



October 7, 2019

Ms. Casey Howard, M.B.A., S.P.H.R.  
Human Resources and Risk Manager  
City of Winter Springs  
1126 East State Road 434  
Winter Springs, Florida 32708

**Re: City of Winter Springs Defined Benefit Plan  
October 1, 2018 Chapter 112.664 Compliance Report**

Dear Casey:

As requested, we are pleased to enclose the October 1, 2018 Chapter 112.664 Compliance Report for the City of Winter Springs Defined Benefit Plan (Plan).

As required, we will timely upload the required data to the State's online portal.

Please note we understand the following items must be posted on the Plan's website and must be posted on any website containing budget information relating to the City or actuarial or performance information relating to the Plan:

- this compliance report
- most recent financial statement
- most recent actuarial valuation report
- a link to the Division of Retirement Actuarial Summary Fact Sheet  
[http://www.dms.myflorida.com/workforce\\_operations/retirement/local\\_retirement\\_plans/local\\_retirement\\_section/actuarial\\_summary\\_fact\\_sheets](http://www.dms.myflorida.com/workforce_operations/retirement/local_retirement_plans/local_retirement_section/actuarial_summary_fact_sheets)
- for the previous five years - a side-by-side comparison of the Plan's assumed rate of return compared to the actual rate of return as well as the percentages of cash, equity, bond and alternative investments in the Plan portfolio
- the Plan's funded ratio as determined in the most recent actuarial valuation – 86.6% on a market value of assets basis as of October 1, 2018

We appreciate the opportunity to work with the Board on this important assignment.

If you should have any questions concerning the above, please do not hesitate to contact us.

Sincerest regards,

A handwritten signature in black ink that reads "Jennifer Borregard".

Jennifer M. Borregard, E.A.  
Consultant and Actuary

Enclosures

# City of Winter Springs Defined Benefit Plan

## CHAPTER 112.664, F.S. COMPLIANCE REPORT

In Connection with the October 1, 2018 Funding Actuarial Valuation Report and the Plan's  
Financial Reporting for Fiscal Year Ended September 30, 2018







October 7, 2019

Board of Trustees  
c/o Ms. Casey Howard, M.B.A., S.P.H.R.  
Human Resources and Risk Manager  
City of Winter Springs Defined Benefit Plan  
1126 East State Road 434  
Winter Springs, Florida 32708

**Re: October 1, 2018 Chapter 112.664 Compliance Report**

Dear Board Members:

Gabriel, Roeder, Smith & Company (GRS) has been engaged by the Board of Trustees (Board) of the City of Winter Springs Defined Benefit Plan (Plan) to prepare a disclosure report to satisfy the requirements set forth in Chapter 112.664, F.S. and as further required pursuant to Chapter 60T-1.0035, F.A.C.

This report was prepared at the request of the Board and is intended for use by the Board and those designated or approved by the Board. This report may be provided to parties other than the Board only in its entirety and only with the permission of the Board.

The purpose of the report is to provide the required information specified in Chapter 112.664, F.S. and to supplement this information with additional exhibits. This report should not be relied on for any purpose other than the purpose described above.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: Plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in Plan provisions or applicable law. The scope of this engagement does not include an analysis of the potential range of such measurements.

This report is based upon information furnished by the City and the Board concerning Plan benefits, Plan provisions and Plan members as used in the corresponding Actuarial Valuation Reports for the Valuation Dates indicated. Financial information was provided by the City and Board as of September 30, 2018. We reviewed the information provided for internal and year-to-year consistency, but did not audit the data. The Plan is responsible for the accuracy of the data.

Except where specific assumptions are required by Chapter 112.664, F.S, this report was prepared using actuarial assumptions adopted by the Board as described in Section C. The economic and demographic actuarial assumptions reflect the results of an Experience Study for the five-year period October 1, 2011 – September 30, 2016. The mortality assumptions are prescribed by statute. Each assumption represents an estimate of future Plan experience.

The investment return assumption of 2% higher than the investment return assumption utilized in the Actuarial Valuation Report does not represent an estimate of future Plan experience nor an observation of the estimates inherent in market data. This assumption is provided as a counterpart to the Chapter 112.664, F.S. requirement to utilize an investment return assumption of 2% lower than the investment return assumption utilized in the Actuarial Valuation Report. The inclusion of the additional 2% higher assumption shows a more complete assessment of the range of potential results as opposed to the *one-sided* range required by statute.

If all actuarial assumptions are met and if all current and future minimum required contributions are paid, Plan assets will be sufficient to pay all Plan benefits, future contributions are expected to remain relatively stable as a percentage of payroll and the funded status of the Plan is expected to improve. Plan minimum required contributions are determined in compliance with the requirements of the Florida Protection of Public Employee Retirement Benefits Act with normal cost determined as a level percent of covered payroll and a level dollar amortization payment using an initial closed amortization period of 30 years.

The Plan's funded ratio as of October 1, 2018 is 86.6% defined as the ratio of the market value of Plan assets to the actuarial accrued liability.

The Plan's funded ratio and the GASB Net Pension Liability may not be appropriate for assessing the sufficiency of Plan assets to meet the estimated cost of settling benefit obligations but may be appropriate for assessing the need for or the amount of future contributions.

The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the Plan sponsor.

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

Board of Trustees  
October 7, 2019  
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With respect to the reporting standards for defined benefit retirement plans or systems contained in Section 112.664(1), F.S., the actuarial disclosures required under this section were prepared and completed by us or under our direct supervision and we acknowledge responsibility for the results. To the best of our knowledge, the results are complete and accurate, and in our opinion, meet the requirements of Section 112.664(1), F.S., and Section 60T-1.0035, F.A.C.

Respectfully submitted,

GABRIEL, ROEDER, SMITH AND COMPANY

By Michelle Jones

Shelly L. Jones, M.A.A.A  
Enrolled Actuary No. 17-08646  
Consultant & Actuary

By Jennifer Borregard

Jennifer M. Borregard, M.A.A.A  
Enrolled Actuary No. 17-07624  
Consultant & Actuary

Date: October 7, 2019

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## SECTION A

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### CHAPTER 112.664, F.S. RESULTS



**Net Pension Liability**  
Using Financial Reporting Assumptions per GASB Statements No. 67 and No. 68

| Measurement Date  | September 30, 2018   |
|---|----------------------|
| <b>A. <u>Total Pension Liability (TPL)</u></b>                          |                      |
| Service Cost  | \$ 502,667           |
| Interest  | 4,452,760            |
| Benefit Changes   | 0                    |
| Difference Between Actual and Expected Experience                       | 124,345              |
| Assumption Changes  | 2,531,601            |
| Benefit Payments  | (2,935,206)          |
| Other   | 0                    |
| <b>Net Change in Total Pension Liability</b>                            | <b>\$ 4,676,167</b>  |
| <b>Total Pension Liability (TPL) - (beginning of year)</b>              | <b>55,763,964</b>    |
| <b>Total Pension Liability (TPL) - (end of year)</b>                    | <b>\$ 60,440,131</b> |
| <b>B. <u>Plan Fiduciary Net Position</u></b>                            |                      |
| Contributions - County and City   | \$ 2,635,968         |
| Contributions - Member  | 460,745              |
| Net Investment Income   | 5,243,193            |
| Benefit Payments  | (2,935,206)          |
| Administrative Expenses   | (64,770)             |
| Other   | 0                    |
| <b>Net Change in Plan Fiduciary Net Position</b>                        | <b>\$ 5,339,930</b>  |
| <b>Plan Fiduciary Net Position - (beginning of year)</b>                | <b>48,091,584</b>    |
| <b>Plan Fiduciary Net Position - (end of year)</b>                      | <b>\$ 53,431,514</b> |
| <b>C. <u>Net Pension Liability (NPL) - (end of year): (A) - (B)</u></b> | <b>\$ 7,008,617</b>  |
| Valuation Date  | October 1, 2017      |

**Certain Key Assumptions**

Investment Return Assumption 7.75%

**Mortality Table:**

Firefighter and Police Officer participants: For healthy participants during employment, RP 2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy participants post employment, RP 2000 Annuitant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. General Employee participants: For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, RP 2000 Disabled Male Mortality Table, set back four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

**Net Pension Liability**  
**Using Assumptions Required Under 112.664(1)(b), F.S.**

| Measurement Date  | <u>September 30, 2018</u>   |
|---|-----------------------------|
| <b>A. <u>Total Pension Liability (TPL)</u></b>                          |                             |
| Service Cost  | \$ 878,808                  |
| Interest  | 4,217,701                   |
| Benefit Changes   | 0                           |
| Difference Between Actual and Expected Experience                       | 153,951                     |
| Assumption Changes  | 3,545,730                   |
| Benefit Payments  | (2,935,206)                 |
| Other   | <u>0</u>                    |
| <b>Net Change in Total Pension Liability</b>                            | <b>\$ 5,860,984</b>         |
| <b>Total Pension Liability (TPL) - (beginning of year)</b>              | <b><u>70,240,441</u></b>    |
| <b>Total Pension Liability (TPL) - (end of year)</b>                    | <b><u>\$ 76,101,425</u></b> |
| <b>B. <u>Plan Fiduciary Net Position</u></b>                            |                             |
| Contributions - County and City   | \$ 2,635,968                |
| Contributions - Member  | 460,745                     |
| Net Investment Income   | 5,243,193                   |
| Benefit Payments  | (2,935,206)                 |
| Administrative Expenses   | (64,770)                    |
| Other   | <u>0</u>                    |
| <b>Net Change in Plan Fiduciary Net Position</b>                        | <b>\$ 5,339,930</b>         |
| <b>Plan Fiduciary Net Position - (beginning of year)</b>                | <b><u>48,091,584</u></b>    |
| <b>Plan Fiduciary Net Position - (end of year)</b>                      | <b><u>\$ 53,431,514</u></b> |
| <b>C. <u>Net Pension Liability (NPL) - (end of year): (A) - (B)</u></b> | <b>\$ 22,669,911</b>        |

Valuation Date October 1, 2017

**Certain Key Assumptions**

Investment Return Assumption 5.75%

**Mortality Table:**

Firefighter and Police Officer participants: For healthy participants during employment, RP 2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy participants post employment, RP 2000 Annuitant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. General Employee participants: For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, RP 2000 Disabled Male Mortality Table, set back four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

## Net Pension Liability

### Using Assumptions Required Under 112.664(1)(a), F.S. Plus 2% on Investment Return Assumption

| Measurement Date  | September 30, 2018    |
|---|-----------------------|
| <b>A. <u>Total Pension Liability (TPL)</u></b>                          |                       |
| Service Cost  | \$ 303,614            |
| Interest  | 4,522,049             |
| Benefit Changes   | 0                     |
| Difference Between Actual and Expected Experience                       | 105,729               |
| Assumption Changes  | 1,915,364             |
| Benefit Payments  | (2,935,206)           |
| Other   | 0                     |
| <b>Net Change in Total Pension Liability</b>                            | <b>\$ 3,911,550</b>   |
| <b>Total Pension Liability (TPL) - (beginning of year)</b>              | <b>45,522,885</b>     |
| <b>Total Pension Liability (TPL) - (end of year)</b>                    | <b>\$ 49,434,435</b>  |
| <b>B. <u>Plan Fiduciary Net Position</u></b>                            |                       |
| Contributions - County and City   | \$ 2,635,968          |
| Contributions - Member  | 460,745               |
| Net Investment Income   | 5,243,193             |
| Benefit Payments  | (2,935,206)           |
| Administrative Expenses   | (64,770)              |
| Other   | 0                     |
| <b>Net Change in Plan Fiduciary Net Position</b>                        | <b>\$ 5,339,930</b>   |
| <b>Plan Fiduciary Net Position - (beginning of year)</b>                | <b>48,091,584</b>     |
| <b>Plan Fiduciary Net Position - (end of year)</b>                      | <b>\$ 53,431,514</b>  |
| <b>C. <u>Net Pension Liability (NPL) - (end of year): (A) - (B)</u></b> | <b>\$ (3,997,079)</b> |
| Valuation Date  | October 1, 2017       |

#### **Certain Key Assumptions**

Investment Return Assumption 9.75%

#### Mortality Table:

Firefighter and Police Officer participants: For healthy participants during employment, RP 2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy participants post employment, RP 2000 Annuitant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. General Employee participants: For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, RP 2000 Disabled Male Mortality Table, set back four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

**Asset and Benefit Payment Projection**  
**Not Reflecting Any Future Contributions**  
Using Financial Reporting Assumptions per GASB Statements No. 67 and No. 68  
and Using Assumptions Required Under 112.664(1)(a), F.S.

| FYE  | Market Value of<br>Assets (BOY) | Expected<br>Investment Return | Projected Benefit<br>Payments | Market Value of<br>Assets (EOY) |
|------|---------------------------------|-------------------------------|-------------------------------|---------------------------------|
| 2019 | \$ 53,431,514                   | \$ 3,995,781                  | \$ 3,497,830                  | \$ 53,929,465                   |
| 2020 | 53,929,465                      | 4,020,964                     | 3,820,907                     | 54,129,522                      |
| 2021 | 54,129,522                      | 4,029,952                     | 3,977,918                     | 54,181,556                      |
| 2022 | 54,181,556                      | 4,023,731                     | 4,225,011                     | 53,980,276                      |
| 2023 | 53,980,276                      | 3,997,904                     | 4,471,450                     | 53,506,730                      |
| 2024 | 53,506,730                      | 3,957,960                     | 4,549,631                     | 52,915,059                      |
| 2025 | 52,915,059                      | 3,905,883                     | 4,699,567                     | 52,121,375                      |
| 2026 | 52,121,375                      | 3,838,838                     | 4,832,925                     | 51,127,288                      |
| 2027 | 51,127,288                      | 3,756,622                     | 4,957,603                     | 49,926,307                      |
| 2028 | 49,926,307                      | 3,659,838                     | 5,046,958                     | 48,539,187                      |
| 2029 | 48,539,187                      | 3,548,541                     | 5,138,399                     | 46,949,329                      |
| 2030 | 46,949,329                      | 3,424,205                     | 5,165,426                     | 45,208,108                      |
| 2031 | 45,208,108                      | 3,287,244                     | 5,214,032                     | 43,281,320                      |
| 2032 | 43,281,320                      | 3,136,833                     | 5,240,157                     | 41,177,996                      |
| 2033 | 41,177,996                      | 2,973,050                     | 5,258,841                     | 38,892,205                      |
| 2034 | 38,892,205                      | 2,796,893                     | 5,234,951                     | 36,454,147                      |
| 2035 | 36,454,147                      | 2,608,716                     | 5,216,324                     | 33,846,539                      |
| 2036 | 33,846,539                      | 2,409,134                     | 5,155,905                     | 31,099,768                      |
| 2037 | 31,099,768                      | 2,196,955                     | 5,139,151                     | 28,157,572                      |
| 2038 | 28,157,572                      | 1,970,413                     | 5,103,533                     | 25,024,452                      |
| 2039 | 25,024,452                      | 1,730,399                     | 5,035,993                     | 21,718,858                      |
| 2040 | 21,718,858                      | 1,478,065                     | 4,943,243                     | 18,253,680                      |
| 2041 | 18,253,680                      | 1,214,280                     | 4,828,379                     | 14,639,581                      |
| 2042 | 14,639,581                      | 939,075                       | 4,710,597                     | 10,868,059                      |
| 2043 | 10,868,059                      | 652,170                       | 4,580,786                     | 6,939,443                       |
| 2044 | 6,939,443                       | 353,472                       | 4,441,745                     | 2,851,170                       |
| 2045 | 2,851,170                       | 63,694                        | 4,305,350                     | -                               |
| 2046 | -                               | -                             | 4,155,651                     | -                               |
| 2047 | -                               | -                             | 4,003,823                     | -                               |
| 2048 | -                               | -                             | 3,823,358                     | -                               |

Number of years for which current market value of assets are adequate to sustain the payment of expected retirement benefits reflecting no contributions from the City, County or Members: 26.67

**Certain Key Assumptions**

Investment return assumption 7.75%

**Mortality Table:**

Firefighter and Police Officer participants: For healthy participants during employment, RP 2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy participants post employment, RP 2000 Annuitant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. General Employee participants: For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, RP 2000 Disabled Male Mortality Table, set back four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

**Note: As required in Section 112.664(1)(c) of the Florida Statutes, the projection of Plan assets does not include future contributions from the City, County or Members. For this reason, this projection should not be viewed as representative of the amount of time the Plan can sustain benefit payments. Under the Government Accounting Standards Board standards which include City, County and Member contributions, the Plan is expected to be able to pay all future benefit payments.**

**Asset and Benefit Payment Projection**  
**Not Reflecting Any Future Contributions**  
Using Assumptions Required Under 112.664(1)(b), F.S.

| FYE  | Market Value of Assets (BOY) | Expected Investment Return | Projected Benefit Payments | Market Value of Assets (EOY) |
|------|------------------------------|----------------------------|----------------------------|------------------------------|
| 2019 | \$ 53,431,514                | \$ 2,964,300               | \$ 3,497,830               | \$ 52,897,984                |
| 2020 | 52,897,984                   | 2,923,645                  | 3,820,907                  | 52,000,722                   |
| 2021 | 52,000,722                   | 2,867,204                  | 3,977,918                  | 50,890,008                   |
| 2022 | 50,890,008                   | 2,795,708                  | 4,225,011                  | 49,460,705                   |
| 2023 | 49,460,705                   | 2,705,913                  | 4,471,450                  | 47,695,168                   |
| 2024 | 47,695,168                   | 2,601,980                  | 4,549,631                  | 45,747,517                   |
| 2025 | 45,747,517                   | 2,485,360                  | 4,699,567                  | 43,533,310                   |
| 2026 | 43,533,310                   | 2,353,925                  | 4,832,925                  | 41,054,310                   |
| 2027 | 41,054,310                   | 2,207,533                  | 4,957,603                  | 38,304,240                   |
| 2028 | 38,304,240                   | 2,046,645                  | 5,046,958                  | 35,303,927                   |
| 2029 | 35,303,927                   | 1,871,303                  | 5,138,399                  | 32,036,831                   |
| 2030 | 32,036,831                   | 1,682,610                  | 5,165,426                  | 28,554,015                   |
| 2031 | 28,554,015                   | 1,480,848                  | 5,214,032                  | 24,820,831                   |
| 2032 | 24,820,831                   | 1,265,383                  | 5,240,157                  | 20,846,057                   |
| 2033 | 20,846,057                   | 1,036,256                  | 5,258,841                  | 16,623,472                   |
| 2034 | 16,623,472                   | 794,195                    | 5,234,951                  | 12,182,716                   |
| 2035 | 12,182,716                   | 539,427                    | 5,216,324                  | 7,505,819                    |
| 2036 | 7,505,819                    | 272,371                    | 5,155,905                  | 2,622,285                    |
| 2037 | 2,622,285                    | 32,010                     | 5,139,151                  | -                            |
| 2038 | -                            | -                          | 5,103,533                  | -                            |
| 2039 | -                            | -                          | 5,035,993                  | -                            |
| 2040 | -                            | -                          | 4,943,243                  | -                            |
| 2041 | -                            | -                          | 4,828,379                  | -                            |
| 2042 | -                            | -                          | 4,710,597                  | -                            |
| 2043 | -                            | -                          | 4,580,786                  | -                            |
| 2044 | -                            | -                          | 4,441,745                  | -                            |
| 2045 | -                            | -                          | 4,305,350                  | -                            |
| 2046 | -                            | -                          | 4,155,651                  | -                            |
| 2047 | -                            | -                          | 4,003,823                  | -                            |
| 2048 | -                            | -                          | 3,823,358                  | -                            |

Number of years for which current market value of assets are adequate to sustain the payment of expected retirement benefits reflecting no contributions from the City, County or Members: 18.50

**Certain Key Assumptions**

Investment return assumption 5.75%

**Mortality Table:**

Firefighter and Police Officer participants: For healthy participants during employment, RP 2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy participants post employment, RP 2000 Annuitant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. General Employee participants: For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, RP 2000 Disabled Male Mortality Table, set back four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

**Note: As required in Section 112.664(1)(c) of the Florida Statutes, the projection of Plan assets does not include future contributions from the City, County or Members. For this reason, this projection should not be viewed as representative of the amount of time the Plan can sustain benefit payments. Under the Government Accounting Standards Board standards which include City, County and Member contributions, the Plan is expected to be able to pay all future benefit payments.**

**Asset and Benefit Payment Projection  
Not Reflecting Any Future Contributions**

Using Assumptions Required Under 112.664(1)(a), F.S. Plus 2% on Investment Return Assumption

| FYE  | Market Value of<br>Assets (BOY) | Expected<br>Investment Return | Projected Benefit<br>Payments | Market Value of<br>Assets (EOY) |
|------|---------------------------------|-------------------------------|-------------------------------|---------------------------------|
| 2019 | \$ 53,431,514                   | \$ 5,027,469                  | \$ 3,497,830                  | \$ 54,961,153                   |
| 2020 | 54,961,153                      | 5,159,789                     | 3,820,907                     | 56,300,035                      |
| 2021 | 56,300,035                      | 5,282,155                     | 3,977,918                     | 57,604,272                      |
| 2022 | 57,604,272                      | 5,396,454                     | 4,225,011                     | 58,775,715                      |
| 2023 | 58,775,715                      | 5,497,840                     | 4,471,450                     | 59,802,105                      |
| 2024 | 59,802,105                      | 5,593,843                     | 4,549,631                     | 60,846,317                      |
| 2025 | 60,846,317                      | 5,687,847                     | 4,699,567                     | 61,834,597                      |
| 2026 | 61,834,597                      | 5,777,262                     | 4,832,925                     | 62,778,934                      |
| 2027 | 62,778,934                      | 5,862,844                     | 4,957,603                     | 63,684,175                      |
| 2028 | 63,684,175                      | 5,946,453                     | 5,046,958                     | 64,583,670                      |
| 2029 | 64,583,670                      | 6,029,393                     | 5,138,399                     | 65,474,664                      |
| 2030 | 65,474,664                      | 6,114,858                     | 5,165,426                     | 66,424,096                      |
| 2031 | 66,424,096                      | 6,204,897                     | 5,214,032                     | 67,414,961                      |
| 2032 | 67,414,961                      | 6,300,146                     | 5,240,157                     | 68,474,950                      |
| 2033 | 68,474,950                      | 6,402,522                     | 5,258,841                     | 69,618,631                      |
| 2034 | 69,618,631                      | 6,515,275                     | 5,234,951                     | 70,898,955                      |
| 2035 | 70,898,955                      | 6,641,076                     | 5,216,324                     | 72,323,707                      |
| 2036 | 72,323,707                      | 6,783,135                     | 5,155,905                     | 73,950,937                      |
| 2037 | 73,950,937                      | 6,942,662                     | 5,139,151                     | 75,754,448                      |
| 2038 | 75,754,448                      | 7,120,359                     | 5,103,533                     | 77,771,274                      |
| 2039 | 77,771,274                      | 7,320,516                     | 5,035,993                     | 80,055,797                      |
| 2040 | 80,055,797                      | 7,548,085                     | 4,943,243                     | 82,660,639                      |
| 2041 | 82,660,639                      | 7,808,037                     | 4,828,379                     | 85,640,297                      |
| 2042 | 85,640,297                      | 8,104,686                     | 4,710,597                     | 89,034,386                      |
| 2043 | 89,034,386                      | 8,442,368                     | 4,580,786                     | 92,895,968                      |
| 2044 | 92,895,968                      | 8,826,111                     | 4,441,745                     | 97,280,334                      |
| 2045 | 97,280,334                      | 9,260,688                     | 4,305,350                     | 102,235,672                     |
| 2046 | 102,235,672                     | 9,751,627                     | 4,155,651                     | 107,831,648                     |
| 2047 | 107,831,648                     | 10,305,139                    | 4,003,823                     | 114,132,964                     |
| 2048 | 114,132,964                     | 10,928,913                    | 3,823,358                     | 121,238,519                     |

Number of years for which current market value of assets are adequate to sustain the payment of expected retirement benefits reflecting no contributions from the City, County or Members:

All Future Years

**Certain Key Assumptions**

Investment return assumption

9.75%

Mortality Table:

Firefighter and Police Officer participants: For healthy participants during employment, RP 2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy participants post employment, RP 2000 Annuitant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. General Employee participants: For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For disabled male participants, RP 2000 Disabled Male Mortality Table, set back four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

**Note: As required in Section 112.664(1)(c) of the Florida Statutes, the projection of Plan assets does not include future contributions from the City, County or Members. For this reason, this projection should not be viewed as representative of the amount of time the Plan can sustain benefit payments. Under the Government Accounting Standards Board standards which include City, County and Member contributions, the Plan is expected to be able to pay all future benefit payments.**

**ACTUARIALLY DETERMINED CONTRIBUTION**

|   | Valuation Assumptions<br>and 112.664(1)(a), F.S.<br>Assumptions | 112.664(1)(b), F.S.<br>Assumptions | 112.664(1)(a), F.S.<br>Assumptions Plus 2% on<br>Investment Return<br>Assumption |
|---|---|------------------------------------|--|
| A. Valuation Date   | October 1, 2018   | October 1, 2018                    | October 1, 2018  |
| B. Actuarial Determined Contribution to Be Paid During Fiscal Year Ending                   | September 30, 2020  | September 30, 2020                 | September 30, 2020   |
| C. Annual Payroll of Active Employees   | \$ 5,042,067  | \$ 5,042,067                       | \$ 5,042,067   |
| D. Total Minimum Funding Requirement  |   |                                    |  |
| 1. Total Normal Cost  | \$ 537,506  | \$ 880,096                         | \$ 354,367   |
| 2. Annual Payment to Amortize Unfunded Actuarial Liability                                  | 1,032,209   | 1,973,270                          | 102,541  |
| 3. Interest Adjustment  | <u>71,513</u>   | <u>98,605</u>                      | <u>23,897</u>  |
| 4. Total Minimum Funding Requirement  | \$ 1,641,228  | \$ 2,951,971                       | \$ 480,805   |
| E. Expected Payroll of Active Employees for Following Plan Year (\$ / % of pay) (C x 1.000) | \$ 5,042,067 100.00%  | \$ 5,042,067 100.00%               | \$ 5,042,067 100.00%   |
| F. Expected Contribution Sources (\$ / % of pay)  |   |                                    |  |
| 1. County and City  | \$ 1,389,125 27.55%   | \$ 2,699,868 53.55%                | \$ 228,702 4.54%   |
| 2. Member   | <u>252,103 5.00%</u>  | <u>252,103 5.00%</u>               | <u>252,103 5.00%</u>   |
| 3. Total  | \$ 1,641,228 32.55%   | \$ 2,951,971 58.55%                | \$ 480,805 9.54%   |

### Unfunded Actuarial Accrued Liabilities Bases and Amortization Payments

| <u>Amortization Base</u>   | <u>Current Unfunded Liabilities</u> | <u>Amortization Payment</u>                          |  |  | <u>Remaining Funding Period</u> |
|--|-------------------------------------|--|--|--|---------------------------------|
|  |                                     | <u>Valuation and 112.664(1)(a), F.S. Assumptions</u> | <u>112.664(1)(b), F.S. Assumptions</u> | <u>112.664(1)(a), F.S. Assumptions Plus 2%</u> |                                 |
| 10/01/2000 Initial   | \$ 1,141,227                        | \$ 138,728   | \$ 126,962                             | \$ 150,747                                     | 12 years                        |
| 10/01/2002 Assumption Change   | (15,818)                            | (1,755)  | (1,584)                                | (1,930)  | 14 years                        |
| 10/01/2003 Plan Amendment  | 103,166                             | 11,016   | 9,881                                  | 12,183   | 15 years                        |
| 10/01/2004 Plan Amendment  | 160,624                             | 16,573   | 14,773                                 | 18,429   | 16 years                        |
| 10/01/2005 Plan Amendment  | 340,656                             | 34,084   | 30,195                                 | 38,098   | 17 years                        |
| 10/01/2006 Plan Amendment  | 399,959                             | 38,923   | 34,278                                 | 43,725   | 18 years                        |
| 10/01/2007 Plan Amendment  | 416,791                             | 39,556   | 34,635                                 | 44,650   | 19 years                        |
| 10/01/2008 Plan Amendment and Assumption Change                        | 1,901,440                           | 176,406  | 153,596                                | 200,040  | 20 years                        |
| 10/01/2008 Method Change   | 4,249,998                           | 394,292  | 343,309                                | 447,118  | 20 years                        |
| 10/01/2009 Actuarial Loss / (Gain)                                     | 1,843,539                           | 167,541  | 145,088                                | 190,825  | 21 years                        |
| 10/01/2010 Actuarial Loss / (Gain)                                     | (345,231)                           | (30,791)   | (26,525)                               | (35,218)                                       | 22 years                        |
| 10/01/2010 Plan Amendment  | (2,001,559)                         | (178,518)  | (153,783)                              | (204,186)                                      | 22 years                        |
| 10/01/2011 Actuarial Loss / (Gain)                                     | 2,214,639                           | 194,170  | 166,417                                | 222,985  | 23 years                        |
| 10/01/2012 Actuarial Loss / (Gain)                                     | 755,556                             | 65,217   | 55,620                                 | 75,184   | 24 years                        |
| 10/01/2013 Actuarial Loss / (Gain)                                     | (594,366)                           | (50,576)   | (42,928)                               | (58,520)                                       | 25 years                        |
| 10/01/2014 Actuarial Loss / (Gain)                                     | (638,409)                           | (53,617)   | (45,301)                               | (62,257)                                       | 26 years                        |
| 10/01/2014 Assumption Change   | 5,995                               | 503  | 425                                    | 585  | 26 years                        |
| 10/01/2015 Actuarial Loss / (Gain)                                     | (258,363)                           | (21,440)   | (18,034)                               | (24,979)                                       | 27 years                        |
| 10/01/2016 Actuarial Loss / (Gain)                                     | (1,248,124)                         | (102,443)  | (85,796)                               | (119,730)                                      | 28 years                        |
| 10/01/2016 Assumption Change   | 432,621                             | 35,508   | 29,739                                 | 41,500   | 28 years                        |
| 10/01/2017 Actuarial Loss / (Gain)                                     | (631,222)                           | (51,288)   | (42,776)                               | (60,125)                                       | 29 years                        |
| 10/01/2017 Assumption Change   | 2,287,239                           | 185,844  | 154,999                                | 217,865  | 29 years                        |
| 10/01/2018 Actuarial Loss / (Gain)                                     | 301,553                             | 24,276   | 20,165                                 | 28,541   | 30 years                        |
| 10/01/2018 Assumption Change - 112.664(1)(b), F.S. Assumptions         | 15,999,649                          | N/A  | 1,069,915                              | N/A  | 30 years                        |
| 10/01/2018 Assumption Change - 112.664(1)(a), F.S. Assumptions Plus 2% | (11,231,279)                        | N/A  | N/A                                    | (1,062,989)                                    | 30 years                        |



## **SECTION B**

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### **SUMMARY OF PLAN PROVISIONS**

**Outline of Principal Provisions of the Retirement Plan**  
**(as of October 1, 2018)**

**A. Effective Date**

Plan adopted as a Money Purchase Floor Offset plan on October 1, 1997. Plan amended and restated as a Defined Benefit Plan effective October 1, 2000. Plan most recently amended by Resolution 2017-10 adopted November 13, 2017.

**B. Eligibility Requirements**

General Employees hired prior to October 1, 2011, Police Officers and Forensic Professionals working 30 or more hours per week are eligible to join the Plan on the first day of the month following completion of six (6) months of service. Electing transferring Firefighters as of October 2, 2008 under the Agreement with the County.

**C. Accrual Service**

Years of Accrual Service are any Plan Years during which an Employee completes at least 1,000 hours of service, including years of service completed prior to participation in the Plan.

**D. Compensation**

Wages, salaries and other amounts received (whether or not paid in cash) for personal services actually rendered in the course of employment. Effective October 10, 2011 Compensation shall exclude commissions, bonuses, overtime pay in excess of one hundred fifty (150) hours per Plan year and payments for accrued leave in excess of the dollar amount of an Employee's accrued leave balance on July 1, 2011.

**E. Final Average Compensation**

Average earnings during the best five (5) consecutive years out of the last ten (10) years preceding termination or retirement, but not less than the three (3) highest consecutive compensation periods during employment with the City as of September 30, 2011.

**F. Normal Retirement**

1. Eligibility:

- (a) Attainment of age 65; or
- (b) Completion of 30 years of service and determined to be disabled under the City's long term disability insurance policy.

Outline of Principal Provisions of the Retirement Plan  
(as of October 1, 2018)

2. Benefit:

For Firefighters, Police Officers and Forensic Professionals, 3.00% times Final Average Compensation multiplied by Accrual Service, up to a maximum of 30 years.

For General Employees, 3.00% times Accrual Service earned through September 30, 2011 times Final Average Compensation plus 2.50% times Accrual Service earned after September 30, 2011 times Final Average Compensation, up to a maximum of 30 years of Accrual Service.

**G. Early Retirement**

1. Eligibility:

- (a) Attainment of age 55 and completion of 15 years of service; or
- (b) Completion of 25 years of service.

2. Benefit:

Benefit accrued to date of early retirement, actuarially reduced for each year early retirement benefit commencement precedes age 55. A participant as of September 30, 2011 who attains age 55 and completes 10 or more years of service but less than 15 years of service may receive the accrued benefit as of September 30, 2011 payable without actuarial reduction plus the accrued benefit earned after September 30, 2011 payable with actuarial reduction from normal retirement date.

**H. Late Retirement**

1. Eligibility:

Continued employment beyond Normal Retirement Date.

2. Benefit:

Greater of (a) and (b):

- (a) Accrued benefit calculated as for Normal Retirement based upon service and pay at Late Retirement Date.

- (b) Actuarially increased benefit as of Late Retirement Date.

**I. Disability Retirement**

1. Eligibility:

Completion of 30 years of service and determined to be disabled under the City's long term disability insurance policy.

2. Benefit:

Accrued benefit calculated as for Normal Retirement based upon service and pay at Disability Retirement Date.

Outline of Principal Provisions of the Retirement Plan  
(as of October 1, 2018)

**J. Death Benefit**

Beneficiary entitled to a monthly benefit supported by the present value of the non-forfeitable accrued benefit at the time of the participant's death. If death occurs after actual retirement, the beneficiary receives whatever is payable under the form of benefit option elected.

**K. Participant Contributions**

Five percent (5%) of compensation for all employees.

**L. Vested Benefit Upon Termination**

100% vested in required participant contributions. Participant contributions made after October 1, 2000 are included in the deferred vested benefit payable at normal or early retirement date.

Upon termination of service prior to normal or early retirement date a participant shall be entitled to a benefit payable at normal or early retirement date calculated as for normal retirement. Based on pay and service at date of termination multiplied by a percentage from the following table.

| <u>Years of Service</u> | <u>Vested Percentage</u> |
|-------------------------|--------------------------|
| Less Than 7             | 0%                       |
| 7 or More               | 100%                     |

**M. Normal Form of Payment of Retirement Income**

Monthly benefit payable for life.

Other Options

Actuarially equivalent joint and survivor at 50%, 75%, 100%; or ten (10) years certain and life.

**N. Changes Since Previous Valuation**

None.

## SECTION C

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### **ACTUARIAL ASSUMPTIONS AND COST METHODS USED FOR FUNDING**

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation  
(as of October 1, 2018)

A. Mortality

Firefighter and Police Officer participants:

For healthy participants during employment, RP 2000 Combined Healthy Participant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For healthy participants post employment, RP 2000 Annuitant Mortality Tables, separate rates for males and females, with 90% Blue Collar Adjustment / 10% White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For disabled male participants, 60% RP 2000 Disabled Male Mortality Table setback four years / 40% RP 2000 Annuitant Male Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements. For disabled female participants, 60% RP 2000 Disabled Female Mortality Table set forward two years / 40% RP 2000 Annuitant Female Mortality Table with White Collar Adjustment with no setback, without projected mortality improvements.

| Sample<br>Ages<br>(2018) | Pre-retirement<br>Future Life<br>Expectancy (Years) |       | Post-retirement<br>Future Life<br>Expectancy (Years) |       |
|--------------------------|---|-------|--|-------|
|                          | Men   | Women | Men  | Women |
|                          | 55  | 29.84 | 32.60  | 29.33 |
| 60                       | 24.96   | 27.56 | 24.76  | 27.41 |
| 62                       | 23.09   | 25.59 | 22.97  | 25.49 |

| Sample<br>Ages<br>(2038) | Pre-retirement<br>Future Life<br>Expectancy (Years) |       | Post-retirement<br>Future Life<br>Expectancy (Years) |       |
|--------------------------|---|-------|--|-------|
|                          | Men   | Women | Men  | Women |
|                          | 55  | 32.06 | 34.54  | 31.57 |
| 60                       | 27.21   | 29.49 | 27.03  | 29.36 |
| 62                       | 25.34   | 27.51 | 25.23  | 27.42 |

General Employee participants:

For healthy male participants during employment, RP 2000 Combined Male Healthy Participant Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants during employment, RP 2000 Combined Female Healthy Participant Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation  
(as of October 1, 2018)

A. Mortality (continued)

For healthy male participants post employment, RP 2000 Annuitant Male Mortality Table, with 50% White Collar / 50% Blue Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB. For healthy female participants post employment, RP 2000 Annuitant Female Mortality Table, with White Collar Adjustment and fully generational mortality improvements projected to each future decrement date with Scale BB.

For disabled male participants, RP 2000 Disabled Male Mortality Table, set back four years, without projected mortality improvements. For disabled female participants, RP 2000 Disabled Female Mortality Table, set forward two years, without projected mortality improvements.

| Sample<br>Ages<br>(2018) | Pre-retirement<br>Future Life<br>Expectancy (Years) |        | Post-retirement<br>Future Life<br>Expectancy (Years) |        |
|--------------------------|---|--------|--|--------|
|                          | Male  | Female | Male   | Female |
|                          | 55  | 30.53  | 33.57  | 30.10  |
| 60                       | 25.60   | 28.54  | 25.44  | 28.44  |
| 62                       | 23.70   | 26.58  | 23.60  | 26.52  |

| Sample<br>Ages<br>(2038) | Pre-retirement<br>Future Life<br>Expectancy (Years) |        | Post-retirement<br>Future Life<br>Expectancy (Years) |        |
|--------------------------|---|--------|--|--------|
|                          | Male  | Female | Male   | Female |
|                          | 55  | 32.67  | 35.41  | 32.26  |
| 60                       | 27.78   | 30.38  | 27.63  | 30.30  |
| 62                       | 25.87   | 28.40  | 25.78  | 28.35  |

B. Investment Return

7.75%, compounded annually, net of investment expenses - includes assumed inflation of 2.75%.

C. Allowances for Expenses or Contingencies

Prior year's actual administrative expenses are included in normal cost.

D. Salary Increase Factors

Current salary is assumed to increase at a rate based on the table below per year until retirement - includes assumed wage inflation of 3.0%.

| <u>Service</u>    | <u>General<br/>Employees</u> | <u>Forensic Professionals,<br/>Firefighters and<br/>Police Officers</u> |
|-------------------|------------------------------|---|
| Less than 5 years | 4.50%                        | 4.50%   |
| 5 - 14 years      | 3.25%                        | 3.25%   |
| 15 - 20 years     | 3.00%                        | 3.25%   |
| 20+ years         | 3.00%                        | 3.00%   |

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation  
(as of October 1, 2018)

E. Employee Withdrawal Rates

Withdrawal rates were used in accordance with the following illustrative example.

| <u>Service</u>    | <u>General Employees</u> |               | <u>Forensic Professionals, Firefighters and Police</u> |               |
|-------------------|--------------------------|---------------|--|---------------|
|                   | <u>Male</u>              | <u>Female</u> | <u>Male</u>  | <u>Female</u> |
| Less than 5 years | 20.5%                    | 15.5%         | 13.5%  | 4.0%          |
| 5 - 9 years       | 8.0%                     | 12.0%         | 9.0%   | 4.0%          |
| 10+ years         | 4.5%                     | 5.0%          | 4.5%   | 4.0%          |

F. Disability Rates

1. Line-of-duty disability rates for General Employees were used in accordance with the following illustrative example.

| <u>Age</u> | <u>Male</u> | <u>Female</u> |
|------------|-------------|---------------|
| 20         | 0.000%      | 0.000%        |
| 25         | 0.001%      | 0.001%        |
| 30         | 0.001%      | 0.001%        |
| 35         | 0.001%      | 0.001%        |
| 40         | 0.001%      | 0.001%        |
| 45         | 0.004%      | 0.001%        |
| 50         | 0.006%      | 0.006%        |
| 55         | 0.006%      | 0.006%        |
| 60         | 0.010%      | 0.013%        |
| 65         | 0.010%      | 0.010%        |

2. Non-duty disability rates for General Employees were used in accordance with the following illustrative example.

| <u>Age</u> | <u>Male</u> | <u>Female</u> |
|------------|-------------|---------------|
| 20         | 0.000%      | 0.000%        |
| 25         | 0.010%      | 0.010%        |
| 30         | 0.010%      | 0.010%        |
| 35         | 0.020%      | 0.010%        |
| 40         | 0.020%      | 0.020%        |
| 45         | 0.080%      | 0.060%        |
| 50         | 0.160%      | 0.100%        |
| 55         | 0.250%      | 0.160%        |
| 60         | 0.300%      | 0.260%        |
| 65         | 0.100%      | 0.080%        |

The disability assumptions are the disability assumptions used in the July 1, 2018 FRS Actuarial Valuation.



Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation  
(as of October 1, 2018)

F. Disability Rates (continued)

3. Line-of-duty disability rates for Forensic Professionals, Firefighters and Police Officers were used in accordance with the following illustrative example.

| <u>Age</u> | <u>Male</u> | <u>Female</u> |
|------------|-------------|---------------|
| 20         | 0.010%      | 0.000%        |
| 25         | 0.010%      | 0.004%        |
| 30         | 0.010%      | 0.004%        |
| 35         | 0.010%      | 0.004%        |
| 40         | 0.020%      | 0.040%        |
| 45         | 0.060%      | 0.040%        |
| 50         | 0.140%      | 0.050%        |
| 55         | 0.100%      | 0.080%        |
| 60         | 0.140%      | 0.150%        |
| 65         | 0.260%      | 0.150%        |

4. Non-duty disability rates for Forensic Professionals, Firefighters and Police Officers were used in accordance with the following illustrative example.

| <u>Age</u> | <u>Male</u> | <u>Female</u> |
|------------|-------------|---------------|
| 20         | 0.020%      | 0.000%        |
| 25         | 0.020%      | 0.020%        |
| 30         | 0.030%      | 0.020%        |
| 35         | 0.030%      | 0.030%        |
| 40         | 0.030%      | 0.030%        |
| 45         | 0.030%      | 0.060%        |
| 50         | 0.080%      | 0.110%        |
| 55         | 0.050%      | 0.110%        |
| 60         | 0.050%      | 0.110%        |
| 65         | 0.050%      | 0.110%        |

The disability assumptions are the disability assumptions used in the July 1, 2018 FRS Actuarial Valuation.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation  
(as of October 1, 2018)

G. Assumed Retirement Age

Retirement rates were used in accordance with the following tables.

1. For Forensic Professionals, Police Officers and Firefighters:

| <u>Age</u>   | <u>Years of Service</u> |                |                |                |                   |
|--------------|-------------------------|----------------|----------------|----------------|-------------------|
|              | <u>0 - 9</u>            | <u>10 - 14</u> | <u>15 - 24</u> | <u>25 - 29</u> | <u>30 or more</u> |
| Under 55     | 0.0%                    | 0.0%           | 0.0%           | 3.5%           | 40.0%             |
| 55           | 0.0%                    | 5.0%           | 25.0%          | 70.0%          | 80.0%             |
| 56 - 64      | 0.0%                    | 5.0%           | 7.5%           | 7.5%           | 10.0%             |
| 65 and above | 100.0%                  | 100.0%         | 100.0%         | 100.0%         | 100.0%            |

2. For General Employees:

| <u>Age</u>   | <u>Years of Service</u> |                |                   |
|--------------|-------------------------|----------------|-------------------|
|              | <u>0 - 14</u>           | <u>15 - 24</u> | <u>25 or more</u> |
| Under 55     | 0.0%                    | 0.0%           | 0.0%              |
| 55 - 64      | 4.0%                    | 18.0%          | 12.0%             |
| 65 and above | 100.0%                  | 100.0%         | 100.0%            |

H. Marital Assumptions

1. 100% of active members are assumed to be married.
2. Females are assumed to be three (3) years younger than their male spouses.

I. Interest on Future Participant Contributions

3.75%, compounded annually.

J. Asset Valuation Method

The method used for determining the smoothed actuarial value of assets phases in the deviation between the expected and actual return on assets at the rate of 20% per year. The smoothed actuarial value of assets will be further adjusted to the extent necessary to fall within the corridor whose lower limit is 80% of the fair market value of Plan assets and whose upper limit is 120% of the fair market value of Plan assets - adjusted for equation of balance October 1, 2010.

K. Cost Method

Normal Retirement, Termination, Disability, and Death Benefits: Entry Age Normal Cost Method

Under this method the normal cost for each active employee is the amount which is calculated to be a level percentage of pay that would be required annually from his entry age to his assumed retirement age to fund his estimated benefits, assuming the Plan had always been in effect. The normal cost for the Plan is the sum of such amounts for all employees. The actuarial accrued liability as of any valuation date for each active employee or inactive employee who is eligible to receive benefits under the Plan is the excess of the actuarial present value of estimated future benefits over the actuarial present value of current and future normal costs. The unfunded actuarial accrued liability as of any valuation date is the excess of the actuarial accrued liability over the assets of the Plan.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation  
(as of October 1, 2018)

L. Changes Since Previous Valuation

None.

## **SECTION D**

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### **GLOSSARY**

## Glossary

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

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

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