



January 7, 2021

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, 2019 Chapter 112.664 Compliance Report**

Dear Casey:

As requested, we are pleased to enclose the October 1, 2019 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 – 84.6% on a market value of assets basis as of October 1, 2019

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". The signature is written in a cursive, flowing style.

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, 2019 Funding Actuarial Valuation Report and the Plan's  
Financial Reporting for Fiscal Year Ended September 30, 2019







January 7, 2021

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, 2019 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, 2019. 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, 2019 is 84.6% 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.

This report was prepared using ProVal's valuation model, a software product of Winklevoss Technologies. We are relying on the ProVal model. We performed tests of the ProVal model with this assignment and made a reasonable attempt to understand the developer's intended purpose of, general operation of, major sensitivities and dependencies within, and key strengths and limitations of the ProVal model. In our professional judgment, the ProVal valuation model has the capability to provide results that are consistent with the purposes of the valuation.

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.

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. 20-08646  
Consultant & Actuary

By Jennifer Borregard

Jennifer M. Borregard, M.A.A.A  
Enrolled Actuary No. 20-07624  
Consultant & Actuary

Date: January 7, 2021



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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

	September 30, 2019
Measurement Date	
<b>A. <u>Total Pension Liability (TPL)</u></b>	
Service Cost	\$ 472,736
Interest	4,693,091
Benefit Changes	0
Difference Between Actual and Expected Experience	1,281,355
Assumption Changes	0
Benefit Payments	(3,276,412)
Other	0
<b>Net Change in Total Pension Liability</b>	<b>\$ 3,170,770</b>
<b>Total Pension Liability (TPL) - (beginning of year)</b>	<b>60,440,131</b>
<b>Total Pension Liability (TPL) - (end of year)</b>	<b>\$ 63,610,901</b>
<b>B. <u>Plan Fiduciary Net Position</u></b>	
Contributions - County and City	\$ 2,924,706
Contributions - Member	265,688
Net Investment Income	1,437,224
Benefit Payments	(3,276,412)
Administrative Expenses	(69,023)
Other	0
<b>Net Change in Plan Fiduciary Net Position</b>	<b>\$ 1,282,183</b>
<b>Plan Fiduciary Net Position - (beginning of year)</b>	<b>53,431,514</b>
<b>Plan Fiduciary Net Position - (end of year)</b>	<b>\$ 54,713,697</b>
<b>C. <u>Net Pension Liability (NPL) - (end of year): (A) - (B)</u></b>	<b>\$ 8,897,204</b>
Valuation Date	October 1, 2018

**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.

	September 30, 2019
Measurement Date	
<b>A. <u>Total Pension Liability (TPL)</u></b>	
Service Cost	\$ 815,326
Interest	4,421,650
Benefit Changes	0
Difference Between Actual and Expected Experience	1,619,710
Assumption Changes	0
Benefit Payments	(3,276,412)
Other	0
<b>Net Change in Total Pension Liability</b>	<b>\$ 3,580,274</b>
<b>Total Pension Liability (TPL) - (beginning of year)</b>	<b>76,101,425</b>
<b>Total Pension Liability (TPL) - (end of year)</b>	<b>\$ 79,681,699</b>
<b>B. <u>Plan Fiduciary Net Position</u></b>	
Contributions - County and City	\$ 2,924,706
Contributions - Member	265,688
Net Investment Income	1,437,224
Benefit Payments	(3,276,412)
Administrative Expenses	(69,023)
Other	0
<b>Net Change in Plan Fiduciary Net Position</b>	<b>\$ 1,282,183</b>
<b>Plan Fiduciary Net Position - (beginning of year)</b>	<b>53,431,514</b>
<b>Plan Fiduciary Net Position - (end of year)</b>	<b>\$ 54,713,697</b>
<b>C. <u>Net Pension Liability (NPL) - (end of year): (A) - (B)</u></b>	<b>\$ 24,968,002</b>
Valuation Date	October 1, 2018

**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, 2019
<b>A. <u>Total Pension Liability (TPL)</u></b>	
Service Cost	\$ 289,597
Interest	4,791,306
Benefit Changes	0
Difference Between Actual and Expected Experience	1,055,772
Assumption Changes	0
Benefit Payments	(3,276,412)
Other	0
<b>Net Change in Total Pension Liability</b>	<b>\$ 2,860,263</b>
<b>Total Pension Liability (TPL) - (beginning of year)</b>	<b>49,434,435</b>
<b>Total Pension Liability (TPL) - (end of year)</b>	<b>\$ 52,294,698</b>
<b>B. <u>Plan Fiduciary Net Position</u></b>	
Contributions - County and City	\$ 2,924,706
Contributions - Member	265,688
Net Investment Income	1,437,224
Benefit Payments	(3,276,412)
Administrative Expenses	(69,023)
Other	0
<b>Net Change in Plan Fiduciary Net Position</b>	<b>\$ 1,282,183</b>
<b>Plan Fiduciary Net Position - (beginning of year)</b>	<b>53,431,514</b>
<b>Plan Fiduciary Net Position - (end of year)</b>	<b>\$ 54,713,697</b>
<b>C. <u>Net Pension Liability (NPL) - (end of year): (A) - (B)</u></b>	<b>\$ (2,418,999)</b>
Valuation Date	October 1, 2018

**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 Assets (BOY)	Expected Investment Return	Projected Benefit Payments	Market Value of Assets (EOY)
2020	\$ 54,713,697	\$ 3,949,795	\$ 3,826,450	\$ 54,837,042
2021	54,837,042	3,950,442	4,040,613	54,746,871
2022	54,746,871	3,933,176	4,302,044	54,378,003
2023	54,378,003	3,895,386	4,554,045	53,719,344
2024	53,719,344	3,842,978	4,628,942	52,933,380
2025	52,933,380	3,777,835	4,783,141	51,928,074
2026	51,928,074	3,696,491	4,931,151	50,693,414
2027	50,693,414	3,598,300	5,070,331	49,221,383
2028	49,221,383	3,484,803	5,147,354	47,558,832
2029	47,558,832	3,355,226	5,268,943	45,645,115
2030	45,645,115	3,211,927	5,263,236	43,593,806
2031	43,593,806	3,056,487	5,302,866	41,347,427
2032	41,347,427	2,887,323	5,319,910	38,914,840
2033	38,914,840	2,704,345	5,333,217	36,285,968
2034	36,285,968	2,508,400	5,302,841	33,491,527
2035	33,491,527	2,299,924	5,275,274	30,516,177
2036	30,516,177	2,079,669	5,203,191	27,392,655
2037	27,392,655	1,846,395	5,178,535	24,060,515
2038	24,060,515	1,598,470	5,129,123	20,529,862
2039	20,529,862	1,337,136	5,042,874	16,824,124
2040	16,824,124	1,063,064	4,946,836	12,940,352
2041	12,940,352	776,789	4,822,192	8,894,949
2042	8,894,949	478,563	4,693,294	4,680,218
2043	4,680,218	168,149	4,551,643	296,724
2044	296,724	-	4,399,527	-
2045	-	-	4,248,383	-
2046	-	-	4,082,807	-
2047	-	-	3,915,096	-
2048	-	-	3,719,044	-
2049	-	-	3,530,967	-

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: 24.00

**Certain Key Assumptions**

Investment return assumption 7.50%

Mortality Table:

Firefighter, Police Officer and Forensic Professional participants: For healthy participants during employment, PUB-2010 Headcount Weighted Safety Employee Female Mortality Table and Safety Below Median Employee Male Mortality Table, both set forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For healthy participants post employment, PUB-2010 Headcount Weighted Safety Healthy Retiree Female Mortality Table and Safety Below Median Healthy Retiree Male Mortality Table, both set forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For disabled participants, 80% PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table / 20% PUB-2010 Headcount Weighted Safety Disabled Retiree Mortality Table, separate rates for males and females, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. General Employee participants: For healthy participants during employment, PUB-2010 Headcount Weighted General Below Median Employee Mortality Table, separate rates for males and females, set back 1 year for male, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For healthy participants post employment, PUB-2010 Headcount Weighted General Below Median Healthy Retiree Mortality Table, separate rates for males and females, set back 1 year for male, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For disabled participants, PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table, separate rates for males and females, both set forward 3 years, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

**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)
2020	\$ 54,713,697	\$ 2,896,189	\$ 3,826,450	\$ 53,783,436
2021	53,783,436	2,838,697	4,040,613	52,581,520
2022	52,581,520	2,764,867	4,302,044	51,044,343
2023	51,044,343	2,672,876	4,554,045	49,163,174
2024	49,163,174	2,567,199	4,628,942	47,101,431
2025	47,101,431	2,449,247	4,783,141	44,767,537
2026	44,767,537	2,316,509	4,931,151	42,152,895
2027	42,152,895	2,168,591	5,070,331	39,251,155
2028	39,251,155	2,006,720	5,147,354	36,110,521
2029	36,110,521	1,830,392	5,268,943	32,671,970
2030	32,671,970	1,641,440	5,263,236	29,050,174
2031	29,050,174	1,441,071	5,302,866	25,188,379
2032	25,188,379	1,228,168	5,319,910	21,096,637
2033	21,096,637	1,002,729	5,333,217	16,766,149
2034	16,766,149	765,450	5,302,841	12,228,758
2035	12,228,758	516,708	5,275,274	7,470,192
2036	7,470,192	257,117	5,203,191	2,524,118
2037	2,524,118	27,823	5,178,535	-
2038	-	-	5,129,123	-
2039	-	-	5,042,874	-
2040	-	-	4,946,836	-
2041	-	-	4,822,192	-
2042	-	-	4,693,294	-
2043	-	-	4,551,643	-
2044	-	-	4,399,527	-
2045	-	-	4,248,383	-
2046	-	-	4,082,807	-
2047	-	-	3,915,096	-
2048	-	-	3,719,044	-
2049	-	-	3,530,967	-

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: 17.42

**Certain Key Assumptions**

Investment return assumption 5.50%

Mortality Table:

Firefighter, Police Officer and Forensic Professional participants: For healthy participants during employment, PUB-2010 Headcount Weighted Safety Employee Female Mortality Table and Safety Below Median Employee Male Mortality Table, both set forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For healthy participants post employment, PUB-2010 Headcount Weighted Safety Healthy Retiree Female Mortality Table and Safety Below Median Healthy Retiree Male Mortality Table, both set forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For disabled participants, 80% PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table / 20% PUB-2010 Headcount Weighted Safety Disabled Retiree Mortality Table, separate rates for males and females, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. General Employee participants: For healthy participants during employment, PUB-2010 Headcount Weighted General Below Median Employee Mortality Table, separate rates for males and females, set back 1 year for male, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For healthy participants post employment, PUB-2010 Headcount Weighted General Below Median Healthy Retiree Mortality Table, separate rates for males and females, set back 1 year for male, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For disabled participants, PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table, separate rates for males and females, both set forward 3 years, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

**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 Assets (BOY)	Expected Investment Return	Projected Benefit Payments	Market Value of Assets (EOY)
2020	\$ 54,713,697	\$ 5,003,628	\$ 3,826,450	\$ 55,890,875
2021	55,890,875	5,104,592	4,040,613	56,954,854
2022	56,954,854	5,192,404	4,302,044	57,845,214
2023	57,845,214	5,264,201	4,554,045	58,555,370
2024	58,555,370	5,327,865	4,628,942	59,254,293
2025	59,254,293	5,386,438	4,783,141	59,857,590
2026	59,857,590	5,436,240	4,931,151	60,362,679
2027	60,362,679	5,477,161	5,070,331	60,769,509
2028	60,769,509	5,511,901	5,147,354	61,134,056
2029	61,134,056	5,540,363	5,268,943	61,405,476
2030	61,405,476	5,566,438	5,263,236	61,708,678
2031	61,708,678	5,593,231	5,302,866	61,999,043
2032	61,999,043	5,619,951	5,319,910	62,299,084
2033	62,299,084	5,647,779	5,333,217	62,613,646
2034	62,613,646	5,679,204	5,302,841	62,990,009
2035	62,990,009	5,716,357	5,275,274	63,431,092
2036	63,431,092	5,761,918	5,203,191	63,989,819
2037	63,989,819	5,816,248	5,178,535	64,627,532
2038	64,627,532	5,879,338	5,129,123	65,377,747
2039	65,377,747	5,954,986	5,042,874	66,289,859
2040	66,289,859	6,046,510	4,946,836	67,389,533
2041	67,389,533	6,157,304	4,822,192	68,724,645
2042	68,724,645	6,290,680	4,693,294	70,322,031
2043	70,322,031	6,449,620	4,551,643	72,220,008
2044	72,220,008	6,637,647	4,399,527	74,458,128
2045	74,458,128	6,857,938	4,248,383	77,067,683
2046	77,067,683	7,114,248	4,082,807	80,099,124
2047	80,099,124	7,410,745	3,915,096	83,594,773
2048	83,594,773	7,752,781	3,719,044	87,628,510
2049	87,628,510	8,145,530	3,530,967	92,243,073

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

9.50%

Mortality Table:

Firefighter, Police Officer and Forensic Professional participants: For healthy participants during employment, PUB-2010 Headcount Weighted Safety Employee Female Mortality Table and Safety Below Median Employee Male Mortality Table, both set forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For healthy participants post employment, PUB-2010 Headcount Weighted Safety Healthy Retiree Female Mortality Table and Safety Below Median Healthy Retiree Male Mortality Table, both set forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For disabled participants, 80% PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table / 20% PUB-2010 Headcount Weighted Safety Disabled Retiree Mortality Table, separate rates for males and females, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. General Employee participants: For healthy participants during employment, PUB-2010 Headcount Weighted General Below Median Employee Mortality Table, separate rates for males and females, set back 1 year for male, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For healthy participants post employment, PUB-2010 Headcount Weighted General Below Median Healthy Retiree Mortality Table, separate rates for males and females, set back 1 year for male, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018. For disabled participants, PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table, separate rates for males and females, both set forward 3 years, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

**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 and 112.664(1)(a), F.S. Assumptions	112.664(1)(b), F.S. Assumptions	112.664(1)(a), F.S. Assumptions Plus 2% on Investment Return Assumption
A. Valuation Date	October 1, 2019	October 1, 2019	October 1, 2019
B. Actuarial Determined Contribution to Be Paid During Fiscal Year Ending	September 30, 2021	September 30, 2021	September 30, 2021
C. Annual Payroll of Active Employees	\$ 4,325,321	\$ 4,325,321	\$ 4,325,321
D. Total Minimum Funding Requirement			
1. Total Normal Cost	\$ 470,973	\$ 759,939	\$ 316,261
2. Annual Payment to Amortize Unfunded Actuarial Liability	934,804	1,891,558	(20,106)
3. Interest Adjustment	<u>62,121</u>	<u>87,847</u>	<u>14,499</u>
4. Total Minimum Funding Requirement (1. + 2. + 3., not less than 1.)	\$ 1,467,898	\$ 2,739,344	\$ 316,261
E. Expected Payroll of Active Employees for Following Plan Year (\$ / % of pay) (C x 1.000)	\$ 4,325,321 100.00%	\$ 4,325,321 100.00%	\$ 4,325,321 100.00%
F. Expected Contribution Sources (\$ / % of pay)			
1. County and City	\$ 1,251,632 28.94%	\$ 2,523,078 58.33%	\$ 99,995 2.31%
2. Member	<u>216,266 5.00%</u>	<u>216,266 5.00%</u>	<u>216,266 5.00%</u>
3. Total	\$ 1,467,898 33.94%	\$ 2,739,344 63.33%	\$ 316,261 7.31%



**Unfunded Actuarial Accrued Liabilities Bases and Amortization Payments**

<u>Amortization Base</u>	Current Unfunded Liabilities	Amortization Payment			Remaining Funding Period
		Valuation and 112.664(1)(a), F.S. Assumptions	112.664(1)(b), F.S. Assumptions	112.664(1)(a), F.S. Assumptions Plus 2%	
10/01/2000 Initial	\$ 862,693	\$ 109,700	\$ 101,046	\$ 118,521	11 years
10/01/2002 Assumption Change	(12,401)	(1,420)	(1,289)	(1,553)	13 years
10/01/2003 Plan Amendment	82,020	8,988	8,107	9,892	14 years
10/01/2004 Plan Amendment	129,231	13,619	12,204	15,076	15 years
10/01/2005 Plan Amendment	276,894	28,177	25,086	31,365	16 years
10/01/2006 Plan Amendment	327,992	32,342	28,615	36,193	17 years
10/01/2007 Plan Amendment	344,454	33,013	29,032	37,134	18 years
10/01/2008 Plan Amendment and Assumption Change	1,582,153	147,782	129,197	167,048	19 years
10/01/2008 Method Change	3,536,347	330,314	288,774	373,376	19 years
10/01/2009 Actuarial Loss / (Gain)	1,543,215	140,816	122,403	159,926	20 years
10/01/2010 Actuarial Loss / (Gain)	(290,534)	(25,953)	(22,434)	(29,609)	21 years
10/01/2010 Plan Amendment	(1,684,444)	(150,471)	(130,069)	(171,665)	21 years
10/01/2011 Actuarial Loss / (Gain)	1,872,634	164,072	141,062	187,995	22 years
10/01/2012 Actuarial Loss / (Gain)	641,593	55,228	47,234	63,544	23 years
10/01/2013 Actuarial Loss / (Gain)	(506,640)	(42,911)	(36,514)	(49,569)	24 years
10/01/2014 Actuarial Loss / (Gain)	(546,052)	(45,569)	(38,586)	(52,840)	25 years
10/01/2014 Assumption Change	5,129	428	362	496	25 years
10/01/2015 Actuarial Loss / (Gain)	(221,670)	(18,249)	(15,379)	(21,238)	26 years
10/01/2016 Actuarial Loss / (Gain)	(1,073,860)	(87,309)	(73,239)	(101,961)	27 years
10/01/2016 Assumption Change	372,219	30,263	25,386	35,342	27 years
10/01/2017 Actuarial Loss / (Gain)	(544,469)	(43,763)	(36,546)	(51,276)	28 years
10/01/2017 Assumption Change	1,972,884	158,574	132,425	185,800	28 years
10/01/2018 Actuarial Loss / (Gain)	260,705	20,735	17,241	24,372	29 years
10/01/2019 Actuarial Loss / (Gain)	490,787	38,656	32,008	45,574	30 years
10/01/2019 Assumption Change	479,182	37,742	31,251	44,496	30 years
10/01/2019 Assumption Change - 112.664(1)(b), F.S. Assumptions	16,470,528	N/A	1,074,181	N/A	30 years
10/01/2019 Assumption Change - 112.664(1)(a), F.S. Assumptions Plus 2%	(11,593,333)	N/A	N/A	(1,076,545)	30 years





## **SECTION B**

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### **SUMMARY OF PLAN PROVISIONS**

## Outline of Principal Provisions of the Retirement Plan (as of October 1, 2019)

### 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 Plan Years out of the last ten (10) Plan 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, 2019)**

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, 2019)**

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.

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 upon 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, 2019)**

A. Mortality

Firefighter, Police Officer and Forensic Professional participants:

For healthy participants during employment, PUB-2010 Headcount Weighted Safety Employee Female Mortality Table and Safety Below Median Employee Male Mortality Table, both set forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

For healthy participants post employment, PUB-2010 Headcount Weighted Safety Healthy Retiree Female Mortality Table and Safety Below Median Healthy Retiree Male Mortality Table, both set forward 1 year, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

For disabled participants, 80% PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table / 20% PUB-2010 Headcount Weighted Safety Disabled Retiree Mortality Table, separate rates for males and females, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

Sample Ages (2019)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Men	Women	Men	Women
	55	30.37	34.25	27.50
60	25.43	29.19	22.93	26.31
62	23.51	27.18	21.21	24.48

Sample Ages (2039)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Men	Women	Men	Women
	55	32.00	35.73	29.39
60	27.00	30.63	24.70	28.04
62	25.04	28.60	22.92	26.16

General Employee participants:

For healthy participants during employment, PUB-2010 Headcount Weighted General Below Median Employee Mortality Table, separate rates for males and females, set back 1 year for male, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

For healthy participants post employment, PUB-2010 Headcount Weighted General Below Median Healthy Retiree Mortality Table, separate rates for males and females, set back 1 year for male, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.



**Actuarial Assumptions and Actuarial Cost Methods  
Used in the Valuation  
(as of October 1, 2019)**

A. Mortality (cont'd)

For disabled participants, PUB-2010 Headcount Weighted General Disabled Retiree Mortality Table, separate rates for males and females, both set forward 3 years, with fully generational mortality improvements projected to each future decrement date with Scale MP-2018.

Sample Ages (2019)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	32.50	34.95	28.53
60	27.66	29.93	24.46	27.77
62	25.78	27.96	22.85	25.95

  

Sample Ages (2039)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	34.14	36.43	30.54
60	29.22	31.36	26.31	29.42
62	27.29	29.36	24.63	27.55

B. Investment Return

7.50%, 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 Employees</u>	<u>Forensic Professionals, Firefighters and 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, 2019)**

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 Officers</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, Forensic Professionals, Firefighters and Police Officers were used in accordance with the following illustrative example.

<u>Age</u>	<u>General Employees</u>	<u>All Other Employees</u>
< 40	0.001%	0.005%
45	0.001%	0.050%
50	0.002%	0.050%
55	0.005%	0.090%
60	0.006%	0.090%
65	0.001%	0.090%

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

<u>Age</u>	<u>General Employees</u>	<u>All Other Employees</u>
20	0.00%	0.02%
25	0.01%	0.02%
30	0.01%	0.04%
35	0.01%	0.04%
40	0.02%	0.04%
45	0.04%	0.04%
50	0.08%	0.07%
55	0.16%	0.07%
60	0.21%	0.07%
65	0.04%	0.07%

The disability assumptions are the disability assumptions used in the July 1, 2019 FRS Actuarial Valuation.



**Actuarial Assumptions and Actuarial Cost Methods  
Used in the Valuation  
(as of October 1, 2019)**

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%
55 - 64	4%	18%	12%
65 and above	100%	100%	100%

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 value of assets phases in the deviation between the expected and actual return on assets at the rate of 20% per year. The smoothed 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.

**Actuarial Assumptions and Actuarial Cost Methods  
Used in the Valuation  
(as of October 1, 2019)**

**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.

**L. Changes Since Previous Valuation**

**1. Mortality was:**

Firefighter, Police Officer and Forensic Professional 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 Ages (2019)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Men	Women	Men	Women
	55	29.96	32.70	29.45
60	25.08	27.66	24.87	27.51
62	23.21	25.69	23.09	25.59

  

Sample Ages (2039)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Men	Women	Men	Women
	55	32.17	34.63	31.68
60	27.32	29.58	27.14	29.45
62	25.45	27.60	25.34	27.51



**Actuarial Assumptions and Actuarial Cost Methods  
Used in the Valuation  
(as of October 1, 2019)**

L. Changes Since Previous Valuation (cont'd)

1. Mortality was (cont'd):

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.

Sample Ages (2019)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	30.64	33.66	30.21
60	25.71	28.64	25.55	28.54
62	23.81	26.68	23.71	26.62

Sample Ages (2039)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
	55	32.78	35.50	32.37
60	27.88	30.47	27.74	30.38
62	25.97	28.49	25.89	28.44

2. Investment Return was:

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

**Actuarial Assumptions and Actuarial Cost Methods  
Used in the Valuation  
(as of October 1, 2019)**

L. Changes Since Previous Valuation (cont'd)

3. Disability Rates were:

- a. 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%

- b. 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	0.00%	0.00%
25	0.01%	0.01%
30	0.01%	0.01%
35	0.02%	0.01%
40	0.02%	0.02%
45	0.08%	0.06%
50	0.16%	0.10%
55	0.25%	0.16%
60	0.30%	0.26%
65	0.10%	0.08%

The disability assumptions were 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, 2019)**

L. Changes Since Previous Valuation (cont'd)

3. Disability Rates were: (cont'd)

- c. 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%

- d. 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	0.02%	0.00%
25	0.02%	0.02%
30	0.03%	0.02%
35	0.03%	0.03%
40	0.03%	0.03%
45	0.03%	0.06%
50	0.08%	0.11%
55	0.05%	0.11%
60	0.05%	0.11%
65	0.05%	0.11%

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

**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.

<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 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.