CITY PENSION FUND FOR FIREFIGHTERS AND POLICE OFFICERS IN THE CITY OF MIAMI BEACH

ACTUARIAL VALUATION AS OF OCTOBER 1, 2020

This Valuation Determines the Annual Contribution for the Fund Year October 1, 2021 through September 30, 2022 to be paid in Fiscal Year October 1, 2021 to September 30, 2022

GRS

City Pension Fund for Firefighters and Police Officers
in the City of Miami Beach

TABLE OF CONTENTS

		Page
Commentary		1
I.	Summary of Pension Fund Costs	10
II.	Comparison of Cost Data of Current and Prior Valuations	12
III.	Characteristics of Participants in Actuarial Valuation	13
IV.	Statement of Assets	14
V.	Reconciliation of Fund Assets and Development of Smoothed Value of Assets	15
VI.	Actuarial Gain / (Loss)	17
VII.	Amortization of Unfunded Actuarial Accrued Liability	18
VIII.	Accounting Disclosure Exhibit	20
IX.	Outline of Principal Provisions of the Pension Fund	26
X.	Actuarial Assumptions and Actuarial Cost Methods Used	33
XI.	Assumption Change History	39
XII.	Distribution of Fund Participants by Attained Age Groups and Service Groups	43
XIII.	Statistics for Participants Entitled to Deferred Benefits and Participants Receiving Benefits	46
XIV.	Reconciliation of Employee Data	47
XV.	Projected Retirement Benefits	48
XVI.	Recent Fund Experience	49
XVII.	Employer Contribution Information	53
XVIII.	Twenty-Year Projections	54
XIX.	State Required Exhibit	55
XX.	Glossary	63

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March 18, 2021

Ms. Donna Brito
Executive Director
City Pension Fund for Firefighters and Police Officers
in the City of Miami Beach
1691 Michigan Avenue, Suite 355
Miami Beach, Florida 33139

Dear Donna:

October 1, 2020 Actuarial Valuation

We are pleased to present our October 1, 2020 Actuarial Valuation Report for the City Pension Fund for Firefighters and Police Officers in the City of Miami Beach (Fund). The purpose of this Report is to indicate appropriate contribution levels, comment on the actuarial stability of the Fund and to satisfy State requirements. The Board of Trustees has retained Gabriel, Roeder, Smith and Company (GRS) to prepare an annual actuarial valuation under Section 63 of the Fund Ordinance.

This Report consists of this commentary, detailed Tables I through XVIII, the State Required Exhibit on Table XIX and a Glossary on Table XX. The Tables contain basic Fund cost figures plus significant details on the benefits, liabilities and experience of the Fund. We suggest that you thoroughly review this Report at your convenience and contact us with any questions that may arise.

Retirement Fund Costs

Our Actuarial Valuation develops the required minimum Retirement Fund payment under the Florida Protection of Public Employee Retirement Benefits Act and for Fire and Police Retirement Chapters 175 and 185. The minimum payment consists of payment of annual normal costs including amortization of the components of the unfunded actuarial accrued liability over various periods as prescribed by law. The **minimum required contribution for fiscal year ending September 30, 2022 is $52,553,532 (76.0% / 59.6%)**. The figures in parentheses is the Fund cost expressed as a percentage of projected annual pensionable payroll excluding DROP payroll ($69,180,946) and projected annual pensionable payroll including DROP payroll ($88,245,479) respectively for fiscal year ending September 30, 2022.

This total cost is to be met by member, City and State (Share Plan) contributions. We anticipate member contributions will be **$7,016,935 (10.1% / 8.0%).** The State (Share Plan) will contribute **$120,549 (0.2% / 0.1%)** and the resulting minimum required City contribution will be **$45,416,048 (65.6% / 51.5%)**. The minimum required City contribution does not include an interest adjustment

and must be increased if State (Share Plan) contributions are less than $120,549. The City minimum required contribution requirement reflects an annual City payment at the beginning of the fiscal year.

At the request of the Board and for informational purposes only, the net City minimum required contribution *without* the Maximum Benefit Limitations under Internal Revenue Code (IRC 415) would have been approximately $45,518,000 (65.8% / 51.6%). The net City minimum required contribution to the Fund was lowered by approximately $102,000 due to the requirements of the IRC 415.

Changes in Actuarial Assumptions, Methods and Fund Benefits

The Fund provisions remain unchanged from the Fund provisions considered in the October 1, 2019 Actuarial Valuation. Fund provisions are summarized on Table IX.

Assumed investment return has been updated to 7.55%, net of investment expenses, compounded annually. The retirement assumption is updated to reflect the results of recent experience. The remaining actuarial assumptions and methods are unchanged from the actuarial assumptions and methods utilized in the October 1, 2019 Actuarial Valuation. The actuarial assumptions and methods are outlined on Table X.

Comparison of October 1, 2019 and October 1, 2020 Valuation Results

Table II of this Report provides information of a comparative nature. The left columns of the Table indicate the costs as calculated for the October 1, 2019 Actuarial Valuation. The center columns indicate the costs as calculated for October 1, 2020, prior to the update in actuarial assumptions. The right columns indicate the costs as calculated for October 1, 2020, after the update in actuarial assumptions.

Comparing the left and center columns of Table II shows the effect of Fund experience during the year. The number of active participants and projected pensionable payroll both decreased by approximately 5%. Total Fund membership decreased less than 1%. Both total normal cost and the unfunded actuarial accrued liability decreased as a dollar amount but increased as a percentage of projected pensionable payroll. The net City minimum funding requirement increased both as a dollar amount and as a percentage of projected pensionable payroll.

Comparing the center and right columns of Table II shows the effect of the update of the actuarial assumptions. Total normal cost, the unfunded actuarial accrued liability and the net City minimum funding requirement increased both as a dollar amount and as a percentage of projected pensionable payroll.

The value of vested accrued benefits exceeds Fund assets, resulting in a Vested Benefit Security Ratio (VBSR) of 78.8% (80.1% before the update in actuarial assumptions) which is an increase from 78.0% as of the October 1, 2019 Actuarial Valuation. The VBSR is measured on a market value of assets basis.

Fund Experience

The Fund experienced an actuarial gain in the amount of $2,349,718 this year. This indicates net Fund experience was more favorable than expected based upon the prior actuarial assumptions.

Table XVI (salary, turnover, mortality, disability and investment yield) provides figures on recent Fund experience. Salary experience indicates actual salary increases averaged approximately 3.7% for Fund Year ended September 30, 2020. The average salary increase assumption was 4.9%. Salary increase experience was generally a source of actuarial gain. Three, five and ten-year average annual salary increases are 6.3%, 6.7% and 6.0%, respectively.

Employee turnover this year was approximately 100% of expected turnover based upon the turnover assumption and was neither a source of actuarial loss or a source of actuarial gain. Three, five and ten-year turnover has averaged 50%, 60% and 100% of assumed turnover, respectively.

Mortality this year was approximately 60% of the assumed mortality and was generally an offsetting source of actuarial loss. Three, five and ten-year mortality experience has averaged 70%, 80% and 90% of the assumed mortality, respectively.

Disability this year was approximately 0% of the assumed disability and was generally a source of actuarial gain.

This year's smoothed value investment return of 8.30% was more than the Fund's prior year investment return assumption of 7.65%. Smoothed investment return was an additional source of actuarial gain during the year. Three, five and ten-year average annual investment returns are 7.85%, 8.32% and 7.6%, respectively on a smoothed value basis. Average annual market value returns for the one, three, five and ten-year periods have been 9.14%, 7.63%, 8.62% and 8.5%, respectively.

The Funded Ratio based on the actuarial accrued liability compared to the smoothed value of assets increased from 74.7% to 75.1% (76.2% prior to the actuarial assumption changes).

Member Census and Financial Data

The Board submitted the Member census data as of October 1, 2020 used for this actuarial valuation to us. This information contains name, Social Security number, date of birth, date of hire, October 1, 2020 rate of pay and member contributions for the previous year. Dates of termination and retirement are provided where applicable. The Board updated information on inactive participants including retirees, beneficiaries and vested terminees.

We received financial information as of September 30, 2020 concerning Fund assets from the Fund Auditors. We do not audit the Member census data and asset information that is provided to us; however, we perform certain reasonableness checks. The Fund is responsible for the accuracy of the data provided to us.

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: Fund experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; 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 Fund's funded status); and changes in Fund provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the fund's future financial condition include:

1. Investment risk – actual investment returns may differ from expected returns;
2. Asset / Liability mismatch – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and the actuarially determined contribution requirements;

3. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the Fund's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll or other relevant contribution base;
4. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and the actuarially determined contributions differing from expected;
5. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
6. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and the actuarially determined contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the actuarially determined contribution can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in the actuarially determined contribution can be anticipated.

The actuarially determined contribution rate shown on page one may be considered as a minimum contribution rate that complies with the Board's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the Fund. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

Fund Maturity Measures

Risks facing a pension fund evolve over time. A young fund with virtually no investments and paying few benefits may experience little investment risk. An older fund with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted fund maturity measures include the following:

	2019	2020
Ratio of the market value of assets to payroll	13.34	14.97
Ratio of actuarial accrued liability to payroll	17.95	19.89
Ratio of actives to retirees and beneficiaries	0.68	0.63
Ratio of net cash flow to market value of assets	-2.4%	-2.2%
Duration of the actuarial accrued liability	13.09	13.11

Ratio of Market Value of Assets to Payroll

The relationship between assets and payroll is a useful indicator of the potential volatility of the actuarially determined contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in the actuarially determined contributions as a percentage of payroll.

Ratio of Actuarial Accrued Liability to Payroll

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of the actuarially determined contributions for a fully funded fund. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also the actuarially determined contributions) as a percentage of payroll.

Ratio of Actives to Retirees and Beneficiaries

A young fund with many active members and few retirees will have a high ratio of active to retirees. A mature open fund may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed fund may have significantly more retirees than actives resulting in a ratio below 1.0.

Ratio of Net Cash Flow to Market Value of Assets

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature fund or a need for additional contributions.

Duration of Actuarial Accrued Liability

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, a duration of 10 indicates the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

Additional Risk Assessment

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

Summary

In our opinion the benefits provided for under the Fund will be sufficiently funded through the payment of the amount as indicated in this and future Actuarial Valuation Reports. We will continue to update you on future payment requirements for the Fund through future Actuarial Valuation Reports. In addition, these Reports will continue to monitor future experience of the Fund.

The actuarial assumptions used in this Actuarial Valuation are as adopted by the Board. The retirement assumption is based on the results of an Experience Study for the period October 1, 2014 – September 30, 2019 and the remaining demographic actuarial assumptions are based on the results of an Experience Study for the period October 1, 2009 – September 30, 2014. The investment return assumption was lowered from 7.65% to 7.55%, as adopted by the Board on May 14, 2020, based upon an Investment Return Assumption Study completed in 2020 along with recommendations from the Investment Consultant. The Investment Return Assumption Study illustrated the consensus trend of lowering the investment return assumption based upon fourteen different investment consultants. We understand the Board intends to monitor this trend and anticipates lowering the investment return assumption over the next few years in response to this trend. The mortality assumptions are prescribed by statute. Each assumption represents an estimate of future Fund experience.

If all actuarial assumptions are met and if all future minimum required contributions are paid, Fund assets will be sufficient to pay all Fund benefits, future contributions are expected to remain relatively stable as a percent of payroll and the funded status is expected to improve. Fund minimum required contributions are determined in compliance with the requirements of the Florida Protection of Public Employee Retirement Benefits Act, Firefighters Retirement Chapter 175 and Police Officers Retirement Chapter 185 with normal cost determined as a level percent of

covered payroll and with a level percent amortization payment using a closed amortization period of 30-years.

The Unfunded Actuarial Accrued Liability (UAAL) and the Funded Ratio may not be appropriate for assessing the sufficiency of Fund 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 UAAL and Funded Ratio would be different if they reflected the market value of assets rather than the smoothed value of assets.

The Government Accounting Standards Board Net Pension Liability and Fund Fiduciary Net Position as a Percentage of Total Pension Liability may not be appropriate for assessing the sufficiency of Fund 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 should not be relied on for any purpose other than the purpose described in the primary communication. Determinations of the financial results associated with the benefits described in this Report in a manner other than the intended purpose may produce significantly different results.

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 and has no material limitations or known weaknesses.

This Report has been prepared by actuaries who have substantial experience valuing public employee retirement funds. To the best of our knowledge the information contained in this Report is accurate and fairly presents the actuarial position of the Fund as of the valuation date. 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.

This Report may be provided to parties other than the Board only in its entirety and only with the permission of an approved representative of the Board.

The signing actuaries are independent of the Fund sponsor.

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 in this Report. We are available to respond to any questions with regards to matters covered in this Report.

Very truly yours,

Michelle Jones

Shelly L. Jones, A.S.A., E.A.
Consultant and Actuary

Jennifer Borregard

Jennifer Borregard, E.A.
Consultant and Actuary

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Table I

Summary of Pension Fund Costs as of October 1, 2020

	Prior Assumptions		Current Assumptions	
	Cost Data	% of Projected Pensionable Payroll	Cost Data	% of Projected Pensionable Payroll
A. Participant Data Summary (Table III)				
1. Active Employees	500	N/A	500	N/A
2. Terminated Vested (including dormants)	20	N/A	20	N/A
3. Receiving Benefits (including DROPs)	792	N/A	792	N/A
4. Annual Pensionable Payroll [1]	$ 67,165,967	97.1%	$ 67,165,967	97.1%
5. Projected Annual Pensionable Payroll [2]	69,180,946	100.0%	69,180,946	100.0%
6. Projected Annual Pensionable Payroll including DROP [3]	88,245,479	127.6%	88,245,479	127.6%
B. Total Normal Costs				
1. Age Retirement Benefits	$ 17,442,937	25.2%	$ 18,224,935	26.3%
2. Termination Benefits	1,364,742	2.0%	1,415,374	2.0%
3. Death Benefits	514,935	0.7%	513,167	0.7%
4. Disability Benefits	2,531,174	3.7%	2,481,802	3.6%
5. Estimated Expenses	900,251	1.3%	900,251	1.3%
6. Total Annual Normal Costs	$ 22,754,039	32.9%	$ 23,535,529	34.0%
C. Total Actuarial Accrued Liability				
1. Age Retirement Benefits Active Employees	$ 233,052,615	336.9%	$ 242,010,280	349.8%
2. Termination Benefits Active Employees	5,010,878	7.2%	5,331,896	7.7%
3. Death Benefits Active Employees	1,313,613	1.9%	1,211,753	1.8%
4. Disability Benefits Active Employees	12,014,076	17.4%	11,081,939	16.0%
5. Retired or Terminated Vested Participants Receiving Benefits (including DROPs)	956,852,318	1383.1%	966,669,735	1397.3%
6. Terminated Vested Participants Entitled to Future Benefits (including dormants)	4,737,300	6.8%	4,819,253	7.0%
7. Deceased Participants Whose Beneficiaries are Receiving Benefits	50,624,106	73.2%	51,021,317	73.8%
8. Disabled Participants Receiving Benefits	53,335,373	77.1%	53,845,631	77.8%
9. Total Actuarial Accrued Liability	$ 1,316,940,279	1903.6%	$ 1,335,991,804	1931.2%

[1] *Annual Pensionable Payroll - Participant's pensionable pay for year ending September 30th increased by assumed salary increases to reflect pay increases.*

[2] *Projected Annual Pensionable Payroll - Annual Pensionable Payroll projected to the end of year (and beginning of fiscal year for which the City contributions are determined) by assuming an aggregate increase in payroll of 3%.*

[3] *Projected Annual Pensionable Payroll including DROP - Projected Annual Pensionable Payroll plus DROP participants pay for year ending September 30th increased by assumed salary increases to reflect pay increases then projected to the end of the year assuming an aggregate increase in payroll of 3%.*

Summary of Pension Fund Costs as of October 1, 2020

	Prior Assumptions		Current Assumptions	
	Cost Data	% of Projected Pensionable Payroll	Cost Data	% of Projected Pensionable Payroll
D. Assets (Table V)				
1. Smoothed Value of Assets	$ 1,002,890,941	1449.7%	$ 1,002,890,941	1449.7%
2. Market Value of Assets	$ 1,005,632,284	1453.6%	$ 1,005,632,284	1453.6%
E. Unfunded Actuarial Accrued Liability (C. - D.1.)	$ 314,049,338	454.0%	$ 333,100,863	481.5%
F. Preliminary Minimum Required Contribution				
1. Total Normal Cost (including expenses)	$ 22,754,039	32.9%	$ 23,535,529	34.0%
2. Amortization of Unfunded Liability	26,096,610	37.7%	27,039,872	39.1%
3. Interest Adjustment	249,324	0.4%	246,294	0.4%
4. Expected Service Buyback	201,152	0.3%	201,152	0.3%
5. Total Preliminary Minimum Required Contribution	$ 49,301,125	71.3%	$ 51,022,847	73.8%
G. Projected Payroll of Active Employees for 2021-2022 Fund Year (A.5.)	$ 69,180,946	100.0%	$ 69,180,946	100.0%
H. Contribution Sources for **Fiscal Year Ending September 30, 2022**				
1. City	$ 43,642,675	63.1%	$ 45,416,048	65.6%
2. State (Share Plan)	$ 120,549	0.2%	$ 120,549	0.2%
3. Member	$ 7,016,935	10.1%	$ 7,016,935	10.1%
I. City Contribution (% of Projected Annual Pensionable Payroll including DROP)	$ 43,642,675	49.5%	$ 45,416,048	51.5%
J. Actuarial Gain / (Loss)	$ 2,349,718	3.4%	$ 2,349,718	3.4%
K. Actuarial Present Value of Vested Accrued Benefits				
1. Retired, Terminated Vested, Beneficiaries and Disabled Receiving Benefits (including DROPs)	$ 1,060,811,797	1533.4%	$ 1,071,536,683	1548.9%
2. Terminated Vested Participants Entitled to Future Benefits and Miscellaneous	4,737,300	6.8%	4,819,253	7.0%
3. Active Participants Entitled to Future Benefits	190,361,640	275.2%	199,631,246	288.6%
4. Total Actuarial Present Value of Vested Accrued Benefits	$ 1,255,910,737	1815.4%	$ 1,275,987,182	1844.4%
L. Unfunded Actuarial Present Value of Vested Accrued Benefits (K. - D.2., not less than zero)	$ 250,278,453	361.8%	$ 270,354,898	390.8%
M. Vested Benefit Security Ratio (D.2. ÷ K.)	80.1%	N/A	78.8%	N/A

Table II

Comparison of Cost Data of October 1, 2019 and October 1, 2020 Valuations

	October 1, 2019		Prior Assumptions October 1, 2020		Current Assumptions October 1, 2020	
	Cost Data	% of Projected Pensionable Payroll	Cost Data	% of Projected Pensionable Payroll	Cost Data	% of Projected Pensionable Payroll
A. Participants						
1. Active Employees	525	N/A	500	N/A	500	N/A
2. Terminated Vested (including dormants)	19	N/A	20	N/A	20	N/A
3. Receiving Benefits (including DROPs)	772	N/A	792	N/A	792	N/A
4. Projected Annual Pensionable Payroll	$ 72,536,070	100.0%	$ 69,180,946	100.0%	$ 69,180,946	100.0%
5. Projected Annual Pensionable Payroll (including DROPs)	$ 89,019,062	122.7%	$ 88,245,479	127.6%	$ 88,245,479	127.6%
B. Present Value of Future Benefits	$ 1,485,086,709	2047.4%	$ 1,532,469,824	2215.2%	$ 1,552,156,684	2243.6%
C. Total Normal Costs	$ 22,965,817	31.7%	$ 22,754,039	32.9%	$ 23,535,529	34.0%
D. Actuarial Accrued Liability	$ 1,266,681,905	1746.3%	$ 1,316,940,279	1903.6%	$ 1,335,991,804	1931.2%
E. Fund Assets						
1. Market Value of Assets	$ 940,953,661	1297.2%	$ 1,005,632,284	1453.6%	$ 1,005,632,284	1453.6%
2. Smoothed Value of Assets	$ 945,608,353	1303.6%	$ 1,002,890,941	1449.7%	$ 1,002,890,941	1449.7%
F. Unfunded Actuarial Accrued Liability	$ 321,073,552	442.6%	$ 314,049,338	454.0%	$ 333,100,863	481.5%
G. City Minimum Funding Payment	$ 43,324,910	59.7%	$ 43,642,675	63.1%	$ 45,416,048	65.6%
(% of Projected Annual Payroll including DROP)		48.7%		49.5%		51.5%
H. Vested Benefit Security Ratio	78.0%	N/A	80.1%	N/A	78.8%	N/A

Table III

Characteristics of Participants in Actuarial Valuation as of October 1, 2020

A. Active Fund Participants Summary

1. Active participants fully vested		379
2. Active participants partially vested		0
3. Active participants non-vested		121
4. Total active participants		500
5. Annual Pensionable Payroll	$	67,165,967
6. Projected Annual Pensionable Payroll	$	69,180,946
7. Projected Annual Pensionable Payroll (Including DROPs)	$	88,245,479

B. Retired and Terminated Vested Participant Summary

1. Retired or terminated vested participants receiving benefits (including DROPs)	629
2. Terminated vested participants entitled to future benefits (including dormants)	20
3. Beneficiaries receiving benefits	106
4. Disabled participants receiving benefits	57

C. Projected Annual Retirement Benefits

1. Retired or terminated vested receiving benefits (including DROPs)	$	66,948,749
2. Terminated vested entitled to future benefits	$	400,780
3. Beneficiaries of deceased participants	$	5,436,797
4. Disabled participants	$	4,516,629

Table IV

Statement of Assets as of October 1, 2020

Assets		Market Value
A. Cash and Cash Equivalents	$	20,000
B. General Investments		
1. Money Market Funds	$	20,219,571
2. U.S. Government Securities		28,784,890
3. Equity Securities		576,647,237
4. Domestic Corporate Bonds		191,763,767
5. International Corporate Bonds		1,011,484
6. International Private Placement		54,665,590
7. Real Estate Fund		98,590,809
8. Mutual Funds Self-Directed DROP Participants		32,473,684
C. Receivables		
1. Accrued Interest	$	1,583,746
2. Due from Broker		0
3. Member Contributions		234,526
D. Payables		
1. Accounts Payable	$	363,020
2. Due to Broker		0
E. Total Assets (A. + B. + C. - D.)	$	1,005,632,284

Table V

Reconciliation of Fund Assets

A. Market Value of Assets as of October 1, 2019				$ 940,953,661
B. Receipts during Period				
1. Contributions				
a. Member	$	6,715,576		
b. Buybacks		417,592	*	
c. City		42,658,455	*	
d. State (Share Plan)		120,549		
e. Total	$	49,912,172		
2. Investment Income				
a. Interest and dividends	$	20,683,787		
b. Realized gains		48,998,291		
c. Unrealized gains		18,913,542		
d. Investment expenses		(3,540,697)		
e. Net investment income	$	85,054,923		
3. Total receipts during period				$ 134,967,095
C. Disbursements during Period				
1. Pension payments	$	63,928,894		
2. DROP distributions		5,411,253		
3. Contribution refunds		48,074		
4. Administrative expenses		900,251		
5. Total disbursements during period				$ 70,288,472
D. Market Value of Assets as of September 30, 2020				$ 1,005,632,284
E. Reconciliation of DROP Account Balances				
1. DROP Accounts Balance as of October 1, 2019	$	25,499,534		
2. Benefit Payments into DROP Accounts during Year		10,242,579		
3. Investment Gains / (Losses) during Year		2,142,824		
4. Distributions from DROP Accounts during Year		(5,411,253)		
5. DROP Accounts Balance as of September 30, 2020				$ 32,473,684

* Includes MBERP Transfer amounts attributed to Buybacks in the amount of $332,079 and attributed to City Contributions in the amount of $351,212.

Development of Smoothed Value of Assets as of September 30

	2019	2020	2021	2022	2023	2024
A. Preliminary smoothed value of assets prior year	$ 904,653,131	$ 945,608,353	$ 1,002,890,941			
B. Market value of assets beginning of year	924,502,976	940,953,661	1,005,632,284			
C. Market value of assets end of year	940,953,661	1,005,632,284				
D. Non-investment net cash flow	(22,602,723)	(20,376,300)				
E. Investment return						
1. Market value return: C. - B. - D.	39,053,408	85,054,923				
2. Amount for immediate recognition (7.75% / 7.65%)	70,773,125	71,203,562				
3. Amount for phased-in recognition: E.1. - E.2.	(31,719,717)	13,851,361				
F. Phased-in recognition of investment return						
1. Current year: 20% of E.3.	(6,343,943)	2,770,272				
2. First prior year	3,027,575	(6,343,943)	2,770,272			
3. Second prior year	4,636,932	3,027,575	(6,343,943)	2,770,272		
4. Third prior year	2,364,492	4,636,932	3,027,575	(6,343,943)	2,770,272	
5. Fourth prior year	(10,900,236)	2,364,490	4,636,934	3,027,576	(6,343,945)	2,770,273
6. Total phased-in recognition of investment return	(7,215,180)	6,455,326	4,090,838	(546,095)	(3,573,673)	2,770,273
G. Smoothed value of assets end of year						
1. Preliminary smoothed value of assets end of year: A. + D. + E.2. + F.6.	945,608,353	1,002,890,941				
2. Upper corridor limit: 120% of C.	1,129,144,393	1,206,758,741				
3. Lower corridor limit: 80% of C.	752,762,929	804,505,827				
4. Smoothed value of assets end of year: G.1., not more than G.2., nor less than G.3.	945,608,353	1,002,890,941				
H. Difference - market value less smoothed value	(4,654,692)	2,741,343				
I. Smoothed value rate of return	7.11%	8.30%				
J. Market value rate of return	4.28%	9.14%				

Table VI

Actuarial Gain / (Loss) for Fund Year Ended September 30, 2020

A. Derivation of Actuarial Gain / (Loss)

1. Employer normal cost previous actuarial valuation	$	15,620,042
2. Unfunded actuarial accrued liability previous actuarial valuation	$	321,073,552
3. Employer contributions previous year:		
(a) City	$	42,658,455
(b) State		120,549
(c) Total	$	42,779,004
4. Interest on:		
(a) Employer normal cost	$	1,194,933
(b) Unfunded actuarial accrued liability		24,562,127
(c) Employer contributions		3,272,594
(d) Net total: (a) + (b) - (c)	$	22,484,466
5. Increase / (decrease) due to assumption changes	$	19,051,525
6. Expected unfunded actuarial liability current year: (1. + 2. - 3. + 4. + 5.)	$	335,450,581
7. Actual unfunded actuarial liability current year		333,100,863
8. Actuarial gain / (loss): (6. - 7.)	$	2,349,718

B. Approximate Portion of Gain / (Loss) due to Investments

1. Smoothed value of assets previous year	$	945,608,353
2. Contributions during period		49,912,172
3. Benefits, refunds and administrative expenses during period		70,288,472
4. Expected net appreciation for period		73,195,942
5. Expected smoothed value assets current year: (1. + 2. - 3. + 4.)	$	998,427,995
6. Actual smoothed value of assets current year	$	1,002,890,941
7. Approximate gain / (loss) due to investments: (6. - 5.)	$	4,462,946

C. Approximate Portion of Gain / (Loss) due to Liabilities: (A. - B.)	$	(2,113,228)

Table VII

Amortization of Unfunded Actuarial Accrued Liability

A. Unfunded Actuarial Accrued Liability

Valuation Date	Unfunded Liability	Amortization Payment
October 1, 2020	$ 333,100,863	$ 27,039,872
October 1, 2021	$ 329,168,597	$ 27,851,069
October 1, 2022	$ 324,067,002	$ 28,686,599
October 1, 2023	$ 317,681,624	$ 29,547,194
October 1, 2024	$ 309,888,582	$ 30,433,610
October 1, 2025	$ 300,553,820	$ 31,346,619
October 1, 2026	$ 289,532,344	$ 32,287,015
October 1, 2027	$ 276,667,352	$ 33,255,626
October 1, 2028	$ 261,789,311	$ 34,253,293
October 1, 2029	$ 244,714,989	$ 35,280,893
October 1, 2030	$ 225,246,370	$ 36,339,312
October 1, 2031	$ 203,169,537	$ 35,826,420
October 1, 2032	$ 179,977,525	$ 35,099,805
October 1, 2033	$ 155,815,988	$ 31,358,280
October 1, 2034	$ 133,854,265	$ 27,347,544
October 1, 2035	$ 114,547,978	$ 28,395,334
October 1, 2036	$ 92,657,166	$ 27,058,094
October 1, 2037	$ 70,551,802	$ 24,548,921
October 1, 2038	$ 49,476,102	$ 20,114,952
October 1, 2039	$ 31,577,916	$ 8,593,239
October 1, 2040	$ 24,720,021	$ 5,942,167
October 1, 2041	$ 20,195,582	$ 154,547
October 1, 2042	$ 21,554,134	$ 2,304,658
October 1, 2043	$ 20,099,817	$ 2,512,770
October 1, 2044	$ 18,363,951	$ 2,739,676
October 1, 2045	$ 16,314,474	$ 2,987,071
October 1, 2046	$ 13,916,138	$ 3,256,806
October 1, 2047	$ 11,130,205	$ 3,550,899
October 1, 2048	$ 7,914,120	$ 3,871,548
October 1, 2049	$ 4,221,152	$ 4,221,152
October 1, 2050	$ -	$ -

Amortization of Unfunded Actuarial Accrued Liability

B. Covered Payroll History

Year Ended	Pensionable Payroll	Annual Increase
September 30, 2020	$ 66,272,092	(0.3%)
September 30, 2019	$ 66,441,610	3.6%
September 30, 2018	$ 64,126,115	7.0%
September 30, 2017	$ 59,907,014	5.5%
September 30, 2016	$ 56,759,632	0.4%
September 30, 2015	$ 56,545,113	11.4%
September 30, 2014	$ 50,740,542	7.6%
September 30, 2013	$ 47,164,030	(11.5%)
September 30, 2012	$ 53,273,735	8.6%
September 30, 2011	$ 49,041,435	(0.2%)
September 30, 2010	$ 49,144,179	N/A
Ten-Year Average Annual Increase		3.0%

Table VIII

Accounting Disclosure Exhibit

	10/01/2019	Prior Assumptions 10/01/2020	Current Assumptions 10/01/2020
I. Number of Fund Members			
a. Retirees and beneficiaries receiving benefits	772	792	792
b. Terminated Fund members entitled to but not yet receiving benefits (inlcuding dormant members)	19	20	20
c. Active Fund members	525	500	500
d. Total	1,316	1,312	1,312
II. Financial Accounting Standards Board Allocation			
A. Statement of Accumulated Fund Benefits			
1. Actuarial present value of accumulated vested Fund benefits			
a. Participants currently receiving benefits	$ 1,009,432,591	$ 1,060,811,797	$ 1,071,536,683
b. Other participants	197,520,775	195,098,940	204,450,499
c. Total	$ 1,206,953,366	$ 1,255,910,737	$ 1,275,987,182
2. Actuarial present value of accumulated non-vested Fund benefits	$ 10,411,389	$ 9,897,513	$ 11,461,835
3. Total actuarial present value of accumulated fund benefits	$ 1,217,364,755	$ 1,265,808,250	$ 1,287,449,017

B. Statement of Change in Accumulated Fund Benefits	
1. Actuarial present value of accumulated fund benefits as of October 1, 2019	$ 1,217,364,755
2. Increase / (decrease) during year attributable to:	
a. Fund amendment	$ 0
b. Change in actuarial assumptions	21,640,767
c. Benefits paid including refunds	(69,388,221)
d. Other, including benefits accumulated, increase for interest due to decrease in the discount period	117,831,716
e. Net increase	$ 70,084,262
3. Actuarial present value of accumulated fund benefits as of October 1, 2020	$ 1,287,449,017

C. Significant Matters Affecting Calculations	
1. Assumed rate of return used in determining actuarial present values	7.55%
2. Change in fund provisions	None.
3. Change in actuarial assumptions and methods	See Table X, Item O.

Accounting Disclosure Exhibit

III. Net Pension Liability and Related Ratios (GASB No. 67)

Measurement date	9/30/2014	9/30/2015	9/30/2016	9/30/2017 [1]	9/30/2018 [1]	9/30/2019 [1]	9/30/2020	Projected 9/30/2021 [2]
A. Total Pension Liability (TPL)								
Service Cost	$ 14,763,595	$ 16,098,560	$ 17,803,602	$ 17,530,982	$ 18,462,961	$ 20,212,389	$ 22,110,056	$ 22,635,278
Interest	75,108,912	78,415,039	82,627,847	87,422,136	91,544,984	94,542,878	95,945,797	99,802,877
Benefit Changes	0	0	0	(9,688,441)	0	0	922,043	0
Difference Between Actual and Expected Experience	7,685,043	12,428,547	14,588,712	141,740	11,814,591	7,883,134	(7,950,229)	1,590,742
Assumption Changes	0	5,686,196	2,447,885	34,969,254	6,951,571	7,294,349	(16,924,385)	19,051,525
Benefit Payments including Refunds of Member Contributions	(53,605,094)	(62,686,716)	(54,861,660)	(58,574,937)	(75,460,821)	(68,466,325)	(69,388,221)	(73,469,351)
Net Change in Total Pension Liability	$ 43,952,456	$ 49,941,626	$ 62,606,386	$ 71,800,734	$ 53,313,286	$ 61,466,425	$ 24,715,061	$ 69,611,071
Total Pension Liability (TPL) - (beginning of year)	947,553,563	991,506,019	1,041,447,645	1,104,054,031	1,175,854,765	1,229,168,051	1,290,634,476	1,315,349,537
Total Pension Liability (TPL) - (end of year)	$ 991,506,019	$ 1,041,447,645	$ 1,104,054,031	$ 1,175,854,765	$ 1,229,168,051	$ 1,290,634,476	$ 1,315,349,537	$ 1,384,960,608
B. Fund Fiduciary Net Position								
Contributions - City and State	$ 35,960,326	$ 33,149,388	$ 34,970,641	$ 35,367,866	$ 37,639,937	$ 39,747,149	$ 42,779,004	$ 43,445,459
Contributions - Member	5,258,974	5,944,414	5,984,397	6,198,244	6,593,715	6,972,214	7,133,168	6,812,558
Net Investment Income	72,259,674	5,689,333	70,539,300	85,791,174	82,094,851	39,053,408	85,054,923	76,655,091
Benefit Payments including Refunds of Member Contributions	(53,605,094)	(62,686,716)	(54,861,660)	(58,574,937)	(75,460,821)	(68,466,325)	(69,388,221)	(73,469,351)
Administrative Expenses	(905,130)	(777,493)	(826,044)	(769,079)	(802,106)	(855,761)	(900,251)	(900,251)
Other	0	0	0	0	0	0	0	0
Net Change in Fund Fiduciary Net Position	$ 58,968,750	$ (18,681,074)	$ 55,806,634	$ 68,013,268	$ 50,065,576	$ 16,450,685	$ 64,678,623	$ 52,543,506
Fund Fiduciary Net Position - (beginning of year)	710,329,822	769,298,572	750,617,498	806,424,132	874,437,400	924,502,976	940,953,661	1,005,632,284
Fund Fiduciary Net Position - (end of year)	$ 769,298,572	$ 750,617,498	$ 806,424,132	$ 874,437,400	$ 924,502,976	$ 940,953,661	$ 1,005,632,284	$ 1,058,175,790
C. Net Pension Liability (NPL) - (end of year): (A) - (B)	$ 222,207,447	$ 290,830,147	$ 297,629,899	$ 301,417,365	$ 304,665,075	$ 349,680,815	$ 309,717,253	$ 326,784,818
D. Fund Fiduciary Net Position as a Percentage of TPL: (B) / (A)	77.59 %	72.07 %	73.04 %	74.37 %	75.21 %	72.91 %	76.45 % [3]	76.40 %
E. Covered Employee Payroll [4]	$ 50,740,542	$ 56,545,113	$ 56,759,632	$ 59,907,167	$ 64,126,115	$ 66,441,610	$ 66,272,092	$ 67,165,967
F. NPL as a Percentage of Covered Employee Payroll: (C) / (E)	437.93 %	514.33 %	524.37 %	503.14 %	475.10 %	526.30 %	467.34 %	486.53 %
G. Notes to Schedule:								
Valuation Date	10/1/2013	10/1/2014	10/1/2015	10/1/2016	10/1/2017	10/1/2018	10/1/2019	10/1/2020

Update procedures used to roll forward TPL excluding DROP account balances to the measurement dates - actual DROP account balances as of measurement dates included in TPL.
See Table VIII, Item V. for prior benefit and assumption changes. See Table X., Item O. for assumption changes during the year. No benefit changes were made during the year.

[1] Per Audit Report

[2] Projected - actual amounts will be available after fiscal year end

[3] The percentage projected in the prior year's valuation report was 75.45% assuming no gains or losses on assets or benefit payments. The information in this footnote is shown as requested by the Board and is not a required disclosure under GASB No. 67.

[4] Reported payroll used to determine contribution as provided under GASB No. 82.

Accounting Disclosure Exhibit

IV. Schedule of Employer Contributions (GASB No. 67)

Fiscal Year Ended 9/30	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll [1]	Actual Contribution as a % of Covered Payroll
2011	$ 32,811,570	$ 32,811,570	$ 0	$ 49,041,435	66.91%
2012	36,297,459	36,297,459	0	53,273,735	68.13%
2013	39,492,050	39,492,050	0	47,164,030	83.73%
2014	35,960,326	35,960,326	0	50,740,542	70.87%
2015	33,149,388	33,149,388	0	56,545,113	58.62%
2016	34,970,641	34,970,641	0	56,759,632	61.61%
2017	35,367,866	35,367,866	0	59,907,167	59.04%
2018	37,639,937	37,639,937	0	64,126,115	58.70%
2019	39,747,149	39,747,149	0	66,441,610	59.82%
2020 [2]	42,779,004	42,779,004	0	66,272,092	64.55%
2021 [3]	43,445,459	43,445,459	0	67,165,967	64.68%

[1] Reported payroll used to determine contribution as provided under GASB Statement No. 82

[2] The Actuarially Determined Contribution and the Actual Contribution in Fiscal Year Ended 2020 includes the additional City Contribution of $351,212 for MBERP transfers into the Fire and Police Pension Plan.

[3] Projected - actual amounts will be available after fiscal year end

Accounting Disclosure Exhibit

V. Notes to Schedule of Contributions (GASB No. 67)

Valuation Date:	Actuarially determined contributions are calculated as of October 1st - two years prior the fiscal year end in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage, Closed
Amortization Period	30 years
Asset Valuation Method	5-year smoothed market
Inflation	3.0%
Payroll Growth	2.8%
Salary Increases	1.70% - 9.89%
Investment Rate of Return	7.65%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition
Mortality	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, without projected mortality improvements.
Cost-of-Living Increases	1.5%, 2.0% or 2.5%

Other Information:

Benefit Changes

In 2019, a Tier 5 was added for Fire Department members hired on or after May 8, 2019 and Police Department members hired on or after July 31, 2019. Vested Benefit Eligibility for Tier 5 members is 10 years of service and transfers from other City Pension Systems is no longer applicable to Tier 5 members. Normal Retirement was extended to include the age at which the maximum benefit percentage (85%) is reached. Benefit Purchase Eligibility was also updated. Disability retirement eligibility for Firefighters was updated to reflect the updated Florida Statutes. In 2016, a Tier 4 was added for Fire Departement members hired on or after June 8, 2016 and Police Department members hired on or after July 20, 2016. Tier 4 members Final Average Monthly Earnings (FAME) is average of the 5 highest paid years prior to date of retirement taking into consideration the overtime limit, the Normal Retirement eligibility is earlier of attainment of age 52 with 5 years of creditable service or Rule of 70 but must be at least attained age 48. Members currently participating in the DROP were permitted to extend DROP participation but no COLA will be paid during the extended years of participation. Members who elect the DROP in the future can participate for up to 96 months - no COLA will be provided for the first through fourth year of DROP participation for these members. In 2013, participants were categorized into different Tiers: Tier 1 - members hired prior to July 14, 2010, Tier 2 - members hired on or after July 14, 2010 but prior to September 30, 2013 and Tier 3 - members hired on or after September 30, 2013. Final average monthly earnings (FAME) were updated to the greater of the average of the 2 highest paid years prior to date of retirement or the 2 last paid years after taking into consideration the overtime limit (Tier 1 and eligible to retire prior to September 30, 2015), the greater of the average of the 3 highest paid years prior to date of retirement or the 3 last paid years after taking into consideration the overtime limit (Tier 1 and eligible to retire on or after September 30, 2015), the greater of the average of the 3 highest paid years prior to date of retirement or the 3 last paid years after taking into consideration the overtime limit (Tier 2) and the greater of the average of the 5 highest paid years prior to date of retirement or the 5 last paid years after taking into consideration the overtime limit (Tier 3).

Accounting Disclosure Exhibit

Other Information:
Benefit Changes (cont'd)
Additionally in 2013, normal retirement eligibility was updated to the earlier of attainment of age 50 or Rule of 70 (Tier 1 and eligible to retire prior to September 30, 2013), the earlier of attainment of age 50 or Rule of 70 and attainment of age 47 (Tier 1 and eligible to retire on or after September 30, 2013) and the earlier of attainment of age 50 or Rule of 70 and attainment of age 48 (Tier 2 and 3). Benefits were updated to not exceed 85% of FAME (if eligible to retire on or after September 30, 2013) unless exceeded 85% as of September 30, 2013 (Tier 1 and eligible to retire on or after September 30, 2013 but prior to September 30, 2015). Pensionable salary was updated to exclude overtime pay in excess of 300 hours per calendar year, withdrawal benefit eligibility was updated to any age prior to 50 with at least 5 years of service for members who terminate employment on or after September 30, 2013, member contributions were updated to 10.0% of salary per year for members hired prior to September 30, 2013 and 10.5% of salary per year for members hired on or after September 30, 2013, members will no longer be able to purchase an additional multiplier or pre-employment public safety service as a police officer or firefighter and overtime for police officer's was limited in each year to an amount that is equal to 11% of highest annualized pay rate for the same salary rank that the member is in at the time of retirement.

In 2010, for members who enter the DROP on or after September 1, 2012, the DROP period was updated to a maximum of 60 months and a 2.5% COLA will be paid annually on the anniversary date of the member's retirement. Pensionable pay was updated to include off-duty pay, overtime for police officers was limited in each year to an amount that is equal to 70% of the difference between the member's annualized pay rate at retirement and the highest annualized pay rate for the next higher salary rank, overtime for firefighters was limited in each year to an amount that is equal to 11% of highest annualized pay rate for the same salary rank that the member is in at the time of retirement and members with ten or more years of service were allowed to purchase up to four years of pre-employment military service, up to two years pre-employment public safety service, or either 3% or 6% additional benefit multiplier. In 2010, for new hires on or after July 14, 2010, the pension multiplier was updated to 3% for each year of service up to 20 years and 4% for each year of service thereafter (subject to a maximum of 90%), the Rule of 70 retirement was updated to state that members must attain age 48 to be eligible, final average salary was updated to the three highest paid years of last three years prior to retirement and the cost of living adjustment was updated to 1.5% annually.

Assumption Changes
In 2019, investment return was decreased from 7.75% to 7.65%. The mortality assumption, disability rates for Firefighters, salary increase factors and loading for contingencies are also updated. In 2018, investment return was decreased from 7.80% to 7.75%. In 2017, investment return was decreased from 7.85% to 7.80%. In 2016, investment return was decreased from 7.90% to 7.85% and the mortality assumption was updated to the assumption used in the Florida Retirement System July 1, 2016 Actuarial Valuation. In 2015, investment return was decreased from 7.95% to 7.90%, withdrawal and retirement rates were updated, disability incidence was updated to 65% service incurred / 35% non-service incurred and the load for compensation and projected pensionable payroll was replaced with actual pensionable pay - these changes do not affect the contribution until the fiscal year ending September 30, 2017. In 2014, investment return was decreased from 8.00% to 7.95% and payroll growth assumption was limited to 10 year average. In 2013, the asset valuation method was updated to phase in the deviation between the expected and actual return on assets at the rate of 20% per year and the load for projected pensionable payroll was decreased to 16%. In 2012, investment return was updated to 8.0%, expected salary increases for final years 2013 and 2014 were reduced by 2.17% and increased by 3.00% respectively, contingency compensation load for overtime and other pays was decreased to 16% and contingency pre-employment service load was decreased to 0.275%.

Accounting Disclosure Exhibit

Other Information:

Assumption Changes (cont'd)

In 2011, investment return was updated to 8.1%, mortality tables for healthy pre and post retirement participants were projected 15 and 7 years from the valuation date and the contingency compensation load for overtime and other pays was increased to 18%. In 2010, investment return was updated to 8.2% and the freeze on the cost of living increase component of the salary scale was extended to March 31, 2012.

VI. Discount Rate (GASB No. 67)

Discount rates of 7.65% and 7.55% were used to measure the September 30, 2020 TPL and the September 30, 2021 TPL, respectively. These discount rates were based on the expected rate of return on Fund investments of 7.65% and 7.55%, respectively. The projection of cash flows used to determine this discount rate assumed member contributions will be made at the current member contribution rate and employer contributions will be made at rates equal to the difference between actuarially determined current contribution rates and the member contribution rate. Based on these assumptions, the Fund's fiduciary net position was projected to be available to make all projected future expected benefit payments to current Fund members. Therefore, the long-term expected rate of return on Fund investments was applied to all periods of projected benefit payments to determine the TPL.

VII. Sensitivity of the NPL to the Discount Rate Assumption (GASB No. 67)

Measurement date: September 30, 2020

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.65%	7.65%	8.65%
NPL	$ 476,993,207	$ 309,717,253	$ 172,681,399
Fund Fiduciary Net Position as a Percentage of TPL **	67.83%	76.45%	85.35%

Measurement date: September 30, 2021 *

	1% Decrease	Current Discount Rate	1% Increase
Discount Rate	6.55%	7.55%	8.55%
NPL	$ 501,962,504	$ 326,784,818	$ 183,430,154
Fund Fiduciary Net Position as a Percentage of TPL **	67.83%	76.40%	85.23%

* Projected - actual amounts will be available after fiscal year end
** Information requested by Board - not required under GASB No. 67

Table IX

Outline of Principal Provisions of the Pension Fund

A. Relevant Provisions:

The Fund was created under Chapter 23414, Laws of Florida, Special Act of 1945, as most recently amended by Ordinance No. 2020-4362 adopted October 14, 2020 and reflecting the most recent Collectively Bargained Agreements executed May 8, 2019 and July 31, 2019 for Firefighters and Police Officers, respectively.

B. Eligibility Requirements:

Any full-time employee of the City who is certified as a Firefighter or Police Officer as a condition of employment.

C. Membership Tiers:

Tier 1 - Members hired prior to July 14, 2010
Tier 2 - Members hired on or after July 14, 2010 but prior to September 30, 2013
Tier 3 - Members hired on or after September 30, 2013 but prior to June 8, 2016 for the Fire Department and July 20, 2016 for the Police Department
Tier 4 - Members hired on or after June 8, 2016 but prior to May 8, 2019 for the Fire Department and hired on or after July 20, 2016 but prior to July 31, 2019 for the Police Department
Tier 5 - Members hired on or after May 8, 2019 for the Fire Department and July 31, 2019 for the Police Department

D. Credited Service:

All periods of employment as an Employee for which contributions have been made to the Fund together with all service in the uniformed services of the United States required to be included.

E. Pre-Employment Service:

Members with at least 5 years of credited service (10 years for Tier 5 members) may purchase pre-employment military service. Pre-employment military service must be purchased within 24 months following the date the member completes 5 years of credited service (10 years for Tier 5 members) under the pension fund. A member may purchase up to two years of pre-employment military service at the accrual rate of 3% per year.

Members are also able to purchase an increase in benefit multiplier or pre-employment public safety service during the window period of July 1, 2021 to September 30, 2021. A member may purchase up to two years of additional pension service at the accrual rate of 3% per year.

However, the total of all combinations of pre-employment benefits purchased cannot exceed two years or a 6% additional benefit.

The price for each year purchased shall be of 10.0% (10.5% for members hired on or after September 30, 2013) of the member's Salary during the 12 calendar months immediately preceding the date of such purchase.

Outline of Principal Provisions of the Pension Fund

F. Pensionable Pay:

Pensionable pay is defined as base pay, any premiums that longevity is calculated on, longevity pay, pensionable overtime and any other pay negotiated as pensionable. Effective July 14, 2010, off-duty pay is pensionable for any member who is eligible for overtime and receives off-duty compensation through the City. Effective September 30, 2013, pensionable overtime is limited to 300 hours per calendar year.

1. Overtime and Off-Duty pay included in pension computation for Police Officers:

   - Pensionable overtime pay not exceeding 300 hours per calendar year and off duty is limited in each year to an amount that is equal to 11% of highest annualized pay rate for the same salary rank that the member is in at time of retirement.
   - The 11% limitation shall not apply to any member who holds the rank of sergeant or lieutenant on September 30, 2013, or any Police Officer promoted to the rank of sergeant prior to the date the 2013 Certified Police Sergeant Promotional Register expired in 2015. For these members, the inclusion of overtime and / or off duty in the member's salary shall be limited in each year to an amount which is equal to 70% of the difference between the member's annualized pay rate at retirement and the highest annualized pay rate for the next higher salary rank.
   - For any members who self-demote they will become subject to the eleven percent (11%) limitation on overtime and off-duty compensation.

2. Overtime and Off-Duty pay included in pension computation for Firefighters:

   - Pensionable overtime pay not exceeding 300 hours per calendar year and off duty is limited in each year to an amount that is equal to 11% of highest annualized pay rate for the same salary rank that the member is in at time of retirement.

G. Final Average Monthly Earnings (FAME):

Tier 1 and eligible to retire prior to September 30, 2015 - the greater of the average of the 2 highest paid years or the 2 last paid years prior to date of retirement after taking into consideration the overtime limit.

Tier 1 and eligible to retire on or after September 30, 2015 - the greater of the average of the 3 highest paid years or the 3 last paid years prior to date of retirement after taking into consideration the overtime limit.

Tier 2 - the greater of the average of the 3 highest paid years or the 3 last paid years prior to date of retirement after taking into consideration the overtime limit.

Tier 3 - the greater of the average of the 5 highest paid years or the 5 last paid years prior to date of retirement after taking into consideration the overtime limit.

Outline of Principal Provisions of the Pension Fund

Tier 4 and Tier 5 - the average of the 5 highest paid years prior to date of retirement taking into consideration the overtime limit.

H. Normal Retirement:

1. Eligibility:

Tier 1 and eligible to retire prior to September 30, 2013 - the earlier of attainment of age 50 or Rule of 70

Tier 1 and eligible to retire on or after September 30, 2013 - the earlier of attainment of age 50 or Rule of 70 (must attain age 47) or reach the 85% maximum pension benefit regardless of age

Tier 2 and Tier 3 - the earlier of attainment of age 50 with 5 years of creditables service or Rule of 70 (must attain age 48) or reach the 85% maximum pension benefit regardless of age

Tier 4 and Tier 5 - the earlier of attainment of age 52 with 5 years of creditables service or Rule of 70 (must attain age 48) or reach the 85% maximum pension benefit regardless of age

2. Benefit:

Tier 1 and eligible to retire prior to September 30, 2013:
3% x FAME x Credited Service up to 15 years plus 4% x Credited Service after 15 years
Benefit shall not exceed 90% of FAME.

Tier 1 and eligible to retire on or after September 30, 2013 but prior to September 30, 2015:
3% x FAME x Credited Service up to 20 years plus 4% x Credited Service after 20 years
Benefit shall not exceed 85% of FAME (exception if exceeded 85% as of September 30, 2013).

Tier 1 and eligible to retire on or after September 30, 2015, Tier 2, Tier 3, Tier 4 and Tier 5:
3% x FAME x Credited Service up to 20 years plus 4% x Credited Service after 20 years
Benefit shall not exceed 85% of FAME.

A member's benefit multiplier for credited service earned before October 1, 2013 shall not be reduced.

I. Deferred Retirement:

1. Eligibility:

Any first day of the month past Normal Retirement Date.

2. Benefit:

Benefit calculated as for Normal Retirement based upon service and pay to Deferred Retirement Date.

Outline of Principal Provisions of the Pension Fund

J. Disability Retirement:

1. Eligibility:

   Totally and permanently disabled meaning incapacity to perform regular duty as Firefighter or Police Officer (and completion of at least 5 years of Credited Service for non-service incurred disability).

   Effective July 1, 2019, a Firefighter who becomes totally and permanently unable to perform useful and efficient service as a Firefighter due to a diagnosis of cancer or circumstances that arise out of the treatment of such cancer will be presumed to be disabled in-line of duty subject to the limitations in Chapter 112.1816, Florida Statutes.

2. Benefit:

   Accrued benefit (minimum of 85% of current salary at time of disability for service incurred disability).

K. Pre-Retirement Death Benefit:

1. Service Incurred:

   Greater of accrued benefit or 85% of members salary payable as a monthly benefit to the spouse until death or remarriage, to a Domestic Partner until death, marriage or entry into another Domestic Partnership, to unmarried children in equal shares until age 18 (until age 22 if a full-time student or until recovery from handicap if handicapped), or to dependent parents in equal shares.

2. Non-Service Incurred:

   For members with at least 5 years of service, accrued benefit is payable for the first 12 months after death and 75% of the accrued benefit is payable thereafter (with a minimum benefit of 25% of average monthly salary); Benefits are payable to the spouse until death or remarriage, to a Domestic Partner until death, marriage or entry into another Domestic Partnership, to unmarried children in equal shares until age 18 (until age 22 if a full-time student or until recovery from handicap or until marriage if handicapped), or to dependent parents in equal shares. However, if the member has been married or in a domestic partnership for less than 10 years, benefits are payable to the spouse or domestic partner only for the life expectancy of the deceased member at time of death.

L. Vested Benefit:

1. Eligibility:

   Any age prior to 50 with at least 5 years (10 years for Tier 5 members) of service for members who terminate employment on or after September 30, 2013.

2. Benefit:

   Return of employee contributions or accrued benefit upon attainment of age 50. If a member terminates employment with less than 10 years of service and passes away prior to the normal retirement date, the return of employee contributions is the only benefit.

Outline of Principal Provisions of the Pension Fund

M. Employee Contributions:

10.0% of pensionable wages (on a pre-tax basis) for members hired prior to September 30, 2013 and 10.5% of pensionable wages (on a pre-tax basis) for members hired on or after September 30, 2013; If contributions are refunded to the member or to his or her beneficiaries, then interest is credited at the rate of 3% per annum.

N. Payment of Retirement Benefit:

Benefit is payable to the member for his or her life. Upon death of member, except those retiring prior to November 5, 2003, the standard benefit is a 75% joint and survivor annuity with a specified beneficiary as provided under the plan. The specified beneficiary will receive a survivor annuity equal to 100% of the total benefit for one year following the death of the member and thereafter 75% of the total benefit until death or remarriage. However, upon death, if the member has been married or in a domestic partnership for less than 10 years, the survivor annuity is payable only for the life expectancy of the deceased member at time of death.

In lieu of the standard benefit, the members may elect the actuarial equivalent of the 10 year certain and life annuity, with a designated beneficiary, any of the following optional forms of payment:

- 75% joint and contingent survivor annuity with a designated beneficiary
- 66 ⅔% joint and contingent survivor annuity with a designated beneficiary
- 50% joint and contingent survivor annuity with a designated beneficiary
- 25% joint and contingent survivor annuity with a designated beneficiary
- 10 year certain and life annuity with a designated beneficiary
- Life of member only

Members who retired prior to November 5, 2003 were subject to different normal and optional forms of payment.

O. Deferred Retirement Option Program (DROP):

Police Officers and Firefighters are eligible to participate in a Deferred Retirement Option Program (DROP) upon meeting eligibility for a normal service retirement.

Operations of the DROP:

1. Member contributions to the Pension Plan will cease upon entering the DROP.
2. The member's monthly retirement benefit, based on final average earnings and service, will be calculated as of the date prior to them entering the DROP.
3. The member will cease to accrue additional pension benefits (with the exception of the COLA under the pension plan).
4. The member will no longer be eligible for Disability or Pre-Retirement Service Connected Death benefits from the Pension Plan.
5. The member's monthly pension will be deposited into the selected investment vehicles.
6. Members who enter the DROP on or after June 8, 2016 for Fire Department members and July 20, 2016 for Police Department members may participate in DROP for a period not to exceed ninety-six (96) months.

Outline of Principal Provisions of the Pension Fund

Notwithstanding the above, participation may not continue beyond the date when the member's combined years of creditable service and time in the DROP equals 456 months for members who enter the DROP on or after September 1, 2012.

Members who enter the DROP on or before September 30, 2015 may extend their DROP participation period by 12 months for a total maximum DROP participation period not to exceed seventy-two (72) months.

Members who enter the DROP on or after October 1, 2015 but prior to June 8, 2016 for Fire Department members and July 20, 2016 for Police Department members may extend their DROP participation period by up to 36 months for a total maximum DROP participation period not to exceed ninety-six (96) months.

7. The member will not have access or be able to borrow against any of the funds accumulated in their DROP account.
8. The member may sever employment with the City at any time during the DROP period. Such separation will terminate their participation in the DROP.
9. No payment will be made from the DROP account until the member severs employment with the City.
10. Following severance of employment, the funds in the DROP will be paid under the *DROP Account Payment Options* the member selected. The member will also start receiving their monthly pension which was previously being deposited in the DROP.
11. A 2.5% COLA (1.5% per year for participants hired on or after July 14, 2010) is paid annually on the anniversary date of the member's retirement.

    Members hired before June 8, 2016 for Fire Department members and July 20, 2016 for Police Department members who elect to extend or enter the DROP and participate for more than 5 years will have no COLA adjustment applied for years six (6), seven (7), and eight (8) while participating in the DROP. Members hired on or after June 8, 2016 for Fire Department members and July 20, 2016 for Police Department members will receive a zero percent (0%) COLA for the first (1st), second (2nd), third (3rd) and fourth (4th) annual adjustment dates while participating in the DROP.

P. <u>Cost-of-Living Adjustment:</u>

Effective October 1, 2010, after 1 year of retirement, benefits are increased by 2.5% per year (1.5% per year for participants hired on or after July 14, 2010), compounded annually, on the anniversary date of each member's retirement.

For members retired prior to October 1, 2010, benefit increases occur on the first of October each year.

Members whose grandfathered Base Plan benefit is greater than the benefit otherwise provided by this plan will receive the applicable cost-of-living adjustment on that basis (2% a year beginning the October three years after retirement) until such time as the benefit from this plan with 2.5% cost-of-living exceeds that comparable grandfathered Base Plan benefit.

Outline of Principal Provisions of the Pension Fund

Q. Changes Since Previous Actuarial Valuation

None.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation

A. Mortality

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, without projected mortality improvements.

Sample Ages (2020)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
45	40.69	44.66	37.20	41.38
50	35.54	39.46	32.36	36.20
55	30.45	34.32	27.59	31.17
60	25.51	29.26	23.01	26.39
62	23.58	27.25	21.28	24.55

Sample Ages (2040)	Pre-retirement Future Life Expectancy (Years)		Post-retirement Future Life Expectancy (Years)	
	Male	Female	Male	Female
45	42.39	46.19	39.23	43.28
50	37.21	40.98	34.33	38.07
55	32.09	35.81	29.48	33.00
60	27.08	30.70	24.79	28.13
62	25.11	28.67	23.00	26.25

B. Investment Return

7.55%, compounded annually, net of investment expenses includes inflation at 3.00%. Reductions in the investment return assumption are being phased in. The October 1, 2021 Actuarial Valuation will have an assumed rate of 7.50%.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation

C. Expenses

Prior year's actual administrative expenses.

D. Employee Withdrawal Rates

Representative values of the assumed annual rates of withdrawal among members in active service are as follows:

Age	Withdrawal Rate	Age	Withdrawal Rate
20	2.00%	35	1.25%
25	1.75%	40	1.00%
30	1.50%	45	0.75%

E. Disability Rates

Representative values of the assumed annual rates of disability among members in active service are as follows:

Age	Disability Rates	Age	Disability Rate
20	0.07%	45	0.58%
25	0.11%	50	0.99%
30	0.16%	55	1.42%
35	0.22%	60	2.00%
40	0.32%	64	2.69%

For Firefighters, 30% of disabilities are assumed to be non-service incurred - 70% service incurred.
For Police Officers, 35% of disabilities are assumed to be non-service incurred - 65% service incurred.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation

F. Salary Increase Factors

Representative values of the assumed annual rates of future salary increase are as follows:

Age	Merit Salary Increase	Age	Merit Salary Increase
20	3.7%	45	2.7%
25	7.7%	50	2.7%
30	6.7%	55	2.7%
35	3.7%	60	1.7%
40	2.7%	64	0.7%

In addition to the average assumed salary increase rates shown above the expected cost of living increases are as follows:

FYE	COLA Salary Increase	Weighted Average Increase *
2021	1.00%	4.68%
2022 and thereafter	2.18%	6.08%

The cost of living increases shown above are based on a 1% increase each April through 2021 contained in the collective bargaining agreement and long term expected increases of 2.18% annually each July.

* The weighted average increase shown is based on aging of the current active census demographics.

G. Payroll Growth Assumption

The aggregate compensation used to compute the accrued liability contribution rate is assumed to increase at a rate of 3.5% per year - not greater than historical 10-year average (3.0% as of October 1, 2020).

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation

H. Retirement

All members are assumed to retire at age 50 with 26.25 years of service, but not later than age 65. Retirement is assumed to occur in accordance with the following rates:

Service	Rate of Retirement	
	Meeting Rule of 70	Not Meeting Rule of 70
Less than 20	30%	8%
20	45%	8%
21	45%	8%
22	50%	8%
23	50%	20%
24	70%	60%
25	70%	60%
More than 25	100%	100%

I. DROP Assumption

80% of all active participants will participate in the DROP.

Leave DROP	Enter DROP on or before September 30, 2015	Enter the DROP on or after October 1, 2015
Prior to 5 years	0%	0%
After 5 years	5%	5%
After 6 years	N/A	5%
After 7 years	N/A	10%
After 8 years	N/A	100%

The recent extension of the DROP may alter the retirement experience of the Fund.

DROP assumptions will need to be monitored in light of future DROP experience.

J. Overtime and Off-Duty Pay Limitation

No members excluded from the eleven percent (11%) limitation on overtime and off-duty compensation are assumed to self-demote.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation

K. Loadings for Contingencies

Pre-Employment Service: A City contribution of 0.275% of annual pensionable payroll is added to provide for the purchase (or *buyback*) of pre-employment military service and any probationary service by the membership.

Transfers into Fund from other City pension systems: A City contribution of 0.025% of annual pensionable payroll is added to provide for the transfer of service under another City pension system. This load does not apply to Tier 5 members.

L. Marital Assumptions

1. 77% of members are assumed married or entitled to benefits for dependents, including registered domestic partners.
2. Male spouses are assumed to be three years older than female spouses.

M. Smoothed 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 fund assets and whose upper limit is 120% of the fair market value of fund assets.

N. Actuarial Cost Methods

Normal Retirement, Termination, Disability, and Death Benefits: Entry-Age-Actuarial 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 age at hire to his assumed retirement age to fund his estimated benefits, assuming the Fund had always been in effect. The normal cost for the Fund 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 Fund 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 smoothed value of assets of the Fund.

Vested Normal Retirement, Termination, Disability, and Death Benefits: Unit Credit Cost Method
Under this method, the actuarial present value of vested accrued benefits is an amount calculated to be the sum of the present values of each individual's vested accrued or earned benefit under the Fund as of the valuation date. Each individual's calculation is based on pay and service as of the valuation date.

The DROP accounts balance is included in the assets and liabilities as of the valuation date.

Actuarial Assumptions and Actuarial Cost Methods Used in the Valuation

O. Changes Since Previous Actuarial Valuation

1. Investment Return:

   The interest rate used to calculate all liabilities was reduced from 7.65% to 7.55%.

2. Retirement

   All members were assumed to retire at age 50 with 26.25 years of service, but not later than age 65. Retirement was assumed to occur in accordance with the following rates:

Service	Rate of Retirement	
	Meeting Rule of 70	Not Meeting Rule of 70
Less than 20	20%	4%
20	25%	5%
21	30%	10%
22	35%	10%
23	40%	20%
24	50%	60%
25	70%	60%
26	100%	100%
More than 26	100%	100%

Assumption Change History

A. Effective October 1, 2002:

The actuarial cost method was changed from frozen initial liability to entry age.

The amortization of the unfunded accrued liability was changed from level dollar to level percentage of pay, with aggregate payroll assumed to increase at 3.50% per year.

B. Effective October 1, 2005:

The *fresh start* method was applied to the smoothed value of assets to begin a new five-year phase-in of realized and unrealized gains and losses.

The retirement rates were increased to reflect retirement experience for participants meeting the age 50 and *Rule of 70* eligibility criteria.

The loadings for contingencies and pre-employment service were increased from 5.00% to 7.00% and from 4.50% to 5.50% respectively.

C. Effective October 1, 2006:

The actuarial valuation system used by Buck Consultants was upgraded effective October 1, 2006. The gain resulting from this upgrade was amortized over 30 years.

D. Effective October 1, 2008:

The interest rate used to calculate all liabilities was reduced to 8.40% from 8.50%.

The salary scale used to project future pay increases was reduced by 50 basis points at each age to reflect the current and projected economic climate.

The loadings for contingencies were increased by 100 basis points (50 basis points for salary rates and 50 basis points for buybacks).

The retirement assumption was updated to reflect an increase in the level of retirements starting at age 45.

E. Effective October 1, 2009:

The interest rate used to calculate all liabilities was reduced from 8.40% to 8.30%.

The mortality rates were changed from the 1983 Group Annuity Mortality Table to the RP-2000 Combined Mortality Table with a blue collar adjustment for healthy lives and the RP-2000 Disabled Mortality Table for disabled participants.

A load of 20% was added to the projected base payroll to estimate the projected pensionable payroll used to determine the expected member contributions.

Assumption Change History

E. Effective October 1, 2009 (cont'd):

An experience study was performed on the fund over the 5 year period October 1, 2003 through October 1, 2008 and the following assumptions were changed to more accurately reflect fund experience:

- Retirement Rates: The retirement assumption was changed to reflect the results of the experience study.
- Withdrawal Rates: The withdrawal assumption was changed to reflect the results of the experience study.
- Salary Increase Rates: The salary increase assumption was changed to an average increase of 3.83% for fund year 2009 to reflect the freeze on COLA for the fund year and to an average increase of 6.00% for all subsequent fund years.
- Load for Overtime and Other Pays: The load for overtime and other pays was changed from 7.50% to 16.00% to reflect the results of the experience study.

F. Effective October 1, 2010:

The interest rate used to calculate all liabilities was reduced from 8.30% to 8.20%.

The freeze on the cost of living increase component of the salary scale was extended to March 31, 2012.

G. Effective October 1, 2011:

The interest rate used to calculate all liabilities was reduced from 8.20% to 8.10%.

The mortality tables for healthy pre and post retirement participants was projected 15 and 7 years respectively from the valuation date to reflect mortality improvements.

The contingency compensation load for overtime and other pays was increased from 16% to 18% to account for the expected increase in pensionable pay due to the inclusion of off duty pay in the computation of pensionable pay.

H. Effective October 1, 2012:

The interest rate used to calculate all liabilities was reduced from 8.10% to 8.00%.

The expected salary increases for FYE 2014 and 2015 were reduced by 2.17% to reflect a freeze in the cost of living increases and increased by 3.00% to reflect a 3.00% cost of living increase in FYE 2016.

Assumption Change History

H. Effective October 1, 2012 (cont'd):

The contingency compensation load for overtime and other pays was decreased from 18% to 16% to account for the expected decrease in pensionable pay due to the cap on overtime hours in the computation of pensionable pay.

The contingency pre-employment service load was decreased from 6.000% to 0.275% to account for the elimination of certain buybacks.

The expected salary increases were adjusted to account for the extension of ranges for Firefighter I, Police Officer, Sergeant of Police and Police Lieutenant effective April 1, 2015.

I. Effective October 1, 2013:

The asset valuation method was updated to phase in the deviation between the expected and actual return on assets at the rate of 20% per year - further adjusted to the extent necessary to fall within the corridor whose lower limit is 80% of the fair market value of fund assets and whose upper limit is 120% of the fair market value of fund assets.

The load for projected pensionable payroll was decreased from 20% to 16% to account for the expected decrease in pensionable pay due to the cap on overtime hours in the computation of pensionable pay.

J. Effective October 1, 2014:

The interest rate used to calculate all liabilities was reduced from 8.00% to 7.95%.

Payroll growth assumption is limited to 10-year average.

K. Effective October 1, 2015:

The interest rate used to calculate all liabilities was decreased from 7.95% to 7.90%.

An experience study was performed on the fund over the 5 year period October 1, 2009 through September 30, 2014 and the following assumptions were changed to more accurately reflect fund experience:

- Withdrawal Rates: The withdrawal assumption was updated to reflect the results of the experience study.
- Disability Incidence: The disability incidence assumption was changed to 65% service incurred / 35% non-service incurred.
- The load for compensation and projected pensionable payroll was replaced with actual pensionable pay.
- Retirement Rates: The retirement assumption was updated to reflect the results of the experience study.

Updated DROP assumptions to reflect updated DROP provisions.

A City contribution of 0.025% of annual pensionable payroll is added to provide for the transfer of service under another City pension system.

The salary increase assumptions were updated to better reflect anticipated merit and COLA increases.

Assumption Change History

L. Effective October 1, 2016:

The interest rate used to calculate all liabilities was reduced from 7.90% to 7.85%.

The mortality assumption was updated to use the mortality assumption used by the Florida Retirement System (FRS) as required under F.S., Chapter 2015-157 based upon the July 1, 2016 FRS Actuarial Valuation.

M. Effective October 1, 2017:

The interest rate used to calculate all liabilities was reduced from 7.85% to 7.80%.

N. Effective October 1, 2018:

The interest rate used to calculate all liabilities was reduced from 7.80% to 7.75%.

O. Effective October 1, 2019:

The interest rate used to calculate all liabilities was reduced from 7.75% to 7.65%.

The mortality assumption was updated to use the mortality assumption used by the Florida Retirement System (FRS) as required under F.S., Chapter 2015-157 based upon the July 1, 2019 FRS Actuarial Valuation.

For Firefighters, the percentage of service incurred disability was updated from 65% to 70%.

Salary COLAs were adjusted based on the most recent Collectively Bargained Agreement.

A City contribution of 0.025% of annual pensionable payroll to provide for the transfer of service under another City pension system is changed to be no longer applicable to Tier 5 members.

P. Effective October 1, 2020:

The interest rate used to calculate all liabilities was reduced from 7.65% to 7.55%.

The retirement assumption was updated to reflect the results of an experience study performed on the fund over the 5 year period October 1, 2014 through September 30, 2019.

Distribution by Attained Age Groups and Service Groups as of October 1, 2020

Active Firefighters

Attained Age Group	COMPLETED YEARS OF SERVICE 0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & Over	Total
Under 25	7	-	-	-	-	-	-	7
25 - 29	12	4	-	-	-	-	-	16
30 - 34	12	27	5	-	-	-	-	44
35 - 39	1	19	20	9	-	-	-	49
40 - 44	1	9	15	11	4	-	-	40
45 - 49	-	6	3	6	6	-	-	21
50 - 54	1	1	1	2	-	-	-	5
55 - 59	-	2	-	-	-	-	-	2
60 - 64	-	-	-	-	-	-	-	0
65 & Over	-	1	-	-	-	-	-	1
TOTAL	34	69	44	28	10	-	-	185

	10/01/2019	10/01/2020
Average Attained Age	37.24 years	37.93 years
Average Hire Age	27.88 years	27.76 years
Average Base Pay	$ 117,870	$ 123,936
Percent Female	7.9%	8.1%

Distribution by Attained Age Groups and Service Groups as of October 1, 2020

Active Police Officers

Attained Age Group	COMPLETED YEARS OF SERVICE 0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & Over	Total
Under 25	3	-	-	-	-	-	-	3
25 - 29	35	10	-	-	-	-	-	45
30 - 34	30	34	7	-	-	-	-	71
35 - 39	11	24	25	5	-	-	-	65
40 - 44	4	18	16	16	5	1	-	60
45 - 49	2	7	7	26	12	-	-	54
50 - 54	1	2	3	7	-	-	-	13
55 - 59	1	-	1	-	1	-	-	3
60 - 64	-	1	-	-	-	-	-	1
65 & Over	-	-	-	-	-	-	-	-
TOTAL	87	96	59	54	18	1	-	315

	10/01/2019	10/01/2020
Average Attained Age	38.73 years	38.44 years
Average Hire Age	28.63 years	28.53 years
Average Base Pay	$ 89,005	$ 91,575
Percent Female	19.9%	20.3%

Distribution by Attained Age Groups and Service Groups as of October 1, 2020

All Active Members

Attained Age Group	COMPLETED YEARS OF SERVICE 0 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 & Over	Total
Under 25	10	-	-	-	-	-	-	10
25 - 29	47	14	-	-	-	-	-	61
30 - 34	42	61	12	-	-	-	-	115
35 - 39	12	43	45	14	-	-	-	114
40 - 44	5	27	31	27	9	1	-	100
45 - 49	2	13	10	32	18	-	-	75
50 - 54	2	3	4	9	-	-	-	18
55 - 59	1	2	1	-	1	-	-	5
60 - 64	-	1	-	-	-	-	-	1
65 & Over	-	1	-	-	-	-	-	1
TOTAL	121	165	103	82	28	1	-	500

	10/01/2019	10/01/2020
Average Attained Age	38.19 years	38.25 years
Average Hire Age	28.36 years	28.24 years
Average Base Pay	$ 99,397	$ 103,549
Percent Female	15.6%	15.8%

Statistics for Participants Entitled to Deferred Benefits and Participants Receiving Benefits

A. Entitled to Deferred Benefits *

Current Age Group	Count	Total Annual Benefit	Average Annual Benefit
Less than 40	3	$ 79,233	$ 26,411
40 - 44	4	162,610	40,653
45 - 49	4	158,937	39,734
50 - 54	-	-	-
55 - 59	-	-	-
60 - 64	-	-	-
65 & Over	-	-	-
TOTAL	11	$ 400,780	$ 36,435

* Excludes 9 dormant members

B. Receiving Benefits (including DROPs)

Current Age Group	Count	Total Annual Benefit	Average Annual Benefit
Less than 50	33	$ 3,179,400	$ 96,345
50 - 54	110	10,611,173	96,465
55 - 59	149	16,685,303	111,982
60 - 64	135	15,516,582	114,938
65 - 69	129	12,318,627	95,493
70 - 74	84	7,771,126	92,513
75 - 79	63	5,284,863	83,887
80 - 84	42	3,397,166	80,885
85 - 89	23	1,175,559	51,111
90 - 94	19	729,561	38,398
95 - 99	5	232,815	46,563
100 & Over	0	-	-
TOTAL	792	$ 76,902,175	$ 97,099

Table XIV

Reconciliation of Employee Data

A. Active Participants	
1. Active participants previous year	525
2. Retired during year	(1)
3. Entered DROP	(31)
4. Died during year	0
5. Disabled during year	0
6. Terminated during year	(3)
7. New active participants	13
8. Rehired during year	0
9. Dormant during the year	(3)
10. Data corrections	0
11. Active participants current year	500
B. Participants Receiving Benefits	
1. Participants receiving benefits previous year	672
2. New retired participants	1
3. New terminated vested receiving benefits	1
4. New disabled receiving benefits	0
5. New beneficiaries receiving benefits	5
6. Former DROPs now receiving benefits	12
7. Died or ceased payment during year	(18)
8. Data corrections	0
9. Retired or terminated vested receiving benefits current year	673
C. DROP Participants	
1. DROP participants previous year	100
2. Died during year	0
3. Became disabled during year	0
4. Employment terminated and retired during year	(12)
5. Entered DROP during year	31
6. DROP participants current year	119
D. Terminated Vested Participants Entitled to Future Benefits (including dormants)	
1. Terminated vested entitled previous year	19
2. Died during year	0
3. Commenced receiving benefits during year	(1)
4. Rehired during the year	0
5. New terminated vested	4
6. Cashed out during year	(2)
7. Terminated vested entitled current year	20

Table XV

Projected Retirement Benefits

Fiscal Year Ending	Projected Annual Payout
2021	$ 77,729,912
2022	$ 80,037,415
2023	$ 82,575,867
2024	$ 85,576,254
2025	$ 88,328,975
2026	$ 91,594,027
2027	$ 95,054,042
2028	$ 98,486,443
2029	$ 102,467,187
2030	$ 107,140,992

The above projected payout of Fund benefits during the next ten years is based on assumptions involving all decrements and includes payments going into DROP accounts. Actual payouts may differ from the above estimates depending upon the death, disability, salary and retirement experience of the Fund. However, since the projected payment is recomputed each valuation date, there is an automatic correction to the extent that actual experience varies from expected experience.

Table XVI

Analysis of Investment Yield as of October 1, 2020

This Table sets forth the results of an analysis made of investment yields on the assets held under the City Pension Fund for Firefighters and Police Officers in the City of Miami Beach.

The basic sources for this analysis were the Statements produced by the Fund Auditors.

The basic data was initially checked for internal consistency. Since no difficulties were encountered with the data, yield rates were calculated directly from the transaction information submitted. A summary of the transaction information is set forth on the following page.

Table XVI
(Cont'd)

Summary of Transaction Information

Year Ended	Benefits Paid [1]	Administrative Expenses	Employee Contributions [2]	City Contributions[3]	State Contributions	Smoothed Value [4]
09/30/2020	$ 69,388,221	$ 900,251	$ 7,133,168	$ 42,658,455	$ 120,549	$1,002,890,941
09/30/2019	68,466,325	855,761	6,972,214	39,626,600	120,549	945,608,353
09/30/2018	75,460,821	802,106	6,593,715	37,519,388	120,549	904,653,131
09/30/2017	58,574,937	769,079	6,198,244	35,247,317	120,549	867,403,683
09/30/2016	54,861,660	826,044	5,984,397	34,850,092	120,549	816,917,537
09/30/2015	62,686,716	777,493	5,944,414	33,028,839	120,549	759,327,614
09/30/2014	53,605,094	905,130	5,258,974	35,839,777	120,549	721,567,277
09/30/2013	52,104,605	805,919	9,717,336	39,371,501	120,549	663,233,454
09/30/2012	48,725,783	859,125	7,504,966	36,176,910	120,549	545,067,653
09/30/2011	44,934,423	971,906	5,783,503	32,691,021	120,549	531,821,181
09/30/2010	42,314,959	697,141	5,989,852	23,283,269	120,549	525,709,407
09/30/2009	38,195,186	767,484	6,542,597	20,039,446	120,549	517,602,834
09/30/2008	35,014,659	641,844	5,577,298	17,497,496	120,549	507,363,812
09/30/2007	32,367,302	646,588	5,194,282	15,110,868	120,549	495,993,903
09/30/2006	30,109,229	633,113	4,915,270	14,481,287	120,549	470,603,144
09/30/2005	27,202,700	581,953	4,982,579	11,857,606	120,549	457,680,582
09/30/2004	24,173,338	564,532	4,588,390	9,387,091	107,000	418,089,222
09/30/2003	22,072,374	521,173	4,437,529	8,577,326	0	410,423,595

[1] Includes DROP distributions and contribution refunds

[2] Includes buybacks

[3] For Fiscal Year Ended 9/30/2020, includes additional City Contribution of $351,212 for MBERP transfers into the Fire and Police Pension Plan

[4] Effective for fiscal years ending on or after September 30, 2013, includes DROP account balances

Table XVI
(Cont'd)

Recent Compensation, Termination, Mortality, Disability and Investment Return Experience

Valuation Date	Compensation		Termination	Mortality *	Disability	Investment Return		
	% Increase (Decrease)	Assumed Increase	Ratio of Actual to Expected	Ratio of Actual to Expected	Ratio of Actual to Expected	Market Value Yield	Smoothed Value Yield	Assumed Rate of Return
10/01/2020	3.7%	4.9%	1.0	0.6	0.0	9.14%	8.30%	7.65%
10/01/2019	5.9%	6.8%	0.2	0.5	0.5	4.28%	7.11%	7.75%
10/01/2018	9.5%	7.0%	0.5	1.1	1.4	9.56%	8.14%	7.80%
10/01/2017	10.2%	5.8%	1.1	0.5	N/A	10.76%	8.45%	7.85%
10/01/2016	4.3%	4.4%	1.0	1.5	N/A	9.49%	9.62%	7.90%
10/01/2015	9.8%	3.9%	1.5	1.1	N/A	0.75%	8.76%	7.95%
10/01/2014	4.0%	3.7%	0.8	1.1	N/A	10.3%	10.9%	8.0%
10/01/2013	3.9%	3.8%	1.1	0.8	N/A	13.1%	8.8%	8.0%
10/01/2012	5.6%	3.9%	1.7	1.1	N/A	20.2%	3.6%	8.1%
10/01/2011	3.4%	3.9%	2.1	0.8	N/A	(0.6%)	2.6%	8.2%
Last 3 Years	6.3%	6.2%	0.5	0.7	0.5	7.63%	7.85%	7.73%
Last 5 Years	6.7%	5.8%	0.6	0.8	N/A	8.62%	8.32%	7.79%
Last 10 Years	6.0%	4.8%	1.0	0.9	N/A	8.5%	7.6%	7.9%

* Does not include beneficiaries of members currently alive

Table XVI
(Cont'd)

Schedule of Funding Progress
(Dollar Amounts in Thousands)

Actuarial Valuation Date		Smoothed Value of Assets (a)	Actuarial Accrued Liability (EAN) (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a/b)
10/01/2012	[1]	$ 545,068	$ 902,778	$ 357,711	60.4%
10/01/2013	[2,3]	$ 663,233	$ 955,239	$ 292,006	69.4%
10/01/2014	[3]	$ 721,567	$ 1,009,621	$ 288,054	71.5%
10/01/2015	[3]	$ 759,328	$ 1,050,155	$ 290,827	72.3%
10/01/2016	[3,5]	$ 816,918	$ 1,129,477	$ 312,559	72.3%
10/01/2017	[3,5]	$ 867,404	$ 1,194,621	$ 327,217	72.6%
10/01/2018	[3,5]	$ 904,653	$ 1,244,346	$ 339,693	72.7%
10/01/2019	[3,4,6]	$ 945,608	$ 1,282,684	$ 337,076	73.7%
10/01/2019	[3,5,7]	$ 945,608	$ 1,266,682	$ 321,074	74.7%
10/01/2020	[3,4]	$ 1,002,891	$ 1,316,940	$ 314,049	76.2%
10/01/2020	[3,5]	$ 1,002,891	$ 1,335,992	$ 333,101	75.1%

[1] As shown in the City's Comprehensive Annual Financial Report (CAFR)
[2] Update in actuarial method applied
[3] Includes DROP accounts in assets and liabilities
[4] Prior to update in actuarial assumptions
[5] After update in actuarial assumptions
[6] Prior to update in plan provisions
[7] After update in plan provisions

Table XVII

Employer Contribution Information

Valuation Date	Contribution Fiscal Year End	Minimum Required Employer Contributions	Actual City Contributions Made	Actual State (Share Plan) Contributions Made	Actual Employer Contributions Made
10/01/2020	09/30/2022	$ 45,536,597	N/A	N/A	N/A
10/01/2019	09/30/2021	$ 43,445,459	N/A	N/A	N/A
10/01/2018	09/30/2020	* $ 42,779,004	$ 42,658,455	$ 120,549	$ 42,779,004
10/01/2017	09/30/2019	$ 39,747,149	$ 39,626,600	$ 120,549	$ 39,747,149
10/01/2016	09/30/2018	$ 37,639,937	$ 37,519,388	$ 120,549	$ 37,639,937
10/01/2015	09/30/2017	$ 35,367,866	$ 35,247,317	$ 120,549	$ 35,367,866
10/01/2014	09/30/2016	$ 34,970,641	$ 34,850,092	$ 120,549	$ 34,970,641
10/01/2013	09/30/2015	$ 33,149,388	$ 33,028,839	$ 120,549	$ 33,149,388
10/01/2012	09/30/2014	$ 35,960,326	$ 35,839,777	$ 120,549	$ 35,960,326
10/01/2011	09/30/2013	$ 39,492,050	$ 39,371,501	$ 120,549	$ 39,492,050
10/01/2010	09/30/2012	$ 36,296,459	$ 36,176,910	$ 120,549	$ 36,297,459
10/01/2009	09/30/2011	$ 34,537,068	$ 32,691,021	$ 120,549	$ 32,811,570
10/01/2008	09/30/2010	$ 23,403,818	$ 23,283,269	$ 120,549	$ 23,403,818
10/01/2007	09/30/2009	$ 20,159,995	$ 20,039,446	$ 120,549	$ 20,159,995

* The Actuarially Determined Contribution and the Actual Contribution in Fiscal Year Ended 2020 includes the additional City Contribution of $351,212 for MBERP transfers into the Fire and Police Pension Plan.

20-Year Projections

Throughout the forecast period, new members are assumed to be hired each year at a rate sufficient to maintain a constant active employee headcount – stationary population. Newly employed members are assumed to have the same average demographic characteristics (age, gender and salary – adjusted each year for inflation) as those of members hired during the past five (5) years. State (Share Plan) contributions are projected to remain $120,549 during the projection period.

Projections are deterministic – assume all actuarial assumptions are realized. Investment return is assumed to be 7.55% for FYE 2022 and 7.50% for FYE 2023 and thereafter. Payroll growth is assumed to remain the same as current year (3.0%) for all projection years. Administrative expenses included in the normal cost are assumed to grow at 3.0% per year.

Contribution Fiscal Year	Projected Annual Pensionable Payroll	Projected Net City Required Contribution Amount	% of Pay
2021 - 2022	69,180,946	45,416,048	65.6%
2022 - 2023	71,366,305	47,180,864	66.1%
2023 - 2024	74,130,171	48,712,463	65.7%
2024 - 2025	76,659,866	50,205,461	65.5%
2025 - 2026	78,865,209	51,564,182	65.4%
2026 - 2027	81,428,539	53,026,399	65.1%
2027 - 2028	83,650,993	54,480,624	65.1%
2028 - 2029	85,854,908	56,135,930	65.4%
2029 - 2030	88,196,046	57,642,702	65.4%
2030 - 2031	90,243,982	58,799,030	65.2%
2031 - 2032	91,878,661	60,400,311	65.7%
2032 - 2033	93,578,222	60,114,282	64.2%
2033 - 2034	95,596,222	59,658,766	62.4%
2034 - 2035	97,611,244	56,391,244	57.8%
2035 - 2036	99,793,079	52,666,206	52.8%
2036 - 2037	101,832,095	54,389,993	53.4%
2037 - 2038	104,180,941	53,625,995	51.5%
2038 - 2039	106,601,341	51,613,628	48.4%
2039 - 2040	107,927,848	47,526,666	44.0%
2040 - 2041	109,690,930	36,302,978	33.1%
5 Year Totals	370,202,497	243,079,018	65.7%
10 Year Totals	799,576,965	523,163,703	65.4%
20 Year Totals	1,808,267,548	1,055,853,772	58.4%

Table XIX

Actuarial Valuation as of October 1, 2020

State Required Exhibit - All Members

	10/01/2019	Prior Assumptions 10/01/2020	Current Assumptions 10/01/2020
A. Participant Data			
1. Active participants	525	500	500
2. Retired participants and beneficiaries receiving benefits (including DROPs)	715	735	735
3. Disabled participants receiving benefits	57	57	57
4. Terminated vested participants (including dormants)	19	20	20
5. Annual Pensionable Payroll	$ 70,560,379	$ 67,165,967	$ 67,165,967
6. Projected Annual Pensionable Payroll	$ 72,536,070	$ 69,180,946	$ 69,180,946
7. Annual benefits payable to those currently receiving benefits (including DROPs)	$ 73,186,550	$ 76,902,175	$ 76,902,175
B. Value of Assets			
1. Smoothed Value	$ 945,608,353	$ 1,002,890,941	$ 1,002,890,941
2. Market Value	$ 940,953,661	$ 1,005,632,284	$ 1,005,632,284
C. Liabilities			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	$ 409,269,360	$ 406,356,502	$ 417,352,555
b. Vesting benefits	18,205,111	18,462,077	18,936,460
c. Death benefits	6,384,065	6,244,543	5,966,047
d. Disability benefits	36,558,725	35,857,605	33,545,686
e. Total	$ 470,417,261	$ 466,920,727	$ 475,800,748
2. Actuarial present value of future expected benefit payments for terminated vested members (including dormants)	$ 5,236,857	$ 4,737,300	$ 4,819,253
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired (includes DROPs)	$ 905,762,015	$ 956,852,318	$ 966,669,735
b. Beneficiaries	51,196,495	50,624,106	51,021,317
c. Disability retired	52,474,081	53,335,373	53,845,631
d. Total	$ 1,009,432,591	$ 1,060,811,797	$ 1,071,536,683

Actuarial Valuation as of October 1, 2020

State Required Exhibit - All Members

	10/01/2019	Prior Assumptions 10/01/2020	Current Assumptions 10/01/2020
4. Total actuarial present value of future expected benefit payments	$ 1,485,086,709	$ 1,532,469,824	$ 1,552,156,684
5. Actuarial accrued liabilities	$ 1,266,681,905	$ 1,316,940,279	$ 1,335,991,804
6. Unfunded actuarial liabilities	$ 321,073,552	$ 314,049,338	$ 333,100,863
D. Statement of Accumulated Fund Benefits			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	$ 1,009,432,591	$ 1,060,811,797	$ 1,071,536,683
b. Other participants	197,520,775	195,098,940	204,450,499
c. Total	$ 1,206,953,366	$ 1,255,910,737	$ 1,275,987,182
2. Actuarial present value of accumulated non-vested fund benefits	$ 10,411,389	$ 9,897,513	$ 11,461,835
3. Total actuarial present value of accumulated fund benefits	$ 1,217,364,755	$ 1,265,808,250	$ 1,287,449,017
E. Pension Cost			
1. Total normal cost (including admin expenses)	$ 22,965,817	$ 22,754,039	$ 23,535,529
2. Payment required to amortize unfunded liability	25,969,404	26,096,610	27,039,872
3. Interest adjustment	261,008	249,324	246,294
4. Expected service buyback	211,586	201,152	201,152
5. Total required contribution	$ 49,407,815	$ 49,301,125	$ 51,022,847
6. Item 5 as a percentage of projected pensionable payroll	68.1%	71.3%	73.8%
7. Estimated employee contributions	$ 7,345,775	$ 7,016,935	$ 7,016,935
8. Item 7 as a percentage of projected pensionable payroll	10.1%	10.1%	10.1%
9. Estimated State contributions	$ 120,549	$ 120,549	$ 120,549
10. Item 9 as a percentage of projected pensionable payroll	0.2%	0.2%	0.2%
11. Net amount payable by City	$ 43,324,910	$ 43,642,675	$ 45,416,048
12. Item 11 as a percentage of projected pensionable payroll	59.7%	63.1%	65.6%

Actuarial Valuation as of October 1, 2020

State Required Exhibit - All Members

	10/01/2019	Prior Assumptions 10/01/2020	Current Assumptions 10/01/2020
F. Past Contributions			
1. Total contribution required (prior valuation)	$ 49,494,580	$ 50,791,234	$ 50,791,234
2. Actual contributions made:			
a. Members	$ 6,715,576	N/A	N/A
b. City*	42,658,455	N/A	N/A
c. State	120,549	N/A	N/A
d. Total	$ 49,494,580	N/A	N/A
G. Disclosure of Following Items:			
1. Actuarial present value of future salaries excluding DROP payroll - attained age	$ 703,316,969	$ 669,498,367	$ 649,900,999
2. Actuarial present value of future employee contributions - attained age	$ 71,644,777	$ 68,306,644	$ 66,327,188
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	$ 59,767,367	$ 59,758,029	$ 59,758,029
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A

* Includes additional City Contribution of $351,212 for MBERP transfers into the Fire and Police Pension Plan

Actuarial Valuation as of October 1, 2020

State Required Exhibit - Firefighters

	10/01/2019	Prior Assumptions 10/01/2020	Current Assumptions 10/01/2020
A. Participant Data			
1. Active participants	189	185	185
2. Retired participants and beneficiaries receiving benefits (including DROPs)	274	273	273
3. Disabled participants receiving benefits	7	7	7
4. Terminated vested participants (including dormants)	3	3	3
5. Annual Pensionable Payroll	$ 28,769,089	$ 27,911,455	$ 27,911,455
6. Projected Annual Pensionable Payroll	$ 29,574,623	$ 28,748,799	$ 28,748,799
7. Annual benefits payable to those currently receiving benefits (including DROPs)	$ 28,992,259	$ 29,779,504	$ 29,779,504
B. Liabilities			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	$ 177,892,064	$ 183,233,608	$ 188,278,435
b. Vesting benefits	8,792,266	8,711,092	8,934,694
c. Death benefits	2,890,825	2,821,748	2,717,108
d. Disability benefits	15,868,094	15,632,936	14,767,914
e. Total	$ 205,443,249	$ 210,399,384	$ 214,698,151
2. Actuarial present value of future expected benefit payments for terminated vested members (including dormants)	$ 630,588	$ 704,747	$ 719,216
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired (includes DROPs)	$ 373,463,558	$ 381,976,659	$ 385,866,307
b. Beneficiaries	17,067,066	17,095,163	17,228,164
c. Disability retired	7,466,690	7,484,697	7,548,272
d. Total	$ 397,997,314	$ 406,556,519	$ 410,642,743

Actuarial Valuation as of October 1, 2020

State Required Exhibit - Firefighters

	10/01/2019	Prior Assumptions 10/01/2020	Current Assumptions 10/01/2020
4. Total actuarial present value of future expected benefit payments	$ 604,071,151	$ 617,660,650	$ 626,060,110
5. Actuarial accrued liabilities	$ 505,902,597	$ 523,041,560	$ 530,846,241
C. Statement of Accumulated Fund Benefits			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	$ 397,997,314	$ 406,556,519	$ 410,642,743
b. Other participants	77,649,797	86,723,855	90,579,430
c. Total	$ 475,647,111	$ 493,280,374	$ 501,222,173
2. Actuarial present value of accumulated non-vested fund benefits	$ 5,412,559	$ 5,360,405	$ 6,080,042
3. Total actuarial present value of accumulated fund benefits	$ 481,059,670	$ 498,640,779	$ 507,302,215
D. Disclosure of Following Items:			
1. Actuarial present value of future salaries - attained age	$ 295,854,754	$ 275,819,840	$ 268,884,363
2. Actuarial present value of future employee contributions - attained age	$ 30,058,050	$ 28,039,295	$ 27,339,721
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	$ 21,647,157	$ 24,030,241	$ 24,030,241
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A

Actuarial Valuation as of October 1, 2020

State Required Exhibit - Police Officers

	10/01/2019	Prior Assumptions 10/01/2020	Current Assumptions 10/01/2020
A. Participant Data			
1. Active participants	336	315	315
2. Retired participants and beneficiaries receiving benefits (including DROPs)	441	462	462
3. Disabled participants receiving benefits	50	50	50
4. Terminated vested participants (including dormants)	16	17	17
5. Annual Pensionable Payroll	$ 41,791,290	$ 39,254,512	$ 39,254,512
6. Projected Annual Pensionable Payroll	$ 42,961,447	$ 40,432,147	$ 40,432,147
7. Annual benefits payable to those currently receiving benefits (including DROPs)	$ 44,194,291	$ 47,122,671	$ 47,122,671
B. Liabilities			
1. Actuarial present value of future expected benefit payments for active members			
a. Retirement benefits	$ 231,377,296	$ 223,122,894	$ 229,074,120
b. Vesting benefits	9,412,845	9,750,985	10,001,766
c. Death benefits	3,493,240	3,422,795	3,248,939
d. Disability benefits	20,690,631	20,224,669	18,777,772
e. Total	$ 264,974,012	$ 256,521,343	$ 261,102,597
2. Actuarial present value of future expected benefit payments for terminated vested members (including dormants)	$ 4,606,269	$ 4,032,553	$ 4,100,037
3. Actuarial present value of future expected benefit payments for members currently receiving benefits			
a. Service retired (includes DROPs)	$ 532,298,457	$ 574,875,659	$ 580,803,428
b. Beneficiaries	34,129,429	33,528,943	33,793,153
c. Disability retired	45,007,391	45,850,676	46,297,359
d. Total	$ 611,435,277	$ 654,255,278	$ 660,893,940

Actuarial Valuation as of October 1, 2020

State Required Exhibit - Police Officers

	10/01/2019	Prior Assumptions 10/01/2020	Current Assumptions 10/01/2020
4. Total actuarial present value of future expected benefit payments	$ 881,015,558	$ 914,809,174	$ 926,096,574
5. Actuarial accrued liabilities	$ 760,779,308	$ 793,898,719	$ 805,145,563
C. Statement of Accumulated Fund Benefits			
1. Actuarial present value of accumulated vested benefits			
a. Participants currently receiving benefits	$ 611,435,277	$ 654,255,278	$ 660,893,940
b. Other participants	$ 119,870,978	108,375,085	113,871,069
c. Total	$ 731,306,255	$ 762,630,363	$ 774,765,009
2. Actuarial present value of accumulated non-vested fund benefits	$ 4,998,830	$ 4,537,108	$ 5,381,793
3. Total actuarial present value of accumulated fund benefits	$ 736,305,085	$ 767,167,471	$ 780,146,802
D. Disclosure of Following Items:			
1. Actuarial present value of future salaries - attained age	$ 407,462,215	$ 393,678,527	$ 381,016,636
2. Actuarial present value of future employee contributions - attained age	$ 41,586,727	$ 40,267,349	$ 38,987,467
3. Actuarial present value of future contributions from other sources	N/A	N/A	N/A
4. Amount of active members' accumulated contributions	$ 38,120,210	$ 35,727,788	$ 35,727,788
5. Actuarial present value of future salaries and future benefits at entry age	N/A	N/A	N/A
6. Actuarial present value of future employee contributions at entry age	N/A	N/A	N/A

State Required Exhibit

Amortization balances are written down in proportion to amortization payments.

Valuation Date Established	Unfunded Actuarial Accrued Liabilities	Current Unfunded Liabilities	Prior Assumptions Amortization Payment	Current Assumptions Amortization Payment	Remaining Funding Period
10/01/2001	Initial Unfunded Liability	$ 10,359,131	$ 1,163,025	$ 1,158,102	11 years
10/01/2002	Method Update	12,086,874	1,269,322	1,263,458	12 years
10/01/2003	Fund Amendment	1,066,507	105,480	104,953	13 years
10/01/2003	Actuarial (Gain) / Loss	32,110,179	3,175,770	3,159,897	13 years
10/01/2004	Actuarial (Gain) / Loss	35,131,295	3,291,222	3,273,546	14 years
10/01/2005	Method Update	(31,695,531)	(2,826,637)	(2,810,422)	15 years
10/01/2005	Assumption Update	6,375,249	568,551	565,289	15 years
10/01/2005	Actuarial (Gain) / Loss	23,674,552	2,111,319	2,099,207	15 years
10/01/2006	Method Update	(4,835,871)	(412,307)	(409,794)	16 years
10/01/2006	Actuarial (Gain) / Loss	20,933,513	1,784,796	1,773,916	16 years
10/01/2007	Actuarial (Gain) / Loss	24,716,872	2,022,298	2,009,258	17 years
10/01/2008	Assumption Update	5,954,012	469,033	465,846	18 years
10/01/2008	Actuarial (Gain) / Loss	32,862,829	2,588,801	2,571,211	18 years
10/01/2009	Assumption Update	23,608,282	1,795,868	1,783,055	19 years
10/01/2009	Actuarial (Gain) / Loss	67,945,531	5,168,575	5,131,701	19 years
10/01/2010	Assumption Update	4,610,484	339,554	337,019	20 years
10/01/2010	Actuarial (Gain) / Loss	17,422,848	1,283,163	1,273,581	20 years
10/01/2011	Fund Amendment	(3,152,361)	(225,305)	(223,549)	21 years
10/01/2011	Assumption Update	17,408,975	1,244,250	1,234,552	21 years
10/01/2011	Actuarial (Gain) / Loss	30,967,320	2,213,289	2,196,037	21 years
10/01/2012	Assumption Update	7,997,471	555,875	551,364	22 years
10/01/2012	Actuarial (Gain) / Loss	26,926,475	1,871,562	1,856,373	22 years
10/01/2012	Fund Amendment	(20,579,817)	(1,430,429)	(1,418,820)	22 years
10/01/2013	Actuarial (Gain) / Loss	1,604,906	108,691	107,775	23 years
10/01/2013	Method Update	(66,579,650)	(4,509,074)	(4,471,062)	23 years
10/01/2014	Actuarial (Gain) / Loss	(6,177,383)	(408,344)	(404,776)	24 years
10/01/2014	Assumption Update	5,971,257	394,718	391,269	24 years
10/01/2015	Actuarial (Gain) / Loss	9,036,021	583,932	578,653	25 years
10/01/2015	Assumption Update	2,558,599	165,344	163,849	25 years
10/01/2015	Fund Amendment	(8,706,330)	(562,627)	(557,540)	25 years
10/01/2016	Actuarial (Gain) / Loss	(11,737,942)	(742,625)	(735,692)	26 years
10/01/2016	Assumption Update	36,402,918	2,303,107	2,281,603	26 years
10/01/2017	Actuarial (Gain) / Loss	8,250,640	511,723	506,796	27 years
10/01/2017	Assumption Update	7,166,916	444,508	440,229	27 years
10/01/2018	Actuarial (Gain) / Loss	6,718,200	408,978	404,924	28 years
10/01/2018	Assumption Update	7,450,897	453,582	449,086	28 years
10/01/2019	Actuarial (Gain) / Loss	(1,311,703)	(78,464)	(77,665)	28 years
10/01/2019	Fund Amendment and Assumption Update	(16,143,109)	(965,656)	(955,816)	29 years
10/01/2020	Actuarial (Gain) / Loss	(2,349,718)	(138,258)	(136,812)	30 years
10/01/2020	Assumption Update	19,051,525	N/A	1,109,271	30 years
	TOTAL	$ 333,100,863	$ 26,096,610	$ 27,039,872	

This actuarial valuation and/or cost determination was 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, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the fund and / or paid from fund assets for which liabilities or current costs have not been established or other wise provided for in the valuation. All known events or trends which may require material increase in fund costs or required contribution rates have been taken into account in the valuation.

Michelle Jones — Shelly L. Jones, A.S.A., E.A.
Enrollment Number: 20-08646

Jennifer Borregard — Jennifer Borregard, E.A.
Enrollment Number: 20-07624

Dated: March 18, 2021

Table XX

Glossary

Actuarial Accrued Liability. The difference between the Actuarial Present Value of Future Benefits, and the Actuarial Present Value of Future Normal Costs.

Actuarial Assumptions. 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.

Actuarial Cost Method. Actuarial Cost Method 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.

Actuarial Equivalent. Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value of Future Benefits. 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.

Actuarial Valuation. 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.

Actuarial Value of Assets. 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.

Amortization Method. 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.

Glossary

Amortization Payment. That portion of the plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Amortization Period. The period used in calculating the Amortization Payment.

Annual Required Contribution. 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.

Closed Amortization Period. 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.

Employer Normal Cost. The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.

Equivalent Single Amortization Period. 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.

Experience Gain/Loss. 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.

Funded Ratio. The ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability.

GASB. Governmental Accounting Standards Board.

Glossary

GASB No. 67 and GASB No. 68. 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.

Normal Cost. The annual cost assigned, under the Actuarial Cost Method, to the current plan year.

Open Amortization Period. 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.

Unfunded Actuarial Accrued Liability. The difference between the Actuarial Accrued Liability and Actuarial Value of Assets.

Valuation Date. 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.

Vested Benefit Security Ratio. The ratio of the Market Value of Assets to the Actuarial Present Value of Vested Accrued Benefits.