Freiman Little Actuaries, LLC
4105 Savannahs Trail
Merritt Island, FL 32953

Phone: (321) 453-6542
Fax: (321) 453-6998

City of Lauderhill

Firefighters' Retirement System

Actuarial Valuation as of October 1, 2021

January 3, 2022

REPORT TO DETERMINE MINIMUM FUNDING REQUIREMENTS
FOR THE PLAN AND FISCAL YEAR
ENDING SEPTEMBER 30, 2022

FLA
FREIMAN LITTLE ACTUARIES

January 3, 2022

Board of Trustees
City of Lauderhill Firefighters' Retirement System
Lauderhill, Florida

RE: Actuarial Valuation as of October 1, 2021

Dear Board Members:

We are pleased to present the actuarial valuation as of October 1, 2021 for the City of Lauderhill Firefighters' Retirement System (the Plan). This report provides a review of the current funded status of the Plan, establishes the minimum funding requirements for the fiscal year ending September 30, 2022 and provides an analysis of experience since the last valuation. In addition to providing the summary and derivation of actuarial findings, this report describes the data, assumptions, and methods used to create these results.

In producing our work product, we rely on various models, internal and external, which were used for their intended purposes. Underlying data, assumptions, methodologies, model inputs and resulting outputs have been reviewed. The 7.20% net assumed return is a prescribed assumption as defined by Actuarial Standard of Practice No. 27 (ASOP 27), as it is set by the Board. While we find all other inputs and outputs to be reasonable, this prescribed assumption significantly conflicts with our judgment regarding what would constitute a reasonable assumption for the purpose of the measurement as discussed in ASOP 27. We continue to recommend lowering the net assumed return.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

Statement by Enrolled Actuary:

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

4105 SAVANNAHS TRAIL, MERRITT ISLAND, FL, 32953-8607 • OFFICE (321) 453-6542 • FAX (321) 453-6998 • MOBILE (321) 591-8265 • chad@flactuaries.com • www.flactuaries.com

We look forward to the presentation of these results to you in person and we are always available to answer any questions you may have.

Sincerely,

Chad M. Little, ASA, EA
Partner, Consulting Actuary
Enrollment Number 20-6619

Paula C. Freiman, ASA, EA
Partner, Consulting Actuary
Enrollment Number 20-5796

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Section 1 Board Summary

This report presents the results of the October 1, 2021 actuarial valuation of the City of Lauderhill Firefighters' Retirement System (the Plan).

Summary of Principal Valuation Results

A summary of the key valuation findings as of October 1, 2021 are compared with the results of the prior valuation below.

Minimum Funding Requirements

Fiscal Year Ending September 30,	**2021**	**2022**
Minimum Required Funding as a Dollar Amount		
Estimated Minimum Required City Contribution	$3,040,018	$3,122,045
Estimated State Contribution	207,151	228,249
Total Minimum Funding Requirement (City plus State)	$3,247,169	$3,350,294
Minimum Required Funding as a % of Payroll		
Estimated Minimum Required City Contribution	37.07%	32.81%
Estimated State Contribution	2.53%	2.40%
Total Minimum Funding Requirement (City plus State)	39.60%	35.21%

Funded Status

Valuation Date October 1,	**2020**	**2021**
Accrued Liability (AL)	$106,381,918	$112,480,530
Actuarial Value of Assets	(95,449,442)	(103,016,852)
Unfunded Accrued Liability (UAL)	$10,932,476	$9,463,678
Funded Percentage	89.72%	91.59%

Key Assumptions

Valuation Date October 1,	**2020**	**2021**
Assumed Net Rate of Investment Return	7.20%	7.20%
Salary Increase Assumption	Graded	Graded
Funding Method	Entry Age	Entry Age

Summary of Significant Events

Determinations of the funded status of the Plan and minimum funding requirements are based on participant data, asset information, Plan provisions, actuarial methods and assumptions, as well as contributions made to the Plan by the State of Florida. Any significant events associated with these items are discussed in the following.

In preparing our report we relied, without audit, on information (some oral and some written) supplied by the Plan Administrator. This information includes, but is not limited to, statutory provisions, employee census, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

Participant Data

While the number of active Members increased from 85 to 96, actual total payroll increased 6.5%. The following provides a summary of the average actual pay increases for continuing active members, by individual, to the expected pay increases for the 12-month periods ending on the date specified.

Year Ending September 30	Actual	Assumed
2021	9.2 %	5.9 %
2020	5.3 %	6.2 %
2019	5.1 %	5.8 %
2018	3.6 %	7.0 %
2017	7.0 %	7.0 %
2016	4.6 %	7.0 %
2015	2.4 %	7.0 %
2014	3.2 %	7.0 %
2013	4.4 %	7.0 %
2012	7.2 %	7.0 %
2011	4.0 %	7.0 %
2010	0.5 %	7.0 %
2009	11.9 %	7.0 %
2008	9.4 %	7.0 %
2007	16.1 %	7.0 %
2006	7.2 %	7.0 %
2005	6.6 %	7.0 %
2004	7.7 %	7.0 %
2003	5.4 %	7.0 %
2002	4.6 %	7.0 %
2001	11.2 %	7.0 %
2000	8.2 %	7.0 %
1999	8.3 %	7.0 %
1998	9.0 %	7.0 %
24-Yr Avg	6.7 %	6.9 %
10-Yr Avg	5.2 %	6.7 %

Note that although the average individual salary increases were 5.2% over the last ten years, they were 6.7% over the last 24 years.

Overall, there was a demographic loss primarily due to pay increases more than expected offset by the gains associated with the termination of five non-vested members.

In general, should a pattern of consistent gains or losses develop, assumptions may require revision.

Assets

While the investment return on the Market Value of Assets, net of investment expenses, was 20.39% for the year, the investment return on the Actuarial Value of Assets, net of investment expenses, was 10.49%. These returns are in comparison to the 7.2% net rate of return expected for the year ending September 30, 2021, resulting in an actuarial investment gain. The following provides a summary of the actual to the expected return on investments for the 12-month periods ending on the date specified.

Year Ending September 30	Market Value	Actuarial Value	Assumed Return*
2021	20.39%	10.49%	7.20%
2020	9.32%	8.17%	7.30%
2019	3.59%	8.61%	7.30%
2018	9.30%	8.52%	7.85%
2017	12.88%	8.13%	7.85%
2016	9.88%	7.66%	8.00%
2015	(0.80)%	9.80%	8.00%
2014	8.83%	11.38%	8.00%
2013	15.49%	11.55%	8.00%
2012	19.82%	5.86%	8.00%
10-Year Geometric Average	10.69%	9.00%	7.75%

*The board of trustees made a decision to revise the assumption used for valuation purposes from 8.0%, gross of investment expenses, as used in the October 1, 2015 actuarial valuation to 7.85%, net of investment expenses, for the October 1, 2016 actuarial valuation of the Plan. The assumed return noted above is net of investment expenses for the year ending September 30, 2017 forward. The returns shown above for the market value of assets and the actuarial value of assets are net of investment expenses.

Investment returns less than the assumed rate of return result in increased annual minimum required contributions.

Plan Provisions

There have been no changes in Plan provisions since the prior actuarial valuation.

Because the cumulative net (gain) loss benchmark for the Supplemental Benefit is in a net (gain) position as of October 1, 2021, an additional $1,630,994 in assets are being reserved for use to pay the Supplemental Benefit.

The impact of any changes in Plan provisions may be found in the reconciliation of the funded status and minimum funding requirements found near the end of Section 2 of this report. See "Reconciliations" in the table of contents.

Methods and Assumptions

There were no changes in methods or assumptions since the prior valuation.

The net assumed rate of investment return is unchanged from 7.2% used in the prior actuarial valuation as directed by the Board of Trustees. The 7.2% net assumed return is a prescribed assumption as defined by Actuarial Standard of Practice No. 27 (ASOP 27), as it is set by the Board. The prescribed assumption significantly conflicts with our judgment regarding what would constitute a reasonable assumption for the purpose of the measurement as discussed in ASOP 27. As discussed with the Board we recommend lowering the net assumed return.

The last actuarial experience review was conducted for the five-year period preceding October 1, 2017. In general, should a pattern of consistent gains or losses develop, assumptions may require revision.

The impact of any changes in assumptions and methods may be found in the reconciliation of the funded status and minimum funding requirements found near the end of Section 2 of this report. See "Reconciliations" in the table of contents.

State Contributions

The Estimated Minimum Required City Contribution shown on page 1 assumes that the premium tax money received from the State for fiscal 2022 will be in the same amount received for fiscal 2021. One-half of the fiscal 2021 premium is shown as applying toward the actuarially determined contribution. Should the amount received for fiscal 2022 be less than expected, the City will need to contribute any potential shortfall to the Plan.

Assessment and Disclosure of Risk

As described in Actuarial Standard of Practice No. 51 (ASOP 51), this section is meant to address the assessment and disclosure of risk in a pension funding valuation. This is not meant to be a comprehensive summary but should provide information regarding risks related to this plan. Additional historical information provided in this report also contain relevant information regarding asset size, asset mix, pay increases, benefits and contributions. This information can be used to understand the changes over time to identify trends.

Note that ASOP 51 defines risk as "The potential of actual future measurements deviating from expected future measurements resulting from actual future experience deviating from actuarially assumed experience…." The following provides examples of potential risk.

Investment Risk: As noted previously, investment returns less than the assumed rate of return result in increased annual minimum required contributions payable in a subsequent year.

Interest Rate Risk: Interest rates are used to discount the value of benefits. If the long-term expectation of returns is higher or lower than the assumed net investment return, the assumed net investment return should be adjusted. When the assumed net investment return is increased the estimated liability is decreased. When the assumed net investment return is decreased the estimated liability is increased. The chart below shows what the funded status of the plan is on a market value of assets basis after changing the net assumed return by 1% or 2%.

	Funded Status on Market Value of Assets Basis					
As of 10/1	**2% Decrease**	**1% Decrease**	**Valuation Net Assumed Return**	**1% Increase**	**2% Increase**	**Valuation Net Assumed Return Assumption***
2021	78.95%	89.37%	100.13%	111.16%	122.41%	7.20%
2020	70.46%	79.70%	89.87%	100.32%	110.48%	7.20%
2019	67.19%	76.58%	86.34%	96.41%	106.73%	7.30%
2018	65.73%	75.32%	85.35%	95.76%	106.51%	7.30%
2017	66.54%	75.64%	85.16%	95.04%	105.24%	7.85%
2016	62.05%	70.58%	79.50%	88.77%	98.33%	7.85%
2015		69.07%	77.31%	85.87%		8.00%
2014		71.04%	79.67%	88.65%		8.00%

*Note that as of October 1, 2014 and 2015 the assumed return assumption was not net of investment expenses.

Longevity and Other Demographic Risks: The estimated liability of the Plan is based on assumptions related to mortality, retirement, disability and termination. To the extent that Plan experience is different than these assumptions the gains and losses affect future required contributions and estimated liability.

Contribution Risk: The possibility that the plan sponsor does not make contributions to the plan according to the funding policy.

Intergenerational equity risk: Intergenerational equity is the concept that resources do not belong to a specific generation and they must be preserved for future generations. One way to alleviate this risk is to pay for benefits over the average future service of the group receiving benefits. Members may feel there are inequities when one is paying more than others, receiving less than others, or paying more than others in relation to what they are receiving.

Plan maturity measures may help understand the risks associated with the plan. As the Plan matures, the ratio of the Market Value of Assets to the Covered Payroll increases. As this ratio gets larger, the impact of asset volatility has a larger effect on the volatility of the Minimum Required Contribution as a percentage of pay.

Year Ending 9/30	Market Value of Assets	Payroll	Asset Volatility Ratio
2021	$115,038,531	$8,580,684	13.4
2020	96,487,703	8,056,817	12.0
2019	89,322,033	7,990,310	11.2
2018	86,028,658	7,634,463	11.3
2017	78,790,699	7,651,439	10.3
2016	69,596,718	7,136,191	9.8
2015	63,881,885	6,884,383	9.3
2014	62,842,972	6,945,643	9.0
2013	56,334,474	6,716,257	8.4
2012	47,216,351	6,445,935	7.3
2011	39,163,277	6,018,473	6.5
2010	38,762,351	6,024,458	6.4
2009	35,818,770	6,357,484	5.6
2008	35,819,095	5,943,239	6.0
2007	39,411,245	5,696,122	6.9

Another measure of a pension plan's maturity is the Ratio of Benefit Payments to Contributions. Over the life of a pension plan, it is expected that the majority of the benefits will be paid for by returns rather than contributions. For this to happen, as a plan matures, the plan will eventually pay out more in benefits than it receives in contributions. It is important to understand the magnitude of this difference so that steps can be taken, if necessary, to manage cash flows going forward. The table below provides the Ratio of Benefit Payments to Contributions. Note that there are other cash flows to be considered such as interest and dividends earned or expenses paid by a pension plan.

Year Ending 9/30	Benefit Payments	Contributions	Ratio of Benefit Payments to Contributions
2021	$5,308,968	$4,452,754	1.19
2020	5,512,820	4,604,032	1.20
2019	4,753,701	5,136,842	0.93
2018	4,902,520	5,031,555	0.97
2017	4,548,444	4,982,039	0.91
2016	5,553,031	5,200,695	1.07
2015	3,799,605	5,522,808	0.69
2014	3,986,091	5,627,432	0.71
2013	3,739,137	5,604,838	0.67
2012	4,418,516	4,856,995	0.91
2011	2,869,182	4,065,702	0.71
2010	4,325,399	4,016,578	1.08

When looking at Net Cash Flows, it is useful to understand the relative size of the cash flows in comparison to the Market Value of Assets. The following table provides the ratio of the Net Cash Flows divided by the Market Value of Assets. As mentioned previously, there are other cash flows to be considered such as interest and dividends earned or expenses paid by a pension plan.

As of September 30, 2021, the DROP balances totaled $2,246,219. This represents the amount of money in addition to regular monthly benefits that could leave the fund at any time.

Year Ending 9/30	Contributions	Disbursements	Assets	Net Cash Flow Divided by Assets
2021	$4,452,754	$5,469,906	$115,038,531	(0.01)
2020	4,604,032	5,712,522	96,487,703	(0.01)
2019	5,136,842	4,938,021	89,322,033	0.00
2018	5,031,555	5,119,043	86,028,658	0.00
2017	4,982,039	4,768,670	78,790,699	0.00
2016	5,200,695	5,772,211	69,596,718	(0.01)
2015	5,522,808	3,976,533	63,881,885	0.02
2014	5,627,432	4,155,408	62,842,972	0.02
2013	5,604,838	3,930,698	56,334,474	0.03
2012	4,856,995	4,593,305	47,216,351	0.01
2011	4,065,702	3,015,222	39,163,277	0.03
2010	4,016,578	4,490,839	38,762,351	(0.01)

Section 2 Results Derivation

In this section, the assets and liabilities of the Plan are shown in detail. Assets and liabilities are then compared to determine the funded status and minimum funding requirements. Finally, analysis is performed to explain movement in results from the prior valuation.

While asset information is based on the fair market value of assets, along with any techniques used to smooth out market fluctuations, liabilities are determined through a combination of the benefit provisions, participant census data which contains information for the members who will receive those benefits, and the methods and assumptions used with regard to how benefits will be paid to members. A summary of participant data, an outline of the benefit provisions, and a description of the methods and assumptions used in this valuation are described in Section 4.

Financial Information

Over the life of the Plan, the majority of assets are typically generated from investment return. In this section, we describe how the assets of the Plan are invested, show how the actuarial value of assets is derived, and review the investment results since the prior valuation.

Investment Allocation

Valuation Date October 1,	**2020**		**2021**	
Equities	$64,585,176	68 %	$76,492,459	66 %
Fixed income	14,615,948	15 %	18,325,360	16 %
Real estate	12,044,799	12 %	13,587,661	12 %
Farmland investment funds	2,249,351	2 %	2,472,410	2 %
Note receivable	1,031,250	1 %	1,031,250	1 %
Cash and equivalents	1,552,326	2 %	2,360,826	2 %
Net receivables	408,853	0 %	768,565	1 %
Fair Market Value of Assets	$96,487,703	100 %	$115,038,531	100 %

Reconciliation of Market Value of Assets

Year ending September 30,			**2020**	**2021**
1.	Market value at beginning of year		$89,322,033	$96,487,703
2.	Contributions			
	a.	City	$3,210,740	$3,018,920
	b.	State	414,303	456,497
	c.	Employee contributions	978,989	977,337
	d.	Total contributions	$4,604,032	$4,452,754
3.	Investment earnings			
	a.	Realized gains and losses	$1,245,444	$5,966,847
	b.	Unrealized gains and losses	5,718,109	12,223,300
	c.	Interest and dividends	1,748,372	1,917,926
	d.	Other income	0	0
	e.	Notes receivable income	68,693	46,562
	f.	Investment expense	(506,458)	(586,655)
	g.	Net investment income	$8,274,160	$19,567,980
4.	Deductions			
	a.	Benefits paid	($4,437,023)	($4,557,648)
	b.	DROP payments	(427,962)	(237,656)
	c.	Supplemental plan payments	(642,235)	(433,922)
	d.	Refund of contributions	(5,600)	(79,742)
	e.	Administrative expenses	(199,702)	(160,938)
	f.	Total deductions	($5,712,522)	($5,469,906)
5.	Net increase		$7,165,670	$18,550,828
6.	Market value of assets end of year		$96,487,703	$115,038,531
7.	Net return on market value of assets		9.32 %	20.39 %

Development of Historical Gain or Loss on Market Value of Assets

Year ending September 30,	2019	2020	2021
1. Market value of assets BOY	$86,028,658	$89,322,033	$96,487,703
2. Contributions			
a. City	$3,695,375	$3,210,740	$3,018,920
b. State	396,652	414,303	456,497
c. Employee contributions	1,044,815	978,989	977,337
d. Total Contributions	$5,136,842	$4,604,032	$4,452,754
3. Pension benefits + administrative expense	(4,938,021)	(5,712,522)	(5,469,906)
4. Net assumed return	6,272,871	6,464,926	6,894,063
5. Expected assets at end of year	$92,500,350	$94,678,469	$102,364,614
6. Market value of assets EOY	$89,322,033	$96,487,703	$115,038,531
7. Gain (Loss) = (6) - (5)	$(3,178,317)	$1,809,234	$12,673,917

Development of Actuarial Value of Assets

1.	Market Value of Assets as of 9/30/2021				$115,038,531
2.	Phase-In Gains (Losses) Over Four Year Period				
			Original Gain (Loss)	Percent Unrecognized	Unrecognized Gain (Loss)
	a.	Year Ending 9/30/2021	$12,673,917	75 %	$9,505,438
	b.	Year Ending 9/30/2020	1,809,234	50 %	904,617
	c.	Year Ending 9/30/2019	(3,178,317)	25 %	(794,579)
	d.	Total			$9,615,476
3.	Preliminary Actuarial Value of Assets as of 9/30/2021 = 1. - 2.d.				$105,423,055
4.	Corridor Around Market Value				
	a.	Minimum = 80% of Market Value of Assets			$92,030,825
	b.	Maximum = 120% of Market Value of Assets			$138,046,237
	c.	Corridor Adjustment to Preliminary Actuarial Value			$0
5.	Supplemental Retirement Benefit Account Balance Reserve (State $)				$483,401
6.	Supplemental Retirement Benefit Account Balance Reserve (Gains)				$291,808
7.	AVA Prior to Additional Supplement Increase = 3. + 4.c. - 5. - .6				$104,647,846
8.	Additional Supplemental Retirement Benefit Account Balance (Gains)				$1,630,994
9.	Actuarial Value of Assets as of 9/30/2021 = 3. + 4.c. - 5. - 6. - 8.				$103,016,852

Historical Asset Values

Year Ending September 30	Market Value of Assets: Including DROP	Market Value of Assets: Reported by Auditor	Actuarial Value of Assets
2021	$115,038,531	$115,038,531	$103,016,852
2020	96,487,703	96,487,703	95,449,442
2019	89,322,033	89,322,033	88,829,489
2018	86,028,658	86,028,658	82,412,419
2017	78,790,699	78,790,699	76,062,075
2016	69,596,718	69,596,718	70,067,764
2015	63,881,885	63,881,885	65,524,026
2014	62,842,972	62,842,972	58,163,473
2013	56,334,474	55,236,797	49,705,303
2012	47,216,351	46,265,563	43,060,519

Note: Beginning with the year ending 9/30/2014 DROP balances are included in the Market Value of Assets reported by the auditor. Prior to that year the Market Value of Assets excluded DROP balances. The Actuarial Value of Assets includes DROP balances in all years shown but excludes state premium taxes reserved for Supplemental Benefits along with any actuarial gains reserved to pay for Supplemental Benefits.

Historical Rates of Investment Return

Year Ending September 30	Market Value	Actuarial Value	Assumed Return*
2021	20.39%	10.49%	7.20%
2020	9.32%	8.17%	7.30%
2019	3.59%	8.61%	7.30%
2018	9.30%	8.52%	7.85%
2017	12.88%	8.13%	7.85%
2016	9.88%	7.66%	8.00%
2015	(0.80)%	9.80%	8.00%
2014	8.83%	11.38%	8.00%
2013	15.49%	11.55%	8.00%
2012	19.82%	5.86%	8.00%
10-Year Geometric Average	10.69%	9.00%	7.75%

Note: The returns shown above for the Market Value of Assets and the Actuarial Value of Assets are net of investment expenses.

*The board of trustees made a decision to revise the assumption used for valuation purposes from 8.0%, gross of investment expenses, as used in the October 1, 2015 actuarial valuation to 7.85%, net of investment expenses, for the October 1, 2016 actuarial valuation of the Plan. The assumed return noted above is net of investment expenses for the year ending September 30, 2017 forward.

Derivation of State Contribution Funding Reserves

September 30	Regular	Supplemental	Total
1998	$137,869	$0	$137,869
1999	137,229	0	137,229
2000	132,060	0	132,060
2001	118,403	0	118,403
2002	134,534	0	134,534
2003	203,319	0	203,319
2004	228,714	0	228,714
2005	244,943	0	244,943
2006	250,977	0	250,977
2007	378,553	5,537	384,090
2008	360,239	60,369	420,608
2009	459,295	0	459,295
2010	407,979	0	407,979
2011	403,937	0	403,937
2012	440,960	0	440,960
2013	472,633	0	472,633
2014	492,840	0	492,840
2015	485,663	0	485,663
2016	391,657	0	391,657
2017	394,437	0	394,437
2018	372,790	0	372,790
2019	396,652	0	396,652
2020	414,303	0	414,303
2021	456,497	0	456,497

	Recognized State Funding			Cumulative
Year Ending September 30	Actuarially Determined Contribution	Supplemental Benefit	Recognized State Funding	Balance Available for Benefit Improve
1998	$137,869	$0	$137,869	$0
1999	137,229	0	137,229	0
2000	132,060	0	132,060	0
2001	118,403	0	118,403	0
2002	134,534	0	134,534	0
2003	203,319	0	203,319	0
2004	167,361	0	167,361	61,353
2005	167,361	0	167,361	138,935
2006	167,361	0	167,361	222,551
2007	167,361	34,741	202,102	404,539
2008	167,361	63,528	230,889	594,258
2009	167,361	93,670	261,031	792,522
2010	167,361	171,041	338,402	862,099
2011	167,361	232,272	399,633	866,403
2012	167,361	314,896	482,257	825,106
2013	167,361	358,282	525,643	772,096
2014	167,361	345,399	512,760	752,176
2015	167,361	357,454	524,815	713,024
2016	167,361	338,414	505,775	598,906
2017	197,218	268,422	465,640	527,703
2018	186,395	233,830	420,225	480,268
2019	198,326	220,297	418,623	458,297
2020	207,151	207,840	414,991	457,609
2021	228,249	202,456	430,705	483,401

Present Value of Benefits

Valuation as of October 1,			2020	2021
1.	Active Members			
	a.	Service Retirement	$50,170,858	$57,568,752
	b.	Deferred Benefits	395,247	466,530
	c.	Survivor Benefits	224,981	248,703
	d.	Disability Benefits	2,103,402	2,364,427
	e.	Total	$52,894,488	$60,648,412
2.	Inactive Members			
	a.	Retirement (Including DROP)	$67,176,771	$67,996,095
	b.	Terminated Vested	298,960	333,789
	c.	Beneficiaries	4,934,149	4,914,479
	d.	Disability Retirement	1,351,198	1,349,826
	e.	Total	$73,761,078	$74,594,189
3.	Accumulated Tier 2 Multiplier Purchase Contributions with Interest		$154,166	$171,039
4.	All Members		$126,809,732	$135,413,640

Accrued Liability

Valuation as of October 1,		2020	2021
1.	Active Members		
	a. Service Retirement	$32,282,562	$37,447,137
	b. Deferred Benefits	(457,905)	(447,693)
	c. Survivor Benefits	54,139	60,473
	d. Disability Benefits	587,878	655,385
	e. Total	$32,466,674	$37,715,302
2.	Inactive Members		
	a. Retirement (Including DROP)	$67,176,771	$67,996,095
	b. Terminated Vested	298,960	333,789
	c. Beneficiaries	4,934,149	4,914,479
	d. Disability Retirement	1,351,198	1,349,826
	e. Total	$73,761,078	$74,594,189
3.	Accumulated Tier 2 Multiplier Purchase Contributions with Interest	$154,166	$171,039
4.	All Members	$106,381,918	$112,480,530

Normal Cost

Valuation as of October 1,		2020	2021
1.	**Preliminary Normal Cost**		
a.	Service Retirement	$2,055,301	$2,364,291
b.	Deferred Benefits	99,430	109,685
c.	Survivor Benefits	19,369	21,824
d.	Disability Benefits	175,488	200,940
e.	Total	$2,349,588	$2,696,740
2.	**Total Normal Cost**		
a.	Preliminary Normal Cost	$2,349,588	$2,696,740
b.	Expense Load	199,702	160,938
c.	Total Normal Cost	$2,549,290	$2,857,678
d.	Total Normal Cost as a % of Pay	31.08 %	30.03 %
3.	**Actual Employer Normal Cost**		
a.	Preliminary Normal Cost	$2,349,588	
b.	Actual Administrative Expense	160,938	
c.	Actual Employee Contributions	(977,337)	
d.	Actual Employer Normal Cost	$1,533,189	
4.	**Payroll**		
a.	Payroll Expected in Funding Year	$7,682,264	$8,967,871
b.	Annualized Payroll in Funding Year	$8,201,154	$9,516,126

Unfunded Accrued Liability

Derivation of Unfunded Accrued Liability (UAL)

Unfunded Accrued Liability as of October 1,	**2021**
1. Actuarial Accrued Liability	$112,480,530
2. Actuarial Value of Assets	103,016,852
3. Unfunded Accrued Liability	$9,463,678
Determination of Expected Unfunded Accrued Liability	
1. Unfunded Accrued Liability for Prior Year	$10,932,476
2. Employer Normal Cost (Including Administrative Expense)	1,533,189
3. Interest for a full year on (1) and (2)	897,528
4. Contributions for this Period	
a. State contributions toward minimum funding	$228,249
b. State contributions used for supplemental benefits	202,456
c. City	3,018,920
d. Total	$3,449,625
5. Interest on Contribution for Time on Deposit	108,681
6. Plan change - supplemental benefits paid from State contributions	202,456
7. Plan change - supplemental benefit account increase from actuarial gain	1,630,994
8. Other changes in plan, methods or assumptions	0
9. Expected Unfunded Accrued Liability	$11,638,337
Calculation of (Gain) or Loss	
1. Actual Unfunded Accrued Liability	$9,463,678
2. Expected Unfunded Accrued Liability	11,638,337
3. Total (Gain) or Loss	$(2,174,659)
4. Breakdown of (Gain) or Loss	
a. Portion of (Gain) / Loss Due to Investments	$(3,152,898)
b. Portion of (Gain) / Loss Due to Demographic Experience	978,239
c. Total (Gain) or Loss	$(2,174,659)
Determination of Actuarial Asset Gain (Loss)	
1. Actuarial Value of Assets - Beginning of Year	$95,972,716
2. Contributions	
a. City	$3,018,920
b. State	430,705
c. Employee contributions	977,337
d. Total contributions	$4,426,962
3. Benefit Payments + Administrative Expenses	(5,469,906)
4. Expected Return on Assets	6,856,984
5. Expected Actuarial Value at End of Year	$101,786,756
6. Actuarial Value of Assets - End of Year	$104,939,654
7. Gain (Loss) for Plan Year = (6) - (5)	$3,152,898
8. Actual Investment Income	$10,009,882
9. Actual % Return	10.49 %

*The "Determination of Actuarial Asset Gain or (Loss)" is based on an asset value that is net of the contributions from the state of Florida reserved to pay Supplemental Benefits. Any portion of the Supplemental Retirement Benefit Account balance allocated due to actuarial gains is not deducted from the Actuarial Value of Assets.

Amortization of Unfunded Liability

The Unfunded Accrued Liability is being amortized in a level dollar amount based on the net assumed investment return assumption. Changes in the Unfunded Accrued Liability due to Plan changes, assumption changes, method changes, or gains and losses are all amortized over a 25-year period effective October 1, 2016. Prior to this change there was a 30-year amortization period.

Amortization Bases

	10/1	Source	Original Balance	Remaining Balance	Adjusted Remaining Balance	Years Remain	Amort Payment
1.	1997	Funding Method	$1,388,294	$120,585	$117,750	1	$117,750
2.	1998	Plan Amendment	2,280,896	1,055,336	1,030,553	7	179,625
3.	2001	(Gain)/Loss	693,992	413,930	404,209	10	54,182
4.	2002	(Gain)/Loss	2,590,283	1,643,774	1,605,172	11	201,677
5.	2003	(Gain)/Loss	351,479	235,483	229,953	12	27,296
6.	2003	Plan Amendment	1,954,593	1,309,548	1,278,795	12	151,794
7.	2004	(Gain)/Loss	754,262	513,076	501,027	13	56,558
8.	2005	(Gain)/Loss	(51,468)	(36,537)	(35,679)	14	(3,851)
9.	2005	Software Change	(370,516)	(263,022)	(256,845)	14	(27,726)
10.	2006	(Gain)/Loss	(866,092)	(638,667)	(623,669)	15	(64,686)
11.	2006	Plan Amendment	5,295,975	3,905,310	3,813,598	15	395,539
12.	2007	(Gain)/Loss	6,078	4,641	4,532	16	453
13.	2008	(Gain)/Loss	1,229,709	972,608	949,767	17	92,007
14.	2009	(Gain)/Loss	4,331,045	3,544,732	3,461,488	18	325,652
15.	2010	(Gain)/Loss	1,092,000	918,186	896,623	19	82,142
16.	2010	Method Change	(131,558)	(110,618)	(108,020)	19	(9,896)
17.	2011	Plan Amendment	(114,527)	(97,690)	(95,396)	20	(8,531)
18.	2011	(Gain)/Loss	4,025,679	3,433,924	3,353,282	20	299,872
19.	2012	(Gain)/Loss	1,168,892	1,019,288	995,351	21	87,072
20.	2012	Assumption Change	2,128,355	1,855,950	1,812,365	21	158,544
21.	2013	(Gain)/Loss	(2,265,872)	(2,016,188)	(1,968,840)	22	(168,803)
22.	2013	Assumption Change	89,691	79,808	77,934	22	6,682
23.	2014	(Gain)/Loss	(2,740,798)	(2,477,761)	(2,419,573)	23	(203,665)
24.	2014	Assumption Change	96,389	87,139	85,093	23	7,163
25.	2015	(Gain)/Loss	(3,292,562)	(3,006,039)	(2,935,445)	24	(242,955)
26.	2015	Assumption Change	101,056	92,261	90,094	24	7,457
27.	2016	(Gain)/Loss	(988,580)	(886,711)	(865,887)	20	(77,433)
28.	2016	Assumption Change	1,946,542	1,745,958	1,704,956	20	152,468
29.	2017	(Gain)/Loss	(542,975)	(499,772)	(488,035)	21	(42,693)
30.	2017	Assumption Change	224,755	206,869	202,011	21	17,672
31.	2018	(Gain)/Loss	(2,332,309)	(2,193,584)	(2,142,070)	22	(183,655)
32.	2018	Supplement	91,134	85,713	83,700	22	7,176
33.	2018	Assumption Change	4,732,870	4,451,362	4,346,826	22	372,685
34.	2019	(Gain)/Loss	(1,211,066)	(1,165,866)	(1,138,487)	23	(95,831)
35.	2019	Supplement	908,300	874,399	853,865	23	71,873
36.	2019	Plan Change	(3,539,958)	(3,407,840)	(3,327,810)	23	(280,115)
37.	2020	(Gain)/Loss	68,866	67,808	66,216	24	5,480
38.	2020	Assumption Change	(1,614,183)	(1,589,386)	(1,552,061)	24	(128,458)
39.	2021	(Gain)/Loss	(2,174,659)	(2,174,659)	(2,174,659)	25	(177,223)
40.	2021	Supplement	1,630,994	1,630,994	1,630,994	25	132,917
				$9,704,342	$9,463,678		$1,296,215

Projected Unfunded Accrued Liability and Amortization Payments

Year Beginning October 1,	Outstanding Bases	Amortization Payment
2021	$9,463,678	$1,296,215
2022	8,755,520	1,178,463
2023	8,122,605	1,178,467
2024	7,444,116	1,178,463
2025	6,716,780	1,178,468
2026	5,937,071	1,178,463
2027	5,101,228	1,178,468
2028	4,205,199	998,835
2029	3,437,222	998,845
2030	2,613,940	998,840
2031	1,731,387	944,661
2032	843,371	742,984
2033	107,614	563,891
2034	(489,128)	507,333
2035	(1,068,207)	538,914
2036	(1,722,833)	208,061
2037	(2,069,919)	207,606
2038	(2,441,506)	115,598
2039	(2,741,215)	(210,052)
2040	(2,713,407)	(282,298)
2041	(2,606,149)	(648,677)
2042	(2,098,410)	(869,271)
2043	(1,317,637)	(903,353)
2044	(444,112)	(402,783)
2045	(44,305)	(44,305)
2046	0	0

Actions Taken to Reduce Unfunded Actuarial Accrued Liability

The required contributions calculated each year include a payment for the amortization of the unfunded actuarial accrued liability. This payment is designed to reduce the unfunded actuarial accrued liability in an orderly fashion over the next 25 years.

Minimum Funding Requirements

	Valuation as of October 1, **Funding for Year Ending September 30,**	**2020** **2021**	**2021** **2022**
1.	Total Normal Cost	$2,549,290	$2,857,678
2.	Amortization of UAL	1,372,767	1,296,215
3.	Interest	148,651	157,757
4.	Total Minimum Required Contribution	$4,070,708	$4,311,650
5.	Expected City Minimum Required Funding	$3,040,018	$3,122,045
6.	State Funding Expected	207,151	228,249
7.	Employee Contributions Expected*	823,539	961,356
8.	Total Minimum Required Contribution	$4,070,708	$4,311,650
9.	City Funding as a % of Pay	37.07 %	32.81 %
10.	State Funding Expected as a % of Pay	2.53 %	2.40 %
11.	Employee Contributions as a % of Pay	10.04 %	10.10 %
12.	Total Required Funding as a % of Pay	49.64 %	45.31 %
13.	City Plus State Funding	$3,247,169	$3,350,294
14.	City Plus State Funding as a % of Pay	39.60 %	35.21 %
15.	Payroll		
	a. Payroll Expected in Funding Year	$7,682,264	$8,967,871
	b. Annualized Payroll in Funding Year	8,201,154	9,516,126
16.	Net Assumed Return on Investments	7.20 %	7.20 %

*Employee contributions expected are those based on payroll expected in the funding year which takes into account the expected decrement of members during the year.

Reconciliations

Reconciliation of Funded Status

As of Prior Valuation		**89.72 %**
Changes in Funded Status due to:		
Normal Operation of Plan	1.33 %	
Investment Experience	2.80 %	
Demographic Experience	(0.81)%	
Supplemental Benefit Increase	(1.45)%	
Total Changes	1.87 %	
As of Current Valuation		**91.59 %**

Reconciliation of City Minimum Funding Requirement

As of Prior Valuation		**$3,040,018**
Changes in Required Contribution due to:		
Expected Change	$0	
Change in Expense Load	(40,159)	
Change in Expected State $	(20,338)	
Investment Experience	(266,194)	
Demographic Experience	271,016	
Supplemental Benefit	137,702	
Total Changes	$82,027	
As of Current Valuation		**$3,122,045**

Cumulative Actuarial Experience

(1) Valuation Date 10/1	(2) Investment (Gain) or Loss	(3) Demographic (Gain) or Loss	(4) = (2) + (3) Total Actuarial (Gain) or Loss	(5) Cumulative (Gain) Loss Benchmark for Variable Benefit	(6) Cumulative (Gain) Loss Benchmark for Supplemental Benefit
1998	*	*	(143,872)	(143,872)	
1999	*	*	890,787	803,037	
2000	*	*	179,313	982,350	
2001	*	*	693,992	1,676,342	
2002	*	*	2,590,283	4,266,625	
2003	*	*	351,479	4,618,104	351,479
2004	*	*	754,262	5,372,366	1,105,741
2005	*	*	(51,468)	5,320,898	1,054,273
2006	*	*	(866,092)	4,454,806	188,181
2007	(1,469,400)	1,475,478	6,078	4,460,884	194,259
2008	667,161	562,548	1,229,709	5,690,593	1,423,968
2009	2,818,559	1,512,486	4,331,045	10,021,638	5,755,013
2010	2,060,463	(968,463)	1,092,000	11,113,638	6,847,013
2011	3,874,093	151,586	4,025,679	15,139,317	10,872,692
2012	516,110	652,782	1,168,892	16,308,209	12,041,584
2013	(1,949,444)	(316,428)	(2,265,872)	14,042,337	9,775,712
2014	(2,188,950)	(551,848)	(2,740,798)	11,301,539	7,034,914
2015	(1,576,871)	(1,715,691)	(3,292,562)	8,008,977	3,742,352
2016	(238,680)	(749,900)	(988,580)	7,020,397	2,753,772
2017	(216,526)	(326,449)	(542,975)	6,477,422	2,210,797
2018	(528,724)	(1,803,585)	(2,332,309)	4,145,113	(121,512)
2019	(1,095,692)	(115,374)	(1,211,066)	3,025,181	(1,241,444)
2020	(794,479)	863,345	68,866	4,002,347	(264,278)
2021	(3,152,898)	978,239	(2,174,659)	1,827,688	(2,438,937)

*The portion of the total actuarial (gain) or loss attributable to investments and demographic experience is not known prior to October 1, 2007.

Note: The Variable Benefit was paid October 1, 1999 with liability totaling $56,122. The Supplemental Retirement Benefit Account is increased $91,134 on October 1, 2018, $908,300 on October 1, 2019, and $1,630,994 on October 1, 2021 since the cumulative value of (gains) and losses benchmark for the Supplemental Benefit was in a net (gain) position. The variable benefit benchmark for 2018 through 2020 has been revised from that shown in the prior year to additionally deduct gains used toward payment of the supplemental benefit.

Section 3 Accounting Information

Information Required by GASB 67/68

A supplemental report provides information under the Governmental Accounting Standards Board No. 67/68.

Statement of Accumulated Plan Benefits (FASB 35)

The following table is based on prior accounting standards and is required by the State. The present value of accrued benefits is an estimate of the liability for all benefits accrued to date.

Year Beginning October 1,	2020	2021
1. Actuarial present value of accumulated plan benefits		
a. Participants currently receiving benefits	$73,462,118	$74,260,400
b. Other participants	25,784,776	30,015,522
c. Total vested plan benefits	$99,246,894	$104,275,922
d. Total non-vested plan benefits	2,437,878	2,707,720
e. Total accumulated plan benefits	$101,684,772	$106,983,642
2. Change in present value of accumulated plan benefits		
a. Accumulated plan benefits beginning of year		$101,684,772
b. Increase (decrease) during year due to:		
i. Plan amendment		$0
ii. Change in assumptions or methods		0
iii. Benefits paid		(5,308,968)
iv. Other (including increase for interest due to decrease in the discount period and benefits accumulated)		10,607,838
v. Net increase (decrease)		$5,298,870
c. Accumulated plan benefits end of year		$106,983,642

Note: The balance of the Supplemental Retirement Benefit Account is not included in the above.

Other Disclosures Required by the State of Florida

Year Beginning October 1,	2020	2021
Present value of active member:		
Future salaries (attained age)	$70,038,803	$80,574,970
Future contributions (attained age)	7,508,160	8,637,637

Required Disclosure Under F.S. 112.664(1)

As required under F.S. Section 112.664(1) we have produced the following information:

(a) Total pension liability calculated based on mortality used in one of the last two Florida Retirement System (FRS) valuations. This actuarial valuation assumes mortality as used in the July 1, 2019 and 2020 actuarial valuation for special risk members of FRS.

(b) Total pension liability calculated using an assumed interest rate that is 200 basis points lower than that assumed in the valuation of the Plan.

(c) Determination of the number of months or years for which the current market value of assets is adequate to sustain the payment of expected retirement benefits.

(d) Recommended contribution to the Plan using the most recent valuation and the contributions necessary prepared pursuant to (a) and (b) stated as a dollar amount and % of payroll.

	2% Decrease (5.20%)	Current Discount Rate (7.20%)	2% Increase (9.20%)
Total pension liability	$145,707,052	$114,886,732	$93,974,724
Plan fiduciary net position	(115,038,531)	(115,038,531)	(115,038,531)
Net pension liability	$30,668,521	$(151,799)	$(21,063,807)
Plan fiduciary net position as a percentage of the total pension liability	78.95%	100.13%	122.41%
Years of benefit payments:			
Expected for current members:	100	100	100
Paid for with current assets:	19.00	26.05	100.00
City Plus State Contribution Requirement, Plus Expected Employee Contributions			
Dollar Amount	$7,875,325	$4,311,650	$2,080,467
Percent of Payroll	82.76%	45.31%	21.86%

Note: Exhibits in Section 2 of this report entitled 'Present Value of Benefits' and 'Accrued Liability' exclude the Supplemental Retirement Benefit Account balance because it is deducted from the Actuarial Value of Assets for the funding valuation. The total pension liability shown above includes the Supplemental Retirement Benefit Account balance of $2,406,202.

Required Disclosure Under F.S. 112.664(2)(b)2.

F.S. Section 112.664(2)(b)2. - For the previous five years, beginning with 2013, a side-by-side comparison of the plan's assumed rate of return compared to the actual rate of return, as well as the percentages of cash, equity, bond and alternative investments in the plan portfolio.

Year Ending September 30,	**2021**	**2020**	**2019**	**2018**	**2017**
Assumed rate of return	7.20%	7.30%	7.30%	7.85%	7.85%
Actual rate of return	20.4%	9.3%	3.6%	9.3%	12.9%
Percentages of assets in:					
Cash	3%	2%	3%	3%	3%
Equity	66%	68%	65%	66%	63%
Bond	16%	15%	16%	15%	17%
Alternative	15%	15%	16%	16%	17%
Total	100%	100%	100%	100%	100%

Section 4 Supplementary Information

Summary of Participant Data

Member Statistics

Year Beginning October 1,	2020	2021
Active Participants		
Number	85	96
Average Age	37.3	37.0
Average Credited Service	9.5	9.2
Percent Male	91.8	88.5
Average Valuation Salary	$91,233	$93,713
Total Valuation Salary (Prior to Impute)	$7,754,803	$8,996,410
Total Valuation Salary (Imputed to Next Year)	$8,201,154	$9,516,125
Payroll Expected in Funding Year	$7,682,264	$8,967,871
Accumulated Employee Contributions With Interest	$11,783,740	$13,123,576
Multiplier Purchase Contributions With Interest	$154,166	$171,039
Terminated With Rights to Deferred Benefits		
Number	2	2
Average Age	36.9	37.9
Percent Male	100.0	100.0
Average Monthly Benefit	$3,407	$3,407
DROP		
Number	13	12
Average Age	48.5	49.1
Percent Male	100.0	100.0
Average Monthly Benefit	$6,574	$6,646
DROP Balances	$1,401,750	$2,246,219

Member Statistics (Continued)

Year Beginning October 1,	**2020**	**2021**
Service Retirements		
Number	65	66
Average Age	63.0	63.9
Percent Male	96.9	97.0
Average Monthly Benefit	$5,134	$5,217
Beneficiaries		
Number	7	7
Average Age	64.4	65.4
Percent Male	0.0	0.0
Average Monthly Benefit	$4,749	$4,820
Disability Retirements		
Number	4	4
Average Age	58.6	59.6
Percent Male	75.0	75.0
Average Monthly Benefit	$2,486	$2,523
Total In Payment Status		
Number	76	77
Average Age	62.9	63.8
Percent Male	86.8	87.0
Average Monthly Benefit	$4,959	$5,041

Number of Active Members by Age and Service as of October 1, 2021

	Service							
Age	<1	<5	<10	<15	<20	<25	<30	Total
<20	1							1
<25	7	4						11
<30	3	8						11
<35	3	6	5	4				18
<40	2	2	2	7	7			20
<45		1	4	3	11			19
<50				3	5			8
<55			1	2				3
<60					4			4
<65					1			1
Total	16	21	12	19	28			96

Active Valuation Pay by Age and Service as of October 1, 2021

	Service							
Age	<1	<5	<10	<15	<20	<25	<30	Total
<20	60,566							60,566
<25	58,877	71,810						63,580
<30	52,055	75,532						69,129
<35	63,008	74,752	103,390	110,307				88,651
<40	61,345	82,318	107,174	113,416	110,453			103,438
<45		83,990	99,908	113,764	111,532			107,988
<50				106,921	118,403			114,097
<55			95,594	112,752				107,033
<60					106,075			106,075
<65					101,637			101,637
Total	58,786	75,649	102,210	111,721	111,356			93,713

Reconciliation of DROP Accounts

Year Ending September 30,	**2020**	**2021**
DROP Balances as of Beginning of Year	828,957.93	1,401,750.37
Additions	951,235.71	997,166.72
Investment Return	49,518.62	84,957.81
Distributions	427,961.89	237,655.72
DROP Balances as of End of Year	1,401,750.37	2,246,219.18

Reconciliation of Plan Participants

	Active	Deferred	DROP	Retiree	Survivor	Disabled	Totals
October 1, 2020	**85**	**2**	**13**	**65**	**7**	**4**	**176**
Active							
To Nonvested Term	(5)						(5)
DROP							
To Retiree			(1)	1			0
New Hires	16						16
October 1, 2021	**96**	**2**	**12**	**66**	**7**	**4**	**187**

Outline of Plan Provisions

Plan Type: Single-employer Defined Benefit Pension Plan

Legal Authority: The Plan was established and is amended by local ordinance.

Effective Date: July 1, 1977. The Plan was most recently amended December 9, 2019 with some items retroactively effective October 29, 2018 and November 25, 2019 with Ordinance No. 190-10-141.

Plan Administrator: The Board of Trustees

Board Composition: Two members are elected from among the fire employees of the City, who are members of the plan, two city residents appointed by the Commission and one person is chosen by a majority of the previous four members.

Plan Year: The 12-month period from October 1st to the following September 30th.

Funding Requirements: Employer contributions are actuarially determined and subject to State statute. Employee contributions are as described below and may be amended by ordinance.

Premium Tax Revenues: State insurance premium tax revenues remitted annually to the City which are collected on casualty insurance policies in the City in accordance with Florida Statutes (F.S.) Chapter 175. Commencing October 1, 2016, the City and union mutually consent that 50% of the Premium Tax Revenues received by the City are used to reduce its pension contributions or the UAL (whichever the City prefers), and 50% used to fund the "Supplemental Retirement Benefit Account."

Member: Firefighters become Members immediately upon hire (after medical examination and the firefighter acceptance of the terms and conditions which may include a declaration of ineligibility for disability benefits, designation of a Beneficiary and authorization for Employee Contribution deductions). Employees hired prior to October 1, 2009 are part of Tier One. Employees hired on or after October 1, 2009 are part of Tier Two.

Actuarial Equivalence: Actuarial Equivalence is determined using an interest rate of 7.0% and the 1971 Group Annuity Mortality Table for males.

Credited Service: Years and completed months of service (omitting intervening years and fractional parts of years when not employed as a full-time firefighter by the City) for which Employee Contributions are not withdrawn. Credited Service may be granted for an authorized leave of absence (not more than 6 months) and military leave (not more than 5 years assuming the member returns to service within one year).

Vesting: 100% upon earning ten years of Credited Service.

Earnings: Fixed monthly remuneration paid by the City to a firefighter, excluding overtime, bonuses and any other non-regular payment.

Employee Contributions: Effective October 1, 1997, 13.72% of Earnings. Ordinance No. 190-10-141 revised employee contributions as shown below.

Effective	Percentage of Earnings
10/01/1997	13.72%
10/30/2018	12.72%
10/01/2019	11.72%
10/01/2020	10.72%

Effective November 25, 2019, Employee Contributions are payable during DROP participation at a rate of 3.0% of Earnings. However, Tier One Members do not contribute 3% of Earnings until after the first five years of DROP participation if they (1) were in the DROP on October 29, 2018 (and still in the DROP on November 25, 2019) or (2) were not eligible to enter into the DROP on October 29, 2018 but became eligible prior to November 25, 2019.

Accumulated Contributions means a member's own contributions and contributions picked up on behalf of a Member, plus interest compounded annually. All benefits payable under this system are in lieu of a refund of Accumulated Contributions. In any event, each Member is granted the payment of benefits at least equal to Accumulated Contributions with interest.

A Member who terminates non-vested is entitled to a refund of accumulated Employee Contributions with interest.

Vested Members who terminate employment prior to being eligible to receive an annuity may leave their Accumulated Contributions in the fund and begin commencement of the Accrued Benefit as early as age 50 as defined under the Early Retirement Benefit.

Contributions may be repaid with interest within 90 days after reemployment in order to maintain prior Credited Service.

<u>Average Monthly Earnings:</u> Prior to the changes in Ordinance No. 190-10-141, the Average Monthly Earnings for Tier One Members effective October 1, 2003 was 1/12 of the average of annual Earnings for the three highest consecutive years of the last ten full years immediately preceding the actual retirement or termination date. The Average Monthly Earnings for Tier Two Members who were to retire with 25 or more years of Credited Service was to be computed in the same manner. The Average Monthly Earnings for Tier Two Members who were to retire with less than 25 years of Credited Service was 1/12 of the average annual Earnings for the four highest consecutive years of the last ten full years immediately preceding the actual retirement or termination date.

Effective November 25, 2019 as provided by Ordinance No. 190-10-141, for Members not eligible for Normal Retirement at November 25, 2019, Average Monthly Earnings is the average of annual Earnings for the five highest consecutive years of the last ten full years immediately preceding the actual retirement or termination date. However, Average Monthly Earnings are not less than the Average Monthly Earnings determined on November 25, 2019 prior to Ordinance No. 190-10-141.

Note the wording in Ordinance No. 190-10-141 indicates the five-year average Earnings is applicable for prospective Credited Service as of November 25, 2019. However, as confirmed with the Board of Trustees, the five-year average is applicable to all Credited Service.

<u>Normal Retirement Date:</u> Effective October 1, 1998, the first day of the month coincident with or next following the earliest of (i) age 55 and completion of 10 years of Credited Service, or (ii) 20 years Credited Service, regardless of age.

<u>Normal Retirement Benefit:</u> The Accrued Benefit.

<u>Accrued Benefit:</u> Effective for Members retiring on or after November 25, 2019 who are part of Tier One:

3.0% x Average Monthly Earnings x Credited Service Prior to 10/1/2003

Plus

4.0% x Average Monthly Earnings x Credited Service on or After 10/1/2003 and Prior to 11/25/2019

Plus

3.0% of Average Monthly Earnings x Credited Service on or After 11/25/2019

The 3.0% multiplier on Tier One Credited Service on or after November 25, 2019 is in effect for those who were not Normal Retirement eligible on November 25, 2019. For Tier One Members who were Normal Retirement eligible by November 25, 2019 the 4.0% multiplier continues for Credited Service on or after November 25, 2019.

The Tier Two Accrued Benefit is 3.0% x Average Monthly Earnings x Credited Service, limited to not more than 75% of Average Monthly Earnings. Tier Two members may increase their pension multiplier to 3.5% provided all costs associated with such an increase (or its actuarially equivalent cost) are borne solely by the Tier Two Member as determined by the Plan actuary. Tier Two members who increase their pension multiplier to 3.5% are not subject to the 75% cap. In no circumstance should a Tier Two Member's total benefit exceed 100% of Average Monthly Earnings.

This benefit is payable as a 10-year certain and continuous annuity.

Early Retirement Date: The first day of the month coincident with or next following the attainment of age 50 and the completion of 10 years of Credited Service.

Early Retirement Benefit: The Accrued Benefit reduced by 3% per year by which the commencement of benefits precedes the Normal Retirement Date.

Delayed Retirement Date: A date following the Normal Retirement Date upon which a Member actually retires.

Delayed Retirement Benefit: On the first day of any month coincident with or next following the Delayed Retirement Date, the benefit payable is computed as described under the Normal Retirement Benefit based on Average Monthly Earnings and Credited Service as of the Delayed Retirement Date.

Cost-of-Living Adjustment (COLA): Prior to the changes in Ordinance No. 190-10-141, the COLA for Tier One Members effective October 1, 2006 was a 1.5% annual COLA is payable after three years of retirement or DROP participation (for both then current and future retirees). Tier Two Members' monthly retirement benefits were to be increased annually after three years of retirement or DROP participation by the net investment return of the Plan, not less than 0% and not more than 1.5% annually. The COLAs described in this paragraph continue to be payable for Members who were Normal Retirement eligible on November 25, 2019 or who terminated employment due a vested deferred benefit prior to November 25, 2019.

With the adoption of Ordinance No. 190-10-141, for all Members who were not Normal Retirement eligible on November 25, 2019 only the portion of the monthly retirement benefit for Credited Service earned on or before October 29, 2018 will have COLAs applied as described prior to this ordinance amendment. For Credited Service earned after October 29, 2018, a 1% annual COLA is payable after five years of retirement. However, a total of eight 1% COLAs are granted during the Member's lifetime.

Following the death of the retiree, the COLA is paid to each beneficiary.

Variable Benefit: For all firefighters employed on or after October 1, 1997, a Variable Benefit will be paid, effective October 1, 1999. Effective each October 1, a benefit increase of no more than 3% may be granted which is funded solely based on the investment return of the system and only in such amount as exceeds both (1) the investment return assumed for purpose of the actuarial valuation and (2) the total experience gains as compared to actuarial assumptions. Members who retired during the prior fiscal year are provided a prorata increase reflecting the number of payments they received divided by 12.

Supplemental Benefit: This type of benefit and the payment of such benefit shall be determined by negotiations between the City and the union.

The Supplemental Benefit will be paid only to eligible persons who retired on or after October 1, 2000. The first Supplemental Benefit is paid effective October 1, 2003, if funding is available.

The "Supplemental Retirement Benefit Account" is annually funded with 75% of the prior year's actuarial gain remaining after the application of payment of the Variable Benefit plus

- prior to October 1, 2016, with any increase in State contributions over that received for fiscal 1997 in the amount of $167,361 after all minimum benefits are paid; and
- effective October 1, 2016, 50% of annual Premium Tax Revenues.

In practice, the Supplemental Benefit payable in the year from October 1, 2016 to September 30, 2017 was based on the Supplemental Retirement Benefit Account balance on October 1, 2016 determined using the funding described in the first bullet, above. The Supplemental Benefit payable in the year from October 1, 2017 to September 30, 2018 was based on the Supplemental Retirement Benefit Account balance on October 1, 2017 determined using the funding described in the second bullet, above.

The Supplemental Benefit is re-determined each October 1 in an amount equal to the Supplemental Retirement Benefit Account divided by the total number of retirees and vested participants. Payments are made on a monthly basis. In no event will the Supplemental Benefits paid to a retiree exceed one year's payment of individual retiree health insurance provided by the City for the previous year ending September 30.

All funds not distributed to retirees remain in the Supplemental Retirement Benefit Account to be used for additional future benefits to eligible retirees and their eligible designated beneficiaries. The accumulated balance of Premium Tax Revenues received prior to 2016 are used to fund benefits payable from the Supplemental Retirement Benefit Account. Note that as Supplemental Benefits are paid, the accumulated balance of Premium Tax Revenues is reduced.

The Supplemental Benefit is paid to the beneficiaries of eligible retirees if the retiree was retired or eligible to retire as of September 30, 2016. For all other individuals who retired on or after October 1, 2016 <u>and</u> who were not eligible to retire until on or after October 1, 2016, the Supplemental Benefit terminates upon death.

Participants in the DROP do not receive the Supplemental Benefit until commencement of retirement benefits after the end of the DROP.

<u>Disability Retirement:</u> Members become eligible for service incurred disability benefits immediately upon Plan entry. Members become eligible for non-service incurred disability benefits upon earning 2 years of Credited Service.

The benefit payable to any Member who is wholly prevented either mentally or physically from rendering useful and efficient service as a firefighter is the greater of (i) 50% of the rate of monthly Earnings in effect on the date of disability and (ii) the Accrued Benefit. Total benefits paid (including workers compensation for example) shall not exceed 100% of the employee's salary.

The Average Final Compensation used in the calculation of the Accrued Benefit is the average taken over the period of actual employment if employed fewer than the number of years in the applicable number of years in the averaging period.

This benefit is payable as a 10-year certain and continuous annuity.

Members may be required to undergo a reexamination annually to confirm continued existence of the disability condition. In the event of recovery from disability, the period of time while disabled is included as Credited Service in future retirement benefits for (i) those who are immediately reemployed as a firefighter upon recovery, and (ii) those who are not immediately reemployed as a firefighter because they were not offered a position. Members who are offered reemployment and do not accept are treated as if they terminated employment on the date of disability.

At age fifty-five (55), the firefighter shall have the option of converting the disability to a normal retirement benefit, provided eligibility requirements are met.

<u>Death Benefits:</u> For purposes of death benefits, the date of death is treated as being the end of the calendar month in which the member dies.

In the event of service incurred death, the benefit payable is the amount greater in value between a monthly benefit equal to 20% of the rate of monthly Earnings at the time of death or a refund of contributions with interest. The monthly benefit is payable to the Spouse until the death of the Spouse. If there is no Spouse or upon the death of the Spouse, the monthly benefit is divided equally among the Member's surviving children under the age of 18 until the youngest child reaches the age of 18. If there is no Spouse and the value of a refund of contributions with interest is greater than the value of the monthly benefit, the refund of contributions with interest is divided equally amongst surviving children under the age of 18. The Member may choose one or more persons other than their spouse and children under the age of 18 to receive the refund of contributions with interest. If there is no designated beneficiary, no Spouse and no children under the age of 18, the refund of contributions with interest is payable to the Member's estate.

In the event of service incurred death of a firefighter who had earned at least 10 years of Credited Service at the time of their death, the beneficiary may instead elect to receive the Accrued Benefit payable as a 10-year certain only annuity commencing when the Member would have reached their Normal Retirement Date, or with reduction for early commencement as defined for an early retirement benefit payable at the Early Retirement Date.

In the event of non-service incurred death of an active Member who has attained their Normal Retirement Date or the Early Retirement Date, a death benefit is payable to the Member's Spouse as if the Member retired from employment on the date of death, elected to receive a benefit in the form of a 50% joint and survivor annuity, and died the next day. Upon the death of the surviving Spouse, this monthly benefit is divided equally among the Member's surviving children under the age of 18 until the youngest child reaches the age of 18. If at the time of death there is no Spouse, the monthly benefit is payable in the form of a 10-year certain and continuous annuity where the monthly benefit is divided equally among the Member's surviving children under the age of 18 until the youngest child reaches the age of 18. However, at the election of the Spouse or children (for a Member who did not designate a beneficiary other than their Spouse or children), a firefighter who has continued employment beyond his Normal Retirement Date and has made an election as to the form of benefit desired upon retirement prior to death, the monthly benefit will be paid in the form of benefit chosen by the Member as if the Member retired on the day of death. For Members who designated a beneficiary other than their Spouse or children, the designated beneficiary is entitled to receive the Accrued Benefit payable as a 10-year certain only annuity commencing when the Member would have reached their Normal Retirement Date, or with reduction for early commencement as defined for an early retirement benefit payable at the Early Retirement Date.

In the event of non-service incurred death of an active Member who is not eligible for Normal Retirement or Early Retirement, and the Member earned less than 10 years of Credited Service at the time of death, a refund of employee contributions with interest is payable. For Members who had earned at least 10 years of Credited Service at the time of their death, the designated beneficiary is entitled to receive the Accrued Benefit payable as a 10-year certain only annuity commencing when the Member would have reached their Normal Retirement Date, or with reduction for early commencement as defined for an early retirement benefit payable at the Early Retirement Date.

<u>Optional Forms of Benefit:</u> The Accrued Benefit described above is payable in the form of a 10-year certain and continuous annuity (except as noted to be a 10-year certain only annuity under certain death benefits). Members may optionally choose an actuarially equivalent single life annuity, joint and survivor annuity (based on a fraction designated by the Member), a joint and last survivor annuity (with 50%, 66 2/3%, 75%, or 100% continuance), or joint and survivor annuity with an optional "pop-up" to the single life annuity form in the event the beneficiary predeceases the Member. Members may also choose benefits to be paid in any form approved by the board so long as actuarial equivalence with the benefit otherwise payable is maintained. The value of optional benefits shall be actuarially equivalent to the value of benefits otherwise payable, and the present value of payments to the retiring Member must be at least equal to 50% of the total present value of payments to the retiring Member and his beneficiary.

<u>Deferred Retirement Option Plan (DROP):</u> Effective October 1, 2003, Tier One Members are eligible to enter the DROP on the first day of the month following the Member's completion of 20 years of Credited Service or upon earning a pension benefit equal to 80%. For Tier One Members who enter the DROP more than 90 days after attaining the 80% Accrued Benefit, the amount of time after the accrual of the 80% benefit until the entry into the DROP will result in a commensurate reduction in the maximum time allowed for DROP participation.

Members with 20 years of Credited Service as of October 1, 2000 were eligible to elect within a 90-day period after the enactment of this section to enter the DROP retroactively to October 1, 2000. The maximum participation in the DROP was 36 months as of October 1, 2000.

As provided by Ordinance No. 040-07-152, effective September 13, 2004 the maximum DROP participation period was extended to 60 months. Members in the DROP at the time of this change were allowed to extend their DROP participation so that their maximum participation in the DROP was 60 months.

As provided by Ordinance No. 190-10-141, effective November 25, 2019 the maximum DROP participation period is extended to 84 months. Members in the DROP at the time of this change may extend their DROP participation so that their maximum participation in the DROP is 84 months. However, any Member whose DROP period was limited due to having reached their 80% multiplier may only extend their DROP participation by 24 months from the time their DROP period was to expire previously.

Prior to the changes in Ordinance No. 190-10-141, Tier Two Members were to become eligible to enter the DROP on the first day of the month following completion of 25 years of Credited Service for a maximum period of 60 months where the DROP term was to be reduced one month for each month of eligibility following the completion of 25 years of Credited Service during which the Member did not participate in the DROP. As provided by Ordinance No. 190-10-141, effective November 25, 2019 Tier Two Members become eligible to enter the DROP on the first day of the month following completion of 20 years of Credited Service for a maximum period of 84 months where the DROP term is reduced one month for each month of eligibility following completion of 25 years of Credited Service during which the Member does not participate in the DROP.

DROP participants are not eligible for death or disability benefits.

The Accrued Benefit is frozen at DROP entry. No payment shall be made for accrued unused leave upon entering the DROP, nor shall the amount of accrued unpaid leave be used in the calculation of the amount of pension benefits.

See "Employee Contributions" which describes Employee Contributions that are made during DROP participation.

The monthly retirement benefits, including any variable benefits that would have been payable had the Member elected to cease employment and not join the DROP, are deposited in the participant's DROP account. Prior to the changes in Ordinance No. 190-10-141, these payments were accumulated with interest, credited quarterly, at a rate equal to the actual rate of return achieved by the trust fund net of investment expenses (where DROP account earnings for Tier Two Members was never to be less than 0%). At the option of the Tier One Member, the DROP account is credited at a fixed rate as determined by the board of trustees (currently 65.625% of the Plan's actuarially assumed investment return), but no higher than the actuarially assumed investment earnings. As provided by Ordinance No. 190-10-141, effective November 25, 2019 DROP interest crediting is revised to the actual rate of return achieved by the trust fund net of investment expenses with a floor of zero and a cap of 5% each fiscal year. Members in the DROP on October 29, 2018 (and still in the DROP on November 25, 2019) and Members who were not eligible for the DROP on October 29, 2018 but who became eligible to enter the DROP prior to November 25, 2019 continue to be eligible for the crediting as defined prior to change for the first five years of DROP. Following resignation and prior to distribution, a rate of interest, as determined by the board of trustees, shall be credited to the participant's DROP account.

As directed by the Board of Trustees, ordinance language which says "the gross return of the Fund less the Fund's administrative costs" means the actual rate of return achieved by the fund net of investment expenses as reported by the investment monitor.

Within 30 days following the end of any calendar quarter after the termination of the Member's employment as a firefighter, the balance credited to the DROP account is distributed in a single lump sum, either directly to the Member (subject to applicable tax withholding) or as a direct rollover.

<u>Defined Contribution Plan Component</u>: Ordinance No. 160-01-100 was adopted effective February 8, 2016 which created a defined contribution (DC) component to the Plan. This component of the Plan is not activated until a portion of Chapter 175 premium tax revenues have been assigned to fund the DC Plan.

Description of Assumptions and Methods

Net Assumed Rate of Investment Return: 7.2% per year, net of investment expenses

Salary Increase – Individual: Salary increases vary based on service as follows:

Service	Rate	Service	Rate
0	8.25%	11	5.25%
1	8.00%	12	5.00%
2	7.75%	13	4.75%
3	7.50%	14	4.50%
4	7.25%	15	4.30%
5	7.00%	16	4.22%
6	6.50%	17	4.19%
7	6.25%	18	4.16%
8	6.00%	19	4.14%
9	5.75%	>=20	4.11%
10	5.50%		

Mortality: The mortality table is that used for special risk employees in the valuation of the Florida Retirement System (FRS) as of July 1, 2019 and 2020, as required by state statue.

The following sex distinct tables are used with fully generational mortality improvements using sex distinct Scale MP-2018.

Active:	Male:	PubS.H-2010(B) male employee set forward 1 year
	Female:	PubS.H-2010 female employee set forward 1 year
Healthy Retiree:	Male:	PubS.H-2010(B) male healthy retiree set forward 1 year
	Female:	PubS.H-2010 female healthy retiree set forward 1 year

The following sex distinct tables are used with no mortality improvement projection.

Disabled Retiree:	Male:	80% PubG.H-2010 male disabled retiree + 20% PubS.H-2010 male disabled retiree
	Female:	80% PubG.H-2010 female disabled retiree + 20% PubS.H-2010 female disabled retiree

Juvenile rates are used for ages 15-17.

The active tables reference the healthy retiree rates, above, at ages 80+.

The healthy retiree tables reference the active mortality rates, above, before age 44.

Retirement: Retirement is assumed at 50% of those eligible to retire or DROP with 20 through 24 years of service with 100% choosing to retire or DROP at 25 years of service or upon reaching age 55 with 10 years of service. DROP Members are assumed to retire on the valuation date such that no future employee contributions are expected.

Termination: Unisex rates, as follows:

Service	Rate	Service	Rate
0	6.0%	6	3.5%
1	5.5%	7	3.0%
2	5.3%	8	2.8%
3	5.0%	9	2.7%
4	4.5%	10	2.6%
5	4.0%	>=11	0.0%

Disability: Unisex rates, as follows:

Age	Rate	Age	Rate	Age	Rate	Age	Rate
15-21	0.14%	36	0.24%	46	0.59%	56	1.68%
22-25	0.15%	37	0.25%	47	0.70%	57	1.81%
26-27	0.16%	38	0.26%	48	0.79%	58	1.95%
28-29	0.17%	39	0.28%	49	0.90%	59	2.09%
30	0.18%	40	0.30%	50	1.00%	>=60	0.00%
31	0.19%	41	0.32%	51	1.10%		
32	0.20%	42	0.35%	52	1.20%		
33	0.21%	43	0.39%	53	1.31%		
34	0.22%	44	0.44%	54	1.43%		
35	0.23%	45	0.51%	55	1.55%		

On and Off Duty Disability and Death: 75% of disabilities are assumed to be in the line of duty.

Percentage Married at Retirement: 40% of active Members are assumed to be married at retirement and elect the 100% joint & survivor form of benefit.

Spouse Ages: Where spousal information was supplied, that information was used. Otherwise, wives are assumed to be three years younger than their husbands.

Administrative Expenses: Actual administrative expense for the prior year is added to the Normal Cost.

Actuarial Value of Assets: The market value of assets is adjusted to recognize gains and losses over a four-year period. The Actuarial Value of Assets shall not be more than 120% or less than 80% of the market value of assets.

Funding Method: Entry Age Normal (level percent of salary).

A description of the funding method is found on the next page entitled "Glossary of Actuarial Terms."

Glossary of Actuarial Terms

Present Value of Benefits (PVB): The present value, as of the valuation date, of all benefits that will become payable by the Plan for the current group of members in the census.

Normal Cost (NC): Under the Individual Entry Age Normal Cost Method, the annual normal cost for each individual active member is determined as the amount, from the date of employment to the date of retirement, sufficient to accumulate the value of the member's benefit at the time of retirement. The annual normal cost is a constant percentage of the member's projected covered pay.

Accrued Liability (AL): This is the portion of the PVB attributable to the past at the valuation date. For active members, AL is the annual NC accumulated from date of entry to the valuation date for each member. For retired and terminated members, the PVB and the AL are equal. The AL is the estimated liability owed by the pension fund at the valuation date.

Unfunded Accrued Liability (UAL): Any excess of the Accrued Liability over the fund assets. A negative UAL indicates fund assets are greater than the Accrued Liability, otherwise known as a surplus. Actuarial gains/(losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Actuarial Value of Assets: The value of assets used in the actuarial valuation of the Plan which is compared to the AL to determine the UAL and minimum funding requirements. A method may be used to smooth out short term volatility in the fair market value of assets. In this valuation, the Actuarial Value of Assets has been calculated to smooth out unexpected fluctuations in the fair market value of assets over a 4-year period, less any reserve of State contributions.