



City of Miami Fire Fighters' and Police Officers' Retirement Trust

October 1, 2023 | Actuarial Valuation Report

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At the request of the plan sponsor, this report summarizes the City of Miami Fire Fighters' and Police Officers' Retirement Trust as of October 1, 2023. The purpose of this report is to communicate the following results of the valuation:

- Determine Funded Status; and
- Determine Recommended Contribution for the fiscal year October 1, 2024 through September 30, 2025.

This report has been prepared in accordance with the applicable Federal and State laws. Consequently, it may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The results in this report were prepared using information provided to us by other parties. The census information has been provided to us by the plan administrator. Asset information has been provided to us by the plan administrator. We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we have made assumptions we believe to be reasonable. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report. A summary of the data used in the valuation is included in this report.

The actuarial assumptions and methods were chosen by the Board. In our opinion, all actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan. 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);
and
- changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement. This report has been prepared in accordance with generally accepted actuarial principles and practice.

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.

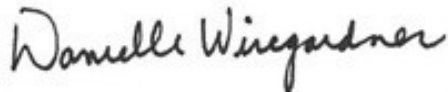
With respect to reporting standards for defined benefit retirement plans or systems contained in Section 112.664(1), F.S., the actuarial disclosures required under this section were prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, meet the requirements of Section 112.664 (1), Florida Statutes, and Rule 60T-1.0035, Florida Administrative Code.

In preparing these results, Nyhart used ProVal valuation software developed by Winklevoss Technologies, LLC. This software is widely used for the purpose of performing pension valuations. We coded the plan provisions, assumptions, methods, and participant data summarized in this report, and reviewed the liability and cost outputs for reasonableness. We are not aware of any weaknesses or limitations in the software, and have determined it is appropriate for performing this valuation.

Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States and are available for any questions.

Nyhart



Danielle Winegardner, FSA, EA, MAAA
Enrolled Actuary No. 23-08260



Lawrence Watts, Jr., FSA, EA, FCA, CFA, MAAA
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May 1, 2024
Date

Copies of this Report are to be furnished to the Division of Retirement within 60 days of receipt from the actuary at the following addresses:

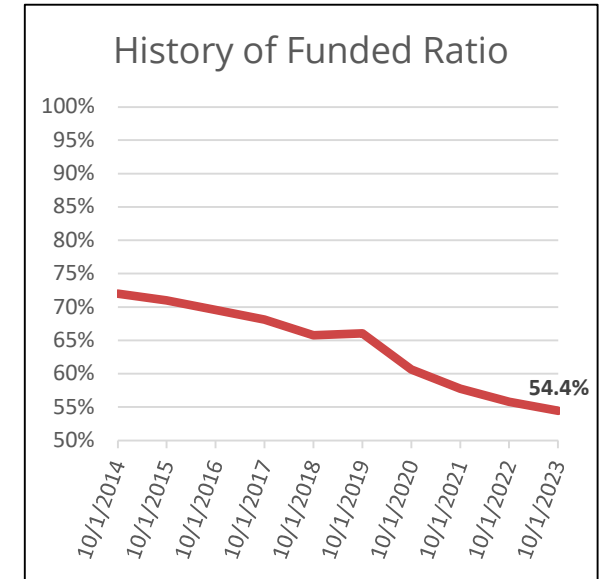
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Summary Results

The actuarial valuation's primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The accrued liability is based on an entry age level percentage of pay.

	October 1, 2022	October 1, 2023
Funded Status Measures		
Accrued Liability	\$2,168,641,844	\$2,227,255,645
Actuarial Value of Assets	1,209,691,816	1,210,996,538
Unfunded Accrued Liability	\$958,950,028	\$1,016,259,107
Funded Percentage (AVA)	55.8%	54.4%
Funded percentage (MVA)	49.8%	51.1%
Cost Measures ¹		
Recommended Contribution For Next Fiscal Year	\$112,614,019	\$119,076,484
Recommended Contribution (as a percentage of payroll)	59.9%	63.0%
Asset Performance		
Market Value of Assets (MVA)	\$1,080,862,803	\$1,138,061,164
Actuarial Value of Assets (AVA)	\$1,209,691,816	\$1,210,996,538
Actuarial Value/Market Value	111.9%	106.4%
Participant Information		
Active Participants	1,926	1,855
Terminated Vested Participants	18	17
Terminated, Due Refund	115	132
Retirees, Beneficiaries, and Disabled	2,033	2,018
DROP Participants	203	256
Total Participants	4,295	4,278
Valuation Payroll	\$187,880,152	\$189,067,815
Total Payroll	\$206,962,544	\$212,137,200



¹Does not include any contribution to the Stabilization Trust. Please see page 45 for more information.

Changes Since Prior Valuation and Key Notes

The assumed administrative expense decreased from \$2,079,777 to \$2,039,789.

As of 10/1/2023, there was a change in the asset allocation method between the Member and Benefits Account and the COLA Fund. Historically, the assets were allocated based on Book Value. Beginning 10/1/2023, the assets will be allocated based on Market Value. The assets reported for the Actuarial Valuations will match the Financial Statements.

There have been no other assumption changes or plan changes since the prior valuation.

Five Year Valuation Summary

	10/1/2019	10/1/2020	10/1/2021	10/1/2022	10/1/2023
Funding					
Accrued Liability	\$1,822,559,347	\$1,940,883,223	\$2,100,049,297	\$2,168,641,844	\$2,227,255,645
Actuarial Value of Assets	\$1,189,509,806	\$1,176,911,870	\$1,213,074,854	\$1,209,691,816	\$1,210,996,538
Unfunded Actuarial Accrued Liability	\$633,049,541	\$763,971,353	\$886,974,443	\$958,950,028	\$1,016,259,107
Funded Percentage	65.3%	60.6%	57.8%	55.8%	54.4%
Actual Employer Contribution ¹	\$62,773,727	\$65,889,915	\$99,369,914	TBD	TBD
Recommended Contribution	\$62,773,727	\$65,889,915	\$99,369,914	\$112,614,019	\$119,076,484
Recommended Contribution (% of Pay)	37.4%	37.3%	55.7%	59.9%	63.0%
Interest Rate	7.34%	7.00%	7.00%	7.00%	7.00%
Expense Load Assumption	\$2,181,634	\$2,137,199	\$2,244,059	\$2,079,777	\$2,039,789
Rate of Return					
Actuarial Value of Assets	6.5%	6.3%	8.6%	5.2%	4.4%
Market Value of Assets	6.1%	5.7%	19.3%	-12.4%	10.2%
Demographic Information					
Active Participants	2,003	1,931	1,915	1,926	1,855
Terminated Vested Participants	22	27	31	18	17
Terminated, Due Refund	106	116	117	115	132
Retirees, Beneficiaries, and Disabled	2,072	2,080	2,036	2,033	2,018
DROP Participants	122	145	187	203	256
Total Participants	4,325	4,299	4,286	4,295	4,278
Valuation Payroll	\$168,059,448	\$176,212,600	\$178,532,455	\$187,880,152	\$189,067,815
Average Pay	\$83,904	\$91,514	\$93,228	\$97,549	\$101,923

¹ Recommended contribution is for the following fiscal year (e.g., the October 1, 2023 recommended contribution will be made in the fiscal year beginning October 1, 2024 and will be documented in the October 1, 2025 valuation report).

Plan Maturity Measures – October 1, 2023

Each pension plan has a distinct life-cycle. New plans promise future benefits to active employees and then accumulate assets to pre-fund those benefits. As the plan matures, benefits are paid and the pre-funded assets begin to decumulate until ultimately, the plan pays out all benefits. A plan's maturity has a dramatic influence on how risks should be viewed. The following maturity measures illustrate where the City of Miami Fire Fighters' and Police Officers' Retirement Trust falls in its life-cycle.

Duration of Liabilities: 10.0

Duration is the most common measure of plan maturity. It is defined as the sensitivity of the liabilities to a change in the interest rate assumption. The metric also approximates the weighted average length of time, in years, until benefits are expected to be paid. A plan with high duration is, by definition, more sensitive to changes in interest rates. A plan with low duration is more susceptible to risk if asset performance deviates from expectations as there would be less time to make up for market losses in adverse market environments while more favorable environments could result in trapped surplus from gains. Conversely, high duration plans can often take on more risk when investing, and low duration plans are less sensitive to interest rate fluctuations.

Demographic Distribution - Ratio of Actively Accruing Participants to All Participants: 43.4%

A plan with a high ratio is more sensitive to fluctuations in salary (if a salary-based plan) and statutory changes. A plan with a low ratio is at higher risk from demographic experience. Such a plan should pay close attention to valuation assumptions as there will be less opportunity to realize future offsetting gains or losses when current experience deviates from assumptions. Plans with a low ratio also have limited opportunities to make alterations to plan design to affect future funded status.

Asset Leverage - Ratio of Payroll for Plan Participants to Market Value of Assets: 16.6%

Younger plans typically have a large payroll base from which to draw in order to fund the plan while mature plans often have a large pool of assets dedicated to providing benefits to a population primarily consisting of members no longer on payroll. Plans with low asset leverage will find it more difficult to address underfunding, as the contributions needed to make up the deficit will represent a higher percentage of payroll than for a plan with high asset leverage.

Benefit Payment Percentage - Ratio of Annual Benefit Payments to Market Value of Assets: 13.2%

As a plan enters its decumulation phase, a larger percentage of the pre-funded assets are paid out each year to retirees. A high percentage is not cause for alarm as long as the plan is nearly fully funded. However, such a plan is more sensitive to negative asset performance, especially if cash contributions are not an option to make up for losses.

Identification of Risks

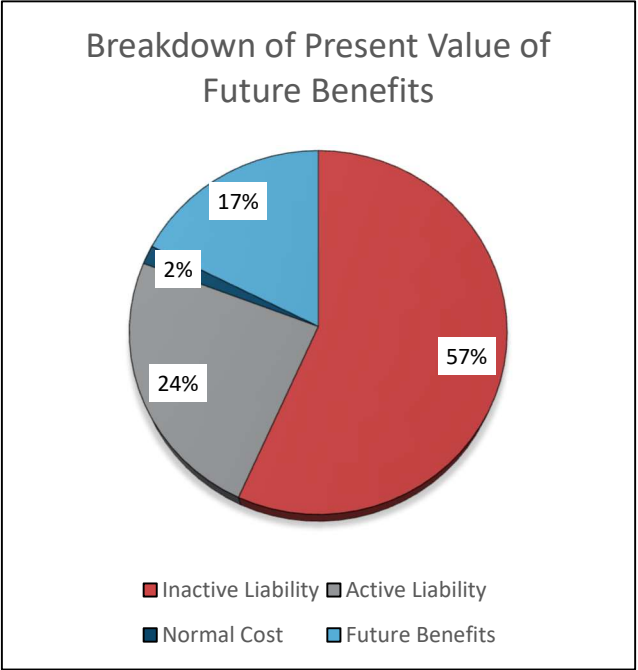
The results presented in this report are shown as single point values. However, these values are derived using assumptions about future markets and demographic behavior. If actual experience deviates from our assumptions, the actual results for the plan will consequently deviate from those presented in this report. Therefore, it is critical to understand the risks facing this pension plan. The following table shows the risks we believe are most relevant to the City of Miami Fire Fighters' and Police Officers' Retirement Trust. The risks are generally ordered with those we believe to have the most significance at the top. Also shown are possible methods by which a more detailed assessment of the risk can be performed.

Type of Risk	Method to Assess Risk
Investment Return	Scenario Testing; Asset Liability Study
Demographic	Scenario Testing
Participant Longevity	Stress Testing; Scenario Testing
Early Retirement	Stress Testing; Scenario Testing

Present Value of Future Benefits

The Present Value of Future Benefits represents the current future benefits payable to the participant.

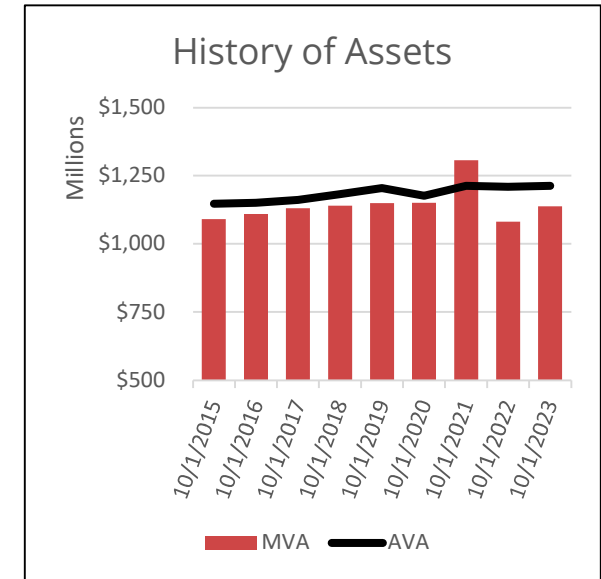
	October 1, 2023
Present Value of Future Benefits	
Active members	
Retirement	\$1,141,992,736
Disability	14,101,623
Death	9,723,179
Termination	26,516,301
Refund of contributions	1,882,411
Total active	\$1,194,216,250
Inactive members	
Retired members	\$1,168,325,779
DROP members	327,564,171
Beneficiaries	36,829,802
Disabled members	24,687,410
Terminated vested members	7,849,557
Total inactive	\$1,565,256,719
Total	\$2,759,472,969
 Present value of future payrolls	 \$2,331,736,442



Asset Information

The amount of assets backing the pension promise is typically the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly offsets the ultimate cost.

	October 1, 2023
Market Value Reconciliation	
Market value of assets, beginning of prior year	\$1,080,862,803
Change in asset allocation method	(16,133,134)
Employer contributions (incl. discounted accrued items)	99,369,914
Member contributions	16,887,734
Investment income, net expenses	109,776,653
Benefit payments and refunds	(150,638,878)
Administrative expenses	(2,063,928)
Other disbursements	0
Market value of asset, beginning of current year	\$1,138,061,164
Return on Market Value	10.02%
Actuarial value of assets	
Value at beginning of current year	\$1,210,996,538



Asset Information (continued)

Plan Assets are used to develop funded percentages and contribution requirements

October 1, 2023

1.	Expected market value of assets	
	(a) Market value of assets – beginning of prior year	\$1,080,862,803
	(b) Change in Asset Allocation Method	(\$16,133,134)
	(c) City Contributions	99,369,914
	(d) Member Contributions	16,887,734
	(e) Benefits Payments and Administrative Expenses	(152,702,806)
	(f) Expected return	76,813,840
	(g) Expected market value of assets – beginning of current year	\$1,105,098,351
2.	Market value of assets – beginning of current year	\$1,138,061,164
3.	Present value of COLA transfers	
	(a) Current year	\$0
	(b) Next year	0
	(c) Total	\$0
4.	Market value net COLA transfer [(2)-(3)]	\$1,138,061,164
5.	Amount subject to phase in [(4)-(1g)]	\$32,962,813
6.	Phase in of asset gain/(loss)	
	(a) Current Year [80% x \$32,962,813]	\$26,370,250
	(b) First Prior Year [60% x (\$253,140,368)]	(151,884,221)
	(c) Second Prior Year [40% x \$141,132,434]	56,452,974
	(d) Third Prior Year [20% x (\$19,371,884)]	(3,874,377)
	(e) Total Phase-In	(\$72,935,374)
7.	Preliminary actuarial value of assets – beginning of current year [(2)-(6e)]	\$1,210,996,538
8.	80% of Market value of assets	\$910,448,932
9.	120% of Market value of assets	\$1,365,673,396
10.	Adjusted actuarial value of assets	\$1,210,996,538
11.	Contribution surplus account balance	\$0
12.	Final actuarial value of assets – beginning of current year [(10)-(11)]	\$1,210,996,538
13.	Return on actuarial value of assets	4.40%

Reconciliation of Gain/Loss

October 1, 2023

Liability (gain)/loss

Present value of future benefits	\$2,707,982,425
Present value of employee contributions	(202,213,402)
Expected employee contribution	16,171,024
Benefit payments	(150,638,878)
Interest	171,352,614
Expected liability	\$2,542,653,783
Plan changes	0
Expected after changes	\$2,542,653,783
Actual liability	\$2,558,314,082
Liability (gain)/loss	\$15,660,299

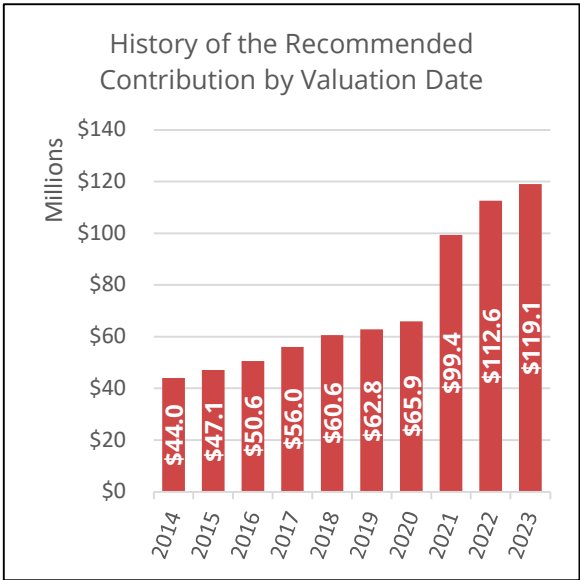
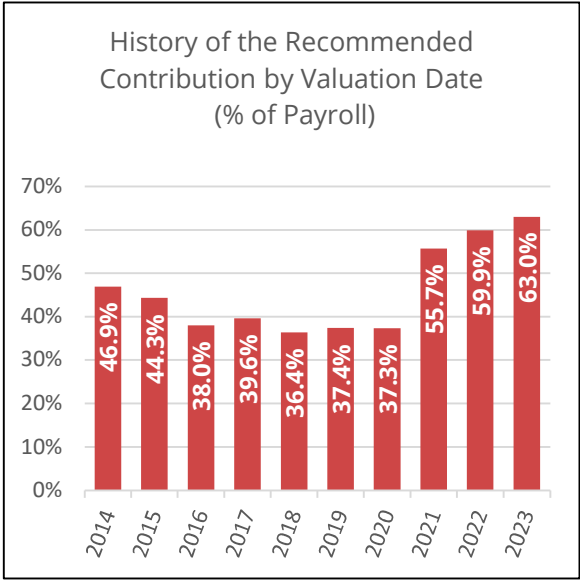
Asset (gain)/loss

Actuarial value of assets, beginning of prior year	\$1,209,691,816
Change in asset allocation method	(16,133,134)
Contributions	116,257,648
Benefit payments and expenses	(152,702,806)
Expected Investment return	85,831,871
Change in actuarial value of assets methodology	0
Expected actuarial value of assets, beginning of current year	\$1,242,945,395
Actual actuarial value of assets, beginning of current year	\$1,210,996,538
Asset (gain)/loss	\$31,948,857
Total (gain)/loss	\$47,609,156

Development of Recommended Contribution

The actuarial determined contribution is the annual amount necessary to fund the plan according to funding policies and/or applicable laws. The contribution as a percentage of payroll is based on valuation payroll as of October 1, 2023.

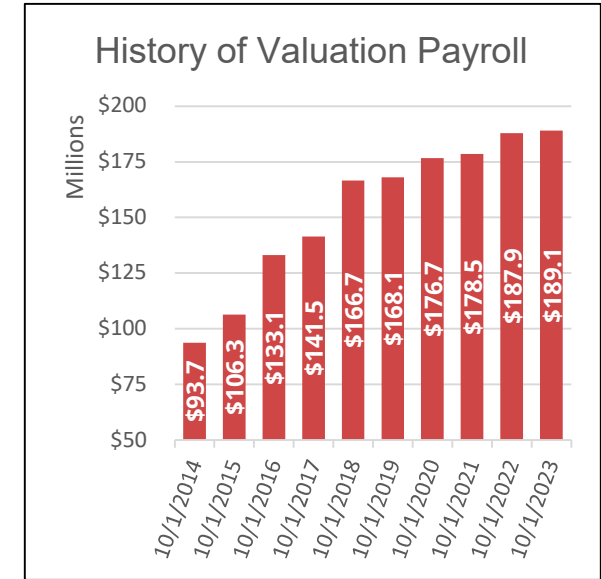
	October 1, 2023
1. Present value of future benefits	\$2,759,472,969
2. Actuarial value of assets	1,210,996,538
3. Present value of future member contributions	201,158,887
4. Present value of future normal Cost [(1)-(2)-(3)]	\$1,347,317,544
5. Present value of future payroll	\$2,331,736,442
6. Normal cost accrual rate [(4)/(5)]	57.78%
7. Administrative expenses	\$2,039,789
8. Valuation payroll	\$189,067,815
9. Applicable interest	7.00%
10. Normal cost	\$111,286,434
11. Interest to estimated payment date	\$7,790,050
12. Recommended contribution as of end of year at 7.00% [(10)+(11)]	\$119,076,484
13. As a percentage of valuation payroll	62.98%
14. As a percentage of total payroll	56.13%



Demographic Information

The foundation of a reliable actuarial report is the member information provided by the plan sponsor. Monitoring trends in demographic information is crucial for long-term pension planning.

	October 1, 2022	October 1, 2023
Member Counts		
Active Members	1,926	1,855
Retired Members	1,665	1,652
Beneficiaries	259	264
Disabled Members	109	102
Terminated Vested Members, due a Monthly Benefit	18	17
Terminated Members, Due a Refund of Employee Contributions	115	132
DROP Members	203	256
Total	4,295	4,278
Active Participant Demographics		
Average Age	38.0	38.3
Average Service	11.0	11.4
Average Compensation	\$97,549	\$101,923
Valuation Payroll	\$187,880,152	\$189,067,815
Total Payroll	\$206,962,544	\$212,137,200



Demographic Information (continued)

	October 1, 2022	October 1, 2023
Retired Member Statistics		
Average Age	67.4	67.8
Average Monthly Benefit	\$5,785	\$5,863
Beneficiary Statistics		
Average Age	77.5	77.9
Average Monthly Benefit	\$1,373	\$1,449
Disabled Member Statistics		
Average Age	73.0	72.8
Average Monthly Benefit	\$2,289	\$2,307
Terminated Member Statistics		
Average Age	40.0	39.8
Average Monthly Benefit for Participants due Monthly Benefit	\$3,215	\$3,395
Average Remaining Contributions for Participants Due a Refund	\$9,707	\$12,076
DROP Member Statistics		
Average Age	52.4	53.2
Average Monthly Benefit	\$8,843	\$8,557
Payroll	\$19,082,392	\$23,069,385

Participant Reconciliation

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Totals
Prior Year	1,926	133	109	1,868	259	4,295
Active						
To Terminated Vested	(3)	3				
To Retired	(79)			79		
To Disabled	(1)		1			
To Refund	(15)					(15)
To Due Refund	(16)	16				
To Death						
Terminated Vested						
To Retired		(1)		1		
To Refund		(12)				(12)
To Active	3	(3)				
Disabled						
To Death			(8)			(8)
Retired						
To Death				(42)		(42)
Survivor						
To Death					(16)	(16)
Additions	40	13		2	23	78
Removed					(2)	(2)
Current Year	1,855	149	102	1,908	264	4,278

Active Participant Schedule

Active participant information grouped based on age and service.

Age Group	Years of Service										Total	Average Pay
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
Under 25	14	32	1								47	\$54,034
25 to 29	9	79	122								210	78,733
30 to 34	11	46	305	57	2						421	90,066
35 to 39	2	23	217	122	105	6					475	103,241
40 to 44	1	5	84	59	145	44					338	113,701
45 to 49	1	2	19	24	71	83	15				215	122,153
50 to 54			6	10	36	32	14	3			101	122,987
55 to 59			2	3	9	11	6	9			40	125,727
60 to 64			2	1		2		2			7	110,834
65 to 69						1					1	116,160
70 & up											0	0
Total	38	187	758	276	368	179	35	14	0	0	1,855	101,923

Plan Status

January 1, 1994 amended January 1, 1995

Eligibility for Participation

Police officers and fire fighters.

Accrual of Benefits

The accrued benefit is determined as follows:

For Police Officers who were vested as of 9/27/2010:

3% of Average Final Compensation for the first 15 years of Creditable Service plus 3.5% of Average Final Compensation after 15 years. Maximum of 100% of Average Final Compensation.

For all other Police Officers:

3% of Average Final Compensation for the first 15 years of Creditable Service plus 3.5% of Average Final Compensation after 15 years. Maximum of 100% of Average Final Compensation and the final benefit may not exceed the larger of the 9/30/2010 accrued benefit and \$120,000.

For Firefighters who were vested as of 9/27/2010:

3% of Average Final Compensation for the first 15 years of Creditable Service plus 3.5% of Average Final Compensation after 15 years. Maximum of 100% of Average Final Compensation.

For all other Fire Fighters:

3% of Average Final Compensation for the first 15 years of Creditable Service plus 3.5% of Average Final Compensation after 15 years. Maximum of 100% of Average Final Compensation and the final benefit may not exceed the larger of the 9/30/2010 accrued benefit and \$120,000.

Benefits

Normal Retirement

Eligibility	Age plus Creditable Service equal to 68 (Rule of 68) for firefighters, except firefighters active 9/30/2009 who were eligible for Rule of 64 at 9/30/2009. Age plus Creditable Service equal to 64 (Rule of 64) for police officers. Age 50 with 10 years of Creditable Service for all members.
Benefit	Unreduced Accrued Benefit payable immediately.

Early Retirement

Eligibility	Completion of 20 years of Creditable Service.
Benefit	Accrued Benefit adjusted with actuarial equivalence for early commencement.

Late Retirement

Eligibility	Participation continues after normal retirement date.
Benefit	Accrued Benefit

Ordinary Death before Retirement

Eligibility	Participant with 3 years of Creditable Service who dies off duty.
Benefit	Between 3 and 10 years of Creditable Service: Lump sum benefit equal to 50% of Compensation received in year preceding death. After 10 years of Creditable Service and before eligibility for Early Service or Rule of 64 Retirement: Accrued benefit, deferred to earlier of police officer member's 49th and firefighter member's 50th birthday or Rule of 64 eligibility, payable for 10 years. Beneficiary does not have to survive deferred period or 10 years' certain period. If eligible for Service, Early Service, or Rule of 64 retirement, considered to have retired on the date of death. Surviving spouse would receive 40% of the member's monthly retirement allowance.

Accidental Death before Retirement

Eligibility	Member who dies during performance of duties.
Benefit	Pension of 50% of Average Final Compensation to spouse until death or remarriage. If there is no spouse, or if spouse dies or remarries before youngest child is 18, payable to child until attainment of age 18. If no spouse or no children under 18, benefit is payable to dependent parents. After 10 years of Creditable Service - Beneficiary receives benefit otherwise payable to member at early or normal retirement for a period of 10 years.

Termination Benefit

Eligibility	Fully vested after completion of 10 years of Creditable Service.
Benefit	Accrued Benefit payable at the member's Early or Normal Retirement Date. If the member terminates prior to 10 years of Creditable Service a refund of accumulated contributions with interest will be issued.

Ordinary Disability Benefit

Eligibility	Completion of 10 years of Creditable Service.
Benefit	90% of benefit rate times Average Final Compensation times Creditable Service, with a minimum benefit of 30% of Average Final Compensation. The normal form is a 10 year certain and life normal form.

Accidental Disability Benefit

Eligibility	Immediately upon permanent disability
Benefit	66 2/3% of Average Final Compensation, or 66 2/3% of Final Compensation, whichever is greater. The normal form is a 40% joint & survivor annuity, with a minimum of 10 years' certain and life.

Compensation

Earnable Compensation

An employee's base salary, including pick-up contributions, for all straight time hours worked, plus assignment pay and payments received for vacation and sick leave taken, jury duty, and death-in-family leave taken. Earnable compensation shall not include overtime pay; payments for accrued sick leave, accrued vacation leave, or accrued compensatory leave; holiday pay; premium pay for holidays worked; the value of any employment benefits or non-monetary entitlements; or any other form of remuneration.

Average Final Compensation

The annual earnable compensation of a member during either the last one year or the highest year of membership service, whichever is greater.

Provided, in no event shall the Average Final Compensation of any member who was employed as a police officer or fire fighter on 9/30/2010 and retires on or after 10/1/2010, be less than the highest year of membership service prior to 9/30/2010.

Creditable Service

For Vesting and Benefit Accrual

Service credited under Retirement System; military service (maximum of four years) during wartime for which Member makes contributions; maternity leave (maximum of 180 days for each leave) for which Member makes contributions; up to 5 years, without member contributions, if member was an employee before period of military service.

Accumulated leave balances may be transferred into system immediately prior to retirement to purchase up to 3 whole years of additional Creditable Service, on an actuarially equivalent basis.

457 balances of Firefighters may be transferred into System at retirement to purchase up to 3 whole years of additional Creditable Service for multiplier purposes.

Member Contributions

- Police Officers: 7% (10% if hired on or after 10/1/2012)
- Fire Fighters: 10%

DROP

Election must be made within 10 years after eligibility for normal retirement. All Members are eligible for forward DROP.

At Retirement Eligibility, Fire and Police participants may enter the City Deferred Retirement Option Program (DROP). The maximum participation in the Forward DROP for fire fighters is 54 months. The maximum participation in the Forward DROP for police officers is 84 months.

Effective 1/1/2013 members may elect the BackDROP option (maximum of 7 years). Members receive a monthly benefit based on an earlier retirement date and a lump sum of past payments compounded at 3%/year.

COLA

Eligibility	Participant or Beneficiary
Benefit	Amount varies annually with the adjustment on January 1

Payment Forms

Normal Form
Joint and 40% Contingent Survivor

- Optional Forms
- Option 1 – Cash refund annuity based on Present Value at retirement
 - Option 2 – Joint and 100% Contingent Annuity
 - Option 3 – Joint and 50% Contingent Annuity
 - Option 4 – Joint and Contingent Annuity approved by the Board
 - Option 5 – Determined by Board due to incapacity of member
 - Option 6 – Withdrawal of member contributions with interest and benefit that is ½ of normal level

Plan Provision Not Included

The COLA benefits and liabilities are not included in this report; these benefits are reported in a separate COLA report dated December 9, 2022. We are not aware of any other provisions not included in this report.

Adjustments Made for Subsequent Events

We are not aware of any event following the measurement date and prior to the date of this report that would materially impact the results.

Changes Since Prior Report

None

Cost Method (CO)

Aggregate Cost Method.

Asset Valuation Method (CO)

20% Phase-In Method: fair market value of assets on the valuation date adjusted for a 5-year phase-in of gains and losses on the fair market value of assets.

The result cannot be greater than 120% of market value or less than 80% of market value (net of pending COLA transfers).

Interest Rates (CO)

7.00% net of investment expenses

Support for the discount rate assumption has been provided in the experience study report dated January 2021.

Annual Pay Increases (FE)

3.25% inflation and 1.5% for promotions and other increases plus salary merit scale below.

<u>Service</u>	<u>Police</u>	<u>Fire</u>
0-6	5.0%	5.0%
7	2.5%	5.0%
8-9	5.0%	5.0%
10-14	1.0%	0.0%
15-16	1.25%	2.5%
17-21	1.0%	1.0%
22+	0.0%	0.0%

The annual pay increases are based on a study of actual experience for the plan during 2017-2020. See the experience study report dated January 2021.

Expense and/or Contingency Loading (FE)

An assumed administrative expense of \$2,039,789 is added to the recommended contribution development.

Mortality Rates (CO)

Pre-Retirement: Pub-2010 Generational using scale MP-2018; Females, Headcount Weighted Safety Employee Female Table, set forward 1 year; Males, Headcount Weighted Safety Below Median Employee Male Table, set forward 1 year.

Post-Retirement: Pub-2010 Generational using scale MP-2018; Females, Headcount Weighted Safety Healthy Retiree Female Table, set forward 1 year; Males, Headcount Weighted Safety Below Median Healthy Retiree Male Table, set forward 1 year

Disabled: Pub-2010; Females, 80% Headcount Weighted General Disabled Retiree Female Table / 20% Headcount Weighted Safety Disabled Retiree Female Table; Males, 80% Headcount Weighted General Disabled Retiree Male Table / 20% Headcount Weighted Safety Disabled Retiree Male Table.

The mortality rate assumptions were set in accordance with the Florida Retirement System Valuation report dated December 2023.

Retirement Rates (FE)

The following decrements apply based on service.

<u>Years of Service</u>	<u>Police %</u>	<u>Fire %</u>
<20	0	0
20	15	10
21-24	20	7.5
25	50	20
26-29	40	20
30-34	100	40
35		100

The assumed retirement rates are based on a study of actual experience for the plan during 2017-2020. See the experience study report dated January 2021.

Disability Rates (FE)

100% of the disabilities are expected to be accidental with the following probabilities. No recovery is assumed.

<u>Age</u>	<u>Rates</u>
35	0.07125%
40	0.09750%
45	0.20000%
50	0.30250%

The disability rates are based on a study of actual experience for the plan during 2017-2020. See the experience study report dated January 2021.

Withdrawal Rates (FE)

Based on Years of Creditable Service using the rates below

<u>Years of Service</u>	<u>Police %</u>	<u>Fire %</u>
0	12.00	7.50
1	4.00	4.00
2-6	1.50	1.75
7-19	0.75	1.00
20+	0.00	0.00

The withdrawal rates are based on a study of actual experience for the plan during 2017-2020. See the experience study report dated January 2021.

Marital Status and Ages

100% of Members are assumed to be married. Female spouses assumed to be 3 years younger than male spouses.

Compensated Absence Balance Transfers

No liabilities or costs are included for the provision to transfer compensated absence balances into FIPO to purchase additional creditable service, based on our understanding that assets will be transferred immediately prior to retirement to cover 100% of the liability for the additional service.

Withdrawal of Employee Contributions

It is assumed that employees do not withdraw their contribution balances upon employment termination or retirement.

COLA

COLA benefits are assumed to increase as indicated in the COLA table; these are documented in a separate COLA report. No increase to the table is assumed to occur.

Changes Since Prior Report

The assumption for the administrative expenses decreased to \$2,039,789.

FE indicates an assumption representing an estimate of future experience.
MO indicates an assumption representing an observation of estimates inherit to market data.
CO indicates an assumption representing a combination of an estimate of future experience and observations of market data.

The actuarial report also shows the necessary items required for plan reporting and the any state requirements.

- ✓ Market Value Reconciliation
- ✓ Membership and Benefits Cost-Of-Living Adjustment Account Summary
- ✓ Investment Results
- ✓ Florida State Requirements
 - Comparative Summary of Principal Valuation Results
 - Separation for Police & Fire
 - Comparison of payroll growth, salary increases and investment returns
 - Requirements under Florida Statute 112.664 and F.A.C. 60T-1.0035
- ✓ Low-Default-Risk Obligation Measure (LDROM)

Market Value Reconciliation

The amount of assets backing the pension promise is typically the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly offsets the ultimate cost.

	October 1, 2023	
	Membership and Benefit Accounts	COLA Account
1. Market value – beginning of prior year	\$1,080,862,803	\$396,278,670
2. Book value – beginning of prior year	\$1,040,118,129	\$381,340,378
3. Change in asset allocation method	(\$16,133,134)	\$16,133,134
4. Income		
(a) City contributions	\$99,369,914	\$7,796,629
(b) Member contributions	16,887,734	0
(c) Other contributions	0	0
(d) Interest and dividends	11,837,570	4,588,848
(e) Net realized gains (losses)	27,067,953	10,581,639
(f) Securities lending income	117,701	45,532
(g) Rental and other income	919,018	73,404
(h) Income transfer	0	0
(i) Total	\$156,199,890	\$23,086,052
5. Disbursements		
(a) Benefit payments and refunds	\$150,638,878	\$30,538,479
(b) Custodial and investment expenses	2,970,582	908,637
(c) Administrative expense	2,063,928	0
(d) Other expense	320,277	0
(e) Securities lending fees	29,543	11,431
(f) Building depreciation	15,901	6,535
(g) Total	\$156,039,109	\$31,465,082
6. Book value – beginning of current year [(2)+(3)+(4i)-(5g)]	\$1,024,145,776	\$389,094,482
7. Net change in unrealized gains (losses)	\$73,170,714	\$25,601,186
8. Unrealized gains (losses)	\$113,915,388	\$40,539,478
9. Market value – beginning of current year [(1)+(3)+(4i)-(5g)+(7)]	\$1,138,061,164	\$429,633,960
10. Current year allocation to COLA II (discounted)	\$0	\$0
11. Net market value – beginning of current year	\$1,138,061,164	\$429,633,960

Membership and Benefits Cost-Of-Living Adjustment Account Summary

	September 30, 2023	
	Market	Book
1. Investments		
(a) Bill, bonds, notes	\$345,565,428	\$410,373,855
(b) Domestic stocks	527,852,714	417,692,101
(c) International stocks	353,384,590	345,917,996
(d) Private equity	184,843,300	127,359,801
(e) Money market fund and time deposit	15,534,675	15,534,675
(f) Mutual fund	137,152,163	92,999,574
(g) Real estate	2,009,964	2,009,964
(h) Securities lending adjustment	0	0
(i) Total investment	\$1,566,342,834	\$1,411,887,966
2. Cash	\$474,388	\$474,388
3. Receivables		
(a) City contributions	\$0	\$0
(b) Member contributions	0	0
(c) Accounts receivable	5,952	5,952
(d) Accrued interest and dividend	1,824,534	1,824,534
(e) Securities sold	834,778	834,778
(f) Total receivables	\$2,665,264	\$2,665,264
4. Payables:		
(a) Budget advance	\$0	\$0
(b) Accrual expense	304	304
(c) Transfer	5	5
(d) Tax withheld	0	0
(e) Accounts payable	348,924	348,924
(f) Securities purchased	1,438,129	1,438,129
(g) Total payables	\$1,787,362	\$1,787,362
5. Total [(1i)+(2)+(3f)-(4g)]	\$1,567,695,124	\$1,413,240,256
6. COLA account	\$429,633,960	\$389,094,480
7. Current year COLA transfer	\$0	\$0
8. Membership & benefits account [(5)-(6)-(7)]	\$1,138,061,164	\$1,024,145,776

Investment Results - Membership and Benefits Accounts

September 30, 2023

Membership and Benefits Accounts	<u>Dollar Return</u>	<u>Market Return</u>	<u>Book Return</u>
Interest	\$1,520,625	0.2%	0.1%
Dividends	10,316,945	0.9%	1.0%
Rental and Other Income, less Depreciation	903,117	0.1%	0.1%
Realized Gains	26,747,676	2.4%	2.6%
Securities Lending (Net)	88,158	0.0%	0.0%
Increase in Unrealized Gains	73,170,714	6.7%	7.2%
Custodial and Investment Expenses	(2,970,582)	(0.3%)	(0.3%)
	\$109,776,653	10.0%	10.7%

Investment Results - COLA Account

September 30, 2023

COLA Accounts

	<u>Dollar Return</u>	<u>Market Return</u>	<u>Book Return</u>
Interest	\$585,235	0.1%	0.2%
Dividends	4,003,613	1.0%	1.1%
Rental and Other Income, less Depreciation	66,869	0.0%	0.0%
Realized Gains	10,581,639	2.7%	2.9%
Securities Lending (Net)	34,101	0.0%	0.0%
Increase in Unrealized Gains	25,601,186	6.5%	6.9%
Custodial and Investment Expenses	(908,637)	(0.1%)	(0.3%)
	\$39,964,006	10.2%	10.8%

Information to Comply with Florida 60T-1.003(4)(i)

Comparative Summary of Principal Valuation Results

	10/1/2023 7.00% (assumption & plan changes)	10/1/2023 7.00% (prior methods & assumptions)	10/1/2022 7.00%
Participant Data			
Active members	1,855	1,855	1,926
Total annual payroll	\$189,067,815	\$189,067,815	\$187,880,152
Members in DROP	256	256	203
DROP Payroll	\$23,069,385	\$23,069,385	\$19,082,392
Projected Total Payroll	\$212,137,200	\$212,137,200	\$206,962,544
Retired members and beneficiaries	1,916	1,916	1,923
Total annualized benefit	\$120,796,923	\$120,796,923	\$119,840,839
Disabled members receiving benefits	102	102	109
Total annualized benefit	\$2,823,683	\$2,823,683	\$2,993,863
Terminated vested members	149	149	133
Total annualized benefit	\$669,342	\$669,342	\$609,438
Assets			
Actuarial value of assets	\$1,210,996,538	\$1,210,996,538	\$1,209,691,816
Market value of assets	\$1,138,061,164	\$1,138,061,164	\$1,080,862,803

Information to Comply with Florida 60T-1.003(4)(i)

Comparative Summary of Principal Valuation Results (continued)

	10/1/2023 7.00% (assumption & plan changes)	10/1/2023 7.00% (prior methods & assumptions)	10/1/2022 7.00%
Liabilities, present value of all future expected benefit payments			
Active members			
Retirement benefits	\$1,141,992,736	\$1,141,992,736	\$1,144,551,670
Vesting benefits	26,516,301	26,516,301	26,158,107
Disability benefits	14,101,623	14,101,623	14,180,232
Death benefits	9,723,179	9,723,179	9,979,185
Return of contribution	1,882,411	1,882,411	1,424,998
Total	\$1,194,216,250	\$1,194,216,250	\$1,196,294,192
Terminated vested members	7,849,557	7,849,557	7,343,128
Retired members and beneficiaries	1,532,719,752	1,532,719,752	1,478,060,476
Disabled members	24,687,410	24,687,410	26,284,629
Total	\$2,759,472,969	\$2,759,472,969	\$2,707,982,425
Liabilities due and unpaid	\$0	\$0	\$0

Information to Comply with Florida 60T-1.003(4)(i)

Comparative Summary of Principal Valuation Results (continued)

	10/1/2023 7.00% (assumption & plan changes)	10/1/2023 7.00% (prior methods & assumptions)	10/1/2022 7.00%
Actuarial present value of accrued benefits			
Statement of actuarial present value of all accrued benefits			
Vested accrued benefits			
Inactive members and beneficiaries	\$1,565,256,719	\$1,565,256,719	\$1,511,688,233
Active members	477,717,925	477,717,925	456,670,479
Total value of all vested accrued benefits	\$2,042,974,644	\$2,042,974,644	\$1,968,358,712
Non-vested accrued benefits	72,784,999	72,784,999	83,373,684
Total actuarial present value of all accrued benefits	\$2,115,759,643	\$2,115,759,643	\$2,051,732,396
Statement of changes in total actuarial present value of all accrued benefits (ASC 960)			
Actuarial present value of accrued benefits, beginning of year	\$2,051,732,396	\$2,051,732,396	\$1,978,295,285
Increase (decrease) during year			
Benefits accumulated	\$76,228,046	\$76,228,046	\$85,116,315
Plan amendment	0	0	0
Changes in actuarial assumptions	0	0	0
Interest	138,438,079	138,438,079	133,485,825
Benefits paid	(150,638,878)	(150,638,878)	(145,165,029)
Other changes	0	0	0
Net increase (decrease)	\$64,027,247	\$64,027,247	\$73,437,111
Actuarial present value of accrued benefits, end of year	\$2,115,759,643	\$2,115,759,643	\$2,051,732,396

Information to Comply with Florida 60T-1.003(4)(i)

Comparative Summary of Principal Valuation Results (continued)

	10/1/2023 7.00% (assumption & plan changes)	10/1/2023 7.00% (prior methods & assumptions)	10/1/2022 7.00%
Pension cost			
Normal Cost	\$135,610,492	\$135,610,492	\$129,090,837
Member contributions	\$16,534,008	\$16,534,008	\$16,476,818
Expected plan sponsor contribution	\$119,076,484	\$119,076,484	\$112,614,019
As % of payroll	62.98%	62.98%	59.94%
As % of Total Payroll	56.13%	56.13%	54.41%
Member Contributions as % of payroll	8.75%	8.75%	8.77%
Past contributions			
Required plan sponsor contribution	9/30/2023 \$99,369,914		9/30/2022 \$65,889,915
Required member contribution	\$16,887,734		\$17,385,718
Actual contributions made by:			
Plan's sponsor	\$99,369,914		\$65,889,915
Members	\$16,887,734		\$17,385,718
Other	\$0		\$0
Net actuarial gain (loss) (if applicable)	N/A	N/A	N/A
Other disclosures (where applicable)			
Present value of active member			
Future salaries at attained age	\$2,331,736,442	\$2,331,736,442	\$2,360,321,170
Future contributions at attained age	\$201,158,887	\$201,158,887	\$202,213,402

Information to Comply with Florida 60T-1.003(4)(i)

Hypothetical City Contribution Requirement for 2023/2024 Fiscal Year

	Police	Fire	Total
Liabilities, present value of all future expected benefit payments			
Active members			
Retirement benefits	\$654,120,157	\$487,872,579	\$1,141,992,736
Vesting benefits	17,598,398	8,917,903	\$26,516,301
Disability benefits	8,172,776	5,928,847	\$14,101,623
Death benefits	5,012,762	4,710,417	\$9,723,179
Return of contribution	1,469,633	412,778	1,882,411
Total	\$686,373,726	\$507,842,524	\$1,194,216,250
Terminated vested members	4,784,717	3,064,840	7,849,557
Retired members and beneficiaries	925,579,978	607,139,774	1,532,719,752
Disabled members	21,188,716	3,498,694	24,687,410
Total	\$1,637,927,137	\$1,121,545,832	\$2,759,472,969
Entry age reserve			
Active	\$349,289,146	\$312,709,780	\$661,998,926
Inactive	951,553,411	613,703,308	1,565,256,719
Total	\$1,300,842,557	\$926,413,088	\$2,227,255,645
Actuarial asset value ¹	\$707,290,084	\$503,706,454	\$1,210,996,538

¹Allocated based on Entry Age Reserve

Information to Comply with Florida 60T-1.003(4)(i)

Hypothetical City Contribution Requirement for 2023/2024 Fiscal Year (continued)

	Police	Fire	Total
Normal cost			
Total present value of future benefits	\$1,637,927,137	\$1,121,545,832	\$2,759,472,969
Present value of future member contributions	(116,137,377)	(85,021,510)	(201,158,887)
Actuarial asset value	(707,290,084)	(503,706,454)	(1,210,996,538)
Present value of future normal costs	\$814,499,676	\$532,817,868	\$1,347,317,544
Present value of future payrolls	\$1,384,716,196	\$947,020,246	\$2,331,736,442
Administrative expense ¹	\$1,191,351	\$848,438	\$2,039,789
Current payroll	\$109,975,362	\$79,092,453	\$189,067,815
Interest rate	7.00%	7.00%	7.00%
Normal Cost	\$65,879,622	\$45,347,880	\$111,286,434
Interest to End of Year	\$4,611,574	\$3,174,352	\$7,790,050
Recommended contribution at end of year at 7.00%	\$70,491,196	\$48,522,232	\$119,076,484
As a percentage of payroll	64.10%	61.35%	62.98%
Hypothetical Total			\$119,013,427

¹Allocated based on Entry Age Reserve

Information to Comply with Florida 60T-1.003(4) (i)

Historical Salary Increases and Asset Performance

September 30, 2023

Year Ending	Payroll Growth	Salary Growth	Expected Salary Growth	Asset Return (Market)	Asset Return (Actuarial)	Asset Return (Expected)
9/30/2023	0.76%	6.63%	7.69%	10.02%	4.40%	7.00%
9/30/2022	5.24%	8.93%	7.70%	(12.35%)	5.15%	7.00%
9/30/2021	1.32%	5.00%	7.72%	19.27%	8.59%	7.00%
9/30/2020	5.15%	11.24%	8.05%	5.65%	6.25%	7.34%
9/30/2019	0.83%	8.21%	7.74%	6.11%	6.48%	7.34%
9/30/2018	5.27%	7.39%	7.85%	6.90%	6.66%	7.34%
9/30/2017	6.32%	7.02%	7.85%	8.24%	6.76%	7.42%
9/30/2016	25.22%	10.46%	7.85%	8.42%	6.51%	7.42%
9/30/2015	13.42%	12.60%	7.79%	2.80%	6.18%	7.42%
9/30/2014	10.00%	1.38%	7.72%	8.60%	7.18%	7.50%
Averages						
3-year				4.77%	6.03%	
5-year				5.21%	6.16%	
10-year	7.35%			6.09%	6.41%	

City of Miami Fire Fighters' and Police Officers' Retirement Trust
Actuarial Valuation as of October 1, 2023
Other Measurements

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

	October 1, 2023			
	Valuation 7.00%	- 200 bp ² 5.00%	Funding Rate ² 7.00%	+ 200 bp ² 9.00%
Total pension liability				
Service Cost	\$46,183,898	\$46,183,898	\$46,183,898	\$46,183,898
Interest	148,051,038	149,765,441	149,765,441	149,765,441
Changes of benefit terms	0	0	0	0
Differences between expected and actual experience	26,205,884	13,303,340	13,303,340	13,303,340
Changes of assumptions	0	534,324,829	0	(377,884,242)
Benefit payments, including refunds of member contributions	(150,638,878)	(150,638,878)	(150,638,878)	(150,638,878)
Net change in pension liability	\$69,801,942	\$592,938,630	\$58,613,801	(\$319,270,441)
Total pension liability, beginning of year	\$2,144,150,363	\$2,168,641,844	\$2,168,641,844	\$2,168,641,844
Total pension liability, end of year	\$2,213,952,305	\$2,761,580,474	\$2,227,255,645	\$1,849,371,403
Plan fiduciary net position				
Contributions - Employer	\$99,369,914	\$99,369,914	\$99,369,914	\$99,369,914
Contributions - State	0	0	0	0
Contributions - Member	16,887,734	16,887,734	16,887,734	16,887,734
Net investment income	109,776,653	109,776,653	109,776,653	109,776,653
Benefit payments	(150,638,878)	(150,638,878)	(150,638,878)	(150,638,878)
Administrative expense	(2,063,928)	(2,063,928)	(2,063,928)	(2,063,928)
Other	(16,133,134)	(16,133,134)	(16,133,134)	(16,133,134)
Net change in plan fiduciary net position	\$57,198,361	\$57,198,361	\$57,198,361	\$57,198,361
Plan fiduciary net position, beginning of year	1,080,862,803	\$1,080,862,803	\$1,080,862,803	\$1,080,862,803
Plan fiduciary net position, end of year	\$1,138,061,164	\$1,138,061,164	\$1,138,061,164	\$1,138,061,164
Net pension liability/(asset)	\$1,075,891,141	\$1,623,519,310	\$1,089,194,481	\$711,310,239
Funded ratio	51.40%	41.21%	51.10%	61.54%
Years that Assets support expected benefit payments	9	8	9	10
Estimated city contribution				
Annual dollar value	\$119,076,484	\$169,645,859	\$119,076,484	\$79,873,994
Percentage of payroll	62.98%	89.73%	62.98%	42.25%

1 Does not include DROP assets and liabilities

2 Based on valuation assumption with the following changes
 - interest rate (as noted)

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

October 1, 2023

Sustainment of Expected Benefit Payments

Mortality FRS Special Risk Pub-2010 Generational using scale MP-2018
 Interest 5.00%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$1,138,061,164	\$53,084,112	\$154,644,018
2	1,036,501,258	48,008,054	154,565,570
3	929,943,742	42,636,692	156,326,489
4	816,253,945	36,893,946	158,685,507
5	694,462,384	30,734,353	161,520,686
6	563,676,051	24,089,099	165,810,533
7	421,954,617	16,884,338	170,616,726
8	268,222,229	9,082,089	175,299,004
9	102,005,314		179,422,799

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

October 1, 2023

Sustainment of Expected Benefit Payments

Mortality FRS Special Risk Pub-2010 Generational using scale MP-2018
Interest 7.00%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$1,138,061,164	\$74,343,283	\$154,644,018
2	1,057,760,429	68,724,931	154,565,570
3	971,919,790	62,655,497	156,326,489
4	878,248,798	56,017,358	158,685,507
5	775,580,649	48,733,035	161,520,686
6	662,792,998	40,690,294	165,810,533
7	537,672,759	31,766,505	170,616,726
8	398,822,538	21,885,882	175,299,004
9	245,409,416	11,005,072	179,422,799
10	76,991,689		182,634,670

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

October 1, 2023

Sustainment of Expected Benefit Payments

Mortality FRS Special Risk Pub-2010 Generational using scale MP-2018
 Interest 9.00%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$1,138,061,164	\$95,616,428	\$154,644,018
2	1,079,033,574	90,307,399	154,565,570
3	1,014,775,403	84,446,629	156,326,489
4	942,895,543	77,873,573	158,685,507
5	862,083,609	70,475,664	161,520,686
6	771,038,587	62,092,727	165,810,533
7	667,320,781	52,546,505	170,616,726
8	549,250,560	41,714,021	175,299,004
9	415,665,577	29,509,799	179,422,799
10	265,752,577	15,876,209	182,634,670
11	98,994,116		187,488,746

Contribution Stabilization Trust

As outlined in City ordinance (Article IV – Division 5), beginning October 1, 2008, any time the city's contributions to normal costs fall below 37%, the difference between the contributions to normal costs and 37% will be deposited into the city firefighters' and police officers' retirement contribution stabilization fund trust ("Stabilization Trust"). The purpose of the trust is to assist in stabilizing the city's annual contributions to the city Firefighters' and Police Officers' Retirement Trust. Whenever the city's annual contributions to the retirement system exceed 37% of valuation payroll, the city may choose to use part of the trust to cover contributions in excess of 37%. The following shows the contributions or use of the funds from the Stabilization Trust.

	October 1, 2023	October 1, 2022
1. City Contribution	\$119,076,484	\$112,614,019
2. Valuation Payroll	\$189,067,815	\$187,880,152
3. City Contribution as a % of Valuation Payroll	62.98%	59.94%
4. Pension Stabilization Contribution, $[(37\% - (1)/(2)) \times (2)]$ (not less than \$0)	\$0	\$0
5. Amount of City Contribution that may be paid from the Stabilization Trust (if funds available), $[(1)/(2) - 37\% \times (2)]$ (not less than \$0)	\$49,121,392	\$43,098,363

If the City followed the stated City ordinance, the following provides the hypothetical cumulative position of the Stabilization Trust.

Valuation Date	Pension Stabilization Contribution	Amount used to satisfy recommended City contribution	Current Stabilization Trust Balance
10/1/2018	\$1,035,008	N/A	\$1,035,008
10/1/2019	\$0	\$0	\$1,035,008
10/1/2020	\$0	\$0	\$1,035,008
10/1/2021	\$0	\$0	\$1,035,008
10/1/2022	\$0	\$0	\$1,035,008
10/1/2023	\$0	To be decided	\$1,035,008

Low-Default-Risk Obligation Measure (LDRM)

For reports issued after February 15, 2023 the Plan's actuary is generally required to disclose liabilities under an alternative low-default-risk based discount rate. This LDRM liability measure represents the estimated asset value as of the measurement date the Plan would need in order to purchase a low-default-risk fixed income securities portfolio with durations that are reasonably consistent with the timing of benefits expected to be paid from the plan.

	October 1, 2023
LDRM liability	(\$2,499,470,209)
Market value of assets	<u>\$1,138,061,164</u>
LDRM funded status	(\$1,361,409,045)

The LDRM liability and funded status is for informational purposes only. The plan sponsor has no requirements to contribute to the Plan to meet this threshold, and the funded status on this basis is not used for any restrictions.

If Plan assets are invested to earn in excess of a fixed income portfolio, a shortfall on this basis may not necessarily mean the security of participant benefits is at risk. If the plan is fully funded, or nearly fully funded, on the LDRM measure, the plan sponsor may want to consider reducing investment risk in order to offer greater benefit security and lower contribution volatility. We did not perform an analysis of assumption or provision changes resulting from a potential shift in investment policy due to the limited scope of our engagement.

The above LDRM liability measure applies a single effective discount rate of 5.89%. This is the single effective discount rate that would produce approximately the same discounted cashflows as the FTSE Above Median AA Curve as of September 30, 2023. All other data, assumptions, methods and provisions are the same as those detailed in this report.

While intended to be a market consistent measure, the above funded status is not appropriate for assessing the plan's sufficiency to settle plan obligations.

Per ASOP No. 4, we reviewed the plan's funding method, contribution policy, and the computation of the recommended contribution. We believe all to be reasonable as plan costs are expected to be fully funded over a reasonable timeframe.