CITY OF TEMPLE TERRACE
FIREFIGHTERS' RETIREMENT SYSTEM

ACTUARIAL VALUATION
AS OF OCTOBER 1, 2023

CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING SEPTEMBER 30, 2025

FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

November 8, 2023

Board of Trustees
City of Temple Terrace
Firefighters' Pension Board

Re: City of Temple Terrace Firefighters' Retirement System

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Temple Terrace Firefighters' Retirement System. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the appropriate funding requirements for the applicable plan year. Use of the results for other purposes may not be applicable and may produce significantly different results.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the provisions of Chapters 112 and 175, Florida Statutes, as well as applicable federal laws and regulations. In our opinion, the assumptions used in the valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience.

The funding percentages and unfunded accrued liability as measured based on the actuarial value of assets will differ from similar measures based on the market value of assets. These measures, as provided, are appropriate for determining the adequacy of future contributions, but may not be appropriate for the purpose of settling a portion or all of its liabilities. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuations, we did not perform an analysis of the potential range of such future measurements.

In conducting the valuation, we have relied on personnel, plan design, and asset information supplied by the City of Temple Terrace, financial reports prepared by the custodian bank, and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

Additionally, we used third-party software to model (calculate) the underlying liabilities and costs. These results are reviewed in the aggregate and for individual sample lives. The output from the software is either used directly or input into internally developed models that apply the funding rules to generate the results. All internally developed models are reviewed as part of the valuation process. As a result of this review, we believe that the models have produced reasonable results. We do not believe there are any material inconsistencies among assumptions or unreasonable output produced due to the aggregation of assumptions.

In our opinion, the Minimum Required Contribution set forth in this report constitutes a reasonable actuarially determined contribution under ASOP No. 4.

The undersigned are familiar with the immediate and long-term aspects of pension valuations, and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster, Inc. working on valuations of the program has any direct financial interest or indirect material interest in the City of Temple Terrace, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Firefighters' Retirement System. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at 239-433-5500.

Respectfully submitted,

Foster & Foster, Inc.

By: Patrick T. Donlan

Patrick T. Donlan, EA, ASA, MAAA
Enrolled Actuary #23-6595

By: Tyler Koftan

Tyler A. Koftan, EA, MAAA
Enrolled Actuary #23-8685

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Enclosures

TABLE OF CONTENTS

SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Temple Terrace Firefighters' Retirement System, performed as of October 1, 2023, has been completed and the results are presented in this Report. The contribution amounts set forth herein are applicable to the plan/fiscal year ending September 30, 2025.

The contribution requirements, compared with those set forth in the October 1, 2022 actuarial valuation report, are as follows:

Valuation Date Applicable to Fiscal Year Ending	10/1/2023 9/30/2025	10/1/2022 9/30/2024
Minimum Required Contribution	$2,800,426	$2,680,185
Member Contributions (Est.)	465,073	475,560
City And State Required Contribution	2,335,353	2,204,625
State Contribution (Est.) [1]	195,946	195,946
City Required Contribution [2]	$2,139,407	$2,008,679

[1] The State Contribution reflects the "default" calculation under Chapter 2015-39, described in Ordinance 1417. The City may use up to $156,212.42 plus 50% of excess State Contributions received above that level to offset its contribution requirement, with remaining excess State Contributions allocated to the Share Plan. It is important to note that the estimated allowable State Contribution is based on the amount received in 2023.

As you can see, the Minimum Required Contribution shows an increase when compared to the results set forth in the October 1, 2022 actuarial valuation report. The increase is attributable to net unfavorable experience realized by the plan during the year.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. Sources of actuarial loss included an investment return of 6.01% (Actuarial Asset Basis) which fell short of the 7.40% assumption and less turnover than expected. There were no significant sources of actuarial gain.

CHANGES SINCE PRIOR VALUATION

Plan Changes

Since the prior valuation, the plan was amended by Ordinance 1539 to allow DROP participants to serve on the Board of Trustees. This change had no impact on the plan's funding requirements.

Actuarial Assumption/Method Changes

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

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	10/1/2023	10/1/2022
A. Participant Data		
Actives	53	51
Service Retirees	25	24
DROP Retirees	4	4
Beneficiaries	0	0
Disability Retirees	4	4
Terminated Vested	7	7
Total	93	90
Projected Annual Payroll	4,035,524	4,124,186
Annual Rate of Payments to:		
Service Retirees	1,688,424	1,597,051
DROP Retirees	273,756	266,169
Beneficiaries	0	0
Disability Retirees	89,324	88,453
Terminated Vested	53,240	53,240
B. Assets		
Actuarial Value (AVA) [1]	39,690,305	37,159,632
Market Value (MVA) [1]	38,012,205	33,717,543
C. Liabilities		
Present Value of Benefits		
Actives		
Retirement Benefits	28,239,702	25,580,007
Disability Benefits	1,554,396	1,576,832
Death Benefits	143,112	140,693
Vested Benefits	1,551,977	1,470,625
Refund of Contributions	187,463	188,872
Service Retirees	21,090,538	20,153,611
DROP Retirees [1]	5,255,263	5,397,870
Beneficiaries	0	0
Disability Retirees	836,271	875,135
Terminated Vested	530,736	504,705
Share Plan Balances [1]	92,230	48,607
Total	59,481,688	55,936,957

C. Liabilities - (Continued)

	10/1/2023	10/1/2022
Present Value of Future Salaries	28,377,350	27,451,520
Present Value of Future Member Contributions	2,982,459	2,885,155
Normal Cost (Retirement)	953,058	962,379
Normal Cost (Disability)	133,944	141,272
Normal Cost (Death)	15,756	16,049
Normal Cost (Vesting)	94,499	87,485
Normal Cost (Refunds)	32,494	36,069
Total Normal Cost	1,229,751	1,243,254
Present Value of Future Normal Costs	8,438,823	8,180,916
Accrued Liability (Retirement)	21,556,528	19,134,850
Accrued Liability (Disability)	677,803	681,540
Accrued Liability (Death)	36,234	36,016
Accrued Liability (Vesting)	916,513	870,588
Accrued Liability (Refunds)	50,749	53,119
Accrued Liability (Inactives) [1]	27,712,808	26,931,321
Share Plan Balances [1]	92,230	48,607
Total Actuarial Accrued Liability (EAN AL)	51,042,865	47,756,041
Unfunded Actuarial Accrued Liability (UAAL)	11,352,560	10,596,409
Funded Ratio (AVA / EAN AL)	77.8%	77.8%

D. Actuarial Present Value of Accrued Benefits

	10/1/2023	10/1/2022
Vested Accrued Benefits		
Inactives + Share Plan Balances [1]	27,805,038	26,979,928
Actives	11,967,156	10,055,699
Member Contributions	3,748,818	3,423,732
Total	43,521,012	40,459,359
Non-vested Accrued Benefits	2,189,014	2,230,485
Total Present Value Accrued Benefits (PVAB)	45,710,026	42,689,844
Funded Ratio (MVA / PVAB)	83.2%	79.0%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
Plan Experience	2,085,467	
Benefits Paid	(2,144,970)	
Interest	3,079,685	
Other	0	
Total	3,020,182	

Valuation Date Applicable to Fiscal Year Ending	10/1/2023 9/30/2025	10/1/2022 9/30/2024
E. Pension Cost		
Normal Cost [2]	$1,348,451	$1,364,031
Administrative Expenses [2]	71,198	79,359
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 28 years (as of 10/1/2023) [2]	1,380,777	1,236,795
Minimum Required Contribution	2,800,426	2,680,185
Expected Member Contributions [2]	465,073	475,560
Expected City and State Contribution	2,335,353	2,204,625
F. Past Contributions		
Plan Years Ending:	9/30/2023	
City and State Requirement	1,972,617	
Actual Contributions Made:		
City	1,808,072	
State	195,946	
Total	2,004,018	
G. Net Actuarial (Gain)/Loss	1,099,946	

[1] The asset values and liabilities include accumulated DROP and Share Plan Balances as of 9/30/2023 and 9/30/2022.

[2] Contributions developed as of 10/1/2023 displayed above have been adjusted to account for assumed salary increase and interest components.

H. Schedule Illustrating the Amortization of the Total Unfunded Actuarial Accrued Liability as of:

Year	Projected Unfunded Actuarial Accrued Liability
2023	11,352,560
2024	10,840,234
2025	10,269,715
2032	4,738,005
2051	0

I. (i) 5 Year Comparison of Actual and Assumed Salary Increases

		Actual	Assumed
Year Ended	9/30/2023	5.75%	5.61%
Year Ended	9/30/2022	9.75%	5.65%
Year Ended	9/30/2021	8.03%	6.50%
Year Ended	9/30/2020	5.14%	6.50%
Year Ended	9/30/2019	7.94%	6.50%

(ii) 5 Year Comparison of Investment Return on Market Value and Actuarial Value

		Market Value	Actuarial Value	Assumed
Year Ended	9/30/2023	11.90%	6.01%	7.40%
Year Ended	9/30/2022	-13.32%	3.98%	7.40%
Year Ended	9/30/2021	21.59%	10.58%	7.50%
Year Ended	9/30/2020	7.07%	8.54%	7.50%
Year Ended	9/30/2019	3.59%	8.51%	7.50%

(iii) Average Annual Payroll Growth

(a) Payroll as of:	10/1/2023	$4,035,524
	10/1/2013	2,809,016
(b) Total Increase		43.66%
(c) Number of Years		10.00
(d) Average Annual Rate		3.69%

STATEMENT BY ENROLLED ACTUARY

This actuarial valuation 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.

Patrick T. Donlan

Patrick T. Donlan, EA, ASA, MAAA
Enrolled Actuary #23-6595

Please let us know when the report is approved by the Board and unless otherwise directed we will provide copies of the report to the following offices to comply with Chapter 112, Florida Statutes:

Mr. Keith Brinkman
Bureau of Local
Retirement Systems
Post Office Box 9000
Tallahassee, FL 32315-9000

Mr. Steve Bardin
Municipal Police and Fire
Pension Trust Funds
Division of Retirement
Post Office Box 3010
Tallahassee, FL 32315-3010

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES

(1)	Unfunded Actuarial Accrued Liability as of October 1, 2022	$10,596,409
(2)	Sponsor Normal Cost developed as of October 1, 2022	809,802
(3)	Expected administrative expenses for the year ended September 30, 2023	72,332
(4)	Expected interest on (1), (2) and (3)	846,736
(5)	Sponsor contributions to the System during the year ended September 30, 2023	2,004,018
(6)	Expected interest on (5)	68,647
(7)	Expected Unfunded Actuarial Accrued Liability as of September 30, 2023 (1)+(2)+(3)+(4)-(5)-(6)	10,252,614
(8)	Change to UAAL due to Assumption Change	0
(9)	Change to UAAL due to Actuarial (Gain)/Loss	1,099,946
(10)	Unfunded Actuarial Accrued Liability as of October 1, 2023	11,352,560

Type of Base	Date Established	Years Remaining	10/1/2023 Amount	Amortization Amount
A	10/1/1995	2	54,691	28,118
B	10/1/2000	7	491,693	82,688
C	10/1/2003	10	265,612	33,804
Method Change	10/1/2004	11	503,977	59,814
Loss Portion [1]	10/1/2004	11	503,977	59,814
Benefit Improv.	10/1/2005	12	720,440	80,380
Actuarial Loss	10/1/2005	12	31,428	3,506
Actuarial Loss	10/1/2006	13	297,764	31,441
Actuarial Loss	10/1/2007	14	246,281	24,751
Actuarial Loss	10/1/2008	15	1,178,672	113,294
Method Change	10/1/2008	15	(110,510)	(10,622)
Actuarial Loss	10/1/2009	16	882,185	81,441
Assumption Change	10/1/2009	16	1,134,500	104,735
Actuarial Loss	10/1/2010	17	800,787	71,263
Benefit Change	10/1/2010	17	(224,684)	(19,995)
Actuarial Loss	10/1/2011	18	1,645,089	141,577
Assumption Change	10/1/2011	8	196,955	29,753
Actuarial Loss	10/1/2012	19	561,538	46,867
Assumption Change	10/1/2012	9	225,550	31,084
Actuarial Gain	10/1/2013	20	(916,713)	(74,389)
Assumption Change	10/1/2013	10	238,397	30,340
Actuarial Gain	10/1/2014	21	(695,526)	(54,998)
Assumption Change	10/1/2014	11	262,151	31,113
Actuarial Gain	10/1/2015	22	(533,834)	(41,218)
Assumption Change	10/1/2015	12	287,968	32,129

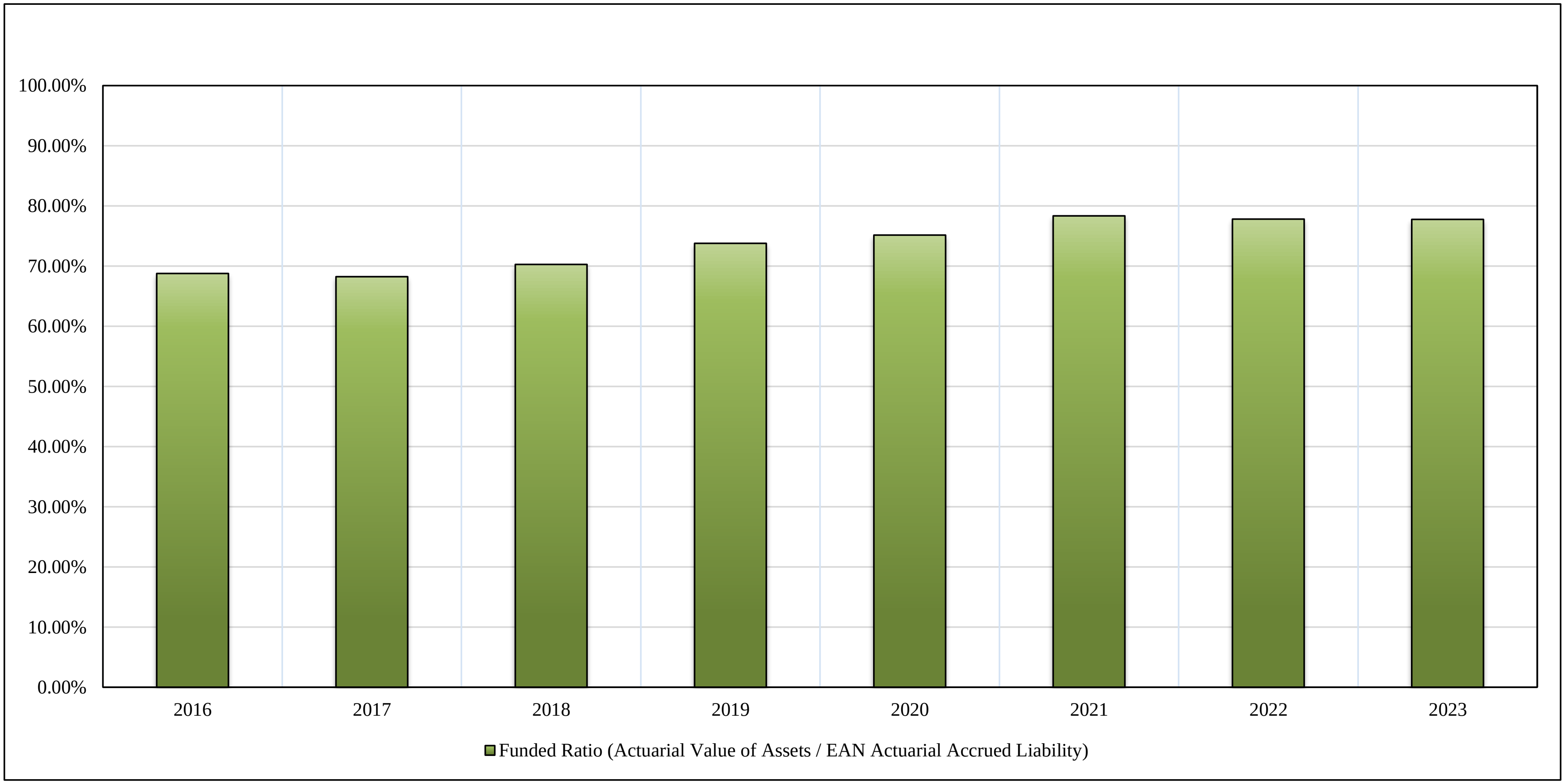
Type of Base	Date Established	Years Remaining	10/1/2023 Amount	Amortization Amount
Chapter 2015-39	10/1/2016	13	(8,067)	(852)
Actuarial Gain	10/1/2016	23	(452,894)	(34,206)
Assumption Change	10/1/2016	13	609,134	64,319
Actuarial Loss	10/1/2017	24	1,297,638	96,031
Actuarial Loss	10/1/2018	25	16,155	1,173
Benefits Change	10/1/2018	25	(20,932)	(1,520)
Actuarial Gain	10/1/2019	26	(590,156)	(42,112)
Actuarial Gain	10/1/2020	27	(136,838)	(9,607)
Assump Change	10/1/2020	17	670,140	59,636
Actuarial Gain	10/1/2021	28	(642,456)	(44,425)
Assump Change	10/1/2021	13	274,121	28,945
Actuarial Loss	10/1/2022	14	1,188,381	119,432
Actuarial Loss	10/1/2023	15	1,099,946	105,727
			11,352,560	1,259,231

[1] Estimated portion of 10/1/2004 Base attributable to prior accumulated actuarial losses.

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1)	Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2022	$10,596,409
(2)	Expected UAAL as of October 1, 2023	10,252,614
(3)	Summary of Actuarial (Gain)/Loss, by component:	
	Investment Return (Actuarial Asset Basis)	518,154
	Salary Increases	(41,755)
	Active Decrements	398,208
	Inactive Mortality	104,600
	Interest Crediting on Share Plan Balances	2,111
	Other	118,628
	Increase in UAAL due to (Gain)/Loss	1,099,946
	Assumption Changes	0
(4)	Actual UAAL as of October 1, 2023	$11,352,560

HISTORY OF FUNDING PROGRESS



ACTUARIAL ASSUMPTIONS AND METHODS

<u>Mortality Rate</u>	*Healthy Active Lives:* **Female:** PubS.H-2010 (Below Median) for Employees, set forward one year. **Male:** PubS.H-2010 (Below Median) for Employees, set forward one year. *Healthy Retiree Lives:* **Female:** PubS.H-2010 (Above Median) for Healthy Retirees, set forward one year. **Male:** PubS.H-2010 (Above Median) for Healthy Retirees, set forward one year. *Beneficiary Lives:* **Female:** PubG.H-2010 (Above Median) for Healthy Retirees. **Male:** PubG.H-2010 (Above Median) for Healthy Retirees, set back one year. *Disabled Lives:* 80% PubG.H-2010 for Disabled Retirees / 20% PubS.H-2010 for Disabled Retirees. All rates for healthy lives are projected generationally with Mortality Improvement Scale MP-2018. We feel this assumption sufficiently accommodates future mortality improvements. The previously described mortality assumption rates were mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumptions used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in Milliman's July 1, 2021 FRS valuation report for special risk employees, with appropriate adjustments made based on plan demographics. 90% of active deaths are assumed to be service-incurred.
<u>Interest Rate</u>	7.40% per year compounded annually, net of investment related expenses. This is supported by the target asset allocation of the trust and the expected long-term return by asset class.

Salary Increases	8.50% in first year of employment and 5.5% for those with 1 or more years of Credited Service until the assumed retirement age. This is based on the results of the May 12, 2021 actuarial experience study. Projected salary at retirement is increased according to frozen balances.
Payroll Growth	1.50% for purposes of amortizing the Unfunded Actuarial Accrued Liability. This assumption cannot exceed the ten-year average payroll growth, in compliance with Part VII of Chapter 112, Florida Statutes.
Administrative Expenses	$64,931 annually, based on the average of actual expenses incurred in the prior two fiscal years.
Disability Rate	See table later in this section (10 times 1201). This is based on the results of the 2009 actuarial experience study (no changes were adopted as a result of the May 12, 2021 experience study). 90% of disabilities are assumed to happen in the line of duty.
Termination Rate	See table later in this section. This is based on the results of the May 12, 2021 actuarial experience study.
Early Retirement	5% per year beginning at age 50 with 10 years of service. This is based on the results of the 2009 actuarial experience study (no changes were adopted as a result of the May 12, 2021 experience study).
Normal Retirement	50% at first eligibility (earlier of age 54 and 10 years of service or 20 years of service, regardless of age) and 100% at one year following first eligibility or later. This is based on the results of the May 12, 2021 actuarial experience study.
Amortization Method	New UAAL amortization bases are amortized over 15 years. Bases established prior to the valuation date are adjusted proportionally to match the Expected Unfunded Actuarial Accrued Liability as of the valuation date, in order to align prior year bases with the portion of the current year UAAL associated with prior year sources.

Funding Method	Entry Age Normal Actuarial Cost Method. The following loads are applied for determining the minimum required contribution: Interest - a half year, based on current 7.40% assumption. Salary - a full year, based on current 5.74% assumption.
Low-Default-Risk Obligation Measure	Based on the Entry Age Normal Actuarial Cost Method and an interest rate of 4.87% per year compounded annually, net of investment related expenses. This rate is consistent with the Yield to Maturity of the S&P Municipal Bond 20-Year High Grade Rate Index as of September 30, 2023. All other assumptions for the Low-Default-Risk Obligation Measure are consistent with the assumptions shown in this section unless otherwise noted.
Actuarial Asset Method	Each year, the prior Actuarial Value of Assets is brought forward utilizing the historical geometric 4-year average Market Value return. It is possible that over time this technique will produce an insignificant bias above or below Market Value of Assets.

Assumption Tables

% Terminating During the Year	
Age	Rate
20	9.30%
25	8.78%
30	7.88%
35	6.23%
40	4.28%
45	2.63%
50	1.13%

% Terminating During the Year	
Service	Rate
< 2	10.0%
2 – 4	6.0%
5 – 9	5.0%
10+	2.0%

% Becoming Disabled During the Year	
Age	Rate
20	0.30%
25	0.30%
30	0.40%
35	0.50%
40	0.70%
45	1.00%
50	1.80%

GLOSSARY

Actuarial Value of Assets is the asset value used in the valuation to determine contribution requirements. It represents the plan's Market Value of Assets (see below), with adjustments according to the plan's Actuarial Asset Method. These adjustments produce a "smoothed" value that is likely to be less volatile from year to year than the Market Value of Assets.

Entry Age Normal Cost Method - Under this method, the normal cost is the sum of the individual normal costs for all active participants. For an active participant, the normal cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation.

(a) The normal cost accrual rate equals:

(i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by

(ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age.

(b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.

(c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.

(d) Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

Market Value of Assets is the fair market value of plan assets as of the valuation date. This amount may be adjusted to produce an Actuarial Value of Assets for plan funding purposes.

Normal (Current Year's) Cost is the current year's cost for benefits yet to be funded. Under the Entry Age Normal cost method, it is determined for each participant as the present value of future benefits, determined as of the Member's entry age, amortized as a level percentage of compensation over the anticipated number of years of participation, determined as of the entry age.

Payroll Under Assumed Ret. Age is the projected annual rate of pay for the fiscal year beginning on the valuation date of all covered Members, excluding any Members who are assumed to retire with 100% probability on the valuation date.

Projected Annual Payroll is the projected annual rate of pay for the fiscal year following the fiscal year beginning on the valuation date of all covered Members.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current plan participants.

Total Annual Payroll is the projected annual rate of pay for the fiscal year beginning on the valuation date of all covered Members.

Total Required Contribution is equal to the Normal Cost plus an amount sufficient to amortize the Unfunded Accrued Liability over no more than 30 years. The required amount is adjusted for interest according to the timing of contributions during the year.

Unfunded Actuarial Accrued Liability (UAAL) is the difference between the actuarial accrued liability (described above) and the Actuarial Value of Assets. Under the Entry Age Normal Actuarial Cost Method, an actuarial gain or loss, based on actual versus expected UAAL, is determined in conjunction with each valuation of the plan.

DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined using various actuarial assumptions. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. It is possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's contribution requirements associated with plan experience. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization payment could potentially grow to an unmanageable level.

- <u>Investment Return</u>: When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, contribution amounts can vary in the future.

- <u>Salary Increases</u>: When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.

- <u>Payroll Growth</u>: The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll increases less than the plan's payroll growth assumption, the plan's amortization payment can increase significantly as a percentage of payroll even if all assumptions other than the payroll growth assumption are realized.

- <u>Demographic Assumptions:</u> Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.

Impact of Plan Maturity on Risk

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared amongst active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on risk tolerance and the overall risk characteristics of the plan. For example, closed plans with a large amount of retired liability do not have as long of a time horizon to recover from losses (such as losses on investments due to lower than expected investment returns) as plans where the majority of the liability is attributable to active members. For this reason, less tolerance for investment risk may be warranted for highly mature closed plans with a substantial inactive liability. Similarly, mature closed plans paying substantial retirement benefits resulting in a small positive or net negative cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the plan, we have provided some relevant metrics in the table following titled "Plan Maturity Measures and Other Risk Metrics". Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, has decreased from 158.6% on October 1, 2013 to 151.4% on October 1, 2023, indicating that the plan has been maturing during the period.

- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the plan, to the Total Accrued Liability, is 54.3%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors may result in larger increases in contribution requirements than would be needed for a less mature plan. Please note Chapter 112, Florida Statutes, requires that the plan sponsor contributes the minimum required contribution; thus, there is minimal solvency risk to the plan.

- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has increased from 62.4% on October 1, 2013 to 77.8% on October 1, 2023.

- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets, increased from -2.2% on October 1, 2013 to 0.8% on October 1, 2023. The current Net Cash Flow Ratio of 0.8% indicates that contributions are generally covering the plan's benefit payments and administrative expenses.

It is important to note that the actuary has identified the risks in this section as the most significant risks based on the characteristics of the plan and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed on page 2 of this report.

Low Default-Risk Obligation Measure

ASOP No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions, was revised as of December 2021 to include a "low-default-risk obligation measure" (LDROM). This liability measure is consistent with the determination of the actuarial accrued liability shown on page 8 in terms of member data, plan provisions, and assumptions/methods, including the use of the Entry Age Normal Cost Method, except that the interest rate is tied to low-default-risk fixed income securities. The S&P Municipal Bond 20 Year High Grade Rate Index (daily rate closest to, but not later than, the measurement date) was selected to represent a current market rate of low risk but longer-term investments that could be included in a low-risk asset portfolio. The interest rate used in this valuation was 4.87%, resulting in an LDROM of $70,833,755. The LDROM should not be considered the "correct" liability measurement; it simply shows a possible outcome if the Board elected to hold a very low risk asset portfolio. The Board actually invests the pension plan's contributions in a diversified portfolio of stocks and bonds and other investments with the objective of maximizing investment returns at a reasonable level of risk. Consequently, the difference between the plan's Actuarial Accrued Liability disclosed earlier in this section and the LDROM can be thought of as representing the expected taxpayer savings from investing in the plan's diversified portfolio compared to investing only in high quality bonds.

The actuarial valuation reports the funded status and develops contributions based on the expected return of the plan's investment portfolio. If instead, the plan switched to investing exclusively in high quality bonds, the LDROM illustrates that reported funded status would be lower (which also implies that the Actuarially Determined Contributions would be higher), perhaps significantly. Unnecessarily high contribution requirements in the near term may not be affordable and could imperil plan sustainability and benefit security.

It is important to note that the actuary has identified the risks above as the most significant risks based on the characteristics of the plan and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed on page 2 of this report.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

	10/1/2023	10/1/2022	10/1/2018	10/1/2013
Support Ratio				
Total Actives	53	51	51	46
Total Inactives [1]	35	34	31	29
Actives / Inactives [1]	151.4%	150.0%	164.5%	158.6%
Asset Volatility Ratio				
Market Value of Assets (MVA)	38,012,205	33,717,543	26,787,484	17,517,608
Total Annual Payroll	4,531,303	4,250,669	3,565,344	2,809,016
MVA / Total Annual Payroll	838.9%	793.2%	751.3%	623.6%
Accrued Liability (AL) Ratio				
Inactive Accrued Liability	27,712,808	26,931,321	21,902,789	17,612,046
Total Accrued Liability (EAN)	51,042,865	47,756,041	36,213,597	25,886,521
Inactive AL / Total AL	54.3%	56.4%	60.5%	68.0%
Funded Ratio				
Actuarial Value of Assets (AVA)	39,690,305	37,159,632	25,449,202	16,165,963
Total Accrued Liability (EAN)	51,042,865	47,756,041	36,213,597	25,886,521
AVA / Total Accrued Liability (EAN)	77.8%	77.8%	70.3%	62.4%
Net Cash Flow Ratio				
Net Cash Flow [2]	290,310	627,675	325,930	(385,306)
Market Value of Assets (MVA)	38,012,205	33,717,543	26,787,484	17,517,608
Ratio	0.8%	1.9%	1.2%	-2.2%

[1] Excludes terminated participants awaiting a refund of member contributions.

[2] Determined as total contributions minus benefit payments and administrative expenses.

PARTIAL HISTORY OF PREMIUM TAX REFUNDS

Received During Fiscal Year	Amount	Increase from Previous Year
1998	44,299.22	_____%
1999	44,834.04	1.2%
2000	56,539.66	26.1%
2001	56,128.84	-0.7%
2002	62,897.41	12.1%
2003	65,096.08	3.5%
2004	70,622.89	8.5%
2005	74,683.61	5.7%
2006	91,697.58	22.8%
2007	139,420.86	52.0%
2008	197,044.58	41.3%
2009	173,202.65	-12.1%
2010	168,244.47	-2.9%
2011	164,187.32	-2.4%
2012	164,955.59	0.5%
2013	156,212.42	-5.3%
2014	162,927.52	4.3%
2015	160,407.20	-1.5%
2016	168,057.38	4.8%
2017	153,625.18	-8.6%
2018	155,353.86	1.1%
2019	157,584.37	1.4%
2020	163,831.16	4.0%
2021	172,876.75	5.5%
2022	185,956.24	7.6%
2023	235,680.35	26.7%

STATEMENT OF FIDUCIARY NET POSITION
SEPTEMBER 30, 2023

ASSETS	COST VALUE	MARKET VALUE
Cash and Cash Equivalents:		
Short Term Investments	1,200,446.23	1,200,446.23
Total Cash and Equivalents	1,200,446.23	1,200,446.23
Receivables:		
Investment Income	33,615.92	33,615.92
Total Receivable	33,615.92	33,615.92
Investments:		
U. S. Bonds and Bills	2,662,611.62	2,524,919.25
Federal Agency Guaranteed Securities	3,652,145.71	3,353,493.14
Corporate Bonds	533,818.07	453,023.94
Stocks	7,303,982.33	9,893,646.79
Mutual Funds:		
Fixed Income	1,649,103.43	1,548,808.49
Equity	9,002,603.49	12,051,502.39
Pooled/Common/Commingled Funds:		
Real Estate[1]	4,599,391.69	6,957,581.00
Total Investments	29,403,656.34	36,782,975.00
Total Assets	30,637,718.49	38,017,037.15
LIABILITIES		
Payables:		
Investment Expenses	4,832.11	4,832.11
Total Liabilities	4,832.11	4,832.11
NET POSITION RESTRICTED FOR PENSIONS	30,632,886.38	38,012,205.04

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED SEPTEMBER 30, 2023
Market Value Basis

ADDITIONS			
Contributions:			
Member		443,150.32	
Buy-Back		10,493.46	
City		1,808,072.00	
State		235,680.35	
Total Contributions			2,497,396.13
Investment Income:			
Net Realized Gain (Loss)	450,237.74		
Unrealized Gain (Loss)	2,482,204.67		
Net Increase in Fair Value of Investments		2,932,442.41	
Interest & Dividends		1,241,807.62	
Less Investment Expense[1]		(169,897.61)	
Net Investment Income			4,004,352.42
Total Additions			6,501,748.55
DEDUCTIONS			
Distributions to Members:			
Benefit Payments		1,630,639.27	
Lump Sum DROP Distributions		498,361.35	
Lump Sum Share Distributions		1,795.35	
Refunds of Member Contributions		14,174.51	
Total Distributions			2,144,970.48
Administrative Expense			62,116.13
Total Deductions			2,207,086.61
Net Increase in Net Position			4,294,661.94
NET POSITION RESTRICTED FOR PENSIONS			
Beginning of the Year			33,717,543.10
End of the Year			38,012,205.04

[1]Investment related expenses include investment advisory, custodial and performance monitoring fees.

ACTUARIAL ASSET VALUATION
SEPTEMBER 30, 2023

Actuarial Assets for funding purposes are developed by increasing the Actuarial Assets used in the most recent actuarial valuation of the Fund by the average annual market value rate of return (net of investment related expenses) for the past four years. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.

Details of the derivation are set forth as follows:

Plan Year End	Rate of Return[1]
09/30/2020	7.07%
09/30/2021	21.59%
09/30/2022	-13.32%
09/30/2023	11.90%

Annualized Rate of Return for prior four (4) years:	6.01%	
(A) 10/01/2022 Actuarial Assets:		$37,159,632.00
(I) Net Investment Income:		
1. Interest and Dividends	1,241,807.62	
2. Realized Gain (Loss)	450,237.74	
3. Unrealized Gain (Loss)	2,482,204.67	
4. Change in Actuarial Value	(1,763,989.44)	
5. Investment Related Expenses	(169,897.61)	
Total		2,240,362.98
(B) 10/01/2023 Actuarial Assets:		$39,690,304.50
Actuarial Asset Rate of Return = 2I/(A+B-I), based on Unlimited Actuarial Assets:		6.01%
10/01/2023 Limited Actuarial Assets		$39,690,304.50
10/01/2023 Market Value of Assets		$38,012,205.04
Actuarial Asset Rate of Return, based on Limited Actuarial Assets:		6.01%
Actuarial Gain/(Loss) due to Investment Return (Limited Actuarial Asset Basis)		($518,153.83)

[1]Market Value Basis, net of investment related expenses.

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
SEPTEMBER 30, 2023
Actuarial Asset Basis

REVENUES

Contributions:		
Member	443,150.32	
Buy-Back	10,493.46	
City	1,808,072.00	
State	235,680.35	
Total Contributions		2,497,396.13
Earnings from Investments:		
Interest & Dividends	1,241,807.62	
Net Realized Gain (Loss)	450,237.74	
Unrealized Gain (Loss)	2,482,204.67	
Change in Actuarial Value	(1,763,989.44)	
Total Earnings and Investment Gains		2,410,260.59

EXPENDITURES

Distributions to Members:		
Benefit Payments	1,630,639.27	
Lump Sum DROP Distributions	498,361.35	
Lump Sum Share Distributions	1,795.35	
Refunds of Member Contributions	14,174.51	
Total Distributions		2,144,970.48
Expenses:		
Investment related[1]	169,897.61	
Administrative	62,116.13	
Total Expenses		232,013.74
Change in Net Assets for the Year		2,530,672.50
Net Assets Beginning of the Year		37,159,632.00
Net Assets End of the Year[2]		39,690,304.50

[1]Investment related expenses include investment advisory, custodial and performance monitoring fees.
[2]Net Assets may be limited for actuarial consideration.

DEFERRED RETIREMENT OPTION PLAN ACTIVITY
October 1, 2022 to September 30, 2023

Beginning of the Year Balance	1,081,091.57
Plus Additions	302,179.85
Investment Return Earned	56,879.38
Less Distributions	(498,361.35)
End of the Year Balance	941,789.45

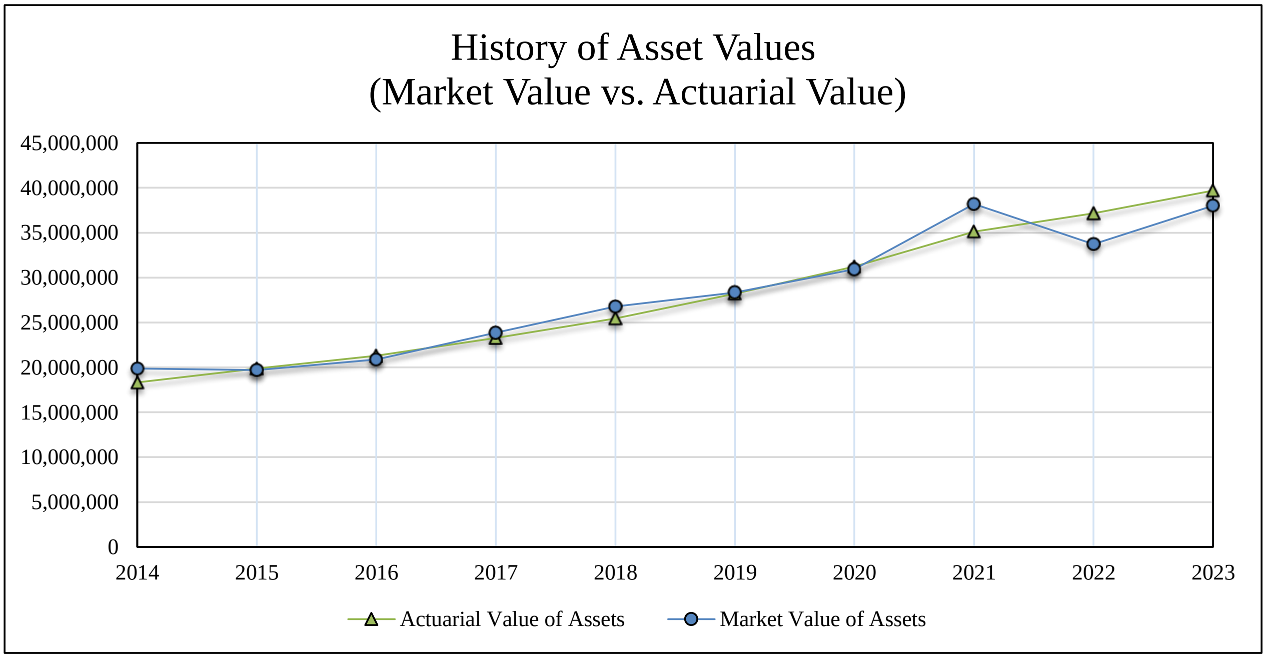
SUPPLEMENTAL CHAPTER 175 SHARE PLAN ACTIVITY
October 1, 2022 through September 30, 2023

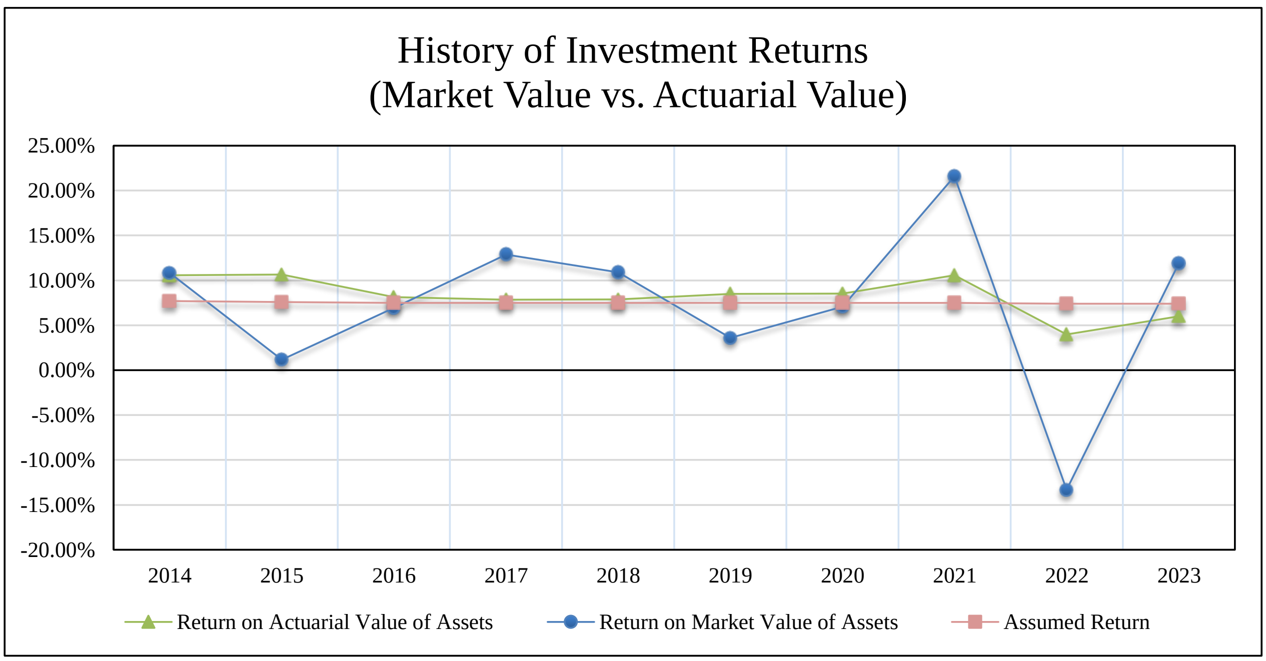
9/30/2022 Balance	48,607.49
Prior Year Adjustment	101.10
Plus Additions	39,733.97
Investment Return Earned (Est.)	5,583.00
Administrative Fees (Est.)	0.00
Less Distributions	(1,795.35)
9/30/2023 Balance (Est.)	92,230.21

CITY CONTRIBUTIONS IN EXCESS OF MINIMUM REQUIREMENT
FOR THE FISCAL YEAR ENDED (FYE) SEPTEMBER 30, 2023

(1)	Required City and State Contributions	$1,972,617.00
(2)	Less Allowable State Contribution	(195,946.39)
(3)	Required City Contribution for Fiscal 2023	1,776,670.62
(4)	Less 2022 Prepaid Contribution	0.00
(5)	Less Actual City Contributions	(1,808,072.00)
(6)	City Contributions in Excess of Minimum Requirement Applied to Reduce Unfunded Actuarial Accrued Liability as of September 30, 2023	($31,401.39)

HISTORY OF ASSET VALUES AND INVESTMENT RETURNS





STATISTICAL DATA

	10/1/2023	10/1/2022	10/1/2021	10/1/2020
Actives				
Number	53	51	48	46
Average Current Age	38.6	38.7	38.4	38.9
Average Age at Employment	28.1	28.4	28.5	28.9
Average Past Service	10.5	10.3	9.9	10.0
Average Annual Salary	$85,496	$83,346	$77,911	$75,895
Service Retirees				
Number	25	24	26	25
Average Current Age	61.8	61.1	60.7	60.2
Average Annual Benefit	$67,537	$66,544	$63,215	$62,126
DROP Retirees				
Number	4	4	4	4
Average Current Age	54.7	54.8	53.8	52.8
Average Annual Benefit	$68,439	$66,542	$66,057	$66,513
Beneficiaries				
Number	0	0	0	0
Average Current Age	N/A	N/A	N/A	N/A
Average Annual Benefit	N/A	N/A	N/A	N/A
Disability Retirees				
Number	4	4	4	4
Average Current Age	67.1	66.1	65.1	64.1
Average Annual Benefit	$22,331	$22,113	$21,902	$21,697
Terminated Vested				
Number	7	7	6	5
Average Current Age [1]	45.8	44.8	43.8	38.6
Average Annual Benefit [1]	$26,620	$26,620	$26,620	$20,405

[1] The Average Current Age and Average Annual Benefit exclude participants awaiting a refund of contributions.

AGE AND SERVICE DISTRIBUTION

PAST SERVICE

AGE	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+	Total
15 - 19												0
20 - 24	2		1	1								4
25 - 29	2	2	2			1						7
30 - 34		1			1	6						8
35 - 39			1			3	3					7
40 - 44						2	5	5	1			13
45 - 49							3	5	1			9
50 - 54							1	1	1			3
55 - 59						1		1				2
60 - 64												0
65+												0
Total	4	3	4	1	1	13	12	12	3	0	0	53

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 10/1/2022	51
b. Terminations	
i. Vested (partial or full) with deferred annuity	0
ii. Vested in refund of member contributions only	(1)
iii. Refund of member contributions or full lump sum distribution	0
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	0
f. DROP	(1)
g. Continuing participants	49
h. New entrants / Rehires	4
i. Total active life participants in valuation	53

2. Non-Active lives (including beneficiaries receiving benefits)

	Service Retirees, Vested Receiving Benefits	DROP Benefits	Receiving Death Benefits	Receiving Disability Benefits	Vested (Deferred Annuity)	Vested (Due Refund)	Total
a. Number prior valuation	24	4	0	4	2	5	39
Retired	1	(1)	0	0	0	0	0
DROP	0	1	0	0	0	0	1
Vested (Deferred Annuity)	0	0	0	0	0	0	0
Vested (Due Refund)	0	0	0	0	0	1	1
Hired/Terminated in Same Year	0	0	0	0	0	0	0
Death, With Survivor	0	0	0	0	0	0	0
Death, No Survivor	0	0	0	0	0	0	0
Disabled	0	0	0	0	0	0	0
Refund of Contributions	0	0	0	0	0	(1)	(1)
Rehires	0	0	0	0	0	0	0
Expired Annuities	0	0	0	0	0	0	0
Data Corrections	0	0	0	0	0	0	0
b. Number current valuation	25	4	0	4	2	5	40

SUMMARY OF CURRENT PLAN

Eligibility	Full-time employees who are classified as full-time Firefighters shall participate in the Plan as a condition of employment.
Credited Service	Total years and fractional parts of years of employment with the City as a Firefighter.
Compensation	Total Salary, including up to 300 hours of overtime per year and educational incentive, but excluding flexible benefits, uniform allowance, and third party sick pay. Lump sum unused sick and vacation leave are capped at October 8, 2011 balances.
Average Final Compensation (AFC)	Average Compensation for the highest 4 years during the 10 years immediately preceding retirement or termination.
Member Contributions	10.51% of Compensation.
City and State Contributions	Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, over 30 years.
Normal Retirement	
Date	Earlier of: 1) age 54 and 10 years of Credited Service or 2) the completion of 20 years of Credited Service, regardless of age.
Benefit	3.00% of AFC times Credited Service prior to June 1, 2001, and 3.50% of AFC times Credited Service on and after June 1, 2001.
Form of Benefit	Ten Year Certain and Life Annuity (options available).
Early Retirement	
Eligibility	Age 50 and 10 Years of Credited Service.
Benefit	Accrued benefit, reduced 3.00% for each year that benefit commencement precedes Normal Retirement.

<u>Cost-of-Living Increase</u>	Normal Retirees who retire after October 1, 2000 and Line of Duty Disability Retirees and Beneficiaries of Line of Duty Death Retirees after October 1, 2004 receive annual 3.00% benefit increases from age 56 to age 70 (or from the Date the Member would have attained age 56 to the date the Member would have attained age 70).
<u>Vesting</u>	
Schedule	100% after 10 years of Credited Service.
Benefit Amount	Member will receive the vested portion of his (her) accrued benefit at age 54 (unreduced) or age 50 (reduced).
<u>Disability</u>	
Eligibility	
Service Incurred	Covered from Date of Employment.
Non-Service Incurred	10 years of Credited Service.
Exclusions	Disability resulting from use of drugs, illegal participation in riots, service in military, etc.
Benefit	Benefit accrued to date of disability but not less than 42% of Average Final Compensation (Service Incurred), or 25% of Average Final Compensation (Non-service Incurred). Maximum benefit is 100% of AFC.
Duration	Payable as a 10 Year Certain and Life Annuity or until recovery (as determined by the Board.)
<u>Death Benefits</u>	
Pre-Retirement	
Not Line of Duty	
Vested	Monthly accrued benefit payable to designated beneficiary for 10 years.
Not Vested	Return of Member’s contributions, without interest.

Line of Duty	$10,000 lump sum, plus either a) the Not Line of Duty benefits, or b) a monthly benefit payable for 180 months only that equals 50% of the Member's annualized salary earned during the last full pay period, plus a monthly benefit to each minor child equal to 7.50% of that annualized salary, payable to age 18 (there is a max of 15% of that annualized salary for all children combined).
Post-Retirement	Benefits payable to beneficiary in accordance with option selected at retirement.
<u>Board of Trustees</u>	a. Two Council appointees, b. Two Members of the Department elected by the membership, and c. Fifth Member elected by other 4 and appointed by the Council.
<u>Deferred Retirement Option Plan</u>	
Eligibility	Satisfaction of Normal Retirement requirements.
Participation	Not to exceed 96 months.
Rate of Return	At Participant's election (may change once during DROP period): (1) Actual net rate of investment return (total return net of management fees, brokerage commissions and transaction costs) credited each fiscal quarter (less 2.00% per annum from 60 to 96 months), or (2) 6.50% fixed per annum (3.00% from 60 to 96 months), convertible monthly.
Form of Distribution	Cash lump sum at termination of employment.
<u>Share Account</u>	Once the State Monies exceeds $156,212.42 one-half the excess of this amount shall be reserved to pay share account benefits to Members of the system at the time of retirement. For the fiscal year 2016/2017 year, one-half of the accumulated unallocated state reserve of $18,213.24 was deposited into the Share Account.