CITY OF MIAMI BEACH
EMPLOYEES' RETIREMENT PLAN

ACTUARIAL VALUATION
AS OF OCTOBER 1, 2022

CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING SEPTEMBER 30, 2024

GASB 67/68 DISCLOSURE INFORMATION
AS OF SEPTEMBER 30, 2022

FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

April 14, 2023

Board of Trustees
City of Miami Beach
General Employees' Pension Board

Re: City of Miami Beach Employees' Retirement Plan

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Miami Beach Employees' Retirement Plan. 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 Chapter 112, 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.

13420 Parker Commons Blvd., Suite 104 Fort Myers, FL 33912 · (239) 433-5500 · Fax (239) 481-0634 · www.foster-foster.com

In conducting the valuation, we have relied on personnel, plan design, and asset information supplied by the City of Miami Beach, 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.

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 Miami Beach, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Employees' Retirement Plan. 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: ______________________________
Bradley R. Heinrichs, FSA, EA, MAAA
Enrolled Actuary #23-6901

By: ______________________________
Sara E. Carlson, ASA, EA, MAAA
Enrolled Actuary #23-8546

By: ______________________________
Tyler A. Koftan, MAAA

Enclosures

TABLE OF CONTENTS

SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Miami Beach Employees' Retirement Plan, performed as of October 1, 2022, 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, 2024.

The contribution requirements, compared with those set forth in the October 1, 2021 actuarial valuation report prepared by Gabriel, Roeder, Smith & Company, are as follows:

Valuation Date Applicable to Fiscal Year Ending	10/1/2022 9/30/2024	10/1/2021 9/30/2023
Minimum Required Contribution	$38,943,008	$38,258,786
Member Contributions (Est.)	9,288,900	9,155,767
City Required Contribution	$29,654,108	$29,103,019

As you can see, the Minimum Required Contribution shows an increase when compared to the results set forth in the October 1, 2021 actuarial valuation report. The increase is primarily due to net unfavorable experience described below.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. The primary source of actuarial loss was an investment return of 5.69% (Actuarial Asset Basis) which fell short of the 7.20% assumption. This loss was offset in part by a gain associated with an average salary increase of 1.59% which fell short of the 5.10% assumption.

CHANGES SINCE PRIOR VALUATION

Plan Changes

There have been no changes in benefits since the prior valuation.

Actuarial Assumption/Method Changes

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

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	10/1/2022	10/1/2021
A. Participant Data		
Actives	1,223	1,185
Service Retirees	953	933
DROP Retirees	102	101
Beneficiaries	170	166
Disability Retirees	22	25
Terminated Vested	179	110
Total	2,649	2,520
Payroll Under Assumed Ret. Age	88,148,710	88,213,744
Annual Rate of Payments to:		
Service Retirees	48,767,743	46,111,003
DROP Retirees	4,988,222	4,965,560
Beneficiaries	4,065,704	3,732,108
Disability Retirees	823,862	878,516
Terminated Vested	3,444,235	2,793,353
B. Assets		
Actuarial Value (AVA) [1]	778,754,175	754,950,350
Market Value (MVA) [1]	697,812,937	831,931,524
C. Liabilities		
Present Value of Benefits		
Actives		
Retirement Benefits	312,298,938	323,637,282
Disability Benefits	14,354,944	8,794,475
Death Benefits	5,201,419	3,563,411
Vested Benefits	29,047,645	36,119,739
Refund of Contributions	1,930,578	1,613,453
Service Retirees, DROP Retirees, and Beneficiaries[1]	708,962,534	674,335,672
Disability Retirees	8,856,245	9,415,122
Terminated Vested	32,864,613	27,339,081
Total	1,113,516,916	1,084,818,235

C. Liabilities - (Continued)	10/1/2022	10/1/2021
Present Value of Future Salaries	799,967,466	791,402,539
Normal Cost (Retirement)	11,265,381	12,039,153
Normal Cost (Disability)	977,619	665,687
Normal Cost (Death)	363,293	220,563
Normal Cost (Vesting)	2,000,992	2,425,862
Normal Cost (Refunds)	724,090	491,183
Total Normal Cost	15,331,375	15,842,448
Present Value of Future Normal Costs	128,386,549	132,904,453
Accrued Liability (Retirement)	218,789,589	N/A
Accrued Liability (Disability)	5,796,094	N/A
Accrued Liability (Death)	2,220,703	N/A
Accrued Liability (Vesting)	6,393,135	N/A
Accrued Liability (Refunds)	1,247,454	N/A
Accrued Liability (Inactives) [1]	750,683,392	N/A
Total Actuarial Accrued Liability (EAN AL)	985,130,367	951,913,782
Unfunded Actuarial Accrued Liability (UAAL)	206,376,192	196,963,432
Funded Ratio (AVA / EAN AL)	79.1%	79.3%

D. Actuarial Present Value of Accrued Benefits

	10/1/2022	10/1/2021
Vested Accrued Benefits		
Inactives [1]	750,683,392	711,089,875
Actives	101,058,679	120,242,041
Member Contributions	74,281,251	73,651,478
Total	926,023,322	904,983,394
Non-vested Accrued Benefits	4,328,447	18,683,718
Total Present Value Accrued Benefits (PVAB)	930,351,769	923,667,112
Funded Ratio (MVA / PVAB)	75.0%	90.1%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
Plan Experience	(641,805)	
Benefits Paid	(57,121,207)	
Interest	64,447,669	
Other	0	
Total	6,684,657	

Valuation Date	10/1/2022	10/1/2021
Applicable to Fiscal Year Ending	9/30/2024	9/30/2023
E. Pension Cost		
Normal Cost [2]	$16,435,234	$16,983,104
Administrative Expenses [2]	782,516	807,246
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 28 years (as of 10/1/2022) [2]	21,725,258	20,468,436
Minimum Required Contribution	38,943,008	38,258,786
Expected Member Contributions [2]	9,288,900	9,155,767
Expected City Contribution	29,654,108	29,103,019
F. Past Contributions		
Plan Years Ending:	9/30/2022	
City Requirement	29,590,369	
Actual Contributions Made:		
City	29,590,369	
G. Net Actuarial (Gain)/Loss	18,344,794	

[1] The asset values and liabilities exclude accumulated DROP Plan Balances and outstanding DROP loans as of 9/30/2022 and 9/30/2021.

[2] Contributions developed as of 10/1/2022 displayed above have been adjusted to account for assumed interest.

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

Year	Projected Unfunded Actuarial Accrued Liability
2022	206,376,192
2023	199,510,018
2024	192,149,480
2031	123,446,304
2037	56,107,522
2044	9,377,517
2050	0

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

		Actual	Assumed
Year Ended	9/30/2022	1.59%	5.10%
Year Ended	9/30/2021	4.60%	5.10%
Year Ended	9/30/2020	4.40%	5.10%
Year Ended	9/30/2019	3.60%	5.10%
Year Ended	9/30/2018	5.80%	5.90%

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

		Market Value	Actuarial Value	Assumed
Year Ended	9/30/2022	-13.65%	5.69%	7.20%
Year Ended	9/30/2021	21.30%	10.70%	7.40%
Year Ended	9/30/2020	8.90%	8.30%	7.40%
Year Ended	9/30/2019	3.50%	6.90%	7.50%
Year Ended	9/30/2018	8.20%	8.30%	7.60%

(iii) Average Annual Payroll Growth

(a) Payroll as of:	10/1/2022	$88,148,710
	10/1/2012	65,053,945
(b) Total Increase		35.50%
(c) Number of Years		10.00
(d) Average Annual Rate		3.08%

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.

Bradley R. Heinrichs, FSA, EA, MAAA
Enrolled Actuary #23-6901

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

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES

(1)	Unfunded Actuarial Accrued Liability as of October 1, 2021	$196,963,432
(2)	Sponsor Normal Cost developed as of October 1, 2021	7,301,621
(3)	Expected administrative expenses for the year ended September 30, 2022	753,028
(4)	Expected interest on (1), (2) and (3)	14,734,193
(5)	Sponsor contributions to the System during the year ended September 30, 2022	29,590,369
(6)	Expected interest on (5)	2,130,507
(7)	Expected Unfunded Actuarial Accrued Liability as of September 30, 2022 (1)+(2)+(3)+(4)-(5)-(6)	188,031,398
(8)	Change to UAAL due to Assumption Change	0
(9)	Change to UAAL due to Actuarial (Gain)/Loss	18,344,794
(10)	Unfunded Actuarial Accrued Liability as of October 1, 2022	206,376,192

Type of Base	Date Established	Years Remaining	10/1/2022 Amount	Amortization Amount
Actuarial Loss	10/1/2002	10	13,083,931	1,753,840
Actuarial Loss	10/1/2003	11	10,743,289	1,349,811
Actuarial Loss	10/1/2004	12	6,224,557	738,860
Loss / Assump.	10/1/2005	13	6,055,392	683,552
Actuarial Loss	10/1/2006	14	7,850,739	847,471
Actuarial Loss	10/1/2006	14	23,123,978	2,496,186
Actuarial Gain	10/1/2007	15	(9,687,556)	(1,004,773)
Assump/Mthd Change	10/1/2007	15	(8,381,119)	(869,272)
Actuarial Loss	10/1/2008	16	22,292,529	2,230,599
Assump. Change	10/1/2008	16	6,146,731	615,044
Actuarial Loss	10/1/2009	17	21,457,387	2,078,654
Assump. Change	10/1/2009	17	6,807,156	659,434
Assump. Change	10/1/2009	17	(6,043,810)	(585,486)
Plan Change	10/1/2009	17	(4,672,979)	(452,688)
Actuarial Loss	10/1/2010	18	12,003,329	1,129,256
Assump. Change	10/1/2010	18	6,398,643	601,975
Actuarial Loss	10/1/2011	19	17,850,763	1,635,360
Assump. Change	10/1/2011	19	1,335,933	122,389
See Below[1]	10/1/2012	19	692,437	63,436

Type of Base	Date Established	Years Remaining	10/1/2022 Amount	Amortization Amount
Actuarial Loss	10/1/2012	20	19,253,239	1,721,750
Assump. Change	10/1/2012	20	8,199,154	733,222
Plan Change	10/1/2012	20	(4,163,921)	(372,365)
Actuarial Gain	10/1/2013	21	(2,731,701)	(238,967)
Plan Change	10/1/2013	21	(857,157)	(74,983)
Actuarial Gain	10/1/2014	22	(2,694,311)	(231,003)
Assump. Change	10/1/2014	22	8,974,403	769,441
Actuarial Gain	10/1/2015	23	(564,305)	(47,500)
Assump. Change	10/1/2015	23	9,694,310	816,008
Actuarial Gain	10/1/2016	24	(11,627,858)	(962,392)
Assump. Change	10/1/2016	24	41,614,160	3,444,241
Actuarial Gain	10/1/2017	25	(5,484,777)	(446,980)
Assump. Change	10/1/2017	25	4,098,311	333,990
Actuarial Gain	10/1/2018	26	(2,664,274)	(214,056)
Assump. Change	10/1/2018	26	9,971,544	801,146
Actuarial Loss	10/1/2019	26	538,273	43,247
Assump. Change	10/1/2019	26	(6,707,256)	(538,883)
Actuarial Gain	10/1/2020	27	(7,082,744)	(561,649)
Plan Change	10/1/2020	27	400,702	31,775
Actuarial Gain	10/1/2021	27	(23,860,576)	(1,892,100)
Assump. Change	10/1/2021	27	20,444,852	1,621,240
Actuarial Loss	10/1/2022	28	18,344,794	1,437,269
			206,376,192	20,266,099

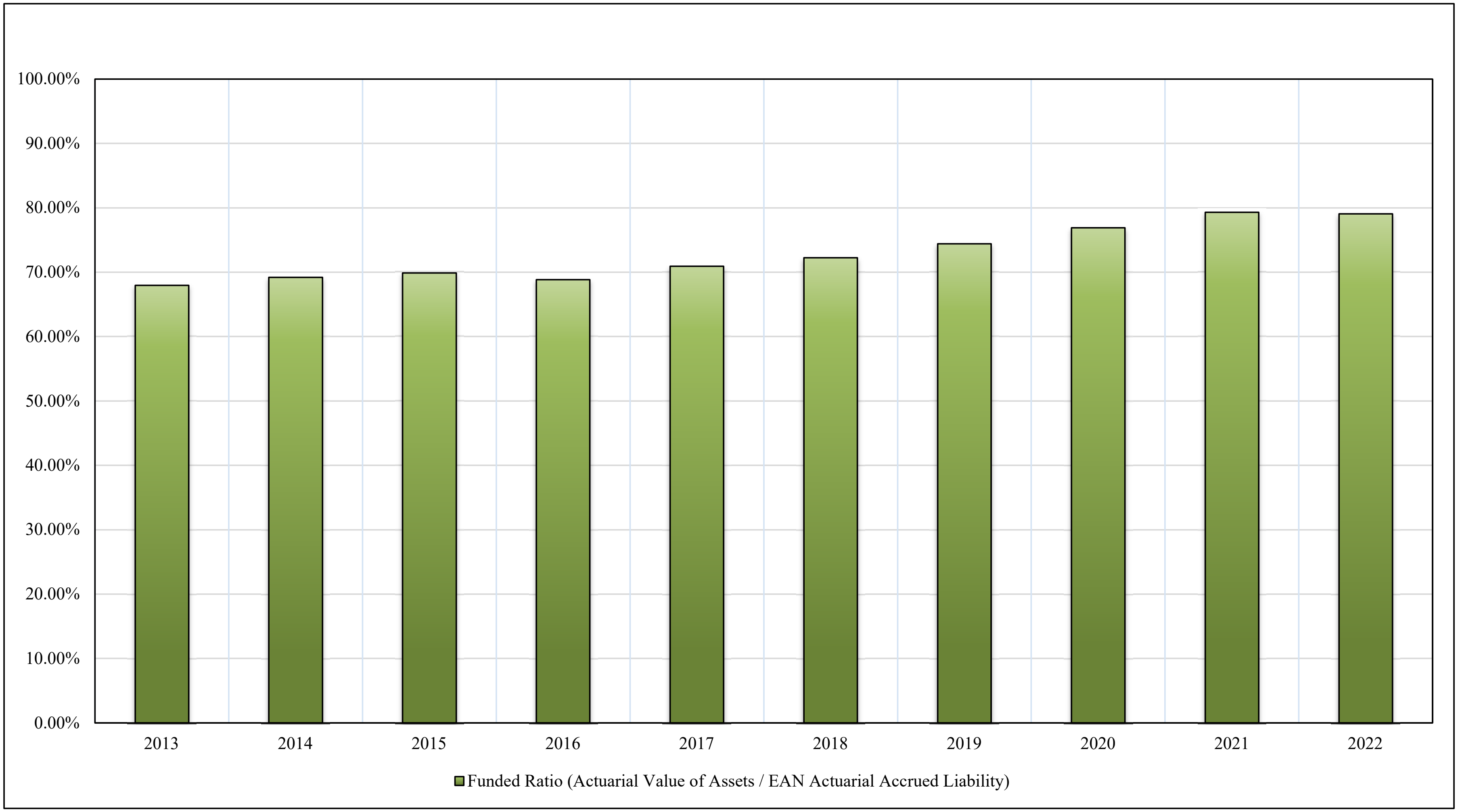
[1] Charge base established to reflect excess contribution for fiscal year ended 9/30/11 that was included in assets. This base was established as of 10/1/12.

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1)	Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2021	$196,963,432
(2)	Expected UAAL as of October 1, 2022	188,031,398
(3)	Summary of Actuarial (Gain)/Loss, by component:	
	Investment Return (Actuarial Asset Basis)	11,493,590
	Salary Increases	(6,380,376)
	Active Decrements	(2,009,370)
	Inactive Mortality	2,773,817
	Other [1]	12,467,133
	Increase in UAAL due to (Gain)/Loss	18,344,794
	Assumption Changes	0
(4)	Actual UAAL as of October 1, 2022	$206,376,192

[1] Includes amount due to transition of actuarial firms and larger than anticipated increases in the retiree benefit amounts.

HISTORY OF FUNDING PROGRESS[1]



[1] Market Value of Assets and Actuarial Value of Assets exclude DROP balances.

ACTUARIAL ASSUMPTIONS AND METHODS

Mortality Rate

Healthy Active Lives:

Female: PubG.H-2010 (Below Median) for Employees.
Male: PubG.H-2010 (Below Median) for Employees, set back one year.

Healthy Retiree Lives:

Female: PubG.H-2010 (Below Median) for Healthy Retirees.
Male: PubG.H-2010 (Below Median) for Healthy Retirees, set back one year.

Beneficiary Lives:

Female: PubG.H-2010 (Below Median) for Healthy Retirees.
Male: PubG.H-2010 (Below Median) for Healthy Retirees, set back one year.

Disabled Lives:

PubG.H-2010 for Disabled Retirees, set forward three years.

All rates 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 non-special-risk employees, with appropriate adjustments made based on plan demographics.

Interest Rate

7.20% 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	See table later in this section. Assumed salary increases were developed based on a wage inflation assumption of 2.50% per year. Salaries during the valuation year are determined as the prior year's salary with a half-year salary increase. This assumption was used by the prior actuary and will be evaluated in the next experience study.
Early Retirement	5% per year. This assumption was used by the prior actuary and will be evaluated in the next experience study.
Normal Retirement	See table later in this section. This assumption was used by the prior actuary and will be evaluated in the next experience study.
DROP Participation	80% of retirees are assumed to enter the DROP, and these retirees are assumed to participate in DROP for 5 years. Since COLAs are not payable in DROP, COLAs are assumed to occur 4 years after retirement.
Termination Rates	See table later in this section. This assumption was used by the prior actuary and will be evaluated in the next experience study.
Disability Rates	See table of sample rates later in this section. 50% of disabilities are assumed to be service connected. This assumption was used by the prior actuary and will be evaluated in the next experience study.
Marriage Assumption	85% of participants are assumed to be married for purposes of death-in-service benefits. Husbands are assumed to be three years older than wives.
Normal Form of Benefit	50% joint and survivor annuity; life annuity for members hired after September 30, 2010.
Payroll Growth	0.00% 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	$729,959 annually, based on the average of actual expenses incurred in the prior two fiscal years.
Maximum Benefits	Based on an 415(b) limit of $245,000 per year as a life annuity beginning between ages 62 and 65, with adjustments for other forms of benefit and ages. This limit is assumed to increase at 3% per year.

Amortization Method	New UAAL amortization bases are amortized over 28 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 full year, based on current 7.20% assumption. Salary - None.

Assumption Tables

% Terminating During the Year (0-4 Years of Service)	
Service	Rate
0	12.50%
1	12.00%
2	10.00%
3	8.50%
4	6.00%

% Terminating During the Year (5+ Years of Service)	
Age	Rate
18-29	6.75%
30-39	4.75%
40-44	3.25%
45+	2.50%

% Becoming Disabled During the Year	
Age	Rate
20	0.02%
30	0.03%
40	0.07%
50	0.17%
60	0.37%

Salary Scale	
Service	Rate
0-5	6.10%
6-10	5.00%
11-15	4.50%
16-20	4.25%
21+	3.75%

Normal Retirement Rates		
Service	Age	Rate
5-9	50-54	5%
	55-59	7%
	60-64	10%
	65-69	20%
	70-74	50%
	75+	100%
10-14	50-54	5%
	55-59	10%
	60-64	20%
	65-69	20%
	70-74	50%
	75+	100%
15-19	50-54	20%
	55-59	15%
	60-64	20%
	65-69	25%
	70-74	50%
	75+	100%

Normal Retirement Rates		
Service	Age	Rate
20-24	50-54	30%
	55-59	30%
	60-64	25%
	65-69	50%
	70-74	50%
	75+	100%
25-29	50-54	70%
	55-59	60%
	60-64	50%
	65-69	50%
	70-74	50%
	75+	100%
30+	50-54	100%
	55-59	100%
	60-64	100%
	65-69	100%
	70-74	100%
	75+	100%

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.

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>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 stayed about the same from October 1, 2021 to October 1, 2022, indicating that the plan's maturity level has not significantly changed 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 76.2%. 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 stayed approximately the same from October 1, 2021 to October 1, 2022.

- 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, decreased from -2.1% on October 1, 2021 to -2.7% on October 1, 2022. The current Net Cash Flow Ratio of -2.7% indicates that contributions are not currently 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.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

	10/1/2022	10/1/2021
Support Ratio		
Total Actives	1,223	1,185
Total Inactives [1]	1,390	1,335
Actives / Inactives [1]	88.0%	88.8%
Asset Volatility Ratio		
Market Value of Assets (MVA) [3]	697,812,937	831,931,524
Total Annual Payroll [2]	88,501,846	88,213,744
MVA / Total Annual Payroll	788.5%	943.1%
Accrued Liability (AL) Ratio		
Inactive Accrued Liability [3]	750,683,392	711,089,875
Total Accrued Liability (EAN) [3]	985,130,367	951,913,782
Inactive AL / Total AL	76.2%	74.7%
Funded Ratio		
Actuarial Value of Assets (AVA) [3]	778,754,175	754,950,350
Total Accrued Liability (EAN) [3]	985,130,367	951,913,782
AVA / Total Accrued Liability (EAN)	79.1%	79.3%
Net Cash Flow Ratio		
Net Cash Flow [4]	(19,007,588)	(17,155,794)
Market Value of Assets (MVA) [3]	697,812,937	831,931,524
Ratio	-2.7%	-2.1%

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

[2] As of 10/1/2021, represents Covered Non-DROP Payroll.

[3] Excludes DROP balances and outstanding DROP loans.

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

STATEMENT OF FIDUCIARY NET POSITION
SEPTEMBER 30, 2022

ASSETS	MARKET VALUE
Cash and Cash Equivalents:	
Short Term Investments	1,808,811
Prepaid Benefits	4,224,777
Cash	1,461,390
Total Cash and Equivalents	7,494,978
Receivables:	
DROP Loans	160,763
Total Receivable	160,763
Investments:	
Bond Funds	130,643,812
Equities	403,007,602
DROP at Mission Square & Nationwide	17,226,730
Pooled/Common/Commingled Funds:	
Infrastructure Fund	37,618,998
Real Estate	119,294,632
Total Investments	707,791,774
Total Assets	715,447,515
LIABILITIES	
Payables:	
Accounts Payable and Accrued Liabilities	242,873
Total Liabilities	242,873
NET POSITION RESTRICTED FOR PENSIONS	715,204,642

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED SEPTEMBER 30, 2022
Market Value Basis

ADDITIONS		
Contributions:		
Member	9,285,205	
City	29,590,369	
Total Contributions		38,875,574
Investment Income:		
Net Increase in Fair Value of Investments	(128,636,281)	
Interest & Dividends	17,042,312	
Less Investment Expense[1]	(2,939,276)	
Net Investment Income		(114,533,245)
Total Additions		(75,657,671)
DEDUCTIONS		
Distributions to Members:		
Benefit Payments	55,507,283	
Refunds of Member Contributions	1,613,924	
Total Distributions		57,121,207
Administrative Expense		761,955
Total Deductions		57,883,162
Net Increase in Net Position		(133,540,833)
NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		848,745,475
End of the Year		715,204,642

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

ACTUARIAL ASSET VALUATION
September 30, 2022

Actuarial Assets for funding purposes are developed by recognizing the total actuarial investment gain or loss for each Plan Year over a five year period. In the first year, 20% of the gain or loss is recognized. In the second year 40%, in the third year 60%, in the fourth year 80%, and in the fifth year 100% of the gain or loss is recognized. The actuarial investment gain or loss is defined as the actual return on investments minus the actuarial assumed investment return. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.

Gains/Losses Not Yet Recognized

Plan Year Ending	Gain/(Loss)	Amounts Not Yet Recognized by Valuation Year 2022	2023	2024	2025	2026
09/30/2018	4,955,715	0	0	0	0	0
09/30/2019	(25,254,380)	(5,050,876)	0	0	0	0
09/30/2020	9,845,681	3,938,273	1,969,137	0	0	0
09/30/2021	100,230,470	60,138,282	40,092,188	20,046,094	0	0
09/30/2022	(174,958,646)	(139,966,917)	(104,975,188)	(69,983,459)	(34,991,730)	0
Total		(80,941,238)	(62,913,863)	(49,937,365)	(34,991,730)	0

Development of Investment Gain/Loss

Market Value of Assets, 09/30/2021	848,745,475
Contributions Less Benefit Payments & Admin Expenses	(19,007,588)
Expected Investment Earnings*	60,425,401
Actual Net Investment Earnings	(114,533,245)
2022 Actuarial Investment Gain/(Loss)	(174,958,646)

*Expected Investment Earnings = 0.072 * (848,745,475 - 0.5 * 19,007,588)

Development of Actuarial Value of Assets

(1) Market Value of Assets, 09/30/2022	715,204,642
(2) Gains/(Losses) Not Yet Recognized	(80,941,238)
(3) Actuarial Value of Assets, 09/30/2022, (1) - (2)	796,145,880
(A) 09/30/2021 Actuarial Assets:	771,764,301
(I) Net Investment Income:	
1. Interest and Dividends	17,042,312
2. Net Increase in Fair Value of Investments	(128,636,281)
3. Change in Actuarial Value	157,922,412
4. Investment Expenses	(2,939,276)
Total	43,389,167
(B) 09/30/2022 Actuarial Assets:	796,145,880
Actuarial Assets Rate of Return = 2I/(A+B-I):	5.69%
Market Value of Assets Rate of Return:	-13.65%
10/01/2022 Limited Actuarial Assets:	796,145,880
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(11,493,590)

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
SEPTEMBER 30, 2022
Actuarial Asset Basis

REVENUES		
Contributions:		
Member	9,285,205	
City	29,590,369	
Total Contributions		38,875,574
Earnings from Investments:		
Interest & Dividends	17,042,312	
Net Increase in Fair Value of Investments	(128,636,281)	
Change in Actuarial Value	157,922,412	
Total Earnings and Investment Gains		46,328,443
EXPENDITURES		
Distributions to Members:		
Benefit Payments	55,507,283	
Refunds of Member Contributions	1,613,924	
Total Distributions		57,121,207
Expenses:		
Investment related[1]	2,939,276	
Administrative	761,955	
Total Expenses		3,701,231
Change in Net Assets for the Year		24,381,579
Net Assets Beginning of the Year		771,764,301
Net Assets End of the Year[2]		796,145,880

[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, 2021 to September 30, 2022

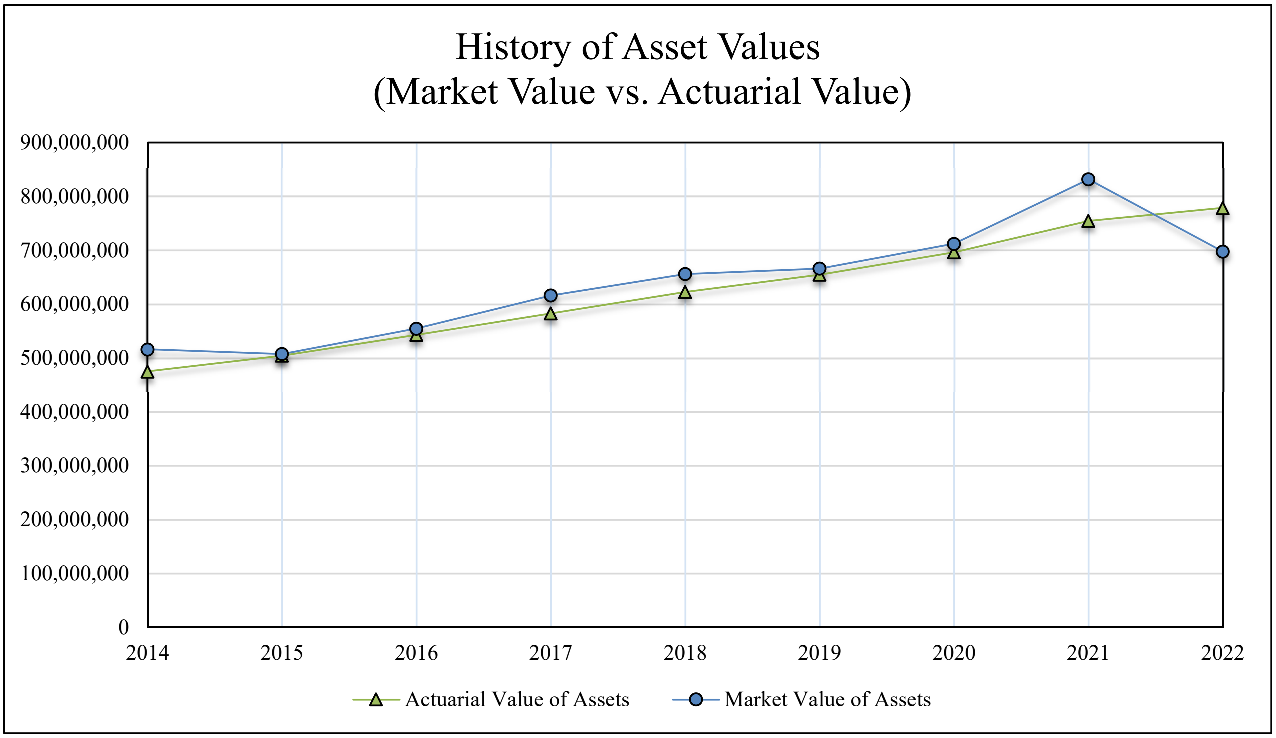
Beginning of the Year Balance*	16,659,387.88
Plus Additions	5,423,784.78
Investment Return Earned	(1,195,769.68)
Less Distributions	(3,656,460.56)
End of the Year Balance*	17,230,942.42

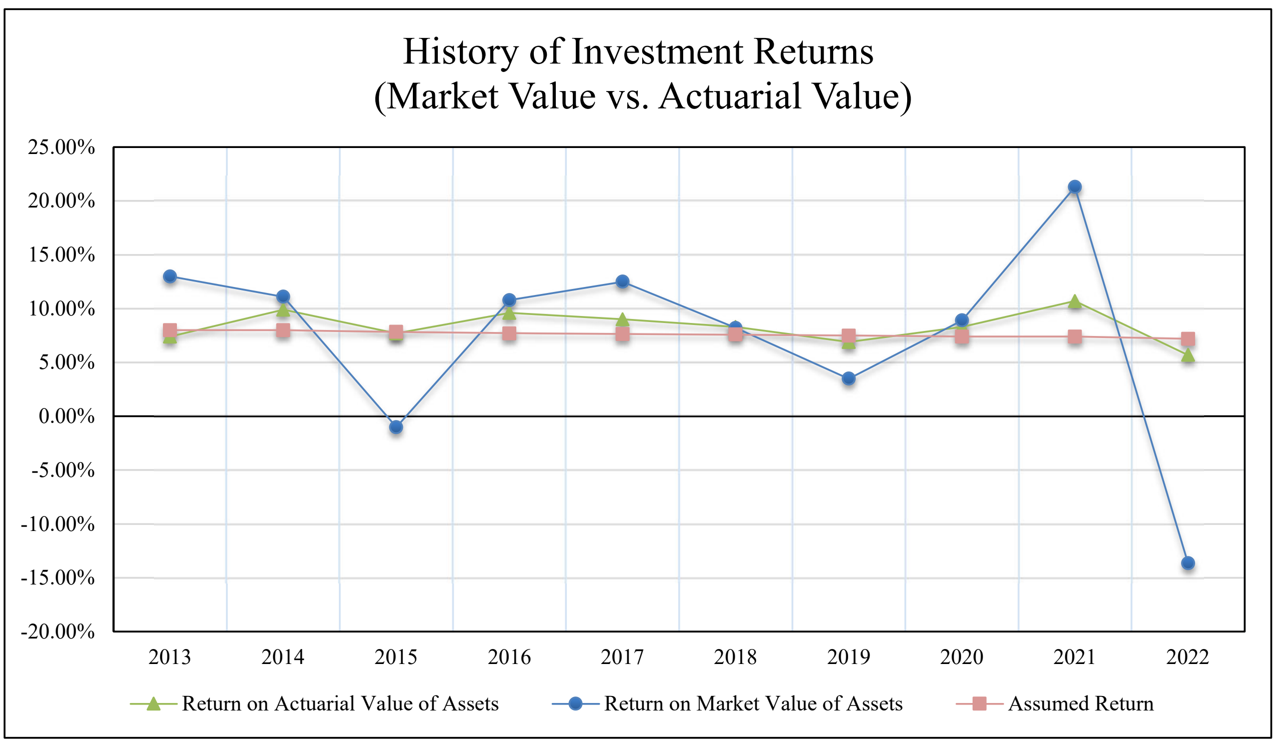
*Does not include DROP loans outstanding, approximately $155,000 at 10/1/2021 and $161,000 at 10/1/2022.

RECONCILIATION OF CITY SHORTFALL/(PREPAID) CONTRIBUTION
FOR THE FISCAL YEAR ENDED (FYE) SEPTEMBER 30, 2022

(1)	Required City Contributions	$29,590,369.00
(2)	Less 2021 Prepaid Contribution	0.00
(3)	Less Actual City Contributions	(29,590,369.00)
(4)	Equals City's Shortfall/(Prepaid) Contribution as of September 30, 2022	$0.00

HISTORY OF ASSET VALUES AND INVESTMENT RETURNS [1]





[1] Market Value of Assets and Actuarial Value of Assets exclude DROP balances.

STATISTICAL DATA

	10/1/2022	10/1/2021
Actives		
Number	1,223	1,185
Average Current Age	43.8	44.4
Average Age at Employment	35.0	35.6
Average Past Service	8.8	8.8
Average Annual Salary	$72,365	$74,442
Service Retirees		
Number	953	933
Average Current Age	70.2	Not Available
Average Annual Benefit	$51,173	$49,422
DROP Retirees		
Number	102	101
Average Current Age	60.4	60.3
Average Annual Benefit	$48,904	$49,164
Beneficiaries		
Number	170	166
Average Current Age	77.5	Not Available
Average Annual Benefit	$23,916	$22,483
Disability Retirees		
Number	22	25
Average Current Age	64.5	65.6
Average Annual Benefit	$37,448	$35,141
Terminated Vested		
Number [1]	179	110
Average Current Age [1]	46.1	46.3
Average Annual Benefit [1]	$24,086	$25,394

[1] The Average Current Age and Average Annual Benefit excludes participants awaiting a refund of contributions. The Number as of 10/1/2021 also excludes 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	21	4	1		1							27
25 - 29	35	15	13	9	11	6						89
30 - 34	42	20	14	22	15	62	4					179
35 - 39	29	14	10	23	21	49	23	18				187
40 - 44	20	6	4	16	8	40	19	39	7			159
45 - 49	11	11	7	12	9	33	16	39	17	6		161
50 - 54	10	7	3	4	13	54	22	36	35	22		206
55 - 59	8	7	5	6	12	26	14	17	11	2	2	110
60 - 64	6	2	5	4	6	25	5	15	5	1		74
65+	2	3	3	2		16		5				31
Total	184	89	65	98	96	311	103	169	75	31	2	1,223

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 10/1/2021	1,185
b. Terminations	
i. Vested (partial or full) with deferred annuity	(39)
ii. Vested in refund of member contributions only	(23)
iii. Refund of member contributions or full lump sum distribution received	(40)
c. Deaths	
i. Beneficiary receiving benefits	(2)
ii. No future benefits payable	(1)
d. Disabled	0
e. Retired	(16)
f. DROP	(30)
g. Continuing participants	1,034
h. New entrants / Rehires	190
i. Data Corrections	(1)
j. Total active life participants in valuation	1,223

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	933	101	166	25	110	0	1,335
Retired	49	(29)	0	0	(4)	0	16
DROP	0	30	0	0	0	0	30
Vested (Deferred Annuity)	0	0	0	0	39	0	39
Vested (Due Refund)	0	0	0	0	0	23	23
Hired/Terminated in Same Year	0	0	0	0	0	13	13
Death, With Survivor	(11)	0	13	0	0	0	2
Death, No Survivor	(18)	0	(12)	(3)	0	0	(33)
Disabled	0	0	0	0	0	0	0
Refund of Contributions	0	0	0	0	(2)	0	(2)
Rehires	0	0	0	0	0	0	0
Expired Annuities	0	0	0	0	0	0	0
Data Corrections	0	0	3	0	0	0	3
b. Number current valuation	953	102	170	22	143	36	1,426

SUMMARY OF CURRENT PLAN
(Through Ordinance No. 2021-4423)

Eligibility	Each general employee who works more than 30 hours per week is eligible for membership on his date of employment.
Creditable Service	Service credited under the predecessor system plus service after such date with respect to which member contributions are made.
Tiers of Employees	Tier C – All members hired on or after September 30, 2010 (October 27, 2010 for members of CWA). Tier B – Members of AFSCME hired on or after April 30, 1993; members classified as GSA or "Other" hired on or after August 1, 1993; members of CWA hired on or after February 21, 1994; and Unclassified members hired on or after October 18, 1992. Tier A – All other members.
Earnings	For Tier B and C members, base pay including longevity, but excluding overtime, shift differential or extra compensation allowances. For Tier A members, actual salary or wages received. Earnings do not include lump sum payments of unused sick or vacation time. Overtime pay for Classified Tier A members is limited to 10% of regular pay.
Final Average Monthly Earnings (FAME)	One-twelfth of average annual Earnings during the two highest paid years of Creditable Service, not less than the average monthly earnings for the 12 months as of March 8, 2006 for Unclassified Tier A members Effective September 30, 2010 averaging period is five years except for members who are less than five years away from normal retirement eligibility. Members who are eligible for normal retirement within two years or less as of September 30, 2010 will have average earnings of two years. Members who are eligible for normal retirement in within three years as of September 30, 2010 will have average earnings of three years. Members who are eligible

for normal retirement within four years as of September 30, 2010 will have average earnings of four years.

Normal Retirement

Eligibility	Tier A – Age 50 with 5 years of Creditable Service
	Tier B – Age 55 with 5 years of Creditable Service
	Tier C – Earlier of 1) Age 55 with 30 years of Creditable Service or 2) Age 62 with 5 years of Creditable Service.
Benefit	3% of FAME multiplied years of Creditable Service with the total not to exceed 80% of FAME. There is a 90% cap for certain Tier A members.
	4% of FAME multiplied years of Creditable Service with the total not to exceed 80% of FAME for the City Clerk.
	2.5% of FAME multiplied years of Creditable Service with the total not to exceed 80% of FAME for Tier C members.
Form of Benefit	Tiers A and B - 50% joint and survivor annuity payable only to the spouse or, if no spouse, to the surviving children until age 21; other options are also available. Spouse's benefits cease upon remarriage.
	Tier C – Life Annuity.

Early Retirement

Eligibility	Tier A – None.
	Tier B – total of age plus service is 75, but not earlier than age 50.
	Tier C – total of age plus service is 75, but not earlier than age 55.
Benefit	Accrued benefit, actuarially reduced from the Normal Retirement Date.
Form of Benefit	Tiers A and B - 50% joint and survivor annuity payable only to the spouse or, if no spouse, to the surviving

	children until age 21; other options are also available. Spouse's benefits cease upon remarriage. Tier C – Life Annuity.
<u>Disability</u>	
Eligibility	A total and permanent disability which renders a member incapacitated for the further performance of duty. Five years of Creditable Service is also required unless the disability is service-connected.
Benefit	Ordinary Disability – Accrued retirement benefit, without reduction, with a minimum of 35% of FAME. Service-Connected Disability – Accrued retirement benefit without reduction, with a minimum of 65% of FAME; 75% of FAME minimum for General Tier A members. Such amounts are reduced by workers' compensation benefits and, in certain cases, earned income will be considered in offsetting the benefit. The period of disability shall be included in Creditable Service for purposes of computing normal retirement benefits when a disability retiree reaches normal retirement age.
Form of Benefit	Tiers A and B - 50% joint and survivor annuity payable only to the spouse or, if no spouse, to the surviving children until age 21; other options are also available. Spouse's benefits cease upon remarriage. Tier C – Life Annuity.
<u>Pre-Retirement Death</u>	For a member who has at least three years of Creditable Service but who dies before commencement of retirement benefits, a monthly benefit is payable to the spouse or, if no spouse, to the children until age 21. The benefit is equal to 50% of the accrued normal retirement benefit without reduction with the result being a minimum of 30% of FAME and a maximum of 40% of FAME for General members.

Vestingthe

Schedule	100% after 5 years of Credited Service.
Benefit Amount	Member will receive the vested portion of the accrued benefit payable at the otherwise Normal Retirement Date.

<u>Member Contributions</u>

Tier A – 12% of Earnings.

Tiers B and C – 10% of Earnings.

Employees who have reached the applicable benefit accrual cap (90% for General Tier A employees and 80% for all others) but have not yet reached retirement age will continue to contribute to the pension Plan, but only on the amount by which pay increases after reaching the cap.

<u>Cost-of-Living Adjustments (COLAs)</u>

2.5% (1.5% for Tier C) on each October 1^{st} following one year of retirement. No COLAs apply during DROP.

<u>Deferred Retirement Option Plan (DROP)</u>

Eligibility	Satisfaction of Normal Retirement requirements.
Participation	Not to exceed 60 months.
Rate of Return	Determined by self-directed investments.
Form of Distribution	Cash lump sum at termination of employment.