

# **Actuarial Valuation Report**



## **Charlotte Firefighters' Retirement System**

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**Prepared as of July 1, 2024**



October 18, 2024

Board of Trustees  
Charlotte Firefighters' Retirement System  
428 East Fourth Street  
Suite 205  
Charlotte, NC 28202

Dear Members of the Board:

We are pleased to submit herewith the results of the annual actuarial valuation of the City of Charlotte Firefighters' Retirement System prepared as of July 1, 2024. The purpose of this report is to provide a summary of the funded status of the System as of July 1, 2024 and to recommend rates of contribution. In performing the valuation, we relied on data provided by the System. While not verifying the data at source, the actuary performed tests for consistency and reasonability.

The asset values used to determine unfunded liabilities are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return on assets. Therefore, liability amounts in the report cannot be used to assess a settlement of the obligation.

The City council has agreed to an increase in the City's contribution rate effective July 1, 2020 to 14% of payroll, increasing by 2% each year until reaching a maximum of 24% of payroll. Legislation has been introduced to amend the Charlotte Firefighters' Retirement System Act to increase the City contribution rates according to the schedule described above.

The promised benefits of the System are included in the actuarially calculated contribution rates which are developed using the entry age cost method. A five-year smoothed market value of plan assets was used for the actuarial value of assets. Consistent with the Board's funding policy, gains and losses are reflected in the unfunded accrued liability that is being amortized by regular annual contributions as a level percentage of payroll, on the assumption that payroll will increase by 2.50% annually. The actuarially determined employer contribution rate based upon the Board's adopted funding policy is 40.91% of payroll for the fiscal year ending June 30, 2026. It is important to note that the employer contribution rate for the year ending June 30, 2026 based on the new City contribution rate schedule is equal to 24.00%, leaving a contribution shortfall of 16.91% of payroll. Contribution shortfalls could lead to insolvency in the future.



The plan's unfunded liability was projected to be \$286,510,259 as of June 30, 2024. The actual unfunded liability is \$300,840,480. The components of the increase above expected of \$14,330,221 in the unfunded liability are as follows:

1. \$10,695,281 increase due to an investment loss
2. \$2,044,460 increase due to higher than anticipated salary increases
3. \$1,590,480 increase due to the difference in expected and actual demographic experience

Separate reports will be issued to provide the disclosure information required under GASB Statements No. 67 and 68.

We have prepared the Schedule of Active Member Valuation Data, Schedule of Retired Members and Beneficiaries Added to and Removed from Rolls, the Solvency Test and the Analysis of Financial Experience for the actuarial section of the Annual Report and the Schedule of Funding Progress and Trend Information for the financial section of the Annual Report.

In order to prepare the results in this report, we have utilized actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

This is to certify that the independent consulting actuary is a Member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the System and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.



We trust that the report will meet the approval of the Board and will furnish the desired information concerning the financial condition of the System.

Respectfully submitted,

Todd B. Green, ASA, EA, FCA, MAAA  
President

Cathy Turcot  
Principal and Managing Director

Jennifer Johnson  
Managing Director



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## SECTION I – SUMMARY OF PRINCIPAL RESULTS



1. For convenience of reference, the principal results of the current and preceding valuations are summarized below.

<b>Valuation Date</b>	<b>July 1, 2024</b>	<b>July 1, 2023</b>
Active members:		
Number	1,115	1,086
Annualized compensation	\$98,656,464	\$94,594,617
Retired members and beneficiaries:		
Number	876	849
Annual allowances	\$50,259,711	\$47,016,238
Number of terminated vested members	20	16
Assets:		
Market Value	\$646,558,324	\$603,780,667
Actuarial Value	663,312,316	645,260,661
Unfunded actuarial accrued liability	\$300,840,480	\$275,650,694
Funded Ratio	68.8%	70.1%
<b>Fiscal Year Ending</b>	<b>June 30, 2026</b>	<b>June 30, 2025</b>
City actuarially determined employer contribution rate (ADEC):		
Normal (including expenses of 0.75%)	15.56%	15.49%
Accrued liability	<u>25.35%</u>	<u>23.08%</u>
Total	40.91%	38.57%
Employer contribution rate	24.00%	22.00%
Member contribution rate	12.65%	12.65%





2. The major benefit and contribution provisions of the System as reflected in the valuation are summarized in Schedule G. The City council has agreed to an increase in the City's contribution to 14% of payroll, increasing by 2% each year until reaching a maximum of 24% of payroll (not more than the Actuarially Determined Contribution and not less than 14%). Legislation has been introduced to amend the Charlotte Firefighters' Retirement System Act to increase the City contribution rates according to the schedule described above. Please note, the contributions noted above are not sufficient to amortize the unfunded actuarial accrued liability on either a market value of assets basis or an actuarial value of assets basis which could lead to insolvency.
3. The July 1, 2024, market value of assets is \$16,753,992 less than the actuarial value of assets. This is due to the smoothing of investment gains and losses over a five-year period. The funded ratio on a market value basis would be 67.06%.
4. Schedule E of this report outlines the full set of actuarial assumptions and methods used in the valuation. There have been no changes in actuarial assumptions since the previous valuation.
5. The entry age actuarial cost method was used to prepare the valuation. Schedule F contains a brief description of the actuarial cost method.
6. Comments on the valuation results as of July 1, 2024 are given in Section IV and further discussion of the contributions is set out in Section V.



## SECTION II – MEMBERSHIP DATA



1. Data regarding the membership of the System for use as a basis of the valuation were furnished by the City. The valuation included 1,115 active members with annualized compensation totaling \$98,656,464.
2. The following table shows the number of retired members and beneficiaries as of July 1, 2024 together with the amount of their annual retirement benefits payable under the System as of that date.

**THE NUMBER AND ANNUAL BENEFITS OF  
RETIRED MEMBERS AND BENEFICIARIES  
AS OF JULY 1, 2024**

GROUP	NUMBER*	ANNUAL RETIREMENT BENEFITS
Service Retirements	781	\$47,961,837
Disability Retirements	32	889,774
Beneficiaries of Deceased Members	<u>63</u>	<u>1,408,100</u>
Total	876	<u>\$50,259,711</u>

\*In addition, there are 20 terminated members entitled to deferred vested benefits.

3. Table 1 of Schedule H shows the distribution by age and years of membership service of the number of active members included in the valuation, while Table 2 shows the number and annual benefits of retired members and beneficiaries included in the valuation, distributed by age. Table 3 shows the schedule of active member valuation data and Table 4 shows the schedule of retired members and beneficiaries added to and removed from the rolls.



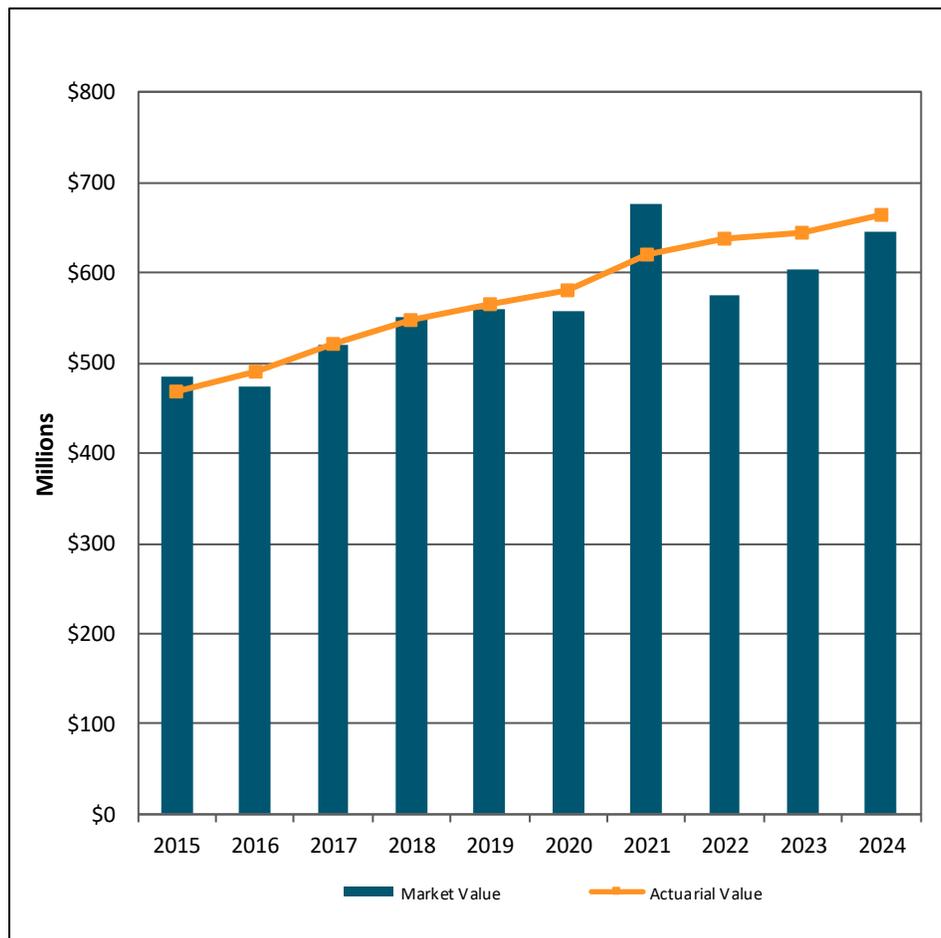
## SECTION III – ASSETS



As of July 1, 2024, the total market value of assets amounted to \$646,558,324. The actuarial value of assets used for the current valuation was \$663,312,316. Schedule C shows the development of the actuarial value of assets as of July 1, 2024. Schedule D shows the allocation of the System's assets and the market value of assets for three years.

The following graph shows a historical comparison of the System's market value of assets to actuarial value of assets over the last 10 years:

**Market Value of Assets vs. Actuarial Value of Assets**



## SECTION IV – COMMENTS ON VALUATION



1. Schedule B of this report contains the valuation balance sheet which shows the present and prospective assets and liabilities of the System as of July 1, 2024. The valuation was prepared in accordance with the actuarial assumptions set forth in Schedule E and the actuarial cost method which is described in Schedule F.
2. The valuation balance sheet shows that the System has total prospective liabilities of \$1,257,050,576 of which \$540,714,680 is for the prospective benefits payable on account of present retired members, beneficiaries of deceased members, and terminated members entitled to deferred benefits, and \$716,335,896 is for the prospective benefits payable on account of present active members. Against these liabilities, the System has a total present actuarial value of assets of \$663,312,316 as of July 1, 2024. The difference of \$593,738,260 between the total liabilities and the total present assets represents the present value of future contributions.
3. The contributions to the System consist of normal contributions and accrued liability contributions. The valuation indicates that normal contributions at the rate of 27.46% of payroll are required under the entry age method. Of this amount, 12.65% is paid by the members and the remaining 14.81% is required by the City.
4. Prospective normal contributions at the rate of 27.46% have a present value of \$292,897,780. When this amount is subtracted from \$593,738,260, which is the present value of the total future contributions to be made, there remains \$300,840,480 as the amount of unfunded accrued liability contributions. The development of the unfunded accrued liability is shown in Schedule A.



## SECTION V – CONTRIBUTIONS PAYABLE



1. The contributions consist of a normal contribution and an accrued liability contribution as determined by actuarial valuation.
2. The normal contribution rate is calculated as the level percentage of payroll which, if applied for the average member during the entire period of his anticipated covered service, would be required to meet the cost of all benefits payable on his behalf. The normal contribution rate was determined to be 27.46%.
3. Section 24 of Title V of the Charlotte Firefighters' Retirement System Act states that each member shall contribute an amount equal to the Member's Compensation multiplied by 12.65%.
4. The City normal contribution rate is equal to the difference between the normal contribution rate of 27.46% and the member contribution rate of 12.65%, or 14.81% of payroll. An additional 0.75% is required for expenses, making the total City normal rate 15.56% of payroll.
5. Pending legislation to amend Section 25 of Title V of the Charlotte Firefighters' Retirement System Act states that effective July 1, 2020, the City of Charlotte shall contribute an amount equal to the Member's Compensation multiplied by 14%, to be increased each Plan Year by 2% for the next five years to a maximum of 24%. Please note, these contributions are not sufficient to fund the system in an actuarially sound manner.
6. As part of the experience investigation performed as of June 30, 2019, the Board adopted a closed layered amortization method for the UAL. This method provides that the UAL as of June 30, 2019 (Transitional UAL) will be amortized as a level percent of payroll over a closed 30-year period. In each subsequent valuation, additional increases or decreases in the UAL will determine a New Incremental UAL. Each New Incremental UAL will be amortized as a level percent of payroll over a separate closed period from the valuation date it is measured according to the following:
  - Experience gains and losses amortized over a closed 15-year period,
  - Changes to assumptions and methods amortized over a closed 30-year period,
  - Plan changes/benefit improvements amortized over a closed 20-year period, and
  - Exceptional plan changes/benefit improvements amortized over a closed 5-year period.



## SECTION V – CONTRIBUTIONS PAYABLE



Total payroll is assumed to grow 2.50% annually. For the ten-year period ended July 1, 2024, payroll has grown by 4.13%. On this basis, we have determined the accrued liability contribution rate to be 25.35% of payroll. Schedule I of this report shows amortization schedules for all bases as of July 1, 2024.

7. The employer statutory contribution rate for the fiscal year ended June 30, 2026 is equal to 24% which is not sufficient to fund the System within the parameters defined by the Board adopted funding policy.
8. The following table shows the components of the total UAL and the derivation of the UAL contribution rate:

### TOTAL UAAL AND UAAL CONTRIBUTION RATE

	<b>Remaining Balance UAAL</b>	<b>Remaining Amortization Period</b>	<b>Amortization Payment</b>
Transitional	\$122,451,321	25	\$7,821,576
New Incremental 7/1/2020-Experience	\$20,359,333	11	\$2,273,365
New Incremental 7/1/2020-Assumptions	\$36,388,617	26	\$2,274,691
New Incremental 7/1/2021-Experience	\$6,417,116	12	\$669,918
New Incremental 7/1/2022-Experience	\$19,558,737	13	\$1,922,026
New Incremental 7/1/2022-Benefit Change	\$878,248	3	\$305,414
New Incremental 7/1/2022-Assumptions	\$24,354,368	28	\$1,463,793
New Incremental 7/1/2023-Experience	\$42,905,993	14	\$3,991,946
New Incremental 7/1/2024-Experience*	<u>\$27,526,747</u>	15	<u>\$2,436,836</u>
Total	\$300,840,480		\$23,159,565
Total Amortization Payment Adjusted for Timing			\$25,633,391
Projected Payroll			\$101,122,876
UAAL Contribution Rate			25.35%

\* Includes the impact of contribution shortfall and timing of payments equal to \$13,196,526



## SECTION V – CONTRIBUTIONS PAYABLE



9. Therefore the total actuarially determined employer contribution (ADEC) rate beginning July 1, 2025 is 40.91% of payroll. The following table summarizes the employer contributions which were determined by the July 1, 2024 valuation and are recommended for use.
10. The funding policy produces a reasonable actuarial required contribution as defined in Actuarial Standard of Practice Number 4. Contributions are developed with the intent of being level as a percentage of covered payroll, assuming the number of active members remains stable. The funding policy is expected to accumulate sufficient assets to make all future benefit payments as they become due, if all assumptions are met. Please note, the Statutory Employer Contribution Rate noted below is not sufficient to fund the System in an actuarial sound manor.

### CITY ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTIONS (ADEC) FOR FISCAL YEAR ENDING June 30, 2026

CONTRIBUTION	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION
Normal (including expenses of 0.75%)	15.56%
Accrued Liability	<u>25.35</u>
Total	40.91%
Statutory Employer Contribution	24.00%
Contribution Shortfall	16.91%



## SECTION VI – ACCOUNTING INFORMATION



The information required under the Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 for the Plan and the City will be issued in separate reports. We are providing the following information for the informational purposes only.

- The following is a distribution of the number of employees by type of membership:

### NUMBER OF ACTIVE AND RETIRED PARTICIPANTS AS OF JULY 1, 2024

GROUP	NUMBER
Retired participants and beneficiaries currently receiving benefits	876
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	20
Active Participants	<u>1,115</u>
Total	2,011

- The schedule of funding progress is shown below.

### SCHEDULE OF FUNDING PROGRESS (dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
7/01/2019	\$566,042	\$684,387	\$118,345	82.7%	\$77,041	153.6%
7/01/2020 <sup>1</sup>	580,144	758,667	178,523	76.5	82,533	216.3
7/01/2021	620,429	806,628	186,198	76.9	88,998	209.2
7/01/2022 <sup>2</sup>	637,714	870,141	232,427	73.3	89,179	260.6
7/01/2023	645,261	920,912	275,651	70.1	94,595	291.4
7/01/2024	663,312	964,152	300,840	68.8	98,656	304.9

<sup>1</sup>Economic and demographic assumptions were changed due to an experience review.

<sup>2</sup>Reflects change in assumed rate of return.





3. Additional information as of July 1, 2024 follows:

Valuation date	7/01/2024
Actuarial cost method	Entry age
Amortization period	Level Percent of Pay, Closed
Remaining amortization period	3 – 28 years
Asset valuation method	Five-year smoothed market value
Actuarial assumptions:	
Investment rate of return (includes inflation)	7.00%
Projected salary increases (includes inflation)	3.75 – 9.00%
Inflation	2.50%
Cost-of-living adjustments	None



## SECTION VII – EXPERIENCE



1. As an aid to the Board in adopting service and mortality tables, we have prepared an experience investigation for the five-year period ending June 30, 2019. The valuation was based on the assumptions adopted by the Board at the May 28, 2020 Board meeting as a result of that investigation.
2. The following tables show the estimated change in the unfunded accrued liability from various factors that resulted in an increase of \$25,189,786 in the unfunded accrued liability from \$275,650,694 to \$300,840,480 during the fiscal year ending June 30, 2024.

### ANALYSIS OF FINANCIAL EXPERIENCE – RECONCILIATION OF UNFUNDED ACCRUED LIABILITY

1. Unfunded Accrued Liability June 30, 2023	\$275,650,694
2. Normal Cost (including Expenses)	25,314,254
3. Actual Contributions	34,321,000
4. Interest [ (1 + 2) x 7.00% - (3 x 7.00% x 0.5) ]	<u>19,866,311</u>
5. Expected Unfunded Accrued Liability June 30, 2024 [ 1 + 2 - 3 + 4 ]	\$286,510,259
6. Actual Unfunded Accrued Liability June 30, 2024	\$300,840,480
7. (Gain)/Loss [ 6 - 5 ]	\$14,330,221

### ANALYSIS OF FINANCIAL EXPERIENCE – (GAINS)/LOSSES BY SOURCE

Recognized Asset (Gain)/Loss	\$10,695,281
Liability (Gain)/Loss	1,590,480
Salary Increases	2,044,460
Amendments (COLA)	0
Assumption and Method Changes	<u>0</u>
Total (Gain)/Loss	\$14,330,221





1. Measuring pension obligations and actuarially determined contributions requires the use of assumptions regarding future economic and demographic experience. Whenever assumptions are made about future events, there is risk that actual experience will differ from expected. Actuarial valuations include the risk that actual future measurements will deviate from expected future measurements due to actual experience that is different than the actuarial assumptions.
  
2. The primary areas of risk in this actuarial valuation are:
  - Investment Risk – the potential that investment returns will be different than expected.
  - Longevity and Other Demographic Risks – the potential that mortality or other demographic experience will be different than expected.
  - Interest Rate Risk – To the extent market rates of interest affect the expected return on assets, there is a risk of change to the discount rate which determines the present value of liabilities and actuarial valuation results.
  - Contribution Risk – The potential that actual contributions are different than the actuarially determined contributions.
  
3. Annual actuarial valuations are performed for CFRS which re-measure the assets and liabilities and compute a new actuarially determined contribution. CFRS also has experience studies performed every five years to analyze the discrepancies between actuarial assumptions and actual experience and determine if the actuarial assumptions need to be changed. Annual actuarial valuations and periodic experience studies are practical ways to monitor and reassess risk.





4. Under the revised Actuarial Standards of Practice (ASOP) No. 4 effective for valuations after February 15, 2023, we include a low-default-risk obligation measure of the System's liability in our funding valuation report. This is an informational disclosure as described below and would not be appropriate for assessing the funding progress or health of the plan. This measure uses the unit credit cost method and reflects all the assumptions and provisions of the funding valuation except that the discount rate is derived from considering low-default-risk fixed income securities. We considered the FTSE Pension Discount Curve based on market bond rates published by the Society of Actuaries as of June 30, 2024 and with the 30-year spot rate used for all durations beyond 30. Using these assumptions, we calculate a liability of \$1.05 billion. This amount approximates the termination liability if the plan (or all covered employment) ended on the valuation date and all of the accrued benefits had to be paid with cash-flow matched bonds. This assurance of funded status and benefit security is typically more relevant for corporate plans than for governmental plans since governments rarely have the need or option to completely terminate a plan.



# SCHEDULE A – UNFUNDED ACTUARIAL ACCRUED LIABILITY



AS OF JULY 1, 2024

(1)	Present value of prospective benefits:	
(a)	Present active members	\$716,335,896
(b)	Present retired members, beneficiaries and former members entitled to deferred vested benefits	<u>540,714,680</u>
(c)	Subtotal	1,257,050,576
(2)	Present value of future System and member normal contributions before expenses	<u>292,897,780</u>
(3)	Actuarial accrued liabilities 1(c) – (2)	964,152,796
(4)	Actuarial value of assets	<u>663,312,316</u>
(5)	Unfunded actuarial accrued liability (3) – (4)	\$ 300,840,480



# SCHEDULE B – VALUATION BALANCE SHEET AND SOLVENCY TEST



The present and prospective assets and liabilities of the System as of July 1, 2024:

<u>ACTUARIAL LIABILITIES</u>	
Present value of prospective benefits payable on account of present retired members, beneficiaries of deceased members, and terminated members entitled to deferred benefits	\$540,714,680
Present value of prospective benefits payable on account of present active members	<u>716,335,896</u>
Total liabilities	<u>\$1,257,050,576</u>
<u>PRESENT AND PROSPECTIVE ASSETS</u>	
Actuarial value of assets	\$663,312,316
Present value of future contributions	
City and member normal contributions	\$292,897,780
Unfunded accrued liability contributions	<u>300,840,480</u>
Total prospective contributions	<u>593,738,260</u>
Total assets	<u>\$1,257,050,576</u>





**SOLVENCY TEST**  
(dollar amounts in millions)

Valuation Date	Aggregate Accrued Liabilities For			Reported Assets	Portion of Accrued Liabilities Covered by Reported Assets		
	(1) Active Member Contributions	(2) Retirees and Beneficiaries	(3) Active Members (Employer Financed Portion)		(1)	(2)	(3)
7/1/24	\$111.3	\$540.7	\$312.2	\$663.3	100%	100%	3.6%
7/1/23	109.0	503.5	308.5	645.3	100	100	10.6
7/1/22 <sup>3</sup>	104.4	477.8	287.9	637.7	100	100	19.3
7/1/21	103.3	426.5	276.8	620.4	100	100	32.7
7/1/20 <sup>2</sup>	97.8	408.8	252.1	580.1	100	100	29.2
7/1/19	92.7	384.3	207.4	566.0	100	100	42.9
7/1/18	94.9	340.1	191.6	548.7	100	100	59.3
7/1/17	92.8	328.2	183.2	520.6	100	100	54.4
7/1/16 <sup>1</sup>	92.2	297.9	174.4	490.9	100	100	57.8
7/1/15	89.8	261.1	153.6	467.5	100	100	75.9

<sup>1</sup>Economic and demographic assumptions were changed as of July 1, 2016 due to an experience review.

<sup>2</sup>Economic and demographic assumptions were changed as of July 1, 2020 due to an experience review.

<sup>3</sup>Reflects change in assumed rate of return.



# SCHEDULE C – DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS



(1)	Actuarial Value of Assets as of July 1, 2023	\$645,260,661
(2)	Market Value of Assets as of July 1, 2024	646,558,324
(3)	Market Value of Assets as of July 1, 2023	603,780,667
(4)	Net Cash Flow During Plan Year	
	(a) Contributions	34,321,000
	(b) Benefit Payments and Administrative Expenses	<u>50,187,000</u>
	(c) Net Cash Flow (a) – (b)	(15,866,000)
(5)	Investment Return	
	(2) – (3) – (4c)	58,643,657
(6)	Expected Investment Return	
	[(3) x 7.00%] + [(4)c x 7.00% x 0.5]	41,709,337
(7)	Investment Gain/(Loss) for Phased-In Recognition (5) – (6)	16,934,320
(8)	Recognized Amounts for Plan Year	
	(a) Current Year 0.20 x (7)	3,386,864
	(b) First Prior Year	1,373,776
	(c) Second Prior Year	(26,688,105)
	(d) Third Prior Year	18,953,429
	(e) Fourth Prior Year	<u>(4,817,646)</u>
	(f) Total Recognized Investment Gain/(Loss)	(7,791,682)
(9)	Actuarial Value of Assets as of July 1, 2024	
	(1) + (4)(c) + (6) + (8)(f)	<u>\$663,312,316</u>
(10)	Rate of Return on Actuarial Value	5.32%
(11)	Rate of Return on Market Value	9.84%



# SCHEDULE D – ASSET INFORMATION



## Reconciliation of Market value of Assets (In Thousands)

	Years Ended June 30	
	2024	2023
Market Value of Assets - Beginning of Year	\$603,781	\$574,603
ADDITIONS:		
Contributions:		
Member	13,700	12,605
Employer	20,621	17,619
Total Contributions	34,321	30,224
Investment Income (loss):		
Net Appreciation (depreciation) in fair value of investments	52,654	42,123
Interest	5,104	3,277
Dividends	3,566	3,574
Other	0	0
Total Investment Income	61,324	48,974
Less Investment Expense	2,649	2,437
Net Investment Income (loss)	58,675	46,537
Total Additions	92,996	76,761
DEDUCTIONS:		
Benefits	48,443	45,951
Refunds	950	774
Administration	794	807
Depreciation	30	51
Total Deductions	50,217	47,583
Change in Net Assets	42,779	29,178
Market Value of Assets - End of Year	\$646,560	\$603,781

## Allocation of Market Value of Assets

	June 30, 2024	June 30, 2023	June 30, 2022
Cash	\$ 23,047	\$ 21,495	\$ 104,499
Cash Equivalents	6,669,167	6,582,444	8,389,938
Fixed Income Investments	121,522,902	101,130,893	98,409,174
Equity Investments	517,526,001	495,322,237	466,574,028
Other	56,395	86,642	137,171
Accrued Income	929,348	716,462	589,849
Accrued Contributions	742,554	606,814	1,024,733
Accrued Liabilities/Expenses	(911,090)	(686,319)	(626,058)
Total Market Value	\$ 646,558,324	\$ 603,780,667	\$ 574,603,333



## SCHEDULE E – ACTUARIAL ASSUMPTIONS AND METHODS



The assumptions and methods used in the valuation were selected by the Actuary and adopted by the Board June 1, 2020. The investment rate of return was adopted by the Board July 28, 2022.

INVESTMENT RATE OF RETURN: 7.00% per year, compounded annually, including 2.50% inflation.

SALARY INCREASES: Representative values of the assumed annual rates of salary increases are as follows:

<u>Years of Service</u>	<u>Rate*</u>
≤ 5	9.00%
6	7.25
7	7.00
8	6.50
9	5.50
10 - 14	4.75
15	4.25
16+	3.75

\*Includes price inflation of 2.50% and wage inflation component of 1.25%

SEPARATIONS FROM ACTIVE SERVICE: For death rates, the Pub-2010 Safety Employee Headcount-Weighted Mortality Table projected generationally with projection Scale MP-2019 was used. Representative values of the assumed annual rates of separation from active service are as follows:

<u>Years of Service</u>	<u>Annual Rate of</u>		
	<u>Withdrawal</u>	<u>Age</u>	<u>Disability*</u>
0-5	1.40%	20	0.04%
6-10	0.80	25	0.04
11-15	0.60	30	0.06
16-25	0.30	35	0.16
26+	0.00	40	0.29
		45	0.43
		50	0.70
		55	1.00

\*65% of the disabilities are assumed to be in the line of duty.



## SCHEDULE E – ACTUARIAL ASSUMPTIONS AND METHODS



Age	Annual Rate of Retirement			
	Age 60 with 5 Years but with less than 25 Years of Service	25 Years of Service*	26-29 Years of Service	30 Years of Service
< 50		7%		50%
50		45	35%	50
51 – 59		45	35	50
60 – 64	45%	45	45	50
65	100	100	100	100

**DEATHS AFTER RETIREMENT:** The Pub-2010 Safety Retiree Headcount-Weighted Below Median Mortality Table adjusted by 87.5% for males projected generationally with Scale MP-2019 is used for the period after service retirement. The Pub-2010 Safety Disabled Retiree Headcount-Weighted Mortality Table projected generationally with Scale MP-2019 is used for the period after disability retirement.

**EXPENSES:** 0.75% of payroll.

**PERCENT MARRIED:** 100% of active members are assumed to be married with the male three years older than his spouse.

**ASSETS:** Actuarial value, as developed in Schedule C. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected actuarial value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected actuarial value.

**VALUATION METHOD:** Entry age actuarial cost method. See Schedule F for a brief description of this method.

**UNUSED SICK AND VACATION DAYS:** 17.3% load on Final Average Salary at Retirement for cashed-in vacation and sick days. In addition, 1 year added to credited service at retirement.

**PAYROLL GROWTH ASSUMPTION:** 2.50% per year.



## SCHEDULE F – ACTUARIAL COST METHOD



1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently 7.00%), of each member's expected benefits at retirement or death is determined, based on age, service and sex. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members and beneficiaries to obtain the present value of all expected benefits payable from the System on account of the present group of members and beneficiaries.
2. The employer contributions required to support the benefits of the System are determined following a level funding approach, and consist of a normal contribution and an accrued liability contribution.
3. The normal contribution is determined using the entry age actuarial cost method. Under this method, a calculation is made to determine the level percentage of payroll which, if applied for the average new member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.
4. The unfunded accrued liability is determined by subtracting the present value of prospective employer normal contributions and member contributions, together with the current actuarial value of assets held, from the present value of expected benefits to be paid from the System.



## SCHEDULE G – SUMMARY OF MAIN SYSTEM PROVISIONS



Member	An employee of the Charlotte Fire Department who is subject to the provisions of the Civil Service Act.
Membership Service Credit	Service for all periods of employment with the Charlotte Fire Department for which contributions have been paid.
Final Average Salary	A member's average monthly compensation for the highest 2 consecutive years within the last 5 years of membership service. Salary in the final year includes cashed-in vacation and sick days.
Accrued Benefit	The monthly amount of retirement benefits earned by a member as of any date computed on his Final Average Salary and Membership Service Credit at that date.
Service Retirement Benefit	
Eligibility	Age 50 and 25 years of membership service credit, age 60 and 5 years of membership service credit or 30 years of membership service credit.
Benefit	Monthly benefit is 2.6% of final average salary multiplied by years of membership service credit. The minimum monthly benefit is \$902.75.
Early Retirement Benefit	
Eligibility	25 years of membership service credit.
Benefit	Accrued benefit reduced by 3% for each year member is under age 50.
In the Line of Duty Disability Retirement Benefit	
Eligibility	No requirements.
Benefit	78% of final average salary or normal retirement benefit if greater.
Not in the Line of Duty Disability Retirement Benefit	
Eligibility	10 years of service.
Benefit	39% of final average salary plus 1.95% of such salary for each year of membership service credit in excess of 10 years, not less than \$902.75 per month.



# SCHEDULE G – SUMMARY OF MAIN SYSTEM PROVISIONS



## Deferred Vested Retirement Benefit

### Eligibility

5 years of service. Member contributions not withdrawn.

### Benefit

Accrued benefit payable at age 60. A member may choose a refund of contributions with 4% interest in lieu of this benefit.

## Termination Benefit

If a member is terminated with less than 5 years of membership service credit, he is entitled to a return of his accumulated contributions.

## Death Benefit

If a member dies in service, his beneficiary is entitled to receive a lump sum equal to the return of the member's accumulated contributions, plus those contributions made by the City on his behalf, plus interest of 4% per year. In lieu of the lump sum, his beneficiary may elect an annuity which is the actuarial equivalent of the lump sum. If the deceased member was eligible for a service or early retirement on the day before death, the spouse may elect to receive the actuarial equivalent monthly benefit under the 66-2/3% Joint and Survivor Option.

## Optional Forms of Benefit

- (1) 10 year certain and life annuity.
- (2) 100%, 75%, 66-2/3% or 50% joint and survivorship annuity.
- (3) Joint and survivorship annuity with a pop-up provision.

## Contributions

The City contributes 24.00%  
The members contribute 12.65%.





**TABLE 1**  
**DISTRIBUTION OF ACTIVE MEMBERS BY AGE AND SERVICE GROUPS**  
**AS OF JULY 1, 2024**

Attained Age	Completed Years of Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Over	
<b>Under 25</b>	29	15								44
Total Pay										\$2,542,894
<b>25 to 29</b>	31	73	34	1						139
Total Pay										\$9,129,209
<b>30 to 34</b>	23	62	88	32						205
Total Pay										\$15,567,276
<b>35 to 39</b>	10	30	85	80	51	1				257
Total Pay										\$22,609,438
<b>40 to 44</b>	3	9	25	27	77	39				180
Total Pay										\$17,897,405
<b>45 to 49</b>		5	6	13	41	92	32			189
Total Pay										\$19,873,581
<b>50 to 54</b>		1	2	4	17	40	16	1		81
Total Pay										\$8,874,442
<b>55 to 59</b>					4	7	6	1	1	19
Total Pay										\$2,058,119
<b>60 to 64</b>						1				1
Total Pay										\$104,100
<b>65 to 69</b>										0
Total Pay										\$0
<b>70 &amp; up</b>										0
Total Pay										\$0
<b>Total Count</b>	96	195	240	157	190	180	54	2	1	1,115
Total Pay										\$98,656,464

Average Age: 38.8  
 Average Service: 12.1





**TABLE 2**

**NUMBER OF RETIRED MEMBERS AND BENEFICIARIES  
AND THEIR BENEFITS BY AGE**

<u>Attained Age</u>	<u>Number of Members</u>	<u>Total Annual Benefits</u>	<u>Average Annual Benefits</u>
50 & Under	27	\$ 1,841,411	\$68,200
51 - 55	124	9,557,178	77,074
56 - 60	156	10,415,842	66,768
61 - 65	177	10,103,930	57,084
66 - 70	141	7,505,423	53,230
71 - 75	102	4,784,352	46,905
76 - 80	82	3,080,045	37,562
Over 80	67	2,971,530	44,351
<b>Total</b>	<b>876</b>	<b>\$50,259,711</b>	<b>\$57,374</b>

**TABLE 3**

**SCHEDULE OF ACTIVE MEMBER VALUATION DATA**

<u>Valuation Date</u>	<u>Number Prior Year</u>	<u>Exits</u>	<u>New Entrants &amp; Rehires</u>	<u>Number Current Year</u>	<u>Annual Payroll</u>	<u>Annual Average Pay</u>	<u>% Increase in Average Pay</u>
7/1/2024	1,086	65	94	1,115	\$98,656,464	\$88,481	1.6%
7/1/2023	1,091	46	41	1,086	94,594,617	87,104	6.6%
7/1/2022	1,103	61	49	1,091	89,178,953	81,741	1.3%
7/1/2021	1,067	35	71	1,103	88,997,989	80,687	4.3%
7/1/2020	1,047	32	52	1,067	82,532,520	77,350	5.1%
7/1/2019	1,058	63	52	1,047	77,040,854	73,582	8.5%
7/1/2018	1,037	31	52	1,058	71,781,041	67,846	-0.4%
7/1/2017	1,030	56	63	1,037	70,610,001	68,091	5.0%
7/1/2016	1,029	46	47	1,030	66,796,597	64,851	1.4%
7/1/2015	1,027	59	61	1,029	65,820,571	63,966	2.3%





**TABLE 4**

**SCHEDULE OF RETIRED MEMBERS AND BENEFICIARIES  
ADDED TO AND REMOVED FROM ROLLS**

<u>Year Ended</u>	<u>Rolls – Beginning of Year</u>		<u>Added to Rolls</u>		<u>Removed from</u>		<u>Rolls – End of</u>		<u>% Increase in Annual Allowances</u>	<u>Average Annual Allowances</u>
	<u>No.</u>	<u>Annual Allowances</u>	<u>No.</u>	<u>Annual Allowances</u>	<u>No.</u>	<u>Annual Allowances</u>	<u>No.</u>	<u>Annual Allowances</u>		
7/1/2024	849	\$47,016,238	51	\$4,257,586	24	\$1,014,113	876	\$50,259,711	6.9%	\$57,374
7/1/2023	826	44,634,953	41	2,999,602	18	618,317	849	47,016,238	5.3%	55,378
7/1/2022	780	40,791,950	60	4,337,445	14	494,443	826	44,634,953 **	9.4%	54,037
7/1/2021	765	39,098,752	36	2,440,777	21	747,578	780	40,791,950	4.3%	52,297
7/1/2020	750	37,719,709	26	1,797,008	11	417,965	765	39,098,752	3.7%	51,109
7/1/2019	697	33,569,732	66	4,586,146	13	436,169	750	37,719,709 *	12.4%	50,293
7/1/2018	684	32,289,898	26	1,699,726	13	419,892	697	33,569,732	4.0%	48,163
7/1/2017	647	29,422,479	52	3,411,374	15	543,955	684	32,289,898	9.7%	47,207
7/1/2016	615	27,388,370	46	2,517,541	14	483,432	647	29,422,479	7.4%	45,475
7/1/2015	575	24,864,206	52	2,879,892	12	355,728	615	27,388,370	10.2%	44,534

\* Includes benefit increases due to Kurzel lawsuit  
 \*\* Includes ad hoc COLA granted to certain members in 2022



# SCHEDULE I – AMORTIZATION OF UAAL



<u>Valuation Date</u>	<u>Total UAAL</u>	
	<u>Balance</u>	<u>Annual Amortization Payment</u>
7/1/2024	300,840,480	23,159,565
7/1/2025	297,118,580	23,738,554
7/1/2026	292,516,628	24,332,018
7/1/2027	286,957,533	24,940,318
7/1/2028	280,710,340	25,226,706
7/1/2029	273,367,488	25,857,374
7/1/2030	264,835,822	26,503,808
7/1/2031	255,015,255	27,166,403
7/1/2032	243,798,272	27,845,563
7/1/2033	231,069,398	28,541,703
7/1/2034	216,704,634	29,255,245
7/1/2035	200,570,846	27,003,774
7/1/2036	185,716,767	26,777,903
7/1/2037	170,064,584	24,797,816
7/1/2038	155,435,442	19,777,244
7/1/2039	145,154,272	16,742,413
7/1/2040	137,400,689	17,160,973
7/1/2041	128,656,495	17,589,998
7/1/2042	118,841,153	18,029,748
7/1/2043	107,868,203	18,480,491
7/1/2044	95,644,852	18,942,504
7/1/2045	82,071,512	19,416,066
7/1/2046	67,041,327	19,901,468
7/1/2047	50,439,649	20,399,005
7/1/2048	32,143,490	20,908,980
7/1/2049	12,020,926	6,930,940
7/1/2050	5,446,285	2,781,635
7/1/2049	12,020,926	6,930,940
7/1/2050	5,446,285	2,781,635
7/1/2051	2,851,176	2,851,176
7/1/2052	0	0



# SCHEDULE J – ESTIMATED PROJECTED BENEFIT PAYMENTS



<u>Year End</u>	<u>Total Projected Benefits*</u>
2024	\$51,211,740
2025	\$52,807,694
2026	\$55,273,647
2027	\$57,999,832
2028	\$60,947,544
2029	\$63,879,787
2030	\$66,963,703
2031	\$70,622,654
2032	\$74,061,132
2033	\$77,499,883
2034	\$81,018,020
2035	\$84,602,620
2036	\$88,353,702
2037	\$92,236,646
2038	\$95,861,844
2039	\$99,466,602
2040	\$103,542,594
2041	\$107,799,183
2042	\$112,267,889
2043	\$116,476,562
2044	\$120,350,965
2045	\$124,569,261
2046	\$129,145,280
2047	\$133,707,905
2048	\$138,462,169
2049	\$143,120,119
2050	\$146,437,320
2051	\$148,136,396
2052	\$148,621,486
2053	\$148,265,889
2054	\$147,171,624
2055	\$145,364,271
2056	\$142,912,438
2057	\$140,028,928
2058	\$136,933,925
2059	\$133,663,930
2060	\$130,263,432
2061	\$126,753,799
2062	\$123,125,985
2063	\$119,429,672
2064	\$115,617,883
2065	\$111,716,751
2066	\$107,754,698
2067	\$103,735,882
2068	\$99,665,638
2069	\$95,549,926
2070	\$91,395,351
2071	\$87,209,350
2072	\$82,999,622
2073	\$78,775,095
2074	\$74,546,356

\*Amounts shown are the cash flows for current members only, based on the current benefit structure and assuming that all actuarial assumptions are met each year. To the extent that actual experience deviates from that expected, results will vary. Amounts are shown in future nominal dollars and have not been discounted to the valuation date.

