

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN
(CASH BALANCE PLAN)**

***Results of Actuarial Valuation
As of June 30, 2023***

CITY OF BARTLETT, TENNESSEE RETIREMENT PLAN

TABLE OF CONTENTS

Page No.

1. Letter Summarizing the Report	1
2. Table A - Summary and Certification of Valuation	4
3. Table B - Comparison of Valuation Results	5
4. Table C - Change in Assets During Plan Year	6
5. Table D - Funded Status of Accumulated Plan Benefits.....	7
6. Table E - Trend Information	8
7. Table F-1 - Changes in Net Pension Liability – Pension Expense.....	9
8. Table F-2 - Schedule of Unrecognized (Gains)/Losses.....	10
9. Table G - Schedule of Changes in Net Pension Liability and Related Ratios	11
10. Table H - Schedule of City Contributions	12

APPENDICES

- 11. Actuarial Methods and Assumptions Used in Determining Costs**
- 12. Summary of Principal Provisions of the Plan**
- 13. Account Balance Statement**
- 14. Employee Census**

August 15, 2023

VIA EMAIL

**Mr. Dick Phebus
Finance Director
City of Bartlett
6400 Stage Road
Bartlett, TN 38134**

Dear Mr. Phebus:

**Actuarial Valuation of
CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

As requested, the enclosed report sets forth the results of the actuarial valuation for the City of Bartlett Retirement Plan as of June 30, 2023. The information in this report should be used to complete the Retirement Plan Section of your Financial Statement.

The information in this report is intended to comply with the requirements of Governmental Accounting Standards Board Statements No. 67 and No. 68.

Risk Discussion

The risks that may reasonably be anticipated to significantly affect the plan's future financial condition are discussed below. It is recommended that these risks be continually monitored.

Investment Risk

The investment risk is expected to be the single most important factor in determining the future cost of the plan. Due to the plan's significant equity exposure and low correlation between fixed income assets and liabilities, there is risk that the funded status (and required cash contributions) of the plan could be very volatile. The history of approximate annual investment returns is shown in the Trend Information Table E. The historical returns highlight the substantial volatility from year to year.

Interest Rate Risk

Related to the investment risk section above, the assumed future returns implied in the interest rate used to value the liabilities is a significant factor in determining the plan's funded status. Due to the plan's liability duration (a measurement of how sensitive the liability is to change in the interest rate) of around 11-12, a 1% decrease in the assumed interest rate would increase the liability by approximately 11-12%.

Inflation Risk

Since benefit amounts are pay-related, pay increases in excess of the valuation assumption will result in an increase in the liabilities (and required cash contributions) of the plan. An increase in inflation is one factor that could lead to higher pay increases. However, the inflation risk is dampened due to inflation being a component of the interest rate used to value the liabilities. An increase in inflation would likely result in an increase in the interest rate, which could mitigate the pay increases.

Mortality Risk

Since the primary benefits of the plan can be paid as annuities, the plan is sensitive to changes in the longevity of the population. As a result, the liabilities (and required cash contributions) of the plan will increase if the participants live longer than expected and decrease if they live shorter than expected.

Contribution Risk

The required contributions calculated in this report are based on the actuarial methods and assumptions as documented in the Summary of Actuarial Methods and Assumptions section of the appendices. The required contribution includes the normal cost for new benefits being earned during the year, plus an amortization to cover any unfunded accrued liability over a period of five years or less. Based on this contribution method, all plan benefits are projected to be systematically funded. This method is not expected to cause additional volatility in the required contribution beyond the underlying risk factors discussed above.

Actuarial Opinion

This valuation has been completed in accordance with generally accepted actuarial principles and practices and is based on our interpretation of the plan provisions as shown in the Appendices.

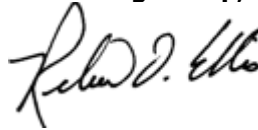
In preparing this report, we relied on the financial statements as submitted to us by the plan's trustee and on the employee data as submitted to us by the plan administrator. Based on comparisons of this data with information received in prior years, it is our opinion that the financial statements and the employee data are sufficient and reliable for the purposes of our calculations.

I am a Member of the American Academy of Actuaries. I meet the Qualification Standards of this organization.

If you have any questions concerning this information, please do not hesitate to call or write.

Sincerely,

**Ellis & Ward
Consulting Group, Inc.**

A handwritten signature in black ink, appearing to read "Richard O. Ellis". The signature is fluid and cursive, with the first name "Richard" being more prominent than the last name "Ellis".

**Richard O. Ellis, MAAA
Consulting Actuary**

**ROE/am
Enclosures**

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

TABLE A
Summary And Certification Of Valuation
As Of June 30, 2023

1. Basic data included in valuation	
a. Active participants	305
b. Individuals receiving benefits	1
c. Vested terminated participants	<u>11</u>
d. Total participants	317
e. Total annual compensation	\$14,343,765
2. Actuarial accrued liability	
a. Active participants	5,322,202
b. Individuals receiving benefits	44,643
c. Vested terminated participants	<u>78,753</u>
d. Total	5,445,598
3. Market value of assets as of valuation date	5,461,926
4. Unfunded actuarial accrued liability	0
5. Actuarially determined contribution	383,469

**Certified by: Ellis & Ward
Consulting Group, Inc.**



**Richard O. Ellis, MAAA
Consulting Actuary**

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

TABLE B
Comparison of Valuation Results

	Valuation as of	
	<u>06-30-22</u>	<u>06-30-23</u>
	(1)	(2)
1. Basic data		
a. Active participants	249	305
b. Individuals receiving benefits	1	1
c. Vested terminated participants	<u>21</u>	<u>11</u>
d. Total participants	271	317
e. Total annual compensation	\$11,121,326	\$14,343,765
2. Average age for participants	37.7	38.3
3. Actuarial accrued liability		
a. Active participants	4,027,660	5,322,202
b. Inactive participants	<u>195,338</u>	<u>123,396</u>
c. Total	4,222,998	5,445,598
4. Market value of assets	4,319,090	5,461,926
5. Unfunded actuarial accrued liability	0	0
6. Actuarially determined contribution	382,352	383,469

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

TABLE C
Change in Assets During Plan Year
Ending June 30, 2023

1. Assets in trust fund as of beginning of plan year	\$4,346,785
2. Employer contributions	415,670
3. Employee contributions	716,748
4. Benefit payments made	(351,986)
5. Expenses	(27,063)
6. Investment return	<u>389,467</u>
7. Assets in trust fund as of end of plan year	5,489,621
8. Payments due Legacy plan	(27,695)
9. Net Assets Available	5,461,926
10. Money-Weighted Rate of Return	8.35%

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

TABLE D
Funded Status of Accumulated Plan Benefits
Valuation as of June 30, 2023

1.	Market value of assets		\$5,461,926
2.	Actuarial present value of accumulated plan benefits		
		<u>Number of Participants Partially or Fully Vested</u>	<u>Actuarial Present Value</u>
a.	<u>Vested</u> accumulated plan benefits for:		
	1) Retired and deferred vested participants	12	123,396
	2) Active Participants	<u>305</u>	<u>4,503,714</u>
	3) Total	317	\$4,627,110
	4) Vested benefit security ratio		118%
b.	<u>Nonvested</u> accumulated plan benefits for active participants		818,488
c.	<u>Total</u> vested and nonvested accumulated plan benefits		\$5,445,598
	Total benefit security ratio		100%

The interest rate used for these calculations is 5.0%.

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

TABLE E

Trend Information

<u>Year</u> (1)	<u>Total Number of Participants</u> (2)	<u>Average Age</u> (3)	<u>Covered Payroll</u> (4)	<u>Unfunded Accrued Liability</u> (5)	<u>Actuarial Asset Value</u> (6)	<u>Approximate Return on Assets</u> (7)
2015	37	34.0	544,418	0	56,631	n/a
2016	70	35.0	1,841,278	0	242,346	0.3%
2017	100	37.0	3,276,689	0	609,313	6.7%
2018	160	37.0	3,213,226	0	1,195,787	5.1%
2019	185	36.6	7,118,575	0	2,028,300	7.60%
2020	203	37.3	8,140,394	0	2,804,196	3.91%
2021	216	38.1	9,136,336	0	4,194,926	24.51%
2022	271	37.7	11,121,326	0	4,319,030	(11.60)%
2023	317	38.3	14,343,765	0	5,461,926	8.35%

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

TABLE F-1

Changes In Net Pension Liability – Pension Expense

	Increase/(Decrease)			
	<u>Total Pension Liability</u>	<u>Plan Fiduciary Net Position</u>	<u>Net Pension Liability</u>	<u>Pension Expense</u>
	(1)	(2)	(3)	(4)
1. Balances at 06/30/2022	4,222,998	4,319,090	-96,092	
2. Changes for the year:				
a. Service Cost	1,403,175		1,403,175	1,403,175
b. Interest	202,350		202,350	202,350
c. Experience	-30,939		-30,939	-12,682
d. Contributions - Employer		415,670	-415,670	
e. Contributions - Employees		716,748	-716,748	-716,748
f. Expected Investment Income		234,789	-234,789	-234,789
g. Actual vs Expected Income		154,678	-154,678	-4,669
h. Benefit Payments	-351,986	-351,986	0	
i. Administrative Expense		-27,063	27,063	27,063
j. Other changes	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
k. Net changes	1,222,600	1,142,836	79,764	
3. Balances at 06/30/23	5,445,598	5,461,926	-16,328	663,700
4. Net Pension Liability Using 4% Discount Rate			1,249,957	
5. Net Pension Liability Using 6% Discount Rate			-983,783	

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

TABLE F-2

Schedule of Unrecognized (Gains)/Losses

A. Schedule of Unrecognized Demographic (Gains)/Losses

<u>Date Established</u> (1)	<u>(Gains)/Losses</u> (2)	<u>Amortization Years</u> (3)	<u>Remaining Last Year</u> (4)	<u>Recognized</u> (5)	<u>Remaining</u> (6)
6/30/2016	-5,166	27	-3,829	-191	-3,638
6/30/2017	-14,657	25	-11,141	-586	-10,555
6/30/2018	-31,534	25	-25,229	-1,261	-23,968
6/30/2019	-7,216	25	-6,060	-289	-5,771
6/30/2020	-53,898	25	-47,430	-2,156	-45,274
6/30/2021	-77,364	24	-70,916	-3,224	-67,692
6/30/2022	-88,462	24	<u>-84,766</u>	-3,686	-81,090
6/30/2023	-30,939	24		<u>-1,289</u>	<u>-29,650</u>
			-249,381	-12,682	-267,638

B. Schedule of Unrecognized (Gains) and Losses from Assumption Changes

<u>Date Established</u> (1)	<u>(Gains)/Losses</u> (2)	<u>Amortization Years</u> (3)	<u>Remaining Last Year</u> (4)	<u>Recognized</u> (5)	<u>Remaining</u> (6)
n/a	0	0			

C. Schedule of Unrecognized Investment(Gains)/Losses

<u>Date Established</u> (1)	<u>(Gains)/Losses</u> (2)	<u>Amortization Years</u> (3)	<u>Remaining Last Year</u> (4)	<u>Recognized</u> (5)	<u>Remaining</u> (6)
6/30/2019	-33,793	5	-6,757	-6,757	0
6/30/2020	25,936	5	-10,375	5,187	5,188
6/30/2021	-603,945	5	-362,367	-120,789	-241,578
6/30/2022	743,131	5	<u>594,505</u>	148,626	445,879
6/30/2023	-154,678	5		<u>-30,936</u>	<u>-123,742</u>
			235,756	-4,669	85,747

CITY OF BARTLETT, TENNESSEE RETIREMENT PLAN

TABLE G

Schedule Of Changes In Net Pension Liability
And Related Ratios
Last 10 Fiscal Years ending June 30,

	<u>2023</u>	<u>2022</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>
<u>Total pension liability</u>								
Service cost	1,403,175	1,073,360	881,465	830,971	702,503	539,160	336,506	189,455
Interest	202,350	160,637	124,604	86,538	51,353	26,318	11,062	2,915
Changes of benefit items	0	0	0	0	0	0	0	0
Differences between expected and actual experience	(30,939)	(88,462)	(77,364)	(53,898)	(7,216)	(31,534)	(14,657)	(5,166)
Changes of assumptions	0	0	0	0	0	0	0	0
Benefit payments	<u>(351,986)</u>	<u>(270,585)</u>	<u>(145,484)</u>	<u>(59,106)</u>	<u>(26,765)</u>	<u>(33,688)</u>	<u>(21,897)</u>	<u>(9,519)</u>
Net change in total pension liability	1,222,600	874,950	783,221	804,505	719,875	497,256	311,014	177,685
Total pension liability – beginning	4,222,998	2,564,827	2,564,827	1,760,322	1,040,447	543,191	232,177	54,492
Total pension liability – ending	5,445,598	4,222,998	3,348,048	2,564,827	1,760,332	1,040,447	543,191	232,177
<u>Plan fiduciary net position</u>								
Contributions – employer	415,670	380,549	338,669	331,144	405,977	299,953	180,556	97,392
Contributions - employee	716,748	555,865	456,847	428,294	355,855	275,499	180,556	97,392
Net investment income	389,467	(517,347)	759,925	92,562	355,855	52,038	36,579	5,687
Benefit payments	(351,986)	(270,585)	(145,484)	(59,106)	(26,765)	(33,688)	(21,897)	(9,519)
Administrative expense	(27,063)	(24,318)	(19,227)	(16,998)	(14,158)	(7,328)	(8,827)	(5,237)
Other	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Net change in plan fiduciary net position	1,142,836	124,164	1,390,730	775,896	832,513	586,474	366,967	185,715
Plan fiduciary net position –beginning (a)	4,319,090	4,194,926	2,804,196	2,028,300	1,195,787	609,313	242,346	56,631
Plan fiduciary net position – ending (b)	<u>5,461,926</u>	<u>4,319,090</u>	<u>4,194,926</u>	<u>2,804,196</u>	<u>2,028,300</u>	<u>1,195,787</u>	<u>609,313</u>	<u>242,346</u>
City's net pension liability	<u>(16,328)</u>	<u>(96,092)</u>	<u>(846,878)</u>	<u>(239,369)</u>	<u>(267,978)</u>	<u>(155,340)</u>	<u>(66,122)</u>	<u>(10,169)</u>
Plan's fiduciary net position as a percentage of the total pension liability	100.30%	102.27%	125.29%	109.33%	115.22%	114.93%	112.17%	104.92%
Covered employee payroll	14,343,765	11,121,326	9,136,336	8,140,394	7,118,575	5,213,226	3,276,689	1,841,278
City's net pension liability as a percentage of covered employee payroll	(00.11%)	(00.86%)	(9.27%)	(2.94%)	(3.76)	(2.98%)	(2.02%)	(0.55%)

CITY OF BARTLETT, TENNESSEE RETIREMENT PLAN

TABLE H
Schedule Of City Contributions
Last 10 Years ending June 30,

	<u>2023</u>	<u>2022</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>
Actuarially determined contribution (ADC)	383,469	382,352	338,669	331,144	346,648	260,661	163,832	92,064
Contributions	415,670	380,549	338,669	331,144	405,977	299,953	180,556	97,392
Contribution deficiency	(32,201)	1,803	0	0	(59,329)	(39,292)	(16,721)	(5,328)
Covered Employee Payroll	14,343,765	11,121,326	9,136,336	8,140,394	7,118,575	5,213,226	3,276,689	1,841,278
Contribution as a percentage of covered Employee payroll	2.90%	3.42%	3.71%	4.07%	5.70%	5.75%	5.51%	5.29%

Notes to Schedule

Valuation date: Actuarially determined contributions are calculated as of December 31st, prior to fiscal year end

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry Age Normal
Amortization method	Level Dollar, closed
Remaining amortization period	n/a
Asset valuation method	Market Value
Inflation	2.50%
Salary increases	3.5%, including inflation
Investment rate of return	5.0%, net of plan investment expense, including inflation

Retirement age Age 62

Mortality IRS Applicable Mortality - Post Retirement Only

Withdrawals None

Other Information: Plan adopted effective July 1, 2014

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

**Actuarial Methods and Assumptions
(Adopted Effective June 30, 2015)**

A. Actuarial Assumptions

1. **Interest** 5.00% Pre-retirement
5.00% Post-retirement
2. **Mortality** IRS Applicable Mortality
Post Retirement Only
3. **Disability Rates** None
4. **Withdrawal Rates** None

5. **Salary Scales**

In the computations, salary scales were used in which it was assumed that future compensation would increase at the rate of 3.5% per year, compounded annually.

6. **Retirement Age**

It was assumed that Participants will retire upon attainment of age 62.

Professional judgment was used to develop retirement probabilities. It is anticipated that an average retirement age of 62 will not cause liabilities to differ significantly from those calculated using retirement rates varying from early retirement age to normal retirement age as defined in the plan document.

7. **Expense Loading** None

8. **Marriage**

100% of active participants are assumed to be married and wives are assumed to be three years younger than husbands.

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

B. Actuarial Methods

The Entry Age Normal Level Percent of Pay cost method was used to determine liabilities for retirement benefits.

C. Method of Valuing Investments

The investments in the trust fund are valued using the market value of assets.

D. Changes in Actuarial Methods or Assumptions

None

CITY OF BARTLETT, TENNESSEE RETIREMENT PLAN

Summary of Principal Provisions As Effective July 1, 2014

1. **Employees Included in Plan:** Employees hired on and after July 1, 2014 participate on their date of hire. Employees contribute five percent (5%) of Compensation.
2. **Credited Service:** Credited service is the number of completed years and months from the Employee's first date of employment.
3. **Initial Vesting Date:** A participant's Initial Vesting Date is the date he has completed five (5) years of Credited Service.
4. **Vested Percentage:**

<u>Years of Credit Service</u> (1)	<u>Vested Percentage</u> (2)
Less than 5 years	0%
5 years	100%

If employment is terminated prior to the completion of five years of service, a refund of the participant's contributions with interest, is payable.

5. **Normal Retirement Date and Normal Form of Retirement Income:**
Normal Retirement Date is the first day of the month coinciding with or next following the date on which the Participant attains age 65, and has completed at least five (5) years of Credited Service.

Normal form of retirement income is life income.
6. **Retirement Benefit:** Monthly income is equal to a single life annuity which is the actuarial equivalent of the Participant's Accumulation Account.

**CITY OF BARTLETT, TENNESSEE
RETIREMENT PLAN**

7. **Death Benefits:** In the event of the death of a Participant prior to his Annuity Starting Date who was in active employment at any time after his Early Retirement Date, his Beneficiary will receive an amount equal to the credits in the Participant's Accumulation Account.