



Schedule C – Development of Actuarial Value of Assets

AS OF JANUARY 1, 2020

(1)	Actuarial Value Beginning of Year	\$ 292,811,879
(2)	Market Value End of Year	\$ 312,002,239
(3)	Market Value Beginning of Year	\$ 277,573,742
(4)	Cash Flow	
	a. Contributions	\$ 14,574,931
	b. Benefit Payments/Refunds	(22,942,618)
	c. Administrative Expenses	<u>(281,555)</u>
	d. Net	\$ (8,649,242)
(5)	Investment Income	
	a. Market total: [(2) – (3) – (4)d]	\$ 43,077,739
	b. Assumed Rate	6.75%
	c. Amount of Immediate Recognition [(3) x (5)b] + [(4)d x (5)b * 0.5]	\$ 18,444,316
	d. Amount for Phased-in Recognition: [(5)a – (5)c]	\$ 24,633,423
(6)	Phased-In Recognition of Investment Income*	
	a. Current Year Recognized [0.20 * (5)d]	\$ 4,926,685
	b. First Prior Year Recognized	(5,165,393)
	c. Second Prior Year Recognized	2,899,138
	d. Third Prior Year Recognized	(83,809)
	e. Fourth Prior Year Recognized	(3,311,668)
	f. Fifth Prior Year Recognized	(613,210)
	g. Sixth Prior Year Recognized	2,135,646
	h. Seventh Prior Year Recognized	990,070
	i. Eighth Prior Year Recognized	(1,382,017)
	j. Ninth Prior Year Recognized	<u>1,112,880</u>
	k. Total Recognized Investment Gain/(Loss)	\$ 1,508,322
(7)	Preliminary Actuarial Value End of Year [(1) + (4)d + (5)c + (6)k]	\$ 304,115,275
(8)	Corridor Lower Limit (80% of Market Value End of Year)	\$ 249,601,791
(9)	Corridor Upper Limit (120% of Market Value End of Year)	\$ 374,402,687
(10)	Final Actuarial Value End of Year [(7) not less than (8) and not greater than (9)]	\$ 304,115,275
(11)	Difference Between Market & Actuarial Values [(2) – (10)]	\$ 7,886,964

* Effective with the January 1, 2019 valuation, investment gains and losses will be recognized over a 5-year period. Any pre-existing investment gains or losses which would have been recognized over a period of more than 5 years from January 1, 2019 have been adjusted such that they will be recognized in full by January 1, 2024.





Schedule D – Reconciliation of Market Value of Assets

	January 1, 2020	January 1, 2019
Market Value of Assets as of January 1 of Previous Year	\$ 277,573,742	\$ 292,092,203
Expenditures		
- Benefit Payments and Refunds	\$ (22,942,618)	\$ (21,905,427)
- Administrative Expenses	<u>(281,555)</u>	<u>(343,320)</u>
- Total	\$ (23,224,173)	\$ (22,248,747)
Contributions		
- Employer	\$ 13,302,540	\$ 12,202,785
- Employee	1,272,391	1,217,025
- Other	<u>0</u>	<u>0</u>
- Total	\$ 14,574,931	\$ 13,419,810
Investment Income	\$ 43,077,739	\$ (5,689,524)
Market Value of Assets as of January 1 of Current Year	\$ 312,002,239	\$ 277,573,742
Investment Rate of Return*	15.77%	(1.98%)

* Calculated assuming cash flow occurs in the middle of the year.





Schedule E – Outline of Actuarial Assumptions and Methods

INVESTMENT RATE OF RETURN: 6.75% per annum, compounded annually, net of investment expenses.

CONTRIBUTION EARNINGS RATE: 6.00% per annum, compounded annually, from the time of termination to the time of payment, if the participant had at least 5 years of Credited Service at the time of termination.

SALARY INCREASES: Representative values of the assumed annual rates of future salary increases are as follows and include inflation at 2.50% per annum:

Annual Rate of Salary Increase	
Years of Service	Rate
<1	5.25%
1 – 5	4.75
6 - 10	4.25
11 – 15	3.75
16 – 20	3.50
21 – 25	3.25
26+	3.00

SEPARATIONS FROM ACTIVE SERVICE: Mortality rates are according to the RP-2014 Mortality Table with Blue Collar Adjustment, set forward four years for males and three years for females and projected to 2025 with projection scale MP-2017. Representative values of the assumed annual rates of death, disability, withdrawal and service retirement are as follows:

Age	Annual Rate of		
	Death – Male	Death – Female	Disability
20	0.06%	0.02%	0.10%
25	0.05	0.02	0.10
30	0.06	0.03	0.10
35	0.08	0.04	0.10
40	0.11	0.06	0.18
45	0.19	0.10	0.26
50	0.31	0.15	0.34
55	0.50	0.22	0.44
60	0.90	0.34	0.44
65	1.51	0.55	
69	2.21	0.82	





Schedule E – Outline of Actuarial Assumptions and Methods

Annual Rate of Withdrawal					
Age	Service				
	0 – 1 Year	2 – 4 Years	5 – 9 Years	10 - 14 Years	15+ Years
Less than 30	22.0%	20.0%	14.0%	8.0%	2.5%
30 – 34	17.0%	15.0%	14.0%	8.0%	2.5%
35 - 39	17.0%	13.0%	8.0%	4.0%	2.5%
40 - 44	15.0%	12.0%	4.5%	3.0%	2.5%
45 – 49	13.0%	8.0%	4.5%	3.0%	2.0%
50 and Over	13.0%	8.0%	4.5%	2.0%	1.6%

Annual Rate of Service Retirement		
Age	Standard Rate	Rule of 80 Rate
50 – 51	0.0%	11.0%
52	0.0	15.0
53 - 54	0.0	11.0
55 – 59	4.0	11.0
60	4.0	11.0
61	11.0	25.0
62	28.0	
63	22.0	
64	20.0	
65	23.0	
66	21.0	
67 - 74	20.0	
75+	100.0	





Schedule E – Outline of Actuarial Assumptions and Methods

DEATHS AFTER RETIREMENT: According to the RP-2014 Mortality Table with Blue Collar Adjustment, set forward four years for males and three years for females and projected to 2025 with projection scale MP-2017 for service retirements and beneficiaries of retired participants. The RP-2014 Disabled Mortality Table set forward four years for males and set forward seven years for females and projected to 2025 using Scale MP-2017 is used for the period after disability retirement. Representative values of the assumed annual rates of death after retirement are as follows:

Age	Annual Rate of Death After			
	Service Retirement		Disability Retirement	
	Male	Female	Male	Female
40	0.11%	0.06%	1.58%	1.13%
50	0.52	0.33	2.01	1.45
60	1.09	0.70	3.40	2.58
70	2.74	1.78	5.49	4.54
80	7.26	4.86	10.54	10.64
90	19.69	14.36	23.01	22.77
100	37.72	32.01	37.86	39.79

PERCENT MARRIED: 85% of all participants are assumed to be married, with husbands four years older than their wives.

ACTUARIAL COST METHOD: Entry age normal. Gains and losses are reflected in the total unfunded accrued liability and amortized over separate bases.

ASSET VALUATION METHOD: 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 value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between the actual market value and the expected market value. The actuarial value is not less than 80% or greater than 120% of market value.

EXPENSE ASSUMPTION: 0.50% of annual salaries.





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 6.75%), of each participant's expected benefit payable at retirement or death is determined, based on his age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the probability of his terminating with a service, disability or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Plan on account of the present group of participants and beneficiaries.
2. The contributions required to support the benefits of the Plan are determined following a level funding approach, and consist of a normal contribution and an unfunded accrued liability contribution.
3. The normal contribution is determined using the "entry age normal" method. Using this method, a calculation is made to determine the uniform and constant percentage rate of City contribution which, if applied to the compensation of each participant during the entire period of his anticipated covered service, would be required in addition to the contributions of the participant to meet the cost of all benefits payable on his behalf.
4. The present value of future unfunded accrued liability contributions is determined by subtracting the present value of prospective normal contributions together with the current assets held, from the present value of expected benefits to be paid from the Plan.





Schedule G – Board Funding Policy

The Board of Trustees of the City of Chattanooga General Pension Plan (“Board”) hereby adopts this document as the Defined Benefit Plan Funding Policy (the “Funding Policy”).

Preamble

The intent of this funding policy is to establish a formal methodology for financing the pension obligations accruing under the Plan. It is intended that current assets plus future assets from employer contributions, employee contributions, and investment earnings should be sufficient to finance all benefits provided by the Plan. The Funding Policy is intended to reflect a reasonable, conservative approach with each generation of taxpayers financing, to the greatest extent possible, the cost of pension benefits being accrued. This Funding Policy recognizes that there will be investment market place volatility and that actual economic and demographic experience will differ from assumed experience. Accordingly, this Funding Policy is intended to provide flexibility to smooth such volatility and experience in a reasonable, systematic, and financially sound manner. Further, it is the intent that this funding policy comply with all applicable Federal, State and Local laws, rules, and regulations.

This funding policy is being adopted by the Board both as a prudent action and as its fiduciary duty. Also, the Board is required to adopt a funding policy which complies with the provision of Chapter Number 990 of the Public Acts of 2014. Moreover, adoption of a funding policy is recommended by the Government Finance Officers Association, the Governmental Accounting Standards Board, and the actuarial profession. It should be noted that the Funding Policy addresses pension benefits and retiree healthcare benefits. In addition to periodic reviews of this Funding Policy, the Board will amend the policy as required by State or federal law and/or the GASB.

I. Funding Objectives

The goal in requiring employer and member contributions to the Plan in addition to investment returns is to accumulate sufficient assets during a member’s employment to fully finance the benefits the member is entitled to receive throughout retirement. To meet the goal, the Plan will strive to achieve the following objectives:

1. Develop a pattern of stable or decreasing contribution rates expressed as a percentage of employer payroll and measured by valuations prepared in accordance with the Actuarial Standards of Practice established by the Actuarial Standards Board.
2. Maintain an increasing funded ratio (ratio of actuarial value of assets to actuarial accrued liabilities) that reflects a trend of improved actuarial condition. The long-term objective is to comply with the 100% annual funding requirement set forth in the Public Employee Defined Benefits Financial Security Act of 2014 (“PEDBFS Act”), T.C.A. § 9-3-501, *et seq.*
3. Maintain adequate asset levels to finance the benefits promised to members.
4. Provide intergenerational equity for taxpayers with respect to contributions required for the benefits provided by the Plan.
5. Fund benefit improvements through increases in contributions to avoid reduction in funded ratios.
6. Comply with all other provisions contained in the PEDBFS Act.





Schedule G – Board Funding Policy

II. Components of this Funding Policy

1. Contributions
2. Procurement of actuarial services
3. Actuarial experience study
4. Actuarial valuation
5. Actuarial audit

III. Contributions

In each valuation subsequent to the adoption of this Funding Policy the City's contribution to the Plan will be based on an **Actuarially Determined Contribution** (ADC) that will be determined as the summation of the employer normal cost rate, a contribution rate for administrative expenses, the amortization rate for the transitional unfunded accrued liabilities, and the individual amortization rate for each of the new incremental unfunded accrued liabilities (UAL).

- Mortality assumptions should consider the effect of expected mortality improvements. These assumptions should be utilized beginning on or before the plan fiscal year after June 15, 2024, and continue to be utilized thereafter.
- Investment earning assumptions should not be greater than fifty (50) basis points above the rate adopted by the Tennessee Consolidated Retirement System.
- For City civilian employees hired on or after the effective date of the PEDBFS Act, the City may freeze, suspend, or modify benefits, employee contributions, plan terms and design on a prospective basis. This provision does not affect any judicial precedents or statutory law as they apply to employees who were employed before the effective date of the PEDBFS Act.
- Any Accrued benefits earned prior to this policy shall remain an enforceable right and may not be reduced without the written consent of the employee, unless the employee is subject to the forfeiture of the employee's retirement benefits provided in T.C.A 8-35-124.
- Should funded ratio of the Plan fall below 60%, no enhancements shall be made to benefits without approval by the State Treasurer.
- In the event the City fails to fund the ADC as required in T.C.A. 9-3-505, the Tennessee Commissioner of Finance and Administration, at the direction of the Comptroller of the Treasury, is authorized to withhold such amount or part of such amount from any state-shared taxes that are otherwise apportioned to the City. The money withheld will be paid to the General Pension Plan.
- Pension fund contributions will have the same budget priority as other salaries and wages.





Schedule G – Board Funding Policy

IV. Procurement of Actuarial Services

The Board shall acquire the services of professional actuarial firms to perform an actuarial experience study, an actuarial valuation, an actuarial audit, and other necessary actuarial services. Actuarial firms shall be selected by a competitive process. The actuarial firm that performs the actuarial audit shall not be the same firm that performs the actuarial valuation and the actuarial experience study. The contractual agreement with an actuarial firm shall not exceed five (5) years. The actuarial firm shall be independent and shall act as an advisor on actuarial matters on behalf of the Board.

The lead actuaries of actuarial firms shall have the requisite experience, capabilities, strengths, and qualifications including, but not limited to, the following:

1. Member of the American Academy of Actuaries;
2. Attainment of the Fellowship of the Society of Actuaries (FSA) designation;
3. Attainment of the Enrolled Actuary (EA) designation;
4. At least seven (7) years of actuarial experience in the defined benefit field; and
5. Ineligible to participate in the Plans

V. Actuarial Experience Study

An actuarial experience study shall be conducted at least every five (5) years. As determined necessary by the Board, assumptions may be evaluated on an interim basis.

Assumptions adopted by the Board should be established based on past experience and future expectations as the result of an extensive actuarial experience study.

Demographic assumptions to be established include without limitation the following:

1. Turnover pattern
2. Pre-retirement mortality based on expected improvement in mortality
3. Pattern of retirement
4. Pattern of disability
5. Post-retirement mortality with expected improvement in mortality to be phased in by June 15, 2024

Economic assumptions to be established include, but are not limited to, the following:

1. Investment earnings (net of investment expenses)
2. Salary
3. Retiree COLA

Economic assumptions shall include an underlying assumption for inflation.

The actuarial experience study shall also generate administrative factors including, but not limited to, the following: (1) survivorship benefit option factors, (2) early retirement reduction factors, (3) age 62 actuarial equivalent factors, and (4) annuity factors. These factors shall be determined on a cost neutral basis.





Schedule G – Board Funding Policy

VI. Actuarial Valuation

Valuation method and frequency. An actuarial valuation to determine the ADC rate to finance pension obligations shall be performed annually. The valuation shall utilize the entry-age normal actuarial method. The ADC shall include (1) the normal cost, (2) the unfunded actuarial accrued liability cost, and (3) the cost of administration for the operation of the Plan. The ADC shall be calculated and become applicable on July 1 of the fiscal year immediately following the valuation date.

Funding the ADC. The ADC, as determined by an actuarial valuation, shall provide annual funding at a level of no less than 100%. With respect to the obligations of the Plan, the Plan's budget shall include funding of at least 100% of the ADC. Tenn. Code Ann. § 9-3-504(c)(3). Tenn. Code Ann. § 9-3-505(a) requires the City to annually pay a payment to the Plan of no less than one hundred (100%) percent of the ADC.

Asset smoothing method. An asset smoothing method shall be utilized to determine the actuarial value of assets. The difference between the amount actually earned and the earnings assumption for a particular year shall be amortized in level amounts. The asset smoothing period shall be no more than ten (10) years. However, there shall be a corridor so that the actuarial value of assets cannot be 20% more than nor 20% less than the market value of assets existing as of the actuarial valuation date.

- **Amortization methodology for actuarial gains and losses.** Unfunded actuarial accrued liabilities shall be amortized utilizing the level dollar amortization method over a closed period not to exceed thirty (30) years. The unfunded actuarial accrued liabilities established as of the initial valuation date for which this Funding Policy is adopted is the transitional liabilities. The transitional liabilities will be amortized over a closed 28 year period beginning on the initial valuation date for which this Funding Policy is adopted. A tier approach will be utilized with new actuarial gains and losses from each actuarial valuation. Each tier shall be amortized over a closed, maximum thirty (30) year period. The amortization period may be shortened or extended from valuation to valuation but the gains and losses for a specific tier must be completely amortized within thirty (30) years. Any extension of the amortization period for a specific tier cannot exceed the thirty (30) year maximum less whatever time has elapsed from the beginning of the amortization period.

The unfunded actuarial accrued liability based on the 2015 actuarial valuation shall be funded no later than 2043. In subsequent actuarial valuations, new tiers of actuarial gains and losses where actual experience differed from assumed experience, changes in demographic and economic assumptions are made, and changes in benefit provisions are enacted shall be amortized over a closed period not to exceed thirty (30) years.

Demographic data. The demographic data in an actuarial valuation shall include: (1) all active members, (2) all inactive vested members, (3) all inactive non-vested members with an account balance, and (4) all annuitants (including beneficiary annuitants and disability annuitants).

Benefit provisions. The actuarial valuation shall include all benefits being accrued by members of the Plan including, but not limited to, retirement, disability, death benefits, and post-employment cost-of-living adjustments (COLAs). The valuation shall be based on the benefit eligibility and benefit terms as set out in City Code.

Assumptions utilized. Demographic and economic assumptions as determined by an actuarial experience study and adopted by the Board shall be utilized in the actuarial valuation.





Schedule G – Board Funding Policy

VII. Actuarial Audit

An actuarial audit by an independent actuarial audit firm shall be conducted at least once in a ten (10) year period. The purpose of the actuarial audit shall be: (1) the validation and verification of actuarial valuation results for both funding and accounting; (2) an evaluation of the reasonableness of actuarial assumptions and methods; (3) compliance with professional standards such as generally accepted actuarial standards; and (4) compliance with applicable laws, regulations and Board policy.

VIII. Transparency and Accountability

This funding policy, the actuarial experience study, the actuarial valuation, and the actuarial audit shall be readily available for review. Accordingly, the Funding Policy shall be posted on the City website. Further, the actuarial experience study, the actuarial valuation, and the actuarial audit shall be maintained on the City website for a period of no less than five years after being published.

IX. Effective Date

This policy shall remain in effect until amended by the Board or preempted by State law.





Schedule H – Amortization of UAL

AMORTIZATION OF 2015 TRANSITIONAL UAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of Transitional UAAL</u>	<u>Annual Amortization Payment</u>
1/1/2015	28	\$35,499,590	\$2,958,414
1/1/2016	27	35,094,710	2,894,183
1/1/2017	26	34,641,815	2,831,907
1/1/2018	25	34,137,395	2,831,907
1/1/2019	24	33,597,665	2,773,288
1/1/2020	23	33,000,148	2,773,288
1/1/2021	22	32,362,300	2,773,288
1/1/2022	21	31,681,396	2,773,288
1/1/2023	20	30,954,532	2,773,288
1/1/2024	19	30,178,604	2,773,288
1/1/2025	18	29,350,301	2,773,288
1/1/2026	17	28,466,088	2,773,288
1/1/2027	16	27,522,190	2,773,288
1/1/2028	15	26,514,579	2,773,288
1/1/2029	14	25,438,954	2,773,288
1/1/2030	13	24,290,725	2,773,288
1/1/2031	12	23,064,990	2,773,288
1/1/2032	11	21,756,518	2,773,288
1/1/2033	10	20,359,725	2,773,288
1/1/2034	9	18,868,647	2,773,288
1/1/2035	8	17,276,922	2,773,288
1/1/2036	7	15,577,756	2,773,288
1/1/2037	6	13,763,896	2,773,288
1/1/2038	5	11,827,600	2,773,288
1/1/2039	4	9,760,604	2,773,288
1/1/2040	3	7,554,086	2,773,288
1/1/2041	2	5,198,628	2,773,288
1/1/2042	1	2,684,177	2,773,288
1/1/2043	0	0	0





Schedule H – Amortization of UAL

AMORTIZATION OF 2016 INCREMENTAL UAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 1/1/2016</u>	<u>Annual Amortization Payment</u>
1/1/2016	30	\$14,145,913	\$1,128,536
1/1/2017	29	13,988,648	1,101,458
1/1/2018	28	13,828,497	1,101,458
1/1/2019	27	13,657,135	1,076,827
1/1/2020	26	13,466,415	1,076,827
1/1/2021	25	13,262,821	1,076,827
1/1/2022	24	13,045,484	1,076,827
1/1/2023	23	12,813,477	1,076,827
1/1/2024	22	12,565,810	1,076,827
1/1/2025	21	12,301,425	1,076,827
1/1/2026	20	12,019,194	1,076,827
1/1/2027	19	11,717,912	1,076,827
1/1/2028	18	11,396,294	1,076,827
1/1/2029	17	11,052,967	1,076,827
1/1/2030	16	10,686,465	1,076,827
1/1/2031	15	10,295,225	1,076,827
1/1/2032	14	9,877,575	1,076,827
1/1/2033	13	9,431,735	1,076,827
1/1/2034	12	8,955,800	1,076,827
1/1/2035	11	8,447,739	1,076,827
1/1/2036	10	7,905,385	1,076,827
1/1/2037	9	7,326,421	1,076,827
1/1/2038	8	6,708,377	1,076,827
1/1/2039	7	6,048,616	1,076,827
1/1/2040	6	5,344,320	1,076,827
1/1/2041	5	4,592,485	1,076,827
1/1/2042	4	3,789,900	1,076,827
1/1/2043	3	2,933,142	1,076,827
1/1/2044	2	2,018,552	1,076,827
1/1/2045	1	1,042,227	1,076,827
1/1/2046	0	0	0





Schedule H – Amortization of UAL

AMORTIZATION OF 2017 INCREMENTAL UAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 1/1/2017</u>	<u>Annual Amortization Payment</u>
1/1/2017	30	\$19,786,641	\$1,541,494
1/1/2018	29	19,577,171	1,541,494
1/1/2019	28	19,353,039	1,506,230
1/1/2020	27	19,103,135	1,506,230
1/1/2021	26	18,836,362	1,506,230
1/1/2022	25	18,551,581	1,506,230
1/1/2023	24	18,247,578	1,506,230
1/1/2024	23	17,923,055	1,506,230
1/1/2025	22	17,576,626	1,506,230
1/1/2026	21	17,206,813	1,506,230
1/1/2027	20	16,812,038	1,506,230
1/1/2028	19	16,390,616	1,506,230
1/1/2029	18	15,940,748	1,506,230
1/1/2030	17	15,460,514	1,506,230
1/1/2031	16	14,947,863	1,506,230
1/1/2032	15	14,400,609	1,506,230
1/1/2033	14	13,816,416	1,506,230
1/1/2034	13	13,192,789	1,506,230
1/1/2035	12	12,527,067	1,506,230
1/1/2036	11	11,816,410	1,506,230
1/1/2037	10	11,057,782	1,506,230
1/1/2038	9	10,247,948	1,506,230
1/1/2039	8	9,383,449	1,506,230
1/1/2040	7	8,460,597	1,506,230
1/1/2041	6	7,475,453	1,506,230
1/1/2042	5	6,423,811	1,506,230
1/1/2043	4	5,301,184	1,506,230
1/1/2044	3	4,102,779	1,506,230
1/1/2045	2	2,823,481	1,506,230
1/1/2046	1	1,457,831	1,506,230
1/1/2047	0	0	0





Schedule H – Amortization of UAL

AMORTIZATION OF 2018 INCREMENTAL UAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 1/1/2018</u>	<u>Annual Amortization Payment</u>
1/1/2018	30	\$8,573,549	\$667,929
1/1/2019	29	\$8,482,786	\$652,317
1/1/2020	28	\$8,381,401	\$652,317
1/1/2021	27	\$8,273,172	\$652,317
1/1/2022	26	\$8,157,638	\$652,317
1/1/2023	25	\$8,034,306	\$652,317
1/1/2024	24	\$7,902,648	\$652,317
1/1/2025	23	\$7,762,104	\$652,317
1/1/2026	22	\$7,612,073	\$652,317
1/1/2027	21	\$7,451,915	\$652,317
1/1/2028	20	\$7,280,946	\$652,317
1/1/2029	19	\$7,098,437	\$652,317
1/1/2030	18	\$6,903,608	\$652,317
1/1/2031	17	\$6,695,628	\$652,317
1/1/2032	16	\$6,473,610	\$652,317
1/1/2033	15	\$6,236,606	\$652,317
1/1/2034	14	\$5,983,604	\$652,317
1/1/2035	13	\$5,713,524	\$652,317
1/1/2036	12	\$5,425,214	\$652,317
1/1/2037	11	\$5,117,442	\$652,317
1/1/2038	10	\$4,788,897	\$652,317
1/1/2039	9	\$4,438,174	\$652,317
1/1/2040	8	\$4,063,778	\$652,317
1/1/2041	7	\$3,664,110	\$652,317
1/1/2042	6	\$3,237,464	\$652,317
1/1/2043	5	\$2,782,020	\$652,317
1/1/2044	4	\$2,295,833	\$652,317
1/1/2045	3	\$1,776,828	\$652,317
1/1/2046	2	\$1,222,791	\$652,317
1/1/2047	1	\$631,356	\$652,317
1/1/2048	0	0	0





Schedule H – Amortization of UAL

AMORTIZATION OF 2019 INCREMENTAL UAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 1/1/2019</u>	<u>Annual Amortization Payment</u>
1/1/2019	30	\$7,075,167	\$538,049
1/1/2020	29	\$6,996,830	\$538,049
1/1/2021	28	\$6,913,205	\$538,049
1/1/2022	27	\$6,823,935	\$538,049
1/1/2023	26	\$6,728,639	\$538,049
1/1/2024	25	\$6,626,911	\$538,049
1/1/2025	24	\$6,518,317	\$538,049
1/1/2026	23	\$6,402,392	\$538,049
1/1/2027	22	\$6,278,642	\$538,049
1/1/2028	21	\$6,146,540	\$538,049
1/1/2029	20	\$6,005,520	\$538,049
1/1/2030	19	\$5,854,981	\$538,049
1/1/2031	18	\$5,694,281	\$538,049
1/1/2032	17	\$5,522,734	\$538,049
1/1/2033	16	\$5,339,608	\$538,049
1/1/2034	15	\$5,144,120	\$538,049
1/1/2035	14	\$4,935,437	\$538,049
1/1/2036	13	\$4,712,668	\$538,049
1/1/2037	12	\$4,474,862	\$538,049
1/1/2038	11	\$4,221,004	\$538,049
1/1/2039	10	\$3,950,011	\$538,049
1/1/2040	9	\$3,660,725	\$538,049
1/1/2041	8	\$3,351,913	\$538,049
1/1/2042	7	\$3,022,256	\$538,049
1/1/2043	6	\$2,670,347	\$538,049
1/1/2044	5	\$2,294,685	\$538,049
1/1/2045	4	\$1,893,665	\$538,049
1/1/2046	3	\$1,465,576	\$538,049
1/1/2047	2	\$1,008,591	\$538,049
1/1/2048	1	\$520,760	\$538,049
1/1/2049	0	0	0





Schedule H – Amortization of UAL

AMORTIZATION OF 2020 INCREMENTAL UAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 1/1/2020</u>	<u>Annual Amortization Payment</u>
1/1/2020	30	\$661,973	\$50,342
1/1/2021	29	\$654,644	\$50,342
1/1/2022	28	\$646,820	\$50,342
1/1/2023	27	\$638,468	\$50,342
1/1/2024	26	\$629,552	\$50,342
1/1/2025	25	\$620,034	\$50,342
1/1/2026	24	\$609,873	\$50,342
1/1/2027	23	\$599,027	\$50,342
1/1/2028	22	\$587,449	\$50,342
1/1/2029	21	\$575,089	\$50,342
1/1/2030	20	\$561,894	\$50,342
1/1/2031	19	\$547,810	\$50,342
1/1/2032	18	\$532,774	\$50,342
1/1/2033	17	\$516,724	\$50,342
1/1/2034	16	\$499,590	\$50,342
1/1/2035	15	\$481,299	\$50,342
1/1/2036	14	\$461,774	\$50,342
1/1/2037	13	\$440,931	\$50,342
1/1/2038	12	\$418,682	\$50,342
1/1/2039	11	\$394,930	\$50,342
1/1/2040	10	\$369,575	\$50,342
1/1/2041	9	\$342,508	\$50,342
1/1/2042	8	\$313,615	\$50,342
1/1/2043	7	\$282,771	\$50,342
1/1/2044	6	\$249,846	\$50,342
1/1/2045	5	\$214,698	\$50,342
1/1/2046	4	\$177,177	\$50,342
1/1/2047	3	\$137,124	\$50,342
1/1/2048	2	\$94,367	\$50,342
1/1/2049	1	\$48,724	\$50,342
1/1/2050	0	0	0





Schedule I – Summary of Main Provisions of the Plan as Interpreted for Valuation Purposes

The following summary gives the main participation, benefit and contribution provisions of the Plan as interpreted in preparing the actuarial valuation. “Average compensation” means the average of the Participant’s highest paid three full calendar years of service or, if less than three years of Credited Service have been completed, the average is calculated using the number of years and months actually completed. “Credited Service” is the length of time a person participated in the Plan or any former plan prior to the date as of which Credited Service is being determined, expressed in years and completed calendar months. Appointed and elected charter officials (Mayor, City Council and City Judge) earn Credited Service for the Plan in the amount of 1.5 years for each single year they are employed by the City.

PARTICIPATION

Employees of the City of Chattanooga, including elected officials, join the Plan on the date they become a permanent employee with the following exceptions: seasonal and temporary employees; firefighters and police officers; and persons rendering a service under contract. Each employee hired after February 1, 1979 shall be a participant of the Plan as a condition of employment. Each such employee’s participation shall commence with the first payroll period.

BENEFITS

Normal Retirement

Condition for Retirement	Age 62 or upon satisfying the Rule of 80.
Amount of Benefit	Calculated using one of the following formulas: <ol style="list-style-type: none"> 1) 2% of Average Compensation multiplied by the number of full years of Credited Service (up to 20 years), plus 1% of Average Compensation multiplied by each additional full year of Credited Service beyond 20 years; or





Schedule I – Summary of Main Provisions of the Plan as Interpreted for Valuation Purposes

- 2) 60% of Average Compensation, less 50% of the primary Social Security amount payable at age 62 (PIA), plus 1% of Average Compensation for each full year in excess of 25, multiplied by a fraction, the numerator of which is equal to Credited Service not in excess of 25, and the denominator of which is equal to 25.

Formula 2 only applies to employees hired prior to January 1, 1985. Participants with 10 or more years of Credited Service on December 31, 1994 will receive the larger benefit from Formula 1 or Formula 2. All other participants will have their benefits calculated using Formula 1.

Early Retirement

Condition for Retirement

Age 55 with 5 years of Credited Service

Amount of Benefit

The early retirement benefit is computed in the manner set forth above for the normal retirement benefit, and payable on the Participant's normal retirement date. Subject to written approval by the Board, an immediate benefit shall be payable, the amount of which shall be the amount of the normal retirement benefit reduced by 5/24 of 1% for each full month the early retirement date precedes the Participant's 62nd birthday.

Disability Retirement

Condition for Retirement

Any participant who becomes disabled in the line of duty regardless of the number of years of service or not in the line of duty after five years of service

Amount of Benefit

60% of earnings is paid by the insurance company until age 62. Upon attainment of age 62, the employee becomes entitled to his regular pension as defined under normal retirement above, with full credit for the years of service during which he was disabled if totally disabled in the line of duty. The pension fund shares the cost of the insurance premium with the City, so that the fund's cost is approximately \$12,000 per month.





Schedule I – Summary of Main Provisions of the Plan as Interpreted for Valuation Purposes

Pre-Retirement Death (Refund of Contributions)

Condition for Benefit	Any participant who dies before completing 5 years of service and before attaining age 62.
Amount of Benefit	The beneficiary shall receive a refund of the deceased participant's contributions to the Plan, without interest.

Pre-Retirement Death Benefit (Monthly Benefit)

Condition for Benefit	Any participant who dies after completing 5 years of service or after attaining age 62.
Amount of Benefit	Upon the death of the participant, any option he may have elected shall be payable as though he had been entitled to have such benefit commence on his date of death. If the participant has not elected any option prior to his death, a benefit shall be payable to his surviving spouse as a ten-year certain annuity. If death occurs in the line of duty, the participant's benefit shall be calculated using 25 years of Credited Service if the participant had less than 25 years of Credited Service at the time of his death.

Termination

Condition for Benefit	Upon termination of service for reasons other than death, before meeting the eligibility requirements for any other benefit.
Amount of Benefit	The participant will receive a refund of his contributions, without interest. However, if the participant has completed at least 5 years of Credited Service, he will receive interest on his contributions at the rate of 6.00% per annum.

Optional Benefits

The normal form of payment for retirement is a straight life annuity that pays the monthly benefit to the participant until his death. The beneficiary received no payment after the participant's death under this method. However, a participant may elect to have his retirement benefit converted to a benefit of equivalent actuarial value in accordance with one of the optional forms below.





Schedule I – Summary of Main Provisions of the Plan as Interpreted for Valuation Purposes

Option A – 120 Payments and Life Certain

A reduced benefit payable for life to the retired participant, with the first 120 payments (10 years) guaranteed. Any guaranteed payments due after the death of the participant are paid to the designated surviving beneficiary.

Option B – Joint and Survivor

A reduced benefit payable for life to the retired participant. If the participant dies, a surviving beneficiary will continue to receive the identical benefit. All benefits end when both the participant and the beneficiary are deceased.

Option C – Modified Joint and Survivor

A reduced benefit payable for life to the retired participant. If the participant dies, a surviving beneficiary will continue to receive 50% of the retiree's benefit. All benefits end when both the participant and the beneficiary are deceased.

Option D – Modification of Option B (Pop-up)

A reduced benefit payable for life to the retired participant. If the participant dies before the beneficiary, a surviving beneficiary will continue to receive the identical benefit. If the beneficiary dies before the participant, the benefit will be increased to the full benefit payment as if the participant had elected the normal form.

Option E – Modification of Option C (Pop-up)

A reduced benefit payable for life to the retired participant. If the participant dies before the beneficiary, a surviving beneficiary will continue to receive 50% of the retiree's benefit. If the beneficiary dies before the participant, the benefit will be increased to the full benefit payment as if the participant had elected the normal form.





Schedule I – Summary of Main Provisions of the Plan as Interpreted for Valuation Purposes

Deferred Retirement Option Provision (DROP)

The DROP offers a participant the option of receiving a portion of his total benefit as a lump-sum cash payment at the time he retires. When a participant elects the DROP, his monthly benefit payments are reduced.

The DROP payment is paid as a lump sum during the first month of retirement. The amount of the lump sum is dependent upon the participant's total Credited Service.

The participant must have 26 years of Credited Service to be eligible for a one-year DROP payment, 27 years for a two-year DROP payment and at least 28 years for a three-year DROP payment.

Post Retirement Adjustments

An annual cost-of-living adjustment will be made to amounts paid to or on account of a retired participant each January 1. The adjustment shall be equal to 3%.

CONTRIBUTIONS

By Participants

Each participant contributes 2% of compensation.

By The City

The City contribution rate is determined on the basis of an actuarial review and analysis of the Plan made as of December 31 of the preceding Plan year.





Schedule J – Tables of Participant Data

TABLE 1
STATUS RECONCILIATION OF PARTICIPANTS

	Active	Vested Terminated	LTD	Disabled	Retired	Beneficiaries	Total
Participants as of 1/1/2019	1,437	130	22	40	977	180	2,786
A. Receiving Benefits	(41)	(6)	(4)	4	47		-
B. LTD	(2)	(1)	3				-
C. Terminated Vested	(21)	25	(4)				-
D. Terminated Non-Vested	(15)	(1)					(16)
E. Deaths	(2)	(2)			(31)	(4)	(39)
F. Refunds	(85)	(6)					(91)
G. New Participants	180					16	196
H. Rehires	9	(4)					5
I. Certain Period Expired						(2)	(2)
J. Data Corrections		5	0	4	(4)		5
Participants as of 1/1/2020	1,460	140	17	48	989	190	2,844





Schedule J – Tables of Participant Data

TABLE 2

AGE – SERVICE TABLE

Distribution of Active Participants as of January 1, 2020 by Age and Service Groups

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	No.	Payroll	
Under 25	17	11									28	\$ 846,349
25 to 29	29	53	5								87	3,195,551
30 to 34	21	68	27	3							119	4,686,331
35 to 39	22	48	23	12	3						108	4,714,512
40 to 44	24	56	38	26	11	9					164	7,549,689
45 to 49	17	57	34	23	26	25	13				195	8,242,553
50 to 54	28	42	36	25	24	27	25	6			213	9,696,246
55 to 59	14	53	50	32	30	32	26	14	8		259	12,070,286
60 to 61	2	16	15	16	15	14	5	11	6		100	4,586,835
62 to 64	2	19	20	15	14	7	6	3	8		94	4,821,110
65 to 69	2	2	15	15	12	6	7	2	6		67	3,454,547
70 & Over		1	3	6	3	1	5	1	6		26	1,294,189
Total Count	178	426	266	173	138	121	87	37	34	1,460	\$ 65,158,198	

Average Age 49.12
 Average Service 10.49





Schedule J – Tables of Participant Data

TABLE 3

NUMBER OF RETIRED PARTICIPANTS AND THEIR BENEFITS BY AGE

SERVICE RETIREMENTS

Attained Age	Number of Members	Total Annual Benefits	Average Annual Benefit
Under 50	0	\$ 0	\$ 0
50 – 54	11	234,894	21,354
55 – 59	54	908,365	16,822
60 – 64	139	2,544,333	18,305
65 – 69	254	4,944,245	19,466
70 – 74	246	4,863,167	19,769
75 – 79	132	2,728,495	20,670
80 – 84	75	1,584,215	21,123
85 – 89	55	1,186,533	21,573
90 and Over	23	337,717	14,683
Total	989	\$ 19,331,964	\$ 19,547

TABLE 4

NUMBER OF RETIRED PARTICIPANTS AND THEIR BENEFITS BY AGE

DISABILITY RETIREMENTS

Attained Age	Number of Members	Total Annual Benefits	Average Annual Benefit
Under 50	4	\$ 36,504	\$ 9,126
50 – 54	7	70,941	10,134
55 – 59	11	139,983	12,726
60 – 64	9	115,049	12,783
65 – 69	12	125,385	10,449
70 – 74	12	124,067	10,339
75 and Over	10	128,951	12,895
Total	65	\$ 740,880	\$ 11,398





Schedule J – Tables of Participant Data

TABLE 5

**NUMBER OF RETIRED PARTICIPANTS
AND THEIR BENEFITS BY AGE**

BENEFICIARIES OF DECEASED PARTICIPANTS

Attained Age	Number of Members	Total Annual Benefits	Average Annual Benefit
Under 50	28	\$ 264,498	\$ 9,446
50 – 54	5	82,748	16,550
55 – 59	9	108,075	12,008
60 – 64	26	377,875	14,534
65 – 69	16	203,855	12,741
70 – 74	29	480,545	16,571
75 – 79	34	463,807	13,641
80 – 84	26	471,626	18,139
85 and Over	17	243,489	14,323
Total	190	\$ 2,696,518	\$ 14,192

TABLE 6

**NUMBER OF DEFERRED FORMER PARTICIPANTS
AND THEIR BENEFITS BY AGE**

Attained Age	Number of Members	Total Annual Benefits	Average Annual Benefit
40 and Under	23	\$ 111,606	\$ 4,852
41 – 45	20	132,157	6,608
46 – 50	31	247,785	7,993
51 – 55	44	418,995	9,523
56 – 60	17	138,890	8,170
Over 60	5	28,608	5,722
Total	140	\$ 1,078,041	\$ 7,700





Schedule K – Analysis of Financial Experience

Gains & Losses in Accrued Liabilities Resulting from Difference Between Assumed Experience & Actual Experience (\$ Thousands)

Type of Activity	\$ Gain (or Loss) For Year Ending 1/1/2020	\$ Gain (or Loss) For Year Ending 1/1/2019
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	\$ 98.9	\$ (1,030.1)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	56.2	37.2
Death-in-Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	42.2	(183.4)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	195.0	1,246.5
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	50.3	24.2
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	479.7	(657.7)
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	(1,399.8)	(275.5)
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	<u>(301.5)</u>	<u>107.8</u>
Gain (or Loss) During Year From Experience	<u>\$ (779.0)</u>	<u>\$ (731.0)</u>
Non-Recurring Items. Adjustments for plan amendments, assumption changes, or method changes.	<u>0.0</u>	<u>(5,816.6)</u>
Composite Gain (or Loss) During Year	<u>\$ (779.0)</u>	<u>\$ (6,547.6)</u>

