



Cavanaugh Macdonald
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**Report on the Actuarial Valuation of the
City of Chattanooga General Pension Plan**

Prepared as of January 1, 2017





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

June 8, 2017

General Pension Board of Trustees
City of Chattanooga
101 East 11th Street
Suite 201, City Hall
Chattanooga, TN 37402

Ladies and Gentlemen:

We are pleased to submit the results of the annual pension actuarial valuation of the City of Chattanooga General Pension Plan, prepared as of January 1, 2017 in accordance with the provisions of Subsection (2) of Section 3.39 of the Chattanooga City Charter. The purpose of the report is to provide a summary of the funded status of the Plan as of January 1, 2017 and to recommend actuarially determined contribution rates. The information needed for the City under Governmental Accounting Standards Board No. 67 and 68 will be provided in a separate report. However, for informational purposes only, we have also provided some accounting information under GASB 25 and 27 in Section VI of this report.

On the basis of the valuation, it is recommended that the City contributions be set at a rate of 19.58% of compensation for the fiscal year ending June 30, 2018, to support the benefits of the Plan as in effect as of the valuation. In preparing the valuation, the actuary relied on data provided by the Plan. While not verifying data at the source, the actuary performed tests for consistency and reasonableness.

Since the previous valuation, the discount rate has been changed from 7.25% to 7.00%. In addition the rate of inflation has been changed from 3.00% to 2.75%.

The Plan is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Board are reasonably related to the experience under the Plan and to reasonable expectations of anticipated experience under the Plan. The assumptions and methods used for financial reporting purposes meet the parameters set by the Actuarial Standards of Practice (ASOPs). The funding objective of the Plan is that contribution rates over time will remain level as a percent of payroll. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a level percent of payroll. In accordance with the Funding Policy adopted by the Board of Trustees, the Transitional Unfunded Accrued Liability (UAL) as of January 1, 2015 is being amortized by regular annual contributions as a level dollar with a closed period. Future gains and losses in subsequent years are amortized within a closed 30 year period from the valuation it is established.

In our opinion, the Plan is operating on an actuarially sound basis. Assuming that contributions to the Plan are made by the employer from year to year in the future at the rates recommended on the basis of the successive valuations, the continued sufficiency of the retirement fund to provide the benefits called for under the Plan may be safely anticipated.

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June 8, 2017
General Pension Board of Trustees
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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 Pension Plans, 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 Pension Plan and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the Plan.

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.

The actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the Plan. Use of these computations for purposes other than meeting these requirements may not be appropriate.

Sincerely yours,

A handwritten signature in blue ink that reads "Edward J. Koebel".

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink that reads "Alisa A. Bennett".

Alisa A. Bennett, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

EJK/AAB:cc



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**REPORT ON THE ACTUARIAL VALUATION OF
THE CITY OF CHATTANOOGA
GENERAL PENSION PLAN
PREPARED AS OF JANUARY 1, 2017**

SECTION I – SUMMARY OF PRINCIPAL RESULTS

1. For convenience of reference, the principal results of the valuation and a comparison with the results of the previous valuation are summarized below:

VALUATION DATE	January 1, 2017	January 1, 2016
Number of active participants	1,403	1,385
Annual compensation	\$ 59,220,510	\$ 57,608,950
Number of retired participants and beneficiaries	1,128	1,080
Annual benefits	\$ 19,424,687	\$ 18,017,272
Number of former participants entitled to deferred vested benefits	108	107
Annual deferred vested benefits	\$ 737,104	\$ 767,952
Assets:		
Actuarial value	\$ 279,342,341	\$ 276,851,916
Market value	266,835,914	258,549,335
Unfunded accrued liability	\$ 68,417,104	\$ 49,240,623
Amortization Period	27.7 years	27.8 years
Funded Ratio		
Actuarial value	80.3%	84.9%
Market value	76.7%	79.3%
CONTRIBUTION RATES FOR FISCAL YEAR ENDING	JUNE 30, 2018	JUNE 30, 2017
Actuarially Determined contribution (ADC) Rate:		
Normal*	10.34%	9.59%
Unfunded accrued liability	<u>9.24</u>	<u>6.98</u>
Total	19.58%	16.57%
Actuarially Determined Contribution (ADC):		
Normal*	\$ 6,125,067	\$ 5,527,567
Unfunded accrued liability	<u>5,474,859</u>	<u>4,022,719</u>
Total	\$ 11,599,926	\$ 9,550,286

* Includes administrative expenses.



2. Comments on the valuation results as of January 1, 2017 are given in Section IV and further discussion of the contribution levels is set out in Section V. In addition, comments on the experience and actuarial gains and losses during the year are provided in Section VII.
3. The Entry Age Normal actuarial cost method was used to prepare the valuation. Schedule F contains a brief description of this method.
4. Schedule E of this report outlines the full set of actuarial assumptions and methods used to prepare the valuation. Since the previous valuation, the discount rate has been changed from 7.25% to 7.00%. In addition, the assumed rate of inflation has been changed from 3.00% to 2.75%
5. Schedule I of this report outlines the main plan provisions employed. There have been no changes since the previous valuation.
6. As shown in the Summary of Principal Results, the funding ratio is the ratio of the actuarial value of assets to the accrued liability and is different based on market value of assets. The funded ratio is an indication of progress in funding the promised benefits. Since the ratio is less than 100%, there is a need for additional contributions toward payment of the unfunded accrued liability. In addition, this funded ratio does not have any relationship to measuring sufficiency if the plan had to settle its liabilities.

SECTION II – PARTICIPANT DATA

1. Data regarding the participants of the Plan for use as a basis of the valuation were furnished by the Plan. The valuation included 1,403 active participants with annualized compensation totaling \$59,220,510.
2. The following table shows the number of retired participants and beneficiaries in receipt of a benefit as of January 1, 2017 together with the amount of their annual retirement allowances payable under the Plan as of that date.



**THE NUMBER AND ANNUAL RETIREMENT BENEFITS OF
RETIRED PARTICIPANTS AND BENEFICIARIES
AS OF JANUARY 1, 2017**

GROUP	NUMBER	ANNUAL RETIREMENT BENEFITS
Service Retirements	907	\$ 16,572,632
Disability Retirements	60	707,522
Beneficiaries of Deceased Participants	<u>161</u>	<u>2,144,533</u>
Total	1,128	\$ 19,424,687

In addition, there are 108 former participants entitled to deferred vested retirement benefits totaling \$737,104.

3. Table 1 in Schedule J gives a reconciliation of participating members for the past plan year; Table 2 shows the distribution by age and service groups of the number and average pay of active participants included in the valuation. Tables 3, 4, 5 and 6 give the number and annual benefits of retired participants and beneficiaries included in the valuation, distributed by age.

SECTION III – ASSETS

1. As of January 1, 2017, the market value of assets amounted to \$266,835,914, as provided by First Tennessee Bank. The estimated investment return for the plan year was 7.04%. Schedule D shows the receipts and disbursements of the System for the year preceding the valuation date and a reconciliation of the System balances at market value.
2. The market-related actuarial value of assets using a 10-year smoothing technique of investment gains and losses is \$279,342,341. The estimated investment return for the plan year ending January 1, 2017 on an actuarial value of assets basis was 4.44%, which can be compared to the investment return assumed for the period of 7.25%. Schedule C shows the development of the actuarial value of assets as of January 1, 2017.



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 Plan as of January 1, 2017. The valuation was prepared in accordance with the actuarial assumption set forth in Schedule E and the actuarial cost method which is described in Schedule F.
2. The valuation balance sheet shows that the Plan has total prospective liabilities of \$400,775,298. Of this amount, \$220,534,693 is for the prospective benefits payable on account of present retired participants, beneficiaries of deceased participants and former participants entitled to deferred vested benefits or a refund of contributions, and \$180,240,605 is for the prospective benefits payable on account of present active participants. Against these liabilities, the Plan has total present assets of \$279,342,341 as of January 1, 2017. The difference of \$121,432,957 between the total liabilities and the total present assets represents the present value of future contributions.
3. The contributions to the Plan consist of normal contributions and accrued liability contributions. The valuation indicates that normal contributions at the rate of 11.92% of payroll are required under the entry age cost method. Of this amount, 2.00% will be paid by the participants and the remaining 9.92% is payable by the City. An additional contribution of 0.42% of payroll is required for administrative expenses. The total normal contribution rate including administrative expenses is, therefore, 10.34% of payroll.
4. Prospective normal contributions at the rate of 11.92% have a present value of \$53,015,853. When this amount is subtracted from \$121,432,957, which is the present value of total future contributions, there remains \$68,417,104 as the amount of unfunded accrued liability (UAL) contributions.
5. The funding policy adopted by the Board provides that the UAL as of January, 1, 2015 (Transitional UAL) will be amortized as a level dollar amount over a closed 28 year period. In each subsequent valuation, all benefit changes, assumption and method changes and experience



gains and/or losses that have occurred since the previous valuation will determine a New Incremental UAL. Each New Incremental UAL will be amortized as a level dollar amount over a closed 30-year period from the date it is established. We have determined that an accrued liability contribution rate of 9.24% of payroll will comply with the Board's funding policy.

6. Schedule H of this report shows the amortization schedules for the Transitional UAL and New Incremental UAL's.
7. The following table shows the components of the total UAAL and the derivation of the UAAL contribution rate in accordance with the funding policy:

TOTAL UAAL AND UAAL CONTRIBUTION RATE

	Remaining Balance UAAL	Remaining Amortization Period (years)	Amortization Payment
Transitional	\$34,641,815	26	\$2,831,907
New Incremental 1/1/2016	13,988,648	29	1,101,458
New Incremental 1/1/2017	<u>19,786,641</u>	30	<u>1,541,494</u>
Total UAAL	\$68,417,104		\$ 5,474,859
Blended Amortization Period (years)			27.7
Estimated Payroll			\$59,220,510
UAAL Contribution Rate			9.24%

8. Therefore, the total contribution rate required for the fiscal year ending June 30, 2018 is 19.58% of payroll.
9. As can be seen from Schedule K of our report, the Plan had an overall composite loss for the year. Besides the discount rate change that increased liability by approximately \$8.9 million, the majority of the loss was due to the investment loss on the actuarial value of assets for the year. The Plan had a loss of approximately \$7.6 million due to the continued recognition of asset gains and losses using the 10-year actuarial smoothing method. This is mainly due to the 2008 economic downturn, which still has one more year until fully recognized. Other losses due to retirement and mortality were offset by gains due to salary increases less than expected.



SECTION V – CONTRIBUTIONS PAYABLE BY THE CITY

It is recommended on the basis of the present valuation that the City make contributions during the fiscal year ending June 30, 2018 to the Plan according to the rates shown in the following table:

CONTRIBUTION	PERCENTAGE OF PARTICIPANTS' COMPENSATION
Normal	10.34%
Unfunded accrued liability	<u>9.24</u>
Total	19.58%

SECTION VI – ACCOUNTING INFORMATION

1. Governmental Accounting Standards Board (GASB) has issued Statement No. 67 which replaces Statement 25 for plans beginning after June 15, 2013. The information required under GASB 67 was issued in a separate report. The following information is provided for informational purposes and for disclosure in the financial statements of the employer under GASB 27. One such item is a distribution of the number of employees by type of membership, as follows:

**NUMBER OF ACTIVE AND RETIRED PARTICIPANTS
AS OF JANUARY 1, 2017**

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits	1,128
Terminated participants entitled to benefits but not yet receiving them	108
Active participants	<u>1,403</u>
Total	2,639



2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS*

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued 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)
1/01/2012	\$246,465,076	\$289,703,203	\$43,238,127	85.1%	\$57,976,515	74.6%
1/01/2013	253,442,165	287,753,658	34,311,493	88.1	56,270,053	61.0
1/01/2014	262,356,948	296,283,808	33,926,860	88.5	55,815,216	60.8
1/01/2015	270,983,381	306,482,971	35,499,590	88.4	57,555,196	61.7
1/01/2016	276,851,916	326,092,539	49,240,623	84.9	57,608,950	85.5
1/01/2017	279,342,341	347,759,445	68,417,104	80.3	59,220,510	115.5

* Results prior to the January 1, 2013 valuation were provided by the Plan's prior actuary.

3. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at January 1, 2017. Additional information as of the latest actuarial valuation follows.

Valuation date	January 1, 2017
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar closed
Remaining amortization period	27.7 years
Asset valuation method	Market value, with 10 year recognition of investment gains and losses, not less than 80% or greater than 120% of market value
Actuarial assumptions:	
Investment rate of return*	7.00%
Projected salary increases*	4.00– 5.00%
Cost-of-living adjustments	3.00%
*Includes inflation at	2.75%



SECTION VII – EXPERIENCE

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain/(loss) for the January 1, 2017 valuation is shown below:

	<u>\$ Thousands</u>
(1) UAAL as of January 1, 2016	\$ 49,240.6
(2) Total normal cost from last valuation	6,256.0
(3) Total actual contributions	10,059.6
(4) Interest accrual: $[(1) + (2)] \times .0725 - (3) \times .03625$	<u>3,658.8</u>
(5) Expected UAAL before changes: (1) + (2) – (3) + (4)	\$ 49,095.8
(6) Change due to plan amendments	0.0
(7) Change due to actuarial assumptions or methods	<u>8,854.8</u>
(8) Expected UAAL after changes: (5) + (6) + (7)	\$ 57,950.6
(9) Actual UAAL as of January 1, 2017	\$ 68,417.1
(10) Gain/(loss): (8) – (9)	\$ (10,466.5)
(11) Gain/(loss) as percent of actuarial accrued liabilities at start of year (\$326,092.5)	(3.21)%

Valuation Date January 1	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2015	(0.72)%
2016	(1.94)%
2017	(3.21)%



SCHEDULE A

**DEVELOPMENT OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY
AS OF JANUARY 1, 2017**

(1)	Present Value of Future Benefits:	
	a) Present Active Participants	\$ 180,240,605
	b) Present Retired Participants, Beneficiaries and Former Participants Entitled to Deferred Vested Benefits or Refunds of Contributions	<u>220,534,693</u>
	c) Total	\$ 400,775,298
(2)	Present Value of Future City and Participant Normal Contributions	<u>53,015,853</u>
(3)	Actuarial Accrued Liabilities [1(c) – (2)]	\$ 347,759,445
(4)	Actuarial Value of Assets	<u>279,342,341</u>
(5)	Unfunded Actuarial Accrued Liabilities (UAAL) [(3) – (4)]	\$ 68,417,104
(6)	Amortization of UAAL	\$ 5,474,859
(7)	Contribution Rate as a % of Payroll	
	(a) Normal Cost	10.34%
	(b) UAAL	<u>9.24</u>
	(c) Total	19.58%



SCHEDULE B

**VALUATION BALANCE SHEET
SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF
THE GENERAL PENSION PLAN FOR EMPLOYEES OF CITY OF CHATTANOOGA
PREPARED AS OF JANUARY 1, 2017**

ASSETS	
Present Assets of the Plan	\$ 279,342,341
Present Value of Prospective Contributions:	
City and Participants Normal Contributions	\$ 53,015,853
Unfunded Accrued Liability Contributions	<u>68,417,104</u>
Total Prospective Contributions	<u>121,432,957</u>
Total Assets	<u>\$ 400,775,298</u>
LIABILITIES	
Present Value of Benefits Payable on Account of Retired Participants, Beneficiaries and Former Participants Entitled to Deferred Vested Benefits or Refunds of Contributions	\$ 220,534,693
Present Value of Prospective Benefits payable on Account of Present Active Participants	<u>180,240,605</u>
Total Liabilities	<u>\$ 400,775,298</u>



SCHEDULE C

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
AS OF JANUARY 1, 2017**

(1)	Actuarial Value Beginning of Year	\$ 276,851,916
(2)	Market Value End of Year	\$ 266,835,914
(3)	Market Value Beginning of Year	\$ 258,549,335
(4)	Cash Flow	
	a. Contributions	\$ 10,059,624
	b. Benefit Payments/Refunds	(19,294,462)
	c. Administrative Expenses	<u>(352,078)</u>
	d. Net	\$ (9,586,916)
(5)	Investment Income	
	a. Market total: [(2) – (3) – (4)d]	\$ 17,873,495
	b. Assumed Rate	7.25%
	c. Amount of Immediate Recognition [(3) x (5)b] + [(4)d x (5)b * 0.5]	\$ 18,397,301
	d. Amount for Phased-in Recognition: [(5)a – (5)c]	\$ (523,806)
(6)	Phased-In Recognition of Investment Income	
	a. Current Year Recognized [0.10 * (5)d]	\$ (52,381)
	b. First Prior Year Recognized	(2,365,477)
	c. Second Prior Year Recognized	(511,009)
	d. Third Prior Year Recognized	2,135,646
	e. Fourth Prior Year Recognized	990,070
	f. Fifth Prior Year Recognized	(1,382,017)
	g. Sixth Prior Year Recognized	1,112,880
	h. Seventh Prior Year Recognized	2,110,984
	i. Eighth Prior Year Recognized	(9,330,884)
	j. Ninth Prior Year Recognized	<u>972,228</u>
	k. Total Recognized Investment Gain/(Loss)	\$ (6,319,960)
(7)	Preliminary Actuarial Value End of Year [(1) + (4)d + (5)c + (6)k]	\$ 279,342,341
(8)	Corridor Lower Limit (80% of Market Value End of Year)	\$ 213,468,731
(9)	Corridor Upper Limit (120% of Market Value End of Year)	\$ 320,203,097
(10)	Final Actuarial Value End of Year [(7) not less than (8) and not greater than (9)]	\$ 279,342,341
(11)	Difference Between Market & Actuarial Values [(2) – (10)]	\$ (12,506,427)



SCHEDULE D

RECONCILIATION OF MARKET VALUE OF ASSETS

	January 1, 2017	January 1, 2016
Market Value of Assets as of January 1 of Previous Year	\$ 258,549,335	\$ 271,329,158
Expenditures		
- Benefit Payments and Refunds	\$ (19,294,462)	\$ (18,065,866)
- Administrative Expenses	<u>(352,078)</u>	<u>(244,888)</u>
- Total	\$ (19,646,540)	\$ (18,310,754)
Contributions		
- Employer	\$ 8,894,850	\$ 8,020,301
- Employee	1,164,774	1,158,174
- Other	<u>0</u>	<u>0</u>
- Total	\$ 10,059,624	\$ 9,178,475
Investment Income	\$ 17,873,495	\$ (3,647,544)
Market Value of Assets as of January 1 of Current Year	\$ 266,835,914	\$ 258,549,335
Investment Rate of Return	7.04%	(1.37%)



SCHEDULE E

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

INVESTMENT RATE OF RETURN: 7.00% 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.

COST OF LIVING: Cost of living as measured by the Consumer Price Index (CPI) is assumed to increase at the rate of 3.00% per year.

SALARY INCREASES: Representative values of the assumed annual rates of future salary increases are as follows and include inflation at 2.75% per annum:

Annual Rate of Salary Increase	
Years of Service	Rate
0 - 5	5.00%
6 - 10	4.50
11+	4.00

SEPARATIONS FROM ACTIVE SERVICE: Mortality rates are according to the RP-2000 Combined Mortality Table set forward four years for males and set forward two years for females and using a Scale AA projection to 2025. 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	0.02%	0.01%	
25	0.04	0.02	
30	0.06	0.03	0.12%
35	0.09	0.04	0.16
40	0.11	0.06	0.23
45	0.14	0.08	0.29
50	0.20	0.14	0.38
55	0.38	0.31	0.41
60	0.77	0.59	0.50
65	1.43	1.07	
69	2.08	1.60	

Age	Annual Rate of Withdrawal				
	Service				
	0 – 1 Year	2 – 4 Years	5 – 9 Years	10 - 14 Years	15+ Years
Less than 30	25.0%	15.0%	10.0%	4.0%	1.5%
30 - 39	17.0%	12.0%	8.0%	4.0%	1.5%
40 and Over	13.0%	8.5%	3.0%	2.5%	1.5%



Annual Rate of Service Retirement		
Age	Standard Rate	Rule of 80 Rate
50 - 54	0.0%	11.0%
55 - 59	4.0	11.0
60	6.0	11.0
61	12.0	28.0
62	30.0	
63 - 74	20.0	
75+	100.0	

DEATHS AFTER RETIREMENT: According to the RP-2000 Combined Mortality Table set forward four years for males and set forward two years for females and using a Scale AA projection to 2025, for service retirements and beneficiaries of retired participants. The RP-2000 Disabled Mortality Table set forward eight years for males and set forward nine years for females and using a Scale AA projection to 2025 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		Annual Rate of Death After Disability Retirement	
	Male	Female	Male	Female
40	0.11%	0.06%	1.76%	0.68%
50	0.20	0.14	2.63	1.83
60	0.77	0.59	4.00	3.12
70	2.32	1.78	7.22	5.69
80	7.96	4.72	14.31	12.15
90	22.68	14.62	30.75	22.57
100	39.20	25.45	100.00	35.15

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.

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 10% 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: 0.42% 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 7.00%), 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 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.



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 actuarial accrued liabilities (UAAL).

- 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.



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.

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 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 liabilities shall be amortized utilizing the level dollar amortization method over a closed period not to exceed thirty (30) years. The unfunded 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 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.

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 2015 TRANSITIONAL UAAL

<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	2,831,907
1/1/2020	23	\$33,020,154	2,831,907
1/1/2021	22	\$32,402,217	2,831,907
1/1/2022	21	\$31,741,025	2,831,907
1/1/2023	20	\$31,033,549	2,831,907
1/1/2024	19	\$30,276,550	2,831,907
1/1/2025	18	\$29,466,561	2,831,907
1/1/2026	17	\$28,599,873	2,831,907
1/1/2027	16	\$27,672,516	2,831,907
1/1/2028	15	\$26,680,245	2,831,907
1/1/2029	14	\$25,618,515	2,831,907
1/1/2030	13	\$24,482,463	2,831,907
1/1/2031	12	\$23,266,888	2,831,907
1/1/2032	11	\$21,966,223	2,831,907
1/1/2033	10	\$20,574,511	2,831,907
1/1/2034	9	\$19,085,379	2,831,907
1/1/2035	8	\$17,492,008	2,831,907
1/1/2036	7	\$15,787,102	2,831,907
1/1/2037	6	\$13,962,851	2,831,907
1/1/2038	5	\$12,010,903	2,831,907
1/1/2039	4	\$9,922,319	2,831,907
1/1/2040	3	\$7,687,534	2,831,907
1/1/2041	2	\$5,296,314	2,831,907
1/1/2042	1	\$2,737,708	2,831,907
1/1/2043	0	0	0



SCHEDULE H
(Continued)

AMORTIZATION OF 2016 INCREMENTAL UAAL

<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	1,101,458
1/1/2020	26	13,473,778	1,101,458
1/1/2021	25	13,277,586	1,101,458
1/1/2022	24	13,067,660	1,101,458
1/1/2023	23	12,843,040	1,101,458
1/1/2024	22	12,602,696	1,101,458
1/1/2025	21	12,345,529	1,101,458
1/1/2026	20	12,070,359	1,101,458
1/1/2027	19	11,775,928	1,101,458
1/1/2028	18	11,460,886	1,101,458
1/1/2029	17	11,123,792	1,101,458
1/1/2030	16	10,763,101	1,101,458
1/1/2031	15	10,377,161	1,101,458
1/1/2032	14	9,964,206	1,101,458
1/1/2033	13	9,522,344	1,101,458
1/1/2034	12	9,049,551	1,101,458
1/1/2035	11	8,543,663	1,101,458
1/1/2036	10	8,002,363	1,101,458
1/1/2037	9	7,423,172	1,101,458
1/1/2038	8	6,803,438	1,101,458
1/1/2039	7	6,140,322	1,101,458
1/1/2040	6	5,430,788	1,101,458
1/1/2041	5	4,671,587	1,101,458
1/1/2042	4	3,859,241	1,101,458
1/1/2043	3	2,990,032	1,101,458
1/1/2044	2	2,059,977	1,101,458
1/1/2045	1	1,064,819	1,101,458
1/1/2046	0	0	0



SCHEDULE H
(Continued)

AMORTIZATION OF 2017 INCREMENTAL UAAL

<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	19,577,172	1,541,494
1/1/2019	28	19,353,039	1,541,494
1/1/2020	27	19,113,218	1,541,494
1/1/2021	26	18,856,609	1,541,494
1/1/2022	25	18,582,037	1,541,494
1/1/2023	24	18,288,246	1,541,494
1/1/2024	23	17,973,889	1,541,494
1/1/2025	22	17,637,527	1,541,494
1/1/2026	21	17,277,619	1,541,494
1/1/2027	20	16,892,518	1,541,494
1/1/2028	19	16,480,461	1,541,494
1/1/2029	18	16,039,559	1,541,494
1/1/2030	17	15,567,793	1,541,494
1/1/2031	16	15,063,005	1,541,494
1/1/2032	15	14,522,881	1,541,494
1/1/2033	14	13,944,948	1,541,494
1/1/2034	13	13,326,560	1,541,494
1/1/2035	12	12,664,885	1,541,494
1/1/2036	11	11,956,893	1,541,494
1/1/2037	10	11,199,341	1,541,494
1/1/2038	9	10,388,761	1,541,494
1/1/2039	8	9,521,440	1,541,494
1/1/2040	7	8,593,407	1,541,494
1/1/2041	6	7,600,411	1,541,494
1/1/2042	5	6,537,905	1,541,494
1/1/2043	4	5,401,024	1,541,494
1/1/2044	3	4,184,562	1,541,494
1/1/2045	2	2,882,947	1,541,494
1/1/2046	1	1,490,219	1,541,494
1/1/2047	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:

- 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



- 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.

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	<p>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.</p> <p>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.</p>

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.

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.

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

TABLE 1

STATUS RECONCILIATION OF PARTICIPANTS

	Active	Vested Terminated	LTD	Disabled	Retired	Beneficiaries	Total
Participants as of 1/1/2016	1,385	107	18	44	865	153	2,572
A. Receiving Benefits	(54)	(10)			64		
B. LTD	(2)		2				
C. Terminated Vested	(14)	14					
D. Terminated Non-Vested	(16)						(16)
E. Deaths			(1)	(3)	(23)	(8)	(35)
F. Rehires	4	(2)					2
G. New Participants	149					18	167
H. Refunds	(49)	(3)					(52)
I. Certain Period Expired						(2)	(2)
J. Data Corrections		2			1		3
Participants as of 1/1/2017	1,403	108	19	41	907	161	2,639



TABLE 2

AGE – SERVICE TABLE

Distribution of Active Participants as of January 1, 2017 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	
Under 25	6	9	1							16
Avg Pay	23,701	29,383	26,800							27,091
25 to 29	31	41	5	1						78
Avg Pay	28,973	36,939	32,307	33,452						33,431
30 to 34	15	44	18	6						83
Avg Pay	38,921	37,974	40,623	37,122						38,658
35 to 39	31	56	36	15	5					143
Avg Pay	37,702	41,155	43,109	45,763	36,184					41,208
40 to 44	18	46	28	12	35	6	1			146
Avg Pay	34,499	49,863	38,241	38,924	46,082	38,029	57,714			43,502
45 to 49	14	53	32	33	32	28	12			204
Avg Pay	34,295	39,378	43,582	39,139	44,244	49,263	45,701			42,142
50 to 54	14	37	41	34	32	35	39	6		238
Avg Pay	32,948	43,699	37,627	40,516	46,938	45,290	51,260	50,078		43,635
55 to 59	11	46	38	38	42	34	29	8	10	256
Avg Pay	32,336	36,045	44,689	41,321	37,744	43,873	47,154	53,503	53,809	41,768
60 to 64	5	20	32	34	31	15	15	9	12	173
Avg Pay	40,539	41,237	46,590	36,011	40,795	52,455	54,276	60,305	63,564	45,744
65 to 69		4	12	7	6	5	6	5	3	48
Avg Pay		30,912	45,645	54,331	40,278	37,138	45,536	63,422	42,203	45,750
70 & Over			1	3	5	4	1	1	3	18
Avg Pay			36,870	30,916	45,228	44,687	178,161	41,319	62,722	52,342
Total Count	145	356	244	183	188	127	103	29	28	1,403
Avg Pay	33,888	40,333	42,021	40,145	42,709	45,950	50,857	56,195	57,701	42,210

Average Age 49.22
 Average Service 11.40



TABLE 3
NUMBER OF RETIRED PARTICIPANTS
AND THEIR BENEFITS BY AGE
SERVICE RETIREMENTS

Attained Age	Number of Members	Total Annual Benefits	Average Annual Benefit
50 and Under	0	\$ 0	\$ 0
51 – 55	14	277,162	19,797
56 – 60	59	1,115,653	18,909
61 – 65	171	3,054,978	17,865
66 – 70	264	4,745,391	17,975
71 – 75	161	3,036,107	18,858
76 – 80	106	2,139,985	20,189
Over 80	132	2,203,356	16,692
Total	907	\$ 16,572,632	\$ 18,272

TABLE 4
NUMBER OF RETIRED PARTICIPANTS
AND THEIR BENEFITS BY AGE
DISABILITY RETIREMENTS

Attained Age	Number of Members	Total Annual Benefits	Average Annual Benefit
50 and Under	8	\$ 98,076	\$ 12,260
51 – 55	7	116,892	16,699
56 – 60	10	134,084	13,408
61 – 65	11	111,427	10,130
Over 65	24	247,043	10,293
Total	60	\$ 707,522	\$11,792



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
50 and Under	21	\$ 240,813	\$ 11,467
51 – 55	8	87,925	10,247
56 – 60	18	197,267	10,597
61 – 65	11	124,517	11,320
66 – 70	24	330,438	13,768
71 – 75	34	478,493	14,073
76 – 80	22	390,037	17,729
Over 80	23	295,043	12,828
Total	161	\$ 2,144,533	\$ 13,320

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	19	\$ 83,256	\$ 4,382
41 – 45	28	175,935	6,283
46 – 50	20	157,237	7,862
51 – 55	22	176,614	8,028
56 – 60	16	123,515	7,720
Over 60	3	20,547	6,849
Total	108	\$ 737,104	\$ 6,825



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 1/01/2017	\$ Gain (or Loss) For Year Ending 1/01/2016
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	\$ (1,605.3)	\$ 251.6
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(104.6)	(227.4)
Death-in-Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(181.8)	(533.2)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(89.5)	466.4
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	1,100.0	1,134.3
New Members. Additional unfunded accrued liability will produce a loss.	(376.6)	(368.8)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(7,646.9)	(4,980.5)
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	(1,673.4)	(683.8)
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	<u>111.6</u>	<u>(1,004.5)</u>
Gain (or Loss) During Year From Experience	\$ <u>(10,466.5)</u>	\$ <u>(5,945.9)</u>
Non-Recurring Items. Adjustments for plan amendments, assumption changes, or method changes.	<u>(8,854.8)</u>	<u>(8,274.1)</u>
Composite Gain (or Loss) During Year	\$ <u>(19,321.3)</u>	\$ <u>(14,220.0)</u>