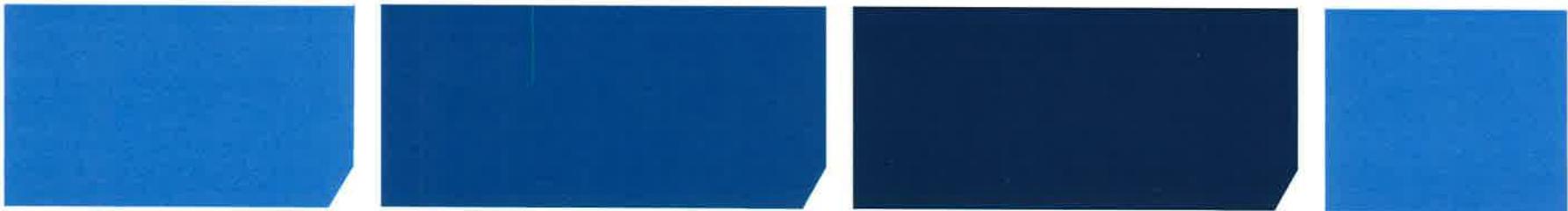


# City of Chattanooga Fire and Police Pension Fund

Actuarial Valuation and Review as of  
January 1, 2013

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 SEGAL



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*April 17, 2013*

*Board of Trustees*

*City of Chattanooga Fire and Police Pension Fund*

*6009 John Douglass Drive*

*Chattanooga, Tennessee 37421-1696*

*Dear Board Members:*

*We are pleased to submit this Actuarial Valuation and Review as of January 1, 2013. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2013 and analyzes the preceding year's experience. The census information on which our calculations were based was prepared by the Fund Office. The financial information used was provided by Gerber/Taylor, along with additional information provided by the Fund Office. That assistance is gratefully acknowledged.*

*Statement by Enrolled Actuary:*

*This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in my opinion, the assumptions as approved by the Board of Trustees are reasonably related to the experience of and the expectations for the Plan.*

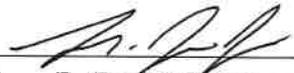
*The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic 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); and changes in plan provisions or applicable law.*

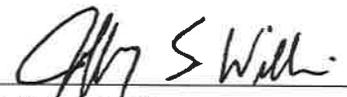
*The actuarial calculations were directed under the supervision of Jeffrey S. Williams, FCA, ASA, MAAA, Enrolled Actuary. Mr. Williams meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.*

*We look forward to reviewing this report at your next meeting and to answering any questions.*

*Sincerely,*

*THE SEGAL COMPANY*

By:   
*Leon F. (Rocky) Joyner, Jr., FCA, ASA, MAAA, EA*  
*Vice President and Actuary*

  
*Jeffrey S. Williams, FCA, ASA, MAAA, EA*  
*Consulting Actuary*  
*Enrolled Actuary No. 11-7009*

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## **SECTION 1: Valuation Summary for the City of Chattanooga Fire and Police Pension Fund**

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### **Purpose**

This report has been prepared by The Segal Company to present a valuation of the City of Chattanooga Fire and Police Pension Fund as of January 1, 2013. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by Fund Office;
- The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of January 1, 2013, provided by the Fund Office;
- The assets of the Plan as of December 31, 2012, provided by Gerber/Taylor and the Fund Office;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

### **Significant Issues in Valuation Year**

The following key findings were the result of this actuarial valuation:

1. The City's total projected recommended contribution for the year is \$13,346,490 (35.86% of projected payroll), representing an increase of \$1,486,985 from \$11,859,505 (31.80% of projected payroll) the prior year. Chart 14 on page 13 in Section 2 of this report shows a reconciliation of recommended contribution amounts.
2. The GASB funded ratio for this Plan, based on the actuarial value of assets, decreased from 66.23% as of January 1, 2012 to 63.34% as of January 1, 2013. The last six years of funding progress are shown in Exhibit III of Section 4.
3. As shown in Section 4, Exhibit V, there is a Net Pension Obligation of -\$4,848,557 as of December 31, 2012. This is effectively a Net Pension Asset. It is our understanding that the City may use any or all of this amount to offset the differences in recommended contributions and actual contributions.
4. The investment rate of return on an actuarial basis for the year ended December 31, 2012 was 3.93%. Since the rate of return was less than the assumed rate of return of 7.75% per year, there was an actuarial investment loss amounting to \$9,695,805. The return on a market value basis was 11.65%. The smoothed actuarial value of assets is \$258,596,818, or

## SECTION 1: Valuation Summary for the City of Chattanooga Fire and Police Pension Fund

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122.2% of the market value of assets. This is within the corridor limit of 125% for the year. (Under the smoothing method adopted by the Trustees, the corridor will decrease by 5% per year until it reaches 120% in 2014.)

5. As indicated in Section 2, Subsection B of this report, the total unrecognized investment loss as of December 31, 2012 is \$46,979,026. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 7.75% per year (net of expenses) on a **market value** basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 7.75% rate and all other actuarial assumptions are met, the contribution requirements would still increase in each of the next few years. To illustrate the effect of the new unrecognized investments losses, if the current year's actuarial value of assets were equal to the current market value of assets, the Plan's recommended contribution would increase from 35.86% of projected pay to 44.03% and the funded ratio would decrease from 63.34% to 51.83%.
6. The actuarial valuation report as of January 1, 2013 is based on financial information as of that date. Changes in the value of assets subsequent to that date, to the extent that they exist, are not reflected. Declines in asset values will increase the actuarial cost of the Plan, while increases will decrease the actuarial cost of the Plan.
7. There have been no assumption changes or plan changes since the last valuation.

**SECTION 1: Valuation Summary for the City of Chattanooga Fire and Police Pension Fund**

**Summary of Key Valuation Results**

	<b>2013</b>	<b>2012</b>
<b>Contributions for plan year beginning January 1:</b>		
Recommended city contribution	\$13,346,490	\$11,859,505
Recommended city contribution as a percent of projected payroll	35.86%	31.80%
Actual city contribution, including income from fines paid	--	11,937,269
<b>Funding elements for plan year beginning January 1:</b>		
Total normal cost, including administrative expenses	\$6,708,651	\$6,577,872
Market value of assets	211,617,792	198,786,000
Actuarial value of assets	258,596,818	258,421,800
Actuarial accrued liability	408,278,814	390,214,388
Unfunded actuarial accrued liability	149,681,996	131,792,588
<b>GASB 25/27 for plan year beginning January 1:</b>		
Annual required contributions (ARC)	\$13,346,490	\$11,859,505
Actual city contribution, including income from fines paid	--	11,937,269
Percentage of ARC contributed	--	100.66%
Funded ratio	63.34%	66.23%
Projected covered payroll	\$37,215,933	\$37,288,914
<b>Demographic data for plan year beginning January 1:</b>		
Number of retired participants and beneficiaries	733	706
Number of vested former participants	9	9
Number of active participants	818	820
Total payroll	\$36,625,527	\$36,697,350
Average payroll	44,774	44,753
Projected payroll	37,215,933	37,288,914

**SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund**

**A. PARTICIPANT DATA**

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, vested terminated participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

*A historical perspective of how the participant population has changed over the past ten valuations can be seen in this chart.*

**CHART 1**  
**Participant Population: 2003 – 2012**

<b>Year Ended December 31</b>	<b>Active Participants</b>	<b>Vested Terminated Participants</b>	<b>Retired Participants and Beneficiaries</b>	<b>Ratio of Non-Actives to Actives</b>
2003	792	5	635	0.81
2004	799	5	655	0.83
2005	793	4	669	0.85
2006	777	5	680	0.88
2007	795	4	682	0.86
2008	808	5	684	0.85
2009	793	7	687	0.88
2010	791	7	692	0.88
2011	820	9	706	0.87
2012	818	9	733	0.91

**SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund**

**Active Participants**

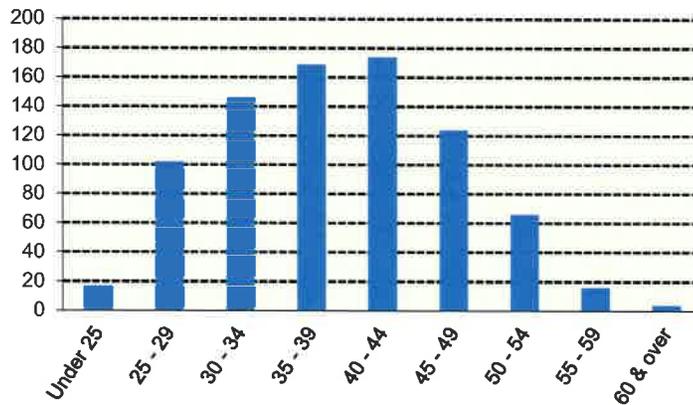
Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 818 active participants with an average age of 39.3, average years of service of 11.9 years and average payroll of \$44,774. The 820 active participants in the prior valuation had an average age of 39.4, average service of 12.0 years and average payroll of \$44,753.

**Inactive Participants**

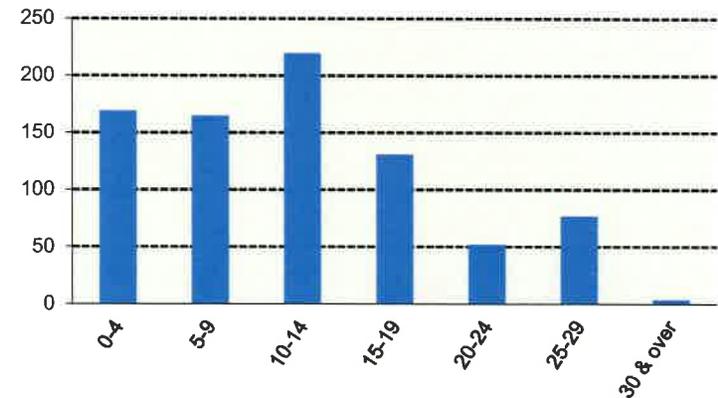
In this year's valuation, there were 9 participants with a vested right to a deferred or immediate vested benefit.

*These graphs show a distribution of active participants by age and by years of service.*

**CHART 2**  
**Distribution of Active Participants by Age as of December 31, 2012**



**CHART 3**  
**Distribution of Active Participants by Years of Service as of December 31, 2012**



**SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund**

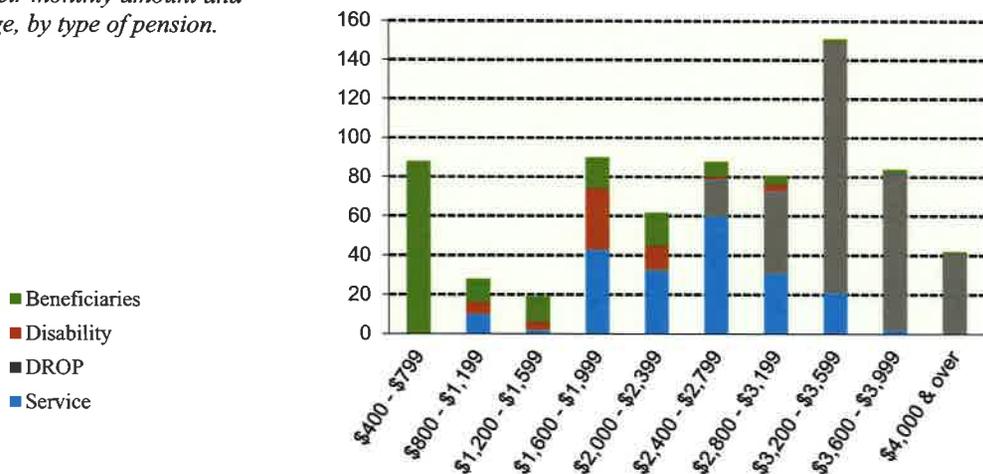
**Retired Participants and Beneficiaries**

As of December 31, 2012, 569 retired participants and 164 beneficiaries (including one estate) were receiving total monthly benefits of \$1,913,441. For comparison, in the previous valuation, there were 551 retired participants and 155 beneficiaries (including two estates) receiving monthly benefits of \$1,777,361.

*These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age, by type of pension.*

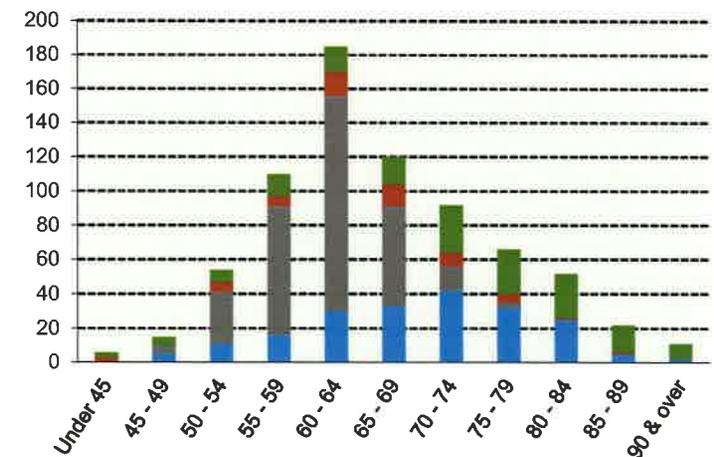
**CHART 4**

**Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2012**



**CHART 5**

**Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2012**



**SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund**

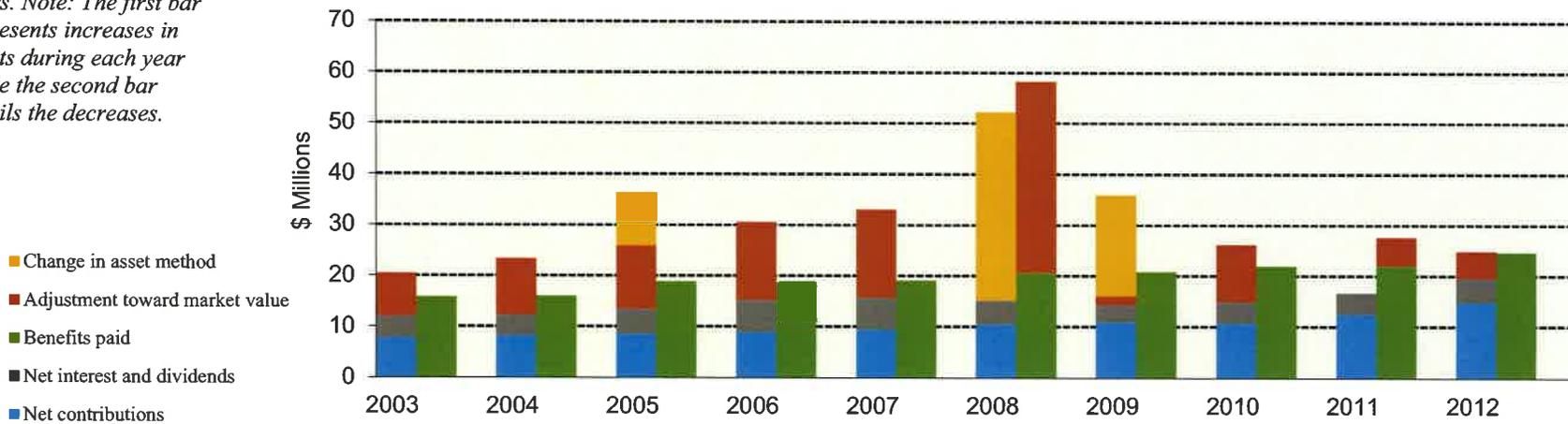
**B. FINANCIAL INFORMATION**

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D, E and F.

*The chart depicts the components of changes in the actuarial value of assets over the last ten years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.*

**CHART 6**  
**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 2003 – 2012**



**SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund**

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board of Trustees has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The smoothing method was revised with the 2010 valuation, with a new base established each year until a total of ten bases are reflected. The upper corridor limit will decline by 5% each year until 120% is reached. The upper corridor limit is equal to 125% of market value of assets this year.

**CHART 7**

**Determination of Actuarial Value of Assets for Year Ended December 31, 2012**

*The chart shows the determination of the actuarial value of assets as of the valuation date.*

1. Market value of assets, December 31, 2012			\$211,617,792
2. Calculation of unrecognized return	Original <u>Amount *</u>	Unrecognized <u>Return**</u>	
(a) Year ended December 31, 2012	\$14,720,524	\$13,248,471	
(b) Year ended December 31, 2011	-18,542,224	-14,833,779	
(c) Year ended December 31, 2010	1,765,324	1,235,726	
(d) Year ended December 31, 2009	8,213,931	4,928,359	
(e) Year ended December 31, 2008	-103,115,606	<u>-51,557,803</u>	
(f) Total unrecognized return			-46,979,026
3. Preliminary actuarial value: (1) - (2f)			258,596,818
4. Adjustment to be within 25% corridor around market value ***			0
5. Final actuarial value of assets as of December 31, 2012: (3) + (4)			<u>\$258,596,818</u>
6. Actuarial value as a percentage of market value: (5) ÷ (1)			122.2%
7. Amount deferred for future recognition: (1) - (5)			-\$46,979,026

*\*Total return on market value basis minus expected return on actuarial basis using the net investment return assumption.*

*\*\*The bases for the 2008 and later plan years are recognized at 10% per year over 10 years.*

*\*\*\*A corridor around the market value of assets was established with the January 1, 2010 valuation. The top end of the corridor is 125% this year, and will decrease by 5% per year until it reaches 120% with the 2014 valuation.*

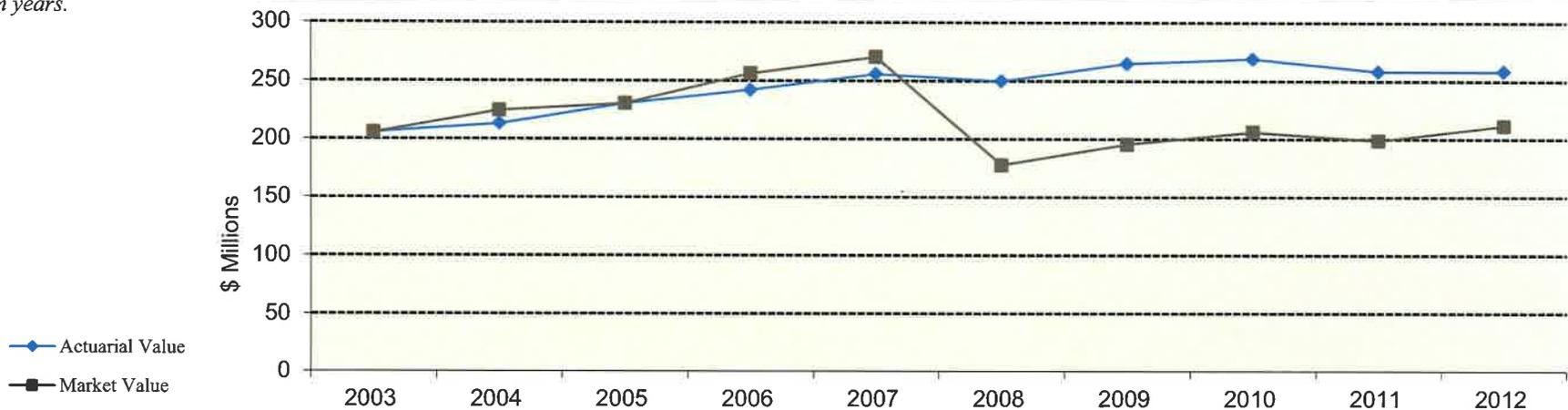
## SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund

Both the actuarial value and market value of assets are representations of the Fund's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Fund's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

*This chart shows the change in the actuarial value of assets versus the market value over the past ten years.*

**CHART 8**

**Actuarial Value of Assets vs. Market Value of Assets as of December 31, 2003 – 2012**



## SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund

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### C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss is \$16,486,741, including losses of \$9,695,805 from investments and \$6,790,936 from all other sources. The net experience variation from individual sources other than investments was 1.7% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

*This chart provides a summary of the actuarial experience during the past year.*

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### CHART 9 Actuarial Experience for Year Ended December 31, 2012

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1. Net loss from investments*	-\$9,695,805
2. Net gain from administrative expenses	21,213
3. Net loss from other experience	<u>-6,812,149</u>
4. Net experience loss: (1) + (2) + (3)	<u>-\$16,486,741</u>

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\* Details in Chart 10

## SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund

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### Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Fund's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 7.75%. The actual rate of return on an actuarial basis for the 2012 plan year was 3.93%.

Since the actual return for the year was less than the assumed return, the Fund experienced an actuarial loss during the year ended December 31, 2012 with regard to its investments.

*This chart shows the loss due to investment experience.*

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### CHART 10

#### Actuarial Value Investment Experience for Year Ended December 31, 2012

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1. Actual return	\$9,983,480
2. Average value of assets	253,926,255
3. Actual rate of return: (1) ÷ (2)	3.93%
4. Assumed rate of return	7.75%
5. Expected return: (2) x (4)	\$19,679,285
6. Actuarial loss: (1) – (5)	<u>-\$9,695,805</u>

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**SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund**

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last ten years, including five-year and ten-year averages.

Based upon this experience and future expectations, we have maintained the assumed rate of return of 7.75%.

**CHART 11**

**Investment Return – Actuarial Value vs. Market Value: 2003 - 2012**

Year Ended December 31	Net Interest and Dividend Income		Recognition of Capital Appreciation		Change in Asset Method		Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
2003	\$4,135,459	2.09%	\$8,396,385	4.25%	--	--	\$12,531,844	6.34%	\$37,984,031	22.10%
2004	4,092,412	2.02	10,936,957	5.40	--	--	15,029,369	7.43	26,814,640	13.27
2005	4,877,207	2.34	12,453,433	5.97	\$10,369,415	4.97%	27,700,055	13.28	16,306,115	7.42
2006	6,249,028	2.76	15,369,312	6.80	--	--	21,618,340	9.56	35,753,204	15.82
2007	6,183,033	2.60	17,343,197	7.29	--	--	23,526,230	9.89	23,836,944	9.46
2008	4,588,947	1.82	-37,611,813	-14.95	37,021,082	14.72	3,998,216	1.59	-82,989,093	-31.20
2009	3,370,659	1.37	1,792,138	0.73	19,801,729	8.06	24,964,526	10.16	27,862,240	16.10
2010	4,079,687	1.57	11,257,043	4.33	--	--	15,336,730	5.90	21,920,866	11.51
2011	4,147,287	1.57	-5,576,570	-2.10	--	--	-1,429,283	-0.54	1,994,797	0.99
2012	<u>4,661,316</u>	1.84	<u>5,322,164</u>	2.10	--	--	<u>9,983,480</u>	3.93	<u>22,640,254</u>	11.65
Total	\$46,385,035		\$39,682,246		\$67,192,226		\$153,259,507		\$132,123,998	
							Five-year average return	4.14%		-0.84%
							Ten-year average return	6.53%		6.30%

Note: Each year's yield is weighted by the average asset value in that year.

\*The actuarial value investment returns shown in the chart include the impact of changes to the asset method in 2005, 2008, and 2009. Exclusive of these changes, the five-year average actuarial return is -0.31% and the ten-year average is 3.66%.

**SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund**

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

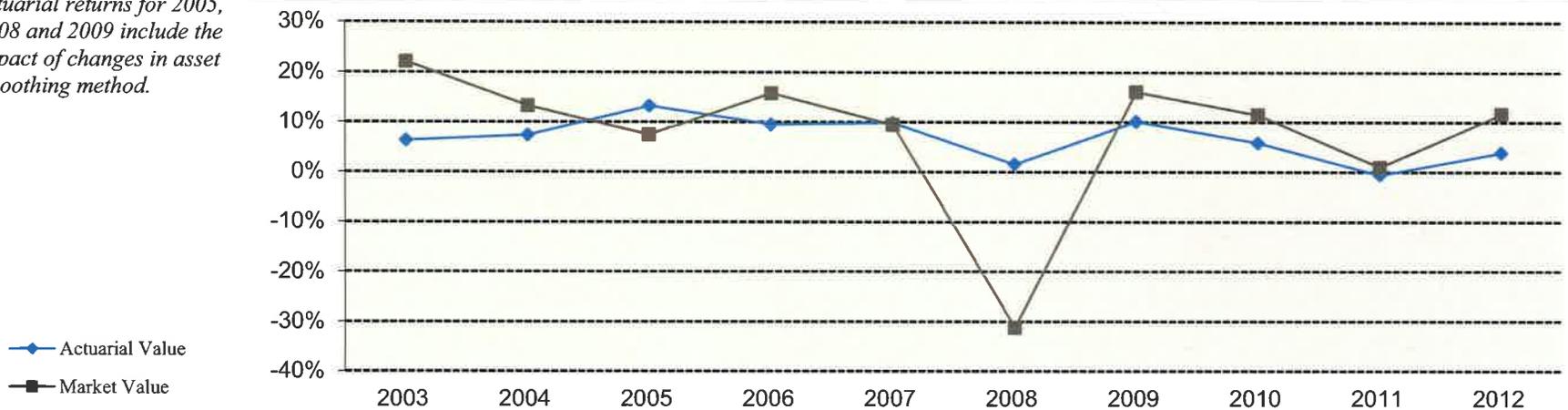
**Administrative Expenses**

Administrative expenses for the year ended December 31, 2012 totaled \$479,564 compared to the assumption of \$500,000. This resulted in a gain of \$21,213 for the year. We have maintained the assumption of \$500,000 for the current year.

*This chart illustrates how this leveling effect has actually worked over the years 2003 - 2012. The actuarial returns for 2005, 2008 and 2009 include the impact of changes in asset smoothing method.*

**CHART 12**

**Market and Actuarial Rates of Return for Years Ended December 31, 2003 - 2012**



## SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund

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### **Other Experience**

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements, and
- salary increases different than assumed.

The net loss from this other experience for the year ended December 31, 2012 amounted to \$6,812,149, which is 1.7% of the actuarial accrued liability. The loss is primarily due to more retirements than expected and fewer deaths than expected among retirees and beneficiaries. These losses were partially offset by smaller salary increases than expected.

## SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund

### D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of a city normal cost payment and a payment on the unfunded actuarial accrued liability. This total amount is then divided by the projected payroll for active members to determine the funding rate of 35.86% of projected payroll.

The recommended contribution is based on a closed 30-year amortization of the unfunded actuarial accrued liability. As of January 1, 2013, there are 26 years remaining on this schedule.

The contribution rates as of January 1, 2013 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

*The chart compares this valuation's recommended contribution with the prior valuation.*

### CHART 13 Recommended Contribution

	Year Beginning January 1			
	2013		2012	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost	\$6,226,968	16.73%	\$6,096,189	16.35%
2. Administrative expenses	481,683	1.29%	481,683	1.29%
3. Expected employee contributions	<u>-3,178,931</u>	<u>-8.54%</u>	<u>-3,200,423</u>	<u>-8.58%</u>
4. Employer normal cost: (1) + (2) + (3)	\$3,529,720	9.48%	\$3,377,449	9.06%
5. Actuarial accrued liability	408,278,814		390,214,388	
6. Actuarial value of assets	<u>258,596,818</u>		<u>258,421,800</u>	
7. Unfunded actuarial accrued liability: (5) - (6)	\$149,681,996		\$131,792,588	
8. Payment on unfunded actuarial accrued liability	9,327,836	25.06%	8,047,596	21.58%
9. Total recommended contribution: (4) + (8), adjusted for timing*	<u>\$13,346,490</u>	<u>35.86%</u>	<u>\$11,859,505</u>	<u>31.80%</u>
10. Projected payroll	\$37,215,933		\$37,288,914	

\*Recommended contributions are assumed to be paid at the middle of every year.

**SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund**

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**Reconciliation of Recommended Contribution**

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

*The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.*

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**CHART 14**

**Reconciliation of Recommended Contribution from January 1, 2012 to January 1, 2013**

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<b>Recommended Contribution as of January 1, 2012</b>	<b>\$11,859,505</b>
Effect of investment loss	627,197
Effect of expected change in amortization payment due to payroll growth	271,493
Effect of contributions more than recommended contribution	-9,055
Effect of other gains and losses on accrued liability	439,288
Effect of net other changes	<u>158,062</u>
<b>Total change</b>	<b><u>\$1,486,985</u></b>
<b>Recommended Contribution as of January 1, 2013</b>	<b>\$13,346,490</b>

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**SECTION 2: Valuation Results for the City of Chattanooga Fire and Police Pension Fund**

**E. INFORMATION REQUIRED BY THE GASB**

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

Critical information to the GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded within the range of the GASB reporting requirements. Chart 15 below presents a graphical representation of this information for the Plan.

The other critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the

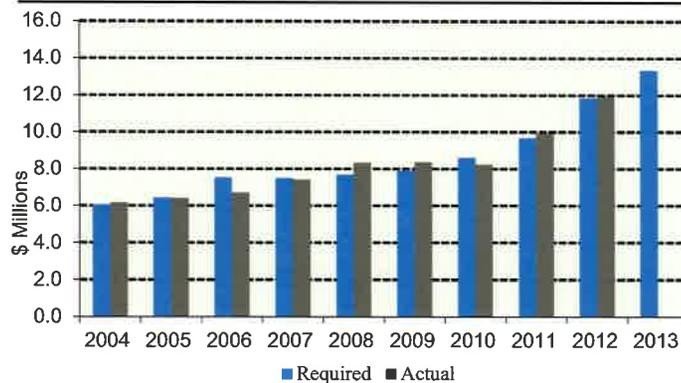
actuarial value of assets to the actuarial accrued liabilities of the Plan as calculated under the GASB Standards. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

Although the GASB requires that the actuarial value of assets be used to determine the funded ratio, Chart 16 shows the funded ratio calculated using both the actuarial value of assets and the market value of assets.

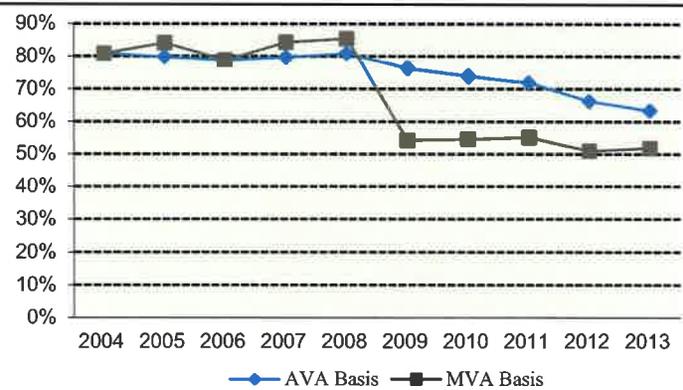
The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

*These graphs show key GASB factors.*

**CHART 15**  
**Required Versus Actual Contributions**



**CHART 16**  
**Funded Ratio**



**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT A**

**Table of Plan Coverage**

<b>Category</b>	<b>Year Ended December 31</b>		<b>Change From Prior Year</b>
	<b>2012</b>	<b>2011</b>	
<b>Active participants in valuation:</b>			
Number	818	820	-0.2%
Average age	39.3	39.4	N/A
Average years of service	11.9	12.0	N/A
Total payroll	\$36,625,527	\$36,697,350	-0.2%
Average payroll	44,774	44,753	0.0%
Account balances	29,164,397	28,953,901	0.7%
Total active vested participants	464	462	0.4%
<b>Vested terminated participants</b>	9	9	0.0%
<b>Retired participants:</b>			
Number in pay status	512	489	4.7%
Average age	64.9	64.7	N/A
Average monthly benefit	\$3,127	\$3,025	3.4%
<b>Disabled participants:</b>			
Number in pay status	57	62	-8.1%
Average age	64.1	64.0	N/A
Average monthly benefit	\$1,861	\$1,794	3.7%
<b>Beneficiaries in pay status:</b>			
Number in pay status	164	155	5.8%
Average age	72.3	73.0	N/A
Average monthly benefit	\$1,259	\$1,207	4.3%

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT B**

**Participants in Active Service as of December 31, 2012  
By Age, Years of Service, and Average Payroll**

Age	Years of Service							
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30 & over
Under 25	17	17	--	--	--	--	--	--
	\$33,691	\$33,691	--	--	--	--	--	--
25 - 29	102	79	23	--	--	--	--	--
	35,694	34,927	\$38,329	--	--	--	--	--
30 - 34	146	44	65	37	--	--	--	--
	39,254	34,925	40,168	\$42,798	--	--	--	--
35 - 39	169	19	40	89	21	--	--	--
	43,465	34,714	40,069	45,469	\$49,355	--	--	--
40 - 44	174	10	30	67	56	11	--	--
	46,059	36,461	39,965	45,829	50,388	\$50,771	--	--
45 - 49	124	--	7	25	41	28	23	--
	51,675	--	42,056	46,196	49,206	56,231	\$59,414	--
50 - 54	66	--	--	--	10	12	44	--
	56,222	--	--	--	50,108	53,447	58,368	--
55 - 59	16	--	--	2	2	1	10	1
	59,012	--	--	44,532	42,581	58,000	59,709	\$114,868
60 - 64	4	--	--	--	1	--	--	3
	64,623	--	--	--	51,358	--	--	69,044
Total	818	169	165	220	131	52	77	4
	\$44,774	\$34,869	\$39,931	\$45,203	\$49,720	\$54,468	\$58,855	\$80,500

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT C**

**Reconciliation of Participant Data**

	<b>Active Participants</b>	<b>Vested Former Participants</b>	<b>Disableds</b>	<b>Retired Participants</b>	<b>Beneficiaries and Estates</b>	<b>Total</b>
Number as of January 1, 2012	820	9	62	489	155	1,535
New participants	48	N/A	N/A	N/A	N/A	48
Terminations – with vested rights	-2	2	0	0	0	0
Terminations – without vested rights	0	N/A	N/A	N/A	N/A	0
Retirements	-31	-1	N/A	32	N/A	0
New disabilities	-1	0	1	N/A	N/A	0
Return to work	1	-1	0	0	N/A	0
Deceased	-2	0	-6	-9	-4	-21
New beneficiaries	0	0	0	0	14	14
Lump sum payoffs	-15	0	0	0	0	-15
Certain period expired	<u>N/A</u>	<u>N/A</u>	<u>0</u>	<u>0</u>	<u>-1</u>	<u>-1</u>
Number as of January 1, 2013	818	9	57	512	164	1,560

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT D**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended December 31, 2012	Year Ended December 31, 2011
<b>Net assets at actuarial value at the beginning of the year:</b>	\$258,421,800	\$269,345,372
<b>Contribution income:</b>		
City contributions	\$11,795,681	\$9,784,174
Employee contributions	3,379,207	3,177,386
Other contributions	141,588	139,506
Less administrative expenses	<u>-479,564</u>	<u>-575,605</u>
Net contribution income	\$14,836,912	\$12,525,461
<b>Investment income:</b>		
Interest, dividends and other income	\$5,165,315	\$5,081,422
Recognition of capital appreciation	5,322,164	-5,576,570
Less investment fees	<u>-503,999</u>	<u>-934,135</u>
Net investment income	<u>9,983,480</u>	<u>-1,429,283</u>
<b>Total income available for benefits</b>	\$24,820,392	\$11,096,178
<b>Less benefit payments:</b>		
Pension payments	-\$22,000,635	-\$20,947,739
DROP payments	-2,259,412	-749,444
Refunds	-259,320	-210,989
Death benefits	<u>-126,007</u>	<u>-111,578</u>
Net benefit payments	-\$24,645,374	-\$22,019,750
<b>Change in reserve for future benefits</b>	\$175,018	-\$10,923,572
<b>Net assets at actuarial value at the end of the year:</b>	\$258,596,818	\$258,421,800

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT E**

**Summary Statement of Income and Expenses on a Market Value Basis**

	Year Ended December 31, 2012	Year Ended December 31, 2011
<b>Net assets at market value at the beginning of the year:</b>	\$198,786,000	\$206,285,491
<b>Contribution income:</b>		
City contributions	\$11,795,681	\$9,784,174
Employee contributions	3,379,207	3,177,386
Other contributions	141,588	139,506
Less administrative expenses	<u>-479,564</u>	<u>-575,605</u>
Net contribution income	\$14,836,912	\$12,525,461
<b>Investment income:</b>		
Interest, dividends and other income	\$5,165,315	\$5,081,422
Asset appreciation	17,978,938	-2,152,489
Less investment fees	<u>-503,999</u>	<u>-934,135</u>
Net investment income	<u>22,640,254</u>	<u>1,994,798</u>
<b>Total income available for benefits</b>	\$37,477,166	\$14,520,259
<b>Less benefit payments:</b>		
Pension payments	-\$22,000,635	-\$20,947,739
DROP payments	-2,259,412	-749,444
Refunds	-259,320	-210,989
Death benefits	<u>-126,007</u>	<u>-111,578</u>
Net benefit payments	-\$24,645,374	-\$22,019,750
<b>Change in reserve for future benefits</b>	\$12,831,792	-\$7,499,491
<b>Net assets at market value at the end of the year:</b>	\$211,617,792	\$198,786,000

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT F**

**Summary Statement of Plan Assets**

	Year Ended December 31, 2012	Year Ended December 31, 2011
<b>Cash equivalents</b>	\$2,762,230	\$2,069,037
<b>Investments:</b>		
Equities	\$77,412,588	\$63,317,372
Hedged strategies	52,669,956	49,328,382
Fixed Income Investments	36,159,157	34,848,992
Real Estate	29,459,524	36,079,716
MLPs and Opportunistic strategies	12,269,337	12,167,501
Building	<u>885,000</u>	<u>975,000</u>
Total investments at market value	<u>208,855,562</u>	<u>196,716,963</u>
<b>Total assets</b>	\$211,617,792	\$198,786,000
<b>Net assets at market value</b>	<u>\$211,617,792</u>	<u>\$198,786,000</u>
<b>Net assets at actuarial value</b>	<u>\$258,596,818</u>	<u>\$258,421,800</u>

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT G**

**Development of the Fund Through December 31, 2012**

<b>Year Ended December 31</b>	<b>City Contributions</b>	<b>Employee Contributions</b>	<b>Other Contributions</b>	<b>Net Investment Return<sup>1</sup></b>	<b>Administrative Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
2003	\$5,543,377	\$2,451,139	\$198,120	\$12,531,844	\$305,757	\$15,836,380	\$205,955,526
2004	6,043,073	2,491,850	163,459	15,029,369	465,680	16,011,714	213,205,883
2005	6,275,513	2,507,325	174,726	27,700,055 <sup>2</sup>	392,917	18,885,285	230,585,300
2006	6,577,296	2,539,121	178,851	21,618,340	384,888	18,788,549	242,325,471
2007	7,258,926	2,560,562	169,681	23,526,230	514,811	19,146,104	256,179,955
2008	8,161,275	2,816,396	178,708	3,998,216 <sup>3</sup>	580,929	20,608,648	250,144,973
2009	8,195,274	2,995,796	171,020	24,964,526 <sup>4</sup>	452,683	20,817,275	265,201,631
2010	8,087,646	3,055,184	146,770	15,336,730	531,852	21,950,737	269,345,372
2011	9,784,174	3,177,386	139,506	-1,429,283	575,605	22,019,750	258,421,800
2012	11,795,681	3,379,207	141,588	9,983,480	479,564	24,645,374	258,596,818

<sup>1</sup> Net of investment fees.

<sup>2</sup> Includes \$10,369,415 due to a method change reflecting a one-time write-up to market value of assets.

<sup>3</sup> Includes \$37,021,082 due to a change in the method for determining the actuarial value of assets (removed 20% corridor around market value).

<sup>4</sup> Includes \$19,801,729 due to a change in the method for determining the actuarial value of assets (re-introduced corridor around market value and reflected ten-year asset smoothing).

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

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**EXHIBIT H**

**Development of Unfunded Actuarial Accrued Liability for Year Ended December 31, 2012**

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1. Unfunded actuarial accrued liability at beginning of year		\$131,792,588
2. Normal cost at beginning of year		<u>6,577,872</u>
3. Total contributions		-15,316,476
4. Interest		
(a) For whole year on (1) + (2)	\$10,723,711	
(b) For half year on (3)	<u>-582,440</u>	
(c) Total interest		<u>10,141,271</u>
5. Expected unfunded actuarial accrued liability		\$133,195,255
6. Changes due to experience loss		<u>16,486,741</u>
7. Unfunded actuarial accrued liability at end of year		<u>\$149,681,996</u>

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**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

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**EXHIBIT I**

**Definitions of Pension Terms**

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The following list defines certain technical terms for the convenience of the reader:

**Assumptions or Actuarial**

**Assumptions:**

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

**Normal Cost:**

The amount of contributions required to fund the benefit allocated to the current year of service.

**Actuarial Accrued Liability**

**For Actives:**

The value of all projected benefit payments for current members less the portion that will be paid by future normal costs.

**Actuarial Accrued Liability**

**For Pensioners:**

The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

**Unfunded Actuarial Accrued**

**Liability:**

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

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**Amortization of the Unfunded**

**Actuarial Accrued Liability:** Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

**Investment Return:**

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT J**

**Supplementary Information - Summary of Salary Changes**

<b>Year Ended December 31</b>	<b>Total Salary</b>	<b>Percent Change in Total Salary</b>	<b>Percent Change in Salary of Employees Remaining Active</b>	<b>Expected Percent Change in Salary of Employees Remaining Active</b>
2002	\$30,060,676	6.41%	7.40%	5.90%
2003	30,489,838	1.43%	3.69%	5.90%
2004	31,364,177	2.87%	4.48%	4.80%
2005	31,502,408	0.44%	3.91%	4.80%
2006	31,475,980	-0.08%	3.59%	4.70%
2007	32,709,779	3.92%	3.64%	4.60%
2008	34,165,094	4.45%	4.13%	4.50%
2009	34,024,779	-0.41%	2.08%	4.50%
2010	34,385,722	1.06%	3.05%	3.95%
2011	36,697,350	6.72%	5.42%	3.83%
2012	36,625,527	-0.20%	2.68%	3.90%

*Note: The average total payroll growth for the most recent ten years was 1.99% per year.*

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT K**

**Supplementary Information - Comparative Summary of Principal Valuation Results**

	Year Ended December 31, 2012	Year Ended December 31, 2011
<b>Participant data</b>		
Active members	818	820
Total annual salary	\$36,625,527	\$36,697,350
Retired members and beneficiaries	733	706
Total annualized benefit	\$22,261,292	\$21,328,330
Terminated vested members	9	9
Total annualized benefit	\$122,136	\$109,572
<b>Actuarial value of assets</b>	<b>\$258,596,818</b>	<b>\$258,421,800</b>
<b>Present value of all future expected benefit payments:</b>		
Active members:		
Retirement benefits	\$157,194,849	\$154,884,512
Vesting benefits	6,597,210	6,435,344
Disability benefits	2,772,193	2,720,857
Death benefits	6,730,558	6,603,045
Return of contributions	<u>29,164,397</u>	<u>28,953,901</u>
Total	\$202,459,207	\$199,597,659
Terminated vested members	1,104,186	839,040
Retired members and beneficiaries	<u>260,717,033</u>	<u>243,440,964</u>
Total	\$464,280,426	\$443,877,663

**SECTION 3: Supplemental Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT K (continued)**

**Supplementary Information – Comparative Summary of Principal Valuation Results**

	<b>Year Ended December 31, 2012</b>	<b>Year Ended December 31, 2011</b>
<b>Unfunded actuarial accrued liability</b>	\$149,681,996	\$131,792,588
<b>Actuarial present value of accrued benefits</b>		
Vested accrued benefits		
Active members	\$61,766,133	\$61,564,509
Inactive members	1,104,186	839,040
Pensioners and beneficiaries	260,717,033	243,440,964
Nonvested active members	<u>5,315,469</u>	<u>5,917,681</u>
Total	\$328,902,821	\$311,762,194
<b>Pension cost</b>		
Normal cost, including administrative expenses	\$6,708,651	\$6,577,872
Expected employee contributions	-3,178,931	-3,200,423
Level % of payroll payment to amortize unfunded actuarial accrued liability	9,327,836	8,047,596
Total minimum annual cost	12,857,556	11,425,045
As a % of covered payroll	35.10%	31.13%
Total city cost adjusted for timing	13,346,490	11,859,505
Projected covered payroll	37,215,933	37,288,914
As % of projected covered payroll	35.86%	31.80%
<b>Present value of active members' future salaries at attained age</b>	\$324,737,123	\$318,958,404

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

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**EXHIBIT I**

**Summary of Actuarial Valuation Results**

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The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 164 beneficiaries in pay status and 57 disabled retirees)		733
2. Participants inactive during year ended December 31, 2012 with vested rights		9
3. Participants active during the year ended December 31, 2012		818
Fully vested	464	
Not vested	354	

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The actuarial factors as of the valuation date are as follows:

1. Normal cost, including administrative expenses		\$6,708,651
2. Actuarial accrued liability		408,278,814
Retired participants and beneficiaries	\$260,717,033	
Inactive participants with vested rights	1,104,186	
Active participants	146,457,595	
3. Actuarial value of assets (\$211,617,792 at market value as reported by Gerber/Taylor and the Fund Office )		258,596,818
4. Unfunded actuarial accrued liability		\$149,681,996

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**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

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**EXHIBIT I (continued)**

**Summary of Actuarial Valuation Results**

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The determination of the recommended contribution is as follows:

1. Total normal cost	\$6,226,968
2. Administrative expenses	481,683
3. Expected employee contributions	<u>-3,178,931</u>
4. City normal cost: (1) + (2) + (3)	\$3,529,720
5. Payment on unfunded actuarial accrued liability	9,327,836
6a. Total recommended contribution: (4) + (5)	12,857,556
6b. As a percentage of covered payroll	35.10%
7. Covered payroll	36,625,527
8. Total recommended city contribution adjusted for timing	<u>\$13,346,490</u>
8b. As a percentage of projected covered payroll	35.86%
9. Projected covered payroll	<u>\$37,215,933</u>

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**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

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**EXHIBIT II**

**Supplementary Information Required by the GASB – Schedule of City Contributions**

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<b>Plan Year Ended December 31</b>	<b>Annual Required Contributions</b>	<b>Actual Contributions*</b>	<b>Percentage Contributed</b>
2007	\$7,504,469	\$7,428,607	99.0%
2008	7,686,489	8,339,983	108.5%
2009	7,903,392	8,366,294	105.9%
2010	8,613,696	8,234,416	95.6%
2011	9,692,292	9,923,680	102.4%
2012	11,859,505	11,937,269	100.7%
2013	13,346,490	--	--

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*\*Includes income from fines paid, if applicable.*

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT III**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded/ AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll* [(b) - (a)] / (c)</b>
1/1/2008	\$256,179,955	\$316,806,281	\$60,626,326	80.86%	\$33,237,063	182.41%
1/1/2009	250,144,973	327,638,030	77,493,057	76.35%	34,715,838	223.22%
1/1/2010	265,201,631	358,088,214	92,886,583	74.06%	34,573,261	268.67%
1/1/2011	269,345,372	374,289,017	104,943,645	71.96%	34,940,022	300.35%
1/1/2012	258,421,800	390,214,388	131,792,588	66.23%	37,288,914	353.44%
1/1/2013	258,596,818	408,278,814	149,681,996	63.34%	37,215,933	402.20%

\* Not less than zero

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT IV**

**Supplementary Information Required by the GASB**

<b>Valuation date</b>	January 1, 2013
<b>Actuarial cost method</b>	Entry Age Normal Cost Method
<b>Amortization method</b>	Level percent of payroll
<b>Remaining amortization period</b>	26 years remaining as of January 1, 2013
<b>Asset valuation method</b>	Market value of assets less unrecognized returns in each of the last ten years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value. Effective in 2008, unrecognized returns are recognized over ten years, while unrecognized return for plan years prior to 2008 will continue to be recognized over a five-year period. A 25% corridor around the market value of assets is in place for the 2013 plan year, with the corridor decreasing by 5% per year until the corridor reaches 20% for the 2014 and future plan years.
<b>Actuarial assumptions:</b>	
Investment rate of return	7.75%
Payroll growth	3.25%
Projected salary increases*	Firefighters: 3.25% - 7.50% Police Officers: 3.25% - 7.00%
Cost of living adjustments	3.00%
<b>Plan membership:</b>	
Retired participants and beneficiaries receiving benefits	733
Terminated participants entitled to, but not yet receiving benefits	9
Active participants	<u>818</u>
Total	1,560

*\*For participants with 10 years of service or less, salaries are assumed to increase by a graduated scale rather than by a flat percentage.*

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT V**

**Development of the Net Pension Obligation (NPO) and the Annual Pension Cost Pursuant to GASB 27**

<b>Plan Year Ended December 31</b>	<b>City Annual Required Contribution (a)</b>	<b>City Amount Contributed* (b)</b>	<b>Interest on NPO (h) x 7.75%** (c)</b>	<b>ARC Adjustment (h) / (e) (d)</b>	<b>Amortization Factor (e)</b>	<b>Pension Cost (a) + (c) - (d) (f)</b>	<b>Change in NPO (f) - (b) (g)</b>	<b>NPO Balance NPO + (g) (h)</b>
2002	\$4,440,048	\$4,541,413	-\$358,908	-\$437,845	9.9359	\$4,518,985	-\$22,428	-\$4,372,825
2003	5,636,207	5,682,456	-360,758	-443,818	9.8527	5,719,267	36,811	-4,336,014
2004	6,073,138	6,167,911	-346,881	-464,027	9.3443	6,190,284	22,373	-4,313,641
2005	6,454,038	6,419,294	-345,091	-458,022	9.4180	6,566,969	147,675	-4,165,966
2006	7,540,220	6,709,228	-333,277	-247,405	16.8386	7,454,348	745,120	-3,420,846
2007	7,504,469	7,428,607	-273,668	-206,482	16.5673	7,437,284	8,676	-3,412,170
2008	7,686,489	8,339,983	-272,974	-209,548	16.2835	7,623,063	-716,920	-4,129,091
2009	7,903,392	8,366,294	-330,327	-245,215	16.8386	7,818,280	-548,014	-4,677,104
2010	8,613,696	8,234,416	-362,476	-275,195	16.9956	8,526,415	291,999	-4,385,105
2011	9,692,292	9,923,680	-339,846	-262,696	16.6927	9,615,142	-308,538	-4,693,643
2012	11,859,505	11,937,269	-363,757	-286,607	16.3766	11,782,355	-154,914	-4,848,557

\* Amount includes income from fines paid, if applicable

\*\*Prior to 2003, interest was 8.25%; for the plan years ending December 31, 2003 through 2009, interest was 8.00%.

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

**EXHIBIT VI**

**Actuarial Assumptions and Actuarial Cost Method**

**Mortality Rates:**

*Healthy Lives:* RP-2000 Blue Collar Healthy Mortality Table, set forward two years for both males and females

*Disabled Lives:* RP-2000 Blue Collar Healthy Mortality Table, set forward eight years for both males and females.

No provision was made for future mortality improvement after the measurement date. Mortality experience will be reviewed in depth during the next five-year experience study.

**Termination Rates before Retirement:**

Age	Rate (%)				
	Mortality*		Disability**	Withdrawal***	
	Male	Female		Firefighters	Police Officers
20	0.04	0.02	0.02	1.4	10.3
25	0.04	0.02	0.02	1.0	7.3
30	0.09	0.04	0.03	0.8	5.6
35	0.12	0.06	0.04	0.6	4.3
40	0.15	0.11	0.06	0.4	3.3
45	0.20	0.16	0.09	0.3	2.2
50	0.30	0.22	0.15	0.1	1.1
55	0.56	0.34	0.25	0.0	0.0
60	1.08	0.68	0.41	0.0	0.0

\* Two-thirds of pre-retirement deaths are assumed to be duty-related.

\*\* Two-thirds of disabilities are assumed to be duty-related.

\*\*\* Withdrawal rates for Firefighters are increased by 150% during the first five years of service and withdrawal rates for Police Officers are increased by 33.33% during the first five years of service

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

**Retirement Rates:**

<b>Employees hired prior to January 1, 2009, with 9% contribution rate</b>		<b>Employees hired prior to January 1, 2009, with 8% contribution rate, and employees hired on or after January 1, 2009</b>	
<b><u>Years of Service</u></b>	<b><u>Rate</u></b>	<b><u>Years of Service</u></b>	<b><u>Rate</u></b>
Less than 25	0%	Less than 25	0%
25	25	25	20
26	10	26-27	10
27	60	28	30
28-29	80	29	35
30+	100	30-31	80
		32+	100

*Note: Participants who will not reach 25 years prior to age 65 are assumed to retire at age 65.*

**Retirement Age for Inactive**

**Vested Participants:** 55

**Average Retirement Start Date**

**During the Year:** October 1

**Percent Married:** 75%

**Percentage of Beneficiaries Paid:** It is assumed that for retirees currently in pay status for whom a Joint and Survivor form of benefit is eligible to be paid, 50% of beneficiaries will ultimately receive a survivor benefit.

**Age of Spouse:** Females 3 years younger than males

**Net Investment Return:** 7.75%

**Administrative Expenses:** \$500,000 for the year beginning January 1, 2013.

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

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**Actuarial Value of Assets:**

Market value of assets for the current year less unrecognized returns in each of the last ten years. Unrecognized return is equal to the difference between total return on market value basis minus expected return on actuarial basis using the net investment return assumptions. Effective in 2008, unrecognized returns are recognized over ten years, while unrecognized return for plan years prior to 2008 will continue to be recognized over a five-year period. A 25% corridor around the market value of assets is in place for the 2013 plan year, with the corridor decreasing by 5% per year until the corridor reaches 20% for the 2014 and future plan years.

**Salary Increases:**

3.25% annual increase. For participants with 10 years of service or less, salaries are assumed to increase by the following graduated scale:

<b>Firefighters</b>		<b>Police Officers</b>	
<b>Years of Service</b>	<b>Rate (%)</b>	<b>Years of Service</b>	<b>Rate (%)</b>
0	7.50	0	7.00
1	7.25	1	6.50
2	7.00	2	6.00
3	6.25	3	5.50
4	6.00	4	5.00
5	5.75	5	4.50
6	5.25	6	4.25
7	4.75	7	4.00
8	4.25	8	3.75
9	3.25	9	3.50
10+	3.25	10+	3.25

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

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**Actuarial Cost Method:**

Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by service, with Normal Cost determined as if the current benefit accrual rate had always been in effect.

**Changes in Assumptions:**

There have been no changes in actuarial assumptions since the last valuation.

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

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**EXHIBIT VII**

**Summary of Plan Provisions**

This exhibit summarizes the major provisions of the Fund included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

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**Plan Year:** January 1 through December 31

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**Service Retirement:**

<i>Age Requirement</i>	None
<i>Service Requirement</i>	25 years of credited service
<i>Amount</i>	2.75% of final average monthly salary for each year of service up to 25 years plus 1.25% of final average monthly salary for each year of service greater than 25 up to 30 years, up to a maximum of 75% of final average monthly salary.

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**Disability:**

On Duty

<i>Age Requirement</i>	None
<i>Service Requirement</i>	None
<i>Amount</i>	60% of final average monthly salary.

Off Duty

<i>Age Requirement</i>	None
<i>Service Requirement</i>	3 years
<i>Amount</i>	30% of final average monthly salary plus an additional 2% for each additional year of service over 10 years, to a maximum of 60% of final average monthly salary.

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

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**Vesting:**

<i>Age Requirement</i>	None
<i>Service Requirement</i>	10 Years
<i>Amount</i>	Refund of contributions or a deferred retirement benefit payable for life commencing at age 55 and calculated according to the following formula: 2.40% of final average monthly salary for each year of service up to 25 years.

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**Pre-Retirement Death Benefit:**

A. \$10,000 lump sum death benefit, in addition to any other benefits that may be payable.

B. Surviving Spouse Benefit, payable until death.

1. On Duty

*Requirement* Death as a result of injuries sustained while in active service, within six months of sustaining such injuries.

*Amount* 60% of final average monthly salary

2. Off Duty

a. *Requirement* Not eligible for service retirement.

*Amount* The amount of pension computed as if the decedent had retired under the off duty disability provision, in the form of a 50% Joint & Survivor option with a minimum of \$500 per month.

b. *Requirement* Eligible for service retirement.

*Amount* The optional benefit if elected, otherwise the amount of pension computed as if the decedent had retired under the service retirement provision, in the form of a 50% Joint and Survivor option.

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

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**Post-Retirement Death Benefits:**

Retirement Prior to November 3, 1992

- A. \$10,000 lump sum death benefit
- B. Benefit based on the form of payment elected, if a Joint & Survivor option was chosen.
- C. If a Single-Life Annuity was elected, the surviving spouse's benefit is \$500 per month.

Retirement On or After November 3, 1992 and Hired Prior to November 3, 1992

- A. \$10,000 lump sum death benefit
- B. Benefit based on the form of payment elected, if a Joint & Survivor option was chosen. If no option was elected at retirement, the surviving spouse's benefit is based on what it would have been if the 50% Joint & Survivor option was chosen.
- C. If the surviving spouse is not chosen as the beneficiary, the surviving spouse's benefit is \$500 per month.

Retirement On or After November 3, 1992 and Hired On or After November 3, 1992

- A. \$10,000 lump sum death benefit
- B. Benefit based on the form of payment elected

## **SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

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### **Final Average Monthly Salary:**

For purposes of determining retirement benefits, average salary is the average monthly base salary for the three years of service that yield the highest average. However, the average monthly salary may not exceed the salary for the highest listed position in each department. For individuals hired prior to July 1, 1999, the average monthly salary cannot be less than the 3-year final average pay of a police sergeant as of July 1, 1999.

### **Participation:**

All regular firefighters and police officers of the City of Chattanooga are eligible to participate.

### **Contributions:**

Participants hired prior to January 1, 2009 contribute the individually elected contribution rate of 8% or 9% of pay.

Participants hired on or after January 1, 2009 contribute 8% of pay.

### **Cost-of-Living-Adjustment:**

Retirement benefits payable from the Fund to retired participants, survivors or beneficiaries are increased each January 1 by 3% of the preceding year's pension benefit. The initial increase is made on the first January 1 following the one year anniversary of the benefit commencement date.

### **Deferred Retirement Option Provision (DROP) for members contributing 9% of pay:**

A participant may retire at any time after completing 25 years of service with the option to retro-DROP for up to three years but not prior to 25 years of service. The retirement benefit amount is calculated, based upon service at the retro-DROP date and final average salary at retirement, and up to 36 months of this benefit amount will be used in determining the DROP lump-sum. The DROP account along with employee contributions made during the retro-DROP period is credited with 7% interest annually, compounded monthly from the retro-DROP date.

**SECTION 4: Reporting Information for the City of Chattanooga Fire and Police Pension Fund**

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**Modified Deferred Retirement Option Provision (DROP) for members contributing 8% of pay and for participants hired on or after January 1, 2009:**

A participant may retire at any time after completing 25 years of service with the option to retro-DROP for up to three years but not prior to 25 years of service. The retirement benefit amount is calculated, based upon service at the retro-DROP date and final average salary at the beginning of the DROP period, and up to 36 months of this benefit amount will be used in determining the DROP lump-sum. The DROP account along with employee contributions made during the retro-DROP period is credited with the valuation interest rate less 3%, not to exceed 7% interest annually, compounded monthly from the retro-DROP date. Participants hired on or after January 1, 2009 will not have interest credited on their DROP lump sum.

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**Changes in Plan Provisions:**                      There have been no changes in plan provisions since the last valuation

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