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City of Memphis

City of Memphis Retirement System

Funding Valuation for Plan Year Ending June 30, 2017

pwc

October 30, 2015

Mr. Brian Collins
Director, Division of Finance
City of Memphis
125 North Main Street
Memphis, Tennessee 38103

Dear Mr. Collins,

We are pleased to present this report containing the funding results of the plan year ending June 30, 2017 for the City of Memphis Retirement System ("the Plan"), pursuant to our engagement letter with the City of Memphis ("the City") dated September 26, 2013 and as amended December 31, 2014.

The City of Memphis retained PricewaterhouseCoopers LLP to perform an actuarial valuation of the Retirement System for the purpose of calculating the Actuarially Determined Contribution as defined in The Public Employee Defined Benefit Financial Security Act of 2014 for the State of Tennessee (the "Financial Security Act of 2014") for the plan year ending June 30, 2017. Pursuant to the City's current funding policy that became effective for the fiscal year beginning July 1, 2015, the measurement date used to determine the Actuarially Determined Contribution is twelve (12) months prior to the beginning of the plan year. Therefore, the funding requirement for the plan year ending June 30, 2017 is based on a valuation date of July 1, 2015. This report is not intended to satisfy the necessary information for accounting and reporting requirements in accordance with Government Accounting Standards Board Statement No. 67 (GASB 67) or with Government Accounting Standards Board Statement No. 68 (GASB 68).

This valuation has been conducted in accordance with the required Actuarial Standards of Practice as issued by the American Academy of Actuaries.

In preparing the results presented in this report, we have relied upon information the City of Memphis provided to us regarding plan provisions, plan participants, unaudited plan assets and benefit payments. The census data and plan asset information used in calculating the results herein were collected as of July 1, 2015. While the scope of our engagement did not call for us to perform an audit or independent verification of this information, we have reviewed this information for reasonableness. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information.

The City of Memphis has determined and taken responsibility for the actuarial assumptions and methods employed in the valuation of obligations and costs for purposes of complying with the Financial Security Act of 2014.

A range of results, different from those presented in this report could be considered reasonable. Future actuarial measurements may differ significantly from the current measurement presented in this report due to a number of factors including but not limited to: plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methods 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), rounding conventions and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed.

This report was prepared for the internal use of the City of Memphis in connection with our actuarial valuation of the Plan for determining the Actuarially Determined Contribution only and not for reliance by any other person. PwC disclaims any contractual or other responsibility or duty of care to others based upon the services or deliverables provided in connection with this report.

This report does not purport to comply with any other purposes not stated herein. Significantly different results from what is presented in this report may be needed for other purposes.

The content of this document is limited to the matters specifically addressed herein and does not address any other potential tax consequences, or the potential application of tax penalties, to any matter other than as set forth herein. Our conclusions are not binding upon any taxing authority or the courts and there is no assurance that any relevant taxing authority will not successfully assert a contrary position. In addition, no exceptions (including the reasonable cause exception) are available for any federal or state penalties imposed if any portion of a transaction is determined to lack economic substance or fails to satisfy any similar rule of law, and our advice will not protect you from any such penalties. This document supersedes all prior written or oral advice with respect to the issues addressed in this document and all such prior communications should not be relied upon by any person for any purpose.

The undersigned actuaries are each a member of the Society of Actuaries and the American Academy of Actuaries and meet the "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" relating to pension plans. To the best of our knowledge, the individuals involved in this engagement have no relationship that may impair, or appear to impair, the objectivity of our work.

We appreciate this opportunity to be of service to the City of Memphis. We are available to answer any questions with respect to our report.

Respectfully submitted,

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Actuarially Determined Contribution for Funding Purposes

The City's Actuarially Determined Contribution ("ADC") for purposes of complying with both The City's Funding Policy and The Public Employee Defined Benefit Financial Security Act of 2014 for the State of Tennessee (the "Financial Security Act of 2014") for the plan year ending June 30, 2017 is $58,185,000. Pursuant to the City's funding policy effective July 1, 2015, the ADC is determined using a measurement date of July 1, 2015, which is twelve (12) months prior to the first day of the plan year. The ADC is comprised of the normal cost of $20,808,000, the current year amortization charge of $33,318,000, with interest on both of these components equal to $4,059,000. Details of this calculation can be found in Section II - Funding, Exhibit D.

As described above, there are two main components that comprise the ADC. The first component is the normal cost, which is the cost of additional benefits accruing during the current year. The employer normal cost for the current plan year as a percentage of anticipated payroll is approximately 6.6%. It is based on the same actuarial assumptions and methods and summary of plan provisions detailed in Section V and Section VI of this report, respectively.

The second component of the ADC is the current year amortization charge. The current year amortization charge is the sum of all amortization charges for both the current year and as established in prior plan years. An amortization charge for any given year is the funding shortfall base (or "tier") amortized over a closed 30-year period. The funding shortfall tier is calculated as the unfunded actuarial accrued liability, defined as the actuarial accrued liability less the actuarial value of assets, for the current plan year less the sum of all remaining balances for shortfall tiers established in prior plan years. This method is determined by the City of Memphis and is consistent with our understanding of the requirements described in The City's Funding Policy.

The unfunded actuarial accrued liability for the current plan year is $417,849,000 and the sum of remaining balances for shortfall tiers established in prior plan years is $528,208,000, resulting in a new shortfall amortization tier of $(110,359,000). The total amortization charges for both the current plan year and all prior plan years is $33,318,000.

As of July 1, 2015, the actuarial value of assets are $2,165,016,000, which is less than the market value of assets of $2,200,549,000 as a result of the deferral of net asset gains from the prior fiscal years within the smoothing period. The method for determining the actuarial value of assets used to determine the ADC is an actuarial value that "smoothes" fluctuations in the market value over a five (5) year period, while ensuring that the actuarial value stays within a 10% corridor of the market value of assets. This method for determining the actuarial value of assets consistent with the City's funding policy and complies with the Financial Security Act of 2014. The development of the actuarial value of assets can be found in Section III - Assets, Exhibit C.

HIGHLIGHTS OF THE ACTUARY'S REPORT

Actuarially Determined Contribution for Funding Purposes (Cont.)

The ADC for the current year is $58,185,000 compared to $73,913,000 in the prior valuation year. The reduction in the ADC is primarily attributable to acturial gains as a result of employee compensation remaining relatively flat compared to an assumed estimated compensation increase of 4.25%. This results in both a decrease in the normal cost over the prior year and an actuarial experience gain in the liability, which is amortized over thirty years and included in the current year ADC.

Valuation Date		July 1, 2014		**July 1, 2015**		
Applicable Fiscal Year Beginning		July 1, 2016		**July 1, 2017**		
Unfunded Actuarial Accrued Liability						Difference
1. Actuarial Accrued Liability	$	2,578,265,000	**$**	**2,582,865,000**	$	4,600,000
2. Actuarial Value of Assets		2,044,905,000		**2,165,016,000**		120,111,000
3. Unfunded Actuarial Accrued Liability (1) - (2)	$	533,360,000	**$**	**417,849,000**	$	(115,511,000)
Actuarially Determined Contribution (ADC):						
1. Employer Normal Cost as of the Beginning of the Period	$	26,746,000	**$**	**20,808,000**	$	(5,938,000)
2. Total Amortization Charge		42,010,000		**33,318,000**		(8,692,000)
3. Interest: [(1) + (2)] × 7.5%		5,157,000		**4,059,000**		(1,098,000)
4. Actuarially Determined Contribution: (1) + (2) + (3)	$	73,913,000	**$**	**58,185,000**	$	(15,728,000)

HIGHLIGHTS OF THE ACTUARY'S REPORT

Assumptions and Methods

There were no changes to the actuarial assumptions and methods from the prior plan year. Actuarial assumptions were last updated for the July 1, 2014 actuarial valaution following the completion of an assumption study performed in April of 2014. A summary of the actuarial assumptions may be found in Section V - Summary of Assumptions and Methods.

Plan Provisions

There were no changes to the plan provisions from the prior plan year. The plan provisions were last updated for the July 1, 2014 actuarial valuation and they reflected amendments for the new plan design that become effective July 1, 2016. Under the new plan design, any participant with seven and one-half (7½) Years of Service or more will be grandfathered in their current plan and all other employees will participate in the new hybrid plan design. Nongrandfathered employees will move from a traditional defined benefit formula to a hybrid defined benefit formula that includes both a market based cash balance component and defined contribution component. The City of Memphis was responsible for indicating which active employees in the July 1, 2015 census information are expected to be grandfathered. Details regarding the new plan design may be found in Section VI - Summary of Plan Provisions.

Census Data

The valuation is based on census information collected as of July 1, 2015. The active headcount decreased slightly from 5,756 as of July 1, 2014 to 5,691 as of July 1, 2015. As a result of the change in headcount and relatively flat pay increases from the prior year, the covered employee payroll decreased from $340 million to $316 million. Details of the census information used in the valuation are summarized Section IV.

FUNDING

A. Development of Funded Status as of July 1, 2015

		General Employees	Police and Fire	Total
1.	Actuarial Accrued Liability [1]			
	a. Active Participants	$ 206,480,000	$ 655,065,000	$ 861,545,000
	b. Terminated Vested Participants	2,672,000	2,601,000	5,273,000
	c. Retiree/Beneficiary/Disabled Participants	494,737,000	1,221,310,000	1,716,047,000
	d. Total: (1)(a) + (1)(b) + (1)(c)	$ 703,889,000	$ 1,878,976,000	$ 2,582,865,000
2.	Actuarial Value of Assets [2]	$ 590,016,000	$ 1,575,000,000	$ 2,165,016,000
3.	Unfunded Actuarial Accrued Liability: (1)(d) - (2)	$ 113,873,000	$ 303,976,000	$ 417,849,000
4.	Funded Percentage: (2) ÷ (1)(d)	83.8%	83.8%	83.8%

1 The actuarial accrued liability above reflects the impact of the plan amendment effective July 1, 2016.

2 The actuarial value of assets are allocated in proportion to the actuarial accrued liability of General employees and Police and Fire employees.

B. Reconciliation of Actuarial Accrued Liability

1.	July 1, 2014 Actuarial Accrued Liability for Funding Purposes	$ 2,578,265,000	
2.	Employer Normal Cost	26,746,000	
3.	Estimated Employee Contributions in Normal Cost	21,442,000	
4.	Actual Benefit Payments	173,991,000	
5.	Interest of 7.5% on (1) + (2) + (3) - (4) ÷ 2	190,460,000	
6.	Expected July 1, 2015 Actuarial Accrued Liability: (1) + (2) + (3) - (4) + (5)	$ 2,642,922,000	
		Dollar Change in Liability	**Percent Change in Liability**
7.	(Gain)/Loss Components		
	a. Census Experience	$ 14,239,000	0.5%
	b. Salary Experience	(74,296,000)	(2.8%)
	c. Total	$ (60,057,000)	(2.3%)
8.	July 1, 2015 Actuarial Accrued Liability: (6) + (7)(c)	$ 2,582,865,000	

C. Reconciliation of Unfunded Actuarial Accrued Liability

			July 1, 2015
1.	Unfunded Actuarial Accrued Liability, Prior Year	$	533,360,000
2.	Change in Unfunded Actuarial Accrued Liability (Decrease) / Increase		
	a. Change Due to Not Funding the Full ADC [1]	$	27,698,000
	b. Change due to Actuarial Value of Asset Experience [2]		(78,000,000)
	c. Plan Experience - Updated Census [3]		14,239,000
	d. Plan Experience - Updated for Actual Salary		(74,296,000)
	e. Total New Amortization Base for Current Plan Year: (2)(a) + (2)(b) + (2)(c) + (2)(d)	$	(110,359,000)
	f. Reduction in Existing Bases Due to Prior Year Amortization, Net of Interest		(5,152,000)
	g. Change in Unfunded Actuarial Accrued Liability:	$	(115,511,000)
3.	Unfunded Actuarial Accrued Liability at July 1, 2015: (1) + (2)(g)	$	417,849,000

[1] The ADC for the prior year was $73,913,000 and the actual City contribution was $46,215,000.

[2] The actuarial value of assets is equal to the fair value of assets adjusted for gains and losses on investments recognized over a five-year period. See Section III - Exhibit C for the development of the actuarial value of assets.

[3] Includes the difference between expected employee contributions of $21,442,000 and actual employee contributions of $23,319,000.

D. Development of Actuarially Determined Contribution [1]

Development of actuarially determined contribution for the plan year ending June 30, 2017.

		General Employees	Police and Fire	Total
1.	Annual Anticipated Payroll [2]	$ 89,670,000	$ 226,769,000	$ 316,439,000
2.	Development of Employer Normal Cost			
	a. Total Normal Cost as of July 1, 2015	$ 11,302,000	$ 33,041,000	$ 44,343,000
	b. Estimated Employee Contributions [3]	7,174,000	16,361,000	23,535,000
	c. Employer Normal Cost as of July 1, 2015 (a) - (b)	$ 4,128,000	$ 16,680,000	$ 20,808,000
3.	Employer Normal Cost as of the Beginning of the Period			$ 20,808,000
	a. Total Amortization Charge			33,318,000
	b. Interest: [(a) + (b)] × 7.5%			4,059,000
	c. Actuarially Determined Contribution: (a) + (b) + (c)			$ 58,185,000
4.	Percent of Annual Covered Payroll: (3)(d) ÷ (1)			18.39%

1 The ADC is determined pursuant to the City's funding policy and complies with our understanding of the provisions The Financial Security Act of 2014.

2 The annual anticipated payroll is for the period from July 1, 2015 through June 30, 2016.

3 Employee contributions are equal to a fixed percentage of compensation. Details regarding the employee contributory rate may be found in Section VI.

E. Development of Amoritzation of Tier for the Current Plan Year

Development of Amoritzation of Tier for the Current Plan Year

1.	Unfunded Actuarial Accrued Liability	$	417,849,000
2.	Present Value of Annual Installments from Prior Fiscal Years		528,208,000
3.	Current Year Tier: (1) - (2)	$	(110,359,000)
4.	Amortization Factor		
	a. Interest Rate		7.50%
	b. Amortization Period		30
	c. Amortization Factor for Current Year Tier		12.6962
5.	Amortization of Tier for Current Plan Year: (3) ÷ (4)(c)	$	(8,692,000)

[1] The ADC is determined pursuant to the City's funding policy and complies with our understanding of the provisions The Financial Security Act of 2014.

F. Unfunded Accrued Liability Amortization Schedule

Date Tier Established	Reason	Original Shortfall Tier	Original Amortization Period	Remaining Shortfall Tier	Remaining Amortization Period	Current Amortization Charge
7/1/2015	Gain/(Loss) for 2017 Budget Year	$ (110,359,000)	30	$ (110,359,000)	30	$ (8,692,000)
7/1/2014	Fresh Start for 2016 Budget Year	533,360,000	30	528,208,000	29	42,010,000
Total				$ 417,849,000		$ 33,318,000

[1] The amortization of the shortfall tier for the current year is calculated using the valuation interest rate of 7.5%.

ASSETS

A. Market Value of Assets	Market Value June 30, 2014	Market Value June 30, 2015
1607 Capital Partners	$ 138,571,589	$ 137,498,161
Acadian EM Equity II	100,558,982	88,673,180
Barrow, Hanley, et al	83,180,245	90,167,953
BlackRock Granite Property Fund	32,828,993	37,148,935
Cash Management Account (In-House)	21,275,205	9,572,626
Cornerstone	8,154,426	7,194,524
Fidelity Real Estate Growth III Fund	15,349,923	8,773,991
Herndon	99,870,281	98,134,284
Long Wharf Real Estate Partners	8,820,168	15,109,382
Mackay Shields	205,141,816	194,977,577
Marathon Asset Management	122,319,095	121,688,052
Martin Currie	-	634
Navellier & Associates	104,525,523	101,051,876
Nicholas Investment Partners	24,300,418	28,122,630
Northern Trust	107,084,318	100,663,060
Paradigm Small Cap	40,522,375	45,414,464
PIMCO	196,136,219	189,193,619
Platte River	30,074,010	-
Principal Global Investors	93,581,094	94,138,464
Prudential Core Conserv Bond	208,031,886	204,662,406
Rhumbline S&P 500	182,653,222	221,845,032
Rowe Price Fleming	139	247
RREEF America REIT II	12,358,308	13,633,390
RREEF Real Estate Securities Commingled Fund	33,200,255	22,433,118
Smith Graham	193,733,390	190,727,520
SouthernSun	44,021,166	40,401,885
Strategic Global Advisors	31,562,613	31,972,220
Winslow Capital Management	107,302,374	107,349,767
Total	$ 2,245,158,000	$ 2,200,549,000

B. Reconciliation of Market Value of Assets and Investment Return

1.	Market Value of Assets at July 1, 2014		$ 2,245,158,000
2.	Contributions		
	a.	Employer Contributions	$ 46,215,000
	b.	Employee Contributions	23,319,000
	c.	Total	$ 69,534,000
3.	Benefit Payments in 2014 - 2015		$ 173,991,000
4.	Expenses		
	a.	Investment Fees	$ 8,864,000
	b.	Administrative Fees	1,975,000
	c.	Total	$ 10,839,000
5.	Interest and Dividend Income		$ 48,446,000
6.	Unrealized Gain/(Loss)		$ 562,000
7.	Net Realized Gain/(Loss)		$ 28,880,000
8.	Other Revenue [1]		$ (7,201,000)
9.	Total Income: (5) + (6) + (7) + (8)		$ 70,687,000
10.	Market Value of Assets at July 1, 2015: (1) + (2) - (3) - (4) + (9)		$ 2,200,549,000
11.	Investment Return: [2 × (9)] ÷ [(1) + (10) - (9)]		3.2%

[1] Does not reflect adjustment to DROP Benefit Payments, as the amount is immaterial, per the City.

C. Development of Actuarial Value of Assets for Funding Purposes

1.	Market Value of Assets (MVA) at July 1, 2015				$ 2,200,549,000
2.	Development of Expected Market Value of Assets at July 1, 2015:				
	a. Market Value of Assets at July 1, 2014:				$ 2,245,158,000
	b. Actual Employee and Employer Contributions:				69,534,000
	c. Actual Benefit Payments:				(173,991,000)
	d. Expected Investment Earnings[1] at July 1, 2014 MVA:				164,470,000
	e. Expected Market Value of Assets at July 1, 2015: (2)(a) + (2)(b) + (2)(c) + (2)(d)				$ 2,305,171,000
3.	Gains/(Losses) at July 1, 2015: (1) - (2)(e)				$ (104,622,000)
4.	Asset Gains/(Losses)		Gains/(Losses)	% Not Yet Recognized	Gains/(Losses) Not Yet Recognized
	a. 2015 Asset Gain (Loss):		$ (104,622,000)	80%	$ (83,698,000)
	b. 2014 Asset Gain (Loss):		184,075,000	60%	110,445,000
	c. 2013 Asset Gain (Loss):		69,045,000	40%	27,618,000
	d. 2012 Asset Gain (Loss):		(94,160,000)	20%	(18,832,000)
5.	Total Unrecognized Asset Gains/(Losses): sum of (4)(a) to (4)(d)				$ 35,533,000
6.	Actuarial Value of Assets Current for Year Prior to Corridor: (1) - (5)				$ 2,165,016,000
7.	90% of Market Value of Assets: (1) × 90%				$ 1,980,494,000
8.	110% of Market Value of Assets: (1) × 110%				$ 2,420,604,000
9.	Actuarial Value of Assets at July 1, 2015: (6), but not less than (7) or greater than (8)				$ 2,165,016,000

[1] Includes half year of interest on net cash flows (conributions less benefit payments).

CENSUS DATA

SECTION IV - CENSUS DATA

A. Census Information

		June 30, 2014	June 30, 2015
1.	Active		
a.	Number	5,756	5,691 [1]
b.	Average Age	43.9	44.2
c.	Average Years of Service	12.0	12.0
d.	Covered Payroll of Actives[2]	$ 340,029,000	$ 316,439,000
2.	Terminated Vested		
a.	Number	646	704
b.	Lump Sum [1]	$ 4,202,000 [2]	$ 5,273,000 [2]
4.	Retiree and Beneficiary		
a.	Number	4,239	4,348
b.	Annual Benefits Payable	$ 144,189,000	$ 149,000,433
5.	Disabled		
a.	Number	653	642
b.	Annual Benefits Payable	$ 17,370,000	$ 17,089,380

[1] The number of grandfathered active participants as of July 1, 2015 are 4,372, as provided by the City of Memphis.

[2] Calculated as return of employee contributions.

B. Distribution of Active Members by Age and Service

Attained Age	Distribution of Active Members by Age and Service as of June 30, 2015										
	Under 1 year	1 to 4 years years	5 to 9 years years	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	30 to 34 years	35 to 39 years	Over 40 years	Total
<25	46	24									70
25-29	122	223	88								433
30-34	65	281	260	62							668
35-39	36	182	277	241	46						782
40-44	29	115	195	277	357	44	1				1,018
45-49	33	104	145	232	355	198	32				1,099
50-54	27	80	79	141	204	172	69	5			777
55-59	12	70	67	91	120	82	51	19	4		516
60-64	11	37	26	69	39	26	12	3	1	2	226
65-69	2	18	21	15	29	14	2		1		102
70&Up											
Total	383	1,134	1,158	1,128	1,150	536	167	27	6	2	5,691

C. Distribution of Terminated Vested Members by Age and Service

Attained Age	Distribution of Terminated Vested Members by Age and Service as of June 30, 2015							
	Under 5 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	Over 30 years	Total
<25	2							2
25-29	56	86						142
30-34	49	112	1					162
35-39	30	82	14	4				130
40-44	21	65	10	1	2			99
45-49	20	22	8	7	1	4		62
50-54	7	28	10	6		1		52
55-59	6	13	4	5				28
60-64	8	4	2	3				17
65-69	2	7		1				10
70&Up								
Total	201	419	49	27	3	5		704

D. Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired

Attained Age	Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired as of June 30, 2015							
	Under 5 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	Over 30 years	Total
<40	1	6	13	13	1	6	4	44
40-44		2	15	13	6	5	2	43
45-49		4	10	31	22	102	8	177
50-54	1		10	19	30	204	103	367
55-59	1	4	11	19	24	120	346	525
60-64		3	14	28	47	88	607	787
65-69		8	13	28	27	65	800	941
70-74		1	4	11	22	28	709	775
75-79			3	3	22	21	545	594
80-84				2	1	12	385	400
85-89					1	3	224	228
90&Up						1	108	109
Total	3	28	93	167	203	655	3,841	4,990

E. Flow of Lives from June 30, 2014 to June 30, 2015

	Actives	Terminated Vested	Disabled	Retired [1]	DROP	Total
June 30, 2014	5,756	646	653	3,943	296	11,294
New Entrants:	359	-	-	-	-	359
Rehires:	47	(5)	(1)	(3)		38
DROP:	(116)			-	116	-
Vested Terminations:	(96)	96		-		-
Terminations:	(197)	(36)		-		(233)
Retirements:	(62)	(1)		173	(110)	-
Disablements:	(11)	(1)	12	-		-
Death with Beneficiary:	(1)		(4)	5		-
Death without Beneficiary:	(7)		(19)	(69)		(95)
Lump Sums:				(1)		(1)
Data Adjustments:	19	5	1	(2)		23
June 30, 2015	5,691	704	642	4,046	302	11,385

[1] Last year this count included 927 beneficiaries and 12 participants who were retirement eligible but had not commenced benefit payments. This year this count includes 966 beneficiaries and 11 participants who are retirement eligible but have not commenced benefit payments.

ACTUARIAL ASSUMPTIONS AND METHODS

SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

A. Actuarial Assumptions

The assumptions used in the valuation were selected and approved by the City of Memphis. The actuary and other economic and investment professionals provide advice for selecting the economic and demographic assumptions. In our opinion, the assumptions are reasonable for purposes of this valuation.

Interest Rate / Investment Return	7.5% per year for funding purposes 7.5% per year
Interest Crediting Rate	
Cash Balance Account	6.5% (Valuation interest rate less 1.0%)
IRC 401(a) Account	5.5%
Future Salary Increases	Scale that varies by age and service with a weighted average of 4.25% per year
Cost of Living Increases	N/A
Mortality	General: Fully Generational RP-2014 Mortality Table for males and females with MP-2014 projection scale and adjusted by a 1 year set forward Police and Fire: Fully Generational RP-2014 Mortality Table with Blue Collar adjustment for males and females with MP-2014 projection scale and adjusted by a 1 year set forward Disabled: Fully Generational RP-2014 Disabled Mortality Table with MP-2014 projection scale and adjusted by a 3 year set back
Disability	1968 Social Security Experience Table. Sample rates are shown below:
Account Balance Conversion	Account balances under the 2016 Plan (effective July 1, 2016) are converted at 5.0% interest and the applicable mortality table under IRC 417(e) in effect on the valuation date.

A. Actuarial Assumptions (continued)

Termination Select and Ultimate rates. Sample rates are shown below:

Police & Fire: Males

	Years of Service					
Age	0	1	2	3	4	5+
20	13.0%	5.0%	5.0%	5.0%	5.0%	5.0%
25	15.0%	5.0%	5.0%	5.0%	5.0%	4.0%
30	17.0%	5.0%	4.0%	4.0%	3.0%	3.0%
35	15.0%	5.0%	5.0%	5.0%	4.0%	3.0%
40	18.0%	4.0%	4.0%	4.0%	2.0%	2.0%
45	17.0%	20.0%	5.0%	5.0%	2.0%	2.0%
50	15.0%	20.0%	5.0%	5.0%	2.0%	2.0%
55	15.0%	20.0%	5.0%	5.0%	2.0%	2.0%

General: Males

	Years of Service					
Age	0	1	2	3	4	5+
20	55.0%	52.0%	47.0%	45.0%	40.0%	40.0%
25	63.0%	57.0%	31.0%	17.0%	7.0%	9.5%
30	46.0%	46.0%	18.0%	14.0%	14.0%	8.0%
35	22.0%	22.0%	17.0%	7.0%	7.0%	6.0%
40	26.0%	4.0%	11.0%	11.0%	10.0%	5.0%
45	5.0%	5.0%	5.0%	5.0%	5.0%	4.0%
50	5.0%	5.0%	5.0%	5.0%	3.0%	4.0%
55	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

A. Actuarial Assumptions (continued)

Termination (cont.)

General, Police & Fire:
Females

	Years of Service					
Age	0	1	2	3	4	5+
20	25.0%	22.0%	20.0%	20.0%	20.0%	5.0%
25	24.0%	16.0%	14.0%	10.0%	12.0%	6.0%
30	26.0%	17.0%	12.0%	13.0%	13.0%	6.0%
35	14.0%	11.0%	15.0%	11.0%	11.0%	4.0%
40	18.0%	14.0%	8.0%	8.0%	7.0%	4.0%
45	18.0%	14.0%	8.0%	8.0%	5.0%	4.0%
50	6.0%	6.0%	7.0%	7.0%	5.0%	4.0%
55	6.0%	6.0%	7.0%	7.0%	5.0%	4.0%

A. Actuarial Assumptions (continued)

Retirement Rates

For both General employees and Police and Fire employees, the rates vary by age, gender and grandfather status:

Grandfathered

Age	Police and Fire Males & Females	General Males
45 - 49	25%	20%
50 - 54	25%	25%
55 - 59	25%	25%
60 - 64	40%	25%
65 - 69	100%	100%
70	100%	100%

Nongrandfathered

General - Males & Females

Age	Rate
62	20%
63	20%
64	20%
65	100%

Police & Fire - Males and Females

Age	Rate
52	20%
53	20%
54	20%
55	20%
56	20%
57	20%
58	20%
59	20%
60	100%

A. Actuarial Assumptions (continued)

Marriage	80% of male General Employees, 50% of female General Employees, and 80% of Police and Fire Employees are assumed to be married. Wives are assumed to be three years younger than their husbands.
Death/Disability	Deaths and disabilities for active General Employees are assumed to be other than line-of-duty. Deaths and disabilities for active Police and Fire Employees are assumed to be line-of-duty.
Form of Payment	It has been assumed that benefits will be paid in the normal annuity form applicable to the particular benefit. All grandfathered General Employees who terminate prior to retirement age are assumed to elect to receive their employee contributions time the applicable return multiple. All nongrandfathered General Employees who terminate prior to ten years of service will receive their account balance, and those who withdraw after ten years of service will receive their accrued benefit commencing at age 60. All Police and Fire Employees who terminate prior to ten years of service will receive their employee contributions, and those who withdraw after ten years of service will receive their accrued benefit.
Expense Load	None.

B. Actuarial Methods for Funding Purposes

1. Actuarial Cost Method

The actuarial cost method is the Entry Age Normal Actuarial Cost Method. This method determines a normal cost rate as a fixed percentage of compensation for each active participant. The current year's normal cost is the participant's compensation multiplied by the normal cost rate. Annual contributions in this amount, from the date the participant entered the plan (or would have entered, if the plan had always been in effect and the participant had entered at the earliest possible date) until retirement, would be sufficient to provide for the actuarial present value of the participant's plan benefits. The total normal cost is the sum of the normal costs for all active participants.

The actuarial accrued liability is the present value of future benefits, for both active and inactive participants, less the present value of future normal costs.

2. Asset Valuation Method

The actuarial value of assets is equal to the fair value of assets adjusted for gains and losses on investments recognized over a five-year period. The annual investment gain/loss amount is equal to the difference between the expected return on the fair value of assets and the actual return on assets. If the resulting value is outside the 90% to 110% range, the amount is further adjusted to be a maximum of 110% of market value or a minimum of 90% of market value. Last year, the actuarial value of assets were developed using a rolling actuarial value with 10% a corridor.

3. Anticipated Payroll

The Anticipated Payroll is equal to actual payroll during the prior year for members who are still active on the valuation date, adjusted for one year of assumed salary increases. The Anticipated Payroll does not include amounts for members who have reached the age at which retirement is assumed to occur immediately. This does not include payroll pertaining to members of the DROP as employee and City contributions cease upon entering the DROP Program.

4. Changes in Actuarial Methods

This marks the first year of calculating the ADC per the City's Funding Policy. Therefore, there are no changes to the actuarial methods.

SUMMARY OF PLAN PROVISIONS

A. Summary of Plan Provisions: General Employees

Effective Date	Originally effective October 1, 1948. Revised July 1, 1978, January 1, 1990, December 1, 2000, July 1, 2012 and July 1, 2016.
Participation	
1948 Plan	All regular salaried employees on their date of hire and hired before July 1, 1978.
1978 Plan	All regular salaried employees on their date of hire and hired on or after July 1, 1978 but prior to July 1, 2016.
2016 Plan	All regular salaried employees on their date of hire and hired on or after July 1, 2016. In addition, any nongrandfathered employee in the 1978 Plan will participate in the 2016 Plan as of July 1, 2016. For this purpose, a nongrandfathered employee is any employee with less than 7½ Years of Service as of July 1, 2016.
Compensation	Basic salary, excluding overtime, but including shift premium, hazardous pay, longevity pay and incentive pay.
Average Monthly Compensation	For 1948 Plan employees and 1978 Plan employees hired before July 1, 2012, the highest average monthly Compensation received for any five consecutive years of service, or the most recent year's earnings, if greater. For 1978 Plan employees hired after June 30, 2012, highest average monthly Compensation received for any three consecutive years of service.
Year of Service	One year of service is earned for each 12-month period beginning at date of employment. Fractional periods (months and days) are also credited.

A. Summary of Plan Provisions: General Employees (continued)

Accrued Benefit

1948 Plan

An employee in the 1948 Plan may choose between (1) and (2):

(1) The sum of (a) and (b):

(a) 2¼% of Average Monthly Compensation times Years of Service before 1/1/90, *plus* 2½% of Average Monthly Compensation times Years of Service after 1/1/90.

Total Years of Service in part (a) must not exceed 25 years.

(b) 1% of Average Monthly Compensation times Years of Service in excess of 25

The maximum total retirement benefit is 72½ % of the Average Monthly Compensation.

(2) Return of Employee Contributions in accordance with the following schedule:

Years of Service	Return Multiple
less than 5	1.0
5 to 14	1.5 - 2.9
15 or more	3.0

A. Summary of Plan Provisions: General Employees (continued)

Accrued Benefit (continued)

1978 Plan

A grandfathered employee is any employee hired before July 1, 2016 and who has 7½ or more Years of Service as of July 1, 2016. All other employees are nongrandfathered.

The Accrued Benefit for nongrandfathered employees will be based on Average Monthly Compensation and Years of Service as of June 30, 2016 after which future benefits will be earned under the 2016 Plan.

An employee in the 1978 Plan may choose between (1) and (2):

(1) The sum of (a) and (b):

(a) For employees hired before July 1, 2012: 2¼% of Average Monthly Compensation times Years of Service before 1/1/90, plus 2½% of Average Monthly Compensation times Years of Service after 1/1/90.

For employees hired after June 30, 2012: 2¼% of Average Monthly Compensation times Years of Service

Total Years of Service in part (a) must not exceed 25 years.

(b) 1% of Average Monthly Compensation times Years of Service in excess of 25, up to a maximum total retirement benefit of 72½ %.

(2) Return of Employee Contributions in accordance with the following schedule:

Years of Service	Return Multiple
less than 5	1.0
5 to 14	1.5 - 2.9
15 or more	3.0

A. Summary of Plan Provisions: General Employees (continued)

Accrued Benefit (continued)

2016 Plan

An employee in the 2016 Plan will be required to receive the Normal Form of Annuity derived by both a market-rate cash balance account and a defined contribution account.

Market-rate Cash Balance Account

Annual allocations to the cash balance account are equal to a percentage of Compensation that varies by Years of Service pursuant to the following allocation schedule:

Years of Service	Allocation %
0.00 - 4.99	5%
5.00 - 9.99	7%
10.00 - 14.99	9%
15.00 - 19.99	12%
20.00 +	15%

Interest Credits applied to the cash balance account are based on an interest crediting rate equal to the investment return on plan assets *less* one percent (1.0%).

The Normal Form of Annuity is determined based on Actuarial Equivalence of five percent (5.0%) per annum and the applicable mortality table pursuant to IRC Section 417(e)(3) for the Plan Year.

Defined Contribution Account Balance

Annual allocations to the defined contribution account are equal to seven and one-half percent (7.5%) of Compensation which consists of a six percent (6.0%) of Compensation as an employee contribution and one and one half percent (1.5%) of Compensation as an employer contribution. Assets are participant directed and the investment earnings are included in the defined contribution account balance.

The Normal Form of Annuity is determined based on Actuarial Equivalence of five percent (5.0%) per annum and the applicable mortality table pursuant to IRC Section 417(e)(3) for the Plan Year.

A. Summary of Plan Provisions: General Employees (continued)

Minimum Accrued Benefit

	Years of Service	At Age	Monthly Minimum Accrued Benefit
1948 Plan and 1978 Plan	25 or more	No Restriction	$525 plus $21 times the lesser of 10 or Years of Service in excess of 25
	15 or more	65 or after	$500 plus $1 times the lesser of 25 or Years of Service
	less than 25	Before 65	The greater of $262.50 or $21 times Years of Service

2016 Plan There is no minimum accrued benefit other than that provided for death and disability.

Normal Form of Annuity If single, an annuity for the life of the participant. A married participant will receive this annuity during his lifetime with a 75% continuation to his spouse upon his death. For 1948 Plan participants, 100% of the annuity is payable to the spouse upon the death of the participant.

A. Summary of Plan Provisions: General Employees (continued)

Normal Retirement

Elected & Appointed	For elected and appointed participants hired before November 1, 2004, first day of month coincident with or next following completion of 12 Years of Service. Otherwise, normal retirement eligibility follows their respective plan. Benefit Amount: Accrued Benefit
1948 Plan	For 1948 Plan employees, first day of the month coincident with or next following the earlier of the following dates: (a) Age 60 and completion of 10 Years of Service; or (b) Completion of 25 Years of Service. Benefit Amount: Accrued Benefit

A. Summary of Plan Provisions: General Employees (continued)

Normal Retirement (continued)

1978 Plan

For 1978 Plan employees hired before July 1, 2012, first day of the month coincident with or next following the earliest of the following dates:

(a) Age 60 and completion of 10 Years of Service;
(b) Age 65 and completion of 5 Years of Service; or
(c) Completion of 25 Years of Service.

Benefit Amount: Accrued Benefit

For 1978 Plan employees hired on or after June 30, 2012, first day of the month coincident with or next following the earliest of the following dates:

(a) Age 65 and the completion of 5 Years of Service; or
(b) Completion of 25 Years of Service

Benefit Amount: A reduction of five percent (5%) per year for each year that the commencement date precedes the date the participant will attain age 62 applied to the Accrued Benefit.

2016 Plan

For 2016 Plan employees, first day of the month coincident with or next following the earlier of the following dates:

(a) Age 65 and the completion of 5 Years of Service; or
(b) Completion of 25 Years of Service

Benefit Amount: Accrued Benefit

A. Summary of Plan Provisions: General Employees (continued)

Disability

Eligibility:	No service requirement for line-of-duty; five years of service for non line-of-duty.
Line-of-Duty:	A participant who becomes disabled while performing City duties is entitled to receive the greater of: (1) 60% of Average Monthly Compensation as of date of disability; or (2) Accrued Benefit as of date of disability.
Other:	For 1948 Plan participants, disabled employees while actively employed for reasons other than line-of-duty is entitled to receive the greater of: (1) 25% of Average Monthly Compensation as of date of disability; or (2) Accrued Benefit as of date of disability. For 1978 Plan participants, an employee who becomes disabled while actively employed for reasons other than line-of-duty is entitled to receive the Accrued Benefit as of date of disability. For 2016 Plan participants, an employee who becomes disabled while actively employed for reasons other than line-of-duty is entitled to receive the Accrued Benefit as of date of disability.

A. Summary of Plan Provisions: General Employees (continued)

Vested Termination

Eligibility:	Termination of employment after completion of 10 Years of Service.
Benefit Amount:	
1948 Plan	Accrued Benefit determined as of termination date becomes payable at age 65 for 1948 Plan employees and 1978 Plan employees hired before July 1, 2012.
1978 Plan	Accrued Benefit determined as of termination date becomes payable at age 60 if hired before July 1, 2012 and becomes payable at age 62 if hired on or after July 1, 2012.
2016 Plan	Accrued Benefit determined as of termination date becomes payable at age 60 for 2016 Plan employees.

Nonvested Termination

Eligibility:	Termination of employment before completion of 10 Years of Service.
Benefit Amount:	
1948 Plan	Return of Employee Contributions times the appropriate return multiple.
1978 Plan	Return of Employee Contributions times the appropriate return multiple for a grandfathered employee. A nongrandfathered employee under the 1978 Plan will receive their refund of contributions via the 2016 Plan.
2016 Plan	The portion of the cash balance account funded by employee contributions. For this purpose, a nongrandfathered employee will have an opening account balance as of July 1, 2016 equal to employee contributions as of July 1, 2016 times the appropriate return multiple.

A. Summary of Plan Provisions: General Employees (continued)

Involuntary Retirement

Eligibility:

1948 Plan	Completion of 15 years of service
1978 Plan	Completion of 12 years of service
	Note: This pension does not apply to any employee hired after November 1, 2004
Benefit Amount:	Accrued Benefit determined as of involuntary retirement date becomes payable on date of retirement.

A. Summary of Plan Provisions: General Employees (continued)

Pre-Retirement Death Benefit

Eligibility:	No service requirement for Line-of-Duty; 5 years of service for non line-of-duty.
Line-of-Duty Benefit:	The surviving spouse (or children) of a participant who dies while performing City duties is entitled to receive the greater of: (1) 60% of Average Monthly Compensation as of date of death; or (2) Accrued Benefit as of date of death.
Non Line-of-Duty Benefit:	For the 1948 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 100% of the participant's Accrued Benefit as of date of the participant's death. For the 1978 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 75% of the participant's Accrued Benefit as of date of the participant's death. For the 2016 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 75% of the Normal Form of Annuity as of the date of the participant's death.

A. Summary of Plan Provisions: General Employees (continued)

Employee Contributions

1948 Plan	Employees in the 1948 Plan must contribute five percent (5%) of Compensation.
1978 Plan	Employees in the 1978 Plan must contribute eight percent (8%) of Compensation.
2016 Plan	Employees in the 2016 Plan must contribute two percent (2%) of Compensation to the cash balance account and six percent (6%) of Compensation to the defined contribution account.

B. Summary of Plan Provisions: Police and Fire Employees

Effective Date

Originally effective October 1, 1948. Revised July 1, 1978, January 1, 1990, December 1, 2000, July 1, 2012 and July 1, 2016.

Participation

1948 Plan

All regular salaried employees on their date of hire and hired before July 1, 1978.

1978 Plan

All regular salaried employees on their date of hire and hired on or after July 1, 1978 but prior to July 1, 2016.

2016 Plan

All regular salaried employees on their date of hire and hired on or after July 1, 2016. In addition, any nongrandfathered employee in the 1978 Plan will participate in the 2016 Plan as of July 1, 2016.

For this purpose, a nongrandfathered employee is any employee with less than 7½ Years of Service as of July 1, 2016.

Compensation

Basic salary, excluding overtime and double time compensation for holiday pay, but including shift premium, hazardous pay, longevity pay and incentive pay.

Average Monthly Compensation

For 1948 Plan participants, the highest average monthly Compensation received for any five consecutive years of service, or the most recent year's earnings, if greater.

For 1978 Plan employee and 2012 Plan employees, the highest average monthly Compensation received for any three consecutive years of service preceding the participant's date of termination. Police officers hired prior to January 31, 1979 who retire with thirty years of service have their accrued benefit determined based on Captain's compensation if greater than their actual compensation, regardless of their rank.

Year of Service

One year of service is earned for each 12-month period beginning at date of employment. Fractional periods (months and days) are also credited.

B. Summary of Plan Provisions: Police and Fire Employees (continued)

Accrued Benefit

1948 Plan

The sum of (1) and (2):

(1) 2¼% of Average Monthly Compensation times Years of Service before 1/1/90, *plus* 2½% of Average Monthly Compensation times Years of Service after 1/1/90.

Total Years of Service in part (a) must not exceed 25 years.

(2) 1% of Average Monthly Compensation times Years of Service in excess of 25, up to a maximum total retirement benefit of 72½ %.

1978 Plan

A grandfathered employee is any employee hired before July 1, 2016 and who has 7½ or more Years of Service as of July 1, 2016. All other employees are nongrandfathered.

The Accrued Benefit for nongrandfathered employees will be based on Average Monthly Compensation and Years of Service as of June 30, 2016 after which future benefits will be earned under the 2016 Plan.

The sum of (1) and (2):

(1) For employees hired before July 1, 2012: 2¼% of Average Monthly Compensation times Years of Service before 1/1/90, plus 2½% of Average Monthly Compensation times Years of Service after 1/1/90.

For employees hired after June 30, 2012: 2¼% of Average Monthly Compensation times Years of Service

Total Years of Service in part (a) must not exceed 25 years.

(2) 1% of Average Monthly Compensation times Years of Service in excess of 25, up to a maximum total retirement benefit of 72½ %.

B. Summary of Plan Provisions: Police and Fire Employees (continued)

Accrued Benefit (continued)

2016 Plan

An employee in the 2016 Plan will be required to receive the Normal Form of Annuity derived by both a market-rate cash balance account and a defined contribution account.

Market-rate Cash Balance Account

Annual allocations to the cash balance account are equal to a percentage of Compensation that varies by Years of Service pursuant to the following allocation schedule:

Years of Service	Allocation %
0.00 - 4.99	8%
5.00 - 9.99	10%
10.00 - 14.99	12%
15.00 - 19.99	15%
20.00 +	18%

Interest Credits applied to the cash balance account are based on an interest crediting rate equal to the investment return on plan assets *less* one percent (1.0%).

The Normal Form of Annuity is determined based on Actuarial Equivalence of five percent (5.0%) per annum and the applicable mortality table pursuant to IRC Section 417(e)(3) for the Plan Year.

Defined Contribution Account Balance

Annual allocations to the defined contribution account are equal to seven and one-half percent (7.5%) of Compensation which consists of a six percent (6.0%) of Compensation as an employee contribution and one and one half percent (1.5%) of Compensation as an employer contribution. Assets are participant directed and the investment earnings are included in the defined contribution account balance.

The Normal Form of Annuity is determined based on Actuarial Equivalence of five percent (5.0%) per annum and the applicable mortality table pursuant to IRC Section 417(e)(3) for the Plan Year.

B. Summary of Plan Providions: Police and Fire Employees (continued)

Minimum Accrued Benefit

Years of Service	At Age	Monthly Minimum Accrued Benefit
25 or more	No Restriction	$525 plus $21 times the lesser of 10 or Years of Service in excess of 25
15 or more	65 or after	$500 plus $1 times the lesser of 25 or Years of Service
less than 25	Before 65	The greater of $262.50 or $21 times Years of Service

Normal Form of Annuity

If single, an annuity for the life of the participant. A married participant will receive this annuity during his lifetime with a 75% continuation to his spouse upon his death. For 1948 Plan participants, 100% of the annuity is payable to the spouse upon the death of the participant.

Normal Retirement

Elected & Appointed

For elected and appointed participants hired before November 1, 2004, first day of month coincident with (next following completion of 12 Years of Service. Otherwise, normal retirement eligibility follows their respective plan.

Benefit Amount: Accrued Benefit

1948 Plan

For 1948 Plan employees, first day of the month coincident with or next following the earlier of the following dates:

(a) Age 55 and completion of 10 Years of Service; or
(b) Completion of 25 Years of Service.

Benefit Amount: Accrued Benefit

B. Summary of Plan Provisions: Police and Fire Employees (continued)

Normal Retirement (continued)

1978 Plan

For 1978 Plan employees hired before July 1, 2012, first day of the month coincident with or next following the earliest of the following dates:

(a) Age 55 and completion of 10 Years of Service;
(b) Completion of 25 Years of Service.

Benefit Amount: Accrued Benefit

For 1978 Plan employees hired on or after June 30, 2012, first day of the month coincident with or next following the earliest of the following dates:

(a) Age 55 and completion of 10 Years of Service;
(b) Completion of 25 Years of Service.

Benefit Amount: A reduction of five percent (5%) per year for each year that the commencement date precedes the date the participant will attain age 52 applied to the Accrued Benefit.

2016 Plan

For 2016 Plan employees, first day of the month coincident with or next following the earlier of the following dates:

(a) Age 55 and completion of 10 Years of Service;
(b) Completion of 25 Years of Service.

Benefit Amount: Accrued Benefit

B. Summary of Plan Provisions: Police and Fire Employees (continued)

Disability

Eligibility:	No service requirement for line-of-duty; five years of service for non line-of-duty.
Line-of-Duty:	A participant who becomes disabled while performing City duties is entitled to receive the greater of: (1) 60% of Average Monthly Compensation as of date of disability; or (2) Accrued Benefit as of date of disability.
Other:	For 1948 Plan participants, an employee who becomes disabled while actively employed for reasons other than line-of-duty is entitled to receive the greater of: (1) 25% of Average Monthly Compensation as of date of disability; or (2) Accrued Benefit as of date of disability. For 1978 Plan participants, an employee who becomes disabled while actively employed for reasons other than line-of-duty is entitled to receive the Accrued Benefit as of date of disability. For 2016 Plan participants, an employee who becomes disabled while actively employed for reasons other than line-of-duty is entitled to receive the Accrued Benefit as of date of disability.

B. Summary of Plan Provisions: Police and Fire Employees (continued)

Vested Termination

Eligibility:	Termination of employment after completion of 10 Years of Service.
Benefit Amount:	
1948 Plan	Accrued Benefit determined as of termination date becomes payable at age 65 for 1948 Plan employees and 1978 Plan employees hired before July 1, 2012.
1978 Plan	Accrued Benefit determined as of termination date becomes payable at age 65 if hired before July 1, 2012 and becomes payable at age 62 if hired on or after July 1, 2012.
2016 Plan	Accrued Benefit determined as of termination date becomes payable at age 60 for 2016 Plan employees.

Nonvested Termination

Eligibility:	Termination of employment before completion of 10 Years of Service.
Benefit Amount:	
1948 Plan	Return of Employee Contributions.
1978 Plan	Return of Employee Contributions for a grandfathered employee. A nongrandfathered employee under the 1978 Plan will receive their refund of contributions via the 2016 Plan.
2016 Plan	The portion of the cash balance account funded by employee contributions. For this purpose, a nongrandfathered employee will have an opening account balance as of July 1, 2016 equal to employee contributions as of July 1, 2016.

B. Summary of Plan Provisions: Police and Fire Employees (continued)

Pre-Retirement Death Benefit

Eligibility:	No service requirement for line-of-duty; 5 years of service for non line-of-duty.
Line-of-Duty Benefit:	The surviving spouse (or children) of a participant who dies while performing City duties is entitled to receive the greater of: (1) 60% of Average Monthly Compensation as of date of death; or (2) Accrued Benefit as of date of death.
Non Line-of-Duty Benefit:	For the 1948 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 100% of the participant's Accrued Benefit as of date of the participant's death. For the 1978 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 75% of the participant's Accrued Benefit as of date of the participant's death. For the 2016 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 75% of the Normal Form of Annuity as of the date of the participant's death.

B. Summary of Plan Provisions: Police and Fire Employees (continued)

Employee Contributions

Employees are required to contribute a percentage of Compensation in accordance with the following schedule:

1948 Plan

Years of Service at 1/1/90	Percentage
up to 15 years	5.50%
15-19 years	5.25%
20 years or more	5.00%

1978 Plan

Date of Hire	Percentage
After 6/30/12	8.00%
After 6/30/83	6.50%
Before 7/1/83	6.25%

The contribution rate for current non-vested employees as of July 1, 2012 will increase annually in 0.5% increments beginning July 1, 2012 until the contribution rate reaches 8.0%.

2016 Plan

Cash Balance Account	2.00%
Defined Contribution Account	6.00%

Appendix I - Summary of Funding Policy

1. The City's funding policy is effective commencing July 1, 2015, and shall remain in effect until duly amended or preempted by state law.

2. The City will engage a professional actuary to compute the Actuarially Determined Contribution (ADC) each plan year.

3. The City will have the professional actuary conduct an actuarial experience study at least every six (6) years.

4. In determining the ADC each year, the actuary will

   a. use entry-age normal actuarial cost method
   b. use an actuarial value of assets equal to a smoothed value that recognizes gains and losses over a 5-year period; 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.
   c. determine actuarial gains and losses to be the result from the difference between experience versus assumptions, changes in demographic and economic assumptions, and changes in benefit provisions.
   d. amortize unfunded liabilities over a closed period of 30 years. A tiered approach will be utilized with new actuarial gains and losses from each actuarial valuation but no tier will exceed the 30 year maximum.

5. The ADC shall be calculated as of a valuation date twelve (12) months prior to the effective date and become applicable on the effective date that is the first day of July twelve (12) months following the valuation date

6. The investment earnings assumption in an actuarial valuation shall not be greater than fifty (50) basis points above the rate adopted by the Tennessee consolidated retirement system

7. Beginning in plan year commencing July 1, 2015 the City will fund the ADC each year over a graduated progress percentage so that in a maximum of five (5) years the City will be funding 100% of the ADC each year. The graduated progress percentage each year is at a minimum the percentage determined by dividing by five (5) the difference between the percentage of the ADC paid in the plan year commencing July 1, 2014, subtracted from one hundred percent (100%). The ADC shall be recalculated each year and the percentage of funding shall be based on the most recent recalculation of the ADC.