



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve



**Report of the Actuary on the
Annual Valuation of the
Shelby County Retirement System**

Prepared as of June 30, 2016





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

November 2, 2016

Board of Commissioners
Shelby County Retirement System
160 North Main Street, Suite 950
Memphis, TN 38103

Members of the Board:

We are pleased to submit the results of the actuarial valuation of the Shelby County Retirement System prepared as of June 30, 2016. The purpose of this report is to provide a summary of the funded status of the System as of June 30, 2016 and to recommend rates of actuarially determined contribution rates. The information needed for the County under the Governmental Accounting Standards Board Statements No. 67 and 68 (GASB 67 and 68) will be provided in separate reports. However, for informational purposes, we have also provided accounting information under GASB 25 and 27 in Section VI.

On the basis of the valuation, it is recommended that employer contributions to the System be set at a rate of 20.95% of payroll for the fiscal year ending June 30, 2018. The promised benefits of the System are included in the calculated contribution rate which is developed using the Entry Age Normal (EAN) cost method. Ten-year smoothed market value of plan assets is used for the actuarial value of assets. Gains and losses are reflected in the unfunded accrued liability that is being amortized by regular annual contributions within a 24-year period. The initial obligation for Plan C is being amortized by annual contributions within a 10-year period.

Since the previous valuation, the investment return assumption was lowered from 7.5% to 7.0%.

This is to certify that the independent consulting actuary is a Member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the System and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System. While not verifying the data at source, the actuary performed tests for consistency and reasonability.

3550 Busbee Pkwy, Suite 250, Kennesaw, GA 30144

Phone (678) 388-1700 • Fax (678) 388-1730

www.CavMacConsulting.com

Offices in Englewood, CO • Kennesaw, GA • Bellevue, NE



Board of Commissioners
November 2, 2016
Page 2

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

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

We trust that the report will meet the approval of the Board and will furnish the desired information concerning the financial condition of the System.

Respectfully submitted,

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

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

A handwritten signature in blue ink that reads 'Ben Mobley'.

Ben Mobley, ASA, ACA, MAAA
Actuary

EJK/BDM:kc



TABLE OF CONTENTS

<u>Section</u>	<u>Item</u>	<u>Page No.</u>
I	Summary of Principal Results	1
II	Membership Data	2
III	Assets	4
IV	Comments on Valuation	4
V	Contributions Payable	5
VI	Accounting Information	6
VII	Experience	9
 <u>Schedule</u>		
A	Development of the County Contribution Requirement	10
B	Development of the Actuarial Value of Assets	11
C	Asset Information	12
D	Outline of Actuarial Assumptions and Methods	13
E	Summary of Main System Provisions as Interpreted for Valuation Purposes	17
F	Tables of Membership Data	25
G	Analysis of Financial Experience	33
H	10-Year Projection of Funding Ratio and Employer Contribution Rates	34



**SHELBY COUNTY RETIREMENT SYSTEM
REPORT OF THE ACTUARY
ON THE VALUATION
PREPARED AS OF JUNE 30, 2016**

SECTION I – SUMMARY OF PRINCIPAL RESULTS

1. For convenience of reference, the principal results of the current and preceding valuations are summarized below.

Valuation Date	June 30, 2016	June 30, 2015
Active members:		
Number	5,108	5,208
Annualized compensation	\$ 244,817,501	\$ 243,654,662
County to City Transfers:		
Number	179	170
Annualized compensation	\$ 10,284,379	\$ 9,905,468
Retired members and beneficiaries:		
Number	3,708	3,598
Annual allowances	\$ 75,463,233	\$ 71,650,735
Number of participants with deferred benefits	209	262
Assets:		
Market Value	\$ 1,052,137,306	\$ 1,115,133,799
Actuarial Value	1,206,907,311	1,192,701,571
Unfunded actuarial accrued liability	\$ 441,762,040	\$ 316,522,180
Weighted Amortization Period	22 years	22 years
Funding Ratio		
Market Value	63.8%	73.9%
Actuarial Value	73.2%	79.0%
Fiscal Year Ending	June 30, 2018	June 30, 2017
Actuarially determined employer contribution rate (ADEC):		
Normal Cost	5.32%	4.19%
Accrued liability	<u>15.63</u>	<u>11.68</u>
Total	20.95%	15.87%



2. The major benefit and contribution provisions of the Plan as reflected in the valuation are summarized in Schedule E. There have been no changes since the previous valuation.
3. Schedule D of this report outlines the full set of actuarial assumptions and methods used in the valuation. Since the last valuation, the investment return assumption was reduced from 7.50% to 7.00%. This resulted in an increase in the actuarial accrued liability of approximately \$91 million.
4. Schedule B shows the development of the actuarial value of assets.
5. Comments on the valuation results as of June 30, 2016 are given in Section IV and further discussion of the contributions is set out in Section V.
6. As shown in the Summary of Principal Results, the funding ratio is the ratio of assets to the accrued liability and is different based on market value of assets. The funding ratio is an indication of progress in funding the promised benefits. Since the ratio is less than 100%, there is a need for additional contributions toward payment of the unfunded accrued liability. In addition, this funded ratio does not have any relationship to measuring sufficiency if the plan had to settle its liabilities.

SECTION II – MEMBERSHIP DATA

1. Data regarding the membership of the System for use as a basis of the valuation were furnished by the County. The valuation included 5,108 active members with annualized compensation totaling \$244,817,501. In addition, there are 179 County to City Transfers with total annual base earnings of \$10,284,379. Below we show the active members by Plan.

THE NUMBER AND ANNUAL BASE EARNINGS OF ACTIVE MEMBERS AS OF JUNE 30, 2016

PLAN	NUMBER	TOTAL ANNUAL BASE EARNINGS
Plan B	8	\$ 593,206
Plan A	1,446	70,202,924
Plan C	2,272	116,484,000
Plan D	<u>1,382</u>	<u>57,537,371</u>
Total	5,108	\$ 244,817,501



2. The following table shows the number of retired members and beneficiaries as of June 30, 2016 together with the amount of their annual retirement benefits payable under the System as of that date.

**THE NUMBER AND ANNUAL BENEFITS OF
RETIRED MEMBERS AND BENEFICIARIES
AS OF JUNE 30, 2016**

TYPE OF RETIREMENT	PLAN B	PLAN A	PLAN C	PLAN D	TOTAL
Service:					
Number	699	1,531	813	0	3,043
Annual Benefits	\$17,959,276	\$24,656,812	\$22,651,086	\$0	\$65,267,174
Disability:					
Number	21	46	0	0	67
Annual Benefits	\$291,886	\$1,089,620	\$0	\$0	\$1,381,506
Survivors:					
Number	259	299	40	0	598
Annual Benefits	\$4,447,338	\$3,490,888	\$876,327	\$0	\$8,814,553
Total:					
Number	979	1,876	853	0	3,708
Annual Benefits	\$22,698,500	\$29,237,320	\$23,527,413	\$0	\$75,463,233

*In addition, there are 209 participants entitled to deferred annual benefits totaling \$4,783,485.

3. Table 1 of Schedule F shows a reconciliation of the membership from June 30, 2015 to June 30, 2016. Tables 2, 3, 4 and 5 of Schedule F show the distribution by age and years of membership service of the number of active members included in the valuation by plan, while Tables 6, 7 and 8 show the number and annual benefits of retired members and beneficiaries included in the valuation by plan, distributed by age.



SECTION III – ASSETS

1. As of June 30, 2016, the total market value of assets amounted to \$1,052,137,306, as reported by the auditor. The estimated investment return for the plan year was (2.81)%. Schedule C shows the receipts and disbursements of the System for the year preceding the valuation date and a reconciliation of the System balances at market value.
2. The market related actuarial value of assets using a 10-year smoothing technique of investment gains and losses is \$1,206,907,311. The estimated investment return for the plan year ending June 30, 2016 on an actuarial value of assets basis was 3.94%, which can be compared to the investment return assumed for the period of 7.50%. Schedule B shows the development of the actuarial value of assets as of June 30, 2016.

SECTION IV – COMMENTS ON VALUATION

1. Schedule A of this report outlines the results of the actuarial valuation. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D.
2. The valuation shows that the total actuarial accrued liability of the System amounts to \$1,648,669,351. Against these liabilities, the System has present assets for valuation purposes of \$1,206,907,311. When this amount is deducted from the actuarial accrued liability of \$1,648,669,351, there remains \$441,762,040 as the unfunded actuarial accrued liability.
3. The employer's contributions to the System consist of normal cost contributions and accrued liability contributions. The normal cost rate is equal to the actuarial present value of benefits accruing during the current year divided by the annual active members' payroll. Estimated budgeted administrative expenses are included in the normal cost rate. The expenses for the fiscal year ending June 30, 2018 are estimated to be 0.50% of payroll. The employer normal cost rate is determined to be 5.32% of payroll.
4. The accrued liability contribution rate is 15.63% of active member's compensation, which will amortize the portion of the unfunded actuarial liability over a weighted 22-year period on a level dollar amortization basis.



5. The total County contribution rate required for the fiscal year ending June 30, 2018 is, therefore, 20.95% of payroll.
6. The unfunded actuarial accrued liability (UAAL) increased approximately \$125 million for the plan year ending June 30, 2016 and the funding ratio decreased from 79.0% to 73.2%. This increase in the UAAL was primarily due to the lowering of the investment return assumption from 7.50% to 7.00%. In addition, there was a significant loss due to the investment return on an actuarial value basis for the year being less than expected. There were gains due to mortality that partially offset these losses. See Schedule G for a complete breakdown of the experience of the System.

SECTION V – CONTRIBUTIONS PAYABLE

The following table summarizes the employer contributions which were determined by the June 30, 2016 valuation and are recommended for use in the fiscal year ending June 30, 2018.

**COUNTY ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTIONS (ADEC)
FOR FISCAL YEAR ENDING JUNE 30, 2018**

CONTRIBUTION	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION	ESTIMATED DOLLARS BASED ON CURRENT PAYROLL
Normal Cost	5.32%	\$ 13,024,291
Accrued Liability	<u>15.63</u>	<u>38,264,975</u>
Total	20.95%	\$ 51,289,266



SECTION VI – ACCOUNTING INFORMATION

Governmental Accounting Standards Board Statements (GASB) has issued Statements No. 67 and 68 which replaces Statement No. 25 and 27 for plan years beginning after June 15, 2013. The information required under the new GASB Statements will be issued in separate reports. The following information is provided for informational purposes only.

1. The following is a distribution of the number of employees by type of membership, as follows:

**NUMBER OF ACTIVE AND RETIRED PARTICIPANTS
AS OF JUNE 30, 2016**

GROUP	PLAN B	PLAN A	PLAN C	PLAN D	TOTAL
Retired participants and beneficiaries currently receiving benefits	979	1,876	853	0	3,708
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	0	155	53	1	209
Terminated participants entitled to a refund of contributions	0	23	79	112	214
County to City Transfers	0	165	12	2	179
Active Participants	<u>8</u>	<u>1,446</u>	<u>2,272</u>	<u>1,382</u>	<u>5,108</u>
Total	987	3,665	3,269	1,497	9,418



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

SCHEDULE OF FUNDING PROGRESS
Dollar Amounts in Thousands

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Liability (AAL) PUC (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
6/30/2011#	\$1,066,406	\$1,186,788	\$120,382	89.9%	\$265,137	45.4%
6/30/2012	1,090,210	1,241,966	151,756	87.8	258,670	58.7
6/30/2013#	1,118,965	1,280,073	161,108	87.4	250,367	64.3
6/30/2014	1,155,350	1,398,658	243,308	82.6	240,466	101.2
6/30/2015#	1,192,702	1,509,224	316,522	79.0	243,655	129.9
6/30/2016#	1,206,907	1,648,669	441,762	73.2	244,818	180.4

Reflects changes in assumptions.

3. Another such item is the schedule of employer contributions as shown below.

SCHEDULE OF EMPLOYER CONTRIBUTIONS

FISCAL YEAR ENDING	ESTIMATED ANNUAL REQUIRED CONTRIBUTION	PERCENT CONTRIBUTED
6/30/2011	\$18,570,739	101%
6/30/2012	23,401,532	100
6/30/2013	31,825,727	100
6/30/2014	32,982,757	100
6/30/2015	33,220,088	100
6/30/2016	32,113,026	100
6/30/2017	38,667,995	N/A



4. Additional information as of June 30, 2016 follows:

Valuation date	6/30/2016
Actuarial cost method	Entry Age Normal
Amortization period	Level dollar closed
Remaining amortization period*	22 years
Asset valuation method	Ten-year smoothed market value
Actuarial assumptions:	
Investment rate of return (includes inflation)	7.00%
Projected salary increases	2.75% - 5.75%
Cost-of-living adjustments	CPI-U up to 1% for Plan B; CPI-U up to 4% for Plan A and Plan C; CPI-U up to 2% for Plan D;

* This period is a weighted average of the amortization for Plan C (10 years) and the amortization of the remaining portion of the unfunded accrued liability (24 years).



SECTION VII – EXPERIENCE

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain/(loss) for the year ended June 30, 2016 is shown below.

	<u>\$ Thousands</u>	
(1) UAAL* as of June 30, 2015	\$	316,522.2
(2) Total normal cost from last valuation		23,035.5
(3) Total actual contributions		51,463.3
(4) Administrative expenses		1,721.5
(5) Interest accrual: $\{[(1) + (2)] \times .075\} - \{(3) - (4)\} \times .03682\}$		<u>23,635.2</u>
(6) Expected UAAL before changes: (1) + (2) – (3) + (4) + (5)	\$	313,451.1
(7) Change due to plan amendments		0.0
(8) Change due to actuarial assumptions or methods		<u>90,985.8</u>
(9) Expected UAAL after changes: (6) + (7) + (8)	\$	404,436.9
(10) Actual UAAL as of June 30, 2016	\$	441,762.0
(11) Gain/(loss): (9) – (10)	\$	(37,325.1)
(12) Gain/(loss) as percent of actuarial accrued liabilities for prior year (\$1,509,223.8)		(2.5)%

*Unfunded actuarial accrued liability.

Valuation Date June 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2012	(1.9)%
2013	(1.6)%
2014	(0.6)%
2015	(1.3)%
2016	(2.5)%



SCHEDULE A

**VALUATION RESULTS
AS OF JUNE 30, 2016**

(1)	Actuarial Accrued Liability:	
(a)	Plan B	
(i)	Actives and Transfers	\$ 4,693,193
(ii)	Retired, Beneficiaries, Disabled, Terminated	<u>206,504,493</u>
(iii)	Total = (i) + (ii)	\$ 211,197,686
(b)	Plan A	
(i)	Actives and Transfers	\$ 294,461,784
(ii)	Retired, Beneficiaries, Disabled, Terminated	<u>337,498,117</u>
(iii)	Total = (i) + (ii)	\$ 631,959,901
(c)	Plan C	
(i)	Actives and Transfers	\$ 467,080,682
(ii)	Retired, Beneficiaries, Disabled, Terminated	<u>322,691,627</u>
(iii)	Total = (i) + (ii)	\$ 789,772,309
(d)	Plan D	
(i)	Actives and Transfers	\$ 15,153,738
(ii)	Retired, Beneficiaries, Disabled, Terminated	<u>585,717</u>
(iii)	Total = (i) + (ii)	\$ 15,739,455
(e)	Total = (a)iii + (b)iii + (c)iii + (d)iii	\$ 1,648,669,351
(2)	Actuarial Asset Value	\$ 1,206,907,311
(3)	Unfunded Actuarial Accrued Liability: (1(e) – 2)	\$ 441,762,040



SCHEDULE B

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS

(1)	Actuarial Value of Assets as of June 30, 2015	\$ 1,192,701,571
(2)	Market Value of Assets as of June 30, 2016	\$ 1,052,137,306
(3)	Market Value of Assets as of June 30, 2015	\$ 1,115,133,799
(4)	Net Cash Flow During Plan Year	
(a)	Contributions	\$ 51,463,316
(b)	Benefit Payments	(81,902,632)
(c)	Administration Expenses	<u>(1,721,528)</u>
(d)	Net Cash Flow: (a) + (b) + (c)	\$ (32,160,844)
(5)	Investment Income	
(a)	Market Total: (2) – (3) – (4)d	\$ (30,835,649)
(b)	Assumed Rate	7.50%
(c)	Amount for Immediate Recognition	\$ 82,450,806
(d)	Amount for Phased-In Recognition: (5)a – (5)c	\$ (113,286,455)
(6)	Recognized Amounts for Plan Year	
(a)	Current Year: 0.10 x (5)d	\$ (11,328,646)
(b)	First Prior Year	(8,343,352)
(c)	Second Prior Year	7,712,483
(d)	Third Prior Year	4,391,650
(e)	Fourth Prior Year	(11,572,814)
(f)	Fifth Prior Year	12,045,965
(g)	Sixth Prior Year	5,330,118
(h)	Seventh Prior Year	(29,407,425)
(i)	Eighth Prior Year	(13,897,942)
(j)	Ninth Prior Year	<u>8,985,741</u>
(k)	Total Recognized Investment Gain/(Loss)	\$ (36,084,222)
(7)	Actuarial Value of Assets as of June 30, 2016 (1) + (4)d + (5)c + (6)k	\$ 1,206,907,311
(8)	Rate of Return on Actuarial Value	3.94%



SCHEDULE C

ASSET INFORMATION

<i>Receipts</i>	
(1) Employee Contributions	\$ 15,599,067
(2) Employer Contributions	35,864,249
(3) Investment Income	<u>(30,835,649)</u>
(4) Total Receipts	\$ 20,627,667
<i>Disbursements</i>	
(5) Retirement	\$ 73,833,173
(6) Refunds and Cashouts	8,069,459
(7) Administrative Expenses	<u>1,721,528</u>
(8) Total Disbursements	\$ 83,624,160
(9) Excess of Receipts Over Disbursements: (4) - (8)	\$ (62,996,493)
<i>Reconciliation of Asset Balances</i>	
(10) Market Value at June 30, 2015	\$1,115,133,799
(11) Excess of Receipts Over Disbursements	<u>(62,996,493)</u>
(12) Market Value at June 30, 2016	\$1,052,137,306
(13) Estimated Rate of Return on Market Value of Assets	(2.81)%



SCHEDULE D

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

INVESTMENT RATE OF RETURN: 7.00% per year (net of investment expenses only).

SALARY INCREASES:

Service	Increase per year
Less than 5	5.75%
5-9	4.75
10-14	4.25
15-19	3.75
20-24	3.25
25 or more	2.75

EXPENSES: Estimated budgeted administrative expenses of 0.50% of payroll are added to the normal cost rate.

COST-OF-LIVING ADJUSTMENT: 1.00% per year, compounded for Plan B. 2.75% per year, compounded for Plan A and Plan C. 2.00% per year, compounded for Plan D.

PERCENT MARRIED: 65% of active members are assumed to be married with the male three years older than his spouse.

ASSETS: Actuarial value, as developed in Schedule C. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected market value of assets, based on the assumed valuation rate of return. The amount recognized each year is 10% of the difference between market value and expected market value.

VALUATION METHOD: Entry Age Normal actuarial cost method.



SEPARATIONS FROM SERVICE: Representative values of the assumed rates of death, disability, withdrawal, service retirement and early retirement are as follows:

Plan B

Age	Annual Rate of							
	Death*		Disability*		Withdrawal	Retirement		
	Male	Female	Male	Female		General		Deputy Sheriff
					Male	Female		
20	0.0231%	0.0128%	0.100%	0.200%	14.00%			
25	0.0306	0.0150	0.100	0.200	14.00			
30	0.0557	0.0239	0.100	0.200	10.00			
35	0.0850	0.0390	0.100	0.200	7.00			
40	0.1063	0.0530	0.130	0.230	5.50	3.43%	11.50%	
45	0.1341	0.0817	0.146	0.310	4.50	2.10	7.45	
50	0.1852	0.1206	0.450	0.500	4.50	10.00	10.00	
55	0.3264	0.2528	0.720	0.800	5.00	15.00	15.00	15.0%
57	0.4395	0.3461	0.812	0.880	5.80	3.00	3.00	3.0
60	0.6690	0.5129	0.950	1.000	7.00	20.00	20.00	100.0
65	1.2562	0.9664	1.150	1.200	7.00	100.00	100.00	100.0
70	2.0825	1.6391	1.150	1.200	7.00	100.00	100.00	100.0

*75% of deaths and disabilities are assumed to be line-of-duty for deputy sheriffs. 10% of deaths and disabilities are assumed to be line-of-duty for general employees.

Plan A

Age	Annual Rate of					
	Death*		Disability*		Withdrawal	Retirement
	Male	Female	Male	Female		
20	0.0231%	0.0128%	0.100%	0.200%	14.00%	
25	0.0306	0.0150	0.100	0.200	14.00	
30	0.0557	0.0239	0.100	0.200	10.00	
35	0.0850	0.0390	0.100	0.200	7.00	
40	0.1063	0.0530	0.130	0.230	5.50	
45	0.1341	0.0817	0.146	0.310	4.50	
50	0.1852	0.1206	0.450	0.500	4.50	
55	0.3264	0.2528	0.720	0.800	5.00	6.0%
60	0.6690	0.5129	0.950	1.000	7.00	7.0
65	1.2562	0.9664	1.150	1.200	7.00	22.0
67	1.6010	1.1861	1.150	1.200	7.00	100.0

*90% of deaths and disabilities are assumed to be non-hazardous duty.



Plan C

Age	Annual Rate of							
	Death*		Disability*		Withdrawal	Retirement**		
	Male	Female	Male	Female		Less than 25 years of service	25 or more years of service	
						Public Safety	Non-Public Safety	
20	0.0231%	0.0128%	0.100%	0.200%	14.00%			
25	0.0306	0.0150	0.100	0.200	14.00			
30	0.0557	0.0239	0.100	0.200	10.00			
35	0.0850	0.0390	0.100	0.200	7.00			
40	0.1063	0.0530	0.130	0.230	5.50		12.0%	20.0%
45	0.1341	0.0817	0.146	0.310	4.50		12.0	20.0
50	0.1852	0.1206	0.450	0.500	4.50		12.0	20.0
55	0.3264	0.2528	0.720	0.800	5.00	7.0%	12.0	20.0
60	0.6690	0.5129	0.950	1.000	7.00	7.0	12.0	20.0
62	0.8729	0.6747	1.030	1.080	7.00	10.0	100.0	20.0
65	1.2562	0.9664	1.150	1.200	7.00	12.0	100.0	20.0
67	1.6010	1.1861	1.150	1.200	7.00	100.0	100.0	100.0

*90% of deaths and disabilities are assumed to be non-hazardous duty.

Plan D

Age	Annual Rate of						
	Death*		Disability*		Withdrawal	Retirement	
	Male	Female	Male	Female		Public Safety	Non-Public Safety
20	0.0231%	0.0128%	0.100%	0.200%	14.00%		
25	0.0306	0.0150	0.100	0.200	14.00		
30	0.0557	0.0239	0.100	0.200	10.00		
35	0.0850	0.0390	0.100	0.200	7.00		
40	0.1063	0.0530	0.130	0.230	5.50		
45	0.1341	0.0817	0.146	0.310	4.50		
50	0.1852	0.1206	0.450	0.500	4.50	7.0%	
55	0.3264	0.2528	0.720	0.800	5.00	10.0	
60	0.6690	0.5129	0.950	1.000	7.00	100.0	
62	0.8729	0.6747	1.030	1.080	7.00	100.0	7.0%
65	1.2562	0.9664	1.150	1.200	7.00	100.0	10.0%
67	1.6010	1.1861	1.150	1.200	7.00	100.0	10.0
70	2.0825	1.6391	1.150	1.200	7.00	100.0	100.0

*90% of deaths and disabilities are assumed to be non-hazardous duty.



DEATHS AFTER RETIREMENT: The RP-2000 Combined Mortality Table set forward three years for males and set forward one year for females and using a Scale AA projection to 2025 is used for the period after retirement and for dependent beneficiaries. The RP-2000 Disabled Mortality Table set forward 6 years for males and set forward 9 years for females and using a Scale AA projection to 2015 is used for the period after disability retirement. Representative values of the assumed rates of death after service and disability retirement are as follows:

Age	Annual Rate of Death After			
	Service Retirement		Disability Retirement	
	Male	Female	Male	Female
50	0.1852%	0.1206%	2.7972%	1.6058%
55	0.3264	0.2528	3.2604	2.3581
60	0.6690	0.5129	4.0993	3.2776
65	1.2562	0.9664	5.3291	4.5353
70	2.0825	1.6391	6.9314	6.2883
75	3.6640	2.5332	9.3519	8.3148
80	6.9785	4.2601	12.7610	11.7874
85	12.6336	7.4311	17.9791	16.7020



SCHEDULE E

**SUMMARY OF MAIN SYSTEM PROVISIONS
AS INTERPRETED FOR VALUATION PURPOSES**

PLAN B

Eligibility	All salaried employees hired prior to December 1, 1978 were eligible at date of employment and had to apply for membership as a condition of such employment. "Employee" means any person employed on a regular full-time basis, excluding officials or employees of the Board of Education of Shelby County. Entry in the System was optional for individuals employed on a per diem basis. Employees not able to complete the required number of years of service prior to mandatory retirement age could not join the plan.
Final Average Earnings	<p>If a participant had 10 years of credited service on October 1, 1977, the greater of:</p> <ol style="list-style-type: none">1) Average monthly earnings for the five consecutive years of County Service during which earnings was the highest or,2) Average monthly earnings for the 12 months preceding the date of retirement. <p>If the participant did not have 10 years of service on October 1, 1977, the average monthly earnings for the 36 consecutive months during which the employee received his highest earnings.</p>
Normal Retirement Benefit	
Eligibility	25 years of credited service or age 60 (age 55 if Deputy Sheriff) and 10 years of credited service.
Benefit	2.7% of final average earnings multiplied by years of credited service not in excess of 25 plus 1% of final average earnings multiplied by years of credited service greater than 25 but less than 35. The maximum benefit is 77.5% of final average earnings. The minimum monthly benefit is \$300 (\$150 monthly if jointly employed by the City and County).
Disability Retirement	
Eligibility	After January 1, 2007, only participants who are disabled in the line-of-duty are eligible to receive a disability pension.
Benefit	<p>The greater of:</p> <ol style="list-style-type: none">1) The Normal Retirement Benefit (if participant is then eligible for a Normal Retirement Benefit) or,2) 50% of Final Average Earnings.



PLAN B

Termination of Employment

If employment is terminated prior to the completion of 10 years of credited service, a refund of the participant's contributions, without interest, is payable.

If employment is terminated after completion of 10 years of credited service, a deferred vested benefit equal to the participant's accrued benefit at date of termination is paid commencing at age 60. Benefits are payable to the surviving spouse after age 60 of the participant. The participant may elect to withdraw his contributions, without interest, instead of receiving the deferred monthly benefit at age 60.

Death Benefit

If a participant dies before completing 10 years of credited service and does not die in line-of-duty, his beneficiary will receive a refund of the participant's contributions, without interest.

If a participant dies after completing 10 years of credited service or after retirement the member's eligible spouse will receive the participant's accrued benefit until death.

If death occurs in line-of-duty, a benefit of 50% of the participant's final average earnings will be paid to the spouse until death.

Contributions

Each year the County contributes an amount determined actuarially to sustain the plan on an actuarially determined funding basis. Employees contribute 8% of earnings to the retirement plan for the first 35 years. After 35 years, employees contribute 8% of any increases in pay.

Cost of Living Adjustment

A maximum of 1% annual adjustment based on CPI changes for the following:

- 1) Retired participants who have attained age 65, completed 25 years of credited service prior to termination, have been retired and receiving benefits for 5 years, and have a monthly pension for the first month in which they are eligible for the COLA less than \$3,000.
- 2) Disability retired participants who have a monthly pension for the first month in which they are eligible for the COLA less than \$3,000.
- 3) Surviving Spouses who have attained age 65, where the original participant completed 25 years of credited service prior to termination or whose death was a line of duty death or whose pension had been a disability pension, where the original participant's termination was at least 5 years prior to receiving the COLA, and who have a monthly pension for the first month in which they are eligible for the COLA less than \$3,000.
- 4) Surviving children where the original participant completed 25 years of credited service prior to termination or whose death was a line of duty death or whose pension had been a disability pension, where the participant's termination was at least 5 years prior to receiving the COLA, and who have a monthly pension for the first month in which they are eligible for the COLA less than \$3,000.

In no event, however, will the Plan B benefits exceed 100% of final average pay.



PLAN A

Eligibility All employees hired after December 1, 1978 and prior to March 1, 2005 including all full-time, part-time and elected employees, and members of Plan B electing to transfer to Plan A and employees of all joint City/County agencies administered by Shelby County participate. CETA employees, Board of Education employees, employees electing Social Security coverage, and Joint City/County agencies not administered by Shelby County cannot participate.

Public Safety Employees Public Safety Employees, hired prior to March 1, 2005, who did not elect to transfer to Plan C, effective September 1, 2005, are no longer eligible to retire under the 25 year-and-out program and no longer contribute to Plan A.

Final Average Earnings The average over the three highest consecutive years of earnings.

Normal Retirement Benefit

Eligibility Age 65 regardless of amount of credited service.

Benefit Final average earnings multiplied by a percentage from Table A, which is included in the appendix to the plan. Listed below is a summary of Table A:

Years of Service	Benefit Accrual Per Year
1 – 7	1.5%
8 – 13	2.0
14 – 20	2.5
21 – 25	3.0
26 – 30	3.0
31 – 35	2.5
36 – 38	2.5
39 and above	0.0

Early Retirement Benefit

Eligibility Age 55 and completion of 7.5 years of credited service.

Benefit The Normal Retirement Benefit reduced 2.5% for each year less than age 65.

Disability Retirement

Eligibility After January 1, 2002, no disability benefits are provided by the Plan. Upon reaching age 65, a disabled participant will have any disability benefit recomputed as a normal retirement benefit payable by the Plan.



PLAN A

Benefit	The Normal Retirement Benefit calculated with credited service including time while disabled.
Termination of Employment	<p>If employment is terminated prior to the completion of 7.5 years of credited service, no benefit is payable.</p> <p>If employment is terminated after completion of 7.5 years of credited service, a deferred vested benefit equal to the participant's accrued benefit at date of termination is paid commencing at age 65. Alternatively, the participant may elect a vested early benefit payable beginning at age 55 which is actuarially equivalent.</p>
Death Benefit	<p>If a participant dies, the participant's eligible spouse shall receive 45% of final average earnings for two years after the participant's death.</p> <p>If death occurs in line-of-duty, or, if not line-of-duty, the participant before death was age 55 and completed 15 years of credited service, the participant's eligible spouse shall receive 75% of the participant's pension calculated as if the participant had retired immediately before death. This benefit shall be payable when the spouse reaches age 65. The participant's final average earnings is adjusted by the COLA from the participant's death until the spouse reaches age 65.</p>
Contributions	Employees contribute 0.5% of earnings in 2011, 1.0% of earnings in 2012, 1.5% of earnings in 2013 and 2.0% of earnings in 2014 and thereafter.
Cost of Living Adjustment	<p>A maximum of 4% annual adjustment based on CPI changes applies to the following benefits:</p> <ol style="list-style-type: none"> 1) Retired participants after age 65 2) Disabled participants 3) Survivor benefits for dependent children 4) Survivor benefits for spouses under age 65 receiving the two year temporary benefit 5) Survivor benefits for spouses age 65 and over. <p>In no event, however, will the Plan A benefits exceed 100% of final average pay except as follows for an employee who retires with 40 or more years of service:</p>

Final Average Earnings	Maximum Benefit
Less than \$1,200	124%
\$1,200 to \$2,800	115%
More than \$2,800	106%



PLAN C

Eligibility	All employees participate who are hired on or after March 1, 2005 but before July 1, 2011, including all full-time, part-time and elected employees, and employees of all joint City/County agencies administered by Shelby County, and members of Plan A electing to transfer to Plan C. CETA employees, Board of Education employees, employees electing Social Security coverage, and Joint City/County agencies not administered by Shelby County cannot participate.
Final Average Earnings	The average over the three highest consecutive years of earnings.
Alternate Benefit Accrual Account	Participants contribute 6% of earnings prior to 2011, 6.5% of earnings in 2011, 7.0% of earnings in 2012, 7.5% of earnings in 2013 and 8.0% of earnings in 2014 and thereafter to fund the Plan. Participants are always fully vested in these contributions. Prior to January 1, 2011, the employer matches 50% of each contribution the participant makes to the plan. Effective January 1, 2011, employer matching contributions are frozen at 3%. The participant becomes fully vested in the employer contributions upon reaching 7.5 years of credited service. The total of these two contribution amounts will comprise the participant's Alternate Benefit Accrual Account. The investment return on these contributions and match is 2% per annum.
Normal Retirement Benefit	
Eligibility	Age 65 or upon completion of 25 years of credited service.
Benefit	The greater of: 1) 2.35% of final average earnings multiplied by credited service (up to 35 years) or, 2) The life annuity equivalent of the participant's Alternate Benefit Accrual Account.
Early Retirement Benefit	
Eligibility	Age 55 and completion of 7.5 years of credited service.
Benefit	The greater of: 1) Final average earnings multiplied by credited service (up to 35 years) and a percentage from Table ERP, which is included as part of the plan, or 2) The life annuity equivalent of the participant's Alternate Benefit Accrual Account.
Disability Retirement	
Eligibility	No disability benefits are provided by the Plan except for transfers. Upon reaching age 65, a disabled participant will have any disability benefit recomputed as a normal retirement benefit payable by the Plan.
Benefit	The Normal Retirement Benefit calculated with credited service including time while disabled.



PLAN C

Termination of Employment

If employment is terminated prior to the completion of 7.5 years of credited service, the participant is entitled to receive the vested portion of the participant's alternate benefit accrual account as a lump sum payment.

If employment is terminated after completion of 7.5 years of credited service, a deferred vested benefit equal to the participant's accrued benefit at date of termination is paid commencing at age 65. Alternatively, the participant may elect a vested early benefit payable beginning at age 55 which is actuarially equivalent.

Death Benefit

If a participant dies before completion of 15 years of credited service and the death occurs in line-of-duty, or, if not line of duty, the participant had completed 7.5 years of credited service before death, the participant's eligible beneficiary shall receive the vested portion of the participant's alternate benefit accrual account as a lump sum payment.

If a participant dies after completion of 15 years of credited service the participant's eligible spouse shall receive 75% of the participant's pension calculated as if the participant had retired immediately before death. This benefit shall be payable when the spouse reaches age 65. The participant's final average earnings is adjusted by the COLA from the participant's death until the spouse reaches age 65.

Contributions

See Alternate Benefit Accrual Account.

Cost of Living Adjustment

A maximum of 4% annual adjustment based on CPI changes applies to the following benefits:

- 1) Retired participants after age 65
- 2) Disabled participants
- 3) Survivor benefits for dependent children
- 4) Survivor benefits for spouses age 65 and over.

In no event, however, will the Plan C benefits exceed 100% of final average pay.



PLAN D

Eligibility	All employees participate who are hired on or after July 1, 2011, including all full-time, part-time and elected employees, and employees of all joint City/County agencies administered by Shelby County. CETA employees, Board of Education employees, employees electing Social Security coverage, and Joint City/County agencies not administered by Shelby County cannot participate.
Final Average Earnings	The average over the 5 highest consecutive years of earnings.
Normal Retirement Benefit	
Eligibility	Age 67 with at least 7.5 years of credited service for general employees and age 55 with at least 7.5 years of credited service for public safety employees.
Benefit	Final average earnings multiplied by credited service multiplied by 2.175%.
Early Retirement Benefit	
Eligibility	Age 62 with at least 7.5 years of credited service for general employees and age 50 with the last 20 years of credited service being in a public safety classification for public safety employees.
Benefit	Final average earnings multiplied by credited service and a percentage from Table ERP-S and Table ERP-PS, which is included as part of the plan.
Disability Retirement	
Eligibility	No disability benefits are provided by the Plan except for transfers. Upon reaching age 65, a disabled participant will have any disability benefit recomputed as a normal retirement benefit payable by the Plan.
Benefit	The Normal Retirement Benefit calculated with credited service including time while disabled.
Termination of Employment	<p>If employment is terminated prior to the completion of 7.5 years of credited service, the participant is entitled to receive the vested portion of the participant's alternate benefit accrual account as a lump sum payment.</p> <p>For general employees, if employment is terminated after completion of 7.5 years of credited service, a deferred vested benefit equal to the participant's accrued benefit at date of termination is paid commencing at age 67. Alternatively, the participant may elect a vested early benefit payable beginning at age 62 which is actuarially equivalent.</p>



PLAN D

For public safety employees, if employment is terminated after completion of 7.5 years of credited service, a deferred vested benefit equal to the participant's accrued benefit at date of termination is paid commencing at age 55. Alternatively, the participant may elect a vested early benefit payable beginning at age 50 which is actuarially equivalent.

Death Benefit

If a participant dies before completion of 15 years of credited service and the death occurs in line-of-duty, or, if not line of duty, the participant had completed 7.5 years of credited service before death, the participant's eligible beneficiary shall receive the amount of the participant contribution account.

If a participant dies after completion of 15 years of credited service the participant's eligible spouse shall receive 75% of the participant's pension calculated as if the participant had retired immediately before death. This benefit shall be payable when the spouse reaches age 67. The participant's final average earnings is adjusted by the COLA from the participant's death until the spouse reaches age 67.

Contributions

Employees contribute 8.0% of earnings.

Cost of Living Adjustment

A maximum of 2% annual adjustment based on CPI changes applies to the following benefits:

- 1) Retired participants after age 65
- 2) Disabled participants
- 3) Survivor benefits for dependent children
- 4) Survivor benefits for spouses age 65 and over.

In no event, however, will the Plan D benefits exceed 100% of final average pay.



SCHEDULE F

TABLE 1

RECONCILIATION OF DATA

	<u>Actives</u>	<u>County to City Transfers</u>	<u>Retirees</u>	<u>Disabled</u>	<u>Beneficiaries</u>	<u>Vested Terms</u>	<u>Total</u>
1. Headcounts as of June 30, 2015	5,208	170	2,931	72	595	262	9,238
2. Change in status during the year:							
a. Death	(7)		(107)	(1)	(37)	(8)	(160)
c. Disabled							
d. Retired	(192)	(4)	220	(4)		(16)	4
e. Terminated Vested	(17)					17	
f. Terminated Not Vested	(259)	(7)					(266)
g. Benefits Expired/Refund					(9)	(28)	(37)
h. Transfer to/from City	(1)	1					
3. New member due to:							
a. New Hires	353						353
b. Rehires	23		(1)			(6)	16
c. Death of Participant					49		49
d. Adjustments		19				(12)	7
4. Headcounts as of June 30, 2016	5,108	179	3,043	67	598	209	9,204

In addition, there are 214 terminated participants entitled to a refund of contributions.



TABLE 2
PLAN B
SCHEDULE OF ACTIVE MEMBERS BY AGE AND SERVICE
AS OF JUNE 30, 2016

Attained Age	Completed Years of Service										Total	
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40		
Under 25 Avg. Pay												
25 to 29 Avg. Pay												
30 to 34 Avg. Pay												
35 to 39 Avg. Pay												
40 to 44 Avg. Pay												
45 to 49 Avg. Pay												
50 to 54 Avg. Pay												
55 to 59 Avg. Pay										1 79,526	1 79,526	
60 to 64 Avg. Pay										2 43,399	2 43,399	
65 to 69 Avg. Pay									3 94,209		3 94,209	
70 & up Avg. Pay									1 41,120	1 103,136	2 72,128	
Total Avg. Pay									4 80,936	4 67,365	8 74,151	

Average Age 67.0

Average Service 40.5



TABLE 3
PLAN A
SCHEDULE OF ACTIVE MEMBERS BY AGE AND SERVICE
AS OF JUNE 30, 2016

Attained Age	Completed Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40	
Under 25 Avg. Pay											
25 to 29 Avg. Pay											
30 to 34 Avg. Pay				1 30,708							1 30,708
35 to 39 Avg. Pay				20 45,735	19 40,271						39 43,073
40 to 44 Avg. Pay				46 46,271	116 46,726	10 57,266					172 47,217
45 to 49 Avg. Pay				48 46,407	134 47,569	40 46,896	16 42,527				238 46,882
50 to 54 Avg. Pay				52 49,985	138 46,184	42 47,196	59 44,350	5 46,146			296 46,629
55 to 59 Avg. Pay				37 45,877	102 45,557	59 48,877	54 52,965	20 51,543	8 51,124		280 48,314
60 to 64 Avg. Pay				37 51,842	62 44,715	46 51,138	50 53,112	23 56,596	22 43,374		240 49,810
65 to 69 Avg. Pay				16 60,076	28 49,744	28 47,974	39 59,179	14 62,626	7 52,718		132 54,933
70 & up Avg. Pay				6 72,603	12 50,651	8 56,647	10 50,107	10 61,523	2 32,200		48 55,777
Total Avg. Pay				263 49,099	611 46,404	233 49,199	228 50,973	72 56,323	39 46,068		1,446 48,550

Average Age 54.3

Average Service

19.7



TABLE 4
PLAN C
SCHEDULE OF ACTIVE MEMBERS BY AGE AND SERVICE
AS OF JUNE 30, 2016

Attained Age	Completed Years of Service										Total	
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40		
Under 25 Avg. Pay												
25 to 29 Avg. Pay	1 37,686	5 37,006	11 44,840									17 42,115
30 to 34 Avg. Pay	1 23,840	3 40,300	107 46,177	17 44,678	1 47,816							129 45,683
35 to 39 Avg. Pay			108 44,711	97 46,476	38 51,168	1 54,535						244 46,458
40 to 44 Avg. Pay		4 37,851	104 46,672	104 49,103	96 50,649	23 58,212						331 49,285
45 to 49 Avg. Pay		3 35,028	97 45,467	87 49,410	116 51,590	81 54,418	45 57,020					429 50,751
50 to 54 Avg. Pay	1 14,085		83 43,510	56 46,857	82 48,779	72 54,487	147 56,357	19 55,568	1 83,285			461 51,184
55 to 59 Avg. Pay		2 36,794	75 44,613	42 52,274	28 47,708	38 53,921	75 53,321	47 61,012	17 70,156			324 52,652
60 to 64 Avg. Pay			48 50,948	46 54,578	25 54,315	15 48,125	40 60,661	26 62,632	13 69,494			213 56,311
65 to 69 Avg. Pay			23 49,757	18 69,507	15 66,528	8 78,528	10 61,430	15 61,313	7 71,478			96 63,084
70 & up Avg. Pay			13 60,224	2 72,467	7 56,664	2 100,236	2 37,384	1 117,569	1 31,123			28 62,444
Total Avg. Pay	3 25,204	17 37,412	669 46,125	469 49,892	408 51,292	240 55,516	319 56,316	108 61,010	39 69,508			2,272 51,269

Average Age 49.1

Average Service 15.8



TABLE 5
PLAN D
SCHEDULE OF ACTIVE MEMBERS BY AGE AND SERVICE
AS OF JUNE 30, 2016

Attained Age	Completed Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40	
Under 25	8	32									40
Avg. Pay	29,796	34,754									33,762
25 to 29	33	325	4								362
Avg. Pay	35,949	38,240	46,294								38,120
30 to 34	28	226	10								264
Avg. Pay	40,429	41,660	43,949								41,616
35 to 39	21	149	11								181
Avg. Pay	36,834	41,506	48,777								41,406
40 to 44	21	104	5								130
Avg. Pay	40,713	41,932	38,821								41,615
45 to 49	12	117	10								139
Avg. Pay	38,771	45,186	43,005								44,476
50 to 54	12	95	9								116
Avg. Pay	47,644	45,226	35,979								44,758
55 to 59	5	60	3								68
Avg. Pay	53,847	40,452	59,416								42,274
60 to 64	7	43	2								52
Avg. Pay	54,055	45,125	62,589								46,999
65 to 69	3	22	1								26
Avg. Pay	76,398	61,542	109,836								65,114
70 & up		2	2								4
Avg. Pay		17,328	37,988								27,658
Total	150	1,175	57								1,382
Avg. Pay	40,660	41,566	45,586								41,633

Average Age 38.3

Average Service 2.2



TABLE 6

PLAN B

**SCHEDULE OF RETIRED MEMBERS AND BENEFICIARIES
AS OF JUNE 30, 2016**

<u>Attained Age</u>	<u>Number of Members</u>	<u>Total Annual Benefits</u>	<u>Average Annual Benefit</u>
Under 50	-	\$ -	\$ -
50 – 54	3	55,903	18,634
55 – 59	20	528,854	26,443
60 – 64	84	2,779,897	33,094
65 – 69	160	4,430,997	27,694
70 – 74	182	4,927,006	27,071
75 – 79	166	3,802,672	22,908
80 – 84	136	2,826,405	20,782
85 – 89	120	2,058,846	17,157
90 & Over	108	1,287,920	11,925
Total	979	\$ 22,698,500	\$ 23,185



TABLE 7

PLAN A

SCHEDULE OF RETIRED MEMBERS AND BENEFICIARIES
AS OF JUNE 30, 2016

<u>Attained Age</u>	<u>Number of Members</u>	<u>Total Annual Benefits</u>	<u>Average Annual Benefit</u>
Under 50	42	\$ 686,246	\$ 16,339
50 – 54	17	158,901	9,347
55 – 59	104	1,224,194	11,771
60 – 64	304	4,602,380	15,139
65 – 69	475	7,897,927	16,627
70 – 74	392	6,828,120	17,419
75 – 79	272	3,998,677	14,701
80 – 84	164	2,351,170	14,336
85 – 89	71	1,114,977	15,704
90 & Over	35	374,728	10,707
Total	1,876	\$ 29,237,320	\$ 15,585

In addition, there are 155 participants entitled to deferred annual benefits totaling \$3,049,510.



TABLE 8
PLAN C
SCHEDULE OF RETIRED MEMBERS AND BENEFICIARIES
AS OF JUNE 30, 2016

<u>Attained Age</u>	<u>Number of Members</u>	<u>Total Annual Benefits</u>	<u>Average Annual Benefit</u>
Under 50	36	\$ 839,483	\$ 23,319
50 – 54	117	3,203,465	27,380
55 – 59	221	6,394,205	28,933
60 – 64	264	7,567,349	28,664
65 – 69	163	4,381,142	26,878
70 – 74	38	882,327	23,219
75 – 79	9	194,693	21,633
80 – 84	5	64,749	12,950
85 – 89	-	-	-
90 & Over	-	-	-
Total	853	\$ 23,527,413	\$ 27,582

In addition, there are 53 participants entitled to deferred annual benefits totaling \$1,666,490.



SCHEDULE G

ANALYSIS OF FINANCIAL EXPERIENCE

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

Type of Activity	\$ Gain (or Loss) For Year Ending 6/30/2016	\$ Gain (or Loss) For Year Ending 6/30/2015
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	\$ 236.7	\$ 3,522.9
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(713.7)	1,082.4
Death-in-Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(261.9)	1,872.8
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(2,218.8)	(2,042.2)
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	2,271.4	(1,622.5)
New Members. Additional unfunded accrued liability will produce a loss.	(1,883.7)	(966.5)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(41,901.8)	(25,007.6)
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	3,737.2	2,948.1
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	<u>3,409.5</u>	<u>1,885.3</u>
Gain (or Loss) During Year From Financial Experience	<u>\$ (37,325.1)</u>	<u>\$ (18,327.3)</u>
Non-Recurring Items. Adjustments for plan amendments, assumption changes, or method changes.	<u>(90,985.8)</u>	<u>(59,700.2)</u>
Composite Gain (or Loss) During Year	<u>\$ (128,310.9)</u>	<u>\$ (78,027.5)</u>



SCHEDULE H

10-YEAR PROJECTION OF FUNDING RATIO AND EMPLOYER CONTRIBUTION RATES

The results of actuarial valuations are a “snapshot” of the financial position on the valuation date, based on the assumed number of active employees and current beneficiaries. Projections simulate future actuarial valuation results over a forecast period (ten years in this case) by “creating” future new hires and performing valuations using the projected membership. The following items are assumed for the projected results provided on the following page.

- Active Employee Growth Rate: 0%
- Valuation Discount Rate: 7.00%
- Investment Rate of Return: 7.00% each year
- Actuarial Value of Assets: 10 year smoothing, No Corridor
- Amortization Method: Level Dollar, Closed
- June 30, 2016 Amortization Period: Weighted 22-year period
- Future Contributions: Based on Expected Actuarially Determined Contributions

All other demographic and economic changes are assumed to occur in accordance with the actuarial assumptions used for the actuarial valuation.



SCHEDULE H

**10-YEAR PROJECTION OF FUNDING RATIO AND
EMPLOYER CONTRIBUTION RATES**

