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LEXINGTON-FAYETTE
URBAN COUNTY GOVERNMENT
Lexington, Kentucky

Policemen's & Firefighters' Retirement Fund

Report on the Valuation of the Lexington-Fayette Urban County Government Policemen's and Firefighters' Retirement Fund

Prepared as of July 1, 2017

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April 10, 2018

Board of Trustees
Lexington-Fayette Urban County Government Policemen's and Firefighters' Pension Plan
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY 40507

Dear Members of the Board:

We are pleased to submit herewith the results of the actuarial valuation of the Lexington-Fayette Urban County Government Policemen's and Firefighters' Pension Plan prepared as of July 1, 2017. The purpose of this report is to provide a summary of the funded status of the Plan as of July 1, 2017 and to recommend contribution rates. A separate report will be issued for reporting accounting information under GASB 67. The Lexington-Fayette County Government is solely responsible for the accuracy and comprehensiveness of the data.

The promised benefits of the Plan reflecting the changes in HB 430 are included in the actuarially calculated contribution rates which are developed using the entry age normal cost method. Actuarial value of plan assets is used for actuarial valuation purposes. The assumptions used for this valuation were developed in the experience study for the six-year period ending June 30, 2016 except for the investment rate of return. This valuation uses 7.50% as the investment rate of return. Gains and losses are reflected in the unfunded accrued liability that is being amortized over a closed period on a level dollar basis. The actuarially determined employer contribution rate is 35.85% of payroll for the plan year ending June 30, 2018 and 37.53% of payroll for the plan year ending June 30, 2019. The assumptions recommended by the actuary and adopted by the Board are in the aggregate reasonably related to the experience under the Plan and to reasonable expectations of anticipated experience under the Plan.

This is to certify 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 Plan and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the Plan. The investment return assumption, which was set by the Board, is a prescribed assumption defined by Actuarial Standard of Practice No. 27 (ASOP 27). Details and discussion regarding the return assumption are shown in the report of the experience study for the six-year period ending June 30, 2016.

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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.

We trust that the report will meet the approval of the Board and will furnish the desired information concerning the financial condition of the Plan. The undersigned are members of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Todd B. G

Todd B. Green ASA, FCA, MAAA
Principal & Consulting Actuary

Matthew Yonz

Matthew Yonz ASA, FCA, MAAA
Actuary

TBG:jmy

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LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
POLICEMEN'S AND FIREFIGHTERS' RETIREMENT FUND
REPORT OF ACTUARY
ON THE VALUATION
PREPARED AS OF JULY 1, 2017

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	July 1, 2017	July 1, 2016
Active members:		
Number	1,144	1,123
Annualized compensation	$ 73,559,366	$ 63,869,423
Retired members and beneficiaries:		
Number	1,201	1,161
Annual benefits	$ 57,493,477	$ 54,837,840
Assets:		
Market Value	$ 695,183,216	$ 619,901,142
Actuarial Value	686,133,702	645,681,282
Unfunded actuarial accrued liability	$ 261,525,982	$ 184,598,489
Amortization Period	26	27
Fiscal Years Ending	**2019***	**2017 & 2018**
Actuarially determined contribution rate (ADC):		
Normal	11.27%	12.35%
Accrued liability	26.26	23.50
Total*	37.53%	35.85%
Member contribution rate	12.00%	12.00%

*The full funding rate, reflecting the results of the experience study, is 39.20% for the fiscal year ending 2019. This amount will be phased into over a two year period. The actuarially determined contribution rate is equal to 37.53% (the average of 35.85% and 39.20%). The actuarially determined contribution for the fiscal year ending 2020 will be determined by the July 1, 2018 valuation without adjustment.

2. The major benefit and contribution provisions of the Plan as reflected in the valuation are summarized in Schedule G. The actual cost-of-living allowances granted through July 1, 2017 were reflected in the valuation.

3. The development of the actuarial value of assets is shown in Schedule C. Schedule E of this report outlines the full set of actuarial assumptions and methods used in the valuation.

4. The entry age normal actuarial cost method was used to prepare the valuation. Schedule F contains a brief description of the actuarial cost method. The cost method produces a contribution rate equal to the sum of the normal contribution rate and the actuarially accrued liability contribution rate which is sufficient to amortize the unfunded actuarially accrued liability over 30 years beginning July 1, 2013 on a level dollar basis. Effective July 1, 2013, and for each fiscal year thereafter, the Government contribution shall not be less than $20 million unless the Plan is 100% funded.

5. Any member who has at least five years of service as a member of the fund my purchase up to four years of service. The amount required to purchase service is based on an actuarial formula. Prior to the July 1, 2015 actuarial valuation, service purchases were not reported by Fund Staff. Service purchases were first reported by Fund Staff in the July 1, 2015 valuation.

6. Comments on the valuation results as of July 1, 2017 are given in Section IV and further discussion of the contributions is set out in Section V.

7. The actuarial assumptions are outlined in Schedule E, and were updated since the prior valuation. The assumptions used for this valuation were developed in the experience study for the six-year period ending June 30, 2016 except for the investment rate of return. The investment return assumption, which was set by the Board, is a prescribed assumption defined by Actuarial Standard of Practice No. 27 (ASOP 27). Details and discussion regarding the return assumption are shown in the report of the experience study for the six-year period ending June 30, 2016.

SECTION II – MEMBERSHIP DATA

1. Data regarding the membership of the Plan for use as a basis of the valuation were furnished by the Government. The valuation included 1,144 active members with annualized compensation totaling $73,559,366.

2. The following table shows the number of retired members and beneficiaries as of July 1, 2017 together with the amount of their annual retirement benefits payable under the Plan as of that date.

THE NUMBER AND ANNUAL BENEFITS OF RETIRED MEMBERS AND BENEFICIARIES AS OF JULY 1, 2017

GROUP	NUMBER	ANNUAL RETIREMENT BENEFITS
Service Retirements	632	$ 34,947,363
Disability Retirements	402	17,867,132
Beneficiaries of Deceased Members	167	4,678,982
Total	1,201	$ 57,493,477

3. Table 1 of Schedule H shows the distribution by age and years of membership service of the number of active members included in the valuation, while Table 2 shows the number and annual benefits of retired members and beneficiaries included in the valuation, distributed by age.

SECTION III – ASSETS

As of July 1, 2017, the total market value of assets amounted to $695,183,216. The actuarial value of assets used for the current valuation was $686,133,702. Schedule C shows the development of the actuarial value of assets as of July 1, 2017. Schedule D shows the Summary of Receipts and Disbursements.

SECTION IV – COMMENTS ON VALUATION

1. Schedule B of this report contains the valuation balance sheet which shows the present and prospective assets and liabilities of the Plan as of July 1, 2017. The valuation was prepared in accordance with the actuarial assumptions set forth in Schedule E and the actuarial cost method which is described in Schedule F.

2. The valuation balance sheet shows that the Plan has total prospective liabilities of $1,095,635,583 of which $691,861,458 is for the prospective benefits payable on account of present retired members and beneficiaries of deceased members, and $403,774,125 is for the prospective benefits payable on account of present active members. Against these liabilities, the Plan has a total present actuarial value of assets of $686,133,702 as of July 1, 2017. The difference of $409,501,881 between the total liabilities and the total present assets represents the present value of future contributions.

3. The contributions to the Plan consist of normal contributions and accrued liability contributions. The valuation indicates that normal contributions at the rate of 23.27% of payroll are required under the entry age normal method. Of this amount, 12.00% is paid by the members and the remaining 11.27% is required by the Government.

4. Prospective normal contributions at the rate of 23.27% have a present value of $147,975,899. When this amount is subtracted from $409,501,881, which is the present value of the total future contributions to be made, there remains $261,525,982 as the amount of unfunded accrued liability contributions. The development of the unfunded accrued liability is shown in Schedule A.

SECTION V – CONTRIBUTIONS PAYABLE

1. Under Section 67A.520 of the law governing the Fund, the Government shall make current contributions to the Fund on an actuarially funded basis equal to the sum of the normal contribution rate and the actuarially accrued contribution rate that will be sufficient to amortize the total unfunded actuarial accrued liability over a period of thirty years beginning July 1, 2013 using the level-dollar amortization method.
2. The normal contribution rate is calculated as the level percentage of payroll which, if applied for the average new member during the entire period of his anticipated covered service, would be required to meet the cost of all benefits payable on his behalf. On the basis of the valuation, the normal contribution rate was determined to be 23.27%.
3. Each member shall contribute an amount equal to 12.00% of current salary.
4. The Government's normal contribution rate is equal to the difference between the normal contribution rate of 23.27% and the member contribution rate of 12.00%, or 11.27% of payroll.
5. The annual accrued liability contribution rate is determined to be 26.26% of payroll. Contributions at this level would be sufficient to amortize the unfunded accrued liability over a 26 year period on a level dollar basis.
6. The actuarially determined employer contribution rate for the plan years ending June 30, 2019 is 37.53% of payroll. The full funding rate, reflecting the results of the experience study, is 39.20% for the fiscal year ending 2019. This amount will be phased into over a two year period. The actuarially determined contribution rate is equal to 37.53% (the average of 35.85% and 39.20%). The actuarially determined contribution for the fiscal year ending 2020 will be determined by the July 1, 2018 valuation without adjustment.
7. The following table on the following page summarizes the employer contributions which were determined by the July 1, 2017 valuation and are recommended for use.

ANNUAL REQUIRED CONTRIBUTION RATE
FOR PLAN YEARS ENDING JUNE 30, 2019

CONTRIBUTION	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION
Normal	11.27%
Accrued Liability	26.26
Total*	37.53%

* The full funding rate, reflecting the results of the experience study, is 39.20% for the fiscal year ending 2019. This amount will be phased into over a two year period. The actuarially determined contribution rate is equal to 37.53% (the average of 35.85% and 39.20%). The actuarially determined contribution for the fiscal year ending 2020 will be determined by the July 1, 2018 valuation without adjustment.

SECTION VI – OTHER DISCLOSURES

1. The information required under the Governmental Accounting Standards (GASB) Statements No. 67 and 68 for the Plan and the City will be issued in separate reports. We are providing the following information for informational purposes only.

NUMBER OF ACTIVE AND RETIRED PARTICIPANTS
AS OF JULY 1, 2017

GROUP	NUMBER
Retired participants and beneficiaries currently receiving benefits	1,201
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	0
Active Participants	1,144
Total	2,345

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

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b – a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b – a) / c)
7/01/2012	$525,849,582	$687,673,831	$257,781,662	69.4%	$54,595,799	296.4%
7/01/2013	533,892,554	738,343,325	161,824,250	66.0	62,455,725	327.4
7/01/2014	579,749,633	760,384,029	204,450,771	76.5	63,248,485	285.6
7/01/2015	623,184,562	794,383,474	180,634,396	72.3	62,102,632	275.7
7/01/2016	645,681,282	830,279,771	171,198,912	78.4	63,869,423	289.0
7/01/2017	686,133,702	947,659,684	261,525,982	72.4	73,559,366	355.5

3. Additional information as of July 1, 2017 follows:

Valuation date	July 1, 2017
Actuarial cost method	Entry age normal
Amortization period	Level dollar, closed
Remaining amortization period	26 years
Asset valuation method	Actuarial Related Value
Actuarial assumptions:	
Investment rate of return (includes inflation)	7.50%
Projected salary increases (includes inflation)	9.50% to 3.50%
Inflation	2.75%
Cost-of-living adjustments	Refer to Schedule G

SECTION VII – EXPERIENCE

The following table shows the change in the accrued actuarial liability and the actuarial value of assets from July 1, 2016 to July 1, 2017 .

DETERMINATION OF ACTUARIAL (GAIN) / LOSS

A. Accrued Actuarial Liability (Gain) / Loss Analysis

1. Actual Accrued Actuarial Liability as of July 1, 2016	$830,279,771
2. Normal Cost	$14,638,448
3. Interest on items 1 and 2 [(1+2) x 7.5%]	$63,368,866
4. Benefit Payments	($56,718,545)
5. Interest on item [4 x 7.5% x .5]	($2,126,945)
6. Expected Accrued Actuarial Liability as of July 1, 2017 (1. + 2. + 3. + 4. + 5.)	$849,441,595
7. Changes due to:	
a. Assumption changes	$61,521,011
b. Plan amendments	$0
c. Funding Method	$0
d. Other	$16,297,527
8. Actual Accrued Actuarial Liability as of July 1, 2017	$947,659,684
9. Liability (Gain) / Loss [8. - 7 - 6.]	$20,399,551

10 Items Affecting Calculation of Accrued Actuarial Liability:

a. Plan provisions reflected in the accrued liability (see Schedule G)

b. Actuarial assumptions and methods used to determine actuarial accrued liability (see Schedule E and Schedule F)

B. Asset (Gain) / Loss Analysis

1. Actuarial Value of Assets as of July 1, 2016	$645,681,282
2. Interest on item [1 x 7.5%]	$48,426,096
3. Contributions and Other Revenue	$40,995,461
4. Interest on item [2 x 7.5% x .5]	$1,537,330
5. Benefit Payments	($56,718,545)
6. Interest on item [5 x 7.5% x .5]	($2,126,945)
7. Expected Actuarial Value of Assets as of July 1, 2017	$677,794,679
8. Actuarial Value of Assets as of July 1, 2017	$686,133,702
9. Asset (Gain) / Loss	($8,339,023)

C. Total Actuarial (Gain) / Loss During 2016 / 2017 Plan Year (A.9 + B.9)	$12,060,528

ANALYSIS OF (GAIN) / LOSS

1.	Expected Unfunded Accrued Liability as of July 1, 2017: (Page 8: A.6 - B.7)		$171,646,916
2.	Change in Unfunded Accrued Liability During 2016/2017 Plan Year:		
	a. Due to Salary	$2,867,240	
	b. Due to Investment Performance	($8,339,023)	
	c. Due to Turnover	$273,934	
	d. Due to New Retirements	$7,686,776	
	e. Due to Disability Retirements	$3,148,650	
	f. Due to Data/Service Adjustments/Benefit Payments	$3,189,383	
	g. Due to New Members	$660,299	
	h. Due to Mortality	$2,573,269	
	i. Other	$16,297,527	
	j. Due to Assumption Changes	$61,521,011	
	k. Due to Method Changes	$0	
	l. Due to Plan Changes	$0	
3.	Total (Gain) / Loss During the 2016/2017 Plan Year (Sum of changes in item 2)		$89,879,066
4.	Unfunded Accrued Liability as of July 1, 2017: (1. + 3.)		$261,525,982

5. Comments on Change in Unfunded Accrued Liability Contribution Rate:
Salary/Service: Actual average salary increase of 8.1% compared to expected increases of 6.2%
Investment Performance: 8.8% actual vs. 7.5% expected return on the actuarial value of assets.
Turnover: Net effect on the valuation liabilities of actual deaths, terminations of employment and disabilities different from what was anticipated in the aggregate by the assumptions related to those events.
New retirements: Net effect of differences in expected vs. actual numbers of, and benefits for, new retirements and refund of employee contributions.
Due to Differences and Timing of Contributions: Due to the one year lag of when the required contribution is determined and when it is deposited into the fund.
Data/Service Adjustments: Effect of service adjustments, data adjustments, and the difference between actual and expected benefit payments.
Assumption Changes: Adopted assumptions from the experience study for the six-year period ending 6/30/2016 except for the investment rate of return.
Method Changes: None
Plan Changes: None

SCHEDULE A

DEVELOPMENT OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY

			July 1, 2017
(1)	Present value of prospective benefits:		
	(a)	Present active members	$ 403,774,125
	(b)	Present retired members, beneficiaries and former members entitled to deferred vested benefits	691,861,458
	(c)	Total	$ 1,095,635,583
(2)	Present value of future Government and member normal contributions before expenses		147,975,899
(3)	Actuarial accrued liabilities 1(c) – (2)		$ 947,659,684
(4)	Actuarial value of assets		686,133,702
(5)	Unfunded actuarial accrued liability (3) – (4)		$ 261,525,982

SCHEDULE B

VALUATION BALANCE SHEET

ACTUARIAL LIABILITIES		
Present value of prospective benefits payable on account of present retired members, beneficiaries of deceased members, and terminated members entitled to deferred benefits		$ 691,861,458
Present value of prospective benefits payable on account of present active members		$ 403,774,125
Total liabilities		$1,095,635,583
PRESENT AND PROSPECTIVE ASSETS		
Actuarial value of assets		$ 686,133,702
Present value of future contributions		
Government and member normal contributions	147,975,899	
Unfunded accrued liability contributions	261,525,982	
Total prospective contributions		$ 409,501,881
Total assets		$1,095,635,583

SCHEDULE C
Development of Actuarial Value of Assets

	Valuation date June 30:	2016	2017	2018	2019	2020	2021
A.	Actuarial Value Beginning of Year	$ 623,184,562	$ 645,681,282				
B.	Market Value End of Year	619,901,142	695,183,216				
C.	Market Value Beginning of Year	634,715,718	619,901,142				
D.	Cash Flow						
	D1. Contributions	$ 34,248,997	$ 40,854,410				
	D2. Other Revenue	79,229	141,051				
	D3. Benefit Payments	(53,360,681)	(56,718,545)				
	D4. Administrative Expenses	(178,943)	(226,211)				
	D5. Investment Expenses	(2,892,329)	(3,005,555)				
	D6. Net	$ (22,103,727)	$ (18,954,850)				
E.	Investment Income						
	E1. Market Total: B.-C.-D6.	$ 7,289,151	$ 94,236,924				
	E2. Assumed Rate (Net of Expenses)	7.50%	7.50%				
	E3. Amount for Immediate Recognition	49,961,292	49,134,736				
	E4. Amount for Phased-In Recognition	(42,672,141)	45,102,188				
F.	Phased-In Recognition of Investment Income						
	F1. Current Year: 0.20 * E4.	$ (8,534,428)	$ 9,020,438	$ -	$ -	$ -	$ -
	F2. First Prior Year	(6,178,693)	(8,534,428)	9,020,438	-	-	-
	F3. Second Prior Year	10,928,441	(6,178,693)	(8,534,428)	9,020,438	-	-
	F4. Third Prior Year	5,036,776	10,928,441	(6,178,693)	(8,534,428)	9,020,438	-
	F5. Fourth Prior Year	(6,612,941)	5,036,776	10,928,441	(6,178,693)	(8,534,428)	9,020,438
	F6. Total Recognized Investment Gain	$ (5,360,845)	$ 10,272,534	$ 5,235,758	$ (5,692,683)	$ 486,010	$ 9,020,438
G.	Preliminary Actuarial Value End of Year						
	A.+D6.+E3.+F6.	$ 645,681,282	$ 686,133,702				
H.	Corridor						
	I1. 80% of Market Value	$ 495,920,914	$ 556,146,573				
	I2. 120% of Market Value	$ 743,881,370	$ 834,219,859				
I.	Actuarial Value End of Year						
	H. Not Less than I1. or Greater than I2	$ 645,681,282	$ 686,133,702				
J.	Difference Between Market & Actuarial Values	$ (25,780,140)	$ 9,049,514	$ 3,813,764	$ 9,506,448	$ 9,020,438	$ -
K.	Market Value of Asets Return	0.67%	14.87%				
L.	Actuarial Value of Assets Return	6.77%	8.81%				

The Actuarial Valuation of Assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) are phased in over a closed 5 year period. During periods when investment performance exceeds the assumed rate, Actuarial Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Actuarial Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for 5 consecutive years, actuarial value will become equal to market value.

SCHEDULE D

SUMMARY OF RECIEPTS AND DISBURSEMENTS

Receipts for the Period	
Contributions:	
Members	11,186,704
Employer	29,667,706
Other	141,051
Total	40,995,461
Investment Income	91,231,368
TOTAL	132,226,829
Disbursements for the Period	
Benefit Payments	56,718,545
Administrative Expense	226,211
TOTAL	56,944,756
Excess of Receipts over Disbursements	75,282,073
Reconciliation of Asset Balances	
Market Value of Assets as of BOY	619,901,142
Adjustment to opening fund balance	1
Excess of Receipts over Disbursements	75,282,073
Market Value of Assets as of EOY	695,183,216
Rate of Return on Market Value of Assets	14.87%

SCHEDULE E

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

INVESTMENT RATE OF RETURN: 7.50% per year, compounded annually.

SALARY INCREASES: Representative values of the assumed annual rates of salary increases are as follows:

Service	Wage Inflation	Merit Component	Total Rate
0	4.00%	6.50%	10.76%
1	4.00	5.50	9.72
2	4.00	3.50	7.64
3-5	4.00	3.00	7.12
6-8	4.00	2.50	6.60
9-12	4.00	2.00	6.08
13-16	4.00	1.50	5.56
16-19	4.00	1.00	5.04
20 or more	4.00	0.00	4.00

SEPARATIONS FROM ACTIVE SERVICE: For death rates, the RP-2000 Combined Table projected to 2015 with scale AA was used. Representative values of the assumed annual rates of separation from active service are as follows:

	Annual Rate of		
	Disability	Death	
Age		Male	Female
20	0.30%	0.03%	0.02%
25	0.30	0.03	0.02
30	0.30	0.04	0.02
35	0.60	0.07	0.04
40	1.00	0.10	0.06
45	2.00	0.12	0.09
50	4.00	0.16	0.13
55	5.00	0.27	0.24

Annual Rate of Termination			
Service	Rate	Service	Rate
0	1.91%	10	1.29%
1	1.85	11	1.23
2	1.79	12	1.17
3	1.73	13	1.08
4	1.67	14	1.00
5	1.61	15	0.94
6	1.55	16	0.88
7	1.47	17	0.82
8	1.41	18	0.76
9	1.35	19	0.70

SERVICE RETIREMENT: Representative annual rates of assumed service retirement are as follows:

Hired Prior to July 1, 2013		Hired on or after July 1, 2013	
Service	Rate	Service	Rate
20	5.0%		
21	6.0		
22	7.0		
23	8.0		
24	9.0		
25	10.0	25	25.0%
26	12.0	26	12.0
27	14.0	27	14.0
28	15.0	28	15.0
29	20.0	29	20.0
30	100.0	30	100.0

DEATHS AFTER RETIREMENT: The RP-2000 Combined Mortality Table projected to 2015 using scale AA, with male mortality set forward 0 years and female mortality set forward 3 years is used for the period following service retirement and for beneficiaries of deceased members. For disabled lives, male mortality was assumed to be the RP-2000 table not projected with male mortality set forward 4 years. Female mortality was assumed to be consistent with rates issued by the IRS in Revenue Ruling 96-7 for use in determining current liability for disabled lives prior to January 1, 1995. The assumed rates of mortality provide a margin for future mortality improvements.

OCCUPATIONAL VS. NON OCCUPATIONAL DEATH: 20% of all deaths are assumed to be due to occupational causes.

OCCUPATIONAL VS. NON OCCUPATIONAL DISABILITY: 75% of disabilities are assumed to be due to occupational causes. For occupational disabilities the average benefit percentage is assumed to be 50.0%.

PERCENT MARRIED: 75% of employees who die before retirement are assumed to be married with the husband 3 years older than the wife.

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 actuarial value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected actuarial value. The actuarial value of assets cannot be more than 120% or less than 80% of the market value of assets.

VALUATION METHOD: Entry age normal actuarial cost method. See Schedule F for a brief description of this method.

AVERAGE DISABILITY IMPAIRMENT PERCENTAGE: 12.50%

SCHEDULE F

ACTUARIAL COST METHOD

1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently 7.50%), of each member's expected benefits at retirement or death is determined, based on age, service and sex. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members and beneficiaries to obtain the present value of all expected benefits payable from the Plan on account of the present group of members and beneficiaries.
2. The employer contributions required to support the benefits of the Plan are determined following a level funding approach and consist of a normal contribution and an accrued liability contribution.
3. The normal contribution is determined using the entry age normal actuarial cost method. Under this method, a calculation is made to determine the level percentage of payroll which, if applied for the average new member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.
4. The unfunded accrued liability is determined by subtracting the present value of prospective employer normal contributions and member contributions, together with the current actuarial value of assets held, from the present value of expected benefits to be paid from the Plan.

SCHEDULE G

SUMMARY OF MAIN PLAN PROVISIONS
AS INTERPRETED FOR VALUATION PURPOSES

Member	Sworn members of the Lexington-Fayette Urban County Government Division of Police and Division of Fire and Emergency Services.
Membership Service	Service rendered on or after the date of establishment of the fund or the fund of a city existing within the boundaries of the government immediately prior to the establishment of the urban-county government.
Total Service	Prior service, membership service, and service credit purchased by a member as provided in KRS 67A.402.
Average Salary	The highest average salary of the member for any three consecutive years of service.

Retirement Annuity

Hired prior to July 1, 2013 and for retirements commencing prior to July 1, 2013

Eligibility	Anytime after completion of 20 years of Total Service (including service purchased up to 4 years).
Benefit	Annuity is 2½% of Average Salary multiplied by years of Total Service. The minimum monthly benefit is $1,250. Upon the death of a retired member whose marriage was in effect at least six months before retirement or one year prior to death, the surviving spouse shall receive an annuity equal to 60% of the member's final annuity or final rate of pay, whichever is greater, unless the retired member elected an alternative actuarial equivalent form at the time of retirement of either a joint and 75% or and joint and 100% survivor payment form.

Hired prior to July 1, 2013 and for retirements commencing on or after July 1, 2013

Eligibility	Anytime after obtaining age 41 and the completion of 20 years of Total Service (including service purchased up to 4 years).
Benefit	Annuity is 2½% of Average Salary multiplied by years of Total Service. The minimum monthly benefit is $1,250. Upon the death of a retired member whose marriage was in effect at least six months before retirement or one year prior to death, the surviving spouse shall receive an annuity equal to 60% of the member's final annuity or final rate of pay, whichever is greater, unless the retired

member elected an alternative actuarial equivalent form at the time of retirement of either a joint and 75% or and joint and 100% survivor payment form.

Hired on or after July 1, 2013

Eligibility	Anytime after obtaining age 50 and the completion of 25 years of Total Service.
Benefit	Annuity is 2.25% of Average Salary multiplied by years of Total Service. The minimum monthly benefit is $1,250. Upon the death of a retired member whose marriage was in effect at least six months before retirement or one year prior to death, the surviving spouse shall receive an annuity equal to 60% of the member's final annuity or final rate of pay, whichever is greater, unless the retired member elected an alternative actuarial equivalent form at the time of retirement of either a joint and 75% or and joint and 100% survivor payment form.

Occupational Disability Benefit

Eligibility	No requirements.

Occur Prior to July 1, 2013

Benefit	Annuity equal to a minimum of 60% of member's last rate of salary, increased above the 60% minimum by ½ the amount by which the member's percentage of disability exceeds 20%, but not greater than 75%. The member's percentage of disability shall be the average of the impairment rating determined by two physicians selected by the Board using the American Medical Association "Guide to the Evaluation of Permanent Impairment". If a member is eligible for a service retirement annuity and the amount of the service retirement annuity exceeds the amount of the disability benefit, then the member may elect to receive an additional service retirement annuity equal to this difference. Upon the death of a retired member whose marriage was in effect at least six months before retirement or one year prior to death, the surviving spouse shall receive an annuity equal to 60% of the member's final annuity or final rate of pay, whichever is greater, unless the retired member elected an alternative actuarial equivalent form at the time of retirement of either a joint and 75% or and joint and 100% survivor payment form.

In addition, any minor children will receive benefits as provided under the occupational death benefit provisions.

Occur on or after July 1, 2013

Benefit

Annuity equal to a minimum of 50% of member's last rate of salary. If the member's percentage of disability exceeds 20% then the amount is equal to 60% of the member's last rate of salary plus ½ the amount by which the member's percentage of disability exceeds 20%, but not greater than 75%. The member's percentage of disability shall be the average of the impairment rating determined by two physicians selected by the Board using the American Medical Association "Guide to the Evaluation of Permanent Impairment". If a member is eligible for a service retirement annuity and the amount of the service retirement annuity exceeds the amount of the disability benefit, then the member may elect to receive an additional service retirement annuity equal to this difference.

Upon the death of a retired member whose marriage was in effect at least six months before retirement or one year prior to death, the surviving spouse shall receive an annuity equal to 60% of the member's final annuity or final rate of pay, whichever is greater, unless the retired member elected an alternative actuarial equivalent form at the time of retirement of either a joint and 75% or and joint and 100% survivor payment form.

In addition, any minor children will receive benefits as provided under the occupational death benefit provisions.

Non-Occupational Disability Benefit

Hired prior to July 1, 2013

Eligibility

5 years of Total Service.

Benefit

2½% of Average Salary times years of Total Service subject to a minimum payment of 25% of Average Salary and a maximum payment of 75% of Average Salary.

Upon the death of a retired member whose marriage was in effect at least six months before retirement or one year prior to death, the surviving spouse shall receive an annuity equal to 60% of the member's final annuity or final rate of pay, whichever is greater, unless the retired member elected an alternative actuarial equivalent form at the time of retirement of either a joint and 75% or and joint and 100% survivor payment form.

	In addition, any minor children will receive benefits provided under the non-occupational death benefit provisions.
Hired on or after July 1, 2013	
Eligibility	5 years of Total Service.
Benefit	2.25% of Average Salary times years of Total Service subject to a minimum payment of 22.5% of Average Salary and a maximum payment of 67.5% of Average Salary. Upon the death of a retired member whose marriage was in effect at least six months before retirement or one year prior to death, the surviving spouse shall receive an annuity equal to 60% of the member's final annuity or final rate of pay, whichever is greater, unless the retired member elected an alternative actuarial equivalent form at the time of retirement of either a joint and 75% or and joint and 100% survivor payment form. In addition, any minor children will receive benefits provided under the non-occupational death benefit provisions.
Termination Benefit	If a member is terminated with less than 20 years of total service credit, he is entitled to a return of his accumulated contributions, without interest.
Occupational Death Benefit	
Eligibility	No requirements.
Benefit	Surviving Spouse receives immediate annuity equal to 75% of the member's last rate of salary until death or remarriage. In addition, 10% of the member's last rate of salary is payable for each minor child until each child attains age 18 (age 23 if involved in educational activities). Maximum total income is 100% of final rate of salary. If no surviving spouse or upon remarriage, then minor children will receive a benefit based on the following schedule:

One minor child	50% of Salary
Two minor children	65% of Salary
Three of more minor children	75% of Salary

Non-Occupational Death Benefit

Eligibility	5 Years of Total Service, married 6 months prior to death.
Benefit	Surviving spouse received immediate annuity equal to 1½% of the Average Salary multiplied by years of Total Service, until death or remarriage. The minimum benefit is 15% of Average Salary. In addition, this annuity is increased by ½ for the first minor child and by ¼ for each additional child. Maximum total income is 75% of Average Salary.

If no surviving spouse or upon remarriage, then minor children will receive a benefit based on the following schedule:

One minor child	50% of Salary
Two minor children	65% of Salary
Three of more minor children	75% of Salary

Member Contributions

Prior to July 1, 2013, active members contribute 11% of current salary. Effective July 1, 2013 active member contributions will increase from 11% to 12%.

Employer Contributions

The government shall make current contributions to the fund on an actuarially funded basis. Such contributions shall be equal to the sum of:

(1) An amount resulting from the application of a rate percent of salaries of active members determined under the entry age normal cost funding method, and

(2) An amount sufficient to amortize the total unfunded liability actuarial accrued liability for the fund over a period of thirty years, using the level dollar amortization method, for a period beginning July 1, 2013 and ending June 30, 2043.

The total contribution of the government shall be at least $20,000,000 until the actuarial funding level is at least 100%.

Post Retirement Cost-of-Living Increases

COLAs will be granted on the following schedule for both current and future retirees commencing upon the earlier of a member turning age 50 or being retired for five years until the Plan, utilizing the current COLA provisions, is 85% funded. At that time, COLA's will be granted each year by an amount, determined by the Board, of not less than 2.00% nor more than 5.00% compounded annually. In addition, those receiving a pension over $100,000 will not be eligible to receive a COLA until the later of the proposed conditions or January 1, 2016.

Above $100,000	1.0%
$75,000 to $99,000	1.0%
$50,000 to $74,999	1.5%
$40,000 to $49,999	1.5%
$35,000 to $39,999	2.0%
$30,000 to $34,999	2.0%
Under $30,000	2.0%

SCHEDULE H

TABLE 1

DISTRIBUTION OF ACTIVE MEMBERS BY AGE AND SERVICE GROUPS

AS OF JULY 1, 2017

Attained Age	Completed Years of Service										
	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	Total
Under 25	25	15									40
Avg. Pay	40,104	45,832									42,252
25 to 29	35	139	7								181
Avg. Pay	41,169	48,542	51,381								47,226
30 to 34	13	115	54	16	1						199
Avg. Pay	34,197	48,919	56,686	70,217	90,488						51,986
35 to 39	4	37	50	114	37						242
Avg. Pay	37,969	50,109	56,556	68,375	75,536						63,732
40 to 44		3	21	56	102	37					219
Avg. Pay		51,605	56,983	70,538	76,446	82,289					73,716
45 to 49			8	28	52	71	15	1			175
Avg. Pay			59,760	67,538	74,102	88,344	98,819	124,139			80,578
50 to 54			1	14	19	22	8	1			65
Avg. Pay			56,573	70,516	73,102	84,420	119,613	164,676			83,255
55 to 59				1	6	4	4				15
Avg. Pay				66,757	81,381	82,661	100,877				85,946
60 to 64				1	2	1	1	1			6
Avg. Pay				66,028	61,503	95,077	106,400	84,494			79,167
65 to 69				1	1						2
Avg. Pay				64,451	67,675						66,063
70 & up											
Avg. Pay											
Total	77	309	141	231	220	135	28	3			1,144
Avg. Pay	39,480	48,768	56,594	69,021	75,473	85,926	105,325	124,436			64,300

TABLE 2

NUMBER OF RETIRED MEMBERS AND BENEFICIARIES AND THEIR BENEFITS BY AGE

Attained Age	Number of Members	Total Annual Benefits	Average Annual Benefit
50 & Under	179	$ 6,918,031	$ 38,648
51 – 55	167	8,596,576	51,477
56 – 60	157	9,059,927	57,707
61 – 65	140	7,854,094	56,101
66 – 70	198	9,671,759	48,847
71 – 75	154	7,078,485	45,964
76 – 80	120	5,087,876	42,399
Over 80	86	3,226,728	37,520
Total	1,201	$ 57,493,476	$ 47,871