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5. The unfunded actuarial accrued liability amounts to \$1,056,684,831 for the Retiree Medical Plan and \$29,965,372 for the Life Insurance Plan as of the valuation date. An accrued liability contribution rate of 2.06% of payroll for the Retiree Medical Plan and 0.05% of payroll for the Life Insurance Plan is sufficient to amortize the unfunded actuarial accrued liabilities over a 20-year period for the Retiree Medical Plan and a 24-year period for the Life Insurance Plan, based on the assumption that the payroll will increase by 3.50% annually.



## **Section VII – Comments on Level of Funding**

1. The System's monthly contribution for retirees who opt into the Retiree Medical Plan is based upon date of hire, date of attaining age 65, and years of service at retirement. Additionally, beneficiary contributions may vary by date of hire, date of attaining age 65, years of service at retirement, plan election, Medicare eligibility, and tobacco use. Beneficiary contributions for dependents are targeted to be 100% of the cost of expected claims and/or insured premiums for spouses age 65 and older. Historically, this target has been achieved. 100% of the full cost for non-Medicare eligible dependents is paid through a combination of payments from beneficiaries and the State on a current disbursement basis. Current employer and State contributions have been determined to be sufficient to fund the cost of the benefits to be provided. Benefits for university, school district (non-Federal), and other members are identical, although active employee contributions collected from university, school district (non-Federal), and other members differ. A listing of active member Retiree Medical Plan contributions by fiscal year, date of membership, and employer type is provided in Schedule E.
2. This valuation provides the contributions required to fund sufficiently the Retiree Medical Plan and to ensure the future solvency of the Health Insurance Trust. For University employees, a member contribution of 2.775% of payroll together with employer and State contributions of 0.765% of payroll are required to meet the cost of benefits currently accruing and provide for the amortization of the unfunded actuarial accrued liability over a period of 20 years. For the remaining membership, a member contribution of 3.750% of payroll together with employer and State contributions of (0.210)% of payroll is required to meet the cost of benefits currently accruing and provide for the amortization of the unfunded actuarial accrued liability over a period of 20 years.



## **Section VIII – Accounting Information**

1. The information required under Governmental Accounting Standards Board (GASB) Statements No. 74 and 75 will be issued in separate reports. The following information is provided for informational purposes only.

<b>NUMBER OF ACTIVE AND RETIRED MEMBERS IN RETIREE MEDICAL PLAN AS OF JUNE 30, 2020</b>	
<b>GROUP</b>	<b>NUMBER</b>
Retirees currently receiving health benefits	41,154
Spouses of retirees currently receiving health benefits	6,883
Terminated employees entitled to benefits but not yet receiving benefits	7,270
Active plan members	<u>73,151</u>
Total	128,458

<b>NUMBER OF ACTIVE AND RETIRED MEMBERS IN LIFE INSURANCE PLAN AS OF JUNE 30, 2020</b>	
<b>GROUP</b>	<b>NUMBER</b>
Retirees	52,262
Terminated employees	9,139
Active plan members	<u>73,151</u>
Total	134,552













## Schedule A – Results of the Valuation and Solvency Test

### HEALTH INSURANCE TRUST SOLVENCY TEST (Dollar amounts in millions)

Valuation Date	(1)	(2)	(3)	Valuation Assets	Portion of Accrued Liabilities Covered by Assets		
	Active Member Contributions	Retirants And Beneficiaries	Active Members (Employer Financed Portion)		(1)	(2)	(3)
6/30/2013	n/a	\$ 2,001.8	\$ 1,519.3	\$ 412.2	n/a	21	0
6/30/2014	n/a	1,771.9	1,422.8	508.9	n/a	29	0
6/30/2015	n/a	1,982.2	1,543.4	637.8	n/a	32	0
6/30/2016	n/a	1,950.9	1,683.2	795.1	n/a	41	0
6/30/2017	n/a	1,985.1	1,706.6	985.7	n/a	50	0
6/30/2018	n/a	1,692.3	1,648.4	1,213.9	n/a	72	0
6/30/2019	n/a	1,604.3	1,528.9	1,442.5	n/a	90	0
6/30/2020	n/a	1,354.0	1,403.7	1,701.0	n/a	100	25

### LIFE INSURANCE TRUST SOLVENCY TEST (Dollar amounts in millions)

Valuation Date	(1)	(2)	(3)	Valuation Assets	Portion of Accrued Liabilities Covered by Assets		
	Active Member Contributions	Retirants And Beneficiaries	Active Members (Employer Financed Portion)		(1)	(2)	(3)
6/30/2012	n/a	\$ 75.2	\$ 16.2	\$ 92.2	n/a	100	105
6/30/2013	n/a	78.1	16.2	94.9	n/a	100	104
6/30/2014	n/a	81.0	16.3	96.1	n/a	100	93
6/30/2015	n/a	82.7	16.0	97.2	n/a	100	91
6/30/2016	n/a	89.0	17.1	97.3	n/a	100	49
6/30/2017	n/a	92.1	17.0	95.7	n/a	100	21
6/30/2018	n/a	94.2	18.3	93.8	n/a	99	0
6/30/2019	n/a	99.1	18.4	92.5	n/a	93	0
6/30/2020	n/a	103.5	18.7	92.2	n/a	89	0



## Schedule B – Development of the Actuarial Value of Assets

### HEALTH INSURANCE TRUST

AS OF JUNE 30, 2020

(1) Actuarial Value of Assets Beginning of Year	\$ 1,442,522,017
(2) Market Value of Assets End of Year	\$ 1,616,675,260
(3) Market Value of Assets Beginning of Year	\$ 1,414,020,056
(4) Cash Flow	
a. Contributions	\$ 318,214,245
b. Benefit Payments	145,986,752
c. Administrative Expense	2,047,238
d. Net: (4)a - (4)b - (4)c	\$ 170,180,255
(5) Investment Income	
a. Market Total: (2) - (3) - (4)d	\$ 32,474,949
b. Assumed Rate	8.00%
c. Amount for Immediate Recognition: [ (3) x (5)b ] + [ (4)d x (5)b x 0.5 ]	119,928,815
d. Amount for Phased-In Recognition: 5(a) - 5(c)	\$ (87,453,866)
(6) Phased-In Recognition of Investment Income	
a. Current Year: 0.20 x (5)d	\$ (17,490,773)
b. First Prior Year	(5,362,227)
c. Second Prior Year	(2,260,479)
d. Third Prior Year	6,277,740
e. Fourth Prior Year	(12,827,103)
f. Total Recognized Investment Gain/(Loss)	\$ (31,662,842)
(7) Actuarial Value of Assets End of Year (1) + (4)d + (5)c + (6)f	\$ 1,700,968,245
(8) Difference Between Market & Actuarial Values: (2) - (7)	\$ (84,292,985)
(9) Rate of Return on Actuarial Value:	5.78%



## Schedule B – Development of the Actuarial Value of Assets

### LIFE INSURANCE TRUST

AS OF JUNE 30, 2020

(1) Actuarial Value of Assets Beginning of Year	\$	92,505,791
(2) Market Value of Assets End of Year	\$	87,367,891
(3) Market Value of Assets Beginning of Year	\$	85,758,279
(4) Cash Flow		
a. Contributions	\$	1,796,389
b. Benefit Payments		5,317,000
c. Administrative Expense		35,980
d. Net: (4)a - (4)b - (4)c	\$	(3,556,591)
(5) Investment Income		
a. Market Total: (2) - (3) - (4)d	\$	5,166,203
b. Assumed Rate		7.50%
c. Amount for Immediate Recognition: [ (3) x (5)b ] + [ (4)d x (5)b x 0.5 ]		6,298,499
d. Amount for Phased-In Recognition: 5(a) - 5(c)	\$	(1,132,296)
(6) Phased-In Recognition of Investment Income		
a. Current Year: 0.20 x (5)d	\$	(226,459)
b. First Prior Year		(227,080)
c. Second Prior Year		(1,061,385)
d. Third Prior Year		(1,150,797)
e. Fourth Prior Year		(353,442)
f. Total Recognized Investment Gain/(Loss)	\$	(3,019,163)
(7) Actuarial Value of Assets End of Year (1) + (4)d + (5)c + (6)f	\$	92,228,536
(8) Difference Between Market & Actuarial Values: (2) - (7)	\$	(4,860,645)
(9) Rate of Return on Actuarial Value:		3.61%



## Schedule C – Summary of Receipts and Disbursements

### HEALTH INSURANCE TRUST SUMMARY OF RECEIPTS AND DISBURSEMENTS (Market Value)

	For the Year Ending	
	June 30, 2020	June 30, 2019
<b>Receipts for the Year</b>		
Contributions		
Members Statutory	\$ 133,588,771	\$ 131,676,820
Payment by Retired Members	59,220,473	57,767,461
Total Members	<u>\$ 192,809,244</u>	<u>\$ 189,444,281</u>
State Statutory Contributions	\$ 23,157,120	\$ 22,674,899
Employer Contributions	107,434,414	106,764,314
State Contributions	54,033,940	53,706,942
Total Employer	<u>\$ 184,625,474</u>	<u>\$ 183,146,155</u>
Grand Total	\$ 377,434,718	\$ 372,590,436
Recovery Income	100,375,749	0
Net Investment Income	32,474,949	74,385,482
TOTAL	<u>\$ 510,285,416</u>	<u>\$ 446,975,918</u>
<b>Disbursements for the Year</b>		
Administrative Expense	\$ 2,047,238	\$ 1,803,192
Medical Insurance Expense	305,582,974	221,433,478
TOTAL	<u>\$ 307,630,212</u>	<u>\$ 223,236,670</u>
<b>Excess of Receipts over Disbursements</b>	\$ 202,655,204	\$ 223,739,248
<b>Reconciliation of Asset Balances</b>		
Asset Balance as of the Beginning of the Year	\$ 1,414,020,056	\$ 1,190,280,808
Excess of Receipts over Disbursements	<u>202,655,204</u>	<u>223,739,248</u>
Asset Balance as of the End of the Year	\$ 1,616,675,260	\$ 1,414,020,056
<b>Investment Rate of Return on Market Value</b>	2.30%	6.11%



**Schedule C – Summary of Receipts and Disbursements**

**LIFE INSURANCE TRUST  
SUMMARY OF RECEIPTS AND DISBURSEMENTS  
(Market Value)**

	For the Year Ending	
	June 30, 2020	June 30, 2019
<b>Receipts for the Year</b>		
Contributions		
Members	\$ 0	\$ 0
State	1,543,413	1,209,055
Employer	252,976	212,172
Total	\$ 1,796,389	\$ 1,421,227
Net Investment Income	5,166,203	5,058,188
TOTAL	\$ 6,962,592	\$ 6,479,415
<b>Disbursements for the Year</b>		
Benefit Payments	\$ 5,317,000	\$ 5,153,000
Refunds to Members	0	0
Medical Insurance Payments	0	0
Miscellaneous, including expenses	35,980	30,392
TOTAL	\$ 5,352,980	\$ 5,183,392
<b>Excess of Receipts over Disbursements</b>	\$ 1,609,612	\$ 1,296,023
<b>Reconciliation of Asset Balances</b>		
Asset Balance as of the Beginning of the Year	\$ 85,758,279	\$ 84,462,256
Excess of Receipts over Disbursements	1,609,612	1,296,023
Asset Balance as of the End of the Year	\$ 87,367,891	\$ 85,758,279
<b>Investment Rate of Return on Market Value</b>	6.32%	6.49%



## Schedule D – Statement of Actuarial Assumptions and Methods

The rates of retirement, disability, mortality, termination, salary increases, and rates of future benefit participation used in the valuation were selected based on the actuarial experience study prepared as of June 30, 2015, submitted to and adopted by the Board on September 19, 2016. The health care cost trend rates, and expected plan costs were determined by the actuary based on recent experience.

VALUATION DATE: June 30, 2020

DISCOUNT RATE: 8.00% per annum, compounded annually for the Health Insurance Trust  
7.50% per annum, compounded annually for the Life Insurance Trust

HEALTH CARE COST TREND RATES: Following is a chart detailing health care trend assumptions.

Fiscal Year Ended	Annual Trend Rate		
	Medicare Part B	Under Age 65	Ages 65 and Older
2021	4.40%	7.00%	5.125%
2022	4.31	6.75	5.000
2023	5.83	6.50	5.000
2024	6.00	6.25	5.000
2025	5.85	6.00	5.000
2026	5.76	5.75	5.000
2027	5.79	5.50	5.000
2028	5.71	5.25	5.000
2029	5.72	5.00	5.000
2030	5.49	5.00	5.000
2031	5.12	5.00	5.000
2032 and beyond	5.00	5.00	5.000

AGE RELATED MORBIDITY: For retirees ages 65 and older, per capita health care costs are adjusted to reflect expected health care cost changes related to age. The increase to the net incurred health care claims is assumed to be:

Participant Age	Annual Increase
65 – 69	3.0%
70 – 74	2.5
75 – 79	2.0
80 – 84	1.0
85 - 89	0.5
90 and over	0.0



## Schedule D – Statement of Actuarial Assumptions and Methods

For the retiree health care liabilities of those under age 65, the current premium charged by the Kentucky Employees' Health Plan (KEHP) is used as the base cost and is projected forward using the health care trend assumption. No implicit rate subsidy is calculated or recognized, as the implicit rate subsidy is deemed the responsibility of the KEHP. Under Actuarial Standard of Practice No. 6 (ASOP No. 6), aging subsidies (or implicit rate subsidies) should be recognized, as the differences in health care utilization and cost due to age have been demonstrated and well quantified.

The impact of aging on a valuation's results can be as significant as the use of mortality, trend, and discounting. It has been the long-standing position that the responsibility for compliance with GASB Statement No. 43, when it relates to KEHP implicit subsidies, rests with KEHP, not the System, as the System has no operational authority over KEHP. As such, KEHP implicit subsidies are excluded from the OPEB valuation process of the Retiree Medical Plan. As GASB 74 and 75 prohibit such a deviation from ASOP No. 6, additional consideration to the current treatment of KEHP implicit rate subsidies may be needed in the future. Valuing the KEHP implicit subsidies will increase the actuarial accrued liability for GASB 74 and 75 purposes.

RETIREE MEDICAL PLAN COSTS: Assumed per capita health care costs were based on past experience and trended based on the assumptions. Following are charts detailing retiree per capita assumptions. These amounts include medical, drug, and administrative costs and represent the amount that the System pays as the full contribution amount. An additional \$8.00 per month is paid to the Department of Employee Insurance (DEI) and is not included in the under age 65 costs listed below. For retirees ages 65 and older, the average costs shown are normalized to age 65 and then age adjusted in calculating liabilities.

Monthly Under Age 65 KEHP Full Costs as of January 1, 2021				
Tier Elected	LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell Limited HDHP
Single	\$732.26	\$753.76	\$704.08	\$626.48
Parent Plus	\$1,011.78	\$1,075.44	\$970.78	\$892.76
Couple	\$1,383.08	\$1,653.10	\$1,501.56	\$1,374.22
Family	\$1,545.50	\$1,841.08	\$1,673.40	\$1,530.02
Family C-R	\$846.00	\$907.84	\$825.88	\$753.62

RETIREE MEDICAL PLAN CONTRIBUTION: The portion of the medical plan premiums paid by participants is composed of a Plan Option Cost, a Time-Specific Adjustment Cost and a Shared Responsibility Cost. Retirees under the age of 65 who do not complete their LivingWell Promise will be charged an additional \$40 per month above the Plan Option Cost detailed below. An additional contribution is required to be paid by retirees under the age of 65 who use tobacco (\$40 for Single or Family Cross-Reference, and \$80 for Parent Plus, Couple or Family).

Monthly Under Age 65 KEHP Plan Option Cost as of January 1, 2021				
Tier Elected	LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell Limited HDHP
Single	\$52.42	\$87.40	\$27.78	\$25.00
Parent Plus	\$134.38	\$249.12	\$66.20	\$59.58
Couple	\$323.18	\$560.54	\$275.90	\$248.32
Family	\$379.92	\$702.58	\$331.06	\$297.96
Family C-R*	\$85.20	\$167.14	\$30.88	\$27.78
Spouse – Single	\$740.26	\$761.76	\$712.08	\$634.48
Spouse – Parent Plus	\$1,019.78	\$1,083.44	\$978.78	\$900.76

\*Per employee/retiree



## Schedule D – Statement of Actuarial Assumptions and Methods

TIME-SPECIFIC ADJUSTMENT PLUS SHARED RESPONSIBILITY COST: The chart below and on the page following are the Time-Specific Adjustment costs paid by Retirees in addition to the Plan Option Costs shown prior.

Abbreviations for Time-Specific Adjustment Charts:

LW CDHP = LivingWell CDHP

LW PPO = LivingWell PPO

LW Basic = LivingWell Basic CDHP

LW Limited = LivingWell Limited HDHP

Time-Specific Adjustments for Retirees Employed Before July 1, 2002 as of January 1, 2021						
Plan	Years of Service	Single	Parent Plus	Couple	Family	Family C-R
LW CDHP	5 – 9.99	\$547.01	\$744.57	\$927.07	\$1,032.75	\$627.97
	10 – 14.99	414.17	611.73	794.23	899.91	495.13
	15 – 19.99	281.34	478.90	661.40	767.08	362.30
	20 or More	148.50	346.06	528.56	634.24	229.46
LW PPO	5 – 9.99	\$536.90	\$693.49	\$959.73	\$1,005.67	\$607.87
	10 – 14.99	407.43	560.65	826.89	872.83	475.03
	15 – 19.99	277.97	427.82	694.06	740.00	342.20
	20 or More	148.50	294.98	561.22	607.16	209.36
LW Basic	5 – 9.99	\$544.35	\$771.75	\$1,092.83	\$1,209.51	\$662.17
	10 – 14.99	412.40	638.91	959.99	1,076.67	529.33
	15 – 19.99	280.45	506.08	827.16	943.84	396.50
	20 or More	148.50	373.24	694.32	811.00	263.66
LW Limited	5 – 9.99	\$488.24	\$700.35	\$993.07	\$1,099.23	\$593.01
	10 – 14.99	374.99	567.51	860.23	966.39	460.17
	15 – 19.99	261.75	434.68	727.40	833.56	327.34
	20 or More	148.50	301.84	594.56	700.72	194.50





**Schedule D – Statement of Actuarial Assumptions and Methods**

Time-Specific Adjustments for Retirees Employed On/After July 1, 2002 as of January 1, 2021						
Plan	Years of Service	Single	Parent Plus	Couple	Family	Family C-R
LW CDHP	5 – 9.99	\$626.71	\$824.27	\$1,006.77	\$1,112.45	\$707.67
	10 – 14.99	547.01	744.57	927.07	1,032.75	627.97
	15 – 19.99	440.74	638.30	820.80	926.48	521.70
	20 – 24.99	334.47	532.03	714.53	820.21	415.43
	25 – 25.99	201.63	399.19	581.69	687.37	282.59
	26 – 26.99	175.07	372.63	555.13	660.81	256.03
	27 or More	148.50	346.06	528.56	634.24	229.46
LW PPO	5 – 9.99	\$614.57	\$773.19	\$1,039.43	\$1,085.37	\$687.57
	10 – 14.99	536.90	693.49	959.73	1,005.67	607.87
	15 – 19.99	433.33	587.22	853.46	899.40	501.60
	20 – 24.99	329.76	480.95	747.19	793.13	395.33
	25 – 25.99	200.29	348.11	614.35	660.29	262.49
	26 – 26.99	174.40	321.55	587.79	633.73	235.93
	27 or More	148.50	294.98	561.22	607.16	209.36
LW Basic	5 – 9.99	\$623.52	\$851.45	\$1,172.53	\$1,289.21	\$741.87
	10 – 14.99	544.35	771.75	1,092.83	1,209.51	662.17
	15 – 19.99	438.79	665.48	986.56	1,103.24	555.90
	20 – 24.99	333.23	559.21	880.29	996.97	449.63
	25 – 25.99	201.28	426.37	747.45	864.13	316.79
	26 – 26.99	174.89	399.81	720.89	837.57	290.23
	27 or More	148.50	373.24	694.32	811.00	263.66
LW Limited	5 – 9.99	\$556.18	\$780.05	\$1,072.77	\$1,178.93	\$672.71
	10 – 14.99	488.24	700.35	993.07	1,099.23	593.01
	15 – 19.99	397.64	594.08	886.80	992.96	486.74
	20 – 24.99	307.05	487.81	780.53	886.69	380.47
	25 – 25.99	193.80	354.97	647.69	753.85	247.63
	26 – 26.99	171.15	328.41	621.13	727.29	221.07
	27 or More	148.50	301.84	594.56	700.72	194.50

CURRENT RETIREE MEDICAL PLAN PARTICIPATION: Actual census data and current plan elections (including waivers) provided by the System were used for those retirees currently participating in the Retiree Medical Plan. Current participants are assumed to maintain their current Retiree Medical Plan coverage until they are no longer eligible.

ANTICIPATED RETIREE MEDICAL PLAN PARTICIPATION: The assumed annual rates of health care plan participation for future retirees are as follows:

Years of Service	Member Participation		
	Entered System Before 7/1/2002	Entered System After 6/30/2002 and Before 7/1/2008	Entered System After 6/30/2008
5-9.99	20%	20%	Not Eligible
10-14.99	49	20	Not Eligible
15-19.99	70	41	41%
20-24.99	91	61	61
25-25.99	91	76	76
26-26.99	91	84	84
27 or more	91	91	91



## Schedule D – Statement of Actuarial Assumptions and Methods

**ANTICIPATED RETIREE MEDICAL PLAN ELECTIONS:** The assumed rates of plan election for future retirees participating in the KEHP plans are provided in the following table. As the assumed plan election rates are estimates and actual results may be materially different, this assumption will need to be revised as experience evolves.

LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell Limited HDHP
53%	43%	3%	1%

**SPOUSE COVERAGE IN RETIREE MEDICAL PLAN:** Actual census data and current plan elections were used for MEHP and KEHP covered spouses (including beneficiaries) of current retirees. For spouses of future retirees, 25% of future male retirees are assumed to cover their spouse and 15% of future female retirees are assumed to cover their spouse. Male retirees are assumed to be three years older than their spouse and female retirees are assumed to be one year younger than their spouse.

**DISABLED DEPENDENT CHILDREN IN RETIREE MEDICAL PLAN:** The liability associated with disabled dependent children was determined to be de minimis and was therefore excluded from this valuation.

**WITHDRAWAL ASSUMPTION:** Future vested members who terminate employment prior to retirement are assumed to elect to withdraw their contributions based upon their age and service at termination of employment as follows:

Rates of Withdrawal Upon Termination of Employment			
Age at Termination of Employment	Years of Service		
	5 - 10	10 - 15	15+
Under Age 55	20%	15%	10%
Ages 55+	10%	10%	10%

All vested members who terminate employment prior to retirement are assumed to elect to withdraw their contributions prior to receiving a pension benefit based upon their service as follows:

Rates of Withdrawal Prior to Receiving a Pension Benefit			
Years of Service			
5 - 10	10 - 15	15 - 27	27+
25%	15%	10%	25%

All vested members who terminate employment prior to retirement and who are assumed to elect to receive a pension benefit are assumed to begin receiving their benefit at age 60.

**PAYROLL GROWTH:** 3.50% per annum, compounded annually.

**PRICE INFLATION:** 3.00% per annum, compounded annually.



## **Schedule D – Statement of Actuarial Assumptions and Methods**

**AFFORDABLE CARE ACT (ACA):** The impact of the Affordable Care Act (ACA) was addressed in this valuation. Review of the information currently available did not identify any specific provisions of the ACA that are anticipated to significantly impact results other than plan design features and fees currently mandated by the ACA and incorporated in the plan designs, which are included in the current baseline claims costs. Continued monitoring of the ACA's impact on the Plan's liability will be required.

**COVID-19:** The impact of the COVID-19 pandemic was considered in this valuation; however, no changes were incorporated at this time due to the level of uncertainty regarding the impact on both plan costs and contribution levels going forward. Given the uncertainty regarding COVID-19 (e.g., the impact of routine care being deferred, direct COVID-19 treatment and prevention costs, changes in contribution and budget projections), continued monitoring of the impact on the Plan's liability will be required.

**ASSET VALUATION METHOD:** Five-year market related actuarial value, as developed in Schedule B. 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 ultimate assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected actuarial value. The ultimate assumed valuation rate of return is assumed to be 8.00% for the Health Insurance Trust and 7.50% for the Life Insurance Trust.

**ACTUARIAL COST METHOD:** 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, of each active member's expected benefit at retirement or death is determined, based on his/her age, service, and gender. 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/her 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 and deferred vested members to obtain the present value of all expected benefits payable from the System on account of the present group of members and beneficiaries.

The employer contributions required to support the benefits of the System are determined following a level funding approach, and consist of a normal contribution and an accrued liability contribution.

The normal contribution is determined using the "entry age normal" method. Under this method, a calculation is made to determine the uniform and constant percentage rate of employer contribution which, if applied to the compensation of the average new member during the entire period of his/her anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his/her behalf.

The unfunded actuarial 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 System.



## Schedule D – Statement of Actuarial Assumptions and Methods

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

MALES								
Age	Annual Rate of							
	SALARY*	DEATH	DISABILITY	WITHDRAWAL			RETIREMENT	
				Years of Service			Before 27 Years of Service	After 27 Years of Service**
				0 – 4	5 – 9	10+		
20	7.20%	0.019%	0.01%	11.00%				
25	6.40	0.021	0.01	11.00	3.00%			
30	5.40	0.025	0.01	11.00	3.00	3.00%		
35	4.70	0.043	0.04	12.00	3.50	1.40		
40	4.20	0.060	0.09	12.00	4.50	1.40		
45	3.80	0.084	0.20	12.00	4.50	1.30		17.0%
50	3.70	0.119	0.30	14.00	4.50	1.90		17.0
55	3.50	0.202	0.58	15.00	4.50	2.40	5.0%	45.0
60	3.50	0.340	0.75	15.00	4.00	2.40	13.0	35.0
62	3.50	0.419	0.75	15.00	3.80	2.40	15.0	25.0
65	3.50	0.565	0.75	15.00	3.50	2.40	20.0	25.0
70	3.50	0.913	0.75	20.00	0.00	0.00	20.0	20.0
75	3.50	1.556	0.75	20.00	0.00	0.00	100.0	100.0

  

FEMALES								
Age	Annual Rate of							
	SALARY*	DEATH	DISABILITY	WITHDRAWAL			RETIREMENT	
				Years of Service			Before 27 Years of Service	After 27 Years of Service**
				0 – 4	5 – 9	10+		
20	7.20%	0.007%	0.01%	9.00%				
25	6.40	0.008	0.01	9.00	4.00%			
30	5.40	0.010	0.03	12.00	4.00	1.65%		
35	4.70	0.018	0.06	12.00	4.00	1.50		
40	4.20	0.026	0.12	12.00	4.00	1.30		
45	3.80	0.042	0.25	13.00	4.00	1.20		15.0%
50	3.70	0.062	0.44	13.00	5.00	1.50		18.0
55	3.50	0.096	0.65	15.00	5.00	2.00	5.5%	50.0
60	3.50	0.157	0.85	15.00	5.00	2.00	14.0	40.0
62	3.50	0.197	0.85	15.00	4.60	2.00	14.0	40.0
65	3.50	0.287	0.85	15.00	4.00	2.00	22.0	35.0
70	3.50	0.495	0.85	15.00	0.00	0.00	20.0	35.0
75	3.50	0.831	0.85	15.00	0.00	0.00	100.0	100.0

\* Includes wage inflation at 3.5% per annum.

\*\* Plus 7.5% in year when first eligible for unreduced retirement with 27 years of service.



## Schedule D – Statement of Actuarial Assumptions and Methods

DEATHS AFTER RETIREMENT: The RP-2000 Combined Mortality Table projected to 2025 using scale BB (set forward two years for males and one year for females) is used for death after service retirement and beneficiaries. The RP-2000 Disabled Mortality Table projected to 2025 using scale BB (set forward two years for males and seven years for females) is used for death after disability retirement. There is a margin for future mortality improvement in the tables used by the System. Based on the results of the most recent experience study adopted by the Board on September 19, 2016, the numbers of expected future deaths are 15-19% less than the actual number of deaths that occurred during the study period for healthy retirees and 13-17% less than expected under the selected table for disabled retirees. Representative values of the assumed annual rates of death after service retirement and after disability retirement are shown below:

Age	Annual Rate of Death After			
	Service Retirement		Disability Retirement	
	Male	Female	Male	Female
45	0.1609%	0.1135%	2.3306%	1.2482%
50	0.2474	0.1718	2.9279	1.5650
55	0.4246	0.2658	3.4400	1.7807
60	0.6985	0.4409	3.5881	2.3164
65	1.1300	0.8100	3.8275	3.1687
70	1.8697	1.3739	4.7566	4.4032
75	3.2147	2.2899	6.3153	6.0857
80	5.5160	3.7551	8.3527	8.4679
85	9.5631	6.3873	10.9122	12.7572
90	17.2787	11.2476	17.2787	19.4718
95	27.1263	18.1190	27.1263	24.2074



## Schedule E – Summary of Main Plan Provisions

### AS INTERPRETED FOR VALUATION PURPOSES

#### ELIGIBILITY FOR ACCESS TO RETIREE MEDICAL PLAN COVERAGE:

**Service Retirement:** For employees hired prior to July 1, 2008, Retiree Medical Plan coverage eligibility is attained when an employee retires, which is possible after the completion of 27 years of service or attainment of age 55 and 5 years of service with reduced pension benefits. For employees hired on or after July 1, 2008, employees may retire after the completion of 27 years of service, the attainment of age 55 and 10 years of service with reduced pension benefits, or the attainment of age 60 and 5 years of service with unreduced pension benefits, but must complete a minimum of 15 years of service to be eligible for Retiree Medical Plan coverage.

**Disability Retirement:** Disabled employees hired prior to July 1, 2008 with at least 5 years of service, who are totally and permanently incapable of being employed as a teacher, are eligible for Retiree Medical Plan coverage upon approval for TRS disability retirement benefits. Disabled employees hired after July 1, 2008 must have 15 years of service to be eligible for Retiree Medical Plan coverage upon approval for TRS disability retirement benefits.

Members and dependents under age 65 and eligible for Medicare due to a disability after January 1, 2013 are only eligible to enroll in the MEHP. Under age 65 members who retired prior to January 1, 2013, are grandfathered from this requirement and allowed a choice of KEHP or MEHP coverage. Actual census data and current plan elections were used for current disabled retirees. All future disabled members under the age of 65 with Medicare are placed on the MEHP and not the KEHP. This has been consistently applied since 2013.

**Survivors:** Spouses of employees who die in service while eligible to retire, as well as survivors of service and disabled retirees, are eligible for Retiree Medical Plan coverage if elected within 30 days of the employee's/retiree's death with no future remarriage. Otherwise, survivor is not eligible for Retiree Medical Plan coverage.

**Spousal Shared Risk Waiver for MEHP:** Beginning in 2013, eligible spouses who waive the MEHP coverage, will no longer have the opportunity to enroll during any annual MEHP open enrollment so most spousal waivers on the MEHP are now permanent waivers unless a TRS specific qualifying event is met. This does not apply to the KEHP. This MEHP eligibility rule became necessary to mitigate spousal adverse selection with zero premium Medicare Advantage plans on the individual and open market.

**Termination:** For employees hired prior to July 1, 2008 and who terminated with at least 5 years of service, Retiree Medical Plan coverage is assumed to begin at age 60. For employees hired on or after July 1, 2008 and who terminated with at least 15 years of service, Retiree Medical Plan coverage is assumed to begin at age 60.

**Reemployed Retirees:** Effective January 1, 2019 and because of the Affordable Care Act (ACA) and Medicare secondary payer (MSP) federal rules, if a TRS retiree returns to work and is offered the same health insurance coverage as any full time employee (whether the KEHP, MEHP, or another plan), then the member must waive coverage through TRS. For valuation purposes, active employees identified as currently receiving retiree health care through the System are valued as retirees. Retirees making active contributions into a second account do not qualify for insurance on that second account.



## Schedule E – Summary of Main Plan Provisions

### COVERED MEMBER RETIREE MEDICAL PLAN CONTRIBUTIONS:

**Under Age 65 Retiree Shared Responsibility Contribution:** Effective July 1, 2010, retirees under the age of 65 began a three-year phase-in of the Shared Responsibility Contribution. This contribution reduces the applicable amount of the full contribution provided by the System to retirees, by adjusting the Shared Responsibility Contribution amount by 100% less the appropriate percentage from the Retiree Percentage Contribution table below. Effective July 1, 2012, the full Shared Responsibility Contribution equals the Standard Medicare Part B premium paid by retirees ages 65 and older.

Monthly Under Age 65 Shared Responsibility Contribution Timeline			
Effective Date	Medicare Part B Monthly Cost	Formula	Shared Responsibility Contribution
July 1, 2010	\$110.50	$(1/3 \times \$110.50)$	\$ 37.00
January 1, 2011	115.40	$(1/3 \times 115.40)$	39.00
July 1, 2011	115.40	$(2/3 \times 115.40)$	77.00
January 1, 2012	99.90	$(2/3 \times 99.90)$	66.00
July 1, 2012	99.90	99.90	99.90
January 1, 2013	104.90	104.90	104.90
January 1, 2014	104.90	104.90	104.90
January 1, 2015	104.90	104.90	104.90
January 1, 2016	121.80	121.80	121.80
January 1, 2017	134.00	134.00	134.00
January 1, 2018	134.00	134.00	134.00
January 1, 2019	135.50	135.50	135.50
January 1, 2020	144.60	144.60	144.60
January 1, 2021	148.50	148.50	148.50

**Retiree Years of Service Percentage Contribution:** Retirees contribute the following percentages based on years of service at retirement, which are then applied to the Retiree Contribution Rate Basis:

Retiree Percentage Contribution*				
Year of Service	Entered System Before 7/1/2002		Entered System After 6/30/2002 and Before 7/1/2008	Entered System After 6/30/2008
	Age 65 or Older and Covered Before 1/1/2005	Age 65 After or Covered After 12/31/2004		
5 – 9.99	30%	75%	90%	Not Eligible
10 – 14.99	20	50	75	Not Eligible
15 – 19.99	10	25	55	55%
20 – 24.99	0	0	35	35
25 – 25.99	0	0	10	10
26 – 26.99	0	0	5	5
27 or more	0	0	0	0

\*0% for disabled retirees that retired prior to 1/1/2002





## Schedule E – Summary of Main Plan Provisions

### COVERED MEMBER RETIREE MEDICAL PLAN CONTRIBUTIONS (CONTINUED):

For 2021, the TRS Board of Trustees approved a single contribution amount of up to \$679.84. TRS will contribute this amount towards insurance costs, less the Shared Responsibility cost of \$148.50. Starting in 2021, there will be no subsidy for non-single KEHP coverage. Under-65 retirees who are not Medicare eligible and continue on the Kentucky Employees' Health Plan (KEHP) are responsible for the remaining costs left from the total premium costs. The total premium costs are shown below.

Monthly Under Age 65 (KEHP) Full Costs* Effective January 1, 2021					
Tier Elected	Under Age 65 (KEHP)				Ages-65 and Older (MEHP)
	LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell Limited HDHP	
Single	\$732.26	\$753.76	\$704.08	\$626.48	\$178.00
Parent Plus	\$1,011.78	\$1,075.44	\$970.78	\$892.76	n/a
Couple	\$1,383.08	\$1,653.10	\$1,501.56	\$1,374.22	n/a
Family	\$1,545.50	\$1,841.08	\$1,673.40	\$1,530.02	n/a
Family C-R	\$846.00	\$907.84	\$825.88	\$753.62	n/a

\* Does not include the additional contribution required to be paid by retirees under the age of 65 who use tobacco (\$40 for Single or Family Cross-Reference, and \$80 for Parent Plus, Couple or Family). Also, this does not include the additional contribution required to be paid by retirees under the age of 65 who do not complete their LivingWell Promise, which is an additional \$40 per month for all levels of coverage—single, parent +, couple, and family. Approximately 1,500 retirees across all four KEHP plans did not complete their LivingWell Promise for 2019. The additional contribution for these retirees will begin in 2020. For valuation purposes, it is conservatively assumed that, over time, 100% of KEHP retirees will complete their LivingWell Promise. This assumption will be monitored in future experience studies.

**Spouse Contributions:** 100% of the full cost for non-Medicare eligible dependents is paid through a combination of payments from beneficiaries and the State. For 2021, neither the State nor TRS will pay any subsidy for family style coverage.

**Survivors:** Spouses of employees who die in service while eligible to retire, as well as survivors of service and disabled retirees, are eligible for Retiree Medical Plan coverage if elected within 30 days of the employee's/retiree's death with no future remarriage. Otherwise, survivor is not eligible for Retiree Medical Plan coverage.

**Spousal Shared Risk Waiver for MEHP:** Beginning in 2013, eligible spouses who waive the MEHP coverage, will no longer have the opportunity to enroll during any annual MEHP open enrollment so most spousal waivers on the MEHP are now permanent waivers unless a TRS specific qualifying event is met. This does not apply to the KEHP. This MEHP eligibility rule became necessary to mitigate spousal adverse selection with zero premium Medicare Advantage plans on the individual and open market.

Monthly Surviving Spouse Contribution Effective January 1, 2021					
Tier Elected by Surviving Spouse	Under Age 65 (KEHP)				Ages 65 and Older (MEHP)
	LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell Limited HDHP	
Single	\$740.26	\$761.76	\$712.08	\$634.48	\$178.00
Parent Plus	\$1,019.78	\$1,083.44	\$978.78	\$900.76	n/a





## Schedule E – Summary of Main Plan Provisions

**SYSTEM RETIREE MEDICAL PLAN CONTRIBUTIONS:** The System Contribution Rate Basis is determined annually by the System, and the full cost is projected based on historical claims data. For retirees, the following percentages are based on years of service at retirement and are then applied to the System Contribution Rate Basis:

Percentage of System Contribution Rate Provided to Retirees*				
Year of Service	Entered System Before 7/1/2002		Entered System After 6/30/2002 and Before 7/1/2008	Entered System After 6/30/2008
	Age 65 or Older and Covered Before 1/1/2005	Age 65 After or Covered After 12/31/2004		
5 – 9.99	70%	25%	10%	Not Eligible
10 – 14.99	80	50	25	Not Eligible
15 – 19.99	90	75	45	45%
20 – 24.99	100	100	65	65
25 – 25.99	100	100	90	90
26 – 26.99	100	100	95	95
27 or more	100	100	100	100

\*100% for disabled retirees that retired prior to 1/1/2002

For 2021, the TRS Board of Trustees approved a single contribution amount of up to \$679.84. TRS will contribute this amount towards insurance costs, less the Shared Responsibility cost of \$148.50. Starting in 2021, there will be no subsidy for non-single KEHP coverage. Under-65 retirees who are not Medicare eligible and continue on the Kentucky Employees' Health Plan (KEHP) are responsible for the remaining costs left from the total premium costs. The total premium costs are shown below.

Monthly Under Age 65 (KEHP) Full Costs Effective January 1, 2021					
Tier Elected	Under Age 65 (KEHP)				Ages-65 and Older (MEHP)
	LivingWell CDHP	LivingWell PPO	LivingWell Basic CDHP	LivingWell Limited HDHP	
Single	\$732.26	\$753.76	\$704.08	\$626.48	\$178.00
Parent Plus	\$1,011.78	\$1,075.44	\$970.78	\$892.76	n/a
Couple	\$1,383.08	\$1,653.10	\$1,501.56	\$1,374.22	n/a
Family	\$1,545.50	\$1,841.08	\$1,673.40	\$1,530.02	n/a
Family C-R	\$846.00	\$907.84	\$825.88	\$753.62	n/a

**ACTIVE MEMBER RETIREE MEDICAL PLAN CONTRIBUTIONS:** Actively employed members make payroll contributions to the Health Insurance Trust based upon the following schedule:

Active Member Percentage of Payroll Contribution Made to Health Insurance Trust					
University Employees		School District Employees (Non-Federal)		Other Employees	
Hired Before 7/1/2008	Hired On or After 7/1/2008	Hired Before 7/1/2008	Hired On or After 7/1/2008	Hired Before 7/1/2008	Hired On or After 7/1/2008
2.775	2.775	3.750	3.750	3.750	3.750



## **Schedule E – Summary of Main Plan Provisions**

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### **LIFE INSURANCE PLAN BENEFITS:**

(1) Effective July 1, 2000, the Teachers' Retirement System shall:

- (a) Provide a life insurance benefit in a minimum amount of five thousand dollars (\$5,000) for its members who are retired for service or disability. This life insurance benefit shall be payable upon the death of a member retired for service or disability to the member's estate or to a party designated by the member on a form prescribed by the retirement system; and
- (b) Provide a life insurance benefit in a minimum amount of two thousand dollars (\$2,000) for its active contributing members. This life insurance benefit shall be payable upon the death of an active contributing member to the member's estate or to a party designated by the member on a form prescribed by the retirement system.

**Note:** Members employed on a substitute or part-time basis and working at least 69% of a full contract year in a single fiscal year will be eligible for a life insurance benefit for the balance of the fiscal year or the immediately succeeding fiscal year under certain conditions. For non-vested members employed on a substitute or part-time basis, the life insurance benefit is provided if death occurs as the result of a physical injury on the job. For vested members employed on a substitute or part-time basis, death does not have to be the result of a physical injury on the job for life insurance benefits to be provided.



**Schedule F – Tables of Member Data**

**TABLE 1  
ACTIVE MEMBER AGE AND SERVICE TABLE AS OF JUNE 30, 2020**

Distribution of Active Members as of June 30, 2020 by Age and Service Groups

Attained Age	Completed Years of Service									Total	
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Over	No.	Payroll
Under 25	1,644	1,754	4	0	0	0	0	0	0	3,402	\$ 82,097,488
25 to 29	963	4,538	1,801	0	0	0	0	0	0	7,302	292,413,583
30 to 34	660	1,914	4,403	1,546	3	0	0	0	0	8,526	408,737,279
35 to 39	645	1,540	2,187	4,310	1,627	2	0	0	0	10,311	556,918,177
40 to 44	604	1,244	1,362	2,058	4,210	1,270	5	0	0	10,753	630,994,996
45 to 49	450	946	1,046	1,422	2,042	3,849	1,095	2	0	10,852	683,664,756
50 to 54	614	713	674	988	1,316	1,844	2,184	368	3	8,704	537,397,081
55 to 59	881	844	432	583	877	941	854	248	42	5,702	297,546,435
60 to 64	772	938	318	255	455	464	360	112	50	3,724	149,382,482
65 to 69	605	820	270	126	138	173	130	50	47	2,359	60,865,741
70 & Over	407	610	266	72	56	37	33	14	21	1,516	23,463,558
<b>Total Count</b>	<b>8,245</b>	<b>15,861</b>	<b>12,763</b>	<b>11,360</b>	<b>10,724</b>	<b>8,580</b>	<b>4,661</b>	<b>794</b>	<b>163</b>	<b>73,151</b>	<b>\$ 3,723,481,576</b>

Average Age: 43.8

Average Service: 11.1



**Schedule F – Tables of Member Data**

**TABLE 2  
SCHEDULE OF TOTAL ACTIVE MEMBER VALUATION DATA**

Valuation Date	Number	Annual Payroll	Annual Average Payroll	Percentage Increase in Average Pay
6/30/2020	73,151	\$ 3,723,481,576	\$ 50,901	1.35 %
6/30/2019	72,647	3,648,427,710	50,221	0.58
6/30/2018	72,205	3,605,115,787	49,929	1.06
6/30/2017	72,130	3,563,584,342	49,405	0.35
6/30/2016	71,848	3,537,226,348	49,232	1.19
6/30/2015	72,246	3,515,113,126	48,655	2.45
6/30/2014	73,407	3,486,326,799	47,493	2.12
6/30/2013	74,831	3,480,066,406	46,506	1.51
6/30/2012	75,951	3,479,567,004	45,813	1.33

**TABLE 3  
ELIGIBLE DEFERRED VESTED MEMBERS AS OF JUNE 30, 2020  
MALE AND FEMALE DEMOGRAPHIC BREAKDOWN**

Attained Age	Health Insurance Trust			Life Insurance Trust		
	Number of		Total	Number of		Total
	Males	Female	Number	Males	Female	Number
Under 30	0	0	0	7	25	32
30 - 34	28	80	108	158	520	678
35 - 39	235	802	1,037	341	1,068	1,409
40 - 44	336	945	1,281	404	1,141	1,545
45 - 49	344	1,122	1,466	387	1,318	1,705
50 - 54	281	1,038	1,319	306	1,167	1,473
55 - 59	229	845	1,074	261	926	1,187
60 & Over	246	739	985	290	820	1,110
<b>Total</b>	<b>1,699</b>	<b>5,571</b>	<b>7,270</b>	<b>2,154</b>	<b>6,985</b>	<b>9,139</b>



## Schedule F – Tables of Member Data

**TABLE 4**  
**ALL RETIREES AND SPOUSES RECEIVING HEALTH CARE BENEFITS AS OF JUNE 30, 2020**  
**MALE AND FEMALE DEMOGRAPHIC BREAKDOWN**

Attained Age	Number of		Total Number
	Males	Female	
Under 40	2	11	13
40 - 44	5	34	39
45 - 49	72	147	219
50 - 54	413	1,023	1,436
55 - 59	1,118	2,539	3,657
60 - 64	1,979	4,516	6,495
65 - 69	3,176	7,453	10,629
70 - 74	3,768	7,591	11,359
75 - 79	2,514	4,415	6,929
80 - 84	1,373	2,482	3,855
85 - 89	747	1,405	2,152
90 - 94	234	735	969
95 - 99	49	208	257
100 & Over	4	24	28
<b>Total</b>	<b>15,454</b>	<b>32,583</b>	<b>48,037</b>



## Schedule F – Tables of Member Data

**TABLE 5**  
**SCHEDULE OF RETIRANTS, BENEFICIARIES AND SURVIVORS ADDED TO AND REMOVED FROM ROLLS\***

Health Insurance Trust									
Fiscal Year Ending June 30	Number of Members Added to Rolls	Number of Spouses** Added to Rolls	Total Number Added to Rolls	Number of Members Removed from Rolls	Number of Spouses** Removed from Rolls	Total Number Removed from Rolls	Number of Members on Rolls at the End of the Year	Number of Spouses** on Rolls at the End of the Year	Total Number on Rolls at the End of the Year
2012	1,996	702	2,698	1,029	616	1,645	36,000	7,008	43,008
2013	1,853	664	2,517	1,076	619	1,695	36,777	7,053	43,830
2014	1,663	638	2,301	1,165	660	1,825	37,275	7,031	44,306
2015	1,990	731	2,721	1,190	633	1,823	38,075	7,129	45,204
2016	2,045	726	2,771	1,305	674	1,979	38,815	7,181	45,996
2017	1,835	699	2,534	1,153	691	1,844	39,497	7,189	46,686
2018	1,903	828	2,731	1,170	422	1,592	40,230	7,595	47,825
2019	1,701	666	2,367	1,220	692	1,912	40,711	7,569	48,280
2020	1,500	487	1,987	1,057	1,173	2,230	41,154	6,883	48,037

\*Reflects members, spouses, and beneficiaries participating in a health care plan.

\*\*Includes spouses, beneficiaries, and surviving spouses.

**TABLE 6**  
**SCHEDULE OF RETIRANTS, BENEFICIARIES AND SURVIVORS ADDED TO AND REMOVED FROM ROLLS\***

Life Insurance Trust								
Fiscal Year Ending June 30	Number Added to Rolls	Life Insurance Benefit (\$1,000's)	Number Removed from Rolls	Life Insurance Benefit (\$1,000's)	Number on Rolls at the End of the Year	Life Insurance Benefit (\$1,000's)	Increase in Life Insurance Benefit	Average Life Insurance Benefit
2012	2,364	11,820	880	4,400	42,602	213,010	3.61 %	5,000
2013	2,195	10,975	952	4,760	43,845	219,225	2.92	5,000
2014	1,964	9,820	954	4,770	44,855	224,275	2.30	5,000
2015	2,270	11,350	1,641	8,205	45,484	227,420	1.40	5,000
2016	2,394	11,970	807	4,035	47,071	235,355	3.49	5,000
2017	2,175	10,875	1,021	5,105	48,225	241,125	2.45	5,000
2018	2,605	13,025	1,408	7,040	49,422	247,110	2.48	5,000
2019	2,226	11,130	210	1,050	51,438	257,190	4.08	5,000
2020	2,003	10,015	1,179	5,895	52,262	261,310	1.60	5,000

\*The life insurance benefit is payable upon the death of only members retired for service or disability. Numbers do not include life insurance benefits payable upon the death of an active contributing member.



## **Schedule G – Health Insurance Trust Sensitivity Analysis**

The June 30, 2020 valuation results of the Health Insurance Trust (health trust) are projections based on the actuarial assumptions. Actual experience will differ from these assumptions, either increasing or decreasing cost. The charts on the following pages provide a simple analysis on how the costs are sensitive to changes to the assumed discount rate, the assumed inflation rate, the assumed rate of payroll growth, and the assumed rates of health care inflation (trend). The charts show the actuarial accrued liability, the unfunded liability, the funded ratio and the employer contribution rate under the following scenarios:

- The discount rate assumption sensitivity analysis shows the valuation results with the baseline discount rate assumption, 8.00%, together with a decrease in the discount rate to 7.00% and an increase in the discount rate to 9.00%. Under this scenario, the underlying inflation rate assumption is held constant at 3.00% and the payroll growth assumption is held constant at 3.50%.
- The inflation assumption sensitivity analysis shows the valuation results with the baseline underlying inflation rate assumption, 3.00%, together with decreases in the inflation rate to 2.75% and 2.50%. Under this scenario, the decrease in the underlying inflation rate assumption leads to corresponding decreases in the discount rate, the payroll growth assumption, and the assumed rates of salary increase for active members. The assumed decreases in inflation are not assumed to impact the assumed rates of health care inflation (trend).
- The wage inflation assumption sensitivity analysis shows the valuation results with the baseline underlying payroll growth assumption, 3.50%, together with decreases in the wage inflation assumption to 2.00% and 0.00%. Under this scenario, all other assumptions, including the individual member salary scale, are held constant so that the only impact is in the amortization of the unfunded liability, leading to higher employer contribution rates.
- The health care inflation (trend) assumption sensitivity analysis shows the valuation results with the baseline trend assumption along with a 1.00% increase in all assumed trend rates and a 1.00% decrease in all assumed trend rates.



**Schedule G – Health Insurance Trust Sensitivity Analysis**

<b>TEACHERS' RETIREMENT SYSTEM OF KENTUCKY            HEALTH INSURANCE TRUST            ASSUMED DISCOUNT RATE SENSITIVITY ANALYSIS            (\$1,000's)</b>			
	Decrease Discount Rate	Valuation Results	Increase Discount Rate
Actuarial Accrued Liability	\$ 3,119,944	\$ 2,757,653	\$ 2,456,805
Actuarial Value of Assets	<u>1,700,968</u>	<u>1,700,968</u>	<u>1,700,968</u>
Unfunded Liability	\$ 1,418,976	\$ 1,056,685	\$ 755,837
Funded Ratio	54.52%	61.68%	69.23%
Contributions			
Normal Cost	1.93%	1.48%	1.13%
Accrued Liability	<u>2.57%</u>	<u>2.06%</u>	<u>1.59%</u>
Total	4.50%	3.54%	2.72%
Member	<u>(3.70%)</u>	<u>(3.70%)</u>	<u>(3.70%)</u>
Employer/State	0.80%	(0.16%)	(0.98%)
Discount Rate	7.00%	8.00%	9.00%
Payroll Growth	3.50%	3.50%	3.50%
Inflation Rate	3.00%	3.00%	3.00%





**Schedule G – Health Insurance Trust Sensitivity Analysis**

TEACHERS' RETIREMENT SYSTEM OF KENTUCKY HEALTH INSURANCE TRUST INFLATION ASSUMPTION SENSITIVITY ANALYSIS (\$1,000's)			
	Valuation Results	Decrease Inflation Rate 0.25%	Decrease Inflation Rate 0.50%
Actuarial Accrued Liability	\$ 2,757,653	\$ 2,853,851	\$ 2,955,697
Actuarial Value of Assets	1,700,968	1,700,968	1,700,968
Unfunded Liability	\$ 1,056,685	\$ 1,152,883	\$ 1,254,729
Funded Ratio	61.68%	59.60%	57.55%
Contributions			
Normal Cost	1.48%	1.56%	1.66%
Accrued Liability	2.06%	2.25%	2.45%
Total	3.54%	3.81%	4.11%
Member	(3.70%)	(3.70%)	(3.70%)
Employer/State	(0.16%)	0.11%	0.41%
Discount Rate	8.00%	7.75%	7.50%
Payroll Growth	3.50%	3.25%	3.00%
Inflation Rate	3.00%	2.75%	2.50%



**Schedule G – Health Insurance Trust Sensitivity Analysis**

<b>TEACHERS' RETIREMENT SYSTEM OF KENTUCKY            HEALTH INSURANCE TRUST            WAGE INFLATION ASSUMPTION SENSITIVITY ANALYSIS            (\$1,000's)</b>			
	Valuation Results	Decrease Wage Inflation to 2%	No Wage Inflation
Actuarial Accrued Liability	\$ 2,757,653	\$ 2,757,653	\$ 2,757,653
Actuarial Value of Assets	1,700,968	1,700,968	1,700,968
Unfunded Liability	\$ 1,056,685	\$ 1,056,685	\$ 1,056,685
Funded Ratio	61.68%	61.68%	61.68%
Contributions			
Normal Cost	1.48%	1.48%	1.48%
Accrued Liability	2.06%	2.31%	2.68%
Total	3.54%	3.79%	4.16%
Member	(3.70%)	(3.70%)	(3.70%)
Employer/State	(0.16%)	0.09%	0.46%
Discount Rate	8.00%	8.00%	8.00%
Payroll Growth	3.50%	2.00%	0.00%
Inflation Rate	3.00%	3.00%	3.00%



**Schedule G – Health Insurance Trust Sensitivity Analysis**

TEACHERS' RETIREMENT SYSTEM OF KENTUCKY HEALTH INSURANCE TRUST HEALTH CARE TREND ASSUMPTION SENSITIVITY ANALYSIS (\$1,000's)			
	Decrease Trend Rates 1.00%	Valuation Results	Increase Trend Rates 1.00%
Actuarial Accrued Liability	\$ 2,424,293	\$ 2,757,653	\$ 3,168,458
Actuarial Value of Assets	1,700,968	1,700,968	1,700,968
Unfunded Liability	\$ 723,325	\$ 1,056,685	\$ 1,467,490
Funded Ratio	70.16%	61.68%	53.68%
Contributions			
Normal Cost	1.18%	1.48%	1.87%
Accrued Liability	1.41%	2.06%	2.87%
Total	2.59%	3.54%	4.74%
Member	(3.70%)	(3.70%)	(3.70%)
Employer/State	(1.11%)	(0.16%)	1.04%
Discount Rate	8.00%	8.00%	8.00%
Payroll Growth	3.50%	3.50%	3.50%
Inflation Rate	3.00%	3.00%	3.00%



## **Schedule H – Life Insurance Trust Sensitivity Analysis**

The June 30, 2020 valuation results of the Life Insurance Trust (life trust) are projections based on the actuarial assumptions. Actual experience will differ from these assumptions, either increasing or decreasing cost. The charts on the following pages provide a simple analysis on how the costs are sensitive to changes to the assumed discount rate, the assumed inflation rate, and the assumed rate of payroll growth. The charts show the actuarial accrued liability, the unfunded liability, the funded ratio and the employer contribution rate under the following scenarios:

- The discount rate assumption sensitivity analysis shows the valuation results with the baseline discount rate assumption, and 7.50% together with a decrease in the discount rate to 6.50% and an increase in the discount rate to 8.50%. Under this scenario, the underlying inflation rate assumption is held constant at 3.00% and the payroll growth assumption is held constant at 3.50%.
- The inflation assumption sensitivity analysis shows the valuation results with the baseline underlying inflation rate assumption, 3.00%, together with decreases in the inflation rate to 2.75% and 2.50%. Under this scenario, the decrease in the underlying inflation rate assumption leads to corresponding decreases in the discount rate, the payroll growth assumption, and the assumed rates of salary increase for active members.
- The wage inflation assumption sensitivity analysis shows the valuation results with the baseline underlying wage inflation assumption, 3.50%, together with decreases in the wage inflation assumption to 2.00% and 0.00%. Under this scenario, all other assumptions, including the individual member salary scale, are held constant so that the only impact is in the amortization of the unfunded liability, leading to higher employer contribution rates.



**Schedule H – Life Insurance Trust Sensitivity Analysis**

<b>TEACHERS' RETIREMENT SYSTEM OF KENTUCKY            LIFE INSURANCE TRUST            ASSUMED DISCOUNT RATE SENSITIVITY ANALYSIS            (\$1,000's)</b>			
	Decrease Discount Rate	Valuation Results	Increase Discount Rate
Actuarial Accrued Liability	\$ 137,911	\$ 122,194	\$ 109,259
Actuarial Value of Assets	<u>92,229</u>	<u>92,229</u>	<u>92,229</u>
Unfunded Liability	\$ 45,682	\$ 29,965	\$ 17,030
Funded Ratio	66.88%	75.48%	84.41%
Contributions			
Normal Cost	0.04%	0.03%	0.03%
Accrued Liability	<u>0.07%</u>	<u>0.05%</u>	<u>0.03%</u>
Total	0.11%	0.08%	0.06%
Member	<u>(0.00%)</u>	<u>(0.00%)</u>	<u>(0.00%)</u>
Employer/State	0.11%	0.08%	0.06%
Discount Rate	6.50%	7.50%	8.50%
Payroll Growth	3.50%	3.50%	3.50%
Inflation Rate	3.00%	3.00%	3.00%



**Schedule H – Life Insurance Trust Sensitivity Analysis**

TEACHERS' RETIREMENT SYSTEM OF KENTUCKY LIFE INSURANCE TRUST INFLATION ASSUMPTION SENSITIVITY ANALYSIS (\$1,000's)			
	Valuation Results	Decrease Inflation Rate 0.25%	Decrease Inflation Rate 0.50%
Actuarial Accrued Liability	\$ 122,194	\$ 126,014	\$ 130,044
Actuarial Value of Assets	92,229	92,229	92,229
Unfunded Liability	\$ 29,965	\$ 33,785	\$ 37,815
Funded Ratio	75.48%	73.19%	70.92%
Contributions			
Normal Cost	0.03%	0.03%	0.04%
Accrued Liability	0.05%	0.06%	0.06%
Total	0.08%	0.09%	0.10%
Member	(0.00%)	(0.00%)	(0.00%)
Employer/State	0.08%	0.09%	0.10%
Discount Rate	7.50%	7.25%	7.00%
Payroll Growth	3.50%	3.25%	3.00%
Inflation Rate	3.00%	2.75%	2.50%



**Schedule H – Life Insurance Trust Sensitivity Analysis**

<b>TEACHERS' RETIREMENT SYSTEM OF KENTUCKY            LIFE INSURANCE TRUST            WAGE INFLATION ASSUMPTION SENSITIVITY ANALYSIS            (\$1,000's)</b>				
	Valuation	Decrease Wage	No Wage	
	Results	Inflation to 2%	Inflation	
Actuarial Accrued Liability	\$ 122,194	\$ 122,194	\$ 122,194	
Actuarial Value of Assets	92,229	92,229	92,229	
Unfunded Liability	\$ 29,965	\$ 29,965	\$ 29,965	
Funded Ratio	75.48%	75.48%	75.48%	
Contributions				
Normal Cost	0.03%	0.03%	0.03%	
Accrued Liability	0.05%	0.06%	0.07%	
Total	0.08%	0.09%	0.10%	
Member	(0.00%)	(0.00%)	(0.00%)	
Employer/State	0.08%	0.09%	0.10%	
Discount Rate	7.50%	7.50%	7.50%	
Payroll Growth	3.50%	2.00%	0.00%	
Inflation Rate	3.00%	3.00%	3.00%	



## **Schedule I – Health Insurance Trust 20-Year Baseline Projection**

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 (twenty 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: 0.00%
- Valuation Discount Rate: 8.00%
- Investment Rate of Return: 8.00% each year
- Actuarial Value of Assets: 5 year smoothing, No Corridor
- Amortization Method: Level Percent of Payroll, Closed
- Amortization Period: 20-year period as of Valuation Date
- Future Contributions: Based on the contribution rates defined in statute

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





**Schedule I – Health Insurance Trust 20-Year Baseline Projection**

Projections assume all actuarial assumptions are met and do not include any adjustment for adverse experience due to COVID-19 (either impacting claims or demographics), changes in the ACA, larger than expected increases to Medicare Advantage premiums, or lower than expected investment return or payroll growth.

(Dollar amounts in \$1,000s)

Fiscal Year End	Non-University Payroll (1)	University Payroll (2)	Total Payroll (3)	Unfunded Accrued Liability (4)	Funding Ratio (5)	Actuarially Determined Contribution in Dollars (6)
2021	\$3,530,991	\$192,491	\$3,723,482	\$1,056,685	61.7%	\$131,774
2022	3,623,284	189,258	3,812,542	882,252	69.6%	124,624
2023	3,716,763	188,454	3,905,217	689,384	77.4%	115,392
2024	3,810,973	188,452	3,999,425	466,599	85.5%	102,908
2025	3,907,520	189,788	4,097,308	208,799	93.8%	86,308
2026	4,003,397	191,807	4,195,204	0	100.0%	72,271
2027	4,098,744	194,531	4,293,275	0	100.0%	75,791
2028	4,194,908	198,021	4,392,929	0	100.0%	79,400
2029	4,295,997	201,887	4,497,884	0	100.0%	83,189
2030	4,400,886	205,828	4,606,714	0	100.0%	87,224
2031	4,509,648	210,000	4,719,648	0	100.0%	91,509
2032	4,623,125	214,241	4,837,366	0	100.0%	96,000
2033	4,741,595	218,364	4,959,959	0	100.0%	100,739
2034	4,863,604	223,292	5,086,896	0	100.0%	105,730
2035	4,993,467	227,687	5,221,154	0	100.0%	111,031
2036	5,129,751	232,104	5,361,855	0	100.0%	116,639
2037	5,273,440	237,377	5,510,817	0	100.0%	122,556
2038	5,425,178	242,986	5,668,164	0	100.0%	128,831
2039	5,585,919	249,262	5,835,181	0	100.0%	135,444
2040	5,755,718	255,985	6,011,703	0	100.0%	142,455



## **Schedule J – Life Insurance Trust 20-Year Baseline Projection**

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 (twenty 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: 0.00%
- Valuation Discount Rate: 7.50%
- Investment Rate of Return: 7.50% each year
- Actuarial Value of Assets: 5 year smoothing, No Corridor
- Amortization Method: Level Percent of Payroll, Closed
- Amortization Period: 24-year period as of Valuation Date
- 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 J – Life Insurance Trust 20-Year Baseline Projection

(Dollar amounts in \$1,000s)

Fiscal Year End	Non-University Payroll (1)	University Payroll (2)	Total Payroll (3)	Unfunded Accrued Liability (4)	Funding Ratio (5)	Actuarially Determined Contribution in Dollars (6)
2023	\$3,530,991	\$192,491	\$3,723,482	\$29,965	75.5%	\$3,065
2024	3,623,284	189,258	3,812,542	33,396	73.3%	3,343
2025	3,716,763	188,454	3,905,217	35,455	72.3%	3,552
2026	3,810,973	188,452	3,999,425	36,293	72.2%	3,691
2027	3,907,520	189,788	4,097,308	36,802	72.4%	3,818
2028	4,003,397	191,807	4,195,204	36,987	72.8%	3,933
2029	4,098,744	194,531	4,293,275	37,080	73.2%	4,053
2030	4,194,908	198,021	4,392,929	37,070	73.7%	4,179
2031	4,295,997	201,887	4,497,884	36,944	74.2%	4,308
2032	4,400,886	205,828	4,606,714	36,687	74.7%	4,443
2033	4,509,648	210,000	4,719,648	36,284	75.3%	4,583
2034	4,623,125	214,241	4,837,366	35,718	76.0%	4,729
2035	4,741,595	218,364	4,959,959	34,970	76.7%	4,883
2036	4,863,604	223,292	5,086,896	34,019	77.6%	5,043
2037	4,993,467	227,687	5,221,154	32,842	78.5%	5,212
2038	5,129,751	232,104	5,361,855	31,413	79.6%	5,389
2039	5,273,440	237,377	5,510,817	29,703	80.8%	5,576
2040	5,425,178	242,986	5,668,164	27,680	82.2%	5,776
2041	5,585,919	249,262	5,835,181	25,307	83.8%	5,989
2042	5,755,718	255,985	6,011,703	22,542	85.6%	6,221