

Kentucky Teachers' Retirement System

2015



Actuarial Section

Report of the Actuary
Annual Valuation
of the Retiree Medical Plan
and the Life Insurance Plan



Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

December 7, 2015

Board of Trustees
Teachers' Retirement System of the State of Kentucky
479 Versailles Road
Frankfort, KY 40601-3800

Members of the Board:

Governmental Accounting Standards Board Statements No. 43 and 45 require the Teachers' Retirement System of the State of Kentucky (the System) to conduct actuarial valuations of the System's retiree medical and other post-employment benefit plans. This report covers the Retiree Medical Plan funded by the Medical Insurance Fund (MIF) and OPEB liabilities related to the Life Insurance Plan funded by the Life Insurance Fund (LIF). Cavanaugh Macdonald Consulting, LLC (CMC) has submitted the results of the annual actuarial valuation prepared as of June 30, 2015. While not verifying the data at source, the actuary performed tests for consistency and reasonability.

The valuation indicates a total annual required contribution of 6.44% of active member payroll for the MIF payable for the fiscal year ending June 30, 2015 is required to support the benefits of the Kentucky Employees' Health Plan (KEHP) and the Medicare Eligible Health Plan (MEHP). Of this amount, 2.775% of payroll is estimated to be paid by University members and 3.750% of payroll is estimated to be paid by all other members, leaving 3.665% and 2.690% respectively, as the remaining annual required contribution. This annual required contribution reflects the actuarial value of assets of the MIF and an 8.00% discount rate for valuing liabilities.

The initial per capita costs of health care and the rates of health care inflation used to project the per capita health care costs have been revised since the previous valuation to reflect recent experience. Additionally, a liability reflecting explicit KEHP dependent subsidies has been included in the liability of the MIF. Finally, some adjustments to the methods and assumptions have been made to accommodate changes made to the valuation data provided by the System.

The Life Insurance Plan valuation indicates a total annual required contribution of 0.030% of active member payroll payable for the fiscal year ending June 30, 2018 is required to support the benefits of the LIF. This annual required contribution reflects the actuarial value of assets of the LIF and a 7.50% discount rate for valuing liabilities.

The promised benefits of the Retiree Medical and Life Insurance Plans are included in the actuarially calculated contribution rates which are developed using the entry age normal actuarial cost method. Five-year market related value of plan assets is used for actuarial valuation purposes. Gains and losses are reflected in the unfunded accrued liability that is being amortized by regular annual contributions as a level percentage of payroll within a 30-year period, on the assumption that payroll will increase by 4.00% annually. The assumptions recommended by the actuary and adopted by the Board are in aggregate reasonably related to the experience under the Retiree Medical and Life Insurance Plans and to reasonable expectations of anticipated experience under the Retiree Medical and Life Insurance Plans and meet the parameters for the disclosures under GASB 43 and 45.

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CMC has prepared the trend information shown in the Schedule of Funding Progress in the Financial Section of the Annual Report and Section VII shown in the Actuarial Section of the Annual Report.

This is to certify that the independent consulting actuaries are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the Retiree Medical and Life Insurance Plans and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the plans.

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.

In our opinion, if the State contributions to the Medical Insurance Fund continue to increase to the planned levels, the Retiree Medical Plan will begin to operate in an actuarially sound basis. Assuming that required contributions to the Medical Insurance Fund are made by the employer from year to year in the future at the levels required on the basis of the successive actuarial valuations, the actuarial soundness of the Medical Insurance Fund to provide the benefits called for under the Retiree Medical Plan will improve.

Respectfully submitted,

Handwritten signature of Eric Gary in blue ink.

Eric Gary, FSA, FCA, MAAA
Chief Health Actuary

Handwritten signature of Alisa Bennett in blue ink.

Alisa Bennett, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

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**Report of Actuary on the Annual Valuation of the Retiree Medical and Life Insurance Plans
Prepared as of June 30, 2015
Section I - Summary of Principal Results**

1. For convenience of reference, the principal results of the valuation and a comparison with the results of the previous valuation are summarized below (dollar amounts are in thousands):

Medical Insurance Fund

Valuation Date	June 30, 2015	June 30, 2014
Number of active members	72,246	73,407
Annual salaries	\$ 3,515,113	\$ 3,486,327
Number of deferred vested members	5,430	5,188
Number of annuitants in medical plans	38,075	37,275
Number of spouses and beneficiaries in medical plans*	7,129	7,031
Total	45,204	44,306
Assets:		
Market value	\$ 626,962	\$ 535,995
Actuarial value	\$ 637,839	\$ 508,913
Unfunded actuarial accrued liability	\$ 2,887,745	\$ 2,685,776
Amortization period (years)	30	30
Discount rate	8.00%	8.00%

* Spouses of post-65 retirees, as well as surviving spouses of deceased retirees on or after July 1, 2002, pay 100% of the full contribution. 100% of the full contribution for non-Medicare eligible dependents is paid through a combination of payments from beneficiaries and the State.

Medical Insurance Fund Contribution Rates for University Members

Valuation Date Contribution For Fiscal Year Ending	June 30, 2015 June 30, 2016		June 30, 2014 June 30, 2015	
	Members hired before 7/1/2008	Members hired on or after 7/1/2008	Members hired before 7/1/2008	Members hired on or after 7/1/2008
Normal	1.95 %	1.95 %	1.79 %	1.79 %
Accrued liability	4.49	4.49	4.21	4.21
Total	6.44 %	6.44 %	6.00 %	6.00 %
Member	2.775 %	2.775 %	2.270 %	2.275 %
Employer (ARC)	2.775	1.775	2.270	1.270
State (ARC)	0.890	1.890	1.460	2.460
Total	6.440 %	6.440 %	6.000 %	6.000 %

Medical Insurance Fund Contribution Rates for School District Employees (Non-Federal)

Valuation Date Contribution For Fiscal Year Ending	June 30, 2015 June 30, 2016		June 30, 2014 June 30, 2015	
	Members hired before 7/1/2008	Members hired on or after 7/1/2008	Members hired before 7/1/2008	Members hired on or after 7/1/2008
Normal	1.95 %	1.95 %	1.79 %	1.79 %
Accrued liability	4.49	4.49	4.21	4.21
Total	6.44 %	6.44 %	6.00 %	6.00 %
Member	3.750 %	3.750 %	3.00 %	3.00 %
Employer (ARC)	3.000	3.000	2.25	2.25
State (ARC)	(0.310)	(0.310)	0.75	0.75
Total	6.440 %	6.440 %	6.00 %	6.00 %



Medical Insurance Fund Contribution Rates for Other Employees

Valuation Date Contribution For Fiscal Year Ending	June 30, 2015		June 30, 2014	
	Members hired before 7/1/2008	Members hired on or after 7/1/2008	Members hired before 7/1/2008	Members hired on or after 7/1/2008
Normal	1.95 %	1.95 %	1.79 %	1.79 %
Accrued liability	4.49	4.49	4.21	4.21
Total	6.44 %	6.44 %	6.00 %	6.00 %
Member	3.750 %	3.750 %	3.00 %	3.00 %
Employer (ARC)	3.750	2.750	3.00	2.00
State (ARC)	(1.060)	(0.060)	0.00	1.00
Total	6.440 %	6.440 %	6.00 %	6.00 %

Life Insurance Fund
(dollar amounts in thousands)

Valuation Date	June 30, 2015	June 30, 2014
Number of active members	72,246	73,407
Annual salaries	\$ 3,515,113	\$ 3,486,327
Number of vested former members	4,295	4,113
Number of retirees in Life Insurance Plan	45,484	44,855
Assets:		
Market value	\$ 89,747	\$ 90,823
Actuarial value	\$ 97,186	\$ 96,130
Unfunded actuarial accrued liability*	\$ 1,553	\$ 1,224
Amortization period (years)	30	30
Discount rate	7.50%	7.50%
Contribution for fiscal year ending	June 30, 2018	June 30, 2017
Normal	0.03 %	0.03 %
Accrued liability	0.00	0.00
Total	0.03 %	0.03 %

* Includes liability for death in active service. This amount could be segregated from the OPEB liability and assets could be split for active and post-employment purposes. However, since this could be administratively burdensome and since death in active service liabilities can be considered de minimis, it is acceptable to consider the entire liability an OPEB liability under GASB 43 and 45.

- The valuation indicates combined member, employer, and State contributions of 6.44% of active member payroll would be sufficient to support the current benefits of the Retiree Medical Plan and State contributions of 0.03% of active member payroll would be sufficient to support the current benefits of the Life Insurance Plan. Comments on the valuation results as of June 30, 2015 are given in Section IV and further discussion of the contribution levels is set out in Sections VI and VII.
- Since the previous valuation, the initial per capita costs of health care and the rates of health care inflation used to project the per capita health care costs have been revised to reflect recent experience. Additionally adjustments to the methods and assumptions used to value spouses currently covered by KEHP and the costs



Report of Actuary on the Annual Valuation of the Retiree Medical and Life Insurance Plans continued ...

associated with future benefit recipients assumed to be ineligible for premium-free Medicare Part A have been made to accommodate changes made to the valuation data provided by the System

- 4. There were no changes in benefit provisions since the last valuation. However, the current treatment of KEHP dependent subsidies in the valuation process was reviewed and, as the subsidy has been in effect since 2006 and has been consistently renewed (part of the current substantive plan as understood by the employers and plan members), the liability associated with this benefit has been included in the June 30, 2015 valuation of the Retiree Medical Plan.

Section II - MEMBERSHIP DATA

- 1. Data regarding the membership of the Retiree Medical and Life Insurance Plans for use as a basis of the valuation were furnished by the System's office. The following tables summarize the membership of the System as of June 30, 2015, upon which the valuation was based. Detailed tabulations of the data are given in Schedule F.

Active Members as of June 30, 2015

Group	Number	Annual Salaries (\$1,000's)
University Full Time hired before 7/1/2008	2,055	\$ 147,256
University Full Time hired after 7/1/2008	1,360	67,694
Non-University Full Time hired before 7/1/2008	40,402	2,517,108
Non-University Full Time hired after 7/1/2008	16,764	708,842
Non-University Part Time hired before 7/1/2008	3,317	28,801
Non-University Part Time hired after 7/1/2008	8,348	45,412
TOTAL	72,246	\$ 3,515,113

The table reflects the active membership for whom complete valuation data was submitted. The results of the valuation were adjusted to take account of inactive members and members for whom incomplete data was submitted.

- 2. The following tables show the number of retired members and their beneficiaries receiving health care as of the valuation date as well as average ages.

Retirees Receiving Health Benefits as of June 30, 2015

	Under Age 65	Age 65 and Over	TOTAL
Number	12,549	25,526	38,075
Average Age	60.4	73.9	69.5

Spouses Receiving Health Benefits as of June 30, 2015

Number	2,624	4,505	7,129
Average Age	58.3	74.7	68.7

- 3. The Retiree Medical Plan valuation also includes 5,430 deferred vested members eligible for health care at age 60.



Section III - ASSETS

1. As of June 30, 2015 the market value of MIF assets held by the Retiree Medical Plan amounted to \$626,962,370 and the market value of LIF assets held by the Life Insurance Plan amounted to \$89,746,507.
2. The five-year market related value of MIF assets used for valuation purposes as of June 30, 2015 was \$637,838,912 and the five-year market related value of LIF assets used for valuation purposes as of June 30, 2015 was \$97,185,537. Schedule B shows the development of the actuarial value of assets as of June 30, 2015.
3. Schedule C shows the receipts and disbursements for the year preceding the valuation date and a reconciliation of the asset balances for the MIF and the LIF.

Section IV - COMMENTS ON VALUATION

1. Schedule A of this report outlines the results of the actuarial valuation. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D.
2. The valuation shows the Retiree Medical Plan has an actuarial accrued liability of \$1,543,426,532 for benefits expected to be paid on account of the present active membership, based on service to the valuation date. The liability on account of deferred vested members amounts to \$25,463,779. The liability on account of benefits payable to retirees and covered spouses amounts to \$1,956,693,974. The total actuarial accrued liability of the Retiree Medical Plan amounts to \$3,525,584,285. Against these liabilities, the Retiree Medical Plan has present assets for valuation purposes of \$637,838,912. When this amount is deducted from the actuarial accrued liability of \$3,525,584,285, there remains \$2,887,745,373 as the unfunded actuarial accrued liability for the Retiree Medical Plan.
3. The normal contribution is equal to the actuarial present value of benefits accruing during the current year. The normal contribution for the Retiree Medical Plan is determined to be \$68,408,971, or 1.95% of payroll.
4. The valuation shows that the Life Insurance Plan has an actuarial accrued liability of \$16,012,905 for benefits expected to be paid on account of the present active membership, based on service to the valuation date. The liability on account of deferred vested members amounts to \$2,041,222. The liability on account of benefits payable to retirees amounts to \$80,684,522. The total actuarial accrued liability of the Life Insurance Plan amounts to \$98,738,649. This amount includes liability for death in active service. The liability for death in active service could be segregated from the OPEB liability and assets could be split for active and post-employment purposes. As this could be administratively burdensome and, as death in active service liabilities can be considered de minimis, it is acceptable to consider the entire liability an OPEB liability under GASB 43 and 45. Against these liabilities, the Life Insurance Plan has present assets for valuation purposes of \$97,185,537. When this amount is deducted from the actuarial accrued liability of \$98,738,649, there remains \$1,553,112 as the unfunded actuarial accrued liability for the life insurance plan.
5. The normal contribution is equal to the actuarial present value of benefits accruing during the current year. The normal contribution for the life insurance plan is determined to be \$1,037,969, or 0.03% of payroll.



Section V - DERIVATION OF EXPERIENCE GAINS AND LOSSES

1. Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain (loss) for the year ended June 30, 2015 is shown below (\$1,000's).

EXPERIENCE GAIN/(LOSS) OF THE:		MEDICAL INSURANCE FUND	LIFE INSURANCE FUND
(1)	UAAL* as of 6/30/2014	\$ 2,685,776	\$ 1,224
(2)	Normal cost from last valuation	62,262	1,079
(3)	Expected employer contributions	209,047	1,024
(4)	Interest accrual: [(1) + (2) - (3)] x interest**	203,119	96
(5)	Expected UAAL before changes: (1) + (2) - (3) + (4)	2,742,110	1,375
(6)	Change due to plan amendments	143,896	0
(7)	Change due to new actuarial assumptions	0	0
(8)	Change due to claims experience	(59,191)	0
(9)	Expected UAAL after changes: (5) + (6) + (7) + (8)	\$ 2,826,815	\$ 1,375
(10)	Actual UAAL as of 6/30/2015	\$ 2,887,745	\$ 1,553
(11)	Total gain/(loss): (9) - (10)	(60,930)	(178)
	(a) Contribution excess and investment loss	62,266	(3,005)
	(b) Experience gain/(loss) (11) - (11a)	\$ (123,196)	\$ 2,827
(12)	Accrued liabilities as of 6/30/2014	\$ 3,194,689	\$ 97,354
(13)	Experience gain/(loss) as percent of actuarial accrued liabilities at start of year (11b) / (12)	(3.9%)	2.9%

* *Unfunded Actuarial Accrued Liability*
 ** *Interest is 8.0% for the Medical Insurance Fund and 7.5% for the Life Insurance Fund*

Section VI - CONTRIBUTIONS PAYABLE UNDER THE PLANS

1. Sections 161.420 and 161.550 of the Kentucky Revised Statutes provide the amounts employers and the State are required to contribute to the Medical Insurance Fund. These contribution amounts vary by fiscal year, date of membership, and employee type.



Employer Percentage of Payroll Contributions Made to Medical Insurance Fund

Fiscal Year Ending	UNIVERSITY EMPLOYEES		SCHOOL DISTRICT EMPLOYEES (Non-Federal)*		OTHER EMPLOYEES	
	Members hired before 7/1/2008	Members hired on or after 7/1/2008	Members hired before 7/1/2008	Members hired on or after 7/1/2008	Members hired before 7/1/2008	Members hired on or after 7/1/2008
2016 and Later	2.775 %	1.775 %	3.000 %	3.000 %	3.750 %	2.750 %

* In addition to the amounts contributed by School Districts on behalf of Non-Federal employees, the State contributes 0.75%.

For the fiscal year ending June 30, 2016, member contributions will be 2.775% for University employees and 3.750% for all other members. Based upon the amortization of the unfunded accrued liability over a 30-year period as a level percentage of payroll, the valuation indicates employer and State contributions of 3.665% of payroll for University employees and 2.690% of payroll for all other members. The State is scheduled to contribute 0.03% of salary to the Life Insurance Fund for the fiscal year ending June 30, 2017. CMC's valuation indicates a contribution of 0.030% for the fiscal year ending June 30, 2018 is required to sufficiently support the benefits of the Life Insurance Plan.

Required Contribution Rates For Fiscal Year Ending June 30, 2016 Medical Insurance Fund

Normal			1.95 %			
Accrued liability			4.49			
Total			6.44 %			

	UNIVERSITY EMPLOYEES		SCHOOL DISTRICT EMPLOYEES (Non-Federal)		OTHER EMPLOYEES	
	Members hired prior 7/1/2008	Members hired on or after 7/1/2008	Members hired prior 7/1/2008	Members hired on or after 7/1/2008	Members hired prior 7/1/2008	Members hired on or after 7/1/2008
Member	2.775 %	2.775 %	3.750 %	3.750 %	3.750 %	3.750 %
Employer (ARC)	2.775	1.775	3.000	3.000	3.750	2.750
State (ARC)	0.890	1.890	(0.310)	(0.310)	(1.060)	(0.060)
Total	6.440 %	6.440 %	6.440 %	6.440 %	6.440 %	6.440 %

Required Contribution Rates Life Insurance Fund For Fiscal Year Ending June 30, 2018

Normal	0.03 %
Accrued liability	0.00
Total	0.03 %

Member	0.00 %
State (ARC)	0.30
Total	0.30 %

- The valuation indicates that a total normal contribution of 1.95% of payroll is required to meet the cost of benefits currently accruing under the Retiree Medical Plan and 0.03% of payroll is required to meet the cost of benefits currently accruing under the Life Insurance Plan. The difference between the total contribution and the normal contribution remains to be applied toward the liquidation of the unfunded actuarial accrued liability. This accrued liability payment is 4.49% of payroll for the Retiree Medical Plan and 0.00% of payroll for the Life Insurance Plan.



- 3. The unfunded actuarial accrued liability amounts to \$2,887,745,373 for the Retiree Medical Plan and \$1,553,112 for the Life Insurance Plan as of the valuation date. An accrued liability contribution of 4.49% of payroll for the Retiree Medical Plan and 0.00% of payroll for the Life Insurance Plan is sufficient to amortize the unfunded actuarial accrued liabilities over a 30-year period, based on the assumption that the payroll will increase by 4.00% 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 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 the Retiree Medical Plan in an actuarially sound manner and to ensure the future solvency of the Medical Insurance Fund. For University employees a member contribution of 2.775% of payroll together with employer and State contributions of 3.665% 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 30 years. For the remaining membership, a member contribution of 3.750% of payroll together with employer and State contributions of 2.690% 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 30 years.

Section VIII - ACCOUNTING INFORMATION

- 1. Governmental Accounting Standards Board Statements 43 and 45 set forth certain items of required supplementary information to be disclosed in the financial statements of the Retiree Medical and Life Insurance Plans and the employer.

Number of Active and Retired Members in Medical Plan as of June 30, 2015	
GROUP	NUMBER
Retirees currently receiving health benefits	38,075
Spouses of retirees currently receiving health benefits	7,129
Terminated employees entitled to benefits but not yet receiving benefits	5,430
Active plan members	72,246
Total	122,880

Number of Active and Retired Members in Life Insurance Plan as of June 30, 2015	
GROUP	NUMBER
Retirees	45,484
Terminated employees	4,295
Active plan members	72,246
Total	122,025



**Schedule of Funding Progress
Medical Insurance Fund
(Dollar amount in thousands)**

ACTUARIAL VALUATION DATE	ACTUARIAL VALUE OF ASSETS	ACTUARIAL ACCRUED LIABILITIES (AAL) ¹	UNFUNDED AAL (UAAL)	FUNDED RATIO	COVERED PAYROLL	UAAL AS A % OF COVERED PAYROLL
	A	B	(B-A)	(A/B)	C	[(B-A)/C]
6/30/2010 ²	\$ 241,224	\$ 3,206,806	\$ 2,965,582	7.5 %	\$ 3,321,614	89.3 %
6/30/2011 ³	294,819	3,423,149	3,128,330	8.6	3,451,756	90.6
6/30/2012	338,746	3,594,540	3,255,794	9.4	3,479,567	93.6
6/30/2013	412,185	3,521,073	3,108,888	11.7	3,480,066	89.3
6/30/2014	508,913	3,194,689	2,685,776	15.9	3,486,327	77.0
6/30/2015	637,839	3,525,584	2,887,745	18.1	3,515,113	82.2

¹ Actuarial cost method of Projected Unit Credit prior to 6/30/2011 and Entry Age Normal 6/30/2011 and after.

² Reflects change in discount rate to 8.0%, change in plan design and updating medical trend.

³ Reflects change in decrement assumptions and updating medical trend.

**Schedule of Funding Progress
Life Insurance Fund
(Dollar amount in thousands)**

ACTUARIAL VALUATION DATE	ACTUARIAL VALUE OF ASSETS	ACTUARIAL ACCRUED LIABILITIES (AAL) ¹	UNFUNDED AAL (UAAL)	FUNDED RATIO	COVERED PAYROLL	UAAL AS A % OF COVERED PAYROLL
	A	B	(B-A)	(A/B)	C	[(B-A)/C]
6/30/2010	\$ 87,905	\$ 92,091	\$ 4,186	95.5 %	\$ 3,321,614	0.13 %
6/30/2011	88,527	88,088	(439)	100.5	3,451,756	(0.01)
6/30/2012	92,241	91,398	(843)	100.9	3,479,567	(0.02)
6/30/2013	94,863	94,325	(538)	100.6	3,480,066	(0.02)
6/30/2014	96,130	97,354	1,224	98.7	3,486,327	0.04
6/30/2015	97,186	98,739	1,553	98.4	3,515,113	0.04

¹ Actuarial cost Method of Projected Unit Credit prior to 6/30/2011 and Entry Age Normal 6/30/2011 and after.

2. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2015. Additional information as of the latest actuarial valuation follows.

Valuation Date	Actuarial Cost Method	Amortization Method	Remaining Amortization Period	Asset Valuation Method	Actuarial Assumptions: Investment Rate of Return*	Actuarial Assumptions: Investment Rate of Return*
06/30/2015	Entry age	Level percent of pay, open	30 years	5-Year Smoothed Market	8.00%-Retiree Medical Plan	7.50%-Retiree Life Insurance Plan
Medical Trend Assumption				<u>Pre-Medicare**</u>	<u>Medicare</u>	
Fiscal Year Ending 6/30/2016				7.50 %	5.50 %	
Fiscal Year Ending 6/30/2017				6.75 %	5.25 %	
Ultimate Trend Rate				5.00 %	5.00 %	
Year of Ultimate Trend Rate				2020	2017	

* Includes price inflation at 3.50%.
**Alternate trend rates were used for Medicare Part B premiums and are disclosed in Schedule D.



**Schedule of Employer Contributions
Medical Insurance Fund**

FISCAL YEAR ENDING	ANNUAL REQUIRED CONTRIBUTION (ARC)	ACTUAL EMPLOYER CONTRIBUTION	RDS CONTRIBUTION	TOTAL CONTRIBUTION	PERCENTAGE OF ARC CONTRIBUTED
	(A)	(B)	(C)	(B) + (C)	[(B) + (C)]/(A)
6/30/2010	\$ 457,054,117	\$ 158,765,496	\$ 14,614,285	\$ 173,379,781	37.9 %
6/30/2011	477,723,070	188,453,929	280,585	188,734,514	39.5
6/30/2012	470,217,067	177,450,206	297,639	177,747,845	37.8
6/30/2013	186,725,823	166,611,420	0	166,611,420	89.2
6/30/2014	159,583,400	162,568,395	0	162,568,395	101.9
6/30/2015	106,606,132	168,084,353	0	168,084,353	157.7

**Schedule of Employer Contributions
Life Insurance Fund**

FISCAL YEAR ENDING	ANNUAL REQUIRED CONTRIBUTION (ARC)	ACTUAL EMPLOYER CONTRIBUTION	PERCENTAGE OF ARC CONTRIBUTED
	(A)	(B)	(B) / (A)
6/30/2010	\$ 1,992,969	\$ 1,966,826	98.7 %
6/30/2011	1,725,878	1,668,822	96.7
6/30/2012	1,732,831	1,684,711	97.2
6/30/2013	1,739,908	1,680,495	96.6
6/30/2014	1,044,959	1,006,091	96.3
6/30/2015	1,050,216	1,019,519	97.1

3. Following is the calculation of the Annual OPEB Cost (AOC) and the Net OPEB Obligation (NOO) for the fiscal year ending June 30, 2015. As the Retiree Medical and Life Insurance Plans are cost-sharing multiple-employer plans, GASB Statement 45 does not require the participating employers to disclose this information.

**Annual OPEB Cost and Net OPEB Obligation
for the Medical Insurance Fund for Fiscal Year Ending June 30, 2015**

(a) Employer Annual Required Contribution	\$ 106,606,132
(b) Interest on Net OPEB Obligation	120,316,223
(c) Adjustment to Annual Required Contribution	82,194,890
(d) Annual OPEB Cost: (a) + (b) - (c)	144,727,465
(e) Employer Contributions for Fiscal Year 2015	168,084,353
(f) Increase in Net OPEB Obligation: (d) - (e)	(23,356,888)
(g) Net OPEB Obligation at beginning of Fiscal Year	1,503,952,786
(h) Net OPEB Obligation at end of Fiscal Year: (f) + (g)	<u>1,480,595,898</u>



Trend Information for the Medical Insurance Fund

Fiscal Year Ending	Annual OPEB Cost (AOC)	Percentage of AOC Contributed	Net OPEB Obligation (NOO)
6/30/2010	\$ 461,942,516	37.5 %	\$ 814,379,040
6/30/2011	485,294,173	38.9	1,110,938,699
6/30/2012	480,545,219	37.0	1,413,736,073
6/30/2013	222,560,394	74.9	1,469,685,047
6/30/2014	196,836,134	82.6	1,503,952,786
6/30/2015	144,727,465	116.1	1,480,595,898

Annual OPEB Cost and Net OPEB Obligation for the Life Insurance Fund for Fiscal Year Ending June 30, 2015

(a) Employer Annual Required Contribution	\$ 1,050,216
(b) Interest on Net OPEB Obligation	(616,132)
(c) Adjustment to Annual Required Contribution	(424,866)
(d) Annual OPEB Cost: (a) + (b) - (c)	858,950
(e) Employer contributions for Fiscal Year 2015	1,019,519
(f) Increase in Net OPEB Obligation: (d) - (e)	(160,569)
(g) Net OPEB Obligation at beginning of Fiscal Year	(8,215,089)
(h) Net OPEB Obligation at end of Fiscal Year: (f) + (g)	<u>\$ (8,375,658)</u>

Trend Information for the Life Insurance Fund

Fiscal Year Ending	Annual OPEB Cost (AOC)	Percentage of AOC Contributed	Net OPEB Obligation (NOO)
6/30/2010	\$ 1,817,516	108.2 %	\$ (7,685,177)
6/30/2011	1,546,950	107.9	(7,807,049)
6/30/2012	1,551,065	108.6	(7,940,695)
6/30/2013	1,555,031	108.1	(8,066,159)
6/30/2014	857,161	117.4	(8,215,089)
6/30/2015	858,950	118.7	(8,375,658)

4. On June 2, 2015, GASB Statement No. 74 and GASB Statement No. 75 (GASB 74 and 75) were unanimously adopted by the GASB Board. The disclosure requirements of GASB 74 and 75 will be similar to the disclosure requirements for pension benefits under GASB Statement No. 67 and GASB Statement No. 68. GASB 74 relates to accounting disclosures for plan sponsors and, as such, replaces GASB 43 beginning with fiscal years ending June 30, 2017. GASB 75 relates to accounting disclosures for contributing employers and, as such, replaces GASB 45 beginning with fiscal years ending June 30, 2018. GASB 74 and 75 will require applicable OPEB plan sponsors and contributing employers to disclose the net OPEB liability on the statement of financial position and book an accounting expense based upon the entry age normal actuarial cost method. Beyond the use of a specified actuarial cost method, GASB's new disclosure standards will also require the discount rate used to calculate liabilities to be based upon the yield of 20-year, tax-exempt municipal bonds and the expected rate of return on plan assets, to the extent plan assets are projected to be available for the payment of future benefits. Additionally, GASB 74 and 75 will bring about many other changes in the liability valuation and accounting disclosure processes currently in place which are expected to significantly impact data collection, timing, and effort. As details for the new GASB OPEB disclosure standards emerge, planning and coordination between plan sponsors, contributing employers, actuaries, and auditors is recommended.



SCHEDULE A

RESULTS OF THE VALUATION AS OF JUNE 30, 2015
(Dollar amounts in thousands)

	Medical Insurance Fund	Life Insurance Fund
PAYROLL	\$ 3,515,113	\$ 3,515,113
ACTUARIAL ACCRUED LIABILITY		
Present value of prospective benefits payable in respect of:		
(a) Present active members	1,543,426	\$ 16,013
(b) Present terminated vested members	25,464	2,041
(c) Present retired members and covered spouses	1,956,694	80,685
(d) Total actuarial accrued liability	3,525,584	\$ 98,739
PRESENT ASSETS FOR VALUATION PURPOSES	637,839	97,186
UNFUNDED ACTUARIAL ACCRUED LIABILITY	<u>2,887,745</u>	<u>\$ 1,553</u>
CONTRIBUTIONS	Fiscal Year Ending June 30, 2016	Fiscal Year Ending June 30, 2018
Normal	1.95%	0.03%
Accrued Liability	4.49	0.00
Total	6.44%	0.03%
Member	3.69%	0.00%
Employer (ARC)	2.97	0.00
State (ARC)	(0.22)	0.03
Total	6.44%	0.03%

MEDICAL INSURANCE FUND
Solvency Test
(Dollar amounts in millions)

Valuation Date	(1) Active Member Contributions	(2) Retirants And Beneficiaries	(3) Active Members (Employer Financed Portion)	Valuation Assets	Portion of Accrued Liabilities Covered by Assets		
					(1)	(2)	(3)
6/30/2010	n/a	\$ 1,948.6	\$ 1,258.2	\$ 241.2	n/a	12%	0%
6/30/2011	n/a	1,910.1	1,513.1	294.8	n/a	15	0
6/30/2012	n/a	2,046.7	1,547.9	338.7	n/a	17	0
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



Schedule A continued ...

LIFE INSURANCE FUND							
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)
6/30/2010	n/a	\$ 74.4	\$ 17.7	\$ 87.9	n/a	100%	76 %
6/30/2011	n/a	72.2	15.9	88.5	n/a	100	103
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

SCHEDULE B

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS		
MEDICAL INSURANCE FUND		
(1)	Actuarial Value of Assets Beginning of Year	\$ 508,913,385
(2)	Market Value of Assets End of Year	\$ 626,962,370
(3)	Market Value of Assets Beginning of Year	\$ 535,995,450
(4)	Cash Flow	
a.	Contributions	\$ 325,552,033
b.	Benefit Payments	240,394,582
c.	Administrative Expense	1,545,235
d.	Net: (4)a - (4)b - (4)c	\$ 83,631,216
(5)	Investment Income	
a.	Market total: (2) - (3) - (4)d	\$ 7,354,704
b.	Assumed Rate	8.00%
c.	Amount for Immediate Recognition: [(3) x (5)b] + [(4)d x (5)b x 0.5]	46,224,125
d.	Amount for Phased-In Recognition: (5)a - (5)c	\$ (38,869,421)
(6)	Phased-In Recognition of Investment Income	
a.	Current Year: 0.20 x (5)d	\$ (7,773,884)
b.	First Prior Year	6,492,851
c.	Second Prior Year	370,219
d.	Third Prior Year	0
e.	Fourth Prior Year	0
f.	Total Recognized Investment Gain	\$ (910,814)
(7)	Actuarial Value of Assets End of Year: (1) + (4)d + (5)c + (6)f	\$ 637,838,912
(8)	Difference Between Market & Actuarial Values: (2) - (7)	\$ (10,876,542)
(9)	Rate of Return on Actuarial Value:	8.23%



Schedule B continued ...

**DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS
LIFE INSURANCE FUND
AS OF JUNE 30, 2015**

(1)	Actuarial Value of Assets Beginning of Year	\$	96,130,349
(2)	Market Value of Assets End of Year	\$	89,746,507
(3)	Market Value of Assets Beginning of Year	\$	90,822,970
(4)	Cash Flow		
	a. Contributions	\$	1,019,519
	b. Benefit Payments		4,061,000
	c. Administrative Expense		25,306
	d. Net: (4)a - (4)b - (4)c	\$	(3,066,787)
(5)	Investment Income		
	a. Market total: (2) - (3) - (4)d	\$	1,990,324
	b. Assumed Rate		7.50%
	c. Amount for Immediate Recognition: [(3) x (5)b] + [(4)d x (5)b x 0.5]		6,696,718
	d. Amount for Phased-In Recognition: (5)a - (5)c	\$	(4,706,394)
(6)	Phased-In Recognition of Investment Income		
	a. Current Year: 0.20 x (5)d	\$	(941,279)
	b. First Prior Year		(406,987)
	c. Second Prior Year		(1,226,477)
	d. Third Prior Year		0
	e. Fourth Prior Year		0
	f. Total Recognized Investment Gain	\$	(2,574,743)
(7)	Actuarial Value of Assets End of Year: (1) + (4)d + (5)c + (6)f	\$	97,185,537
(8)	Difference Between Market & Actuarial Values: (2) - (7)	\$	(7,439,030)
(9)	Rate of Return on Actuarial Value:		4.36%



SCHEDULE C

**MEDICAL INSURANCE FUND
Summary of Receipts & Disbursements
(Market Value)**

<u>RECEIPTS FOR THE YEAR</u>	<i>For the Year Ending</i>	
	June 30, 2015	June 30, 2014
Contributions		
Members Statutory	\$ 100,622,991	\$ 74,329,798
Payment by Retired Members	56,844,689	60,861,093
TOTAL MEMBERS	157,467,680	135,190,891
State Statutory Contributions	21,375,292	20,841,052
Employer Contributions	77,655,778	52,247,362
State Statutory - Transition Fund/KEHP	46,232,856	84,600,000
TOTAL EMPLOYER	145,263,926	157,688,414
GRAND TOTAL	302,731,606	292,879,305
Recovery Income	22,820,427	4,879,981
Net Investment Income	7,354,704	67,741,063
TOTAL	332,906,737	365,500,349
<u>DISBURSEMENTS FOR THE YEAR</u>		
Administrative Expense	1,545,235	1,100,133
Medical Insurance Expense	240,394,582	242,070,531
TOTAL	241,939,817	243,170,664
Excess of Receipts over Disbursements	90,966,920	122,329,685
<u>RECONCILIATION OF ASSET BALANCES</u>		
Asset Balance as of the Beginning of the Year	535,995,450	413,665,765
Excess of Receipts over Disbursements	90,966,920	122,329,685
Asset Balance as of the End of the Year	<u>\$ 626,962,370</u>	<u>\$ 535,995,450</u>



Schedule C continued ...

**LIFE INSURANCE FUND
Summary of Receipts & Disbursements
(Market Value)**

<u>RECEIPTS FOR THE YEAR</u>	<u>For the Year Ending</u>	
	June 30, 2015	June 30, 2014
Contributions		
Members	\$ 0	\$ 0
State	855,012	839,681
Employer	164,507	166,410
TOTAL	\$ 1,019,519	\$ 1,006,091
Net Investment Income	1,990,324	4,572,845
TOTAL	\$ 3,009,843	\$ 5,578,936
 <u>DISBURSEMENTS FOR THE YEAR</u>		
Benefit Payments	\$ 4,061,000	\$ 4,692,000
Refunds to Members	0	0
Medical Insurance Payments	0	0
Miscellaneous, including expenses	25,306	21,324
TOTAL	\$ 4,086,306	\$ 4,713,324
 <u>EXCESS OF RECEIPTS OVER DISBURSEMENTS</u>	 \$ (1,076,463)	 \$ 865,612
 <u>RECONCILIATION OF ASSET BALANCES</u>		
Asset Balance as of the Beginning of the Year	\$ 90,822,970	\$ 89,957,358
Excess of Receipts over Disbursements	(1,076,463)	865,612
Asset Balance as of the End of the Year	\$ 89,746,507	\$ 90,822,970

**SCHEDULE D
Statement of Actuarial Assumptions and Methods**

The rates of retirement, disability, mortality, termination, and salary increases used in the valuation were selected based on the actuarial experience study prepared as of June 30, 2010, submitted to and adopted by the Board on September 19, 2011. The rates of future participation, health care cost trend rates, and expected plan costs were determined by the actuary based on plan experience.

Valuation Date: June 30, 2015

Discount Rate: 8.0% per annum, compounded annually for Medical Insurance Fund.
7.5% per annum, compounded annually for Life Insurance Fund.



Schedule D continued ...

Health Care Cost Trend Rates: Following is a chart detailing trend assumptions.

Fiscal Year Ended	Annual Trend Rate		
	Medicare Part B	Under Age 65	Age 65 and Over
2016	8.29 %	7.50 %	5.50 %
2017	1.43	6.75	5.25
2018	4.62	6.25	5.00
2019	6.79	5.75	5.00
2020	4.46	5.25	5.00
2021	4.40	5.00	5.00
2022	5.57	5.00	5.00
2023	5.65	5.00	5.00
2024	5.60	5.00	5.00
2025	5.37	5.00	5.00
2026	5.12	5.00	5.00
2027 and beyond	5.00	5.00	5.00

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 Increases
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

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 KTRS, as KTRS 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.

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 KTRS pays as the full contribution amount. The amounts include medical and drug costs. An additional \$6.58 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.

Tier Elected	Under Age 65 (KEHP) Full Costs as of January 1, 2016			
	LivingWell CDHP	LivingWell PPO	Standard PPO	Standard CDHP
Single	\$ 702.10	\$ 721.14	\$ 677.74	\$ 663.68
Parent Plus	967.18	1,023.04	963.36	930.34
Couple	1,302.74	1,564.20	1,474.84	1,429.26
Family	1,453.94	1,738.40	1,640.84	1,591.52
Family C-R	810.00	865.64	814.72	792.90



Schedule D continued ...

Average Monthly KTRS Full Costs & Contributions

Calendar Year	Under Age 65 (KEHP) Contributions	Age 65 & Over (MEHP) Full Costs	Age 65 & Over (MEHP) Contributions
2004	\$ 293	\$ 274	\$ 274
2005	412	288	288
2006	461	315	315
2007	458	283	283
2008	484	278	278
2009	545	301 ¹	285
2010	594	373 ¹	342
2011	626	289	289
2012	622	270 ²	270
2013	635	294 ²	290
2014	679	290 ²	290
2015	669	240 ²	240
2016	681	260	260

¹ Under GASB 43 and 45, cost reductions for the amount of the Medicare Part D Retiree Drug Subsidy cannot be taken into account in the gross cost calculations.

² 2,101 current, Medicare-eligible benefit recipients have been identified by the client to be ineligible for premium-free Medicare Part A benefits. For these individuals, the full cost of coverage is, on average, \$595 per month. It is assumed 9% of current retirees under the age of 65 who were hired prior to 4/1/1986 will be ineligible for premium-free Medicare Part A benefits upon reaching Medicare eligibility (age 65) and 2% of these retirees will cover a spouse. All active members are assumed to have begun contributing to Medicare as of 4/1/1986 and are assumed eligible for premium-free Medicare Part A benefits.

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:

Member Participation*

Years of Service	Entered KTRS Before 7/1/2002	Entered KTRS After 6/30/2002 & Before 7/1/2008	Entered KTRS After 6/30/2008
5-9.99	23%	9%	Not Eligible
10-14.99	45	23	Not Eligible
15-19.99	68	41	41%
20-24.99	93	59	59
25-25.99	93	81	81
26-26.99	93	86	86
27 or more	93	93	93

* Members retiring from deferred vested status are assumed to participate at 50% of the corresponding rate listed.

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	Standard PPO	Standard CDHP
39%	46%	8%	7%



Schedule D continued ...

Spouse Coverage in Medical Plans: Actual census data and current plan elections were used for MEHP covered spouses (including beneficiaries) of current retirees. For KEHP covered spouses of current retirees, current plan elections were used and females were assumed to be 3 years younger than males. For spouses of future retirees, 20% of future retirees are assumed to cover their spouse, with females assumed to be 3 years younger than males.

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: It is assumed 30% of future vested members who terminate elect to withdraw their contributions while the remaining 70% elect to leave their contributions in the plan in order to be eligible for a benefit at their retirement date.

Payroll Growth: 4.00% per annum, compounded annually.

Price Inflation: 3.50% per annum, compounded annually.

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. While the impact of certain provisions such as the excise tax on high-value health insurance plans beginning in 2018 (if applicable), mandated benefits and participation changes due to the individual mandate should be recognized in the determination of liabilities, overall future plan costs and the resulting liabilities are driven by the assumed rate of health care inflation (i.e., trend). The trend assumption forecasts the anticipated increase to initial per capita costs, taking into account health care cost inflation, increases in benefit utilization, government-mandated benefits, and technological advances. Given the uncertainty regarding the ACA's implementation (e.g., the impact of excise tax on high-value health insurance plans, changes in participation resulting from the implementation of state-based health insurance exchanges), continued monitoring of the ACA's impact on the Retiree Medical 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 Medical Insurance Fund and 7.50% for the Life Insurance Fund.

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 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 continued ...

Separation From Service: Representative values of the assumed annual rates of salary increases, death, disability, withdrawal, service retirement and early retirement are as follows:

MALES: Annual Rate of ...

AGE	SALARY*	DEATH	DISABILITY	WITHDRAWAL			RETIREMENT	
				SERVICE			Before 27 Years of Service	After 27 Years of Service**
				0 - 4	5 - 9	10+		
20	8.10%	0.012%	0.01%	9.00%				
25	7.20	0.015	0.01	9.00	3.00%			
30	6.20	0.020	0.02	9.00	3.00	3.00%		
35	5.50	0.035	0.05	10.00	3.25	1.75		
40	5.00	0.046	0.09	10.00	4.00	1.40		
45	4.60	0.058	0.18	11.00	4.00	1.50		17.0%
50	4.50	0.074	0.33	9.00	4.00	2.00		17.0
55	4.30	0.124	0.55	12.00	3.50	2.50	5.5%	35.0
60	4.20	0.244	0.70	12.00	3.50	2.50	13.0	24.0
62	4.10	0.324	0.70	12.00	3.50	2.50	15.0	25.0
65	4.00	0.480	0.70	12.00	3.50	2.50	21.0	26.0
70	4.00	0.821	0.70	0.00	0.00	0.00	100.0	100.0

* Includes inflation at 3.5% per annum.

** Plus 10% in year when first eligible for unreduced retirement with 27 years of service.

FEMALES: Annual Rate of ...

AGE	SALARY*	DEATH	DISABILITY	WITHDRAWAL			RETIREMENT	
				SERVICE			Before 27 Years of Service	After 27 Years of Service**
				0 - 4	5 - 9	10+		
20	8.10%	0.007%	0.01%	7.00%				
25	7.20	0.008	0.02	8.50	4.00%			
30	6.20	0.010	0.04	9.00	4.00	1.65%		
35	5.50	0.017	0.08	9.00	3.75	1.85		
40	5.00	0.024	0.14	8.50	3.25	1.50		
45	4.60	0.037	0.32	7.50	3.25	1.25		15.0%
50	4.50	0.055	0.42	9.50	3.50	1.75		15.0
55	4.30	0.103	0.56	11.00	4.00	2.00	6.0%	35.0
60	4.20	0.201	0.85	11.00	4.00	2.00	14.0	30.0
62	4.10	0.263	0.85	11.00	4.00	2.00	12.5	25.0
65	4.00	0.390	0.85	11.00	4.00	2.00	22.0	30.0
70	4.00	0.672	0.85	0.00	0.00	0.00	100.0	100.0

* Includes inflation at 3.5% per annum.

** Plus 10% in year when first eligible for unreduced retirement with 27 years of service.



Schedule D continued ...

Deaths After Retirement: The RP-2000 Combined Mortality Table projected to 2020 using scale AA (set back one year for females) is used for death after service retirement and beneficiaries. The RP-2000 Disabled Mortality Table (set back seven years for males and set forward five years for females) is used for death after disability retirement. Mortality improvement is anticipated under these assumptions as recent mortality experience shows actual deaths are approximately 4% greater for healthy lives and 5% greater for disabled lives than expected under the selected tables. Representative values of the assumed annual rates of death after service retirement and after disability retirement are shown below:

Annual Rate of Death After . . .				
Age	Service Retirement		Disability Retirement	
	MALE	FEMALE	MALE	FEMALE
45	0.1161%	0.0745%	2.2571%	1.1535%
50	0.1487	0.1100	2.2571	1.6544
55	0.2469	0.2064	2.6404	2.1839
60	0.4887	0.4017	3.2859	2.8026
65	0.9607	0.7797	3.9334	3.7635
70	1.6413	1.3443	4.6584	5.2230
75	2.8538	2.1680	5.6909	7.2312
80	5.2647	3.6066	7.3292	10.0203
85	9.6240	6.1634	9.7640	14.0049
90	16.9280	11.2205	12.8343	19.4509
95	25.6992	17.5624	16.2186	23.7467

SCHEDULE E

Summary of Main Plan Provisions as Interpreted for Valuation Purposes

ELIGIBILITY FOR ACCESS TO RETIREE MEDICAL 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. 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, or the attainment of age 60 and 5 years of service, 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. Disabled employees hired after July 1, 2008 must have 15 years of service to be eligible for Retiree Medical Plan 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.

Termination: For employees hired prior to July 1, 2008 and who terminated with at least 5 years of service, Retiree Medical Plan coverage eligibility is attained 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 eligibility is attained at age 60.

Reemployed Retirees: Retirees who return to work in an agency that participates in KEHP are required to terminate their coverage through KTRS. Additionally, if a retiree returns to work somewhere that does not participate in the KEHP, but offers health insurance, the retiree must terminate KTRS coverage unless the employer coverage is of lesser value. For valuation purposes, active employees identified as currently receiving retiree health care through KTRS are valued as retirees.



Schedule E continued ...

COVERED MEMBER 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 on the following page. Effective July 1, 2012, the full Shared Responsibility Contribution equals the Standard Medicare Part B premium paid by retirees ages 65 and older.

Effective Date	Medicare Part B Monthly Cost	Formula	Shared Responsibility Contribution
July 1, 2010	\$ 110.50	(1/3 x \$110.50)	\$ 37.00
January 1, 2011	115.40	(1/3 x 115.40)	39.00
July 1, 2011	115.40	(2/3 x 115.40)	77.00
January 1, 2012	99.90	(2/3 x 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

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:

Years of Service	Hired before 7/1/2002: Age 65 or Older and Covered Before 1/1/2005	Hired before 7/1/2002: Age 65 After or Covered After 12/31/2004	Entered KTRS After 6/30/2002 and Before 7/1/2008	Entered KTRS After 6/30/2008
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.

Tier Elected	LivingWell CDHP	LivingWell PPO	Standard PPO	Standard CDHP	Ages 65 and Older (MEHP)
Single	\$ 654.12	\$ 641.16	\$ 629.76	\$ 650.70	\$ 260.00
Parent Plus	654.12	654.12	654.12	654.12	260.00
Couple	654.12	654.12	654.12	654.12	260.00
Family	654.12	654.12	654.12	654.12	260.00
Family C-R	654.12	654.12	654.12	654.12	260.00



Schedule E continued ...

Under Age 65 Retiree Plan Cost Contribution: A contribution according to the table below is required to be paid by retirees under the age of 65 based upon the plan elected:

Under Age 65 Plan Cost Contribution* Effective January 1, 2016				
Tier Elected	LivingWell CDHP	LivingWell PPO	Standard PPO	Standard CDHP
Single	\$ 47.98	\$ 79.98	\$ 47.98	\$ 12.98
Parent Plus**	313.06	368.92	309.24	276.22
Couple**	648.62	910.08	820.72	775.14
Family**	799.82	1,084.28	986.72	937.40
Family C-R**	155.88	211.52	160.60	138.78

* Does not include the additional contribution required to be paid by retirees under the age of 65 who smoke (\$40 for Single or Family Cross-Reference, and \$80 for Parent Plus, Couple or Family).
 ** Contribution for Parent Plus, Couple, Family and Family Cross-Reference tiers is offset by the State Under Age 65 Spouse/Dependent Subsidy.

The Under Age 65 Plan Cost Contribution is reduced by subtracting the State Under Age 65 Spouse/Dependent Subsidy multiplied by 100% less the appropriate percentage in the Retiree Percentage Contribution table on the previous page, from the Under Age 65 Plan Cost Contribution.

State Under Age 65 Spouse/Dependent Subsidy Effective January 1, 2016				
Tier Elected	LivingWell CDHP	LivingWell PPO	Standard PPO	Standard CDHP
Parent Plus	\$ 190.08	\$ 140.94	\$ 186.26	\$ 216.24
Couple	360.64	397.10	532.74	525.16
Family	461.84	441.30	648.74	637.42
Family C-R	77.90	58.54	82.62	110.80

Spouse Contributions: 100% of the full cost for non-Medicare eligible dependents is paid through a combination of payments from beneficiaries and the State. Spouses of post-65 retirees, as well as surviving spouses of deceased retirees on or after July 1, 2002, pay 100% of the full contribution. Spouses of active members who died while eligible to retire prior to July 1, 2002, are provided the same subsidy by KTRS that would have been provided to the retiree for the lifetime of the spouse, or until remarriage. Spouses of active members who die while eligible to retire July 1, 2002, and later, pay 100% of the full contribution.

Surviving Spouse Monthly Contribution Effective January 1, 2016 Under Age 65 (KEHP)					
Tier Elected	LivingWell CDHP	LivingWell PPO	Standard PPO	Standard CDHP	Age 65 & Over (MEHP)
Single	\$ 708.68	\$ 727.72	\$ 684.32	\$ 670.26	\$ 260.00
Parent Plus	973.76	1,029.62	969.94	936.92	n/a



Schedule E continued ...

System Retiree Medical Plan Contributions: The System Contribution Rate Basis is determined annually by KTRS; 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*					
Years of Service	Entered KTRS Before 7/1/2002: Age 65 or Older & Covered Before 1/1/2005	Entered KTRS Before 7/1/2002: Age 65 After or Covered After 12/31/2004	Entered KTRS After 6/30/2002 and Before 7/1/2008	Entered KTRS After 6/30/2008	
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.

System Monthly Contribution Rate Basis Effective January 1, 2016 Under Age 65 (KEHP)					
Tier Elected	LivingWell CDHP	LivingWell PPO	Standard PPO	Standard CDHP	Ages 65 and Older (MEHP)
Single	\$ 654.12	\$ 641.16	\$ 629.76	\$ 650.70	\$ 260.00
Parent Plus	654.12	654.12	654.12	654.12	260.00
Couple	654.12	654.12	654.12	654.12	260.00
Family	654.12	654.12	654.12	654.12	260.00
Family C-R	654.12	654.12	654.12	654.12	260.00

Active Member Retiree Medical Plan Contributions: Actively employed members make payroll contributions to the Medical Insurance Fund based upon the following schedule:

Active Member Percentage of Payroll Contribution Made to Medical Insurance Fund							
Fiscal Year Ending	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	
2016 & Later	2.775 %	2.775 %	3.750 %	3.750%	3.750 %	3.750 %	



Schedule E continued ...

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
Table 1 – Service Table
Distribution of Active Members as of June 30, 2015
by Age and Service Groups

Attained Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	>= 35	TOTAL
24 & under	2,213	2							2,215
Total Pay	41,947,049	43,502							41,990,551
Avg. Pay	18,955	21,751							18,957
25 to 29	6,199	1,397	1						7,597
Total Pay	204,011,920	66,904,762	43,050						270,959,732
Avg. Pay	32,910	47,892	43,050						35,667
30 to 34	3,056	4,991	1,307	3					9,357
Total Pay	95,321,748	249,144,319	73,460,486	153,055					418,079,608
Avg. Pay	31,192	49,919	56,205	51,018					44,681
35 to 39	2,213	2,424	4,578	962	4				10,181
Total Pay	62,011,160	121,552,831	267,069,504	61,448,344	254,485				512,336,324
Avg. Pay	28,021	50,146	58,338	63,876	63,621				50,323
40 to 44	1,926	1,566	2,269	4,007	797	1			10,566
Total Pay	48,076,172	78,903,638	133,000,641	260,740,328	54,050,935	64,650			574,836,364
Avg. Pay	24,962	50,385	58,616	65,071	67,818	64,650			54,404
45 to 49	1,436	1,228	1,510	2,120	3,065	762	3		10,124
Total Pay	35,812,710	60,907,248	87,807,089	136,589,683	209,991,357	53,758,353	291,877		585,158,317
Avg. Pay	24,939	49,599	58,150	64,429	68,513	70,549	97,292		57,799
50 to 54	1,197	750	1,085	1,254	1,534	1,754	320	1	7,895
Total Pay	26,138,213	37,365,255	62,125,573	80,091,516	106,724,424	126,744,365	24,411,479	51,329	463,652,154
Avg. Pay	21,836	49,820	57,259	63,869	69,573	72,260	76,286	51,329	58,727
55 to 59	1,417	464	754	984	1,095	865	395	33	6,007
Total Pay	25,813,988	21,457,280	44,157,300	63,512,149	76,152,402	66,191,587	33,976,083	2,927,726	334,188,515
Avg. Pay	18,217	46,244	58,564	64,545	69,546	76,522	86,015	88,719	55,633
60 to 64	1,965	372	400	624	611	451	120	92	4,635
Total Pay	26,415,228	15,272,685	24,733,514	41,330,777	44,908,769	35,340,649	10,764,337	8,630,293	207,396,252
Avg. Pay	13,443	41,056	61,834	66,235	73,500	78,361	89,703	93,808	44,746
65 & over	2,198	484	191	237	220	197	58	84	3,669
Total Pay	19,925,732	12,980,171	11,414,848	16,368,292	16,473,814	15,983,130	4,964,889	8,404,433	106,515,309
Avg. Pay	9,065	26,819	59,764	69,065	74,881	81,133	85,602	100,053	29,031
Total	23,820	13,678	12,095	10,191	7,326	4,030	896	210	72,246
Total Pay	585,473,920	664,531,691	703,812,005	660,234,144	508,556,186	298,082,734	74,408,665	20,013,781	3,515,113,126
Avg. Pay	24,579	48,584	58,190	64,786	69,418	73,966	83,045	95,304	48,655

Average Age: 43.5

Average Service: 10.8



Schedule F continued ...

Table 2 – Total Active Member Valuation Data

Valuation Date	Number	Annual Payroll	Annual Average Pay	Percentage Increase in Average Pay
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
6/30/2011	76,349	3,451,756,288	45,210	3.97
6/30/2010	76,387	3,321,614,223	43,484	1.51
6/30/2009	75,937	3,253,076,600	42,839	1.43

**Table 3 – Eligible Deferred Vested Members
as of June 30, 2015
Medical Insurance Fund
Male & Female Demographic Breakdown**

Attained Age	Number of Males	Number of Females	Total Number
Under 30	0	5	5
30-34	73	329	402
35-39	191	631	822
40-44	229	708	937
45-49	225	750	975
50-54	225	683	908
55-59	188	606	794
60 & Over	170	417	587
Total	1,301	4,129	5,430

**Table 3 – Eligible Deferred Vested Members
as of June 30, 2015
Life Insurance Fund
Male & Female Demographic Breakdown**

Attained Age	Number of Males	Number of Females	Total Number
Under 30	3	29	32
30-34	66	343	409
35-39	133	516	649
40-44	183	579	762
45-49	178	584	762
50-54	178	532	710
55-59	149	453	602
60 & Over	96	273	369
Total	986	3,309	4,295



Schedule F continued ...

**Table 4 – All Retirees & Spouses Receiving Health Care Benefits as of June 30, 2015
Male & Female Demographic Breakdown**

Attained Age	Number of Males	Number of Females	Total Number
Under 40	4	10	14
40-44	22	37	59
45-49	151	124	275
50-54	662	822	1,484
55-59	1,546	2,949	4,495
60-64	2,276	6,389	8,665
65-69	3,762	7,831	11,593
70-74	2,814	4,842	7,656
75-79	1,771	2,996	4,767
80-84	1,163	1,958	3,121
85-89	565	1,417	1,982
90-94	201	629	830
95-99	34	180	214
100	2	13	15
101	2	14	16
102	0	5	5
103	1	3	4
104	0	5	5
105 & Over	0	4	4
Total	14,976	30,228	45,204

**Table 5 – Retirees, Beneficiaries and Survivors Added To and Removed From Rolls *
Medical Insurance Fund**

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
2010	1,710	555	2,265	876	529	1,405	34,315	6,834	41,149
2011	1,770	629	2,399	1,052	541	1,593	35,033	6,922	41,955
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

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

** Includes spouses, beneficiaries, and surviving spouses.



Schedule F continued ...

Table 6 – Retirees, Beneficiaries and Survivors Added To and Removed From Rolls *
Life Insurance Fund

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
2010	1,799	\$ 8,995	806	\$ 4,030	39,951	\$ 199,755	2.55 %	\$ 5,000
2011	2,025	10,125	858	4,290	41,118	205,590	2.92	5,000
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

** 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.*

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