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November 21, 2016

Mr. Gary L. Harbin
Executive Secretary
Teachers' Retirement System of the
State of Kentucky
479 Versailles Road
Frankfort, KY 40601-3800

Dear Gary:

Enclosed are 25 bound copies and one unbound copy of the "Teachers' Retirement System of the State of Kentucky Report of Actuary on the Valuation Prepared as of June 30, 2016".

Sincerely yours,

Edward J. Koebel

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

E H Gary

Eric H. Gary, FSA, FCA, MAAA
Principal and Chief Health Actuary

Cathy Turcot

Cathy Turcot
Principal and Managing Director

Enclosure

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Teachers' Retirement System of the State of Kentucky Report of the Actuary on the Annual Valuation

Prepared as of June 30, 2016

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November 21, 2016

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

Members of the Board:

Section 161.400 of the law governing the operation of the Teachers' Retirement System of the State of Kentucky provides that the actuary shall make an actuarial valuation of the System. We have submitted the results of the annual actuarial valuation prepared as of June 30, 2016. While not verifying the data at source, the actuary performed tests for consistency and reasonability. The combined member and state contribution rates as a percentage of payroll for the fiscal year ending June 30, 2019 required to support the total benefits of the System are as follows:

Group	Combined Member and State Contribution Requirement
University members hired before July 1, 2008	35.90%
University members hired on or after July 1, 2008	36.90%
Non-University members hired before July 1, 2008	38.86%
Non-University members hired on or after July 1, 2008	39.86%

These rates represent an increase since the previous valuation in the Pension actuarially determined employer contribution rate of 1.00% of payroll for the fiscal year ending June 30, 2019. In addition, there has been a net decrease in the expected state special appropriation from 2.94% to 2.83%, or 0.11% of payroll and an increase of 0.01% in the amount required for life insurance benefits.

For the fiscal year ending June 30, 2019, in addition to the State statutory contribution rates and the state special appropriation, there is an additional employer contribution rate of 14.61% of payroll required in order to amortize the unfunded accrued liability according to the funding policy adopted by the Board. This is 1.12% greater than the 13.49% determined in the previous valuation.

Since the previous valuation, various economic and demographic assumptions have been revised to reflect the results of the experience investigation for the five-year period ending June 30, 2015. These revised changes were adopted by the Board on September 19, 2016 and are discussed on pages 4 and 5 of the report. The valuation takes into account the effect of membership to the System enacted through the most recent Session of the Legislature.

The financing objective of the System is that contribution rates will remain relatively level over time as a percentage of payroll. The promised benefits of the System are included in the actuarially calculated contribution rates which are developed using the entry age normal cost method.

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Five-year market related value of plan assets is used for actuarial valuation purposes. Gains and losses are reflected in the total unfunded accrued liability that is being amortized by regular annual contributions as a level percentage of payroll in accordance with the funding policy adopted by the Board, on the assumption that payroll will increase by 3.5% annually. The assumptions recommended by the actuary and adopted by the Board are reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System.

We have prepared the trend information shown in the Schedule of Funding Progress in the Financial Section of the Annual Report and Schedule A, Schedule B, Schedule C, Solvency Test and Analysis of Financial Experience shown in the Actuarial Section of the Annual Report.

The valuation reflects that a portion of the annual required contributions to the fund from 2005 to 2010 were allocated to the Medical Insurance Fund and are being repaid over time. A pension obligation bond was issued August 26, 2010 and was used to repay the balances of a substantial portion of the loans previously made to the Medical Insurance Fund. No additional contributions were allocated during the 2016 fiscal year.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

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.

This actuarial valuation was performed to determine the recommended funding amount for the System. The asset values used to determine unfunded liabilities and funded ratios are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts and funded ratios using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return of assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.

In our opinion, the System has not been funded on an actuarially sound basis since the full actuarially determined contributions were not made by the employer. If contributions by the employer to the System in subsequent fiscal years are less than those required, the assets are expected to become insufficient to pay promised benefits. Assuming that contributions to the System are made by the employer from year to year in the future at rates recommended on the basis of the successive actuarial valuations, the continued sufficiency of the assets to provide the benefits called for under the System may be safely anticipated. It is our understanding that the State budget includes additional appropriations of $973 million to fund the required contribution for the 2016-2018 biennium.

Respectfully submitted,

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

Eric H. Gary, FSA, FCA, MAAA
Principal and Chief Health Actuary

Cathy Turcot
Principal and Managing Director

TABLE OF CONTENTS

TEACHERS' RETIREMENT SYSTEM
OF THE STATE OF KENTUCKY
REPORT OF ACTUARY ON THE VALUATION
PREPARED AS OF JUNE 30, 2016

SECTION I - SUMMARY OF PRINCIPAL RESULTS

1. For convenience of reference, the principal results of the valuation and a comparison with the results of the previous valuation are summarized below (all dollar amounts are $1,000's):

Valuation Date	June 30, 2016	June 30, 2015
Number of active members	71,848	72,246
Annual salaries	$ 3,537,226	$ 3,515,113
Number of annuitants and beneficiaries	51,563	49,822
Annual allowances	$ 1,868,875	$ 1,767,637
Assets:		
Market value	$ 16,812,832	$ 18,049,131
Actuarial value	17,496,894	17,219,520
Unfunded accrued liability	$ 14,531,333	$ 13,930,442
Funded Ratio	54.6%	55.3%
Amortization period (years)	28.1	29.3

Contribution rates are shown separately for university and non-university members on the following pages.

CONTRIBUTION RATES FOR UNIVERSITY MEMBERS

Valuation Date	June 30, 2016		June 30, 2015	
For fiscal year ending:	June 30, 2019		June 30, 2018	
	Members hired before 7/1/2008	Members on and after 7/1/2008	Members hired before 7/1/2008	Members on and after 7/1/2008
Pension Plan:				
Normal	11.030%	11.030%	12.340%	12.340%
Accrued liability	24.870	25.870	22.560	23.560
Total	35.900%	36.900%	34.900%	35.900%
Member	7.625%	7.625%	7.625%	7.625%
State (ARC)	28.275	29.275	27.275	28.275
Total	35.900%	36.900%	34.900%	35.900%
Life Insurance Fund:				
State	0.040%	0.040%	0.030%	0.030%
Medical Insurance Fund:				
Member	2.775%	2.775%	2.775%	2.775%
State Match	2.775	1.775	2.775	1.775
Total	5.550%	4.550%	5.550%	4.550%
Total Contributions	41.490%	41.490%	40.480%	40.480%
Member Statutory	10.400%	10.400%	10.400%	10.400%
State Statutory	13.650	13.650	13.650	13.650
Required Increase	14.610	14.610	13.490	13.490
State Special	2.830	2.830	2.940	2.940
Total	41.490%	41.490%	40.480%	40.480%

CONTRIBUTION RATES FOR NON-UNIVERSITY MEMBERS

Valuation Date	June 30, 2016		June 30, 2015	
For fiscal year ending:	**June 30, 2019**		**June 30, 2018**	
	Members hired before 7/1/2008	**Members on and after 7/1/2008**	**Members hired before 7/1/2008**	**Members on and after 7/1/2008**
Pension Plan:				
Normal	14.940%	14.940%	16.720%	16.720%
Accrued liability	23.920	24.920	21.140	22.140
Total	38.860%	39.860%	37.860%	38.860%
Member	9.105%	9.105%	9.105%	9.105%
State (ARC)	29.755	30.755	28.755	29.755
Total	38.860%	39.860%	37.860%	38.860%
Life Insurance Fund:				
State	0.040%	0.040%	0.030%	0.030%
Medical Insurance Fund:				
Member	3.750%	3.750%	3.750%	3.750%
State Match	3.750	2.750	3.750	2.750
Total	7.500%	6.500%	7.500%	6.500%
Total Contributions	46.400%	46.400%	45.390%	45.390%
Member Statutory	12.855%	12.855%	12.855%	12.855%
State Statutory	16.105	16.105	16.105	16.105
Required Increase	14.610	14.610	13.490	13.490
State Special	2.830	2.830	2.940	2.940
Total	46.400%	46.400%	45.390%	45.390%

2. The valuation includes only the assets and liabilities associated with the pension plan. The valuation of the Medical Insurance Fund and the Active and Retired Life Insurance Benefits will be prepared separately.

3. Comments on the valuation results as of June 30, 2016 are given in Section IV and further discussion of the contribution levels is set out in Sections V and VI.

4. Since the previous valuation, various economic and demographic assumptions have been revised to reflect the results of the experience investigation for the five-year period ending June 30, 2015. The changes adopted by the Board on September 19, 2016, include various demographic and economic assumptions summarized below:

   - Price Inflation changed assumed rate from 3.50% to 3.00%,
   - Wage Inflation changed assumed rate from 4.00% to 3.50%,
   - Assumed Salary Scale adjusted to reflect a decrease of 0.25% in merit & promotion for all ages, and
   - Assumed rates of Withdrawal, Disability, Retirement, and Mortality have been adjusted to more closely reflect experience.

5. Schedule B shows the development of the actuarial value of assets. The assumed investment rate of return is 7.50%. Schedule D of this report outlines the full set of actuarial assumptions and methods employed in the current valuation.

6. The funding policy is shown in Schedule H of the Report.

7. Provisions of the System, as summarized in Schedule F, were taken into account in the current valuation. There have been no changes since the previous valuation.

SECTION II - MEMBERSHIP DATA

1. Data regarding the membership of the System for use as a basis of the valuation were furnished by the Retirement System office. The following table shows the number of active members and their annual salaries as of June 30, 2016 on the basis of which the valuation was prepared.

GROUP	NUMBER	ANNUAL SALARIES ($1,000's)
University hired before 7/1/2008	1,883	$ 137,213
University hired after 7/1/2008	1,453	72,056
Non-University Full Time hired before 7/1/2008	38,065	2,429,982
Non-University Full Time hired after 7/1/2008	18,846	826,256
Non-University Part Time hired before 7/1/2008	2,797	24,219
Non-University Part Time hired after 7/1/2008	8,804	47,500
Total	71,848	$ 3,537,226

2. The following table shows the number and annual retirement allowances payable to annuitants and beneficiaries on the roll of the Retirement System as of the valuation date.

THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF ANNUITANTS AND BENEFICIARIES ON THE ROLL AS OF JUNE 30, 2016

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES[1] ($1,000's)
Service Retirements	44,970	$ 1,704,041
Disability Retirements	2,751	80,652
Beneficiaries of Deceased Members	3,842	84,182
Total	51,563	$ 1,868,875

[1] Includes cost-of-living adjustments effective through July 1, 2016.

3. Table 1 of Schedule G shows a distribution by age and years of service of the number and annual salaries of active members included in the valuation, while Table 2 shows the number and annual retirement allowances of annuitants and beneficiaries included in the valuation, distributed by age.

SECTION III - ASSETS

1. As of June 30, 2016 the market value of Pension Plan assets for valuation purposes held by the System amounted to $16,812,831,883. This value excludes assets in the Medical Insurance Fund, the 403(b) Program Reserve Fund, and the Life Insurance Fund, which are not included in the assets used for Pension Plan valuation purposes. The estimated market investment return for the plan year was (1.0)%. Schedule C shows the receipts and disbursements for the year preceding the valuation date and a reconciliation of the asset balances for the Pension Plan.
2. The five-year market related value of Pension Plan assets used for valuation purposes as of June 30, 2016 was $17,496,894,437. The estimated investment return for the plan year ending June 30, 2016 on an actuarial value of assets basis was 7.58%, compared to the assumed investment rate of return for the period of 7.50%. Schedule B shows the development of the actuarial value of assets as of June 30, 2016.

SECTION IV - COMMENTS ON VALUATION

1. Schedule A of this report contains the valuation balance sheet which shows the present and prospective assets and liabilities of the System as of June 30, 2016. The valuation was prepared in accordance with the actuarial assumptions and the actuarial cost method, which are described in Schedule D and Schedule E.
2. The valuation balance sheet shows that the System has total prospective liabilities of $16,231,288,904 for benefits expected to be paid on account of the present active members. The liability on account of benefits payable to annuitants and beneficiaries amounts to $20,002,749,810 of which $781,756,333 is for special appropriations remaining to be made toward funding minimum annuities, ad hoc increases and sick leave allowances granted after 1981. The liability for benefits expected to be paid to inactive members and to members entitled to deferred vested benefits is $413,616,742. The total prospective liabilities of the System amounts to $36,647,655,456. Against these liabilities, the System has present assets for valuation purposes of $17,496,894,437. When

this amount is deducted from the total liabilities of $36,647,655,456, there remains $19,150,761,019 as the present value contributions to be made in the future.

3. The employer's contributions to the System consist of normal contributions and accrued liability contributions. The valuation indicates that employer normal contributions at the rate of 11.03% of payroll for University and 14.94% of payroll for Non-University are required.

4. Prospective normal employer and employee contributions have a present value of $4,619,427,935. When this amount is subtracted from $19,150,761,019, which is the present value of the total future contributions to be made by the employer, there remains $14,531,333,084 as the amount of future unfunded accrued liability contributions.

5. The unfunded accrued liability increased by approximately $601 million for the plan year ending June 30, 2016 and the funding ratio decreased from 55.3% to 54.6%. The increase in the unfunded accrued liability was primarily due to the contribution shortfall for the plan year and demographic losses due to turnover, retirement and mortality. Offsetting these losses were a gain due to the assumption changes from the experience study and small gains for the investment return on an actuarial value basis that was greater than expected and salary increases that were less than assumed. See Section VII for a complete breakdown of the experience of the System.

SECTION V - CONTRIBUTIONS PAYABLE UNDER THE SYSTEM

1. Section 161.540 of the retirement law provides that each university member contribute 10.400% of annual salary to the System and each non-university member contribute 12.855% of annual salary. Of this amount, for each university member, 2.775% is paid to the Medical Insurance Fund for medical benefits and for each non-university member, 3.75% is paid to the Medical Insurance Fund for medical benefits. The remainder, 7.625% for university members and 9.105% for non-university members, is applicable for the retirement benefits taken into account in the valuation.

2. Section 161.550 provides that the State will match a portion of the member contributions and contribute a supplemental 3.25% of members' salaries towards discharging the System's unfunded obligations. Additional contributions are made to the Medical Insurance Fund as required under 161.550(3).

3. Therefore for university members, 10.875% of the salaries of active members who become members before July 1, 2008 and 11.875% of the salaries of active members who become members on or after July 1, 2008 is funded by statute or supplemental funding for the Pension Plan and Life Insurance Fund. For non-university members, 12.355% of the salaries of active members who become members before July 1, 2008 and 13.355% of the salaries of active members who become members on or after July 1, 2008 is funded by statute or supplemental funding for the Pension Plan and Life Insurance Fund. Of these amounts, 0.04% of payroll will be allocated to the Life Insurance Fund. Based on the results of the valuation, an additional 14.61% of payroll for both university and non-university will be required in order to maintain the amortization of the unfunded liability of the Pension Plan based on the funding policy adopted by the Board. An additional special appropriation of 2.83% of total payroll will be made by the State. Therefore, the total actuarially determined employer contribution rate to the Pension Plan is 28.275% for university members who become members before July 1, 2008 and 29.275% for university members who become members on or after July 1, 2008. The total actuarially determined employer contribution rate to the Pension Plan is 29.755% for non-university members who become members before July 1, 2008 and 30.755% for non-university members who become members on or after July 1, 2008. The total member and employer contribution rates to the Pension Plan are shown in the following table.

CONTRIBUTION RATES BY SOURCE

UNIVERSITY

	Members hired before 7/1/2008	Members hired on and after 7/1/2008
Member		
Statutory Total	10.400%	10.400%
Statutory Medical Insurance Fund	(2.775)	(2.775)
Contribution to Pension Plan	7.625%	7.625%
Employer		
Statutory Matching Total	10.400%	10.400%
Statutory Medical Insurance Fund	(2.775)	(1.775)
Supplemental Funding	3.250	3.250
Subtotal	10.875%	11.875%
Life Insurance	(0.040)%	(0.040)%
Additional to Comply with Board Funding Policy	14.610	14.610
Special Appropriation	2.830	2.830
Contribution to Pension Plan	28.275%	29.275%
Total Contribution to Pension Plan	35.900%	36.900%

NON-UNIVERSITY

	Members hired before 7/1/2008	Members hired on and after 7/1/2008
Member		
Statutory Total	12.855%	12.855%
Statutory Medical Insurance Fund	(3.750)	(3.750)
Contribution to Pension Plan	9.105%	9.105%
Employer		
Statutory Matching Total	12.855%	12.855%
Statutory Medical Insurance Fund	(3.750)	(2.750)
Supplemental Funding	3.250	3.250
Subtotal	12.355%	13.355%
Life Insurance	(0.040)%	(0.040)%
Additional to Comply with Board Funding Policy	14.610	14.610
Special Appropriation	2.830	2.830
Contribution to Pension Plan	29.755%	30.755%
Total Contribution to Pension Plan	38.860%	39.860%

4. The valuation indicates that normal contributions at the rate of 11.03% of active university members' salaries and 14.94% of active non-university members' salaries are required. The difference between the total contribution rate and the normal rate remains to be applied toward the liquidation of the unfunded accrued liability. This accrued liability rate is 24.87% for university members hired before July 1, 2008, 25.87% for university members hired on and after July 1, 2008, 23.92% for non-university members hired before July 1, 2008, and 24.92% for non-university members hired on and after July 1, 2008. These rates include special appropriations of 2.83% of payroll to be made by the State. These rates are shown in the following table:

ACTUARIALLY DETERMINED CONTRIBUTION RATES

RATE	PERCENTAGE OF ACTIVE MEMBERS' SALARIES			
	UNIVERSITY		NON-UNIVERSITY	
	Members hired before 7/1/2008	Members hired on and after 7/1/2008	Members hired before 7/1/2008	Members hired on and after 7/1/2008
Normal	11.03%	11.03%	14.94%	14.94%
Accrued liability*	24.87	25.87	23.92	24.92
Total	35.90%	36.90%	38.86%	39.86%

* Includes special appropriations of 2.83% of payroll to be made by the State.

5. The following table shows the components of the total UAAL and the derivation of the UAAL contribution rate in accordance with the funding policy:

TOTAL UAAL AND UAAL CONTRIBUTION RATE
(Dollar amounts in thousands)

	UAAL	REMAINING AMORTIZATION PERIOD (YEARS)	AMORTIZATION PAYMENT
Legacy	$14,543,130	28	$859,217
New Incremental 6/30/2015	(352,563)	19	(26,536)
New Incremental 6/30/2016	340,766	20	24,775
Total UAAL	$14,531,333		$857,456
Blended amortization period (years)			28.1

SECTION VI - COMMENTS ON LEVEL OF FUNDING

1. Our calculations indicate that the contribution rates shown in the previous section will be sufficient to cover the benefits of the System, the annual 1.5% increases in the allowances of retired members and beneficiaries, and the liabilities for minimum annuities, ad hoc increases and sick leave allowances granted after 1981.

2. The valuation indicates that the present statutory contribution rates, supplemental funding and special appropriations, if continued at the current level percentage, along with an additional required contribution of 14.61%, not currently provided in statute, are sufficient to meet the cost of benefits currently accruing and provide for the amortization of the unfunded accrued liability in accordance with the Board funding policy. However, as existing special contributions expire, the statutory contributions or supplemental funding may be required to increase as an equal percentage of payroll.

3. During the 2005 through 2010 fiscal years, a portion of the contributions required for the pension fund were allocated as loans to the Medical Insurance Fund for Stabilization Funding. Beginning with the 2009 fiscal year, contributions have also been allocated as loans for non-single subsidy funding. Payments are being made to repay these loans. In August 2010, a pension obligation bond was issued with proceeds used to fully repay the loans for the Stabilization Funding. Beginning with the 2011 fiscal year, there have been no further loans for Stabilization Funding. In addition, there were no loans for single-subsidy funding for fiscal years 2013 through 2015. The table on the following page shows the amounts borrowed, annual payments and remaining balances for the non-single subsidy funding as of June 30, 2016:

MEDICAL INSURANCE FUND STABILIZATION FUNDING

	Loan Amount	Annual Payment	Balances as of June 30, 2016
2008/2009	$ 8,400,000	$ 1,228,900	$ 3,274,213
2009/2010	9,200,000	1,345,200	4,611,791
2010/2011	10,700,000	1,564,500	6,473,479
2011/2012	12,300,000	1,798,700	8,627,015
Total	$ 40,600,000	$ 5,937,300	$ 22,986,498

3. There are no excess assets or contributions available to provide additional benefits, and there is a cumulative increase in the required employer contribution of 14.61% of payroll for the fiscal year ending June 30, 2019, as shown in the following table:

Valuation Date	Fiscal Year	Increase/ (Decrease)	Cumulative Increase	Amount
June 30, 2004	June 30, 2007	0.11%	0.11%	$ 3,174,600
June 30, 2005	June 30, 2008	1.21	1.32	38,965,900
June 30, 2006	June 30, 2009	0.56	1.88	60,499,800
June 30, 2007	June 30, 2010	0.58	2.46	82,331,200
June 30, 2008	June 30, 2011	1.13	3.59	121,457,000
June 30, 2009	June 30, 2012	2.22	5.81	208,649,000
June 30, 2010	June 30, 2013	1.46	7.27	260,980,000
June 30, 2011	June 30, 2014	0.75	8.02	299,420,000
June 30, 2012	June 30, 2015	2.40	10.42	386,400,000
June 30, 2013	June 30, 2016	2.55	12.97	487,400,000
June 30, 2014	June 30, 2017	0.83	13.80	520,372,000
June 30, 2015	June 30, 2018	(0.31)	13.49	512,883,000
June 30, 2016	June 30, 2019	1.12	14.61	553,597,000

In addition, as existing special contributions expire, the statutory contributions or supplemental funding may be required to increase as an equal percentage of payroll, in order to amortize the unfunded actuarial accrued liability in accordance with the Board funding policy. Any further benefit improvements must be accompanied by the entire additional contributions necessary to support the benefits.

SECTION VII – ANALYSIS OF FINANCIAL EXPERIENCE

The following table shows the estimated gain or loss from various factors that resulted in an increase of $600,891,107 in the unfunded accrued liability from $13,930,441,977 to $14,531,333,084 during the year ending June 30, 2016.

ANALYSIS OF FINANCIAL EXPERIENCE
(Dollar amounts in thousands)

ITEM	AMOUNT OF INCREASE/ (DECREASE)
Interest (7.50%) added to previous unfunded accrued liability	$ 1,044,783
Expected accrued liability contribution	(784,659)
Loss due to Contribution Shortfall and Timing	472,425
Experience:	
Valuation asset growth	(14,160)
Pensioners' mortality	71,058
Turnover and retirements	135,219
New entrants	37,907
Salary increases	(64,476)
Amendments	0
Assumption changes	(297,206)
Method changes	0
Total	$ 600,891

SECTION VIII - ACCOUNTING INFORMATION

Governmental Accounting Standards Board (GASB) has issued Statements No. 67 and 68 which replace Statement No. 25 and 27. The information required under the new GASB Statements will be issued in separate reports. The following information is provided for informational purposes only.

1. The following is a distribution of the number of employees by type of membership.

NUMBER OF ACTIVE AND RETIRED MEMBERS
AS OF JUNE 30, 2016

GROUP	NUMBER
Retirees and beneficiaries currently Receiving benefits	51,563
Terminated vested employees entitled to Benefits but not yet receiving benefits	9,240
Inactive non-vested members	46,055
Active plan members	71,848
Total	178,706

2. The schedule of funding progress is shown below.

SCHEDULE OF FUNDING PROGRESS
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
6/30/2011*	$14,908,138	$25,968,693	$ 11,060,554	57.4%	$3,451,756	320.4%
6/30/2012	14,691,371	26,973,853	12,282,483	54.5	3,479,567	353.0
6/30/2013	14,962,758	28,817,232	13,854,474	51.9	3,480,066	398.1
6/30/2014**	16,174,199	30,184,404	14,010,205	53.6	3,486,327	401.9
6/30/2015	17,219,520	31,149,962	13,930,442	55.3	3,515,113	396.3
6/30/2016**	17,496,894	32,028,227	14,531,333	54.6	3,537,226	410.8

* Reflects change in assumptions and methods
** Reflects change in assumptions

3. The information presented above was determined as part of the actuarial valuation at June 30, 2016. Additional information as of the latest actuarial valuation follows.

Valuation date	6/30/2016
Actuarial cost method	Entry Age
Amortization method	Level percent of pay, closed
Remaining amortization period	28.1 years
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment Rate of Return*	7.50%
Projected salary Increases**	3.50 - 7.30%
Cost-of-living adjustments	1.50% Annually
*Includes price inflation at	3.00%
**Includes wage inflation at	3.50%

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year Ending June 30	Actuarially Determined Employer Contributions	Actual Employer Contributions	Percentage Contributed
2011	$ 678,741,428	$ 1,037,935,993*	153%
2012	757,822,190	557,339,552	74
2013	802,984,644	568,233,446	71
2014	823,446,156	563,326,249	68
2015	913,653,854	559,579,290	61
2016	999,270,174	565,454,590	57

* Includes Pension Obligation Bond proceeds of $465,384,165

SCHEDULE A

VALUATION BALANCE SHEET
SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES
AS OF JUNE 30, 2016
(Dollar amounts in thousands)

	ACTUARIAL LIABILITIES		
(1)	Present value of prospective benefits payable on account of present active members		
	- Service retirement benefits	$ 15,144,582	
	- Disability retirement benefits	711,697	
	- Death and survivor benefits	127,458	
	- Refunds of member contributions	247,552	
	Total		$ 16,231,289
(2)	Present value of prospective benefits payable on account of present retired members, beneficiaries of deceased members, and members entitled to deferred vested benefits		
	- Service retirement benefits	$ 18,488,211	
	- Disability retirement benefits	787,689	
	- Death and survivor benefits	726,850	
	Total		$ 20,002,750
(3)	Present value of prospective benefits payable on account of inactive members and members entitled to deferred vested benefits		$ 413,616
(4)	TOTAL ACTUARIAL LIABILITIES		$ 36,647,655
	PRESENT AND PROSPECTIVE ASSETS		
(5)	Actuarial value of assets		$ 17,496,894
(6)	Present value of total future contributions = (4)-(5)	$ 19,150,761	
(7)	Present value of future member contributions and employer normal contributions		4,619,428
(8)	Prospective unfunded accrued liability contributions = (6)-(7)		14,531,333
(9)	TOTAL PRESENT AND PROSPECTIVE ASSETS		$ 36,647,655

SCHEDULE A
(continued)

SOLVENCY TEST
(in millions of dollars)

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)
6/30/2011	$3,325.7	$15,557.9	$7,085.1	$14,908.1	100%	74%	0%
6/30/2012	3,415.2	16,472.2	7,086.4	14,691.4	100	68	0
6/30/2013	3,514.4	17,716.4	7,586.5	14,962.8	100	65	0
6/30/2014	3,629.7	18,676.3	7,878.3	16,174.2	100	67	0
6/30/2015	3,700.6	19,522.5	7,926.8	17,219.5	100	69	0
6/30/2016	3,756.0	20,416.4	7,855.8	17,496.9	100	67	0

SCHEDULE B

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS
AS OF JUNE 30, 2016

(1)	Actuarial Value of Assets Beginning of Year		$ 17,219,519,677
(2)	Market Value of Assets End of Year		16,812,831,883
(3)	Market Value of Assets Beginning of Year		18,049,130,737
(4)	Cash Flow		
	a.	Contributions	878,498,816
	b.	Benefit Payments	1,860,946,372
	c.	Administrative Expense	8,636,438
	d.	Net: (4)a – (4)b – (4)c	(991,083,994)
(5)	Investment Income		
	a.	Market total: (2) – (3) – (4)d	(245,214,860)
	b.	Assumed Rate	7.50%
	c.	Amount for Immediate Recognition: [(3) x (5)b] + [(4)d x (5)b x 0.5]	1,316,519,156
	d.	Amount for Phased-In Recognition: (5)a – (5)c	(1,561,734,016)
(6)	Phased-In Recognition of Investment Income		
	a.	Current Year: 0.20 x (5)d	(312,346,803)
	b.	First Prior Year	(92,160,668)
	c.	Second Prior Year	325,163,609
	d.	Third Prior Year	191,479,441
	e.	Fourth Prior Year	(160,195,981)
	f.	Total Recognized Investment Gain	(48,060,402)
(7)	Actuarial Value of Assets End of Year: (1) + (4)d + (5)c + (6)f		$ 17,496,894,437
(8)	Difference Between Market & Actuarial Values: (2) – (7)		$ (684,062,554)
(9)	Rate of Return on Actuarial Value:		7.58%

SCHEDULE C

PENSION PLAN ASSETS
SUMMARY OF RECEIPTS AND DISBURSEMENTS*
(Market Value)

	For the Year Ending	
	June 30, 2016	**June 30, 2015**
Receipts for the Year		
Contributions		
Members	$ 313,044,226	$ 308,159,763
Employers	565,454,590	559,579,290
Total	878,498,816	867,739,053
Net Investment Income	(245,214,860)	862,178,759
TOTAL	$ 633,283,956	$ 1,729,917,812
Disbursements for the Year		
Benefit Payments	$ 1,833,198,630	$ 1,741,456,095
Refunds to Members	27,747,742	23,032,624
Miscellaneous, including expenses	8,636,438	8,868,971
TOTAL	$ 1,869,582,810	$ 1,773,357,690
Excess of Receipts over Disbursements	$ (1,236,298,854)	$ (43,439,878)
Reconciliation of Asset Balances		
Asset Balance as of the Beginning of the Year	$ 18,049,130,737	$ 18,092,570,615
Excess of Receipts over Disbursements	(1,236,298,854)	(43,439,878)
Asset Balance as of the End of the Year	$ 16,812,831,883	$ 18,049,130,737
Rate of Return on Market Value	(1.0)%	5.1%

* Excludes assets for Medical Insurance Fund, the 403(b) Program Reserve Fund and the Life Insurance Fund.

SCHEDULE D

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions and methods 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.

INVESTMENT RATE OF RETURN: 7.50% per annum, compounded annually, including price inflation at 3.00% per annum.

SALARY INCREASES: Representative values of the assumed annual rates of future salary increases are as follows and include wage inflation at 3.50% per annum:

Age	Annual Rate
20	7.20%
25	6.40
30	5.40
35	4.70
40	4.20
45	3.80
50	3.70
55	3.50
60	3.50
65	3.50

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

Males

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

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

Females

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

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

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 (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 Male	Service Retirement Female	Disability Retirement Male	Disability Retirement 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

ASSETS: 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 of 7.50%. The amount recognized each year is 20% of the difference between market value and expected actuarial value.

EXPENSE LOAD: None.

PERCENT MARRIED: 100%, with females 3 years younger than males.

LOADS: Unused sick leave: 2% of active liability

SCHEDULE E

ACTUARIAL COST METHOD

1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently at 7.50%), of each active member's expected benefit at retirement or death is determined, based on his age, service, sex and compensation. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. Future salary increases and post-retirement cost-of-living adjustments are also anticipated. 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 inactive members to obtain the present value of all expected benefits payable from the System on account of the present group of members and beneficiaries.
2. 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.
3. 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 anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.
4. The unfunded accrued liability is determined by subtracting the present value of prospective employer normal contributions and member contributions, together with the current actuarial value of assets held, from the present value of expected benefits to be paid from the System.

SCHEDULE F

SUMMARY OF MAIN SYSTEM PROVISIONS
AS INTERPRETED FOR VALUATION PURPOSES

The Teachers' Retirement System of the State of Kentucky was established on July 1, 1940. The valuation took into account amendments to the System effective through June 30, 2016. The following summary describes the main benefit and contribution provisions of the System as interpreted for the valuation.

1 - DEFINITIONS

"Final average salary" means the average of the five highest annual salaries which the member has received for service in a covered position and on which the member has made contributions or on which the public board, institution or agency has picked up the member contributions. For a member who retires after attaining age 55 with 27 years of service, “final average salary” means the average of the three highest annual salaries.

2 - BENEFITS

Service Retirement Allowance

Members Before 7/1/2008

Condition for Allowance	Completion of 27 years of service or attainment of age 55 and 5 years of service.
Amount of Allowance	The annual retirement allowance for non-university members is equal to:

(a) 2.0% of final average salary multiplied by service before July 1, 1983, plus

(b) 2.5% of final average salary multiplied by service after July 1, 1983.

(c) For individuals who become members of the Retirement System on or after July 1, 2002 and have less than 10 years of service at retirement, the retirement allowance is 2.0% of final average salary multiplied by service. If, however, they have 10 or more years, they receive a benefit percentage of 2.5% for all years of service up to 30 years.

(d) For members retiring on or after July 1, 2004, the retirement allowance formula is 3.0% of final average salary for each year of service credit earned in excess of 30 years.

The annual retirement allowance for university members is equal to 2.0% of final average salary multiplied by all years of service.

For all members, the annual allowance is reduced by 5% per year from the earlier of age 60 or the date the member would have completed 27 years of service.

The minimum annual service allowance for all members is $440 multiplied by credited service.

Members on and after 7/1/2008

Condition for Retirement

Completion of 27 years of service, attainment of age 60 and 5 years of service or attainment of age 55 and 10 years of service.

Amount of Allowance

The annual retirement allowance for non-university members is equal to:

1.7% of final average salary if service is 10 years or less.
2.0% of final average salary if service is greater than 10 years and no more than 20 years.
2.3% of final average salary if service is greater than 20 years but no more than 26 years.
2.5% of final average salary if service is greater than 26 years but no more than 30 years.
3.0% of final average salary for years of service greater than 30 years.

The annual retirement allowance for university members is equal to:

1.5% of final average salary if service is 10 years or less.
1.7% of final average salary if service is greater than 10 years and no more than 20 years.
1.85% of final average salary if service is greater than 20 years but less than 27 years.
2.0% of final average salary if service is greater than or equal to 27 years.

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For all members, the annual allowance is reduced by 6% per year from the earlier of age 60 or the date the member would have completed 27 years of service.

Disability Retirement Allowance

Condition for Allowance

Totally and permanently incapable of being employed as a teacher and under age 60 but after completing 5 years of service.

Amount of Allowance

The disability allowance is equal to the greater of the service retirement allowance or 60% of the member's final average salary. The disability allowance is payable over an entitlement period equal to 25% of the service credited to the member at the date of disability or five years, whichever is longer. After the disability entitlement period has expired and if the member remains disabled, he will be retired under service retirement. The service retirement allowance will be computed with service credit given for the period of disability retirement. The allowance will not be less than $6,000 per year. The service retirement allowance will not be reduced for commencement of the allowance before age 60 or the completion of 27 years of service.

Benefits Payable on Separation from Service

Any member who ceases to be in service is entitled to receive his contributions with allowable interest. A member who has completed 5 years of creditable service and leaves his contributions with the System may be continued in the membership of the System after separation from service, and file application for service retirement after the attainment of age 60.

Life Insurance

A separate Life Insurance fund has been created as of June 30, 2000 to pay benefits on behalf of deceased TRS active and retired members.

Death Benefits

A surviving spouse of an active member with less than 10 years of service may elect to receive an annual allowance of $2,880 except that if income from other sources exceeds $6,600 per year the annual allowance will be $2,160.

A surviving spouse of an active member with 10 or more years of service may elect to receive an allowance which is the actuarial equivalent of the allowance the deceased member would have received upon retirement. The allowance will commence on the date the deceased member would have been eligible for service retirement and will be payable during the life of the spouse.

If the deceased member is survived by unmarried children under age 18 the following schedule of annual allowances applies:

Number of Children	Annual Allowance
1	$ 2,400
2	4,080
3	4,800
4 or more	5,280

The allowances are payable until a child attains age 18, or age 23 if a full-time student.

If the member has no eligible survivor, a refund of his accumulated contributions is payable to his estate.

Options

In lieu of the regular Option 1, a retirement allowance payable in the form of a life annuity with refundable balance, any member before retirement may elect to receive a reduced allowance which is actuarially equivalent to the full allowance, in one of the following forms:

Option 2. A single life annuity payable during the member's lifetime with payments for 10 years certain.

Option 3. At the death of the member his allowance is continued throughout the life of his beneficiary.

Option 3(a). At the death of the beneficiary designated by the member under Option 3, the member's benefit will revert to what would have been paid had he not selected an option.

Option 4. At the death of the member one half of his allowance is continued throughout the life of his beneficiary.

Option 4(a). At the death of the beneficiary designated by the member under Option 4, the member's benefit will revert to what would have been paid had he not selected an option.

Post-Retirement Adjustments	The retirement allowance of each retired member and of each beneficiary shall be increased by 1.50% each July 1.

3 - CONTRIBUTIONS

Member Contributions	University members contribute 7.625% of salary to the Retirement System. Non-university members contribute 9.105% of salary to the Retirement System. Member contributions are picked up by the employer.

SCHEDULE G

TABLE 1
AGE – SERVICE TABLE

Distribution of Active Members as of June 30, 2016 by Age and Service Groups

Attained Age	Completed Years of Service								
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 35	Over 35	Total
24 & Under	2,355								2,355
Total Pay	45,330,040								45,330,040
Avg. Pay	19,248								19,248
25 to 29	5,983	1,390	6						7,379
Total Pay	203,433,582	67,448,815	290,024						271,172,421
Avg. Pay	34,002	48,524	48,337						36,749
30 to 34	3,012	4,867	1,237	5					9,121
Total Pay	95,202,602	245,417,243	70,031,584	254,892					410,906,321
Avg. Pay	31,608	50,425	56,614	50,978					45,051
35 to 39	2,269	2,377	4,756	984	4				10,390
Total Pay	63,198,818	122,108,596	281,358,005	63,149,812	239,758				530,054,989
Avg. Pay	27,853	51,371	59,159	64,177	59,940				51,016
40 to 44	1,785	1,520	2,196	4,060	746	1			10,308
Total Pay	45,830,416	77,450,441	131,391,508	267,885,302	52,046,889	53,664			574,658,220
Avg. Pay	25,675	50,954	59,832	65,982	69,768	53,664			55,749
45 to 49	1,483	1,177	1,593	2,266	3,343	750	3		10,615
Total Pay	39,361,503	60,147,545	93,765,291	147,455,842	233,185,542	54,299,673	169,293		628,384,689
Avg. Pay	26,542	51,102	58,861	65,073	69,753	72,400	56,431		59,198
50 to 54	1,196	717	1,039	1,272	1,534	1,826	286	2	7,872
Total Pay	25,260,952	36,290,570	61,397,451	82,245,956	106,693,617	134,430,589	21,213,845	131,648	467,664,628
Avg. Pay	21,121	50,614	59,093	64,659	69,553	73,620	74,174	65,824	59,409
55 to 59	1,345	467	678	996	1,069	818	352	19	5,744
Total Pay	21,138,039	21,468,016	39,649,701	64,095,061	75,667,783	62,721,524	30,314,021	1,529,398	316,583,543
Avg. Pay	15,716	45,970	58,480	64,352	70,784	76,677	86,119	80,495	55,116
60 to 64	1,837	341	387	608	577	412	102	65	4,329
Total Pay	23,796,325	13,577,768	22,772,409	40,965,044	42,005,811	32,467,970	9,324,712	5,479,043	190,389,082
Avg. Pay	12,954	39,818	58,843	67,377	72,800	78,806	91,419	84,293	43,980
65 & Over	2,291	524	181	227	214	169	65	64	3,735
Total Pay	20,398,952	12,356,675	11,463,858	15,532,839	16,369,811	14,008,597	5,681,398	6,270,288	102,082,418
Avg. Pay	8,904	23,581	63,336	68,427	76,494	82,891	87,406	97,973	27,331
Total	23,556	13,380	12,073	10,418	7,487	3,976	808	150	71,848
Total Pay	582,951,229	656,265,669	712,119,831	681,584,748	526,209,211	297,982,017	66,703,269	13,410,377	3,537,226,351
Avg. Pay	24,747	49,048	58,984	65,424	70,283	74,945	82,554	89,403	49,232

Average Age: 43.5

Average Service: 10.8

SCHEDULE G

TABLE 2

NUMBER OF RETIRED MEMBERS AND BENEFICIARIES AND THEIR BENEFITS BY AGE AS OF JUNE 30, 2016

Attained Age	Number of Members	Total Annual Payment	Average Annual Benefits
49 & Under	848	$ 11,407,720	$ 13,453
50 – 54	1,322	51,147,401	38,689
55 – 59	4,074	174,702,723	42,882
60 – 64	8,959	364,324,086	40,666
65 – 69	13,703	520,359,554	37,974
70 – 74	9,332	336,374,000	36,045
75 – 79	5,933	201,434,460	33,952
80 – 84	3,715	114,780,225	30,896
85 – 89	2,315	62,949,170	27,192
90 & Over	1,362	31,395,212	23,051
Total	51,563	$ 1,868,874,551	$ 36,244

Average Current Age: 69.2

Average Age at Retirement: 55.9

SCHEDULE G

TABLE 3

SCHEDULE OF RETIRANTS, BENEFICIARIES AND SURVIVORS ADDED TO AND REMOVED FROM ROLLS

	ADDED TO ROLLS		REMOVED FROM ROLLS		ROLLS AT END OF YEAR			
Fiscal Year Ending June 30	Number	Annual Allowances (in millions)	Number	Annual Allowances (in millions)	Number	Annual Allowances (in millions)	Increase In Annual Allowances	Average Annual Allowance
2007	2,050	$82.1	1,041	$20.7	39,506	$1,135.6	5.7%	$28,746
2008	2,183	90.6	950	19.4	40,739	1,206.8	6.3%	29,623
2009	2,351	96.2	1,040	22.7	42,050	1,280.3	6.1%	30,447
2010	2,105	93.7	1,021	21.8	43,134	1,352.2	5.6%	31,348
2011	2,133	98.9	848	17.7	44,419	1,433.4	6.0%	32,270
2012	2,513	111.2	838	19.4	46,094	1,525.2	6.4%	33,089
2013	2,303	105.7	991	22.2	47,406	1,608.7	5.5%	33,934
2014	2,146	99.6	976	23.4	48,576	1,684.9	4.7%	34,685
2015	2,917	119.1	1,671	36.3	49,822	1,767.6	4.9%	35,479
2016	2,753	128.2	1,012	26.9	51,563	1,868.9	5.7%	36,244

SCHEDULE H

BOARD FUNDING POLICY

Introduction

Pursuant to the provisions of KRS 161.250, the Board of Trustees ("Board") of the Kentucky Teachers' Retirement Systems ("TRS") is vested with the responsibility for the general administration and management of the retirement system. The Board may adopt procedures necessary to conduct the business of the retirement system as needed. The applicable provisions of the Kentucky Revised Statutes ("state law") shall control if any inconsistency exists between state law and this policy.

Background:

State law provides that the retirement benefits promised to members of TRS are "…an inviolable contract of the Commonwealth…." (KRS 161.714.) To satisfy this solemn commitment, the Commonwealth of Kentucky ("state") is required to pay annual retirement appropriations necessary to fund the benefit requirements of members of the retirement system. All employers participating in TRS are responsible for paying the fixed employer contribution rate set forth in state law. However, the state—as plan guarantor—is solely responsible for paying the additional annual retirement appropriations necessary to keep the retirement system actuarially sound and able to satisfy the contract with members to provide promised benefits. (KRS 161.550(6).)

Since fiscal year 2008, the state has not paid the recommended annual retirement appropriations necessary to pre-fund the benefit requirements of members of the retirement system as determined by the actuary. Over this period of time, because of the failure to fund, the state's annual retirement appropriations have grown significantly from $60.5 million (Fiscal Year 2009) to $487 million (Fiscal Year 2016). The following schedule details the growth of the annual retirement appropriations payable by the state:

	Cumulative Increase as a % of Payroll	Cumulative Increase of Annual Retirement Appropriations Payable by the State
2009	1.88	$ 60,499,800
2010	2.46	82,331,200
2011	3.59	121,457,000
2012	5.81	208,649,000
2013	7.27	260,980,000
2014	8.02	299,420,000
2015	10.42	386,400,000
2016	12.97	487,400,000

(Source: TRS Report of the Actuary on the Annual Valuation Prepared as of June 30, 2013).

The Board has always taken action as required by state law and recommended annual retirement appropriations payable by the state that would ensure that the state meets the contractual obligations to members. This policy confirms the Board's process for recommending annual retirement appropriations payable by the state and the primary actuarial assumptions and methodologies associated with calculating the annual retirement appropriations. Other related actuarial assumptions and methodologies not listed in this policy are reported in annual valuations, the most recent experience study, or resolutions adopted by the Board.

1. Annual Retirement Appropriations Payable by the State: In each biennial budget request, the Board will recommend annual retirement appropriations payable by the state to meet the benefit requirements of the members of the retirement system. The annual retirement appropriations payable by the state are the sum of the fixed employer contribution rate set by state law and the additional annual retirement appropriations necessary to fund the benefit requirements of members of the retirement system. (KRS 161.550.) The recommended additional annual retirement appropriations payable by the state are calculated by the Board's actuary based upon the results of an annual valuation preceding the beginning of each biennium. (KRS 161.400.)

2. Calculation of Annual Retirement Appropriations Payable by the State: The Board will recommend annual retirement appropriations payable by the state, which—if paid—will meet the benefit requirements of the members of the retirement system consistent with generally accepted actuarial principles. Based

upon technical advice from the Board's actuary, the Board hereby adopts the following principles for calculating the recommended annual retirement appropriations payable by the state:

- Use the Entry Age Normal actuarial cost method;
- Use a five-year asset smoothing method;
- Use a thirty-year closed period to amortize legacy unfunded liability ("legacy unfunded liability" is that unfunded liability recognized as of the valuation prepared for June 30, 2014);
- Use a twenty-year closed period to amortize new sources of unfunded liability ("new sources of unfunded liability" is that unfunded liability consisting of all benefit changes, assumption and method changes, and experience gains and/or losses that have occurred since the previous valuation); and
- Reach a 100 percent minimum funded ratio within the thirty-year closed amortization period.

The Board also recognizes that, from time to time, the state may desire to contribute lump sum payments toward satisfaction of unfunded liability rather than amortization of the debt. Total unfunded liability is published in every annual valuation of the retirement system and TRS will work with the state to develop reasonable and appropriate plans for receipt of lump sum payments toward the satisfaction of unfunded liability.

This policy will be reviewed regularly and amended or revised as necessary.