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March 9, 2020

Mr. Robert B. Barnes
Deputy Executive Secretary and General Counsel
Kentucky Teachers' Retirement System
479 Versailles Road
Frankfort, KY 40601-3800

Actuarial Impact – House Bill 613 – 20 RS HB 613/HCS 1 – Impact on Pension Plan
AA Statement 1 of 1

Dear Beau:

We have prepared an actuarial analysis of the impact of House Bill 613 – 20 RS HB 613/HCS 1 (HB 613/HCS 1) on the Teachers' Retirement System of the State of Kentucky (TRS). This actuarial analysis relates to the pension plan only. HB 613/HCS 1 creates a new benefit structure for active university members hired on or after January 1, 2021 and changes actuarial funding, participation requirements and actuarial assumptions. The major provisions of HB 613/HCS 1 are summarized below and the estimated cost impacts are provided in the attached Exhibits.

Section I - Benefit Provisions for New University Members on or after January 1, 2021

All new university members hired on or after January 1, 2021 will accrue retirement benefits under a foundational benefit plan and a supplemental benefit plan within TRS.

The following are the major provisions of the foundational benefit plan:

- Retirement eligibility of age 55 with 10 years of service or age 65 with 5 years of service.
- Final average salary will be based on highest 5 years.
- Benefit formula of 0.85% of final average salary at age 55, increasing incrementally each month, not to exceed a total of 1.25% of final average salary at age 65 or greater, applied to all years of service, plus
- An additional percentage for each month of service in excess of 33 years, of .05% not to exceed 0.25% at 38 years of service, applied to all years of service.
- 1.5% annual COLA will apply.

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- Member contributions earn interest based on a 30-year United States Treasury Bill rate until vested and 2.5% thereafter.
- Some disability and death benefits will continue to new members hired on or after January 1, 2021 in a similar manner as current members.
- Life Insurance benefits of $10,000 for death after retirement and $5,000 for death in active service.
- If the funding levels of the foundational benefit plan fall below 90%, the Board will make changes to any or all of the preceding provisions.

The retirement benefit determined under the supplemental plan will be based upon a member's accumulated account balance calculated as follows:

- Members shall contribute 2.0% of monthly salary.
- Employer shall contribute 2.0% of monthly salary.
- Member contributions earn interest based on a 30-year United States Treasury Bill rate.
- Once a member meets the service retirement eligibility, the member may elect to receive a monthly lifetime retirement allowance by annuitizing the accumulated account balance based on the actuarial assumptions and methods adopted by the TRS Board in effect on the member's retirement date.
- The member may elect to receive an actuarial equivalent benefit under one of the optional forms of payment as established by the TRS Board,
- Or the member may instead take a refund of the accumulated account balance or take a distribution over a period certain.
- Upon termination of employment with less than five years of service, the member shall forfeit the accumulated employer contributions and interest and shall only receive a refund of his or her accumulated contributions with regular interest.
- Upon termination of employment with five or more years of service, the member shall receive a full refund of his or her accumulated account balance.
- If the funding level of the foundational benefit falls below 90%, the Board shall utilize prospective mandatory supplemental contributions to provide funding for the foundational benefit component.

Section II - Contribution Requirements

Employee Contribution Rates
Active non-university members will contribute a percentage of salary for the foundational, supplemental and retiree health plans. The table below shows the contribution requirements:

Item	Member Rate
Foundational	5.000%
Supplemental	2.000
Retiree Health	2.775
Total	9.775%

Employer Contributions
According to HB 613/HCS 1, for all members, employers will pay a fixed base statutory contribution rate of 9.775% of pay for non-university employers to fund the foundational, supplemental and retiree health benefits. The table below shows the statutory contribution rates.

Item	Employer Rate
Foundational	5.775%
Supplemental	2.000
Retiree Health	2.000
Total	9.775%

Section III - Actuarial Funding

An employer stabilization reserve account is established that shall consist of the amounts of employer contributions that exceed the combined actuarially required employer contribution for the foundational benefit component and the mandatory employer contribution to the supplemental benefit component. The funds in this account may only be used to pay off the unfunded liability of the pension and life insurance funds.

Section IV - Actuarial Assumptions

The projections for the proposed legislation use the June 30, 2019 actuarial valuation of TRS as a baseline. Below are additional or alternative actuarial assumptions that are used in the determination of this legislation:

- We have assumed a Regular Interest assumption of 2.75%.
- We have assumed that the actuarially determined employer contribution (ADEC) will be made for each year of the projection. The total dollar amount payable by the university employers will decrease due to the new benefit structure.
- We have revised assumed retirement rates for members of the new plan structure based on the new retirement eligibility requirements. Actual retirement patterns occurring in the future that are different from those assumed, will impact the ultimate cost of HB 613/HCS 1. In addition, other assumptions, such as rates of termination and disability that were determined based on actual experience under the current plan would likely change under HB 613/HCS 1 further impacting the ultimate cost of disability significantly.

Section V - Conclusion

As shown in Exhibit 2, there is an ultimate savings under HB 613/HCS 1 of approximately $38 Million over the 20-year projection period. The savings is due to the new benefit structure for University members hired on or after January 1, 2021. The savings increases as more and more new University members are hired under this new benefit structure.

Projections are designed to identify anticipated trends rather than predicting some future state of events. The projections are based on TRS' estimated financial status on June 30, 2019, and project future events using one set of assumptions out of a range of many possibilities. The projections do not predict TRS' financial condition or its ability to pay benefits in the future and do not provide any guarantee of future financial soundness of the DB Plan. Over time, a defined benefit plan's total cost will depend on a number of factors, including the amount of benefits paid, the number of people paid benefits, the duration of the benefit payments, plan expenses, and the amount of earnings on assets invested to pay benefits. These amounts and other variables are uncertain at the time the projections were made. Because actual experience will not unfold exactly as expected, actual results can be expected to differ from the projections. To the extent that actual experience deviates significantly from the assumptions, results could be significantly better or significantly worse that indicated in this study.

The undersigned, Edward J. Koebel, is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

If you have any questions, please do not hesitate to contact us.

Sincerely,

Edward J. Koebel

Edward J. Koebel, EA, FCA, MAAA
Chief Executive Officer

Cathy Turcot

Cathy Turcot
Principal and Managing Director

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Exhibit 1
Teachers' Retirement System of the State of Kentucky
Current Funding Status for Open Defined Benefit Plan
($ in thousands)

Fiscal Year	Non-University Payroll (1)	University Payroll (2)	Total Payroll (3)	Unfunded Accrued Liability (4)	Funding Ratio (5)	Actuarially Determined Contribution in Dollars for Open DB Plan (6)
FY 2021-22	$3,629,800	$199,926	$3,829,726	$14,522,552	58.1%	$1,166,242
FY 2022-23	3,719,567	205,035	3,924,602	14,603,366	58.7%	1,200,796
FY 2023-24	3,809,893	210,510	4,020,403	14,489,240	60.0%	1,220,821
FY 2024-25	3,901,606	216,801	4,118,407	14,629,891	60.5%	1,263,638
FY 2025-26	3,991,126	224,165	4,215,291	14,866,282	60.7%	1,315,571
FY 2026-27	4,081,214	232,450	4,313,664	15,031,350	61.2%	1,365,963
FY 2027-28	4,172,477	241,666	4,414,143	15,172,649	61.6%	1,419,967
FY 2028-29	4,268,103	251,466	4,519,569	15,279,228	62.1%	1,476,633
FY 2029-30	4,367,514	261,323	4,628,837	15,346,697	62.7%	1,535,426
FY 2030-31	4,470,072	271,796	4,741,868	15,369,197	63.4%	1,598,001
FY 2031-32	4,578,015	282,465	4,860,480	15,342,978	64.1%	1,662,157
FY 2032-33	4,691,000	293,137	4,984,137	15,256,546	64.9%	1,728,832
FY 2033-34	4,807,117	304,819	5,111,936	15,106,934	65.9%	1,797,837
FY 2034-35	4,930,521	316,176	5,246,697	14,887,872	66.9%	1,869,533
FY 2035-36	5,060,198	327,783	5,387,981	14,586,670	68.1%	1,944,822
FY 2036-37	5,197,690	340,357	5,538,047	14,197,048	69.4%	2,023,261
FY 2037-38	5,343,656	353,535	5,697,191	13,704,910	70.9%	2,158,768
FY 2038-39	5,498,384	367,474	5,865,858	13,102,302	72.6%	2,196,843
FY 2039-40	5,662,115	382,131	6,044,246	12,378,147	74.5%	2,351,341
FY 2040-41	5,836,091	397,499	6,233,590	11,463,252	76.7%	2,475,176

Exhibit 2
Teachers' Retirement System of the State of Kentucky
Funding Requirements under New Plan and Comparison to Current Plan
($ in thousands)

Fiscal Year	Non-University Payroll (7)	University Payroll (8)	Total Payroll (9)=(7)+(8)	Unfunded Accrued Liability under New Plan (10)	New Plan Funding Ratio (11)	Total Employer Contribution for Proposed Bill (12)	Total Employer Contribution for Current Plan (13)=(6)	Cost/(Savings) to TRS Employers/ State (14)=(12)-(13)
FY 2021-22	$3,629,800	$199,926	$3,829,726	$14,522,552	58.1%	$1,166,242	$1,166,242	$0
FY 2022-23	3,719,567	205,035	3,924,602	14,603,365	58.7%	1,200,618	1,200,796	(178)
FY 2023-24	3,809,893	210,510	4,020,403	14,488,967	60.0%	1,220,465	1,220,821	(356)
FY 2024-25	3,901,606	216,801	4,118,407	14,629,061	60.5%	1,263,125	1,263,638	(513)
FY 2025-26	3,991,126	224,165	4,215,291	14,864,876	60.7%	1,314,900	1,315,571	(671)
FY 2026-27	4,081,214	232,450	4,313,664	15,029,365	61.2%	1,365,093	1,365,963	(870)
FY 2027-28	4,172,477	241,666	4,414,143	15,170,123	61.6%	1,418,891	1,419,967	(1,076)
FY 2028-29	4,268,103	251,466	4,519,569	15,276,170	62.1%	1,475,394	1,476,633	(1,239)
FY 2029-30	4,367,514	261,323	4,628,837	15,343,083	62.7%	1,534,024	1,535,426	(1,402)
FY 2030-31	4,470,072	271,796	4,741,868	15,365,047	63.4%	1,596,331	1,598,001	(1,670)
FY 2031-32	4,578,015	282,465	4,860,480	15,338,311	64.1%	1,660,316	1,662,157	(1,841)
FY 2032-33	4,691,000	293,137	4,984,137	15,251,391	64.9%	1,726,815	1,728,832	(2,017)
FY 2033-34	4,807,117	304,819	5,111,936	15,101,331	65.9%	1,795,563	1,797,837	(2,274)
FY 2034-35	4,930,521	316,176	5,246,697	14,881,825	66.9%	1,867,040	1,869,533	(2,493)
FY 2035-36	5,060,198	327,783	5,387,981	14,580,195	68.1%	1,942,048	1,944,822	(2,774)
FY 2036-37	5,197,690	340,357	5,538,047	14,190,177	69.4%	2,020,256	2,023,261	(3,005)
FY 2037-38	5,343,656	353,535	5,697,191	13,697,683	70.9%	2,155,458	2,158,768	(3,310)
FY 2038-39	5,498,384	367,474	5,865,858	13,094,758	72.6%	2,193,216	2,196,843	(3,627)
FY 2039-40	5,662,115	382,131	6,044,246	12,370,340	74.5%	2,347,407	2,351,341	(3,934)
FY 2040-41	5,836,091	397,499	6,233,590	11,455,221	76.7%	2,470,924	2,475,176	(4,252)