MEMORANDUM REPORT

TO: Donna S. Early

FROM: Findley, Inc.

DATE: January 28, 2020

RE: KJRP - Actuarial Analysis of 20 RS HB 328
AA Statement 1 of 2

Findley, Inc. was asked to prepare an actuarial analysis in compliance with KRS 6.350 with regard to the recent proposed legislation ("20 RS HB 328") that makes changes to the Kentucky Judicial Retirement Plan ("KJRP").

It is our understanding that 20 RS HB 328 makes the following changes to KJRP effective with the 2021 actuarial valuation regarding the calculation of the annual required contribution which shall include:

1. The entry age normal cost or the unit credit normal cost, as selected by the board. For purposes of this study, we have assumed entry age normal cost would be used which is consistent with the current funding methods being used and with the requirements of the Governmental Accounting Standards Board Statements 67 and 68;
2. The unfunded liability as of July 1, 2021 shall be amortized over a closed period of 25 years;
3. After the July 1, 2021 valuation is completed, all future changes which impact the unfunded accrued liability shall be amortized as follows:
   i) Plan amendments shall be amortized over a closed period of 20 years;
   ii) Changes in methods or assumptions shall be amortized over a closed period of 15 years;
   iii) Other actuarial gains and losses shall be amortized over a closed period of 15 years.
4. All amortization bases shall be set up as a level dollar amortization.
5. The contribution required in a non-valuation year (every other year) shall be based on the results of the most recent actuarial valuation;
6. Employer costs for the hybrid cash balance plan shall be incorporated in to the employer contribution rate for KJRP. Due to the timing requirements for this study and the small liability currently in the hybrid plan, we have excluded any current or future liability from the hybrid plan for purposes of this study.

Comments Relating to Items 1, 2, and 3 Above

Item 1, use entry age normal cost:

- No change from current practice

Item 2, amortize unfunded liability over 25 years:

- In year 1, the 25 year amortization is approximately the same as the current practice of multiplying the unfunded liability by interest plus one percent. In future years, the 25-year level amortization will result in larger contributions and will pay off the current unfunded liability after 25 years.

Item 3, modify future amortization periods:

- While this study assumes no future amendments, assumption changes or other gains and losses, the lag period between the calculated date of the Annual Required Contribution and the date of the actual contribution creates some small gains and losses. These gains and losses have been funded using a rolling 15 year amortization period to simulate the anticipated impact of the actual change in amortization method.

Assumptions

Future results will vary from projections to the extent future experience varies from the assumptions used in the projections. The longer the period of the forecast, the more variation is likely to occur and the less likely future results will match projections.

1. Except as mentioned herein, all data, assets and assumptions are consistent with the assumptions and methods used for the July 1, 2019 valuation report.
2. Future experience assumptions are consistent with the July 1, 2019 valuation assumptions.
3. The total population remains constant over the period of the forecast.
4. Since the changes under 20 RS HB 328 are effective January 1, 2021, the first year impacted by a valuation recognizing the changes is July 1, 2021.
5. It is assumed that 100% of the recommended contribution will be made for each year in the forecast.
6. In accordance with KRS 21.405, this study does not recognize cost of living increases effective after the most recent valuation date.
7. Certain changes under 20 RS HB 328, may or may not be allowed under state law. Whether or not all changes under 20 RS HB 328 are permissible is a legal issue, and we provide no opinion in this regard. For purposes of the attached projections, we have assumed such changes are allowable.
8. This report provides actuarial advice and does not constitute legal advice.

Definitions

Accrued Liability – based on the methods and assumptions used, the amount of assets that would be needed to satisfy future projected benefit payments based on service as of the valuation date.

Normal Cost – cost of benefits earned in the year following the valuation for current active members

Actuarial Asset Value – A smoothed asset value which smoothes in asset gains and losses over a 5 year period (for purposes of this study). For projection years 5 or more years in the future, the actuarial and market value would be the same (assuming assets earn the 6.5% rate of return which is assumed). As the Plan has experienced consistent gains over the past few years, the current Actuarial Asset Value is smaller than the market value since all prior gains have not yet been recognized.

Current – projections reflecting current rules and regulations, without regard to 20 RS HB 328

Proposed – projections reflecting 20 RS HB 328

Conclusions

Adopting the changes put forth under 20 RS HB 328 will increase annual contributions over the next 25 years, as the unfunded liability is paid off but then will result in much lower contributions beyond 25 years in the future as the expected annual contribution would be approximately equal to the normal cost once the plan is 100% funded.

Since the traditional OPEB portion of the plan is currently overfunded, the overfunding in that plan will continue to grow over the period of the forecast but the pension and hybrid OPEB portions will continue to require contributions as that portion of the plan will be underfunded over the next 20 years (just less so under 20 RS HB 328).

In accordance with KRS 6.350(2)(c), we have the following opinion in regards to 20 RS HB 328:

1. The estimated number of individuals affected is none (i.e., no individual benefit amounts are changed).
2. There is no change in benefit payments anticipated.
3. The estimated change to employer contribution rates is shown in the attached tables.
4. Estimated change to administrative expenses is no more than $2,000 (one-time expense to change internal models for the change in amortization periods).

Forecast results are sensitive to the assumptions used. For example, using a different assumption as to future investment returns can produce materially different results. Let us know if you would like for us to perform any sensitivity analysis.

Actuarially Sound

KRS 6.350 requires comment on whether the proposed changes would make KJRP actuarially unsound or, if already actuarially unsound, if such changes would make KJRP "more unsound".

A plan that has adopted a reasonable funding method, uses reasonable assumptions and contributes at a rate at or above the recommended contribution rate (based on these reasonable methods and assumptions), could be considered to be actuarially sound. We believe the changes reflected in this study, if adopted, **will** increase the "actuarial soundness" of KJRP.

In order to ensure KJRP is funded in an "actuarially sound manner", we would recommend:

1. Adopting the changes to the calculation of the minimum recommended contribution outlined in 20 RS HB 328.
2. Contributing at least the minimum recommended contribution each year.

Deviations from these recommendations could result in an "actuarially unsound" approach to funding KJRP and may eventually result in KJRP becoming insolvent – that is, exhausting assets at which time all future benefits would be made on a pay as you go basis.

Although the Actuarial Standards of Practice 4 "Measuring Pension Obligations" allows for plan liabilities to be calculated under a legally prescribed method, the statement goes on to say,

> "If, in the actuary's professional judgment, such an actuarial cost method or amortization method is significantly inconsistent with the plan accumulating adequate assets to make benefit payments when due, assuming that all actuarial assumptions will be realized and that the plan sponsor or other contributing entity will make contributions when due, the actuary should disclose this."

It is our professional actuarial opinion that the current legally prescribed method which requires contributions of normal cost plus interest on the unfunded liability plus 1% of the unfunded liability (per KRS 21.525 as currently written) is inconsistent with the plan accumulating adequate assets to make benefit payments when due, assuming all actuarial assumptions are realized. Adopting 20 RS HB 328 would resolve this issue.

Professional Qualifications

This report has been prepared under the supervision of Matthew Widick. Matthew is a member of the American Academy of Actuaries, a Fellow of the Society of Actuaries, and a consulting actuary with Findley, Inc. who has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein. To the best of my knowledge this report has been prepared in accordance with generally accepted actuarial standards, including the overall appropriateness of the analysis, assumptions, and results and conforms to appropriate Standards of Practice as promulgated from time to time by the Actuarial Standards Board, which standards form the basis for the actuarial report. I am not aware of any direct or material indirect financial interest or relationship, including investment management or other services that could create, or appear to create, a conflict of interest that would impair the objectivity of this work.

Matthew Widick

Matthew S. Widick
Associate, Society of Actuaries
Enrollment No. 17-08159
Phone 615.665.5407

January 28, 2020
Date

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Kentucky Judicial Retirement Plan
Cost Projections - 20 RS HB 328
Prepared by Findley, Inc.
January 28, 2020
Pension Plan Only (pre-2014 Legacy and post-2014 Hybrid Tier)

	Contribution ($M)		Contribution (%)		Accrued Liability ($M)		Unfunded Liability ($M)		Funded Ratio (Assets/Liabilities)	
Year Beginning July 1	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed
2019	$ 9.9	$ 9.9	32.5%	32.5%	$ 369.3	$ 369.3	$ 58.4	$ 58.4	84%	84%
2020	$ 6.8	$ 6.8	22.5%	22.5%	$ 365.7	$ 365.7	$ 45.5	$ 45.5	88%	88%
2021	$ 7.2	$ 7.2	23.7%	23.7%	$ 361.6	$ 361.6	$ 33.3	$ 33.3	91%	91%
2022	$ 4.6	$ 4.7	15.2%	15.5%	$ 356.9	$ 356.9	$ 24.0	$ 24.0	93%	93%
2023	$ 5.0	$ 5.0	16.1%	16.2%	$ 351.7	$ 351.7	$ 18.4	$ 18.3	95%	95%
2024	$ 3.2	$ 3.0	10.1%	9.5%	$ 345.7	$ 345.7	$ 16.1	$ 16.0	95%	95%
2025	$ 3.4	$ 3.1	10.5%	9.6%	$ 339.4	$ 339.4	$ 15.5	$ 15.6	95%	95%
2026	$ 3.0	$ 2.8	8.7%	8.2%	$ 332.5	$ 332.5	$ 14.6	$ 14.9	96%	96%
2027	$ 3.1	$ 2.9	8.8%	8.3%	$ 325.3	$ 325.3	$ 14.2	$ 14.5	96%	96%
2028	$ 2.8	$ 2.8	7.7%	7.8%	$ 317.9	$ 317.9	$ 13.5	$ 14.0	96%	96%
2029	$ 3.0	$ 3.0	7.9%	7.9%	$ 310.0	$ 310.0	$ 13.1	$ 13.6	96%	96%
2030	$ 2.7	$ 2.9	6.9%	7.4%	$ 301.8	$ 301.8	$ 12.4	$ 13.0	96%	96%
2031	$ 2.8	$ 3.0	7.0%	7.5%	$ 293.4	$ 293.4	$ 11.9	$ 12.3	96%	96%
2032	$ 2.5	$ 2.9	6.1%	7.0%	$ 284.7	$ 284.7	$ 11.3	$ 11.5	96%	96%
2033	$ 2.7	$ 3.1	6.2%	7.1%	$ 276.2	$ 276.2	$ 11.0	$ 10.9	96%	96%
2034	$ 2.6	$ 3.1	5.7%	6.9%	$ 267.7	$ 267.7	$ 10.6	$ 10.0	96%	96%
2035	$ 2.7	$ 3.2	5.9%	7.0%	$ 259.3	$ 259.3	$ 10.2	$ 9.1	96%	96%
2036	$ 2.6	$ 3.2	5.4%	6.7%	$ 250.1	$ 250.1	$ 9.8	$ 8.1	96%	97%
2037	$ 2.7	$ 3.4	5.4%	6.8%	$ 240.5	$ 240.5	$ 9.5	$ 7.0	96%	97%
2038	$ 2.6	$ 3.4	5.1%	6.7%	$ 230.9	$ 230.9	$ 9.1	$ 5.7	96%	98%
2039	$ 2.7	$ 3.6	5.1%	6.8%	$ 221.2	$ 221.2	$ 8.7	$ 4.2	96%	98%
Sum of Contributions	$ 78.3	$ 82.8								

Assumes 6.5% future asset returns beginning July 1, 2019 in the Traditional Defined Benefit plan and 4% interest credit in the Hybrid Defined Benefit plan.
Assumes 100% of the recommended contribution is contributed each year.
Unfunded Liability is calculated as Accrued Liability minus the Actuarial Assets Value.
Funded Ratio is calculated as Actuarial Value of Assets divided by Accrued Liability.
Contribution(%) is calculated as the Contribution($) divided by total payroll, including participants in both the Traditional and Hybrid Defined Benefit plans and future new entrants.

Kentucky Judicial Retirement Plan
Cost Projections - 20 RS HB 328
Prepared by Findley, Inc.
January 28, 2020
Traditional OPEB Plan Only

	Contribution ($M)		Contribution (%)		Accrued Liability ($M)		Unfunded Liability ($M)		Funded Ratio (Assets/Liabilities)	
Year Beginning July 1	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed
2019	$ 0.0	$ 0.0	0.0%	0.0%	$ 47.2	$ 47.2	$ (41.0)	$ (41.0)	187%	187%
2020	$ 0.0	$ 0.0	0.0%	0.0%	$ 48.4	$ 48.4	$ (45.3)	$ (45.3)	194%	194%
2021	$ 0.0	$ 0.0	0.0%	0.0%	$ 49.5	$ 49.5	$ (50.4)	$ (50.4)	202%	202%
2022	$ 0.0	$ 0.0	0.0%	0.0%	$ 50.4	$ 50.4	$ (54.9)	$ (54.9)	209%	209%
2023	$ 0.0	$ 0.0	0.0%	0.0%	$ 51.1	$ 51.1	$ (59.1)	$ (59.1)	216%	216%
2024	$ 0.0	$ 0.0	0.0%	0.0%	$ 51.6	$ 51.6	$ (62.5)	$ (62.5)	221%	221%
2025	$ 0.0	$ 0.0	0.0%	0.0%	$ 52.0	$ 52.0	$ (66.2)	$ (66.2)	227%	227%
2026	$ 0.0	$ 0.0	0.0%	0.0%	$ 52.1	$ 52.1	$ (70.1)	$ (70.1)	235%	235%
2027	$ 0.0	$ 0.0	0.0%	0.0%	$ 52.0	$ 52.0	$ (74.3)	$ (74.3)	243%	243%
2028	$ 0.0	$ 0.0	0.0%	0.0%	$ 51.8	$ 51.8	$ (78.9)	$ (78.9)	252%	252%
2029	$ 0.0	$ 0.0	0.0%	0.0%	$ 51.4	$ 51.4	$ (83.7)	$ (83.7)	263%	263%
2030	$ 0.0	$ 0.0	0.0%	0.0%	$ 50.9	$ 50.9	$ (89.0)	$ (89.0)	275%	275%
2031	$ 0.0	$ 0.0	0.0%	0.0%	$ 50.2	$ 50.2	$ (94.6)	$ (94.6)	288%	288%
2032	$ 0.0	$ 0.0	0.0%	0.0%	$ 49.2	$ 49.2	$ (100.6)	$ (100.6)	304%	304%
2033	$ 0.0	$ 0.0	0.0%	0.0%	$ 48.2	$ 48.2	$ (107.1)	$ (107.1)	322%	322%
2034	$ 0.0	$ 0.0	0.0%	0.0%	$ 47.0	$ 47.0	$ (113.9)	$ (113.9)	342%	342%
2035	$ 0.0	$ 0.0	0.0%	0.0%	$ 45.7	$ 45.7	$ (121.3)	$ (121.3)	365%	365%
2036	$ 0.0	$ 0.0	0.0%	0.0%	$ 44.4	$ 44.4	$ (129.1)	$ (129.1)	391%	391%
2037	$ 0.0	$ 0.0	0.0%	0.0%	$ 43.0	$ 43.0	$ (137.4)	$ (137.4)	420%	420%
2038	$ 0.0	$ 0.0	0.0%	0.0%	$ 41.5	$ 41.5	$ (146.3)	$ (146.3)	453%	453%
2039	$ 0.0	$ 0.0	0.0%	0.0%	$ 40.0	$ 40.0	$ (155.8)	$ (155.8)	490%	490%
Sum of Contributions	$ 0.0	$ 0.0								

Assumes 6.5% future asset returns beginning July 1, 2019 in the Traditional OPEB plan.
Assumes 100% of the recommended contribution is contributed each year.
Unfunded Liability is calculated as Accrued Liability minus the Actuarial Assets Value.
Funded Ratio is calculated as Actuarial Value of Assets divided by Accrued Liability.
Contribution(%) is calculated as the Contribution($) divided by total payroll of participants in the Traditional OPEB plan.

Kentucky Judicial Retirement Plan
Cost Projections - 20 RS HB 328
Prepared by Findley, Inc.
January 28, 2020
Hybrid OPEB Plan Only

Year Beginning July 1	Contribution ($M) Current	Contribution ($M) Proposed	Contribution (%) Current	Contribution (%) Proposed	Accrued Liability ($M) Current	Accrued Liability ($M) Proposed	Unfunded Liability ($M) Current	Unfunded Liability ($M) Proposed	Funded Ratio (Assets/Liabilities) Current	Funded Ratio (Assets/Liabilities) Proposed
2019	$ 0.00	$ 0.00	0.0%	0.0%	$ 0.11	$ 0.11	$ (0.03)	$ (0.03)	127%	127%
2020	$ 0.00	$ 0.00	0.0%	0.0%	$ 0.16	$ 0.16	$ (0.04)	$ (0.04)	125%	125%
2021	$ 0.00	$ 0.00	0.0%	0.0%	$ 0.30	$ 0.30	$ (0.07)	$ (0.07)	123%	123%
2022	$ 0.00	$ 0.00	0.0%	0.0%	$ 0.47	$ 0.47	$ (0.10)	$ (0.10)	121%	121%
2023	$ 0.00	$ 0.00	0.0%	0.0%	$ 0.66	$ 0.66	$ (0.13)	$ (0.13)	120%	120%
2024	$ 0.00	$ 0.00	0.0%	0.0%	$ 0.88	$ 0.88	$ (0.16)	$ (0.16)	118%	118%
2025	$ 0.00	$ 0.00	0.0%	0.0%	$ 1.12	$ 1.12	$ (0.20)	$ (0.20)	118%	118%
2026	$ 0.00	$ 0.00	0.0%	0.0%	$ 1.39	$ 1.39	$ (0.25)	$ (0.25)	118%	118%
2027	$ 0.00	$ 0.00	0.0%	0.0%	$ 1.68	$ 1.68	$ (0.29)	$ (0.29)	117%	117%
2028	$ 0.00	$ 0.00	0.0%	0.0%	$ 2.01	$ 2.01	$ (0.35)	$ (0.35)	117%	117%
2029	$ 0.00	$ 0.00	0.0%	0.0%	$ 2.36	$ 2.36	$ (0.41)	$ (0.41)	117%	117%
2030	$ 0.00	$ 0.00	0.0%	0.0%	$ 2.74	$ 2.74	$ (0.48)	$ (0.48)	118%	118%
2031	$ 0.00	$ 0.00	0.0%	0.0%	$ 3.14	$ 3.14	$ (0.57)	$ (0.57)	118%	118%
2032	$ 0.00	$ 0.00	0.0%	0.0%	$ 3.57	$ 3.57	$ (0.66)	$ (0.66)	118%	118%
2033	$ 0.00	$ 0.00	0.0%	0.0%	$ 4.03	$ 4.03	$ (0.75)	$ (0.75)	119%	119%
2034	$ 0.00	$ 0.00	0.0%	0.0%	$ 4.52	$ 4.52	$ (0.85)	$ (0.85)	119%	119%
2035	$ 0.00	$ 0.00	0.0%	0.0%	$ 5.03	$ 5.03	$ (0.97)	$ (0.97)	119%	119%
2036	$ 0.00	$ 0.00	0.0%	0.0%	$ 5.58	$ 5.58	$ (1.09)	$ (1.09)	120%	120%
2037	$ 0.00	$ 0.00	0.0%	0.0%	$ 6.16	$ 6.16	$ (1.22)	$ (1.22)	120%	120%
2038	$ 0.00	$ 0.00	0.0%	0.0%	$ 6.77	$ 6.77	$ (1.36)	$ (1.36)	120%	120%
2039	$ 0.00	$ 0.00	0.0%	0.0%	$ 7.42	$ 7.42	$ (1.51)	$ (1.51)	120%	120%
Sum of Contributions	$ 0.00	$ 0.00								

Assumes 4.0% future asset returns beginning July 1, 2019 in the Hybrid OPEB plan.
Assumes 100% of the recommended contribution is contributed each year.
Unfunded Liability is calculated as Accrued Liability minus the Actuarial Assets Value.
Funded Ratio is calculated as Actuarial Value of Assets divided by Accrued Liability.
Contribution(%) is calculated as the Contribution($) divided by total payroll of participants in the Hybrid OPEB plan.

MEMORANDUM REPORT

TO: Donna S. Early

FROM: Findley, Inc.

DATE: January 28, 2020

RE: KLRP - Actuarial Analysis of 20 RS HB 328
AA Statement 2 of 2

Findley, Inc. was asked to prepare an actuarial analysis in compliance with KRS 6.350 with regard to the recent proposed legislation ("20 RS HB 328") that makes changes to the Kentucky Legislators Retirement Plan ("KLRP").

It is our understanding that 20 RS HB 328 makes the following changes to KLRP effective with the 2021 actuarial valuation regarding the calculation of the annual required contribution which shall include:

7. The entry age normal cost or the unit credit normal cost, as selected by the board. For purposes of this study, we have assumed entry age normal cost would be used which is consistent with the current funding methods being used and with the requirements of the Governmental Accounting Standards Board Statements 67 and 68;
8. The unfunded liability as of July 1, 2021 shall be amortized over a closed period of 25 years;
9. After the July 1, 2021 valuation is completed, all future changes which impact the unfunded accrued liability shall be amortized as follows:
   iv) Plan amendments shall be amortized over a closed period of 20 years;
   v) Changes in methods or assumptions shall be amortized over a closed period of 15 years;
   vi) Other actuarial gains and losses shall be amortized over a closed period of 15 years.
10. All amortization bases shall be set up as a level dollar amortization.
11. The contribution required in a non-valuation year (every other year) shall be based on the results of the most recent actuarial valuation;
12. Employer costs for the hybrid cash balance plan shall be incorporated in to the employer contribution rate for KLRP. Due to the timing requirements for this study and the small liability currently in the hybrid plan, we have excluded any current or future liability from the hybrid plan for purposes of this study.

<u>Comments Relating to Items 1, 2, and 3 Above</u>

Item 1, use entry age normal cost:

- No change from current practice

Item 2, amortize unfunded liability over 25 years:

- In year 1, the 25 year amortization is approximately the same as the current practice of multiplying the unfunded liability by interest plus one percent. In future years, the 25-year level amortization will result in larger contributions and will pay off the current unfunded liability after 25 years.

Item 3, modify future amortization periods:

- While this study assumes no future amendments, assumption changes or other gains and losses, the lag period between the calculated date of the Annual Required Contribution and the date of the actual contribution creates some small gains and losses. These gains and losses have been funded using a rolling 15 year amortization period to simulate the anticipated impact of the actual change in amortization method.

Assumptions

Future results will vary from projections to the extent future experience varies from the assumptions used in the projections. The longer the period of the forecast, the more variation is likely to occur and the less likely future results will match projections.

9. Except as mentioned herein, all data, assets and assumptions are consistent with the assumptions and methods used for the July 1, 2019 valuation report.
10. Future experience assumptions are consistent with the July 1, 2019 valuation assumptions.
11. The total population remains constant over the period of the forecast.
12. Since the changes under 20 RS HB 328 are effective January 1, 2021, the first year impacted by a valuation recognizing the changes is July 1, 2021.
13. It is assumed that 100% of the recommended contribution will be made for each year in the forecast.
14. In accordance with KRS 21.405, this study does not recognize cost of living increases effective after the most recent valuation date.
15. Certain changes under 20 RS HB 328, may or may not be allowed under state law. Whether or not all changes under 20 RS HB 328 are permissible is a legal issue, and we provide no opinion in this regard. For purposes of the attached projections, we have assumed such changes are allowable.
16. This report provides actuarial advice and does not constitute legal advice.

Definitions

Accrued Liability – based on the methods and assumptions used, the amount of assets that would be needed to satisfy future projected benefit payments based on service as of the valuation date.

Normal Cost – cost of benefits earned in the year following the valuation for current active members

Actuarial Asset Value – A smoothed asset value which smoothes in asset gains and losses over a 5 year period (for purposes of this study). For projection years 5 or more years in the future, the actuarial and market value would be the same (assuming assets earn the 6.5% rate of return which is assumed). As the Plan has experienced consistent gains over the past few years, the current Actuarial Asset Value is smaller than the market value since all prior gains have not yet been recognized.

Current – projections reflecting current rules and regulations, without regard to 20 RS HB 328

Proposed – projections reflecting 20 RS HB 328

Conclusions

Because the plan is approaching a fully funded position, the Proposed Bill has no impact to forecasted contributions since there is no expected unfunded liability under the set of assumptions used.

Since the traditional OPEB portion of the plan is currently overfunded, the overfunding in that plan will continue to grow over the period of the forecast but the hybrid OPEB portion will continue to require contributions and will be underfunded over the next 20 years (just less so under 20 RS HB 328).

In accordance with KRS 6.350(2)(c), we have the following opinion in regards to 20 RS HB 328:

5. The estimated number of individuals affected is none (i.e., no individual benefits are changed).
6. There is no change in benefit payments anticipated.
7. The estimated change to employer contribution rates is shown in the attached tables.
8. Estimated change to administrative expenses is no more than $2,000 (one-time expense to change internal models for change in amortization periods).

Forecast results are sensitive to the assumptions used. For example, using a different assumption as to future investment returns can produce materially different results. Let us know if you would like for us to perform any sensitivity analysis.

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In order to ensure KLRP is funded in an "actuarially sound manner", we would recommend:

3. Adopting the changes to the calculation of the minimum recommended contribution outlined in 20 RS HB 328.
4. Contributing at least the minimum recommended contribution each year.

Deviations from these recommendations could result in an "actuarially unsound" approach to funding KLRP and may eventually result in KLRP becoming insolvent – that is, exhausting assets at which time all future benefits would be made on a pay as you go basis.

Although the Actuarial Standards of Practice 4 "Measuring Pension Obligations" allows for plan liabilities to be calculated under a legally prescribed method, the statement goes on to say,

> "If, in the actuary's professional judgment, such an actuarial cost method or amortization method is significantly inconsistent with the plan accumulating adequate assets to make benefit payments when due, assuming that all actuarial assumptions will be realized and that the plan sponsor or other contributing entity will make contributions when due, the actuary should disclose this."

It is our professional actuarial opinion that the current legally prescribed method which requires contributions of normal cost plus interest on the unfunded liability plus 1% of the unfunded liability (per KRS 21.525 as currently written) is inconsistent with the plan accumulating adequate assets to make benefit payments when due, assuming all actuarial assumptions are realized. Adopting 20 RS HB 328 would resolve this issue.

Professional Qualifications

This report has been prepared under the supervision of Matthew Widick. Matthew is a member of the American Academy of Actuaries, a Fellow of the Society of Actuaries, and a consulting actuary with Findley, Inc. who has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein. To the best of my knowledge this report has been prepared in accordance with generally accepted actuarial standards, including the overall appropriateness of the analysis, assumptions, and results and conforms to appropriate Standards of Practice as promulgated from time to time by the Actuarial Standards Board, which standards form the basis for the actuarial report. I am not aware of any direct or material indirect financial interest or relationship, including investment management or other services that could create, or appear to create, a conflict of interest that would impair the objectivity of this work.

January 28, 2020
Date

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Associate, Society of Actuaries
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Kentucky Legislators Retirement Plan
Cost Projections - 20 RS HB 328
Prepared by Findley, Inc.
January 28, 2020
Pension Plan Only (pre-2014 Legacy and post-2014 Hybrid Tier)

	Contribution ($M)		Contribution (%)		Accrued Liability ($M)		Unfunded Liability ($M)		Funded Ratio (Assets/Liabilities)	
Year Beginning July 1	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed
2019	$ 1.23	$ 1.23	28.4%	28.4%	$ 71.9	$ 71.9	$ 0.5	$ 0.5	99%	99%
2020	$ 0.37	$ 0.37	8.7%	8.7%	$ 70.4	$ 70.4	$ (2.3)	$ (2.3)	103%	103%
2021	$ 0.37	$ 0.37	8.6%	8.6%	$ 69.0	$ 69.0	$ (4.7)	$ (4.7)	107%	107%
2022	$ 0.13	$ 0.13	3.0%	3.0%	$ 67.3	$ 67.3	$ (6.6)	$ (6.6)	110%	110%
2023	$ 0.13	$ 0.13	2.9%	2.9%	$ 65.7	$ 65.7	$ (7.8)	$ (7.8)	112%	112%
2024	$ 0.14	$ 0.14	3.1%	3.1%	$ 63.9	$ 63.9	$ (8.2)	$ (8.2)	113%	113%
2025	$ 0.14	$ 0.14	3.0%	3.0%	$ 62.1	$ 62.1	$ (8.6)	$ (8.6)	114%	114%
2026	$ 0.15	$ 0.15	3.1%	3.1%	$ 60.3	$ 60.3	$ (9.1)	$ (9.1)	115%	115%
2027	$ 0.16	$ 0.16	3.1%	3.1%	$ 58.5	$ 58.5	$ (9.7)	$ (9.7)	116%	117%
2028	$ 0.17	$ 0.17	3.2%	3.2%	$ 56.7	$ 56.7	$ (10.2)	$ (10.2)	118%	118%
2029	$ 0.18	$ 0.18	3.3%	3.3%	$ 55.0	$ 55.0	$ (10.9)	$ (10.9)	120%	120%
2030	$ 0.19	$ 0.19	3.4%	3.4%	$ 53.1	$ 53.1	$ (11.5)	$ (11.5)	122%	122%
2031	$ 0.20	$ 0.20	3.4%	3.4%	$ 51.3	$ 51.3	$ (12.2)	$ (12.2)	124%	124%
2032	$ 0.21	$ 0.21	3.5%	3.5%	$ 49.5	$ 49.5	$ (13.0)	$ (13.0)	126%	126%
2033	$ 0.21	$ 0.21	3.4%	3.4%	$ 47.7	$ 47.7	$ (13.8)	$ (13.8)	129%	129%
2034	$ 0.22	$ 0.22	3.4%	3.4%	$ 45.9	$ 45.9	$ (14.6)	$ (14.6)	132%	132%
2035	$ 0.23	$ 0.23	3.4%	3.4%	$ 44.2	$ 44.2	$ (15.6)	$ (15.7)	135%	135%
2036	$ 0.24	$ 0.24	3.5%	3.5%	$ 42.4	$ 42.4	$ (16.6)	$ (16.6)	139%	139%
2037	$ 0.25	$ 0.25	3.5%	3.5%	$ 40.8	$ 40.8	$ (17.7)	$ (17.7)	143%	143%
2038	$ 0.26	$ 0.26	3.5%	3.5%	$ 39.2	$ 39.2	$ (18.8)	$ (18.8)	148%	148%
2039	$ 0.27	$ 0.27	3.5%	3.5%	$ 37.5	$ 37.5	$ (20.0)	$ (20.0)	153%	153%
Sum of Contributions	$ 5.45	$ 5.45								

Assumes 6.5% future asset returns beginning July 1, 2019 in the Traditional Defined Benefit plan and 4% interest credit in the Hybrid Defined Benefit plan.
Assumes 100% of the recommended contribution is contributed each year.
Unfunded Liability is calculated as Accrued Liability minus the Actuarial Assets Value.
Funded Ratio is calculated as Actuarial Value of Assets divided by Accrued Liability.
Contribution(%) is calculated as the Contribution($) divided by total payroll, including participants in both the Traditional and Hybrid Defined Benefit plans and future new entrants.

Kentucky Legislators Retirement Plan
Cost Projections - 20 RS HB 328
Prepared by Findley, Inc.
January 28, 2020
Traditional OPEB Plan Only

Year Beginning July 1	Contribution ($M) Current	Contribution ($M) Proposed	Contribution (%) Current	Contribution (%) Proposed	Accrued Liability ($M) Current	Accrued Liability ($M) Proposed	Unfunded Liability ($M) Current	Unfunded Liability ($M) Proposed	Funded Ratio (Assets/Liabilities) Current	Funded Ratio (Assets/Liabilities) Proposed
2019	$ 0.0	$ 0.0	0.0%	0.0%	$ 19.6	$ 19.6	$ (26.9)	$ (26.9)	237%	237%
2020	$ 0.0	$ 0.0	0.0%	0.0%	$ 19.7	$ 19.7	$ (29.7)	$ (29.7)	251%	251%
2021	$ 0.0	$ 0.0	0.0%	0.0%	$ 19.8	$ 19.8	$ (33.0)	$ (33.0)	267%	267%
2022	$ 0.0	$ 0.0	0.0%	0.0%	$ 19.8	$ 19.8	$ (35.9)	$ (35.9)	281%	281%
2023	$ 0.0	$ 0.0	0.0%	0.0%	$ 19.8	$ 19.8	$ (38.7)	$ (38.7)	295%	295%
2024	$ 0.0	$ 0.0	0.0%	0.0%	$ 19.7	$ 19.7	$ (41.1)	$ (41.1)	309%	309%
2025	$ 0.0	$ 0.0	0.0%	0.0%	$ 19.5	$ 19.5	$ (43.7)	$ (43.7)	324%	324%
2026	$ 0.0	$ 0.0	0.0%	0.0%	$ 19.4	$ 19.4	$ (46.5)	$ (46.5)	340%	340%
2027	$ 0.0	$ 0.0	0.0%	0.0%	$ 19.2	$ 19.2	$ (49.4)	$ (49.4)	357%	357%
2028	$ 0.0	$ 0.0	0.0%	0.0%	$ 18.9	$ 18.9	$ (52.6)	$ (52.6)	378%	378%
2029	$ 0.0	$ 0.0	0.0%	0.0%	$ 18.6	$ 18.6	$ (56.0)	$ (56.0)	401%	401%
2030	$ 0.0	$ 0.0	0.0%	0.0%	$ 18.3	$ 18.3	$ (59.6)	$ (59.6)	426%	426%
2031	$ 0.0	$ 0.0	0.0%	0.0%	$ 17.9	$ 17.9	$ (63.4)	$ (63.4)	454%	454%
2032	$ 0.0	$ 0.0	0.0%	0.0%	$ 17.5	$ 17.5	$ (67.5)	$ (67.5)	486%	486%
2033	$ 0.0	$ 0.0	0.0%	0.0%	$ 17.1	$ 17.1	$ (71.8)	$ (71.8)	520%	520%
2034	$ 0.0	$ 0.0	0.0%	0.0%	$ 16.6	$ 16.6	$ (76.4)	$ (76.4)	560%	560%
2035	$ 0.0	$ 0.0	0.0%	0.0%	$ 16.2	$ 16.2	$ (81.4)	$ (81.4)	602%	602%
2036	$ 0.0	$ 0.0	0.0%	0.0%	$ 15.7	$ 15.7	$ (86.6)	$ (86.6)	652%	652%
2037	$ 0.0	$ 0.0	0.0%	0.0%	$ 15.2	$ 15.2	$ (92.2)	$ (92.2)	707%	707%
2038	$ 0.0	$ 0.0	0.0%	0.0%	$ 14.7	$ 14.7	$ (98.2)	$ (98.2)	768%	768%
2039	$ 0.0	$ 0.0	0.0%	0.0%	$ 14.1	$ 14.1	$ (104.6)	$ (104.6)	842%	842%
Sum of Contributions	$ 0.0	$ 0.0								

Assumes 6.5% future asset returns beginning July 1, 2019 in the Traditional OPEB plan.
Assumes 100% of the recommended contribution is contributed each year.
Unfunded Liability is calculated as Accrued Liability minus the Actuarial Assets Value.
Funded Ratio is calculated as Actuarial Value of Assets divided by Accrued Liability.
Contribution(%) is calculated as the Contribution($) divided by total payroll of participants in the Traditional OPEB plan.

Kentucky Legislators Retirement Plan
Cost Projections - 20 RS HB 328
Prepared by Findley, Inc.
January 28, 2020
Hybrid OPEB Plan Only

	Contribution ($M)		Contribution (%)		Accrued Liability ($M)		Unfunded Liability ($M)		Funded Ratio (Assets/Liabilities)	
Year Beginning July 1	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed
2019	$ 0.01	$ 0.01	0.5%	0.5%	$ 0.09	$ 0.09	$ 0.03	$ 0.03	67%	67%
2020	$ 0.02	$ 0.02	0.4%	0.4%	$ 0.14	$ 0.14	$ 0.04	$ 0.04	71%	71%
2021	$ 0.03	$ 0.03	0.5%	0.5%	$ 0.27	$ 0.27	$ 0.09	$ 0.09	67%	67%
2022	$ 0.09	$ 0.09	1.3%	1.3%	$ 0.43	$ 0.43	$ 0.15	$ 0.15	65%	65%
2023	$ 0.09	$ 0.09	1.2%	1.2%	$ 0.61	$ 0.61	$ 0.16	$ 0.16	74%	74%
2024	$ 0.11	$ 0.11	1.3%	1.3%	$ 0.82	$ 0.82	$ 0.17	$ 0.17	79%	79%
2025	$ 0.11	$ 0.11	1.2%	1.2%	$ 1.04	$ 1.04	$ 0.18	$ 0.17	83%	84%
2026	$ 0.12	$ 0.13	1.2%	1.3%	$ 1.29	$ 1.29	$ 0.19	$ 0.18	85%	86%
2027	$ 0.13	$ 0.13	1.2%	1.2%	$ 1.57	$ 1.57	$ 0.19	$ 0.18	88%	89%
2028	$ 0.14	$ 0.14	1.2%	1.2%	$ 1.87	$ 1.87	$ 0.20	$ 0.18	89%	90%
2029	$ 0.14	$ 0.15	1.1%	1.2%	$ 2.20	$ 2.20	$ 0.21	$ 0.18	90%	92%
2030	$ 0.15	$ 0.16	1.1%	1.2%	$ 2.56	$ 2.56	$ 0.21	$ 0.18	92%	93%
2031	$ 0.16	$ 0.16	1.1%	1.1%	$ 2.94	$ 2.94	$ 0.21	$ 0.17	93%	94%
2032	$ 0.16	$ 0.17	1.1%	1.2%	$ 3.35	$ 3.35	$ 0.22	$ 0.17	93%	95%
2033	$ 0.17	$ 0.18	1.1%	1.2%	$ 3.77	$ 3.77	$ 0.21	$ 0.16	94%	96%
2034	$ 0.17	$ 0.18	1.1%	1.1%	$ 4.22	$ 4.22	$ 0.21	$ 0.15	95%	96%
2035	$ 0.18	$ 0.18	1.1%	1.1%	$ 4.66	$ 4.66	$ 0.19	$ 0.13	96%	97%
2036	$ 0.17	$ 0.17	1.0%	1.0%	$ 5.12	$ 5.12	$ 0.18	$ 0.11	96%	98%
2037	$ 0.18	$ 0.18	1.0%	1.0%	$ 5.62	$ 5.62	$ 0.19	$ 0.11	97%	98%
2038	$ 0.18	$ 0.18	1.0%	1.0%	$ 6.15	$ 6.15	$ 0.19	$ 0.11	97%	98%
2039	$ 0.19	$ 0.19	1.0%	1.0%	$ 6.71	$ 6.71	$ 0.19	$ 0.10	97%	99%
Sum of Contributions	$ 2.70	$ 2.76								

Assumes 4.0% future asset returns beginning July 1, 2019 in the Hybrid OPEB plan.
Assumes 100% of the recommended contribution is contributed each year.
Unfunded Liability is calculated as Accrued Liability minus the Actuarial Assets Value.
Funded Ratio is calculated as Actuarial Value of Assets divided by Accrued Liability.
Contribution(%) is calculated as the Contribution($) divided by total payroll of participants in the Hybrid OPEB plan.