

~~February 13, 2017~~ February 28, 2017

Ms. Katie Carney
Executive Assistant, Director's Office
Legislative Research Commission
Capitol Annex, Room 104
Frankfort, KY 40601

RE: Senate Bill 112 GA (2017 RS BR 975)
AA Statement Required by KRS 6.350
AA Statement 1 of 1

Dear Ms. Carney:

Senate Bill 112 GA (2017 RS BR 975) authorizes the appropriation of \$23,354,400 in Fiscal Year 2016-2017 and \$125,000,000 in Fiscal Year 2017-2018 from the Kentucky Permanent Pension Fund to the Kentucky Retirement Systems to be applied to the unfunded liability of the State Police Retirement System (SPRS) pension fund. The bill also contains an Emergency clause.

Attached to this letter please find an Actuarial Analysis from the Systems' independent actuary, Cavanaugh Macdonald Consulting, LLC, dated January 24, 2017. The Analysis provides the results of the twenty-year projections for SPRS based on these additional contributions.

Please let me know if you have any questions regarding our analysis of Senate Bill 112 GA (2017 RS BR 975).

Sincerely,



David L. Eager
Interim Executive Director
Kentucky Retirement Systems



Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you

January 24,

Ms. Karen Roggenkamp
Executive Director, Office of
Operations
Kentucky Retirement Systems
Perimeter Park West
1260 Louisville Road

Subject: Twenty-Year Projections for SPRS Based on Additional

Dear

As requested, we have prepared the results of twenty-year projections of the State Police Retirement System. The first projection serves as a baseline for comparison purposes. The second projection includes the impact of HB 303 which provides an additional \$25 million in fiscal year ended 2017 and \$10 million in fiscal year ended 2018. These contributions are in excess of the required employer actuarially determined contribution. For the purpose of this projection, we have included the \$10 million which is payable in fiscal year ended 2018 as a contribution receivable in fiscal year ended 2017. For the third projection, the additional contributions in excess of the required actuarially determined contribution provided for in HB 303 are included plus an additional \$23.4 million in fiscal year ended 2017 and an additional \$125 million in fiscal year ended 2018 are also included. As in the second projection, the additional contributions in fiscal year ended 2018 are included as a contribution receivable in fiscal year ended 2017.

The attached table show the results over a twenty-year

Disclaimers, Caveats, and Limitations

The results shown in the numerical charts enclosed were performed using the actuarial valuation as of June 30, 2016 as a basis. Significant items are noted below:

- All demographic assumptions regarding mortality, disability, retirement, salary increases, and termination of employment are assumed to hold true in the future.
- Changes in the plan design and resulting benefit amounts as a result of SB2 may have an effect on future termination and retirement patterns. Whether, and how, retirement and termination of employment patterns will ultimately be impacted cannot be known at this time. Therefore, no change in those assumptions was reflected in our modeling results.

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Ms. Karen
Roggenkamp
January 24, 2017

- The number of active members covered by SPRS in the future is assumed to remain level (neither growth nor decline in the active membership count).
 - As active members leave covered employment, they are assumed to be replaced by new employees who have a similar demographic profile as recent new hires.
- The funding methods, including the entry age normal cost method, the asset smoothing method, and the amortization method and period, remain unchanged over the projection period from that required by the statutory changes of SB2.
- Projections reflect the budgeted contribution amounts through FY 2016-2017 and FY 2017-2018, and actuarially determined contributions thereafter.

Projections are designed to identify anticipated trends rather than predicting some future state of events. The projections are based on the Systems' estimated financial status on June 30, 2016, and project future events using one set of assumptions out of a range of many possibilities. A different set of assumptions would lead to different results. The projections do not predict the Systems' financial condition or their ability to pay benefits in the future and do not provide any guarantee of future financial soundness of the Systems. 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 and unknowable at the time the projections were prepared. Because not all of the assumptions will unfold exactly as expected, actual results will differ from the projections. To the extent that actual experience deviates significantly from the assumptions, results could be significantly better or significantly worse than indicated in the enclosed tables.

We certify that we are members of the American Academy of Actuaries and that we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

If you have any questions, please give us a

Sincerely

A handwritten signature in blue ink that reads 'Todd B. Green' followed by a horizontal line.

Todd B. Green ASA, FCA,
MAAA

Enc.



State Police Retirement System
20-Year Projected Contribution Rates Baseline

Valuation Date June 30	Unfunded Liability at Valuation Date	Projected Funded Ratio at Valuation Date	FY Year Ending	Projected Salaries	Employer Contribution \$	Employer Contribution as a % of Salaries
2016	\$540,592,758	30.26%	2017	\$45,923,065	\$32,302,284	70.34%
2017	\$550,344,309	29.16%	2018	\$46,825,511	\$32,937,064	70.34%
2018	\$560,970,379	27.93%	2019	\$47,912,925	\$34,971,644	72.99%
2019	\$574,345,322	26.31%	2020	\$49,018,737	\$35,778,776	72.99%
2020	\$583,955,150	25.13%	2021	\$50,197,815	\$38,090,102	75.88%
2021	\$587,111,130	24.73%	2022	\$51,495,154	\$39,074,522	75.88%
2022	\$589,418,961	24.39%	2023	\$52,907,984	\$41,241,773	77.95%
2023	\$589,551,280	24.29%	2024	\$54,383,137	\$42,391,655	77.95%
2024	\$588,418,669	24.29%	2025	\$55,898,224	\$44,170,777	79.02%
2025	\$585,287,116	24.50%	2026	\$57,452,636	\$45,399,073	79.02%
2026	\$580,620,336	24.82%	2027	\$59,191,184	\$47,347,028	79.99%
2027	\$573,595,069	25.42%	2028	\$61,199,958	\$48,953,846	79.99%
2028	\$564,418,154	26.25%	2029	\$63,325,932	\$51,110,360	80.71%
2029	\$552,421,251	27.44%	2030	\$65,644,355	\$52,981,559	80.71%
2030	\$537,694,903	28.99%	2031	\$68,224,278	\$55,097,927	80.76%
2031	\$519,836,866	30.98%	2032	\$71,025,229	\$57,359,975	80.76%
2032	\$498,552,125	33.51%	2033	\$73,993,492	\$59,246,589	80.07%
2033	\$473,969,361	36.54%	2034	\$77,105,370	\$61,738,270	80.07%
2034	\$445,303,613	40.22%	2035	\$80,252,305	\$63,270,917	78.84%
2035	\$413,278,913	44.43%	2036	\$83,361,819	\$65,722,458	78.84%



State Police Retirement System

20-Year Projected Contribution Rates Reflecting HB 303

Valuation Date June 30	Unfunded Liability at Valuation Date	Projected Funded Ratio at Valuation Date	FY Year Ending	Projected Salaries	Employer Contribution	Employer Contribution as a % of Salaries
2016	\$540,592,758	30.26%	2017	\$45,923,065	\$32,302,284	70.34%
2017	\$515,086,719	33.70%	2018	\$46,825,511	\$32,937,064	70.34%
2018	\$523,247,177	32.77%	2019	\$47,912,925	\$33,059,918	69.00%
2019	\$536,084,641	31.22%	2020	\$49,018,737	\$33,822,929	69.00%
2020	\$545,170,143	30.10%	2021	\$50,197,815	\$35,891,437	71.50%
2021	\$548,031,573	29.74%	2022	\$51,495,154	\$36,819,035	71.50%
2022	\$550,153,962	29.43%	2023	\$52,907,984	\$38,823,878	73.38%
2023	\$550,259,242	29.33%	2024	\$54,383,137	\$39,906,346	73.38%
2024	\$549,164,697	29.34%	2025	\$55,898,224	\$41,549,150	74.33%
2025	\$546,214,339	29.54%	2026	\$57,452,636	\$42,704,544	74.33%
2026	\$541,812,010	29.85%	2027	\$59,191,184	\$44,499,932	75.18%
2027	\$535,225,013	30.40%	2028	\$61,199,958	\$46,010,128	75.18%
2028	\$526,611,450	31.19%	2029	\$63,325,932	\$47,994,724	75.79%
2029	\$515,391,265	32.30%	2030	\$65,644,355	\$49,751,857	75.79%
2030	\$501,607,337	33.76%	2031	\$68,224,278	\$51,707,180	75.79%
2031	\$484,919,189	35.62%	2032	\$71,025,229	\$53,830,021	75.79%
2032	\$465,024,343	37.98%	2033	\$73,993,492	\$55,576,511	75.11%
2033	\$442,067,685	40.81%	2034	\$77,105,370	\$57,913,843	75.11%
2034	\$415,295,493	44.25%	2035	\$80,252,305	\$59,338,554	73.94%
2035	\$385,400,561	48.18%	2036	\$83,361,819	\$61,637,729	73.94%



State Police Retirement System
20-Year Projected Contribution Rates
Reflects HB 303 plus Additional Contributions

Valuation Date June 30	Unfunded Liability at Valuation Date	Projected Funded Ratio at Valuation Date	FY Year Ending	Projected Salaries	Employer Contribution	Employer Contribution as a % of Salaries
2016	\$540,592,758	30.26%	2017	\$45,923,065	\$32,302,284	70.34%
2017	\$373,271,099	51.95%	2018	\$46,825,511	\$32,937,064	70.34%
2018	\$370,787,440	52.36%	2019	\$47,912,925	\$25,379,476	52.97%
2019	\$380,715,953	51.16%	2020	\$49,018,737	\$25,965,225	52.97%
2020	\$386,933,392	50.39%	2021	\$50,197,815	\$26,951,207	53.69%
2021	\$387,953,722	50.26%	2022	\$51,495,154	\$27,647,748	53.69%
2022	\$389,242,944	50.07%	2023	\$52,907,984	\$28,930,085	54.68%
2023	\$389,221,223	50.02%	2024	\$54,383,137	\$29,736,699	54.68%
2024	\$388,264,975	50.04%	2025	\$55,898,224	\$30,799,921	55.10%
2025	\$386,060,930	50.20%	2026	\$57,452,636	\$31,656,402	55.10%
2026	\$382,746,507	50.44%	2027	\$59,191,184	\$32,815,592	55.44%
2027	\$377,971,781	50.85%	2028	\$61,199,958	\$33,929,257	55.44%
2028	\$371,684,735	51.44%	2029	\$63,325,932	\$35,228,216	55.63%
2029	\$363,646,427	52.24%	2030	\$65,644,355	\$36,517,955	55.63%
2030	\$353,723,298	53.29%	2031	\$68,224,278	\$37,809,895	55.42%
2031	\$341,831,676	54.62%	2032	\$71,025,229	\$39,362,182	55.42%
2032	\$327,635,185	56.30%	2033	\$73,993,492	\$40,533,635	54.78%
2033	\$311,345,901	58.31%	2034	\$77,105,370	\$42,238,322	54.78%
2034	\$292,337,467	60.76%	2035	\$80,252,305	\$43,199,816	53.83%
2035	\$271,196,627	63.54%	2036	\$83,361,819	\$44,873,667	53.83%