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Stephen J. Owens, Esq.
General Counsel
University of Missouri
227 University Hall
Columbia, MO 65211

Re: Cost Statement of Proposed Changes to the University of Missouri Retirement, Disability and Death Benefit Plan

Dear Mr. Owens:

In accordance with Chapter 105 of the laws of the State of Missouri, this letter is to advise you of the cost impact of the proposed changes to the University of Missouri Retirement, Disability and Death Benefit Plan ("Plan") as summarized below:

Proposed Plan Changes for:

A. Current Employees in the Plan as of September 30, 2019

- No changes to the Plan of benefits for current service as well as future service periods of employment
- No change in the employee mandatory contributions

B. Benefit Eligible Employees hired on or after October 1, 2019

- Will not become members in the Plan and will accrue no benefits under the Plan
- Will instead be covered under a defined contribution plan

Results of the most recent Actuarial Valuation of the Plan (as of October 1, 2017)

The most recent actuarial valuation of the Plan was as of October 1, 2017. The valuation determined the contribution requirements for University's fiscal year July 1, 2018 – June 30, 2019 ("fiscal 2019"). The valuation report, dated March 16, 2018, has been previously issued to the Board of Curators.

The following is a summary of the cost components of the Plan based on that actuarial valuation [Statute 105.665.2(1), (2), (3)]:

	Dollar Amount	Percent of Payroll
1. Total normal cost:	$65,979,258	5.75%
2. Expected employee contributions:	14,908,183	1.30%
3. Net employer normal cost:	$51,071,075	4.45%
4. Actuarial accrued liability:	$4,310,862,288	
5. Actuarial value of assets:	3,572,150,725	
6. Unfunded actuarial accrued liability:	$738,711,563	
7. 26-year amortization payment on unfunded actuarial accrued liability:	$61,615,901	5.37%
8. Total annual contribution requirement (item 1 plus item 7):	$127,595,159	11.13%
9. Net employer contribution requirement (item 3 plus item 7):	$112,686,976	9.83%

Note: Detailed figures may not add to totals shown due to rounding.

To the best of my knowledge, the University has always paid the employer contribution as determined in accordance with the above methodology [Statute 105.665.2(4)].

The following is a summary of the plan's assets and liabilities based on the actuarial valuation [Statute 105.665.2(5)]:

Actuarial value of assets:	$3,572,150,725
Market value of assets:	$3,572,074,894
Actuarial accrued liability:	$4,310,862,288
Funded ratio:	82.86%

<u>Cost impact resulting from the proposed plan change</u> [Statute 105.665.2(6)]

A: Impact on current contribution requirement and future year contribution requirements for current employees (and those hired prior to October 1, 2019)

There is no impact on the October 1, 2017 actuarial valuation results shown above (contributions for fiscal 2019) that results from the above plan changes since no plan changes are applicable to current employees (those hired before October 1, 2019).

The contribution requirements for future fiscal years for those individuals hired prior to October 1, 2019 will also not be impacted from what they otherwise would be as a result of the plan changes.

While the dollar cost of the contribution requirements for future valuations/fiscal years will not be impacted by the plan changes for new employees, if the dollar amount of the amortization payment is considered as a percent of only the payroll for the employees hired prior to October 1, 2019, then the percent of payroll of such payment will increase over time (as the aggregate payroll for this closed group of employees declines due to attrition). If the amortization payment continues to be viewed as a percent of payroll for all employees (those hired both before and after October 1, 2019), then there will not be any such percent of payroll increase.

B: Impact on future contribution requirements for those hired on or after October 1, 2019

The plan changes noted above for those employees hired on or after October 1, 2019 will result in lower contribution requirements in future fiscal years for these individuals than if there were no plan changes made. While as noted above the total normal cost for current employees under the current Plan provisions is 5.75% of payroll (a 4.45% net employer normal cost), the normal cost for similar situated new employees after reflecting the plan changes would be zero, as they would not be covered by the Plan. The dollar amount of the amortization payment of the existing unfunded liability will not be impacted by the plan change for these future new employees.

C: Comparison of Employer Cost Requirements for Current and Proposed Plan Provisions

Ten-year projections with and without the proposed change are shown of the following page [Statute 105.665.2(7)].

There are no additional contributions required under the proposed change and therefore no such contributions are mandated [Statute 105.665.2(8)].

The proposed change would not in any way impair the ability of the plan to meet the obligations thereof in effect at the time the proposal is made [Statute 105.665.2(9)].

Current Plan Provisions						
Plan Year	**Market Value of Assets**	**Actuarial Value of Assets**	**Actuarial Accrued Liability**	**Funded Percentage**	**Employer Contribution (Dollars)**	**Employer Contribution (Percent of Payroll)**
2019	3,833,940,623	3,781,032,669	4,545,120,934	83.19%	113,975,013	9.57%
2020	3,978,468,193	3,957,049,608	4,659,293,530	84.93%	108,584,582	8.94%
2021	4,109,886,170	4,111,171,617	4,767,039,167	86.24%	104,567,137	8.44%
2022	4,243,394,306	4,243,394,306	4,869,718,757	87.14%	102,154,453	8.08%
2023	4,372,316,024	4,372,316,024	4,968,369,578	88.00%	99,810,278	7.74%
2024	4,496,807,003	4,496,807,003	5,062,042,017	88.83%	97,506,058	7.40%
2025	4,616,532,335	4,616,532,335	5,151,929,718	89.61%	95,388,157	7.09%
2026	4,730,831,834	4,730,831,834	5,236,377,970	90.35%	93,365,909	6.79%
2027	4,840,182,985	4,840,182,985	5,315,699,435	91.05%	91,404,275	6.51%
2028	4,943,767,058	4,943,767,058	5,388,601,180	91.74%	89,465,220	6.23%

Proposed Plan Provisions						
Plan Year	**Market Value of Assets**	**Actuarial Value of Assets**	**Actuarial Accrued Liability**	**Funded Percentage**	**Employer Contribution ($)**	**Employer Contributions (Percent of Payroll)[1]**
2019	3,833,940,623	3,781,032,669	4,545,120,934	83.19%	113,975,013	9.57%
2020	3,978,468,193	3,957,049,608	4,659,293,530	84.93%	105,749,695	8.71%
2021	4,108,721,988	4,110,007,436	4,762,382,439	86.30%	99,060,375	8.00%
2022	4,228,909,549	4,228,909,549	4,856,436,323	87.08%	95,037,705	7.52%
2023	4,341,044,261	4,341,044,261	4,942,859,866	87.82%	91,329,786	7.08%
2024	4,445,833,593	4,445,833,593	5,020,913,547	88.55%	87,824,057	6.67%
2025	4,542,897,139	4,542,897,139	5,091,783,708	89.22%	84,581,288	6.29%
2026	4,630,982,891	4,630,982,891	5,153,404,218	89.86%	81,537,174	5.93%
2027	4,710,523,805	4,710,523,805	5,205,996,566	90.48%	78,624,657	5.60%
2028	4,780,529,506	4,780,529,506	5,248,133,350	91.09%	75,793,471	5.28%

[1] Employer contribution as a percent of payroll is determined based on the projected total payroll of the entire active population, including those hired after October 1, 2019.

<u>Other Potential Plan Changes</u>

It is our understanding that the Board is considering the addition of a defined contribution plan for employees hired on or after October 1, 2019. The cost of such a defined contribution plan has not been included in the fiscal cost impact in this analysis. That is, this letter only addresses the cost impact of proposed changes being made to the above referenced Retirement, Disability and Death Benefit Plan.

<u>Assumptions, Methods and Cost Projections</u> <u>[Statute 105.665.2(10)(a)-(g), (11), 12)]</u>

This cost statement was prepared based on the same actuarial methods and assumptions used in the most recent actuarial valuation as of October 1, 2017. Please refer to the actuarial valuation report, a copy of which is attached, for a complete description of those assumptions and methods. For purposes of the projections, the active employee group size is assumed to remain the same as reflected in the October 1, 2017 actuarial valuation.

Projections, by their nature, are not a guarantee of future results. Emerging results will differ if the actual experience proves to be different from the assumptions or if alternative methodologies are used. Actual experience may differ due to such variables as demographic experience, the economy, stock market performance and the regulatory environment.

I will be pleased to answer any questions that may arise in connection with the information contained in this letter.

Sincerely yours,

Joshua Kaplan

Joshua Kaplan

cc: Marsha Fischer
Ryan Rapp

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