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February 19, 2015

Mr. Alan Conroy
Executive Director
Kansas Public Employees Retirement System
611 S. Kansas Ave., Suite 100
Topeka, KS 66603-3803

Re: Cost Study for HB 2288 - Deferred Retirement Option Program for KP&F

Dear Alan:

House Bill 2288 (HB 2288) creates a Deferred Retirement Option Program (DROP) for members of the Kansas Police and Firemen's Retirement System (KP&F) who are employed by the state of Kansas or a participating employer that chooses to affiliate with the DROP. Under HB 2288, the KPERS Board establishes a DROP account (a notional account) for each member who meets the eligibility requirements and elects to participate in the DROP. The member's monthly retirement benefit, calculated as the amount that would have been payable to the member had the member terminated service and retired on the day he elected into the DROP, is then credited to the DROP account. Interest credits are also credited to the DROP account annually. The member continues in active employment, with both the employer and member continuing to make contributions to KP&F. These contributions are not deposited to the DROP account, but rather used to fund the system's total unfunded actuarial liability.

A more detailed summary of the provisions of HB 2288 are included below:

- An eligible employer may affiliate with the DROP by making an application in the manner provided by K.S.A. 74-4954 to be effective on the January 1 next following application.
- Eligible to participate in DROP: State employees or anyone employed by a participating employer other than the state of Kansas that has affiliated with the DROP provision.
- Each participating employer affiliated with the DROP shall pay to the system a sum sufficient to satisfy the obligations hereunder as certified by the board.
- Eligible members may participate in DROP when they become eligible to retire with unreduced benefits (normal retirement), as follows:
 - Members hired or appointed prior to July 1, 1989 may elect to participate in the DROP upon attainment of age 55 and completion of 20 years of credited service or at the completion of 32 years of credited service regardless of the age of such member.
 - Members hired or appointed on or after July 1, 1989 may elect to participate in DROP upon attaining age 55 and completion of 20 years of credited service, age 50 and completion of 25 years of creditable service or age 60 with completion of 15 years of creditable service.
- A member may elect to participate in the DROP for a minimum of three years and a maximum of five years.

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- For each DROP member, the board shall calculate a monthly DROP accrual which shall be equal to the member's retirement benefit determined using the members' total service credit and final average salary as of the last day prior to the member's election to participate in the DROP. During the DROP period, an amount equal to the monthly DROP accrual shall be credited to the member's DROP account.
- The DROP account is credited annually with interest, as determined by the Board, in the range of 0% to 7%. Interest may only be credited in a year in which the actual rate of return on the market value of assets meets or exceeds the assumed investment return and such interest credit may not exceed 50% of the actual rate of return.
- A member's participation in the DROP ceases on the earliest of the following:
 - Termination of active service with the participating employer,
 - Last day of the member's elected DROP period,
 - Retirement due to disability, or
 - The member's death.

If a member dies before taking a distribution from the member's DROP account, the designated beneficiary shall receive a lump-sum payment equal to the member's DROP account and a monthly benefit, if payable under the form of payment elected by the member upon entering DROP. No disability benefit will be payable to member during the DROP.

At the end of the DROP period, the member is entitled to receive the amount in the member's DROP account (payable as a rollover or lump sum distribution) with the monthly benefit continuing to be paid to the member under the terms of the payment option elected when the member entered the DROP.

Cost Analysis

You requested that we perform a cost study for HB 2288 which implements a Deferred Retirement Option Plan (DROP) effective January 1, 2016. Two factors, in particular, affect the impact of the DROP plan on KP&F and employer costs – the option for local employers to participate in the plan, and potential changes in retirement decisions of members eligible for the DROP plan.

Effect of Employer Participation Option. Based on the language in the bill, employees of the state of Kansas are eligible for the DROP, but other employers must affiliate with the DROP in the manner provided by K.S.A. 74-4954. The bill also requires each participating employer to pay the system an amount sufficient to satisfy the obligations under the DROP, as certified by the KPERS Board.

It will be impossible to meet this requirement without segregating the employers who participate in the DROP and performing a separate actuarial valuation to determine their appropriate employer contribution rate. Effectively, KP&F is split into two groups, each with their own "uniform contribution rate". This raises a question as to how the unfunded actuarial accrued liability as of December 31, 2015, should be allocated among the two groups, since this allocation will have an impact on the uniform contribution rate for each group. Amortization of any unfunded actuarial liability accruing over time due to the affiliation into the DROP would be paid in addition to the applicable uniform contribution rate for the DROP group.



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Given the current provisions of HB 2288, it is nearly impossible for us to provide any type of reliable cost estimate for the DROP. The voluntary nature of the program for employers means that both the pool of eligible members and the actual KP&F members participating in the DROP is unknown. Because the demographic profile of active members may impact the probability of DROP utilization, the lack of knowledge as to which employers will elect DROP is a significant hurdle to overcome. Further compounding the issue is the fact that different employers will have unique blends of employee demographics, and those demographics may have more influence on the DROP group's contribution rate than the availability of the DROP would by itself. Thus, the resulting contribution rate calculations for the DROP and non-DROP groups may be more affected by which groups of employers elect to offer the DROP than the value of the DROP benefits.

Effect of DROP on retirement decisions. In addition to not knowing which employers will participate, it is difficult to anticipate the impact of the DROP on the ultimate retirement patterns of eligible members.

Actuarial assumptions regarding retirement rates are based on observed patterns of retirements among those eligible to retire. In general, the value of a member's retirement benefits is greater at the point the member first becomes eligible for unreduced retirement benefits (normal retirement) than at a later date when retirement has been delayed for a period of time after reaching normal retirement age. Therefore, plan design changes that provide incentives for members to begin receiving benefits earlier than under current actuarial assumptions tend to increase the actuarial liability and costs of a plan. Likewise, plan design changes that provide incentives for members to delay receipt of benefits beyond existing actuarial assumptions may tend to reduce the plan's actuarial liabilities and costs. As a result, the potential cost of the proposed DROP plan depends in part on how the plan affects member retirement decisions. If members generally enter the DROP plan around the time they would have otherwise retired, there is likely to be a small decrease in the actuarial liabilities. However, if members enter the DROP plan three to five years before they would otherwise have typically retired without DROP, they will receive benefits that are smaller, but for a longer period of time, with the potential for an increase in the actuarial liability.

In reviewing other systems who offer a DROP, we note that often the DROP provisions are coordinated with a benefit structure where the amount of retirement benefits is limited, i.e., a maximum benefit exists. DROP provisions tend to be highly utilized by members who have reached a maximum benefit. However, the benefit structure for KP&F was amended in 2013 to extend the maximum benefit from 80% to 90% of final average pay. As a result, a KP&F member does not reach the 90% of final average pay maximum benefit until completing 36 years of service. It would seem unlikely that members completing 36 years of service would then elect to participate in DROP and continue working for another three to five years. On the other hand, if the member has not reached the maximum benefit (less than 36 years of service) and elects into DROP, the additional benefit accruals for the years in DROP are lost, along with the potential for a higher final average salary, i.e., the member's retirement benefit (payable for life) is smaller.

For this reason, it is not clear at that point which decision is a better financial decision for the member. Two examples are shown below where election into DROP produces either a higher or lower ultimate benefit (in terms of present value) upon ultimate termination of employment. In both cases, the salary at DROP entry date is \$75,000.



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Example 1: Higher Value if DROP Elected

Age at Termination of Employment: age 55	Age at Participation in DROP: age 50
Years of Service at Termination: 30 years	Years of Service at DROP Date: 25 years
Salary increases age 50 to 55: 2% each year	Annual Benefit at DROP Date: \$45,962
Annual Benefit with Continued Accruals: \$60,895	Balance in DROP Account at age 55*: \$244,018

Present value of benefit with Continued Accruals: \$672,623

Present value of benefit if DROP Elected for 5 Years (including DROP account balance): \$751,688

Ratio of present values under DROP vs. Continue to Work: 1.118

*Assumes 3% average annual interest credit

Example 2: Election of DROP Produces Lower Value

Age at Termination of Employment: age 65	Age at Participation in DROP: age 60
Years of Service at Termination: 20 years	Years of Service at DROP Date: 15 years
Salary increases age 60 to 65: 4% each year	Annual Benefit at DROP Date: \$27,057
Annual Benefit with Continued Accruals: \$43,892	Balance in DROP Account at age 55*: \$143,650

Present value of benefit with Continued Accruals: \$416,090

Present value of benefit if DROP Elected for 5 Years (including DROP account balance): \$400,147

Ratio of present values under DROP vs. Continue to Work: 0.962

*Assumes 3% average annual interest credit

This situation makes it very difficult to develop assumptions as to member behavior with respect to participation in the DROP. In general, we expect members to make decisions that are in their own best financial interest to the extent they are aware of the financial implications of the choice. If that occurs, we would expect the DROP to result in higher costs than would have occurred in the absence of the DROP. In many systems where DROPs exist, the benefit structure includes a maximum benefit at shorter durations than under KP&F (often 20 to 25 years), and therefore, members are generally younger when they reach



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the maximum benefit. In these situations, entering DROP is more clearly a financial benefit to the member who was going to continue to work in covered employment.

However, given the KP&F benefit structure and retirement eligibility requirements, it is not apparent what circumstances will incent members to participate in the DROP. Moreover, since the financial benefit to individual members may be variable and not easily discerned, it is not clear how many members choosing DROP will begin participating in DROP when they would otherwise have retired (thereby actually extending their ultimate date of termination of employment), instead of simply leaving employment at the same point in time after electing into DROP three to five years earlier (and thereby extending the length of time they receive benefits).

The assumptions used to anticipate the member behavior with respect to DROP will impact the estimated cost of providing the DROP, even though the reliability of those assumptions is very limited. As a result, although some cost estimates are provided in this letter, very little credibility can be assigned to them. The actual cost of the plan design with the DROP, which may unfold gradually over time, may vary significantly from the information provided at this time.

The continuation of both employee and employer contributions during DROP does ensure that contributions into KP&F during the DROP period will not be less than if the member who elected into DROP had either continued to work or elected to retire and was replaced with a new person.

Recognizing the limitations that exist at this time, we are providing cost analysis under two different scenarios, although neither is likely to occur exactly. Instead they may provide some insight into the cost impact of adding the DROP if: (1) all employer participating in KP&F elect to participate in DROP and (2) no employers elect to participate in the DROP, so that only state employees are covered by the DROP.

Option 1: All KP&F Employers Elect to Offer the DROP – 75% of Eligible Members Elect into DROP for Lesser of 5 Years or until Age 62

The following table illustrates the cost impact under two possible behavior patterns. In the first case, we assumed 75% of the eligible employees elect to participate in the DROP, but the ultimate age of retirement is unchanged (because DROP is elected in anticipation of leaving employment at the same date as retirement would have occurred without DROP). In the second case, we assume the same 75% of eligible employees electing to participate in the DROP, but ultimately retiring at a later age than would be expected under present retirement rates.



	<u>12/31/13 Valuation</u>	<u>HB 2288</u>	
		Retirement Age Extended	Same Ultimate Retirement Age
Actuarial Liability	2,706,558,019	2,706,062,802	2,725,827,829
Actuarial Assets	<u>1,903,444,252</u>	<u>1,903,444,252</u>	<u>1,903,444,252</u>
Unfunded Actuarial Liability	803,113,767	802,618,550	822,383,577
Funded ratio	70.3%	70.3%	69.8%
Normal Cost Rate	14.55%	14.47%	14.65%
Employee Contribution Rate	<u>(7.15%)</u>	<u>(7.15%)</u>	<u>(7.15%)</u>
Employer Normal Cost Rate	7.40%	7.32%	7.50%
UAL Payment	<u>13.02%</u>	<u>13.01%</u>	<u>13.33%</u>
Total Employer Contribution	20.42%	20.33%	20.83%

As can be seen in the table above, if members electing into DROP ultimately work until a later age, the costs will be slightly lower. However, if member leave covered employment at the same ages as they currently do, but simply elect into DROP for three to five years before leaving, the cost will be slightly higher. As noted previously, this increase is due, at least in part, to a shift in which benefits begin earlier than under current actuarial assumptions.

Option 2: Only the State of Kansas Participates in the DROP

At this time, the only group that will definitely be eligible for the DROP is state employees. Participation by other employers is strictly voluntary. In order to assess the ongoing cost of the DROP solely to the employers who participate in that plan design, a separate actuarial valuation would be required for that group so it captures the actual versus expected experience of those members. Moving the state employees into a separate group for valuation purposes has a small impact on the valuation results for the other participating KP&F employers, but a significant impact on the costs for the State.

For purposes of this study, the state members, including actives, retirees, beneficiaries and inactive vested or nonvested members, were moved into a separate group, and the December 31, 2013 actuarial valuation results were revised to reflect separate KP&F contribution rates for the State and all other KP&F employers, rather than just one. Actuarial assets were allocated in proportion to the actuarial liability of each group, so the funded ratio of the two groups is the same. This portion of the cost study is **prior** to reflecting any potential impact of the DROP on the costs. The results are shown in the table below:



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	<u>12/31/13 Valuation</u>	<u>12/31/13 Valuation by Group</u>	
		<u>State Only</u>	<u>All Others</u>
Active Members	7,224	696	6,528
Projected Payroll	\$461,814,718	\$42,796,871	\$419,017,847
Actuarial Liability	2,706,558,019	324,635,191	2,381,922,828
Actuarial Assets	<u>1,903,444,252</u>	<u>228,306,574</u>	<u>1,675,137,678</u>
Unfunded Actuarial Liability	803,113,767	96,328,617	706,785,150
Funded ratio	70.3%	70.3%	70.3%
Normal Cost Rate	14.55%	14.63%	14.54%
Employee Contribution Rate	<u>(7.15%)</u>	<u>(7.15%)</u>	<u>(7.15%)</u>
Employer Normal Cost Rate	7.40%	7.48%	7.39%
UAL Payment	<u>13.02%</u>	<u>16.93%</u>	<u>12.61%</u>
Total Employer Contribution	20.42%	24.41%	20.00%

As the table above indicates, when the state employees are valued as a separate group, the employer contribution rate increases to 24.41%, before the potential impact of the DROP is assessed. This implicit cost impact may also deter other employers from adopting the DROP as their contribution rate would be determined in conjunction with the State.

After projecting the separate contribution rate for state KP&F members, the impact of DROP on the contribution rate was then evaluated. As shown for Option 1, the following table illustrates (1) the cost impact if 75% of the eligible employees elect to participate in the DROP, but the ultimate age of retirement is unchanged and (2) the cost impact if the same 75% of eligible employees elects to participate in the DROP, but ultimately retires at a later age.

State Employees Only – 75% Elect DROP

	<u>12/31/13 Valuation</u>	<u>HB 2288</u>	
		<u>Retirement Age Extended</u>	<u>Same Ultimate Retirement Age</u>
Actuarial Liability	324,635,191	324,675,499	326,645,763
Actuarial Assets	<u>228,306,574</u>	<u>228,306,574</u>	<u>228,306,574</u>
Unfunded Actuarial Liability	96,328,617	96,368,925	99,339,189
Funded ratio	70.3%	70.3%	69.9%
Normal Cost Rate	14.63%	14.54%	14.72%
Employee Contribution Rate	<u>(7.15%)</u>	<u>(7.15%)</u>	<u>(7.15%)</u>
Employer Normal Cost Rate	7.48%	7.39%	7.57%
UAL Payment	<u>16.93%</u>	<u>16.93%</u>	<u>17.28%</u>
Total Employer Contribution	24.41%	24.32%	24.85%



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In addition to increased administrative effort and costs incurred by KPERS and possibly some of its service providers, the creation of a separate group in KP&F for employers offering the DROP will result in additional actuarial work when the annual actuarial valuations are prepared. In order to provide actuarial results for DROP and non-DROP participating employers, we expect our valuation fees to increase around \$10,000 per year.

It is important to realize that the cost impact of a implementing a DROP, or any other benefit change for that matter, cannot be assumed to be the same from one retirement system to another. The actuarial funding of each retirement system is unique and reflects the employer policies, the benefit structure, the design of the DROP, and the actuarial assumptions used both before and after implementation of the DROP. There are some systems whose DROPs were specifically designed to protect the system's long term funding while others were implemented with acknowledgement of higher costs. The reader should not expect the cost estimates for the DROP in KP&F to be similar to those of other retirement systems who have implemented a DROP.

Data, Assumptions and Methodology

The analysis contained in this letter is based on the December 31, 2013 actuarial valuation. To the extent that any of that data is inaccurate, our analysis may need to be revised. Unless otherwise noted, the assumptions and methods used in analyzing this proposal are the same as those used in the December 31, 2013 actuarial valuation, which are shown in Appendix C of that report.

Some additional actuarial assumptions were necessary in order to complete our cost analysis for HB 2288. These include:

- An assumption about the election of members into DROP once eligible,
- The length of the DROP period, and
- The interest crediting rate for the DROP account.

As discussed earlier in this letter, two different sets of retirement assumptions were used in our analysis. The assumptions, which apply to Tier 2 members, are set out in the following table:

<u>Age</u>	Current Retirement Rates:	Lower Retirement
	No Change in Ultimate <u>Retirement Ages</u>	Rates: Later <u>Retirement Ages</u>
50 to 55	25%	20%
56	35%	20%
57	35%	20%
58	20%	20%
59	30%	30%
60	25%	25%
61	25%	25%



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The DROP period was assumed to be the maximum number of years the member would have been eligible to participate in DROP, not to exceed five years. The DROP accounts were assumed to be credited with interest at 3% per year.

The assumptions we developed were based solely on our professional judgment as there is no actual experience for KP&F that can be used. The costs of the DROP are dependent on these assumptions, along with the actual experience as it unfolds over time, so it is likely the cost of the DROP may vary from year to year as well as over time. This is particularly true given the small number of active members that may be eligible to participate in the DROP.

The comments and analysis contained in this letter are not intended to give exact calculations of costs. They should be considered to be estimates. The emerging costs will vary from those presented in this letter to the extent that actual experience differs from that projected by the actuarial assumptions. This cost analysis has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board (ASB) and the Code of Professional Conduct and Qualification Standards for Public Statement of Actuarial Opinion of the American Academy of Actuaries.

We have not explored any legal issues with respect to the proposed plan changes. We are not attorneys and cannot give legal advice on such issues. We suggest that you review this proposal with counsel.

We, Patrice A. Beckham, FSA and Brent A. Banister, FSA, are consulting actuaries with Cavanaugh Macdonald Consulting, LLC. We are members of the American Academy of Actuaries, Fellows of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

If you have any questions or additional information is needed, please let us know.

Sincerely,

A handwritten signature in cursive script that reads 'Patrice Beckham'.

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in cursive script that reads 'Brent A. Banister'.

Brent A. Banister, PhD, FSA, EA, FCA, MAAA
Chief Pension Actuary