

March 5, 2013

Mr. George Hopkins  
Executive Director  
Arkansas Teacher Retirement System  
1400 West Third Street  
Little Rock, Arkansas 72201

**Re: HB 1198**

Dear Mr. Hopkins:

You have asked us for our analysis of House Bill (HB) 1198 as it relates to the Arkansas Teacher Retirement System (ATRS).

HB 1198 creates Subchapter 17 of title 24, Chapter 7 of the Arkansas Code authorizing the Board of Trustees to create a Tier II benefit plan within the Arkansas Teacher Retirement System. The Tier II plan, if created, would apply to all members hired on or after July 1, 2015, and only to such members. The Tier II plan must generally provide the same benefits as currently provided by the Arkansas Teacher Retirement System with certain exceptions listed below.

- A. Age requirements for unreduced retirement cannot be extended beyond age 67.
- B. Years of service for unreduced benefits cannot be extended beyond 35 Years.
- C. Benefit Reduction for early retirement can be changed.
- D. Multipliers for contributory retirement must be at least 1.75% and no more than 2.15% (current Contributory multiplier). The multiplier for non-contributory retirement must be at least 0.5% and no more than 1.39% (current Non-Contributory multiplier)
- E. Years of credit required for vesting cannot exceed 10 years.
- F. The Lump sum death benefit cannot exceed \$10,000.
- G. The monthly stipend cannot exceed \$75 (current stipend).
- H. Survivor benefits can be modified but cannot exceed 20% of a member's highest one year salary per minor, and not more than 60% in total, in the case of multiple minors (current level).
- I. Disability benefits may be modified but cannot exceed age and service benefits.
- J. Cost of living adjustments must not exceed 3% simple increases (current level).

When a Tier II plan is introduced, plan costs do not change all at once. Rather, they change gradually as increasing numbers of new members are covered by the Tier II plan. In the ATRS, based upon our assumptions, about half of the active members will be affected by Tier II benefits nine (9) years after establishing a Tier II. A Tier II plan may affect the behavior of members. For example, if the benefit reduction for early retirement is made steeper fewer members may choose early retirement than otherwise. Consequently, the true long term costs of a Tier II plan can only be known many years after it has been established, once experience under the new benefit provisions can be measured.

Mr. George Hopkins

March 5, 2013

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Since this legislative is permissive, and provides a range of options to the Board for the design of a Tier II plan, we cannot assign a precise savings estimate for the introduction of Tier II at this time. In an August 29, 2012 study, we analyzed one particular Tier II that we believe is reasonably representative of the type of Tier II plan the Board might establish. For your reference, we have attached a copy of that study. In reading the study, you will note that it envisions a change in the Final Average Salary Period. While HB 1198 does not permit such a change, a similar result could be achieved by a multiplier change; thus we continue to believe that study is relevant.

The results of the August 29, 2012 study are summarized below. The results are presented as a range for the reasons described above – future behavior of future people under future conditions cannot be known now.

<b>Long Term Normal Cost</b>	<b>Low Savings</b>	<b>High Savings</b>
Current	6.98%	6.98%
Tier II	5.89%	4.39%
<b>Long Term Net Savings</b>	<b>1.09%</b>	<b>2.59%</b>
Unfunded Years Savings	21	31

This bill allows the ATRS Board to provide reduced benefits for future hires. Consequently, it must save money for ATRS. The amount actually saved will depend on the exact plan that is ultimately designed.

We hope this analysis meets your needs.

Please review this letter carefully to ensure that we have understood the bill properly and that the assumptions we have made are realistic. The analysis in this letter should not be relied upon if there is doubt about our understanding of the bill or the assumptions we have made. Our analysis relates only to the plan changes described in this correspondence. In the event that other plan changes are being considered, it is very important to remember that the results of separate actuarial analyses cannot generally be added together to produce a total. The total can be considerably greater than the sum of the parts due to the interaction of various plan provisions with each other, and with the assumptions that must be used.

We did not review this bill for compliance with Federal, State, or local laws or regulations, and internal revenue code provisions. Such a review was not within the scope of our assignment.

The undersigned are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Mr. George Hopkins

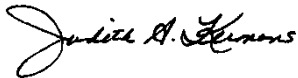
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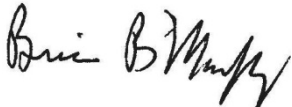
Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this communication (or any attachment) concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.

This communication shall not be construed to provide tax advice, legal advice or investment advice.

Sincerely,



Judith A. Kermans, EA, MAAA, FCA



Brian B. Murphy, FSA, EA, MAAA, FCA

JAK/BBM:rmn

August 29, 2012

Mr. George Hopkins  
Executive Director  
Arkansas Teacher Retirement System  
1400 West Third Street  
Little Rock, Arkansas 72201

**Re: Supplemental Valuation**

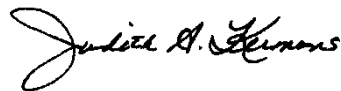
Dear Mr. Hopkins:

Enclosed is a supplemental actuarial valuation of the following benefit changes for members of the Arkansas Teacher Retirement System:

- Introduction of a new tier of benefits for newly hired participants.

Please call if you have any questions regarding the calculations enclosed.

Sincerely,



Judith A. Kermans, EA, MAAA, FCA

JAK:rmn  
Enclosures

cc: Gail Bolden, ATRS  
Brian Murphy, GRS  
Heidi Barry, GRS

**ARKANSAS TEACHER RETIREMENT SYSTEM**  
**SUPPLEMENTAL ACTUARIAL VALUATION AS OF JUNE 30, 2011**

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**Requested By:** Mr. George Hopkins, Executive Director  
**Date:** August 29, 2012  
**Submitted By:** Brian B. Murphy, FSA, EA, MAAA, FCA and  
Judith A. Kermans, EA, MAAA, FCA  
Actuaries  
Gabriel, Roeder, Smith & Company

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This report contains actuarial valuations of proposed changes in benefits for members of the Arkansas Teacher Retirement System. The actuaries issuing this report are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The supplemental valuations were based on the census data and actuarial methods and assumptions used in the June 30, 2011 actuarial valuation. The results of the supplemental valuations indicate what the June 30, 2011 valuation would have shown if the proposed benefit changes had been in effect on that date. Supplemental valuations do not predict the result of future actuarial valuations. (Future activities can affect future valuation results in an unpredictable manner.) Rather, supplemental valuations give an indication of the probable effect of **only the benefit changes** on future valuations without comment on the complete end result of the future valuations.

These calculations are based upon assumptions regarding future events, which may or may not materialize. They are also based upon present and proposed plan provisions that are outlined in the valuation report. If you have reason to believe that the assumptions that were used are unreasonable, that the plan provisions are incorrectly described, that important and relevant plan provisions are not described, or that conditions have changed since the calculations were made, you should contact the authors of this report prior to relying on information in the report.

If you have reason to believe that the information provided in this report is inaccurate, or is in any way incomplete, or if you need further information in order to make an informed decision on the subject matter of this report, please contact the authors of the report prior to making such decision. Also, in the event that more than one plan change is being considered, it is very important to remember that the results of separate actuarial valuations cannot generally be added together to produce a total. The total can be considerably greater than the sum of the parts due to the interaction of various plan provisions with each other, and with the assumptions that must be used.

This report is intended to describe the financial effect of the proposed plan changes. No statement in this report is intended to be interpreted as a recommendation in favor of the changes, or in opposition to them.

This report is intended to describe the financial effect of the proposed plan changes on the Retirement System. Except as otherwise noted, potential effects on others benefit plans were not considered.

A review of the proposed provisions for compliance with Federal, State or local laws or regulations, specifically IRC §415 and rules related to the diminishment of benefits, was outside the scope of this assignment.

**ARKANSAS TEACHER RETIREMENT SYSTEM**  
**SUPPLEMENTAL ACTUARIAL VALUATION AS OF JUNE 30, 2011**

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Actuarial assumptions and methods were consistent with those used in the regular actuarial valuation of the Retirement System on the valuation date, unless otherwise noted. Actuarial assumptions are adopted by the Retirement Board of Trustees. The assumptions used for this valuation include:

- An assumed rate of investment return of 8.0%.
- An entry-age normal cost valuation method.
- For purposes of amortizing unfunded accrued liabilities, payroll was assumed to increase 3.25% per year.

The amortization period as of the June 30, 2011 valuation is 66.0 years, based upon a 14% employer contribution rate.

A brief summary of the data, as of June 30, 2011, used in this valuation is presented below.

Group	Active Members			
	Number	Covered Payroll	Average in Years	
			Age	Service
Education	34,832	\$ 1,681,218,368	43.3	12.3
Support	<u>37,461</u>	<u>776,395,473</u>	46.3	7.6
Total	72,293	\$ 2,457,613,841	44.8	9.9

Group	T-DROP Members		
	Number	Account Balance	Covered Payroll
Total	4,487	\$488,599,404	\$270,669,423

**ARKANSAS TEACHER RETIREMENT SYSTEM**  
**SUPPLEMENTAL ACTUARIAL VALUATION AS OF JUNE 30, 2011**

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**CURRENT PROVISIONS:**

**Voluntary Retirement** – A member may retire at age **60** with 5 or more years of credited service, or after **28** years of credited service regardless of age.

**Early Retirement** – A member who has more than 25 but less than **28** years of credited service and has not attained age **60** years may retire and receive an immediate early retirement annuity. The early annuity is an age & service annuity reduced by the lesser of (i) 5/12 of 1% multiplied by the number of months by which early retirement precedes completion of **28** years of service, or (ii) 5/12 of 1% multiplied by the number of months by which early retirement precedes the attainment of age **60** years.

**Deferred Retirement** – An inactive member who has 5 or more years of credited service will be entitled to an age & service annuity beginning at age **60**, provided accumulated contributions are left on deposit with the retirement system.

**Disability Retirement** – An active member, with **5** or more years of credited service, who becomes totally and permanently disabled may be retired and receive a disability annuity computed in the same manner as an age & service annuity.

**Final Average Salary (FAS)** – A member's final average salary is the average of the annual salaries paid during the period of **3** years of credited service producing the highest annual average.

**T-DROP** – A member with **28** or more years of service may participate. An amount equal to the amount that would have been paid had the member retired, reduced by 1% for each year of contributory, 1% for each year of reciprocal and **6/10%** for each year of non-contributory service, is deposited into a T-DROP account. **Members who enter T-DROP with less than 30 years of service are subject to an additional 6% reduction for each year less than 30 years.**

**Post-Retirement Increases** – Each July 1, annuities are adjusted to be equal to the base annuity times 100% plus **3%** for each full year in the period from the effective date of the base annuity to the current July 1.

**Survivor Benefits** – Upon the death of an active member, who has **5** or more years of credited service, the following annuities are payable:

- (a) The surviving spouse receives an Option A - 100% Survivor Annuity. **If the member has attained age 60 and has acquired 5 years of credited service or has acquired 25 years of credited service regardless of age, the annuity begins immediately; otherwise the annuity begins the month following the date the member would have attained age 60.**
- (b) Each dependent child receives an annuity in an amount equal to 20% of the **highest salary received in covered employment**. If there are 3 or more dependent children, the aggregate amount of the dependent children's annuity shall not exceed 60% of the member's **highest salary received in covered employment** and shall be divided equally among the dependent children. A child is dependent until the child's death, marriage, or attainment of age 18 (age 23 if the child is a full-time student).

**Lump Sum Death Benefit** – Beneficiaries of deceased active members or retirees with 10 or more years of ATRS credited service are eligible to receive a lump sum death benefit of up to \$10,000 (\$6,667 for non-contributory service-benefit). The amount will be prorated for members who have both contributory service and non-contributory service. Members with 15 or more years of contributory service will receive the full \$10,000.

**ARKANSAS TEACHER RETIREMENT SYSTEM**  
**SUPPLEMENTAL ACTUARIAL VALUATION AS OF JUNE 30, 2011**

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**Retiree Health Stipend** – Each retired member as of June 30, 2008, with 5 or more years of ATRS credited service receives \$75 per month toward retiree health care premiums. Members in T-DROP do not receive the \$75 per month until actual retirement. For all members retiring on or after July 1, 2008, a minimum of 10 years of ATRS credited service is required to receive the \$75 per month stipend.

**Waiting Period For Reemployment** – Members who terminate service must wait 180 days before being reemployed unless they either have 38 years of accrued service or have attained the age of 65 years. Members who are less than 65 but have 38 or more years of service need only wait for 30 days before reemployment, and members who are age 65 or over can be reemployed immediately.



**ARKANSAS TEACHER RETIREMENT SYSTEM**  
**SUPPLEMENTAL ACTUARIAL VALUATION AS OF JUNE 30, 2011**

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**PROPOSED PROVISIONS FOR NEW HIRES ON OR AFTER EFFECTIVE DATE OF CHANGE:**

**Voluntary Retirement** – A member may retire at age **65** with 5 or more years of credited service, or after **35** years of credited service regardless of age.

**Early Retirement** – A member who has more than 25 but less than **35** years of credited service and has not attained age **65** years may retire and receive an immediate early retirement annuity. The early annuity is an age & service annuity reduced by the lesser of (i) 5/12 of 1% multiplied by the number of months by which early retirement precedes completion of **35** years of service, or (ii) 5/12 of 1% multiplied by the number of months by which early retirement precedes the attainment of age **65** years.

**Deferred Retirement** – An inactive member who has 5 or more years of credited service will be entitled to an age & service annuity beginning at age **65**, provided accumulated contributions are left on deposit with the retirement system.

**Disability Retirement** – An active member, with **10** or more years of credited service, who becomes totally and permanently disabled may be retired and receive a disability annuity computed in the same manner as an age & service annuity.

**Final Average Salary (FAS)** – A member's final average salary is the average of the annual salaries paid during the period of **5** years of credited service producing the highest annual average.

**T-DROP** – A member with **35** or more years of service may participate. An amount equal to the amount that would have been paid had the member retired, reduced by **1%** for each year of contributory, reciprocal and non-contributory service, is deposited into a T-DROP account.

**Post-Retirement Increases** – Each July 1, annuities are adjusted to be equal to the base annuity times 100% plus **2.5%** for each full year in the period from the effective date of the base annuity to the current July 1.

**Survivor Benefits** – Upon the death of an active member, who has **10** or more years of credited service, the following annuities are payable:

- (a) The surviving spouse receives an Option A - 100% Survivor Annuity. **If the member has attained normal retirement eligibility at the time of death, the annuity begins immediately; otherwise the annuity begins the month following the date the member would have attained normal retirement eligibility age.**
- (b) Each dependent child receives an annuity in an amount equal to 20% of the **benefit amount**. If there are 3 or more dependent children, the aggregate amount of the dependent children's annuity shall not exceed 60% of the member's **benefit amount** and shall be divided equally among the dependent children. A child is dependent until the child's death, marriage, or attainment of age 18 (age 23 if the child is a full-time student).

**Lump Sum Death Benefit** – None.

**Retiree Health Stipend** – None.

**Waiting Period For Reemployment** – Members who terminate service must wait **180** days before being reemployed.

**ARKANSAS TEACHER RETIREMENT SYSTEM**  
**SUPPLEMENTAL ACTUARIAL VALUATION AS OF JUNE 30, 2011**

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**Actuarial Statement \$ Millions**

<u>Valuation Date June 30, 2011</u>	<u>Present</u> <u>Plan</u>	<u>Present</u> <u>Members</u>	<u>Proposal Results</u>	
			<u>New Entrants#</u>	
			<u>Low Savings</u>	<u>High Savings</u>
1) Accrued Liabilities	\$15,521.3	\$15,521.3		
2) Funding Value of Assets	11,146.2	11,146.2		
3) UAAL \$: (1) - (2)	\$ 4,375.1	\$ 4,375.1		
4) - % Funded: (2) / (1)	72%	72%		
5) Employer Contribution Rate	14.00%	14.00%	14.00%	14.00%
6) Normal Cost	6.98%	6.98%	5.89%	4.39%
7) UAAL %: (5) - (6)	7.02%	7.02%	8.11%	9.61%
8) Amortization Years	<b>66.02</b>		<b>45</b>	<b>35</b>
9) Change in Years			<b>(21)</b>	<b>(31)</b>

# *The proposed changes have no impact on current members but only on future members, whose demographic details are unknown. This means that the proposal results shown above are based on assumptions about the behavior of hypothetical members, which introduces a considerable amount of uncertainty into the results. Therefore, we have provided a range of results from low savings to high savings. Of course, the actual savings, as they emerge, could be outside of the range.*

A contribution rate change of 0.67% would be required to produce a 45 year amortization period in the absence of benefit changes. That means that, in some sense, the low savings estimate could be said to correspond to a 0.67% of payroll savings, averaged over time. A change of 1.47% would be required to produce a 35 year amortization period in the absence of benefit changes. That means that the high savings estimate would correspond approximately to a 1.47% of payroll savings, averaged over time.

In the very long term, once all present members are replaced by people in Tier 2, the normal cost of the plan is expected to be lower than it is today. In the low savings estimate, the normal cost would become 5.89% of payroll, which is 1.09% of payroll lower than it is today. In the high savings estimate, the normal cost would drop to 4.39% of payroll, which is 2.59% lower than it is today.

*Please see page 7 for Comments regarding this Proposal*

**ARKANSAS TEACHER RETIREMENT SYSTEM**  
**SUPPLEMENTAL ACTUARIAL VALUATION AS OF JUNE 30, 2011**  
**COMMENTS**

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1. The actuarial calculations are based on the June 30, 2011 actuarial valuation. Please remember that these changes, if adopted, would likely impact the June 30, 2012 valuation. That valuation will be completed in the fall of 2012 and will be based on member data and financial results as of June 30, 2012, neither of which is available to us at this time.
2. The savings generated by this proposal, when measured in terms of amortization years is approximately 21 to 31 years. The measured savings appear to be large especially since benefits for current members did not change. That occurs because measurements in terms of amortization years depend very highly on the starting point, which is 66 years in this case. If the amortization period in the valuation had been 30 years, the apparent savings in terms of amortization years would have been smaller.
3. The proposed change affects the benefits of future members. The long-term costs of benefits (the normal cost) for members hired after the effective date will be reduced by approximately 1.09% to 2.59% of payroll if the proposal is implemented. The 1.09% figure corresponds to the low savings estimate, while the 2.59% figure corresponds to the high savings estimate. The reduction is expected to emerge gradually over a 20 to 30 year period as the current population is replaced by new entrants. The actual level of the true savings cannot be known until there has been enough experience with the Tier 2 group to do a full experience study.
4. It was assumed that the mix of contributory and non-contributory people in Tier 2, would be approximately the same as it currently is in Tier 1.
5. Probabilities of retirement were adjusted in connection with these proposals and can be found on pages 8 and 9. There was no experience on which to base these adjusted assumptions, since the demographic details of future hires cannot be known in advance. Once the new tier has been in place for a sufficient number of years, assumptions based upon actual experience can be developed. Actual future experience may differ materially from the estimates made in this report. If you have reason to believe that the assumptions we have used are incorrect, do not rely on these results. If future members retire at different ages or with different benefit amounts than expected, as a result of these changes, then the cost of the changes will be different than shown on the previous page.
6. In situations where many different benefit changes are being considered, results from separate studies may not be additive. If more than one change under consideration is adopted, the resulting effect may be greater or less than the sum of the individual changes.

**ARKANSAS TEACHER RETIREMENT SYSTEM**  
**SUPPLEMENTAL ACTUARIAL VALUATION AS OF JUNE 30, 2011**

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**Normal Retirement Rates Assumed for New Hires**

<b>Retirement Ages</b>	<b>% of Active Participants Retiring with Unreduced Benefits</b>			
	<b>Education</b>		<b>Support</b>	
	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>
55	59%	55%	25%	25%
56	67%	25%	54%	22%
57	11%	12%	10%	10%
58	11%	12%	16%	14%
59	14%	16%	16%	27%
60	16%	16%	11%	13%
61	15%	15%	10%	14%
62	30%	26%	29%	22%
63	24%	22%	21%	18%
64	22%	20%	25%	20%
65	37%	43%	46%	40%
66	43%	41%	38%	36%
67	35%	34%	37%	35%
68	31%	33%	39%	28%
69	25%	33%	26%	34%
70	37%	40%	33%	34%
71	41%	30%	34%	33%
72	32%	34%	41%	31%
73	44%	36%	32%	34%
74	30%	30%	29%	34%
75	100%	100%	100%	100%

**ARKANSAS TEACHER RETIREMENT SYSTEM**  
**SUPPLEMENTAL ACTUARIAL VALUATION AS OF JUNE 30, 2011**

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**Early Retirement Rates Assumed for New Hires**

<b>Retirement Ages</b>	<b>% of Active Participants Retiring with Reduced Benefits</b>			
	<b>Education</b>		<b>Support</b>	
	<b>Male</b>	<b>Female</b>	<b>Male</b>	<b>Female</b>
50	2%	2%	2%	2%
51	2%	2%	2%	2%
52	3%	3%	3%	3%
53	4%	4%	4%	4%
54	4%	4%	4%	4%
55	6%	6%	6%	6%
56	9%	5%	9%	5%
57	9%	5%	9%	5%
58	9%	5%	9%	5%
59	9%	5%	9%	5%
60	9%	5%	9%	5%
61	9%	5%	9%	5%
62	9%	5%	9%	5%
63	9%	5%	9%	5%
64	9%	5%	9%	5%