

ARKANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM
ACTUARIAL VALUATION AND EXPERIENCE
GAIN/(LOSS) ANALYSIS
JUNE 30, 2016

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November 10, 2016

Board of Trustees
Arkansas Public Employees Retirement System
Little Rock, Arkansas

Ladies and Gentlemen:

The results of the ***June 30, 2016 actuarial valuation*** of the Arkansas Public Employees Retirement System together with ***the annual gain and loss analysis*** for the year ended June 30, 2016 are presented in this report. The purpose of the valuation and gain/loss analysis is to measure funding progress in relation to the actuarial cost method and to determine employer contribution rates for the fiscal year beginning July 1, 2017.

Calculations required for compliance with the Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68 have been issued in separate reports.

This report should not be relied on for any other purpose than those described above. It was prepared at the request of the Board and is intended for use by the Retirement System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with permission of the Board. Gabriel, Roeder, Smith & Company is not responsible for the unauthorized use of this report.

The findings in this report are based on data and other information through June 30, 2016. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: plan experience differing from that anticipated by the economic and demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

The actuarial methods and assumptions used in the actuarial valuation are summarized in Section E of this report. The assumptions are established by the Board after consulting with the actuary. The actuarial assumptions used for the valuation produce results which, individually and in the aggregate, are reasonable.

The cooperation of the Executive Director and the APERS staff in furnishing the materials required for these valuations is acknowledged with appreciation.

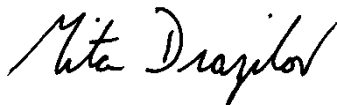
Board of Trustees
November 10, 2016
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This report has been prepared by individuals who have substantial experience valuing public employee retirement systems. To the best of our knowledge, this report is complete and accurate and was made in accordance with standards of practice promulgated by the Actuarial Standards Board and in conformance with Title 24 of the Arkansas Code.

Mita D. Drazilov and Heidi G. Barry are Members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

The signing individuals are independent of the plan sponsor.

Respectfully submitted,



Mita D. Drazilov, ASA, FCA, MAAA



Heidi G. Barry ASA, MAAA



David L. Hoffman

MDD/HGB/DLH:dj

SECTION A
VALUATION RESULTS

COMMENTS

General Financial Objective. Section 24-2-701 of the Arkansas Code provides as follows:

The general financial objective of each Arkansas public employee retirement plan shall be to establish and receive contributions that, expressed as percentages of active member payroll, will remain approximately level from generation to generation of Arkansas citizens. More specifically, contributions received each year shall be sufficient both:

- (1) To fully cover the costs of benefit commitments being made to members for their service being rendered in that year; and
- (2)(A) To make a level payment that, if paid annually over a reasonable period of future years, will fully cover the unfunded costs of benefit commitments for service previously rendered.
- (B) Alternatively, if the costs of benefit commitments for service previously rendered are overfunded, the plan may deduct a level payment that, if deducted annually over a reasonable period of future years, will fully liquidate the overfunded portion of such costs.

Benefit Changes. The most recent benefit changes were reflected in the June 30, 2009 valuation. No benefit changes have been adopted for consideration in the June 30, 2016 valuation.

Assumption Changes. The most recent assumption changes were reflected in the June 30, 2015 valuation. No assumption changes have been adopted for consideration in the June 30, 2016 valuation.

Method Changes. In recognition of the 14.75% employer contribution rate adopted by the Board at the August 2016 meeting, the amortization period was updated for the June 30, 2016 valuation to a 21- year period. There have been no other changes in methods since the June 30, 2015 valuation.

APERS Status. Based upon the results of the June 30, 2016 actuarial valuation, **APERS continues to satisfy the general financial objective** of level contribution financing.

APERS Reserve Strength. As a by-product of achieving level contribution financing, actuarial accrued liabilities usually become more and more funded over a period of years. On a funding value of assets basis, the System has an 80% funded ratio. On a market value of assets basis, the System has a 76% funded ratio.

Employer Contribution Rates. Based upon experience through June 30, 2016, the State and Local Government contribution rate (including General Assembly members) will be 14.75% of covered payroll for the fiscal year beginning July 1, 2017. Based on the Board's Funding Policy, decreases (if any) are limited to 0.25% of covered payroll in each of the two subsequent years beginning with the June 30, 2015 valuation.

District Judges. Results for the District Judges are presented in Section D. These results are not included in any of the numbers presented in Sections A, B and C.

OTHER OBSERVATIONS

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status.

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 7.50% on the actuarial value of assets), it is expected that:

- (1) The employer normal cost as a percentage of pay will decrease to less than 7% (the employer normal cost for the new contribution plans) as non-contributory members leave employment;
- (2) The unfunded actuarial accrued liabilities will be fully amortized after 21 years; and
- (3) The funded status of the plan will increase gradually towards a 100% funded ratio.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

- (1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
- (2) The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).
- (3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

**EMPLOYER CONTRIBUTION RATES COMPUTED
FOR FISCAL YEAR BEGINNING JULY 1, 2017**

Contribution for	Contributions Expressed as %'s of Active Payroll
	State and Local and General Assembly
Normal Cost:	
Age and service annuities (including DROP and reduced retirement)	7.81%
Separation benefits	1.76%
Disability benefits	0.62%
Death-in-service annuities	0.21%
Administrative expenses	0.40%
Total	10.80%
Member contributions	3.29%
Employer Normal Cost	7.51%
Unfunded Actuarial Accrued Liabilities #	7.24% *
Total Employer Contribution	14.75%

* *Unfunded actuarial accrued liabilities were amortized over a 21-year period.*

Included in this total is the Wildlife rate fixed at 12% of payroll (in addition to the rate shown above) and the School rate fixed at 4% of payroll.

Note: State and Local payroll includes payroll for DROP participants and retired members returned to work.

SUMMARY STATEMENT OF SYSTEM RESOURCES AND OBLIGATIONS
YEAR ENDED JUNE 30, 2016

Present Resources and Expected Future Resources

A.	Present Valuation Assets:	
	1. Net assets from System financial statements	\$ 7,350,771,708
	2. Market value adjustment	418,100,043
	3. Valuation assets	<u>7,768,871,751</u>
B.	Actuarial present value of expected future employer contributions:	
	1. For normal costs	947,639,405
	2. For unfunded actuarial accrued liability	1,893,811,641
	3. Total	<u>2,841,451,046</u>
C.	Actuarial present value of expected future member contributions	<u>480,753,458</u>
D.	Total Present and Expected Future Resources	<u><u>\$ 11,091,076,255</u></u>

Actuarial Present Value of Expected Future Benefit Payments

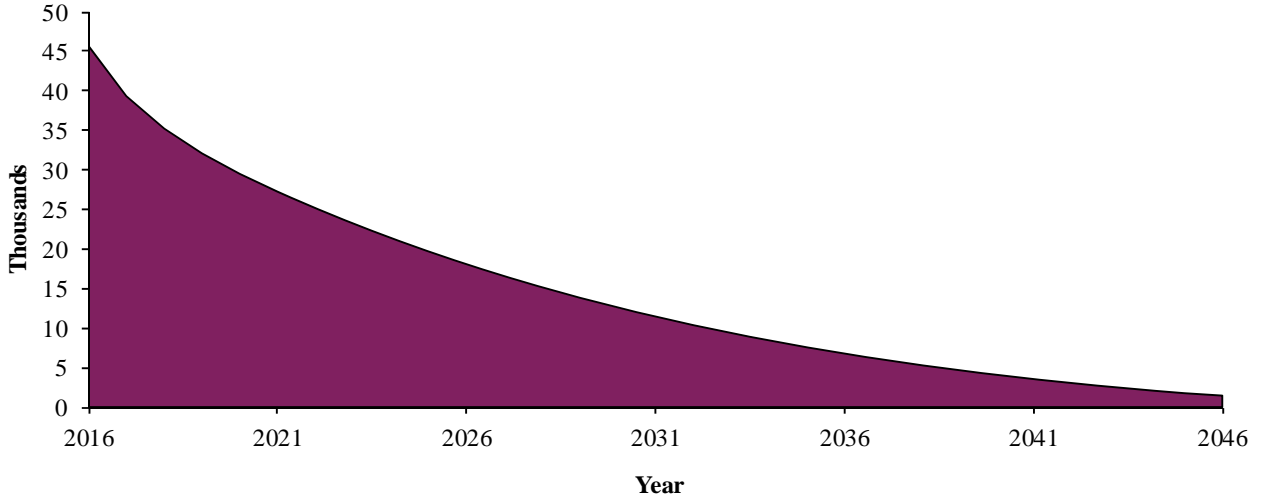
A.	To retirees and beneficiaries:	
	1. Annual pensions	\$ 4,929,189,468
	2. DROP participants: future payments	642,205,680
	3. DROP Reserve: accrued balances	100,336,295
	4. Total	<u>5,671,731,443</u>
B.	To vested terminated members	462,859,264
C.	To present active members:	
	1. Allocated to service rendered prior to valuation date - actuarial accrued liability	3,528,092,685
	2. Allocated to service likely to be rendered after valuation date	1,428,392,863
	3. Total	<u>4,956,485,548</u>
D.	Total Actuarial Present Value of Expected Future Benefit Payments	<u><u>\$ 11,091,076,255</u></u>

**COMPUTED ACTUARIAL LIABILITIES AND
ALLOCATION USING ENTRY AGE ACTUARIAL COST METHOD
AS OF JUNE 30, 2016**

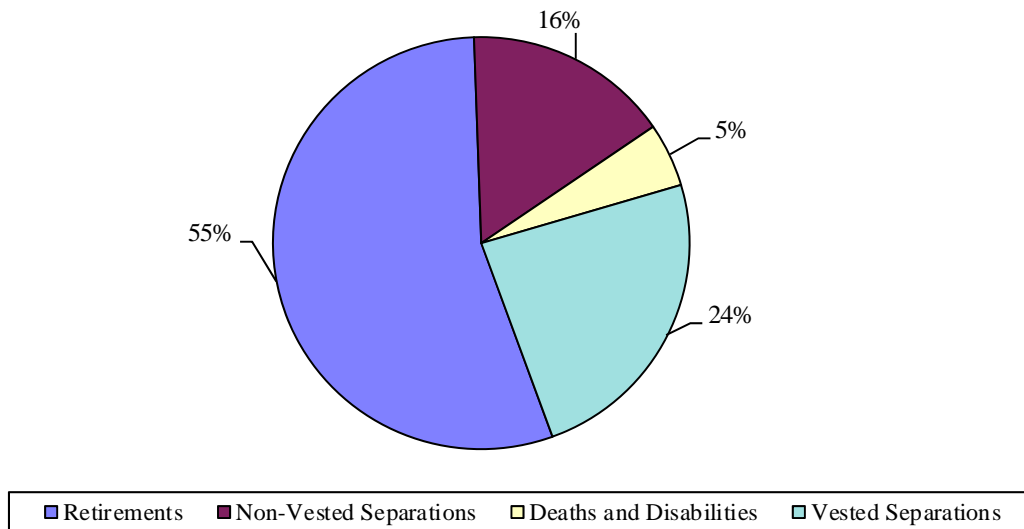
Actuarial Present Value of	Total Present Value	Portion Covered By Future Normal Cost Contributions	Actuarial Accrued Liabilities (1) - (2)
Benefits to be paid to current retirees, beneficiaries, and future beneficiaries of current retirees	\$4,929,189,468	\$ 0	\$4,929,189,468
Age and service allowances based on total service likely to be rendered by present active members	4,382,113,640	1,072,668,102	3,309,445,538
DROP participant benefits likely to be paid to present active members and current DROP participants	742,541,975	0	742,541,975
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members	773,595,010	241,728,023	531,866,987
Disability benefits likely to be paid to present active members	180,888,947	85,154,190	95,734,757
Death-in-service benefits likely to be paid on behalf of present active members	82,747,215	28,842,548	53,904,667
Total	\$11,091,076,255	\$1,428,392,863	\$ 9,662,683,392
Applicable assets (funding value)	7,768,871,751	0	7,768,871,751
Liabilities to be covered by future contributions	\$ 3,322,204,504	\$1,428,392,863	\$ 1,893,811,641

EXPECTED DEVELOPMENT OF PRESENT POPULATION JUNE 30, 2016

Closed Group Population Projection



Expected Termination Type from Active Employment



The charts show the expected future development of the present population in simplified terms. The Retirement System presently covers 45,676 active members. Eventually, 16% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. About 79% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, retiring from DROP, or retiring from vested deferred status. About 5% of the present population is expected to become eligible for death-in-service or disability benefits. Within 9 years, over half of the covered membership is expected to consist of new hires.

**RECOMMENDED TRANSFERS
TO FULLY FUND THE DEFERRED ANNUITY ACCOUNTS AND RETIREMENT RESERVE ACCOUNTS**

Each year the actuary recommends transfers to the Deferred Annuity Accounts and the Retirement Reserve Accounts from the Employer Accumulation Accounts. These transfers place in the Deferred Annuity Account and the Retirement Reserve Account sufficient assets to cover the computed liabilities for future deferred annuity payments to present reported inactive members and for future retirement annuities to present retired members.

This year's transfer amounts are given below:

Division	Employer Accumulation Accounts Before Transfers	Transfers as of July 1, 2016 to:		Employer Accumulation Accounts After Transfers
		Deferred Annuity Accounts	Retirement Reserve Accounts	
State	\$1,640,548,362	\$15,079,677	\$282,025,237	\$ 1,343,443,448
Wildlife	(84,610,971)	(52,065)	2,393,612	(86,952,518)
Penitentiary	(468,137)	0	0	(468,137)
State Constitutional Officers	(1,760,421)	7,368	56,926	(1,824,715)
Governors	(7,013,858)	0	14,918	(7,028,776)
Quasi-Judicial	(862,590)	0	0	(862,590)
State Capitol Police	3,424,716	0	0	3,424,716
Administrative Officers Courts	702,647	0	(5)	702,652
Total State	1,549,959,748	15,034,980	284,490,688	1,250,434,080
General Assembly	(8,775,737)	(101,416)	1,257,852	(9,932,173)
County	306,889,148	4,006,231	47,601,029	255,281,888
County Constitutional Officers	(876,839)	0	8,509	(885,348)
Total County	306,012,309	4,006,231	47,609,538	254,396,540
Municipal	184,935,210	3,292,224	32,777,486	148,865,500
School	(113,359,955)	(2,592,035)	20,968,221	(131,736,141)
Non-State	9,070,108	159,744	1,289,793	7,620,571
Total	\$1,927,841,683	\$19,799,728	\$388,393,578	\$1,519,648,377

**VALUATION RESULTS
COMPARATIVE STATEMENT
(\$ MILLIONS)**

Valuation Date June 30,	Actuarial Accrued Liabilities & Reserves	Valuation Assets	% Funded	Unfunded Actuarial Accrued Liabilities & Reserves			Contribution Rate Computed Percents	
				Dollars	Amortiz. Period *	% of Payroll	General Assembly	State & Local**
2001 @	\$4,111	\$ 4,342	105.6 %	\$(231)	50	(22) %	148.78 %	10.00 %
2002 #	4,398	4,404	100.1	(6)	6	(1)	150.95	10.00
2003 #	4,674	4,416	94.5	258	30	22	222.80	11.09
2004	5,005	4,438	88.7	567	30	48	201.39	12.54
2005 @#	5,619	4,584	81.6	1,035	22	85	459.47	12.54
2006	5,936	4,949	83.4	987	19	78	464.67	12.54
2007 @	6,174	5,498	89.1	676	18	52	410.58	11.01
2008 #	6,543	5,866	89.7	677	14	49	408.06	11.00
2009 @	6,938	5,413	78.0	1,525	30	106	521.36	12.46
2010	7,304	5,409	74.1	1,895	30	124	518.69	13.47
2011 #	7,734	5,467	70.7	2,267	30	147	939.81	14.24
2012	8,163	5,625	68.9	2,538	30	151		14.88
2013 #	8,284	6,159	74.3	2,125	25	126		14.76
2014 #	8,864	6,895	77.8	1,969	23	113		14.50
2015 #	9,295	7,352	79.1	1,943	25	111		14.50
2016	9,663	7,769	80.4	1,894	21	106		14.75

* Amortization period is for State division prior to 2001, State and Local division for 2001 and later and may be rounded above. General Assembly unfunded actuarial accrued liabilities are amortized over an 18-year period as of June 30, 2008.

** Local Government rate was 6.00% for the 1998 valuation, 7.00% for the 1999 valuation, and 8.00% for the 2000 valuation. Beginning with the June 30, 2012 valuation, results include General Assembly.

@ After legislated changes in benefit provisions.

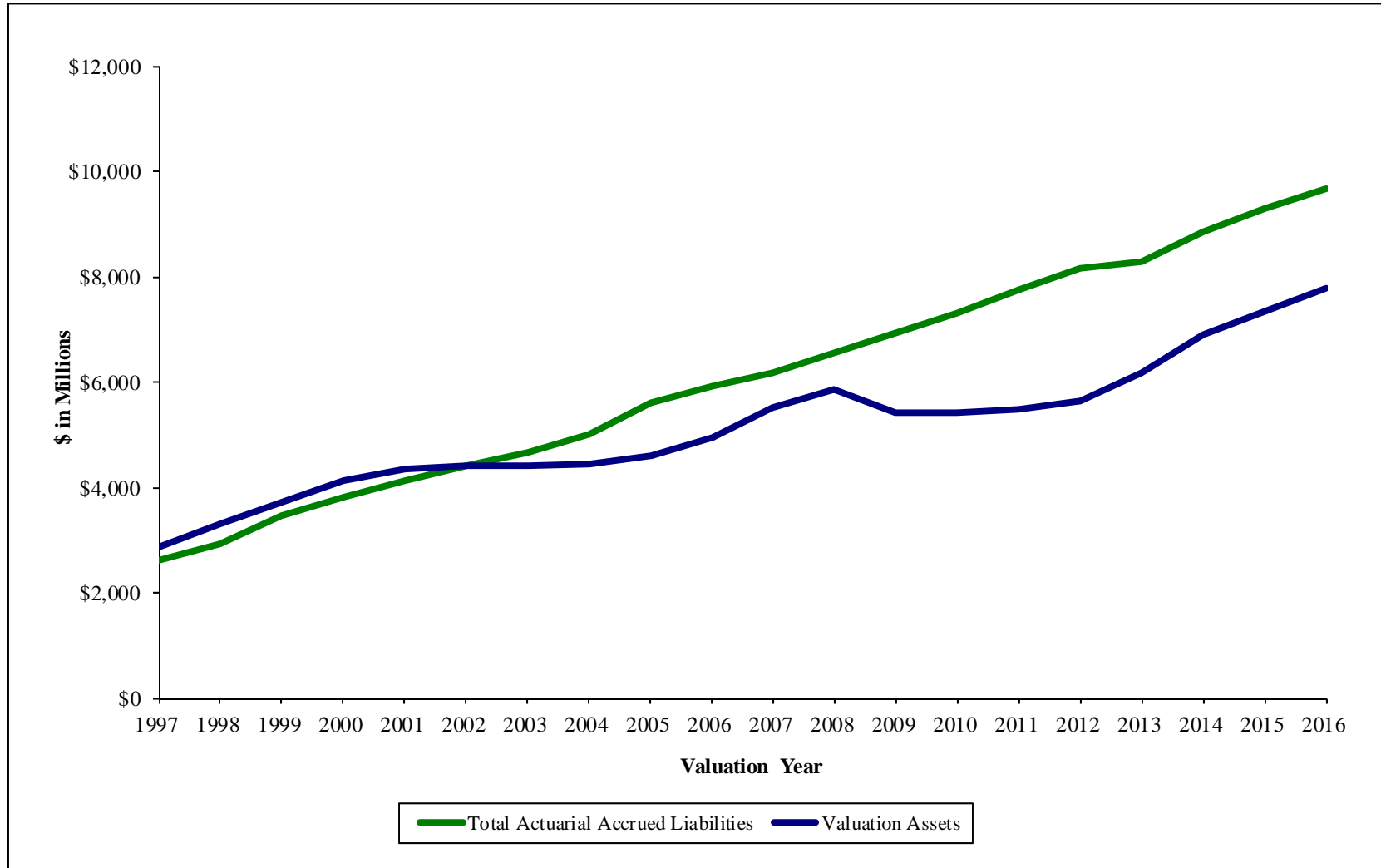
After changes in actuarial assumptions.

ACTIVE MEMBERS AND RETIRED LIVES HISTORICAL COMPARATIVE SCHEDULE

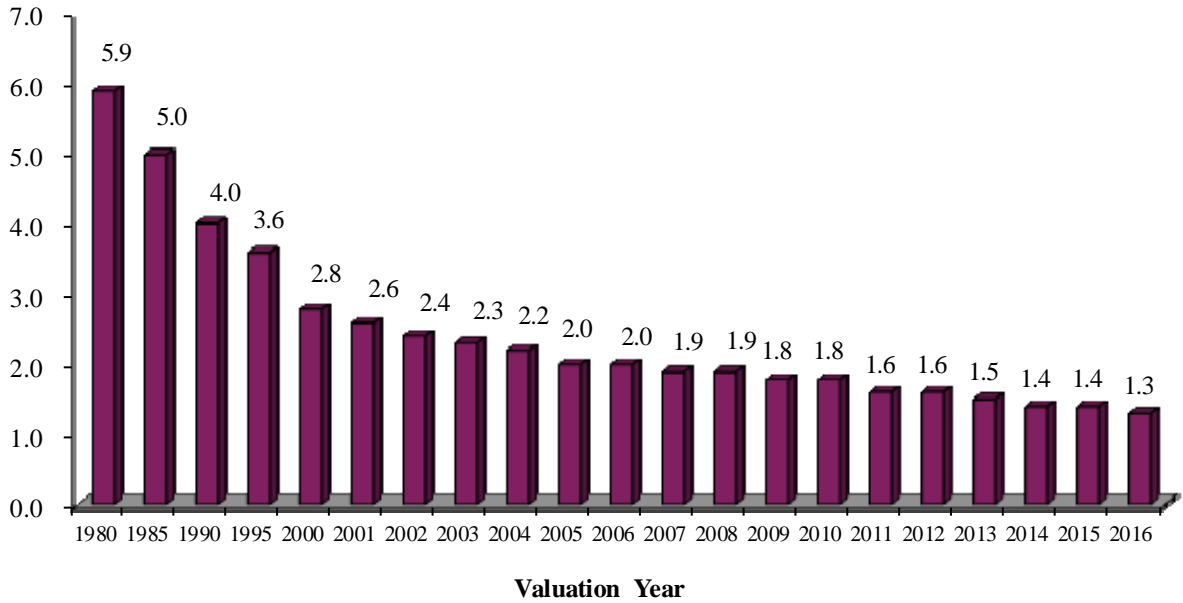
Valuation Date	Active Members				Retired Lives			
	No.	Valuation Payroll			No.	Active per Retired	Annual Benefits	
		\$ Millions	Average	% Incr.			\$ Millions	As a % of Pay
6/30/84	NA	NA	NA	NA	7,036	NA	\$ 19.1	4.4%
6/30/85	NA	NA	NA	NA	7,331	NA	22.0	4.8%
6/30/86	NA	NA	NA	NA	7,649	NA	24.1	4.9%
6/30/87	NA	NA	NA	NA	8,074	NA	30.2	6.0%
6/30/88	NA	NA	NA	NA	9,155	NA	39.6	7.5%
6/30/89	NA	NA	NA	NA	9,418	NA	42.9	7.6%
6/30/90	NA	NA	NA	NA	9,747	NA	44.9	7.4%
6/30/91	NA	NA	NA	NA	10,110	NA	49.2	7.6%
6/30/92	39,752	\$ 698.2	\$ 17,564	NA	10,456	3.8	51.9	7.4%
6/30/93	39,849	733.4	18,404	4.8%	10,840	3.7	56.8	7.7%
6/30/94	40,940	778.7	19,021	3.3%	11,213	3.7	60.7	7.8%
6/30/95	42,041	834.5	19,850	4.4%	11,683	3.6	70.1	8.4%
6/30/96	42,712	889.3	20,821	4.9%	12,073	3.5	76.2	8.6%
6/30/97	43,068	938.5	21,791	4.7%	12,644	3.4	84.8	9.0%
6/30/98	43,047	974.7	22,644	3.9%	13,480	3.2	94.6	9.7%
6/30/99	43,064	1,008.9	23,427	3.5%	14,688	2.9	119.3	11.8%
6/30/00	43,121	1,050.0	24,351	3.9%	15,544	2.8	133.6	12.7%
6/30/01	42,556	1,070.1	25,146	3.3%	16,643	2.6	150.0	14.0%
6/30/02	42,230	1,111.5	26,320	4.7%	17,748	2.4	167.6	15.1%
6/30/03	42,879	1,147.9	26,772	1.7%	18,838	2.3	186.0	16.2%
6/30/04	42,826	1,175.8	27,455	2.6%	19,872	2.2	203.4	17.3%
6/30/05	42,938	1,214.9	28,295	3.1%	21,080	2.0	232.9	19.2%
6/30/06	43,453	1,267.1	29,159	3.1%	22,234	2.0	254.7	20.1%
6/30/07	43,630	1,302.6	29,855	2.4%	22,409	1.9	274.8	21.1%
6/30/08	44,357	1,379.8	31,106	4.2%	23,555	1.9	297.0	21.5%
6/30/09	44,702	1,433.7	32,073	3.1%	24,972	1.8	323.1	22.5%
6/30/10	45,394	1,522.7	33,544	4.6%	25,880	1.8	342.2	22.5%
6/30/11	45,145	1,542.9	34,177	1.9%	28,137	1.6	375.7	24.3%
6/30/12	45,937	1,606.1	34,962	2.3%	29,282	1.6	399.5	24.9%
6/30/13	45,707	1,612.7	35,285	0.9%	30,533	1.5	426.2	26.4%
6/30/14	45,841	1,638.0	35,735	1.3%	31,914	1.4	457.1	27.9%
6/30/15	45,722	1,645.0	35,979	0.7%	33,106	1.4	483.9	29.4%
6/30/16	45,676	1,686.5	36,923	2.6%	34,214	1.3	509.7	30.2%

The above valuation payroll results do not include DROP payroll.

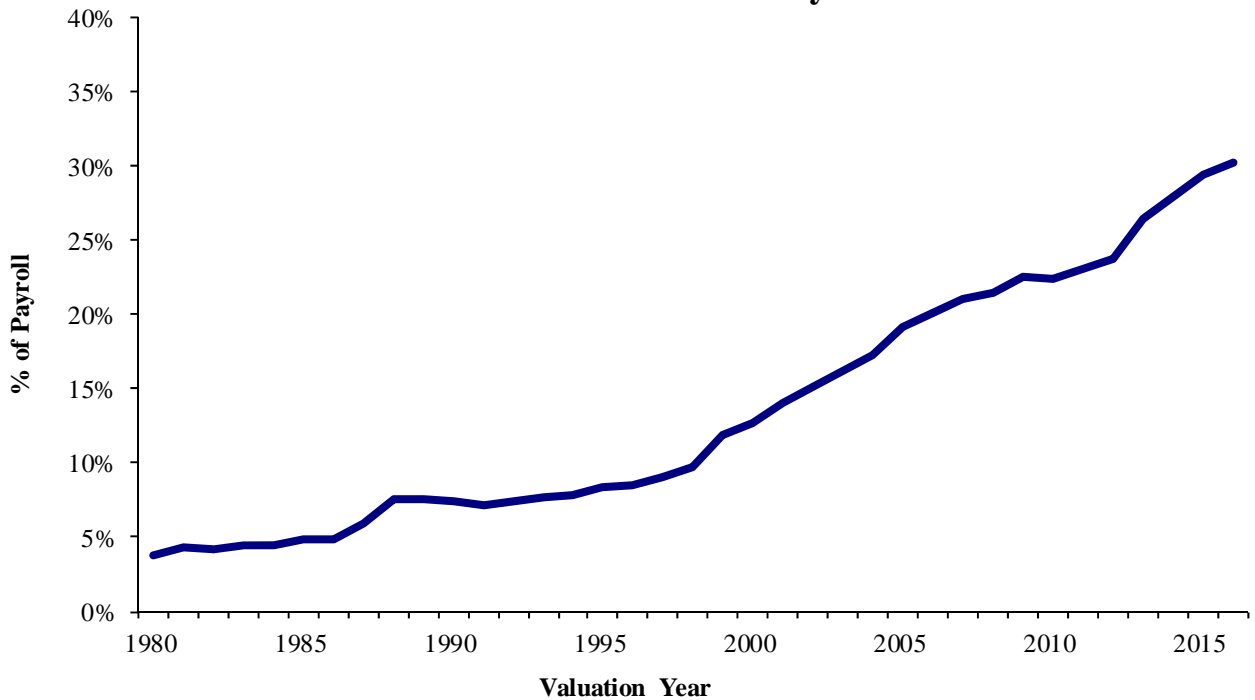
ACTUARIAL ACCRUED LIABILITIES & ASSETS



Active Members Per Retired Life



Retirement Benefits Being Paid as a Percent of Member Payroll



SHORT CONDITION TEST

The APERS funding objective is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the System are level in concept and soundly executed, the System will *pay all promised benefits when due -- the ultimate test of financial soundness*. Testing for level contribution rates is *the* long-term condition test.

A short condition test is one means of checking a System's progress under its funding program. In a short condition test, the Plan's present assets (cash and investments) are compared with:

- 1) Active member contributions on deposit;
- 2) The liabilities for future benefits to present retired lives; and
- 3) The liabilities for service already rendered by active members.

In a System that has been following the discipline of level percent-of-payroll financing, the liabilities for active member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets (except in unusual circumstances). In addition, the liabilities for service already rendered by active members (liability 3) will be partially covered by the remainder of present assets. The larger the funded portion of liability 3, the stronger the condition of the System. Liability 3 being fully funded is uncommon.

**SHORT CONDITION TEST
COMPARATIVE STATEMENT
(\$ IN MILLIONS)**

Val'n. Date: June 30	Entry Age Accrued Liability			Valuation Assets	Portion of Present Values Covered by Present Assets				
	(1) Active Member Contr.	(2) Retirees and Benef.	(3) Active Members (Employer Financed Portion)		(1)	(2)	(3)	Total	
<i>STATE DIVISION (including sub-divisions)</i>									
1998@	\$17.2	\$ 640.3	\$1,395.9	\$2,328.5	100%	100%	119%	113%	
1999@#	16.9	784.0	1,634.2	2,637.1	100%	100%	112%	108%	
2000	15.8	747.5	1,865.7	2,943.3	100%	100%	117%	112%	
<i>LOCAL GOVERNMENT DIVISION</i>									
1998@	\$ 8.8	\$ 337.9	\$ 501.1	\$ 968.1	100%	100%	124%	114%	
1999#	8.8	446.9	587.9	1,074.7	100%	100%	105%	103%	
2000	7.6	440.0	706.0	1,178.1	100%	100%	103%	102%	
<i>STATE AND LOCAL GOVERNMENT DIVISION</i>									
2001#	\$23.4	\$1,305.0	\$2,759.2	\$4,335.5	100%	100%	109%	106%	
2002@	20.5	1,502.7	2,850.8	4,397.2	100%	100%	101%	101%	
2003@	20.5	1,624.7	3,004.7	4,408.3	100%	100%	92%	95%	
2004	20.5	1,762.2	3,197.6	4,429.9	100%	100%	83%	89%	
2005@	15.5	1,878.2	3,701.7	4,576.1	100%	100%	72%	82%	
2006	15.5	1,990.6	3,907.3	4,941.1	100%	100%	75%	84%	
2007#	29.7	2,268.5	3,856.7	5,489.3	100%	100%	83%	89%	
2008@	45.8	2,463.9	4,014.9	5,858.1	100%	100%	83%	90%	
2009	66.4	2,750.3	4,059.9	5,406.8	100%	100%	64%	79%	
2009#	66.4	2,750.3	4,103.5	5,406.8	100%	100%	63%	78%	
2010	92.8	2,928.7	4,266.1	5,403.5	100%	100%	56%	74%	
2011@	119.2	3,268.3	4,327.8	5,462.6	100%	100%	48%	71%	
2012	122.1	3,518.7	4,521.9	5,625.4	100%	100%	44%	69%	
2013@	147.9	3,855.2	4,281.1	6,159.3	100%	100%	50%	74%	
2014@	176.3	4,246.7	4,440.6	6,894.9	100%	100%	56%	78%	
2015@	201.1	4,654.5	4,439.2	7,351.7	100%	100%	56%	79%	
2016	228.4	4,929.2	4,505.1	7,768.9	100%	100%	58%	80%	

After legislated changes in benefit provisions.

@ After changes in actuarial assumptions.

SUMMARY OF RISK MEASURES

Valuation Date June 30,	Funded Ratio		UAAL	Total Actuarial Value			Standard Deviation of
	Based on AVA	Based on MVA	Amortization Period	Total UAAL / Total Payroll	of Assets / Total Payroll	Total AAL / Total Payroll	Investment Return / Total Payroll
2005 @#	82 %	83 %	22	0.9	3.8	4.6	**
2006	83	87	19	0.8	3.9	4.7	**
2007 @	89	97	18	0.5	4.2	4.7	**
2008 #	90	86	14	0.5	4.3	4.7	**
2009 @	78	62	30	1.1	3.8	4.8	**
2010	74	65	30	1.2	3.6	4.8	**
2011 #	71	75	30	1.5	3.4	4.8	**
2012	69	70	30	1.5	3.3	4.8	**
2013 #	74	77	25	1.3	3.6	4.9	**
2014 #	78	85	23	1.1	4.0	5.1	59 %
2015 #	79	81	25	1.1	4.2	5.3	58 %
2016	80	76	21	1.1	4.3	5.4	56 %

@ After legislated changes in benefit provisions.

After changes in actuarial assumptions.

** Unavailable. This measurement will be built prospectively beginning with the June 30, 2014 valuation.

Funded ratio: The funded ratio is expected to trend toward 100% by June 30, 2039 under the current amortization period.

UAAL Amortization Period: The statutory amortization period is expected to decrease by one year each year.

UAAL / Total Payroll: The ratio of the unfunded actuarial accrued liability to payroll is expected to trend toward to 0% by June 30, 2039.

Funding Value of Assets / Total Payroll: As the funded ratio increases, this ratio is expected to converge to the ratio of Total AAL / Payroll.

Total AAL / Total Payroll: Total AAL / Total Payroll is expected to grow as the system matures.

Standard Deviation of Investment Return / Total Payroll: This measure illustrates the impact of a one standard deviation change in investment return as a percent of payroll. Investment return experience other than expected ultimately affects the employer contribution rates. The higher the ratio of this risk metric, the greater the expected volatility in employer contribution rates. Absent changes in investment policy, this metric is expected to increase as the assets grow to 100% of the AAL.

SECTION B
VALUATION DATA

**SUMMARY OF PROVISIONS EVALUATED
(EXCLUDES SPECIAL PROVISIONS FOR GENERAL ASSEMBLY)
(LAST CHANGED AS OF 7/1/2009)**

The Old Contributory Plan is available to persons who became members of APERS before January 1, 1978. The Non-Contributory Plan applies to all persons first hired after January 1, 1978 and before July 1, 2005 in APERS-covered employment. The New Contributory Plan applies to all persons hired after July 1, 2005 in APERS-covered employment or Non-Contributory members who elected to participate in the New Contributory Plan.

New Contributory Plan

Non-Contributory Plan

VOLUNTARY RETIREMENT

With a full benefit, after either (a) age 65 with 5 years of service, or (b) 28 years of actual service, regardless of age. For sheriff and public safety members, the age 65 requirement is reduced 1 month for each 2 months of actual service, but not below age 55 (age 52 for sheriff members with a minimum of 10 years of actual service).

With a full benefit, after either (a) age 65 with 5 years of service, or (b) 28 years of actual service, regardless of age. For sheriff and public safety members, the age 65 requirement is reduced 1 month for each 2 months of actual service, but not below age 55 (age 52 for sheriff members with a minimum of 10 years of actual service).

With a reduced benefit, after age 55 with 5 years of service or any age with 25 years of service. The reduction is equal to ½ of 1% for each month retirement proceeds normal retirement age or 1% for each month below 28 years of actual service, whichever is less.

With a reduced benefit, after age 55 with 5 years of service or any age with 25 years of service. The reduction is equal to ½ of 1% for each month retirement proceeds normal retirement age or 1% for each month below 28 years of actual service, whichever is less.

FINAL AVERAGE COMPENSATION (FAC)

Average of highest 36 calendar months of covered compensation.

Average of highest 36 calendar months of covered compensation.

FULL AGE & SERVICE RETIREMENT BENEFIT

2.00% of FAC times years of service (2.03% for service prior to July 1, 2007), plus .5% of FAC times years of service over 28 years for service after July 1, 2009. The minimum monthly benefit is \$150 minus any age and beneficiary option reductions.

1.72% of FAC times years and months of credited service (1.75% for service prior to July 1, 2007), plus .5% of FAC times years of service over 28 years for service after July 1, 2009. If retirement is prior to age 62, an additional .33% of FAC times years of service will be paid until age 62. The portion of the APERS benefit based on service before 1978 cannot be less than the amount provided by contributory provisions in effect at the time of retirement. The minimum monthly benefit is \$150 minus any age and beneficiary option reductions.

SUMMARY OF PROVISIONS EVALUATED

New Contributory Plan

Non-Contributory Plan

BENEFIT INCREASES AFTER RETIREMENT

Annually, there will be a cost-of-living adjustment equal to 3% of the current benefit.

Annually, there will be a cost-of-living adjustment equal to 3% of the current benefit.

MEMBER CONTRIBUTION RATES

5% of covered compensation (pre-tax). Member contributions are refundable if APERS-covered employment terminates before a monthly benefit is payable. Members will earn interest on the contributions at a rate of 4% annually.

No employee contributions for service after January 1, 1978. If there is service before January 1, 1978, contributions for that period are refundable later in the same manner as under the Contributory Plan.

VESTED RETIREMENT BENEFITS

5 years service, and leaving APERS-covered employment before full retirement age. Deferred full retirement benefit, based on service and pay at termination, begins at age 65. A death benefit is payable to surviving spouse of member who dies before benefit commencement.

5 years service and leaving APERS-covered employment before full retirement age. Deferred full retirement benefit, based on service and pay at termination, begins at age 65. A death benefit is payable to surviving spouse of member who dies before benefit commencement.

In place of deferred full benefit, at age 55 or older a qualifying member can elect an immediate reduced benefit.

In place of deferred full benefit, at age 55 or older a qualifying member can elect an immediate reduced benefit.

TOTAL AND PERMANENT DISABILITY

Disabled after 5 years service, including credit for 18 of the 24 months preceding disability.

Disabled after 5 years service, including credit for 18 of the 24 months preceding disability.

Amount is computed as an age & service benefit, based on service and pay at disability.

Amount is computed as an age & service benefit, based on service and compensation at disability.

SUMMARY OF PROVISIONS EVALUATED

New Contributory Plan

Non-Contributory Plan

DEATH AFTER RETIREMENT

If death occurs before total monthly benefit payments equal member's accumulated contributions, the difference is refunded.

A retiring member can also elect an optional form of benefit, which provides beneficiary protection paid for by reducing the retired member's benefit amount. Should the member elect a straight life benefit and die within 12 months of the date of retirement, a benefit may be payable to the surviving spouse under certain conditions.

Member contributions before 1978 are protected in the same manner as under the Contributory Plan.

A retiring member can also elect an optional form of benefit, which provides beneficiary protection paid for by reducing the retired member's benefit amount. Should the member elect a straight life benefit and die within 12 months of the date of retirement, a benefit may be payable to the surviving spouse under certain conditions.

DEATH WHILE IN APERS-COVERED EMPLOYMENT

Member's accumulated contributions are refundable.

If the member had 5 years service, monthly benefits are payable instead. Surviving spouse receives a benefit computed as if member had retired and elected the Joint & 75% Survivor Option. Payment begins immediately.

Each dependent child receives benefit of 10% of compensation (maximum of 25% for all children).

Dependent parents benefits are payable if neither spouse nor children's benefits are payable.

Member's accumulated contributions before 1978 are refundable.

If the member had 5 years service, monthly benefits are payable instead. Surviving spouse receives a benefit computed as if member had retired and elected the Joint & 75% Survivor Option. Payment begins immediately.

Each dependent child receives benefit of 10% of compensation (maximum of 25% for all children).

Dependent parents benefits are payable if neither spouse nor children's benefits are payable.

SUMMARY OF PROVISIONS EVALUATED CREDITED SERVICE

Membership Group	Service Credits
Public Safety Members (including State Capitol Police and Wildlife Sub-Division members) hired before July 1, 1997	1-1/2 times regular rate with 5 years actual service required to meet benefit eligibility rules.
Governor (hired before July 1, 1999)	3 times regular rate with 5 years actual service required to meet death-in-service eligibility and 4 years actual service required for other benefit eligibility.
Elected State Constitutional Officers (hired before July 1, 1999)	2-1/2 times regular rate with 5 years actual service required to meet benefit eligibility.
General Assembly	Regular crediting rate with 5 years of actual service required to meet death-in-service eligibility and 10 years of actual service required for other benefit eligibility.
Other Elected Public Officials (municipal and county officials)	2 times regular rate with 5 years actual service required to meet benefit eligibility.
All Other Members	Regular rate.

ARKANSAS PUBLIC EMPLOYEES DEFERRED RETIREMENT OPTION PLAN

Members with 28 years of actual service in APERS or in combination with a reciprocal system are eligible to participate.

Members, for a maximum of 7 years, may continue employment and have 75% of their accrued benefit (at date of participation with 30 or more years of service) paid into the Deferred Retirement Option Plan in lieu of any further benefit accruals.

The payments into the Deferred Retirement Option Plan accumulate with interest at a rate established by the Board. The interest is paid on the mean balance and is paid to the member at termination of active membership in either a lump sum or as an annuity.

Employer contributions continue for members participating in the DROP.

SUMMARY OF PROVISIONS EVALUATED
GENERAL ASSEMBLY DIVISION
ADDITIONAL BENEFIT PROVISIONS

VOLUNTARY RETIREMENT ELIGIBILITY

Age 65 with 10 or more years of credited service, 28 years of actual service regardless of age, or age 55 with 12 or more years of actual service, 10 of which must be as a member of the General Assembly. In addition, a member of the General Assembly who was a member of the General Assembly on July 1, 1979, or holding any other Arkansas elective office on July 1, 1979, is eligible to retire with 17.5 years of actual service regardless of age.

VESTING

Termination of employment prior to normal retirement age after completing 10 or more years of credited service.

RETIREMENT BENEFIT

\$35.00 per month times years of General Assembly service. The amount is \$40.00 per month per year of service for any member who served as Speaker of the House of Representatives or President Pro Tempore of the Senate.

DISABILITY

Eligibility: 10 years of credited service.

Amount: Accrued retirement benefit.

DEATH-IN-SERVICE

Eligibility: 5 years of service.

Amount - Less than 10 years in General Assembly: Same as for regular members.

Amount - 10 or more years in General Assembly: 100% of the benefit the member would have been entitled to had he or she been at retirement age payable to an eligible surviving spouse.

DEATH-AFTER-RETIREMENT

100% of the benefit the member was receiving payable to an eligible surviving spouse.

PARTICIPATION

A member of the General Assembly may, at any time, elect either (i) to be covered by regular benefit provisions, or (ii) to discontinue an APERS membership.

SUMMARY OF PROVISIONS EVALUATED
ILLUSTRATION OF BENEFIT CHANGES DURING RECENT
YEARS OF RETIREMENT & RELATED CHANGES IN PURCHASING POWER

Year Ended June 30	Increase Beginning of Year	Benefit Dollars In Year	Inflation (Loss) In Year#	Purchasing Power at Year End	
				1985 \$	% of 1985
1985	--	\$ 8,000	(3.7)%	\$8,000	100%
1986	\$ 240	8,240	(1.7)%	8,102	101%
1987	240	8,480	(3.7)%	8,041	101%
1988	240	8,720	(3.9)%	7,958	99%
1989	240	8,960	(5.1)%	7,780	97%
1990	240	9,200	(4.7)%	7,630	95%
1991	240	9,440	(4.7)%	7,478	93%
1992	661	10,101	(3.1)%	7,761	97%
1993	303	10,404	(3.0)%	7,761	97%
1994	584	10,988	(2.5)%	7,996	100%
1995	275	11,263	(3.0)%	7,958	99%
1996	1,064	12,327	(2.8)%	8,472	106%
1997	345	12,672	(3.0)%	8,506	106%
1998	760	13,432	(2.3)%	8,761	110%
1999	309	13,741	(1.7)%	8,896	111%
2000	990	14,731	(3.7)%	9,194	115%
2001	442	15,173	(3.2)%	9,172	115%
2002	713	15,886	(1.1)%	9,502	119%
2003	477	16,363	(2.1)%	9,586	120%
2004	491	16,854	(3.0)%	9,586	120%
2005	506	17,360	(3.2)%	9,570	120%
2006	521	17,881	(4.1)%	9,465	118%
2007	715	18,596	(2.4)%	9,617	120%
2008	558	19,154	(5.6)%	9,380	118%
2009	575	19,729	2.1 %	9,864	123%
2010	592	20,321	(1.2)%	10,036	125%
2011	610	20,931	(3.6)%	9,962	125%
2012	628	21,559	(1.4)%	10,118	126%
2013	647	22,206	(2.0)%	10,221	128%
2014	666	22,872	(2.0)%	10,322	129%
2015	686	23,558	(0.2)%	10,614	133%
2016	707	24,265	(0.8)%	10,843	136%
2017	728	24,993			

Based on Consumer Price Index, All Urban Consumers, United States City Average (July values).

**REVENUES AND EXPENDITURES
JULY 1, 2015 THROUGH JUNE 30, 2016
MARKET VALUE**

	Totals
Balance 7/1/2015	\$7,530,670,312
Revenues	
Member contributions	54,833,872
Employer contributions	262,359,400
Transfers	5,051,635
Other	1,792,117
Investment return*	(4,166,485)
Total	319,870,539
Expenditures	
Benefits paid	492,608,899
Expenses	6,911,141
Total	499,520,040
Reserve Adjustments	(249,103)
Balance 6/30/2016	\$7,350,771,708

** Net of investment expenses.*

Note: Results may not total due to rounding.

REPORTED ACCRUED ASSETS AVAILABLE FOR BENEFITS
JUNE 30, 2016

Retirement System Account	Reported Assets June 30, 2016
Employer Accumulation Account	\$ 1,519,648,377 *
Members Deposit Account	296,995,516
Members Deposit Interest Reserve	41,629,898
Retirement Reserve Account	4,929,189,468 *
Deferred Annuity Reserve Account	462,859,264 *
DROP Reserve	100,336,295
Miscellaneous Reserves	112,890
Total Market Value	<u>7,350,771,708</u>
Funding Value of Assets	7,768,871,751
Valuation Asset Adjustment	418,100,043
Adjusted Employer Accum. Account	\$ 1,937,748,420

* After recommended reserve transfers (see page A-7).

REPORTED ACCRUED ASSETS AVAILABLE FOR BENEFITS
JUNE 30, 2016
(CONCLUDED)

The Employers Accumulation Account represents employer contributions accumulated for benefits on behalf of present members.

The Members Deposit Account represents member contributions accumulated for (1) monthly benefits at retirement, and (2) refunds upon termination if monthly benefits are not payable.

The Members Deposit Interest Reserve Account represents interest credited on member contributions.

The Retirement Reserve Account represents reserves, from employer and member contributions, held for the monthly benefits being paid to present retired lives.

The Deferred Annuity Account represents employer reserves held for future monthly benefits to present inactive members.

In financing the liabilities, the above Fund balances were applied to the actuarial accrued liabilities.

DEVELOPMENT OF FUNDING VALUE OF ASSETS

Valuation Date June 30:	2014	2015	2016	2017	2018	2019
A. Funding Value Beginning of Year	\$ 6,159,333,771	\$ 6,894,878,773	\$ 7,351,734,654			
B. Market Value End of Year	7,512,167,348	7,530,670,312	7,350,771,708			
C. Market Value Beginning of Year	6,418,518,612	7,512,167,348	7,530,670,312			
D. Non-Investment Net Cash Flow	(104,393,272)	(143,395,439)	(175,483,016)			
E. Investment Income						
E1. Market Total: B - C - D	1,198,042,008	161,898,403	(4,415,588)			
E2. Assumed Rate	8.00%	7.75%	7.50%			
E3. Amount for Immediate Recognition	488,624,527	528,865,652	544,878,798			
E4. Amount for Phased-In Recognition	709,417,481	(366,967,249)	(549,294,386)			
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.25 x E4	177,354,370	(91,741,812)	(137,323,597)			
F2. First Prior Year	99,452,354	177,354,370	(91,741,812)	\$ (137,323,597)		
F3. Second Prior Year	(113,679,245)	99,452,354	177,354,370	(91,741,812)	\$ (137,323,597)	
F4. Third Prior Year	188,186,268	(113,679,244)	99,452,354	177,354,371	(91,741,813)	\$ (137,323,595)
F5. Total Phase-Ins	351,313,747	71,385,668	47,741,315	(51,711,038)	(229,065,410)	(137,323,595)
G. Preliminary Funding Value End of Year: A + D + E3 + F5	\$ 6,894,878,773	\$ 7,351,734,654	\$ 7,768,871,751			
H. Adjustment to Minimum of 75% of B, Maximum 125% of B	0	0	0			
I. Funding Value End of Year	\$ 6,894,878,773	\$ 7,351,734,654	\$ 7,768,871,751			
J. Difference Between Market & Funding Value	617,288,575	178,935,658	(418,100,043)			
K. Recognized Rate of Return	13.8%	8.8%	8.2%			
L. Market Rate of Return	18.8%	2.2%	(0.1)%			
M. Ratio of Funding Value to Market Value	92%	98%	106%			

The Funding Value of Assets recognizes assumed investment return (line E3) fully each year. Differences between actual and assumed investment return (Line E4) are phased-in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than Market Value. If assumed rates are exactly realized for 3 consecutive years, Funding Value will become equal to Market Value.

SUMMARY OF ANNUITANTS ON ROLLS

Retirees and beneficiaries (including DROP participants) on rolls included in the valuation totaled 34,214, involving annual annuities of \$509,731,261, distributed as follows:

Division	Number	Annuities Being Paid July 1, 2016	
		Monthly	Annualized
State & Local	32,452	\$ 37,952,514	\$ 455,430,169
General Assembly	121	169,075	2,028,900
Governor	5	17,935	215,220
Wildlife	105	346,619	4,159,428
State Constitutional Officers	5	17,619	211,428
Penitentiary	0	0	0
Sub-total	32,688	38,503,762	462,045,145
DROP	1,526	3,973,843	47,686,116
Totals	34,214	\$ 42,477,605	\$ 509,731,261

Inactive members, entitled to deferred annuities, included in the valuation totaled 13,624, involving estimated deferred monthly annuities of \$5,877,444, distributed as follows:

Division	Number of Inactive Members	Estimated Deferred Annuities	
		Monthly	Annualized
State and Local	13,566	\$ 5,864,319	\$ 70,371,828
General Assembly	49	7,952	95,424
Wildlife	7	3,244	38,928
State Constitutional Officers	2	1,929	23,148
Totals	13,624	\$ 5,877,444	\$ 70,529,328

**RETIREMENT SYSTEM TOTALS
ANNUITIES BEING PAID RETIREES AND BENEFICIARIES
AND DROP PARTICIPANTS
JUNE 30, 2016
BY ATTAINED AGE AND TYPE OF RETIREMENT**

Attained Ages	DROP		Age & Service*		Casualty		Totals	
	No.	Annual Amount	No.	Annual Annuities	No.	Annual Annuities	No.	Annual Annuities
Under 40			153	\$ 882,963	37	\$ 180,792	190	\$ 1,063,755
40-44		\$ -	56	510,705	56	340,440	112	851,145
45-49	17	434,640	137	1,984,302	125	1,029,000	279	3,447,942
50-54	245	7,484,268	533	12,343,896	282	2,489,856	1,060	22,318,020
55-59	617	20,521,416	2,305	43,656,357	514	4,682,736	3,436	68,860,509
60-64	480	15,186,864	4,893	81,571,330	755	7,299,360	6,128	104,057,554
65-69	148	3,643,716	7,459	108,942,924	698	6,525,348	8,305	119,111,988
70-74	15	313,920	5,459	73,776,768	360	3,202,104	5,834	77,292,792
75-79	3	60,360	3,942	49,216,632	128	1,142,256	4,073	50,419,248
80-84	1	40,932	2,554	33,307,728	54	633,000	2,609	33,981,660
85-89			1,384	18,186,540	14	187,212	1,398	18,373,752
90-94			555	7,721,556	6	67,848	561	7,789,404
95-99			130	1,603,716			130	1,603,716
Over 100			99	559,776			99	559,776
Totals	1,526	\$47,686,116	29,659	\$434,265,193	3,029	\$27,779,952	34,214	\$ 509,731,261

* Including survivor beneficiaries of deceased retirees and QDRO alternate payees.

**ANNUITIES BEING PAID JUNE 30, 2016
BY TYPE OF ANNUITY**

<u>Type of Annuity</u>	<u>Number</u>	<u>Annual Annuities</u>
Age & Service Retirees		
Life	19,638	\$ 298,739,748
Option A- 60 (5 years certain)	1,403	18,682,622
Option A-120 (10 years certain)	2,549	31,182,442
Option B- 50 (joint and 50% survivor)	1,341	26,510,244
Option B- 75 (joint and 75% survivor)	2,943	41,354,523
Option B-100 (joint and 100% survivor)	56	1,386,636
Totals	27,930	417,856,215
Beneficiaries of Age & Service Retirees*		
Life	281	2,225,775
Option A- 60	39	396,066
Option A-120	211	2,011,081
Option B- 50	345	3,051,106
Option B- 75	615	6,402,837
Option B-100	35	772,320
Totals	1,526	14,859,185
Total Age & Service Retirees & Beneficiaries	29,456	432,715,400
Disability Retirees		
Life	2,084	19,452,732
Option A- 60	157	1,337,964
Option A-120	364	3,231,864
Option B- 50	156	1,477,332
Option B- 75	260	2,238,972
Option B-100	0	0
Totals	3,021	27,738,864
Death-in-Service Beneficiaries	8	41,088
Total Death and Disability Retirees & Beneficiaries	3,029	27,779,952
QDRO Alternate Payees	203	1,549,793
Total Retirees & Beneficiaries	32,688	462,045,145
DROP Participants	1,526	47,686,116
Total Including DROP Participants	34,214	\$ 509,731,261

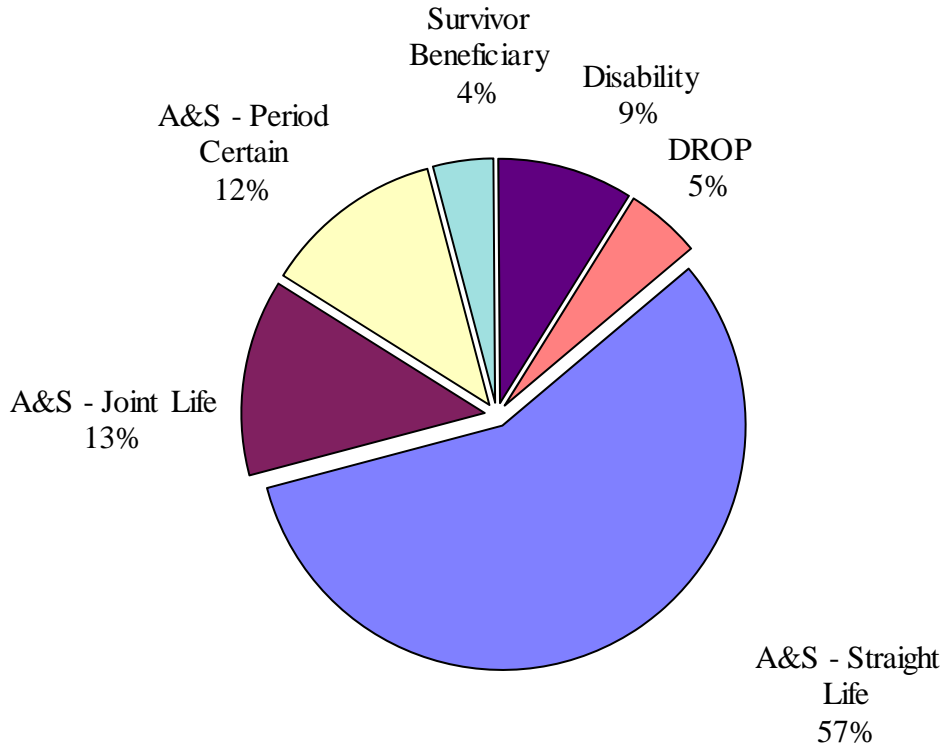
The average monthly benefit payable is \$1,241.53.

** Includes beneficiaries of disabled retirees. Due to coding changes in the June 30, 2016 data file, we are unable to identify the beneficiaries of disabled retirees. This affects the data schedules only and in no way impacts the valuation results.*

**SCHEDULE OF AVERAGE BENEFIT PAYMENTS
(VOLUNTARY RETIREMENTS STILL RECEIVING
BENEFITS AS OF JUNE 30, 2016)**

	Years of Credited Service				
	10-14	15-19	20-24	25-29	30+
Retirement Effective Dates July 1, 2015 to June 30, 2016					
Average Monthly Benefit	\$ 420.34	\$ 911.03	\$ 1,281.45	\$1,887.00	\$2,099.87
Average Monthly FAS	2,413.56	3,195.80	3,656.73	3,828.65	4,028.25
Number of Active Retirees	678	201	137	240	119
Retirement Effective Dates July 1, 2014 to June 30, 2015					
Average Monthly Benefit	426.99	897.29	1,193.16	1,792.53	2,671.37
Average Monthly FAS	2,471.46	3,181.51	3,302.20	3,537.38	4,301.26
Number of Active Retirees	704	217	172	261	152
Retirement Effective Dates July 1, 2013 to June 30, 2014					
Average Monthly Benefit	388.26	825.79	1,242.74	1,830.60	2,628.91
Average Monthly FAS	2,263.88	2,899.83	3,371.98	3,520.40	3,925.18
Number of Active Retirees	646	203	146	264	107
Retirement Effective Dates July 1, 2012 to June 30, 2013					
Average Monthly Benefit	400.14	826.20	1,229.95	1,931.07	2,817.45
Average Monthly FAS	2,295.27	2,771.14	3,249.64	3,656.93	4,159.36
Number of Active Retirees	677	185	159	271	139
Retirement Effective Dates July 1, 2011 to June 30, 2012					
Average Monthly Benefit	376.35	862.30	1,184.69	2,083.89	2,609.37
Average Monthly FAS	2,118.61	2,884.05	3,121.76	3,728.01	3,783.00
Number of Active Retirees	611	182	161	266	105
Retirement Effective Dates July 1, 2010 to June 30, 2011					
Average Monthly Benefit	382.27	775.84	1,146.35	2,024.70	2,944.21
Average Monthly FAS	2,093.49	2,628.94	2,994.48	3,488.85	4,144.64
Number of Active Retirees	525	167	154	266	153
Retirement Effective Dates July 1, 2009 to June 30, 2010					
Average Monthly Benefit	356.78	742.92	1,011.33	1,979.18	2,572.18
Average Monthly FAS	1,916.66	2,525.25	2,576.35	3,368.01	3,790.53
Number of Active Retirees	513	147	135	228	106
Retirement Effective Dates July 1, 2008 to June 30, 2009					
Average Monthly Benefit	358.46	730.79	1,040.96	2,150.67	2,709.62
Average Monthly FAS	1,780.37	2,520.70	2,676.18	3,313.57	3,746.01
Number of Active Retirees	528	178	165	431	246
Retirement Effective Dates July 1, 2007 to June 30, 2008					
Average Monthly Benefit	389.06	830.62	972.27	2,063.50	2,764.80
Average Monthly FAS	1,897.15	2,531.92	2,465.04	3,276.65	3,688.20
Number of Active Retirees	416	146	129	392	142
Retirement Effective Dates July 1, 2006 to June 30, 2007					
Average Monthly Benefit	401.91	820.09	1,144.14	2,244.73	3,086.06
Average Monthly FAS	1,882.95	2,489.80	2,670.83	3,318.32	3,782.64
Number of Active Retirees	415	162	146	393	182
Retirement Effective Dates July 1, 2006 to June 30, 2016					
Average Monthly Benefit	391.89	1,518.69	2,325.85	2,485.21	5,740.61
Average Monthly FAS	1,345.55	1,654.90	1,715.79	1,578.42	1,742.60
Number of Active Retirees	5,713	1,788	1,504	3,012	1,451

ANNUITIES BEING PAID BY TYPE
JUNE 30, 2016



NEW RETIREES
JUNE 30, 2016

	<u>New Retirees June 30, 2016</u>	
	<u>Age & Service</u>	<u>Disability</u>
Number*	1,644	144
Average Age (yrs.)	62.5	53.3
Average Service (yrs.)	16.6	12.9
Average Monthly Benefit	\$960.00	\$633.10

* May include members who become new retirees from a non-active status.

RETIREMENT SYSTEM TOTALS
ANNUITIES LIKELY TO BE PAID PRESENT INACTIVE MEMBERS
JUNE 30, 2016
BY ATTAINED AGE

Attained Ages	No.	Estimated Annual Annuities
Under 40	2,106	\$ 9,764,650
40-44	1,979	10,152,816
45-49	2,573	13,218,197
50-54	2,737	15,462,119
55-59	2,203	11,890,569
60-64	1,384	7,649,472
65-69	642	2,391,505
Totals	13,624	\$ 70,529,328

LIABILITIES FOR DEFERRED ANNUITIES JUNE 30, 2016

Number of Inactive Members	Estimated Annual Annuities	Annuity Liabilities
13,624	\$ 70,529,328	\$ 462,859,264

**STATE AND LOCAL DIVISION
(EXCLUDING GENERAL ASSEMBLY)
ACTIVE MEMBERS* IN VALUATION JUNE 30, 2016
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 plus	No.	Valuation Payroll
Under 20	268							268	\$ 4,654,896
20-24	2,454	16						2,470	61,795,020
25-29	3,494	702	16					4,212	127,627,821
30-34	2,638	1,399	531	12				4,580	157,531,711
35-39	2,104	1,399	1,119	333	9	2		4,966	183,104,809
40-44	1,712	1,223	988	872	203	15	9	5,022	193,956,630
45-49	2,407	1,202	974	888	602	313	58	6,444	243,017,737
50-54	1,464	1,104	937	899	647	605	190	5,846	232,701,202
55-59	1,211	1,091	965	829	588	590	271	5,545	226,665,280
60	174	211	164	169	123	100	61	1,002	41,835,471
61	190	176	167	159	107	91	50	940	37,804,445
62	136	158	150	144	120	94	48	850	35,751,012
63	131	133	126	134	95	61	43	723	30,019,033
64	97	112	101	94	75	49	29	557	22,269,377
65	83	98	78	63	58	46	23	449	18,448,524
66	59	79	56	59	37	15	20	325	13,322,034
67	51	76	53	47	31	22	16	296	11,703,421
68	64	31	45	49	17	23	14	243	9,743,407
69	52	50	28	36	13	14	11	204	7,415,776
70 & over	172	138	138	125	63	52	43	731	27,009,416
Totals	18,961	9,398	6,636	4,912	2,788	2,092	886	45,673	\$1,686,377,022

* Not including DROP participants.

Group Averages

Age:	44.7 years
Service:	9.2 years
Annual Pay:	\$36,923

**GENERAL ASSEMBLY SUB-DIVISION
ACTIVE MEMBERS IN VALUATION JUNE 30, 2016
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service to Valuation Date							No.	Valuation Payroll
	0-4	5-9	10-14	15-19	20-24	25-27	28 Plus		
25-29									
30-34									
35-39									
40-44		1						1	\$ 39,399
45-49									
50-54									
55-59			1					1	39,399
60									
61									
62									
63									
64									
65									
66									
67									
68									
69									
70									
71									
72			1					1	39,399
Totals		1	2					3	\$ 118,197

While not used in the computations, the following *group averages* are computed and shown for their general interest.

Group Averages

Age:	58.2 years
Service:	12.2 years
Annual Pay:	\$39,399

SECTION C
GAIN/(LOSS) ANALYSIS

GAIN/(LOSS) ANALYSIS COMMENTS

Purpose of Gain/(Loss) Analysis. Regular actuarial valuations give valuable information about the composite change in unfunded actuarial accrued liabilities – whether or not the liabilities are increasing or decreasing and by how much.

But valuations do not show the portion of the change attributable to each risk area within the Retirement System: the rate of investment return which plan assets earn; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of pay increases; and the ages at actual retirement. In an actuarial valuation, assumptions must be made as to what these rates will be, for the next year and for decades in the future.

The objective of a gain and loss analysis is to determine the portion of the change in actuarial condition (unfunded actuarial accrued liabilities) attributable to each risk area.

The fact that actual experience differs from assumed experience is to be expected – *the future cannot be predicted with precision*. The economic risk areas (particularly investment return and pay increases) are volatile. Inflation directly affects economic risk areas, and inflation seems to defy reliable prediction.

Changes in the valuation assumed experience for a risk area should be made when the differences between assumed and actual experience have been observed to be sizable and persistent. A gain and loss analysis covering a relatively short period may or may not be indicative of *long-term trends, which are the basis of actuarial assumptions*.

**CHANGES IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016**

	Total (\$ in millions)
(1) UAAL* at beginning of year	\$ 1,943.1
(2) Employer normal cost from last valuation	133.5
(3) Actual employer contributions	262.4
(4) Interest accrual: [(1) + ½[(2) - (3)]]x .0750	140.9
(5) Expected UAAL before changes: (1) + (2) - (3) + (4)	1,955.1
(6) Increase from benefit changes	0.0
(7) Changes from revised actuarial assumptions and methods	0.0
(8) New entrant liabilities	42.7
(9) Expected UAAL after changes: (5) + (6) + (7) + (8)	1,997.8
(10) Actual UAAL at end of year	1,893.8
<hr/>	
(11) Gain/(Loss): (9) - (10)	\$ 104.0

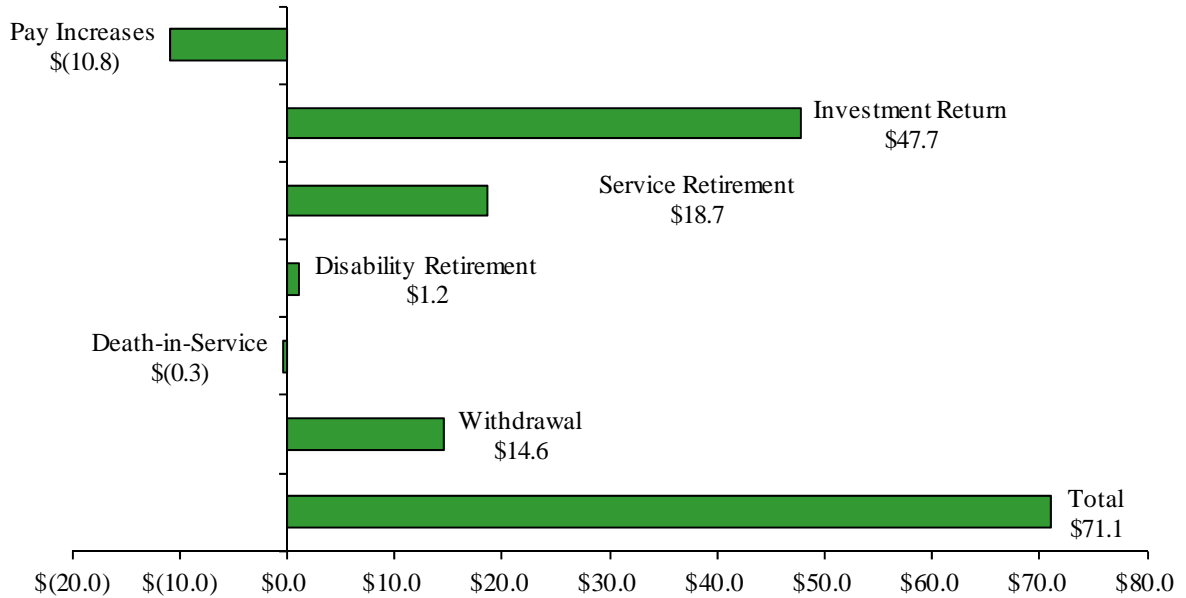
* Unfunded actuarial accrued liability.

**GAINS/(LOSSES) BY RISK AREA
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016**

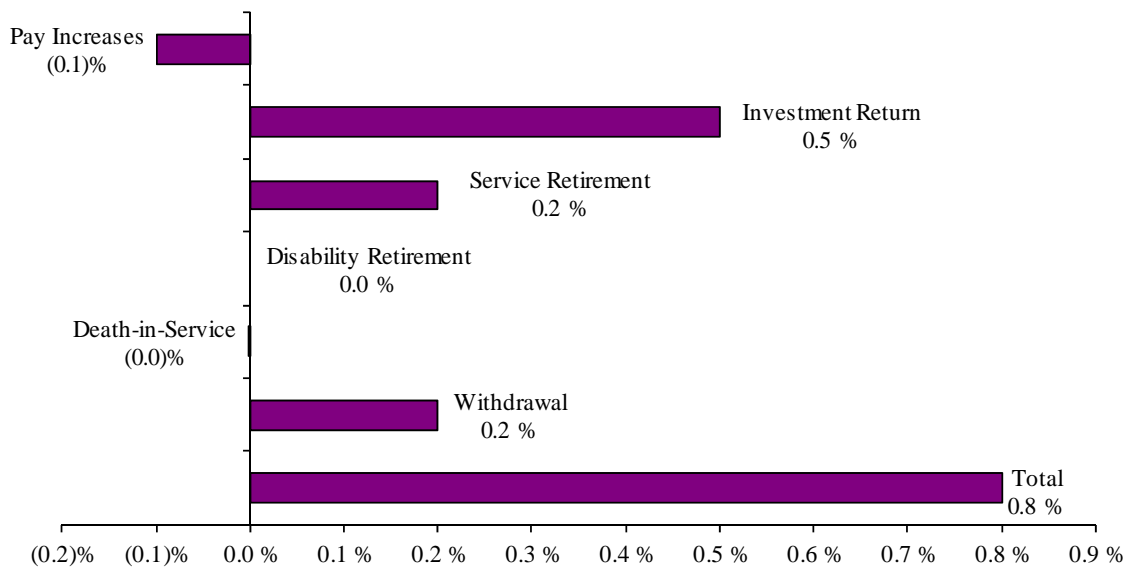
<u>Type of Risk Area</u>	<u>Total (\$ in millions)</u>	<u>% of Accrued Liabilities</u>
ECONOMIC RISK AREAS		
<i>Pay Increases.</i> If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	\$ (10.8)	(0.1)%
<i>Investment Return.</i> If there is greater investment return than assumed, there is a gain. If less return, a loss.	47.7	0.5 %
NON-ECONOMIC RISK AREAS		
<i>Non-Casualty Retirements.</i> If members retire at older ages or with lower final average pays than assumed, there is a gain. If younger ages or higher average pays, a loss.	18.7	0.2 %
<i>Disability Retirements.</i> If there are fewer disabilities than assumed, there is a gain. If more, a loss.	1.2	0.0 %
<i>Death-in-Service Benefits.</i> If there are fewer claims than assumed, there is a gain. If more, a loss.	(0.3)	0.0 %
<i>Withdrawal.</i> If more liabilities are released by other separations than assumed, there is a gain. If smaller releases, a loss.	14.6	0.2 %
Total Active Member Actuarial Gains/(Losses)	\$ 71.1	0.8 %
<i>Retired Life Mortality.</i>	39.0	0.4 %
<i>Other.</i> Includes data adjustments at retirement, timing of financial transactions, and miscellaneous unidentified sources.	(6.1)	(0.1)%
Total Actuarial Gains/(Losses)	\$ 104.0	1.1 %

**ACTUARIAL GAINS/(LOSSES)
ACTIVE MEMBERS
2015-2016 PLAN YEAR**

Amount in \$ Millions



% of Accrued Liabilities



ACTUARIAL GAINS/(LOSSES) BY RISK AREA
ACTIVE MEMBERS - COMPARATIVE STATEMENT
(\$ IN MILLIONS)

Year Ending June 30	Gain/(Loss) By Risk Area						Total Experience		Accrued Liability End of Year
	Pay Increases	Invest- ments	Age & Service		Death-In- Service	Withdrawal	Gain/(Loss)		
			Retirement	Disability			Dollars	% of AAL	
1992	\$2.7	\$27.9	\$ 2.7	\$ 1.2	\$ 2.1	\$(6.1)	\$30.5	3.2 %	\$ 1,607.6
1993	(2.6)	36.3	1.6	1.3	3.1	4.2	43.9	2.7 %	1,711.3
1994	26.0	21.5	3.8	1.4	2.4	(2.2)	52.9	3.1 %	1,853.8
1995	32.0	68.1	(2.1)	(1.5)	(3.0)	(1.7)	91.8	4.5 %	2,057.4
1996	(0.7)	103.5	5.7	2.9	1.4	5.3	118.1	5.8 %	2,290.6
1997	(2.2)	155.3	7.7	3.6	1.9	4.9	171.2	7.5 %	2,605.6
1998	18.2	197.4	(4.4)	4.2	2.1	20.6	238.1	9.1 %	2,882.5
1999	(0.6)	153.1	(0.3)	3.2	(0.1)	25.8	181.1	5.5 %	3,478.7
2000	(13.1)	134.1	2.2	2.8	(0.1)	20.7	146.6	4.2 %	3,803.4
2001	31.3	(37.0)	3.3	3.0	0.1	18.9	19.6	0.5 %	4,111.0
2002	5.4	(247.1)	3.7	(2.5)	0.5	(4.2)	(244.2)	(5.6)%	4,398.0
2003	36.0	(292.6)	11.2	3.3	(0.1)	15.2	(227.0)	(4.9)%	4,398.0
2004	16.2	(274.0)	18.4	0.5	0.2	8.6	(230.0)	(4.6)%	5,004.5
2005	46.7	(143.4)	20.1	0.5	0.5	28.5	(47.1)	(0.8)%	5,619.4
2006	(15.4)	46.5	17.0	0.8	0.0	11.4	60.3	1.0 %	5,936.3
2007	53.2	215.5	12.4	0.8	0.1	17.2	299.2	4.8 %	6,173.8
2008	(35.8)	(0.5)	(1.4)	0.9	0.1	10.0	(26.7)	(0.4)%	6,542.7
2009	1.9	(808.1)	(7.3)	1.1	0.0	4.9	(807.5)	(11.6)%	6,937.9
2010	(2.8)	(319.7)	(2.1)	2.4	(0.1)	(7.7)	(330.0)	(4.5)%	7,304.2
2011	65.1	(259.8)	10.7	(5.9)	(0.1)	7.7	(182.3)	(2.4)%	7,734.1
2012	35.8	(189.5)	11.1	0.8	(0.2)	(4.2)	(146.1)	(1.8)%	8,162.7
2013	89.2	190.9	27.6	0.8	(0.3)	3.4	311.6	3.7 %	8,284.2
2014	86.7	351.3	13.4	0.9	(0.3)	5.6	457.6	5.3 %	8,863.6
2015	93.6	71.4	17.1	1.3	(0.3)	23.8	206.9	2.3 %	9,294.8
2016	(10.8)	47.7	18.7	1.2	(0.3)	14.6	71.1	0.8 %	9,662.7

**DEVELOPMENT OF GAIN/(LOSS)
FROM INVESTMENT RETURN*
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016**

	<u>\$ Millions</u>
1. Total Assets Beginning of Year	\$ 7,351.7
2. Total Assets End of Year (Funding Value)	
a. Actual	\$ 7,768.9
b. If net investment return had been 7.50%	<u>\$ 7,721.2</u>
3. Gain/(Loss): 2a. minus 2b.	\$ 47.7

* *“Investment return” as used in this Gain/(Loss) Analysis means essentially: assumed investment income; plus/minus a four-year phase-in of differences between actual and assumed investment return (see page B-10).*

**ACTIVE MEMBERS WHO BECAME AGE & SERVICE RETIREES
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016
(RETIREMENT WITH UNREDUCED BENEFIT
BEGINNING IMMEDIATELY)
ATTAINED AGE OF 65 OR OLDER WITH LESS
THAN 28 YEARS OF SERVICE**

Ages	State & Local Retirements	
	Actual#	Expected
65	72	90
66	77	77
67	51	52
68	38	29
69	25	25
70	25	19
71	15	14
72	13	14
73	5	11
74	10	10
75 & Up	33	25
	364	366

Additionally, there were 76 new age and service retirees with less than 28 years of non-reciprocal service and under the age of 65.

Averages, in Years:

Age at retirement 68.6

Service at retirement 14.8

**ACTIVE MEMBERS WHO BECAME REDUCED EARLY RETIREES
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016
(EARLY RETIREMENTS WITH REDUCED BENEFITS
BEGINNING IMMEDIATELY)**

Ages	State & Local Early Retirement	
	Actual #	Expected
55	17	13
56	17	12
57	18	17
58	23	18
59	17	23
60	28	26
61	22	26
62	109	97
63	94	72
64	78	40
Totals	423	344

Additionally, there were 20 new early retirees under the age of 55.

Averages, in Years:

Age at retirement	61.0
Service at retirement	15.5

**ACTIVE MEMBERS WHO RETIRED OR ENTERED THE DROP
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016
(28 OR MORE YEARS OF SERVICE)**

Service	State & Local			
	Retirement		DROP	
	Actual	Expected	Actual	Expected
28	51	47	148	n/a
29	29	31	37	n/a
30	24	22	35	n/a
31	11	13	15	n/a
32	9	14	5	n/a
33	7	10	6	n/a
34	9	8	7	n/a
35	4	11	17	n/a
36	4	9		
37	4	13		
38 & Up	11	42		
Totals	163	220	270	

Averages, in Years:

Age at retirement	60.5	57.9
Service at retirement	31.5	28.9

**ACTIVE MEMBERS WHO BECAME DISABILITY RETIREES
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016
(AND WHO WERE ACTIVE MEMBERS AS OF JUNE 30, 2015)**

Ages	State & Local Disabilities	
	Actual	Expected
20- 24		
25- 29		1
30- 34	2	2
35- 39		4
40- 44	2	6
45- 49	4	11
50- 54	13	20
55- 59	20	32
60 & Up	17	30
	58	106

Averages, in Years:

Age at retirement 55.6

Service at retirement 14.5

**ACTIVE MEMBERS WHO LEFT ACTIVE STATUS WITH A
DEFERRED BENEFIT PAYABLE
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016
(VESTED SEPARATIONS)**

Ages	State & Local Vested Separations	
	Actual	Expected
Below 30	167	110
30- 34	246	188
35- 39	287	181
40- 44	265	159
45- 49	248	145
50- 54	247	122
55- 59	175	82
60 & Up	145	47
Totals	1,780	1,034

Averages, in Years:

Age at termination 47.0

Service at termination 10.7

**ACTIVE MEMBERS WHO LEFT ACTIVE STATUS WITH
NO BENEFIT PAYABLE
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016
(NON-VESTED SEPARATIONS)**

Service at Termination	State & Local Non-Vested Separations	
	Actual	Expected
0	2,040	2,263
1	981	1,072
2	596	663
3	481	434
4	2	107
	4,100	4,539

Averages, in Years:

Age at termination	44.8
Service at termination	1.5

**MEMBERS ACTIVE BOTH BEGINNING AND END OF YEAR
SALARY INCREASES BY AGE GROUP
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016**

Age Groups	Number	Beginning Pay	Ending Pay		Percentage Increase	
			Expected	Actual	Expected	Actual
Below 25	1,382	\$ 33,838,873	\$ 37,030,518	\$ 38,178,079	9.4%	12.8%
25- 29	3,112	93,409,151	100,280,713	102,146,730	7.4%	9.4%
30- 34	3,783	128,533,751	136,248,952	137,521,663	6.0%	7.0%
35- 39	4,330	155,812,642	164,238,583	165,782,658	5.4%	6.4%
40- 44	4,474	170,830,336	179,372,112	180,566,555	5.0%	5.7%
45- 49	5,357	204,430,605	213,853,063	216,067,547	4.6%	5.7%
50- 54	5,408	210,644,663	219,638,501	220,741,807	4.3%	4.8%
55- 59	5,149	205,539,941	213,864,309	214,438,546	4.1%	4.3%
60-64	3,609	144,652,662	150,138,237	150,758,232	3.8%	4.2%
65 & Over	1,881	70,694,437	72,992,006	73,822,769	3.3%	4.4%
Totals	38,485				4.9%	5.8%

SECTION D

**DISTRICT JUDGES – VALUATION RESULTS AND
VALUATION DATA**

DISTRICT JUDGES
EMPLOYER CONTRIBUTION RATES COMPUTED JUNE 30, 2016

Contribution for	Computed Employer Contributions	
	New Plan and Paid-Off Old Plan (% of Active Payroll)	Still Paying Old Plan (Annual \$)
Normal Cost:		
Age and service annuities (including reduced retirement)	18.21%	
Separation benefits	1.43%	
Disability benefits	1.41%	
Death-in-service annuities	0.00%	
Total	21.05%	
Member contributions	5.00%	
Employer Normal Cost	16.05%	
Unfunded Actuarial Accrued Liabilities	9.50% *	\$861,106 **
Total Employer Contribution	25.55%	\$861,106

* Unfunded actuarial accrued liabilities were amortized over a 10.6-year period.

** Unfunded actuarial accrued liabilities were amortized over a 19-year period.

DISTRICT JUDGES
SUMMARY STATEMENT OF SYSTEM RESOURCES AND OBLIGATIONS
YEAR ENDED JUNE 30, 2016

Present Resources and Expected Future Resources

	Totals
A. Present Valuation Assets:	
1. Net assets from system financial statements	\$19,986,442
2. Market value adjustment	1,402,052
3. Valuation assets	21,388,494
B. Actuarial present value of expected future employer contributions:	
1. For normal costs	1,778,797
2. For unfunded actuarial accrued liability	11,002,286
3. Total	12,781,083
C. Actuarial present value of expected future member contributions	556,912
D. Total Present and Expected Future Resources	\$34,726,489

Actuarial Present Value of Expected Future Benefit Payments and Reserves

A. To retirees and beneficiaries	\$ 13,569,996
B. To vested terminated members	8,722,728
C. To present active members:	
1. Allocated to service rendered prior to valuation date - actuarial accrued liability	10,098,056
2. Allocated to service likely to be rendered after valuation date	2,335,709
3. Total	12,433,765
D. Reserve	0
E. Total Actuarial Present Value of Expected Future Benefit Payments	\$34,726,489

**DISTRICT JUDGES
COMPUTED ACTUARIAL LIABILITIES AND
ALLOCATION USING ENTRY AGE ACTUARIAL COST METHOD
AS OF JUNE 30, 2016**

Actuarial Present Value of	(1) Total Present Value	(2) Portion Covered By Future Normal Cost Contributions	Actuarial Accrued Liabilities (1) - (2)
Benefits to be paid to current retirees, beneficiaries, and future beneficiaries of current retirees	\$13,569,996	\$ 0	\$13,569,996
Age and service allowances based on total service likely to be rendered by present active members	12,047,760	2,000,698	10,047,062
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members	8,933,477	170,741	8,762,736
Disability benefits likely to be paid to present active members	175,256	164,270	10,986
Death-in-service benefits likely to be paid on behalf of present active members	0	0	0
Total	\$34,726,489	\$2,335,709	\$32,390,780
Applicable assets (funding value)	21,388,494	0	21,388,494
Liabilities to be covered by future contributions	\$13,337,995	\$2,335,709	\$11,002,286

DISTRICT JUDGES
SUMMARY OF PROVISIONS EVALUATED

VOLUNTARY RETIREMENT	<i>With a full benefit</i> , after either (a) age 50 with 20 years of eligibility service, (b) age 60 with 16 years of eligibility service, or (c) age 65 with 8 years of eligibility service.
FINAL AVERAGE COMPENSATION (FAC)	Average of the final three calendar years of employment.
BENEFIT SERVICE	Service performed on or after January 1, 2005.
ELIGIBILITY SERVICE	Benefit service plus service in Old Local District Judges Plan.
FULL AGE & SERVICE RETIREMENT BENEFIT	2.50% of FAC times actual service.
BENEFIT INCREASES AFTER RETIREMENT	Annually, there will be a cost-of-living adjustment equal to 3% of the current benefit.
MEMBER CONTRIBUTION RATES	Active members contribute 5% of their salaries. If a member leaves service before becoming eligible to retire, accumulated contributions may be refunded.
VESTED RETIREMENT BENEFITS	8 years of eligibility service. Deferred full retirement benefit, based on benefit service and pay at termination, begins when member would have been eligible for voluntary retirement.
TOTAL AND PERMANENT DISABILITY	An active member with 3 or more consecutive years of eligibility service who becomes totally and permanently disabled may be retired and receive a disability annuity computed in the same manner as an age and service annuity.
DEATH AFTER RETIREMENT	If the member was eligible for normal retirement at the time of death, an eligible beneficiary will begin receiving a 50% joint and survivor pension computed in the same manner as a service retirement pension as if the member had retired the last day of his life.

**DISTRICT JUDGES
REVENUES AND EXPENDITURES
JULY 1, 2015 THROUGH JUNE 30, 2016
MARKET VALUE**

	Plan		Totals
	New Plan and Paid-Off Old Plan	Still Paying Old Plan	
Balance 7/1/2015	\$15,536,710	\$4,035,319	\$19,572,029
Adjustment	25,872	(25,872)	0
Revenues			
Member contributions	166,245	0	166,245
Employer contributions	822,245	1,034,607	1,856,852
Other	0	0	0
Investment return	(11,183)	(2,871)	(14,054)
Total	\$ 977,307	\$1,031,736	\$ 2,009,043
Expenditures			
Benefits paid	546,714	950,318	1,497,032
Refunds	0	0	0
Investment Expenses	63,369	16,267	79,636
Administrative Expenses	14,293	3,669	17,962
Total	\$ 624,376	\$ 970,254	\$ 1,594,630
Preliminary Balance	\$15,915,513	\$4,070,929	\$19,986,442
Employer Paid Off Old Liability	196,937	(196,937)	0
Balance 6/30/2016	\$16,112,450	\$3,873,992	\$19,986,442

Note: Results may not total due to rounding.

**DEVELOPMENT OF FUNDING VALUE OF ASSETS
NEW PLAN AND PAID-OFF OLD PLAN
JUNE 30, 2016**

Valuation Date June 30:	2014	2015	2016	2017	2018	2019
A. Funding Value Beginning of Year	\$ 12,373,072	\$ 14,293,743	\$ 15,915,500			
B. Market Value End of Year	15,107,940	15,536,710	16,112,450			
C. Market Value Beginning of Year	12,701,797	15,107,940	15,536,710			
D. Non-Investment Net Cash Flow	439,106	642,008	650,292			
E. Investment Income						
E1. Market Total: B - C - D	1,967,037	(213,238)	(74,552)			
E2. Assumed Rate	8.00%	7.75%	7.50%			
E3. Amount for Immediate Recognition	1,007,185	1,132,333	1,217,755			
E4. Amount for Phased-In Recognition	959,852	(1,345,571)	(1,292,307)			
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.25 x E4	239,963	(336,393)	(323,077)			
F2. First Prior Year	150,463	239,963	(336,393)	\$ (323,077)		
F3. Second Prior Year	(206,618)	150,463	239,963	(336,393)	\$ (323,077)	
F4. Third Prior Year	290,572	(206,617)	150,462	239,963	(336,392)	\$ (323,076)
F5. Total Phase-Ins	474,380	(152,584)	(269,045)	(419,507)	(659,469)	(323,076)
G. Preliminary Funding Value End of Year: A + D + E3 + F5	14,293,743	15,915,500	17,514,502			
H. Adjustment to Minimum of 75% of B, Maximum 125% of B	0	0	0			
I. Funding Value End of Year	14,293,743	15,915,500	17,514,502			
J. Difference Between Market & Funding Value	814,197	(378,790)	(1,402,052)			
K. Recognized Rate of Return	11.8%	6.7%	5.8%			
L. Market Rate of Return	15.2%	(1.4)%	(0.5)%			
M. Ratio of Funding Value to Market Value	95%	102%	109%			

The Funding Value of Assets recognizes assumed investment return (line E3) fully each year. Differences between actual and assumed investment return (Line E4) are phased-in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than Market Value. If assumed rates are exactly realized for 3 consecutive years, Funding Value will become equal to Market Value.

DISTRICT JUDGES SUMMARY OF ANNUITANTS ON ROLLS

Retirees and beneficiaries on rolls included in the valuation totaled 145, involving monthly annuities of \$126,929, distributed as follows:

Plan	Number of Retired Records	Annuities Being Paid July 1, 2016	
		Monthly	Annualized
New Plan	19	\$ 10,331	\$ 123,972
Old Plan Paid Off	40	38,427	461,124
Still Paying Old Plan	86	78,171	938,052
Totals	145	\$ 126,929	\$ 1,523,148

A retiree's monthly benefit may be allocated to more than one employer or more than one plan. The actual number of retired members as of June 30, 2016 was reported to be 106, consisting of 91 original retirees and 15 survivors.

Actual Number of Retired Members: 106

Average Age: 73.3 years

Average Age at Retirement: 63.7 years

Average Years of Service: 9.1 years

Average Monthly Benefit: \$1,197.44

Inactive members, entitled to deferred annuities, included in the valuation totaled 119, involving estimated deferred monthly annuities of \$74,749 distributed as follows:

Plan	Number of Inactive Records	Estimated Deferred Annuities	
		Monthly	Annualized
New Plan	7	\$ 5,749	\$ 68,988
Old Plan Paid Off	39	29,414	352,968
Still Paying Old Plan	73	39,586	475,032
Totals	119	\$ 74,749	\$ 896,988

An inactive member's monthly benefit may be allocated to more than one employer or more than one plan. The actual number of deferred members as of June 30, 2016 was reported to be 101.

DISTRICT JUDGES DETAIL BY EMPLOYER

Employer	ER ID	Participants Covered		Retiree	Deferred	Retiree	Deferred	Total	Assets	Unfunded	19-year
		Deferred	Retired	Mon. Ben.	Mon. Ben.	Liability	Liability	Liability	Allocated	Liability	Payoff of
		Vested		7/1/2016	7/1/2016	6/30/2016	6/30/2016	6/30/2016	6/30/2016		Unfunded Liability
Ashdown	90141	2	2	\$ 466.28	\$ 550.08	\$ 35,453	\$ 69,372	\$ 104,825	\$ 43,107	\$ 61,718	\$ 5,976
Ashdown (County)	90941	2	2	771.63	910.30	60,014	114,801	174,815	72,248	102,567	9,931
Batesville	90132	2	1	859.69	514.54	103,088	59,153	162,241	45,724	116,517	11,282
Batesville (Independence Co.)	90932	2	1	859.69	514.54	103,088	59,153	162,241	45,692	116,549	11,285
Beebe	90511	0	1	1,016.67	0.00	99,275	0	99,275	(12,677)	111,952	10,840
Benton District Court	90962	0	2	2,398.38	0.00	232,408	0	232,408	85,410	146,998	14,233
Berryville	90108	1	1	152.78	475.94	16,913	63,121	80,034	45,511	34,523	3,343
Berryville (County)	90908	2	2	1,251.98	700.94	162,606	89,759	252,365	101,648	150,717	14,594
Biscoe	90159	0	1	150.00	0.00	19,176	0	19,176	221	18,955	1,835
Bryant	90133	0	1	517.50	0.00	45,939	0	45,939	(15,681)	61,620	5,966
Cabot	90143	3	0	0.00	1,651.12	0	201,519	201,519	171,448	30,071	2,912
Clarendon	90148	1	0	0.00	444.72	0	66,409	66,409	45,108	21,301	2,062
Conway	90123	1	2	3,413.05	966.66	353,118	109,135	462,253	174,998	287,255	27,813
Dequeen	90166	0	3	4,406.12	0.00	425,470	0	425,470	(45,093)	470,563	45,562
Dermott	90109	2	1	312.50	205.08	36,725	23,429	60,154	8,061	52,093	5,044
Dermott (County)	90909	2	1	312.50	205.08	36,725	23,429	60,154	8,061	52,093	5,044
Devalls Bluff	90359	0	1	225.00	0.00	29,046	0	29,046	487	28,559	2,765
Dewitt	90101	1	1	733.48	519.44	69,320	64,764	134,084	52,506	81,578	7,899
Dumas	90121	0	4	2,773.34	0.00	316,017	0	316,017	95,122	220,895	21,388
East Camden	90252	2	1	531.53	136.07	63,699	12,520	76,219	20,802	55,417	5,366
Elkins	90172	2	0	0.00	1,074.68	0	125,588	125,588	94,831	30,757	2,978
Greenwood	90265	0	1	771.00	0.00	90,992	0	90,992	(6,585)	97,577	9,448
Hamburg	90202	1	1	450.00	457.19	33,341	58,171	91,512	44,440	47,072	4,558
Hampton	90107	1	1	696.00	850.46	61,413	95,771	157,184	101,850	55,334	5,358
Hazen	90459	0	1	683.33	0.00	93,484	0	93,484	4,382	89,102	8,627
Helena	90154	2	1	384.38	27.72	19,381	1,636	21,017	(24,420)	45,437	4,399
Helena (County)	90954	2	1	384.38	27.72	19,381	1,636	21,017	(24,420)	45,437	4,399
Hope	90110	0	2	762.50	0.00	79,760	0	79,760	(22,306)	102,066	9,882
Hope (County)	90929	0	2	762.50	0.00	79,760	0	79,760	(22,306)	102,066	9,882
Hot Springs	90126	4	3	4,772.59	3,592.02	501,654	387,421	889,075	186,127	702,948	68,062

**DISTRICT JUDGES
DETAIL BY EMPLOYER**

Employer	ER ID	Participants Covered		Retiree	Deferred	Retiree	Deferred	Total	Assets	Unfunded Liability	19-year
		Deferred	Retired	Mon. Ben. 7/1/2016	Mon. Ben. 7/1/2016	Liability 6/30/2016	Liability 6/30/2016	Liability 6/30/2016	Allocated 6/30/2016		Payoff of Unfunded Liability
Lawrence County	90938	0	2	\$ 1,016.99	\$ 0.00	\$ 113,526	\$ 0	\$ 113,526	\$ 40,110	\$ 73,416	\$ 7,108
Little Rock	90260	13	10	18,919.49	9,422.56	2,007,918	1,192,818	3,200,736	1,014,545	2,186,191	211,675
Magnolia	90114	0	1	641.98	0.00	57,672	0	57,672	30,853	26,819	2,597
Magnolia (Columbia County)	90914	0	1	641.98	0.00	57,672	0	57,672	(10,812)	68,484	6,631
Marked Tree	90256	0	1	948.14	0.00	77,601	0	77,601	(7,760)	85,361	8,265
Marshall	90964	0	1	701.31	0.00	70,386	0	70,386	21,715	48,671	4,713
Mt. Home	90103	1	2	2,336.96	1,237.29	233,754	150,467	384,221	90,132	294,089	28,475
Newport	90134	1	2	1,035.91	234.22	98,798	28,645	127,443	37,449	89,994	8,714
North Little Rock	90460	10	10	12,045.06	8,159.50	1,156,214	937,052	2,093,266	649,788	1,443,478	139,763
Osceola	90247	1	1	500.00	648.60	29,646	98,624	128,270	44,410	83,860	8,120
Ozark	90124	1	1	531.72	593.47	62,068	68,777	130,845	61,948	68,897	6,671
Ozark (County)	90924	1	1	531.72	593.47	62,068	68,777	130,845	60,499	70,346	6,811
Pocahontas	90161	1	1	466.18	210.07	63,444	23,415	86,859	22,167	64,692	6,264
Pocahontas (County)	90961	1	1	466.18	210.07	63,444	23,415	86,859	21,382	65,477	6,340
Prairie Grove	90372	0	2	1,861.93	0.00	202,425	0	202,425	5,377	197,048	19,079
Rison	90113	1	0	0.00	780.00	0	87,836	87,836	78,044	9,792	948
Searcy	90273	1	2	1,383.33	1,179.36	120,559	146,291	266,850	102,315	164,535	15,931
Stuttgart	90201	1	2	704.61	530.85	56,582	70,863	127,445	66,302	61,143	5,920
Stuttgart	90901	1	2	861.18	648.82	69,155	86,611	155,766	81,272	74,494	7,213
Trumann	90356	1	0	0.00	224.77	0	27,357	27,357	(609)	27,966	2,708
Tyronza	90456	1	1	850.64	40.12	108,343	3,774	112,117	62,705	49,412	4,784
West Helena	90254	2	0	0.00	1,048.27	0	120,733	120,733	100,477	20,256	1,961
Wynne	90519	0	1	906.73	0.00	106,724	0	106,724	27,387	79,337	7,682
UAL>0 as of 6/30/2016		73	86	\$78,170.84	\$39,585.74	\$8,005,245	\$4,762,242	\$12,767,487	\$3,873,992	\$8,893,495	\$861,106

DISTRICT JUDGES
ACTIVE MEMBERS IN VALUATION JUNE 30, 2016
BY ATTAINED AGE AND YEARS OF ELIGIBILITY SERVICE

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 plus	No.	Valuation Payroll
Under 20									
20-24									
25-29									
30-34									
35-39									
40-44									
45-49			1					1	\$ 36,017
50-54			1	1				2	185,403
55-59			7	3	1			11	817,170
60			1				1	2	174,918
61									
62						1		1	26,195
63									
64				1				1	50,693
65				2				2	150,494
66					1			1	139,999
67			1			2	3	6	487,398
68			2			1	1	4	363,998
69			1		1			2	279,998
70 & over			3		2		4	9	615,973
Totals			17	7	5	4	9	42	\$3,328,256

Group Averages

Age:	64.2 years
Benefit Service:	11.3 years
Eligibility Service:	19.9 years
Annual Pay:	\$79,244

DISTRICT JUDGES
CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITIES
DURING THE PERIOD JULY 1, 2015 TO JUNE 30, 2016

	New Plan and Paid Off Old Plan	Still Paying Old Plan	Total
(1) UAAL* at beginning of year	\$ 2,318,577	\$ 9,163,882	\$ 11,482,459
(2) Normal cost from last valuation	699,932	-	699,932
(3) Actual contributions	988,490	1,034,607	2,023,097
(4) Interest accrual: [(1) + ½[(2) - (3)]]x .0750	163,072	648,493	811,565
(5) Expected UAAL before changes: (1) + (2) - (3) + (4)	2,193,091	8,777,768	10,970,859
(6) Increase from benefit changes	-	-	-
(7) Changes from revised actuarial assumptions and methods	-	-	-
(8) Expected UAAL after changes: (5) + (6) + (7)	2,193,091	8,777,768	10,970,859
(9) Actual UAAL at end of year	2,108,791	8,893,495	11,002,286
(10) Gain/(Loss): (8) - (9)	\$ 84,300	\$ (115,727)	\$ (31,427)

* *Unfunded actuarial accrued liability.*

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Entry Age AAL (b)	UAAL (b)-(a)	Funded Ratio (a)/(b)	Annual Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b-a)/(c)]
12/31/04	\$ 0	\$ 0	\$ 0	100.0 %	\$1,841,022	0.0%
6/30/05	7,569,919	24,134,114	16,564,195	31.4 %	3,222,495	514.0%
6/30/06	10,141,040	24,943,381	14,802,341	40.7 %	3,313,454	446.7%
6/30/07	12,582,548	24,387,433	11,804,885	51.6 %	3,366,861	350.6%
6/30/08 @	12,398,225	24,797,303	12,399,078	50.0 %	3,526,319	351.6%
6/30/09	10,004,394	25,671,893	15,667,499	39.0 %	3,368,169	465.2%
6/30/10	11,112,521	26,775,249	15,662,728	41.5 %	3,554,044	440.7%
6/30/11	12,950,730	27,524,848	14,574,118	47.1 %	3,345,497	435.6%
6/30/12	13,925,350	28,343,368	14,418,018	49.1 %	3,374,982	427.2%
6/30/13 @	16,090,536	28,823,709	12,733,173	55.8 %	2,989,465	425.9%
6/30/14 @	18,562,875	30,005,138	11,442,263	61.9 %	3,108,024	368.2%
6/30/15 @	19,950,819	31,433,278	11,482,459	63.5 %	3,173,245	361.9%
6/30/16	21,388,494	32,390,780	11,002,286	66.0 %	3,328,256	330.6%

@ After changes in actuarial assumptions and methods.

SECTION E

**ACTUARIAL METHODS AND ASSUMPTIONS AND
OTHER TECHNICAL ASSUMPTIONS**

**SUMMARY OF ASSUMPTIONS USED FOR
APERS ACTUARIAL VALUATIONS
ASSUMPTIONS ADOPTED BY BOARD OF TRUSTEES
AFTER CONSULTING WITH ACTUARY**

In accordance with Section 24-4-105 of the Arkansas Code, the Board of Trustees adopts the actuarial assumptions used for actuarial valuation purposes.

The actuarial assumptions used in the valuation are shown in this section. Assumptions were established based upon an Experience Study covering the period July 1, 2007 through June 30, 2012 (please see our report dated February 13, 2013). Economic assumptions have been subsequently updated based on the Experience Study and the results of the Economic Assumption Review performed for the Arkansas Judicial Retirement System (please see our report dated August 6, 2015). The actuarial assumptions represent estimates of future experience.

ECONOMIC ASSUMPTIONS

The investment return rate used in making the valuation was 7.50% per year, compounded annually (net after investment expenses). This rate of return is not the assumed real rate of return. The real rate of return is the portion of investment return which is more than the wage inflation rate. Considering the assumed wage inflation rate of 3.25%, the 7.50% investment return rate translates to an assumed net real rate of return of 4.25%. This assumption was first used for the June 30, 2015 valuation, including also the District Judges division.

Pay increase assumptions for individual active members are shown on pages E-8 and E-10. Part of the assumption for each age is for a merit and/or seniority increase, and the other 3.25% recognizes wage inflation. The wage inflation assumption consists of 2.50% for price inflation and 0.75% for real wage growth. These assumptions were first used for the June 30, 2015 valuation and for the District Judges division for the June 30, 2015 valuation.

Total active member payroll is assumed to increase 3.25% a year, which is the portion of the individual pay increase assumptions attributable to wage inflation. This assumption was first used for the June 30, 2015 valuation and for the District Judges division for the June 30, 2015 valuation.

The number of active members is assumed to continue at the present number.

NON-ECONOMIC ASSUMPTIONS

The mortality table used to measure retired life mortality was the RP-2000 Combined Healthy mortality table, projected to 2020 using Projection Scale BB, set-forward 2 years for males and 1 year for females. Related values are shown on page E-3. Based upon the experience observed during the most recent experience study, it appears that at the time of the study the current table provides for an approximate 15% margin for future mortality improvement. This assumption was first used for the June 30, 2013 valuation.

The probabilities of retirement for members eligible to retire are shown on pages E-4 through E-7. These probabilities were first used for the June 30, 2013 valuation and for the June 30, 2007 valuation for the District Judges division.

The probabilities of withdrawal from service, death-in-service and disability are shown for sample ages on pages E-8 through E-10. These probabilities were first used for the June 30, 2013 valuation and for the District Judges division for the June 30, 2013 valuation.

The individual entry-age normal actuarial cost method of the valuation was used in determining liabilities and normal cost.

Differences in the past between assumed experience and actual experience (actuarial gains and losses) become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities are amortized to produce contribution amounts (principal and interest) which are level percent-of-payroll contributions. For the District Judges division, unfunded actuarial accrued liabilities are amortized as a level dollar contribution.

Recognizing the special circumstances of the General Assembly division, modifications of the above assumptions were made where appropriate.

Present assets (cash & investments) were valued on a market related basis in which differences between actual and assumed returns are phased-in over a four-year period (including District Judges New Plan and Paid Off Old Plan). The funding value of assets may not deviate from the market value of assets by more than 25%. District Judges Still Paying Old Plan present assets (cash & investments) were valued on a market value basis.

The data about persons now covered and about present assets were furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA).

SINGLE LIFE RETIREMENT VALUES
BASED ON RP-2000 COMBINED, PROJECTED TO 2020
7.50% INTEREST
JUNE 30, 2016

Sample Attained Ages	Present Value of \$1.00 Monthly for Life		Present Value of \$1.00 Monthly for Life Increasing 3% Annually		Future Life Expectancy (Years)	
	Men	Women	Men	Women	Men	Women
40	\$ 152.73	\$ 155.50	\$ 221.02	\$ 228.64	40.56	44.21
45	148.14	151.73	209.34	218.29	35.81	39.39
50	142.02	146.73	195.44	205.97	31.13	34.64
55	134.13	140.11	179.30	191.41	26.58	29.98
60	124.36	131.56	161.13	174.51	22.23	25.44
65	112.66	121.10	141.22	155.67	18.14	21.14
70	98.84	108.87	119.72	135.45	14.35	17.16
75	83.43	95.07	97.62	114.39	10.95	13.56
80	67.17	79.89	76.00	92.98	8.02	10.35
85	51.06	64.05	56.01	72.24	5.60	7.59

Sample Attained Ages	Benefit Increasing 3.0% Yearly	Portion of Age 60 Lives Still Alive	
		Men	Women
60	\$100	100 %	100 %
65	116	96	97
70	134	90	92
75	155	80	84
80	180	66	72

The mortality table was set forward 10 years for disabilities.

Based on RP-2000 Combined Healthy mortality table, projected to 2020 using Projection Scale BB, set-forward 2 years for males and 1 year for females.

STATE AND LOCAL GOVERNMENT DIVISION
AGE-BASED RETIREMENT
JUNE 30, 2016

Retirement Ages (with less than 28 years of service)	Percent of Eligible Active Members Retiring Within Next Year	
	Unreduced	Reduced
55		2 %
56		2
57		3
58		3
59		4
60		5
61		5
62		18
63		17
64		13
65	23 %	
66	23	
67	23	
68	15	
69	15	
70	17	
71	17	
72	17	
73	17	
74-75	20	
76-78	15	
79-84	20	
85 & Over	100	

A member was assumed eligible for unreduced retirement after attaining age 65 with 5 years of service or 28 years regardless of age. A member was assumed eligible for reduced retirement after attaining age 55 with 10 or more years of service.

STATE AND LOCAL GOVERNMENT DIVISION
SERVICE BASED RETIREMENT
JUNE 30, 2016

Service	Percent of Eligible Active Members Retiring Within Next Year
28	15 %
29	13
30	11
31	11
32	12
33	12
34	12
35	20
36	25
37	25
38	30
39	30
40 & Over	100

**GENERAL ASSEMBLY DIVISION
PROBABILITIES OF RETIREMENT
FOR MEMBERS ELIGIBLE TO RETIRE
JUNE 30, 2016**

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year
50	30 %
51	30
52	30
53	30
54	30
55	30
56	30
57	30
58	30
59	30
60	30
61	30
62	50
63	30
64	30
65	50
66	30
67-79	20
80 & Over	100

Member may retire at age 50 with 20 or more years of service, age 60 with 16 or more years of service, or age 65 with 8 or more years of service.

**DISTRICT JUDGES DIVISION
AGE-BASED RETIREMENT
JUNE 30, 2016**

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year
50	10 %
51	10
52	10
53	10
54	10
55	12
56	12
57	14
58	14
59	14
60	18
61	18
62-73	30
74 & Over	100

Members may retire at age 50 with 20 or more years of service, age 60 with 16 or more years of service, or age 65 with 8 or more years of service.

STATE AND LOCAL GOVERNMENT DIVISION
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE SERVICE RETIREMENT
JUNE 30, 2016

Sample Ages	Years of Service	Percent of Active Members Separating within the Next Year						Pay Increase Assumptions for an Individual Employee		
		Withdrawal		Death		Disability		Merit & Seniority	Base (Economy)	Increase Next Year
		Men	Women	Men	Women	Men	Women			
	0	40.0 %	40.0 %							
	1	25.0	25.0							
	2	20.0	20.0							
	3	15.0	15.0							
	4	12.0	12.0							
20	5+	10.0	10.0	0.02 %	0.01 %	0.01 %	0.01 %	6.60 %	3.25 %	9.85 %
25		10.0	10.0	0.02	0.01	0.05	0.05	5.10	3.25	8.35
30		8.8	8.8	0.03	0.01	0.08	0.08	3.20	3.25	6.45
35		6.2	6.2	0.04	0.02	0.10	0.10	2.30	3.25	5.55
40		4.4	4.4	0.06	0.03	0.15	0.15	1.90	3.25	5.15
45		3.4	3.4	0.08	0.05	0.20	0.20	1.50	3.25	4.75
50		2.7	2.7	0.13	0.08	0.40	0.40	1.10	3.25	4.35
55		1.9	1.9	0.22	0.12	0.70	0.70	0.80	3.25	4.05
60		1.2	1.2	0.37	0.21	1.00	1.00	0.70	3.25	3.95

Pay increase rates are age based only, and not service based.

**GENERAL ASSEMBLY DIVISION
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE
SERVICE RETIREMENT
JUNE 30, 2016**

		Percent of Active Members Separating within the Next Year					
Sample Ages	Years of Service	Withdrawal		Death		Disability	
		Men	Women	Men	Women	Men	Women
	0	30.0 %	30.0 %				
	1	25.0	25.0				
	2	20.0	20.0				
	3	15.0	15.0				
	4	12.0	12.0				
20	5+	9.0	9.0	0.02 %	0.01 %	0.06 %	0.06 %
25		8.3	8.3	0.02	0.01	0.06	0.06
30		5.3	5.3	0.03	0.01	0.06	0.06
35		3.0	3.0	0.04	0.02	0.06	0.06
40		2.6	2.6	0.06	0.04	0.16	0.16
45		2.4	2.4	0.08	0.06	0.22	0.22
50		1.1	1.1	0.13	0.09	0.39	0.39
55		0.8	0.8	0.22	0.14	0.71	0.71
60		0.8	0.8	0.37	0.23	1.13	1.13

DISTRICT JUDGES
SEPARATIONS FROM ACTIVE EMPLOYMENT BEFORE
SERVICE RETIREMENT
JUNE 30, 2016

Sample Ages	Percent of Active Members Separating within the Next Year				Pay Increase Assumptions For An Individual Employee		
	Withdrawal		Disability		Merit & Seniority	Base (Economy)	Increase Next
	Men	Women	Men	Women			
20	2.0 %	2.0 %	0.08 %	0.08 %	2.70 %	3.25 %	5.95 %
25	2.0	2.0	0.08	0.08	2.60	3.25	5.85
30	2.0	2.0	0.08	0.08	2.20	3.25	5.45
35	2.0	2.0	0.08	0.08	1.90	3.25	5.15
40	2.0	2.0	0.20	0.20	1.40	3.25	4.65
45	2.0	2.0	0.27	0.27	1.20	3.25	4.45
50	2.0	2.0	0.49	0.49	0.70	3.25	3.95
55	2.0	2.0	0.89	0.89	0.70	3.25	3.95
60	2.0	2.0	1.41	1.41	0.00	3.25	3.25

SUMMARY OF ASSUMPTIONS USED
JUNE 30, 2016
MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Marriage Assumption. 80% of males and 80% of females are assumed to be married for purposes of death-in-service benefits. District Judges division - 100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. 80% of males and 80% of females are assumed to be married for purposes of death-after-retirement benefits for active member valuation purposes.

Pay Increase Timing. Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

Decrement Timing. Decrements of all types are assumed to occur mid-year.

Other Liability Adjustments. Active member non-refund normal costs and actuarial accrued liabilities were increased by 1.5% to reflect non-reported reciprocal service.

Eligibility Testing. Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

Benefit Service. Exact fractional service is used to determine the amount of benefit payable.

Decrement Relativity. Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

Normal Form of Benefit. The assumed normal form of benefit is the straight life form.

District Judges Division Old Plan Deferred Members. For members that are eligible for a deferred benefit in the Old Plan and are currently active in the New Plan, it is assumed that the deferred benefit will commence at the first age at which the member is eligible to receive the benefit.

Incidence of Contributions. Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. New entrant normal cost contributions are applied to the funding of new entrant benefits.

DROP Duration. We assume on average the total DROP duration is 4 years for those members currently participating in the DROP.

SUMMARY OF ASSUMPTIONS USED
JUNE 30, 2016
MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

DROP Interest Credit. The current interest rate credit for DROP accounts is assumed to be 3.0%.

Payroll for DROP Participants and Retired Members Returned to Work. Employers now contribute on the pays of DROP participants and retired members returned to work. For the June 30, 2016 valuation the reported payroll for these members was \$105,350,988.

Pre-Retirement Mortality. The weighting of duty and ordinary deaths-in-service is 0%/100%.

Administrative Expenses. The normal cost was increased by 0.40% of payroll to fund administrative expenses.

SECTION F
FINANCIAL PRINCIPLES

FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES OF APERS

Promises Made, and To Be Paid For. As each year is completed, APERS in effect hands an “IOU” to each member then acquiring a year of service credit --- the “IOU” says: “The Arkansas Public Employees Retirement System owes you one year’s worth of retirement benefits, payments in cash commencing when you qualify for retirement.”

The related *key financial questions* are:

Which generation of taxpayers contributes the money to cover the IOU?

The present taxpayers, who receive the benefit of the member’s present year of service? ***Or the future taxpayers***, who happen to be in Arkansas at the time the IOU becomes a cash demand, years and often decades later?

The law governing APERS financing intends that this year’s taxpayers contribute the money to cover the IOUs being handed out this year. With this financial objective, ***the employer contribution rate is expected to remain approximately level from generation to generation of taxpayers.***

There are systems which have a design for deferring contributions to future taxpayers. Lured by a lower contribution rate now, they put aside the consequence that the contribution rate must then relentlessly grow to a level much higher than would be required if a level contribution pattern were followed.

An inevitable by-product of the level-cost design is the accumulation of reserve assets, for decades, and the income produced when the assets are invested. ***Investment income*** becomes ***the third and largest contributor*** for benefits to employees, and is interlocked with the contribution amounts required from employees and employers.

Translated to actuarial terminology, this level-cost objective means that the contribution rates must total at least the following:

Normal Cost (the cost of members' service being rendered this year)

... plus ...

Interest on Unfunded Actuarial Accrued Liabilities (unfunded actuarial accrued liabilities are the difference between: the actuarial accrued liabilities for service already rendered and the actuarial value of assets).

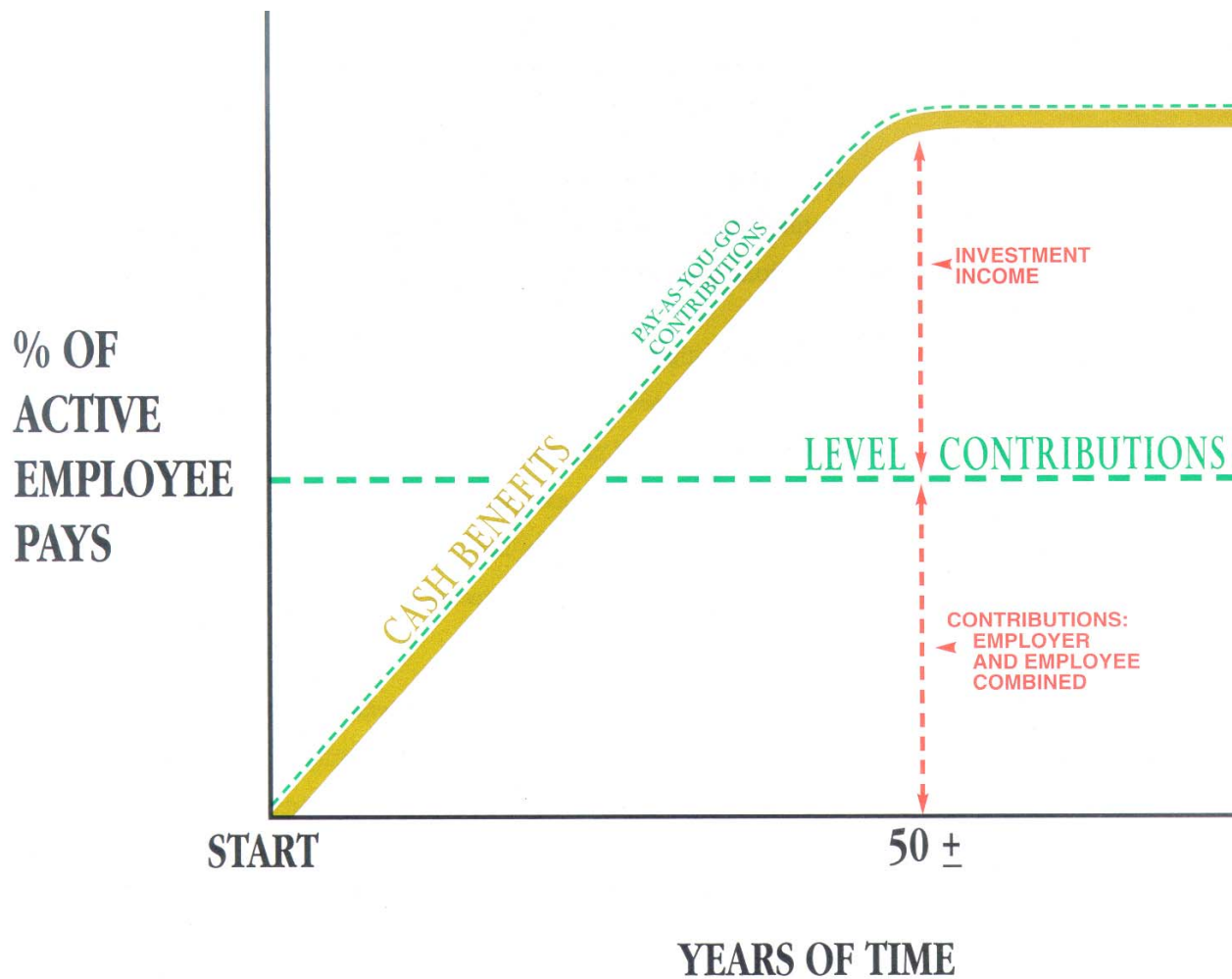
Computing Contributions to Support Fund Benefits. From a given schedule of benefits and from employee and asset data, the actuary calculates the contribution rates to support the benefits by means of ***an actuarial valuation and a funding method.***

An actuarial valuation has a number of ingredients such as: the rate of investment return which plan assets will earn; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of pay increases; and the assumed age or ages at actual retirement.

In an actuarial valuation, assumptions must be made as to what the above rates will be for the next year and for decades in the future. The assumptions are established by the Retirement Board after receiving the advice of the actuary.

Reconciling Differences Between Assumed Experience and Actual Experience. Once actual experience has occurred and has been observed, it will not coincide exactly with assumed experience, regardless of the skill of the actuary and the many calculations made. The future cannot be predicted with 100% precision.

APERS copes with these continually changing differences by having annual actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is ***continuing adjustments in financial position.***



CASH BENEFITS LINE. This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

LEVEL CONTRIBUTION LINE. Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

Economic Risk Areas

- Rates of investment return
- Rates of pay increase
- Changes in active member group size

Non-Economic Risk Areas

- Ages at actual retirement
- Rates of mortality
- Rates of withdrawal of active members (turnover)
- Rates of disability

THE ACTUARIAL VALUATION PROCESS

The financing diagram on the preceding page shows the relationship between *the two fundamentally different philosophies of paying* for retirement benefits: the method where contributions match cash benefit payments (or barely exceed cash benefit payments, as in the Federal Social Security program) which is thus an *increasing contribution method*; and, the *level contribution method* which attempts to equalize contributions between the generations.

The actuarial valuation is the mathematical process by which the level contribution rate is determined. The activity constituting the valuation may be summarized as follows:

- A. **Census Data**, including:
 - Retired lives now receiving benefits
 - Former employees with vested benefits not yet payable
 - Active employees
- B. + **Asset data** (cash & investments)
- C. + **Benefit provisions** that establish eligibility and amounts of payments to members
- D. + **Assumptions concerning future experience** in various risk areas
- E. + **The funding method** for employer contributions (the long-term, planned pattern for employer contributions)
- F. + **Mathematically combining the assumptions, the funding method, and the data**
- G. = Determination of:
 - Plan Financial position; and/or
 - New Employer Contribution Rate

GLOSSARY

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.”

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Accumulated Benefit Obligation. The actuarial present value of vested and non-vested benefits based on service to date and past and current salary levels.

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future plan benefits” between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

GLOSSARY

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Plan Termination Liability. The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a “going concern” basis and is not normally determined in a routine actuarial valuation.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as “unfunded accrued liability.”

Valuation Assets. The value of current plan assets recognized for valuation purposes. Generally based on a phase-in of differences between actual and assumed market rates of return.

MEANING OF “UNFUNDED ACTUARIAL ACCRUED LIABILITIES”

“*Actuarial accrued liabilities*” are *the present value of the portions of promised benefits that are not covered by future normal cost contributions* --- a liability has been established (“accrued”) because the service has been rendered but the resulting monthly cash benefit may not be payable until years in the future.

If “actuarial accrued liabilities” at any time exceed the plan’s accrued assets (cash & investments), the difference is “*unfunded actuarial accrued liabilities.*” This is the common condition. It is less common when a plan’s assets equal or exceed the plan’s “actuarial accrued liabilities.”

Each time a plan adds a new benefit which applies to service already rendered, an “actuarial accrued liability” is created, which is also an “unfunded actuarial accrued liability” because the plan can’t print instant cash to cover the value of the new benefit promises. Payment for such unfunded actuarial accrued liabilities is spread over a period of years, commonly in the 15-30 year range.

Unfunded actuarial accrued liabilities can occur in another way: if actual plan experience is less favorable than assumed, the difference is added to unfunded actuarial accrued liabilities. For example, in plans where benefits are directly related to an employee’s pay near time of retirement, unfunded actuarial accrued liabilities increased rapidly during the 1970’s because unexpected rates of pay increase created additional actuarial accrued liabilities which could not be matched by reasonable investment results. Most of the unexpected pay increases were the direct result of inflation, which is a very destructive force on financial stability.

The existence of unfunded actuarial accrued liabilities is not bad but the changes from year to year in the amount of unfunded actuarial accrued liabilities are important --- “bad” or “good” or somewhere in between.

Nor are unfunded actuarial accrued liabilities a bill payable immediately, but it is important that policy-makers prevent the amount from becoming unreasonably high and *it is vital for plans to have a sound method for making payments toward them* so that they are controlled.

November 10, 2016

Ms. Gail H. Stone, Executive Director
Arkansas Public Employees Retirement System
One Union National Plaza
124 West Capitol, Suite 400
Little Rock, Arkansas 72201

**Re: Report of the June 30, 2016 Actuarial Valuation and Gain/(Loss) Analysis of
Financial Experience**

Dear Gail:

Enclosed are 40 copies of this report.

Sincerely,



Mita D. Drazilov, ASA, FCA, MAAA

MDD:dj
Enclosures

cc: David L. Hoffman, GRS