Arkansas Judicial Retirement System

Annual Actuarial Valuation and Experience Gain/(Loss) Analysis Year Ending June 30, 2020

Outline of Contents

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October 29, 2020

The Board of Trustees
Arkansas Judicial Retirement System
Little Rock, Arkansas

Ladies and Gentlemen:

The results of the ***38th Annual Actuarial Valuation of the Arkansas Judicial Retirement System as of June 30, 2020, and the Gain/(Loss) Analysis of Financial Experience from July 1, 2019 to June 30, 2020*** 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 the employer contribution rate. The results of the valuation may not be applicable for other purposes. A separate report will be issued to provide actuarial information for GASB Statement No. 67 and Statement No. 68.

This report should not be relied on for any purpose other 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 the permission of the Board. GRS is not responsible for unauthorized use of this report.

The individuals signing this report are independent of the plan sponsor.

The valuation was based upon Retirement System provisions in effect on the valuation date (summarized in Section B) along with census data and financial information. Data was tested for year-to-year consistency, but was not audited by the actuary. We are not responsible for the accuracy and completeness of the information provided by the administrative staff.

The findings in this report are based on data and other information through June 30, 2020. 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 assumptions used in the actuarial valuation are summarized in Section D. The assumptions are established by the Retirement 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 administrative staff in furnishing the materials required for this valuation is hereby acknowledged with appreciation.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in Section D of this report. This report includes risk commentary beginning on page A-12 but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

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.

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.

Respectfully submitted,

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SECTION A

VALUATION RESULTS

Computed Actuarial Accrued Liabilities
as of June 30, 2020

Actuarial Present Value of	(1) Total Present Value	(2) Portion Covered by Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1) - (2)
Benefits to be paid to current retirees, beneficiaries, and future beneficiaries of current retirees	$ 163,176,878	$ 0	$ 163,176,878
Age and service allowances based on total service likely to be rendered by present active members	176,167,476	49,669,385	126,498,091
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active and inactive members	6,658,404	3,371,779	3,286,625
Disability benefits likely to be paid to present active members	1,270,603	1,929,485	(658,882)
Death-in-service benefits likely to be paid on behalf of present active members	7,261,295	2,910,429	4,350,866
Total	$354,534,656	$57,881,078	$ 296,653,578
Applicable assets (Funding Value)	277,318,078	0	277,318,078
Liabilities to be covered by future contributions	$ 77,216,578	$57,881,078	$ 19,335,500

Employer Contribution Rates Computed June 30, 2020
for Fiscal Year Ending June 30, 2022
Expressed as Percents of Active Member Payroll

Contributions for	Contributions Expressed as Percents of Active Payroll
Normal Cost	
Age and service annuities	25.31 %
Separation benefits	1.57 %
Disability annuities	1.01 %
Death-in-service annuities	1.63 %
Administrative expenses	0.70 %
Total	30.22 %
Member Contributions (average)	4.47 %
Employer Normal Cost	25.75 %
Unfunded Actuarial Accrued Liabilities*	8.59 %
TOTAL COMPUTED EMPLOYER CONTRIBUTION RATE	**34.34 %**

** Unfunded actuarial accrued liabilities were amortized as described on page A-3.*

Financing of Unfunded Actuarial Accrued Liabilities

Source of Unfunded Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability Initial Amount	Initial Financing Period	Current Amount	Remaining Period 6/30/2020	Amortization Factor	Contribution as a % of Payroll
Initial Unfunded Actuarial Accrued Liability.						
	N/A	N/A	$ 26,104,714	12 yrs.	10.266703	10.34%
Changes from experience deviations.						
6/30/2018	$ (382,766)	20	(375,489)	18	14.394996	(0.11)%
6/30/2019	(5,577,710)	20	(5,531,973)	19	15.027249	(1.50)%
6/30/2020	(3,153,650)	20	(3,153,650)	20	15.644554	(0.82)%
Changes from actuarial assumptions and actuarial cost method revisions.						
6/30/2017	2,369,244	20	2,291,898	17	13.747435	0.68%
Totals			**$ 19,335,500**			**8.59%**

Computed Employer Contribution Rates
Historical Comparative Statement

Valuation Date June 30	Active Members in Valuation				UAAL Financing Period	Computed Employer Contribution Rate
	Number	Average Pay	Averages in Years Age	Service@		
1996 (a) #	121	$ 96,810	53.8 yrs.	10.4	17 yrs.	29.62%
1997	125	99,376	53.5	10.1	16	24.22%
1998	125	104,673	54.5	11.2	*	22.47%
1999 (a)	129	107,679	54.1	10.4	*	21.92%
2000	130	110,545	54.4	10.7	*	21.87%
2001 (a)	131	113,502	55.0	11.1	*	26.00%
2002 #	133	116,441	55.9	11.9	30	25.77%
2003	134	118,915	54.9	10.0	30	29.34%
2004	134	121,505	55.6	10.5	30	29.46%
2005	134	124,161	55.9	10.9	30	30.44%
2006	134	126,933	56.7	11.6	30	29.36%
2007 #	134	129,358	56.9	11.8	*	24.20%
2008	137	131,929	57.8	12.6	*	24.59%
2009 (a)	138	136,775	56.2	15.0	30	27.43%
2010	136	136,984	57.1	15.4	30	29.08%
2011	141	137,149	57.6	15.3	30	29.93%
2012 #	140	137,155	58.5	15.8	30	31.46%
2013	140	139,898	58.7	15.9	30	29.12%
2014 #	140	141,297	59.7	16.8	29	25.09%
2015 #	139	160,489	58.6	16.4	28	37.99%
2016	139	160,489	59.5	17.0	27	37.37%
2017#	140	163,699	59.0	16.1	15/20	35.87%
2018	139	168,595	60.0	16.9	&	35.90%
2019	140	168,591	60.5	17.8	&	34.85%
2020	**142**	**173,141**	**60.9**	**17.9**	**&**	**34.34%**

(a) After changes in benefit provisions.
 # Revised actuarial assumptions and/or methods.
** Retirement System was fully funded.*
@ Includes reciprocal service for Tier One members on and after June 30, 2006 and Tier Two members on and after June 30, 2009.
& Unfunded actuarial accrued liabilities are amortized as described on page A-3.

Employer contributions are the total of all types of revenue to the System except member contributions by payroll deduction and investment return. Employer contributions include court fees and Act 922 transfers.

Active Members and Retired Lives
Historical Comparative Schedule

Valuation Date June 30	Active Members No.	Active Members Valuation Payroll $ Millions	Active Members Valuation Payroll Average	Active Members Valuation Payroll % Incr.	Retired Lives No.	Retired Lives Active per Retired	Retired Lives Annual Benefits $ in Millions	Retired Lives Annual Benefits as a % of Pay
1996	121	$ 11.7	$ 96,810	4.9%				
1997	125	12.4	99,376	2.7%				
1998	125	13.1	104,673	5.3%				
1999	129	13.9	107,679	2.9%	79	1.6	$ 3.6	25.6%
2000	130	14.4	110,545	2.7%	80	1.6	3.7	26.1%
2001	131	14.9	113,502	2.7%	82	1.6	5.0	33.8%
2002	133	15.5	116,441	2.6%	81	1.6	5.0	32.3%
2003	134	15.9	118,915	2.1%	98	1.4	6.4	40.5%
2004	134	16.3	121,505	2.2%	100	1.3	6.6	40.6%
2005	134	16.6	124,161	2.2%	105	1.3	7.1	42.9%
2006	134	17.0	126,933	2.2%	101	1.3	7.1	41.5%
2007	134	17.3	129,358	1.9%	103	1.3	7.3	42.4%
2008	137	18.1	131,929	2.0%	105	1.3	7.5	41.5%
2009	138	18.9	136,775	3.7%	123	1.1	9.2	48.8%
2010	136	18.6	136,984	0.2%	121	1.1	9.2	49.1%
2011	141	19.3	137,149	0.1%	120	1.2	9.1	46.9%
2012	140	19.2	137,155	0.0%	123	1.1	9.3	48.6%
2013	140	19.6	139,898	2.0%	125	1.1	10.0	50.8%
2014	140	19.8	141,297	1.0%	124	1.1	10.1	51.2%
2015	139	22.3	160,489	13.6%	137	1.0	11.8	53.0%
2016	139	22.3	160,489	0.0%	138	1.0	12.0	53.7%
2017	140	22.9	163,699	2.0%	147	1.0	12.9	56.2%
2018	139	23.4	168,595	3.0%	147	0.9	13.0	55.5%
2019	140	23.6	168,591	0.0%	149	0.9	13.3	56.4%
2020	**142**	**24.6**	**173,141**	**2.7%**	**148**	**1.0**	**13.7**	**55.7%**

Payroll and Asset
Historical Comparative Statement

Valuation Date June 30	Valuation Payroll	Funding Value of Assets	Ratio of Assets/Payroll
		($ in Millions)	
1985	$ 4.7	$ 4.5	1.0
1990	7.1	21.4	3.0
1995	11.0	41.1	3.7
2000	14.4	107.1	7.4
2001	14.9	119.2	8.0
2002	15.5	124.2	8.0
2003	15.9	126.5	7.9
2004	16.3	129.1	7.9
2005	16.6	135.1	8.1
2006	17.0	145.1	8.5
2007	17.3	159.6	9.2
2008	18.1	169.1	9.3
2009	18.9	167.4	8.9
2010	18.6	165.2	8.9
2011	19.3	165.4	8.6
2012	19.2	167.8	8.7
2013	19.6	182.6	9.3
2014	19.8	201.8	10.2
2015	22.3	215.4	9.7
2016	22.3	225.3	10.1
2017	22.9	239.0	10.4
2018	23.4	249.1	10.6
2019	23.6	260.7	11.0
2020	**24.6**	**277.3**	**11.3**

As AJRS has matured, the asset base relative to covered payroll has increased dramatically. This is a normal and planned occurrence in a soundly financed plan. However, as the ratio grows, market gains and losses have a progressively larger effect on contribution rates, making the objective of contribution rate stability increasingly more difficult to achieve.

Comments

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

> "(a) The general financial objective of each Arkansas public employee retirement plan shall be to ***establish and receive contributions which, expressed as percents 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 to (i) fully cover the costs of benefit commitments being made to members for their service being rendered in such year and (ii) make a level payment which if paid annually over a reasonable period of future years will fully cover the unfunded costs of benefit commitments for service previously rendered....."

Judicial Retirement System Status. Financing the Retirement System under a level contribution pattern means:

- The normal costs of judicial service will be paid by the generation of taxpayers who receive the value of the judicial service, and not passed on to a future generation;
- The ultimate contributions required will be substantially less than future benefit payouts, because investment return will pay the largest portion of benefits (see Financing Diagram on page E-3); and
- The benefit promises the Retirement System makes to individual judges will be more secure, because Retirement System assets will support the benefits, rather than grants from future legislatures.

Experience of the Retirement System was favorable, in aggregate, for the year ended June 30, 2020 with lower than assumed pay increases and higher than assumed investment returns phased in on the actuarial value of assets. AJRS is 93.5% funded based on the funding (smoothed) value of assets. AJRS is 94.7% funded based on the market value of assets. There is a $3.5 million cumulative investment gain to be recognized over the next three years. If actual experience matches assumed experience during this coming period, the employer contribution would decrease by approximately 0.9% of payroll from the current level. The cumulative investment gain to be recognized is heavily weighted to the June 30, 2021 valuation, which leads to downward pressure on the contribution rate.

Based upon the results of the June 30, 2020 actuarial valuation, ***the Judicial Retirement System is satisfying the general financial objective*** of level percent-of-payroll financing.

Recommendations

Reserve Transfers. Each year reserve transfers are recommended so that there will be a balance between assets and actuarial accrued liabilities in the Retirement Reserve Account and the Deferred Annuity Account.

- The Retirement Reserve Account is responsible for future annuity payments to present retired lives.

- The Deferred Annuity Account is responsible for future annuity payments to present inactive members.

This year's recommended transfer amounts are as follows:

Employer Accum. Account Before Transfers	Transfers as of July 1, 2020 (from) to:		Employer Accum. Account After Transfers
	Deferred Annuity Account	Retirement Reserve Account	
$105,504,540	$1,468,846	$6,620,987	$97,414,707

For the purposes of this valuation it was assumed that these transfers would be made.

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 5.75% on the actuarial value of assets), it is expected that:

1) The unfunded actuarial accrued liabilities will be fully amortized as shown on page A-3.
2) The funded status of the plan will increase gradually towards a 100% funded ratio.

When selecting a contribution allocation procedure, the following three items should be considered, including the balance amongst the three items: (1) benefit security, (2) intergenerational equity, and (3) contribution stability and predictability. Generally, given the nature of public employee retirement systems (i.e., level contribution financing objective and perceived ongoing nature of the plan or plan sponsor), intergenerational equity and contribution stability and predictability have received more consideration than benefit security when contribution allocation procedures are selected. However, given the importance of benefit security to any retirement system, we suggest that contributions to the System in excess of those presented in this report be considered.

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.

Short Condition Test

The AJRS 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 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) Member accumulated contributions;
2) The liabilities for future benefits to present retired lives; and
3) The employer financed portion of liabilities for service already rendered by non-retired members.

In a system that has been following the discipline of level percent-of-payroll financing, active member contributions (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets. 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.

Short Condition Test – Comparative Statement

Valuation Date June 30	Entry Age Accrued Liability (1) Active Members Contr.	(2) Retirees and Benef.	(3) Active Member (Employer Financed Portion)	Present Assets	Portion of Present Values Covered by Present Assets (1)	(2)	(3)	Total	Market Value Total
	($ in Thousands)								
1996(a)	$ 4,828	$32,063	$26,561	$ 51,478	100%	100%	55%	81%	
1997	5,418	33,295	26,944	63,284	100%	100%	91%	96%	
1998	6,067	33,218	31,989	77,175	100%	100%	118%	108%	
1999(a)	6,817	38,040	37,919	91,783	100%	100%	124%	111%	
2000(a)	7,740	39,255	36,217	107,059	100%	100%	166%	129%	
2001(a)	8,522	54,712	52,839	119,191	100%	100%	106%	103%	
2002(a)	9,316	54,216	61,202	124,212	100%	100%	99%	99%	
2003	10,147	74,060	53,718	126,520	100%	100%	79%	92%	
2004	10,948	74,227	56,600	129,065	100%	100%	78%	91%	
2005	10,254	79,560	60,766	135,062	100%	100%	74%	90%	
2006	11,078	79,739	65,692	145,050	100%	100%	83%	93%	
2007(a)	11,906	82,165	63,302	159,587	100%	100%	103%	101%	
2008	11,825	81,712	72,211	169,061	100%	100%	105%	102%	
2009(a)	12,689	103,249	64,227	167,433	100%	100%	80%	93%	73%
2010	11,474	102,200	69,238	165,244	100%	100%	74%	90%	78%
2011	11,822	102,379	72,434	165,377	100%	100%	71%	89%	92%
2012(a)	12,356	107,413	75,685	167,796	100%	100%	63%	86%	87%
2013	12,397	114,770	75,967	182,596	100%	100%	73%	90%	94%
2014(a)	13,310	113,468	81,228	201,792	100%	100%	92%	97%	105%
2015(a)	12,665	143,898	98,150	215,448	100%	100%	60%	85%	88%
2016	13,337	142,743	104,441	225,254	100%	100%	66%	86%	83%
2017 (a)	13,261	161,761	95,360	238,956	100%	100%	67%	88%	89%
2018	14,196	162,018	102,961	249,096	100%	100%	71%	89%	92%
2019	14,957	160,858	108,673	260,671	100%	100%	78%	92%	94%
2020	**15,745**	**163,177**	**117,732**	**277,318**	**100%**	**100%**	**84%**	**93%**	**95%**

(a) After changes in benefit provisions and/or actuarial assumptions and methods.

Risk Commentary

The determination of the actuarial accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the actuarial measurements that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; 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. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. **Investment Risk** – The risk that actual investment returns may differ from the expected investment returns. For AJRS, this risk is enhanced since the required level of assets to support the provided benefits is approximately 12 times payroll.
2. **Inflation Risk** – The risk that actual salaries and total payroll may differ from expected due to inflation, resulting in actual future accrued liability and contributions differing from expected. For AJRS, this risk is enhanced since the COLA of certain retired members is based upon the salary increase of certain active members.
3. **Longevity Risk** – The risk that members may live longer or shorter than expected and receive pensions for a period of time other than assumed.
4. **Other Demographic Risks** – The risk that members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Various plan maturity measures are included in Section A of this report (e.g., active members per retired lives on page A-5).

Presented on the following page is a summary of additional risk measures for AJRS.

Summary of Risk Measures

Valuation Date June 30,	Funded Ratio Based on AVA	Funded Ratio Based on MVA	UAAL Amortization Period	Total UAAL / Total Payroll	Total Actuarial Value of Assets / Total Payroll	Total AAL/ Total Payroll	Standard Deviation of Investment Return / Total Payroll
2016	86%	83%	27	1.6	10.1	11.7	**
2017	88%	89%	15/20	1.4	10.4	11.8	115.6%
2018	89%	92%	*	1.3	10.6	11.9	120.4%
2019	92%	94%	*	1.0	11.0	12.1	124.6%
2020	93%	95%	*	0.8	11.3	12.1	125.6%

* *Unfunded actuarial accrued liabilities are amortized as described on page A-3.*

** *Unavailable.*

Funded Ratio: This is the most widely known measure of a plan's financial strength. In most circumstances, the trend in the funded ratio is much more important than the absolute ratio. A trend approaching 100% is desirable. This measure is presented for more years on page F-1.

UAAL Amortization Period: Based upon the current economic assumptions, amortization periods at or above about 24 years indicate that the UAAL payment is less than the interest on the UAAL. This situation is referred to as "negative amortization." Negative amortization is increasingly viewed as undesirable.

UAAL / Total Payroll: The ratio of UAAL to payroll gives an indication of the plan sponsor's ability to pay off the UAAL. A declining ratio is desirable. A ratio above approximately 3.0 or 4.0 may indicate difficulty in discharging the unfunded liability in some circumstances.

Funding Value of Assets / Total Payroll: The ratio of assets to payroll gives an indication of both maturity and volatility. A high ratio can indicate volatility of contribution rates or amortization period. This measure is presented for more years on page A-6.

Total AAL / Total Payroll: This is similar to above. It illustrates the expected ratio of assets to payroll when the plan has a funded ratio of 100%.

Standard Deviation of Investment Return / Total Payroll: The portfolio standard deviation measures the volatility of investment return. When divided by payroll it gives the effect of a one standard deviation asset gain or loss as a percent of payroll. This theoretically may happen once every 6 years.

SECTION B

VALUATION DATA

Summary of Provisions Considered
(July 1, 2020)

Tier One	Tier Two
Description	
Elected or appointed prior to the effective date of Act 399 of 1999 and who do not elect to participate in Tier Two.	Elected or appointed after the effective date of Act 399 of 1999 or elected to participate in Tier Two.
Regular Retirement	
An active member may retire at age 65 with 10 or more years of credited service, or after 20 years of credited service regardless of age. Persons who become members after June 30, 1983 must also have at least 8 years of actual service as a justice of the Supreme Court, or as a judge of the Circuit or Chancery Courts or the Court of Appeals.	An active member or former member may retire at age 65 with 8 or more years of credited service, or after 20 years of credited service regardless of age.
Compulsory Retirement	
Any judge or justice who attains 70 years of age during a term of office to which he has been elected may complete the term without forfeiting rights to retirement benefits. Any judge or justice who is not eligible to retire at age 70 may continue to serve as judge until completion of the term in which there has accrued sufficient credited service to retire. Otherwise, judges or justices must retire by their 70th birthday or lose their retirement benefits.	Any judge or justice who attains 70 years of age during a term of office to which he has been elected may complete the term without forfeiting rights to retirement benefits. Any judge or justice who is not eligible to retire at age 70 may continue to serve as judge until completion of the term in which there has accrued sufficient credited service to retire. Otherwise, judges or justices must retire by their 70th birthday or lose their retirement benefits.
Final Salary	
The annual salary for the last judicial office held.	The annual salary for the last judicial office held.
Age & Service Annuity	
60% of the judge's final salary, for life. Each year of additional service after twenty (20) years of judicial service, the benefit shall be increased by two and one-half percent (2.5%) with a maximum benefit payable of seventy-five percent (75%) of the judge's final salary.	3.2% of the salary of the last judicial office held multiplied by the number of years of service not to exceed 80% of the salary of the last judicial office held.

Summary of Provisions Considered (Continued)

Tier One	Tier Two
Deferred Retirement	
An inactive member who has 14 or more years of credited service and left judicial service before attaining age 65 will be entitled to an age and service annuity beginning at age 65. Persons who become members after June 30, 1983 must also have at least 8 years of actual service as a justice of the Supreme Court, or as a judge of the Circuit or Chancery Courts or the Court of Appeals.	An inactive member who has 8 or more years of credited service and left judicial service before attaining age 65 will be entitled to an age and service annuity beginning at age 65.
Disability Retirement	
An active member with 3 or more consecutive years of credited service who becomes totally and permanently disabled may be retired and receive a disability annuity computed in the same manner as an age and service annuity. The 3 years of service is not required for persons who were members before July 1, 1983.	An active member with 3 or more consecutive years of credited service who becomes totally and permanently disabled may be retired and receive a disability annuity computed in the same manner as an age and service annuity, except that the benefit shall not be less than 25.6% of final salary.
Early Retirement	
A member who became a member before July 1, 1983 and who has 18 but less than 20 years credited service may retire, regardless of age, and receive an immediate annuity. The amount is the full age and service amount reduced proportionately for service less than 20 years. A member with 14 years of credited service may retire between ages 62 and 65 and receive an immediate annuity. The amount is the full age and service amount reduced 1/2 of 1% for each month that retirement age is younger than age 65. Persons who become members after June 30, 1983 must also have at least 8 years of actual service as a justice of the Supreme Court, or as a judge of the Circuit Court or Chancery Courts or the Court of Appeals.	A member with 8 years of credited service may retire between ages 62 and 65 and receive an immediate annuity. The amount is the full age and service amount reduced 1/2 of 1% for each month retirement age is younger than age 65.

Summary of Provisions Considered (Concluded)

Tier One	Tier Two
Survivor Benefits	
Upon the death of a member with 3 or more years of service, before or after retirement, an annuity of 67% of the judge's benefit is payable to the following survivors (shared if there is more than one eligible survivor): • A surviving spouse married to the judge more than 1 year at the time of death. • A minor child of the judge. The 3-year service requirement is not required of those who became members prior to July 1, 1983.	Upon the death of a member with 3 or more years of service, before or after retirement, an annuity of 67% of the judge's benefit, but not less than 17.152% of final salary, is payable to the following survivors (shared if there is more than one eligible survivor): • A surviving spouse married to the judge more than 1 year at the time of death. • A minor child of the judge. The 3-year service requirement is not required of those who became members prior to July 1, 1983.
Increases After Retirement	
For any person who was a member on or before June 30, 1983, the retirement benefits are increased or decreased from time to time as the salary for the particular judicial office is increased or decreased. For all judges or justices first elected after June 30, 1983, and who have received retirement benefits from the System for at least 12 full calendar months, the retirement benefits are increased each July 1st by 3%.	For all judges or justices who have received retirement benefits from the System for at least 12 full calendar months, the retirement benefits are increased each July 1st by 3%.
Member Contributions	
Active members contribute 6% of their salaries. Members with 20 or more years of service and members age 65 or older with 10 or more years of service do not contribute to the Retirement System. At any time a member is accruing the additional 2.5% of final salary benefit, member contributions would be required. If a member leaves service before becoming eligible to retire, accumulated contributions may be refunded.	Active members contribute 5% of their salaries. Members with 25 or more years of service do not contribute to the Retirement System. If a member leaves service before becoming eligible to retire, accumulated contributions may be refunded.

Summary of Reported Assets
June 30, 2020

Reserve Account Balances

Members Deposit Account	$ 15,744,793
Members Deposit Account Interest Reserve	698
Employer Accumulation Account	105,504,540
Retirement Reserve Account	156,555,891
Partial Purchase Service Reserve	0
Deferred Annuity Account	3,031,217
Total Applicable Assets (Market Value)	$ 280,837,139

Revenues & Expenditures

Total Assets Beginning of Year (Market Value)			$267,279,487
Revenues:	Member Contributions		1,138,323
	Employer Contributions	- Statutory	3,034,573
		- Act 922	5,143,150
		- Court fees	394,974
		- Other	0
	Service Purchase		1,129
	Investment Income		18,489,138
	Total Revenues		28,201,287
Expenditures:	Retirement Benefits Paid		13,440,774
	Refunds of Member Contributions		5,986
	Administrative Expenses		141,891
	Investment Expenses		1,054,984
	Other		0
	Total Expenditures		14,643,635
Total Assets End of Year (Market Value)			$280,837,139

Development of Funding Value of Assets

Valuation Date June 30:	2018	2019	2020	2021	2022	2023
A. Funding Value Beginning of Year	$238,955,509	$249,096,499	$260,671,375			
B. Market Value End of Year	256,508,130	267,279,487	280,837,139			
C. Market Value Beginning of Year	240,819,648	256,508,130	267,279,487			
D. Non-Investment Net Cash Flow	(3,474,121)	(3,884,430)	(3,876,502)			
E. Investment Return						
E1. Market Total: B-C-D	19,162,603	14,655,787	17,434,154			
E2. Assumed Rate	5.75%	5.75%	5.75%			
E3. Amount for Immediate Recognition	13,640,991	14,212,412	14,878,193			
E4. Amount for Phased-In Recognition	5,521,612	443,375	2,555,961			
F. Phased-In Recognition of Investment Return						
F1. Current Year: 0.25xE4	1,380,403	110,844	638,990			
F2. First Prior Year	3,514,774	1,380,403	110,844	$ 638,990		
F3. Second Prior Year	(3,759,127)	3,514,774	1,380,403	110,844	$ 638,990	
F4. Third Prior Year	(1,161,930)	(3,759,127)	3,514,775	1,380,403	110,843	$ 638,991
F5. Total Recognized Investment Gain	(25,880)	1,246,894	5,645,012	2,130,237	749,833	638,991
G. Funding Value End of Year						
G1. Preliminary Funding Value End of Year: A+D+E3+F5	249,096,499	260,671,375	277,318,078			
G2. Upper Corridor Limit: 125% x B	320,635,163	334,099,359	351,046,424			
G3. Lower Corridor Limit: 75% x B	192,381,098	200,459,615	210,627,854			
G4. Funding Value End of Year	249,096,499	260,671,375	277,318,078			
H. Difference Between Market & Funding Values	7,411,631	6,608,112	3,519,061			
I. Recognized Rate of Return	**5.7%**	**6.3%**	**7.9%**			
J. Market Value Rate of Return	8.0%	5.8%	6.6%			
K. Ratio of Funding Value to Market Value	97.1%	97.5%	98.7%			

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.

Retirees and Beneficiaries as of June 30, 2020
Tabulated by Attained Age

Attained Age	Retirees		Survivor Beneficiaries		Total	
	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances
51		$ -	1	$ 50,088	1	$ 50,088
57	2	54,624			2	54,624
61			1	39,036	1	39,036
62			4	315,276	4	315,276
64	2	198,816	2	127,380	4	326,196
65	3	254,544	2	125,412	5	379,956
66	1	85,572			1	85,572
67	2	111,324			2	111,324
68	2	132,264			2	132,264
69	3	389,172	2	141,912	5	531,084
70	4	390,384	1	72,384	5	462,768
71	5	489,288	2	177,852	7	667,140
72	6	689,892	1	103,740	7	793,632
73	3	298,776	1	79,032	4	377,808
74	7	762,504			7	762,504
75	7	798,168	4	292,296	11	1,090,464
76	5	411,288	2	122,760	7	534,048
77	9	776,832	1	76,200	10	853,032
78	4	485,064	2	154,980	6	640,044
79	4	479,916	2	140,340	6	620,256
80	3	143,232	2	171,720	5	314,952
81	4	397,512	1	67,572	5	465,084
82	2	272,820			2	272,820
83	5	553,764	1	73,008	6	626,772
84	3	311,916	1	77,148	4	389,064
85	5	611,412	3	219,108	8	830,520
86	3	336,216	2	138,528	5	474,744
87			1	69,264	1	69,264
88	2	223,296			2	223,296
89	1	111,072	1	69,264	2	180,336
90	2	210,960	1	82,620	3	293,580
91	1	117,036	1	69,264	2	186,300
92	1	103,368	1	69,264	2	172,632
93			1	73,104	1	73,104
94	1	165,240	1	69,264	2	234,504
95			1	70,932	1	70,932
TOTALS	**102**	**$ 10,366,272**	**46**	**$ 3,338,748**	**148**	**$ 13,705,020**

Retirees and Beneficiaries as of June 30, 2020
Tabulated by Attained Age (Concluded)

Type of Annuity	Number	Annual Annuities	Annuity Liabilities
Age & Service Retirees			
Life	12	$ 1,093,368	$ 10,977,975
Life Continuing to Survivor	88	9,128,304	115,327,016
Totals	100	10,221,672	126,304,991
Beneficiaries of Age & Service Retirees	41	3,040,596	30,893,382
Total Age & Service Retirees & Beneficiaries	141	13,262,268	157,198,373
Disability Retirees			
Life	1	97,728	792,540
Life Continuing to Survivor	1	46,872	638,649
Totals	2	144,600	1,431,189
Beneficiaries of Disability Retirees	0	0	0
Total Disability Retirees & Beneficiaries	2	144,600	1,431,189
Death-in-Service Beneficiaries	5	298,152	4,547,316
Total Retirees & Beneficiaries	**148**	**$ 13,705,020**	**$ 163,176,878**

	AJRS Retirees		
	July 1, 2019 through June 30, 2020		
	Age & Service	Disability	All Retirees
Number	3.0	NA	148
Average Age	67.3	NA	77.1
Average Service	21.0	NA	NA
Average Annual Benefit	$107,544	NA	$92,601

Included in the valuation were 8 inactive vested members.

Active Members as of June 30, 2020
by Attained Age and Years of Service
Tier One

Attained Age	Years of Benefit Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
50-54									$ -
55-59					2			2	344,596
60									
61									
62									
63									
64									
65									
66									
67					1	1		2	344,596
68							1	1	172,298
69					1		1	2	354,158
70					2	2		4	693,370
71					1			1	172,298
72						3		3	516,894
73						1	1	2	344,596
74									
75							1	1	172,298
76									
77					1			1	181,860
Totals					**8**	**7**	**4**	**19**	**$ 3,296,964**

		Averages			
Group	No.	Age	Benefit Service	Eligibility Service	Annual Pay
Tier One	19	69.4	26.9	29.6	$173,524

Active Members as of June 30, 2020
by Attained Age and Years of Service
Tier Two

Attained Age	Years of Benefit Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
35-39	1							1	$ 172,298
40-44	5	2						7	1,210,264
45-49	1	6	4					11	1,918,580
50-54	9	5	7	1				22	3,804,296
55-59	2	5	5	1	1	1		15	2,598,210
60		3		3				6	1,042,144
61	1		1					2	348,774
62		1		2				3	516,894
63			1	1				2	344,596
64		2	3	3				8	1,389,432
65		1		2				3	516,894
66			2	3	2	1		8	1,378,384
67	2	2	1					5	871,052
68	1	2	1		1	1		6	1,033,788
69		2		2		1	1	6	1,037,966
70		1	1				1	3	516,894
71	1		1	2			1	5	861,490
72			1			1		2	344,596
73		1	1	3	1			6	1,037,966
74				1				1	172,298
75									
76			1					1	172,298
Totals	**23**	**33**	**30**	**24**	**5**	**5**	**3**	**123**	**$ 21,289,114**

		Averages			
Group	No.	Age	Benefit Service	Eligibility Service	Annual Pay
Tier Two	123	59.6	11.3	16.1	$173,082

SECTION C

GAIN/(LOSS) RESULTS

Comments

Purpose of Gain/(Loss) Analysis. Regular actuarial valuations provide information about the composite change in unfunded actuarial accrued liabilities -- whether or not they 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 financial mechanism: 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) are volatile.

Changes in the 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***.

The Arkansas Judicial Retirement System had an experience gain during the 2019-2020 observation year. Details are reported on the following pages.

Changes in Unfunded Actuarial Accrued Liabilities
Derivation of Experience Gain (Loss)
Year Ended June 30, 2020

Actual experience will not (except by coincidence) coincide exactly with assumed experience. Gains and losses often cancel each other over a period of years, but sizable year-to-year fluctuations are common. Detail on the derivation of the experience gain (loss) is shown below:

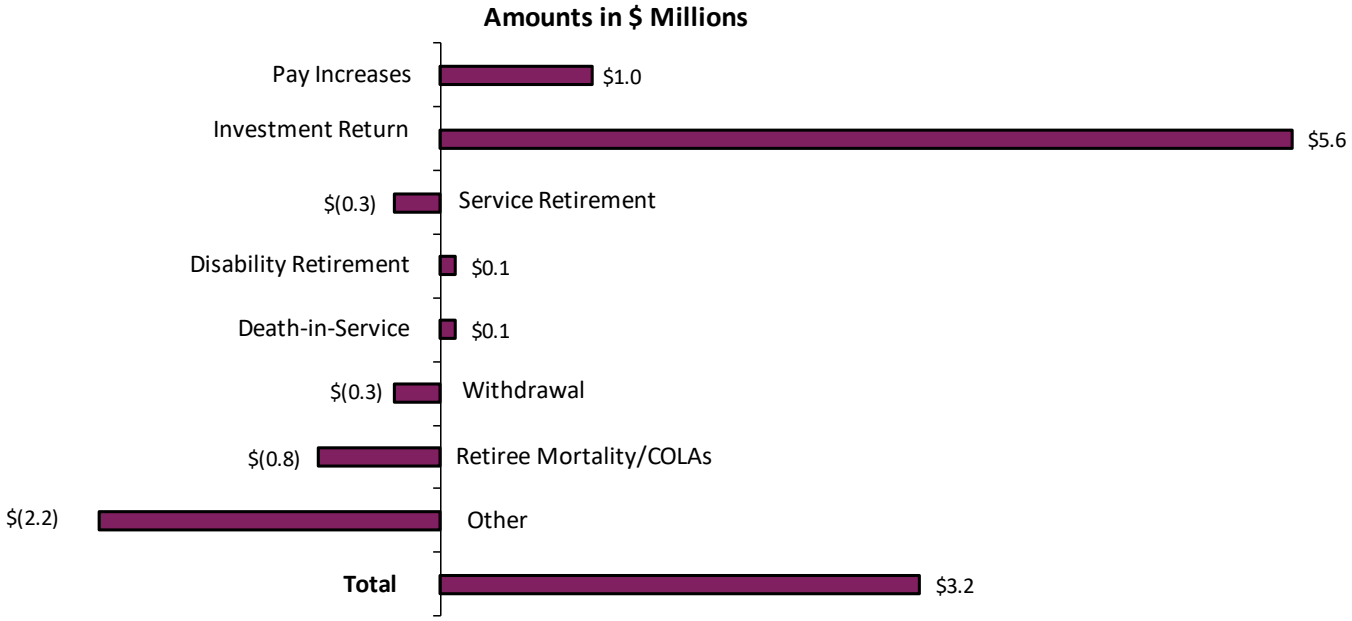
	2020	2019
1) UAAL* at start of year	$ 23,817,084	$ 30,078,181
2) Normal cost from last valuation	5,950,664	5,888,508
3) Employer contributions	8,572,697	8,233,959
4) Interest accrual: (1) * .0575 + [(2)-(3)]*.02875	1,294,099	1,662,064
5) Expected UAAL before changes: (1)+(2)-(3)+(4)	22,489,150	29,394,794
6) Change in benefits/assumptions/methods	0	0
7) Expected UAAL after changes: (5) + (6)	22,489,150	29,394,794
8) Actual UAAL at end of year	19,335,500	23,817,084
9) Gain(loss): (7) - (8)	3,153,650	5,577,710
10) Gain(loss) as percent of actuarial accrued liabilities at start of year: $284,488,459	1.1%	2.0%
Last year's accrued liability	$284,488,459	$279,174,680

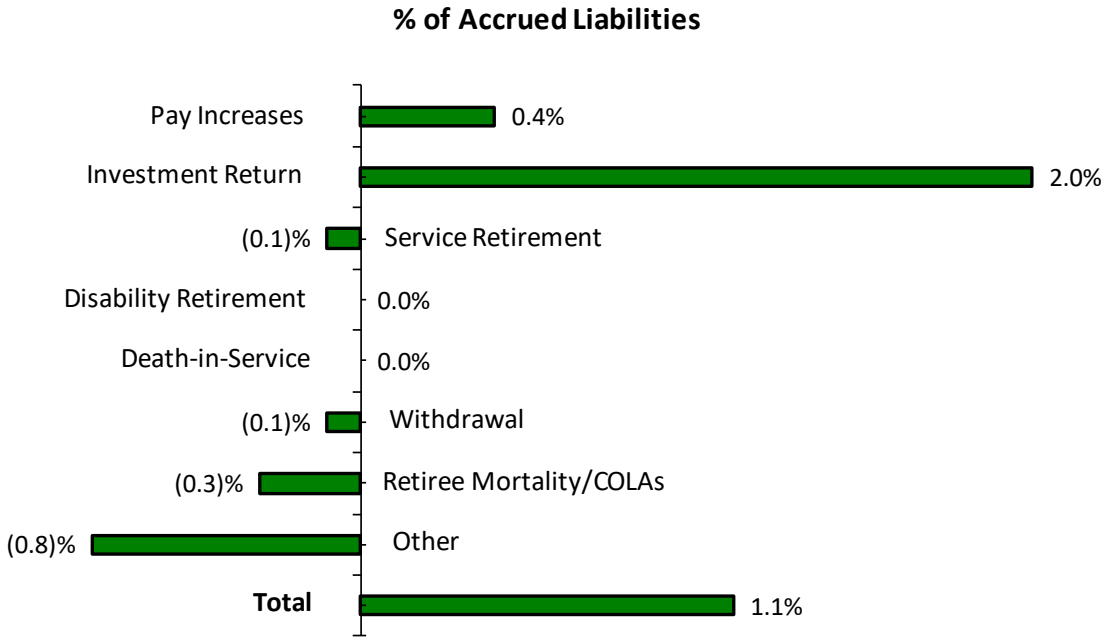
* *Unfunded actuarial accrued liability.*

Gain/(Loss) by Risk Area
During the Period July 1, 2019 to June 30, 2020

Type of Risk Area	Gain (Loss) During Year $ in Millions	Gain (Loss) During Year Percent of Liabilities
ECONOMIC RISK AREAS		
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a (loss).	$1.0	0.4 %
Investment Return. If there is greater investment return than assumed, there is a gain. If less return, a (loss).	5.6	2.0 %
NON-ECONOMIC RISK AREAS		
Age & Service Retirements. 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).	(0.3)	(0.1)%
Disability Retirements. If there are fewer disabilities than assumed, there is a gain. If more, a (loss).	0.1	0.0 %
Death-in-Service Benefits. If more liabilities are released by deaths-in-service than assumed, there is a gain. If less, a (loss).	0.1	0.0 %
Withdrawal. If more liabilities are released by other separations than assumed, there is a gain. If smaller releases, a (loss).	(0.3)	(0.1)%
Retiree Mortality/COLAs. If there are fewer deaths than assumed, there is a (loss). If more, a gain. This includes gains and losses related to Tier I pre-July 1, 1983 retired member increases.	(0.8)	(0.3)%
Other. Gains and losses resulting from group size change, data adjustments, timing of financial transactions, additional contributions and miscellaneous unidentified sources.	(2.2)	(0.8)%
Experience Gain/(Loss)	**$3.2**	**1.1 %**

Gain/(Loss) Experience
2019-2020 Year





Development of Gain/(Loss) from Recognized Investment Return* During the Period July 1, 2019 to June 30, 2020

		$ Millions
1.	Total Funding Value of Assets Beginning of Year	$260.7
2.	Total Funding Value of Assets End of Year	
	a. Actual	277.3
	b. If net investment return had been 5.75%	271.7
3.	Gain (Loss): 2a minus 2b	$5.6

* *Recognized "investment return" as used in this Gain/(Loss) Analysis means assumed investment income plus a four-year phase-in of differences between actual market rate of return and the assumed rate of return.*

Members Who Separated from Active Employment During the Period July 1, 2010 to June 30, 2020

Year	Number Added During Year	Terminations During the Year										Active Members End of Year
		Normal Retirement		Disability Retirement		Died-in Service		Withdrawals				
								Vested	Other	Total		
		A	E	A	E	A	E	A	A	A	E	
2011	13	3	14.4	0	0.2	1	0.3	1	3	4	1.3	141
2012	4	3	14.7	0	0.2	0	0.4	1	1	2	1.6	140
2013	13	6	14.6	0	0.2	0	0.3	0	7	7	1.3	140
2014	1	0	16.0	0	0.2	0	0.3	1	0	1	1.4	140
2015	19	14	17.9	0	0.2	1	0.4	5	0	5	1.0	139
2016	3	0	14.8	0	0.2	3	0.4	0	0	0	1.2	139
2017	13	7	16.5	0	0.2	0	0.4	1	4	5	0.9	140
2018	2	2	3.0	0	0.1	0	0.6	1	0	1	1.9	139
2019	11	0	10.2	0	0.1	2	0.7	1	7	8	1.7	140
2020	6	2	3.4	0	0.2	1	0.8	0	1	1	1.6	142
10 Year Totals	85	37	125.5	0	1.9	8	4.6	11	23	34	###	

A = Actual
E = Expected

Members Active Both Beginning and End of Year
Salary Increases by Age Group
During the Period of July 1, 2019 to June 30, 2020

Age Groups	Percent Increase
35-39	2.5%
40-44	2.5%
45-49	2.5%
50-54	2.5%
55-59	2.5%
60-64	2.5%
65-69	2.5%
70-74	2.5%

SECTION D

ACTUARIAL METHODS AND ASSUMPTIONS

Summary of Assumptions Used for Arkansas Judicial Actuarial Valuations Assumptions Adopted by Board of Trustees After Consulting with the Actuary

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, 2011 through June 30, 2016 (please see report dated May 2, 2017). The actuarial assumptions represent estimates of future experience.

Economic Assumptions

The investment return rate used in making the valuation was 5.75% per year, compounded annually (net after investment expenses). Adopted 2017.

Pay increase assumptions for individual active members are shown on page D-3. Part of the assumption for each age is for a merit and/or seniority increase, and the other 3.25% recognizes wage inflation. This wage inflation assumption consists of 2.50% for price inflation and 0.75% for real wage growth. Adopted 2015 and readopted 2017.

Total active member payroll is assumed to increase 3.25% a year, which is the portion of the individual pay increase assumptions recognizing inflation.

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

Non-Economic Assumptions

The healthy mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the RP-2014 Healthy Annuitant table for males and females, adjusted for mortality improvement back to the observation period base year of 2006. The ***disabled retiree mortality tables***, for post-retirement mortality, used in evaluating allowances to be paid were the RP-2014 disabled mortality table for males and females, adjusted for mortality improvement back to the observation period base year of 2006. The ***pre-retirement mortality tables*** used were the RP-2014 employees mortality table for males and females, adjusted for mortality improvement back to the observation period base year of 2006. It was assumed that 100% of pre-retirement deaths would be non-duty related. Mortality rates for a particular calendar year are determined by applying the MP-2016 improvement scale to the above described tables. Related values are shown on pages D-3 and D-5. Adopted 2017.

(Concluded on the following page.)

Summary of Assumptions Used for Arkansas Judicial Actuarial Valuations Assumptions Adopted by Board of Trustees After Consulting with the Actuary (Concluded)

The probabilities of retirement for members eligible to retire are shown on page D-4. Adopted 2017.

The probabilities of withdrawal from service, ***death-in-service*** and ***disability*** are shown for sample ages on page D-3. Adopted 2017.

Normal Cost. Normal Cost and the allocation of benefit values between service rendered before and after the valuation date was determined using an individual entry-age actuarial cost method having the following characteristics.

- The annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement; and
- Each annual normal cost is a constant percentage of the member's year-by-year projected covered pay.

The normal cost, the present value of future normal cost and the present value of benefits are based on the benefit levels available to each member. The accrued liability is the difference between the present value of benefits and the present value of future normal cost.

Funding value of assets (cash & investments) was determined by phasing-in differences between actual market return and the assumed rate of return over a four-year period.

The data about persons now covered and about present assets was 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).

Decrement and Pay Increase Assumptions for Active Members June 30, 2020

2020 Sample Ages	Years of Service	Percent of Active Members Separating Within the Next Year					Pay Increase Assumptions for Individual Member		
		Male		Female			Merit &	Base	Increase
		Death	Disability	Death	Disability	Withdrawal	Seniority	(Economic)	Next Year
	0					6.00%			
	1					6.00%			
	2					6.00%			
	3					6.00%			
	4					6.00%			
30	5+	0.05%	0.04%	0.02%	0.05%	1.00%	0.00%	3.25%	3.25%
35		0.05%	0.04%	0.03%	0.05%	1.00%	0.00%	3.25%	3.25%
40		0.06%	0.10%	0.04%	0.18%	1.00%	0.00%	3.25%	3.25%
45		0.09%	0.13%	0.06%	0.20%	1.00%	0.00%	3.25%	3.25%
50		0.16%	0.25%	0.10%	0.28%	1.00%	0.00%	3.25%	3.25%
55		0.27%	0.45%	0.17%	0.38%	1.00%	0.00%	3.25%	3.25%
60		0.47%	0.71%	0.26%	0.51%	1.00%	0.00%	3.25%	3.25%
65		0.85%	0.83%	0.38%	0.62%	1.00%	0.00%	3.25%	3.25%

The pay increase assumptions are age based only, and not service based.

Probabilities of death are for calendar year 2020.

Probabilities of Retirement for Members Eligible to Retire
June 30, 2020

Early Retirement

Retirement Ages	Percent of Eligible Active Members Electing Early Retirement Within Next Year
62	2%
63	2%
64	2%

Normal Retirement

1) For ages under 70, a 4% probability of retirement is used.
2) For ages 70 and over
    a. If the future year of consideration is an odd year, then a 4% probability of retirement is used.
    b. If the future year of consideration is an even year,
        i. For members under the age of 76, a 33% probability of retirement is used.
        ii. For members ages 76 or older, a 100% probability of retirement is used.

For Tier One, a member was assumed eligible to retire at age 50 with 20 years of service, or at age 65 with 10 years of service. A member was assumed eligible to retire early at age 62 with 14 years of service.

For Tier Two, a member was assumed eligible to retire at age 50 with 20 years of service, or at age 65 with 8 years of service. A member was assumed eligible to retire early at age 62 with 8 years of service.

Single Life Retirement Values
June 30, 2020

Attained Age in 2020	Percent Dying Next Year		Present Value of $1 Monthly for Life Increasing 3% Annually		Future Life Expectancy (Years)	
	Men	Women	Men	Women	Men	Women
50	0.3874%	0.2633%	$235.52	$245.57	34.79	37.37
55	0.5565%	0.3684%	217.47	228.22	30.02	32.43
60	0.7846%	0.5543%	196.97	208.22	25.44	27.64
65	1.1345%	0.8287%	174.18	185.77	21.08	23.07
70	1.6906%	1.2745%	149.37	160.89	16.99	18.73
75	2.6731%	2.0720%	123.06	134.04	13.20	14.68
80	4.4887%	3.5404%	96.50	106.52	9.81	11.03

Probabilities of death are for calendar year 2020.

Sample Attained Ages	$100 Benefit Increasing 3% Annually	Portion of Age 65 Lives in 2020 Still Alive	
		Men	Women
65	$100.00	100%	100%
70	115.93	94%	95%
75	134.39	85%	88%
80	155.80	73%	79%
85	180.61	57%	65%

Summary of Assumptions Used
June 30, 2020
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. 80% of members are assumed to be married at retirement. Male spouses are assumed to be six years older than female spouses for active member valuation purposes. Actual data is used for retired 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.
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.
Decrement Operation:	Disability and withdrawal do not operate during retirement eligibility.
Normal Form of Benefit:	The assumed normal form of benefit is the 67% joint and survivor 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.
Tier 1 2.5% Benefit Multiplier Election:	For present value of future benefit purposes, it was assumed that all Tier 1 members will elect to accrue the additional 2.5% benefit multiplier (if they have not already done so). Member contribution rates are based upon those members that have elected to accrue the additional 2.5% benefit multiplier as of the valuation date.
Administrative Expenses:	The computed contribution rate was increased by 0.7% of payroll to fund for administrative expenses.
Additional Adjustments:	The actuarial accrued liabilities were increased by $4.3 million to reflect potential future salary/COLA increases in excess of the actuarial assumptions.

SECTION E

FINANCIAL PRINCIPLES

Financial Principles and Operational Techniques of AJRS

Promises Made and to be Paid for. As each year is completed, AJRS in effect hands an "IOU" to each member then acquiring a year of service credit -- the "IOU" says: "The Arkansas Judicial 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 AJRS financing intends that this year's taxpayers contribute the money to cover the IOUs being handed out this year. With this financial objective, ***funds are accumulated during the members' working years which, when combined with investment income, will be sufficient to pay benefits throughout the years of retirement.***

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 inherent feature of a pre-funded program 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 accrued liabilities are the difference between liabilities for service already rendered and accrued assets).

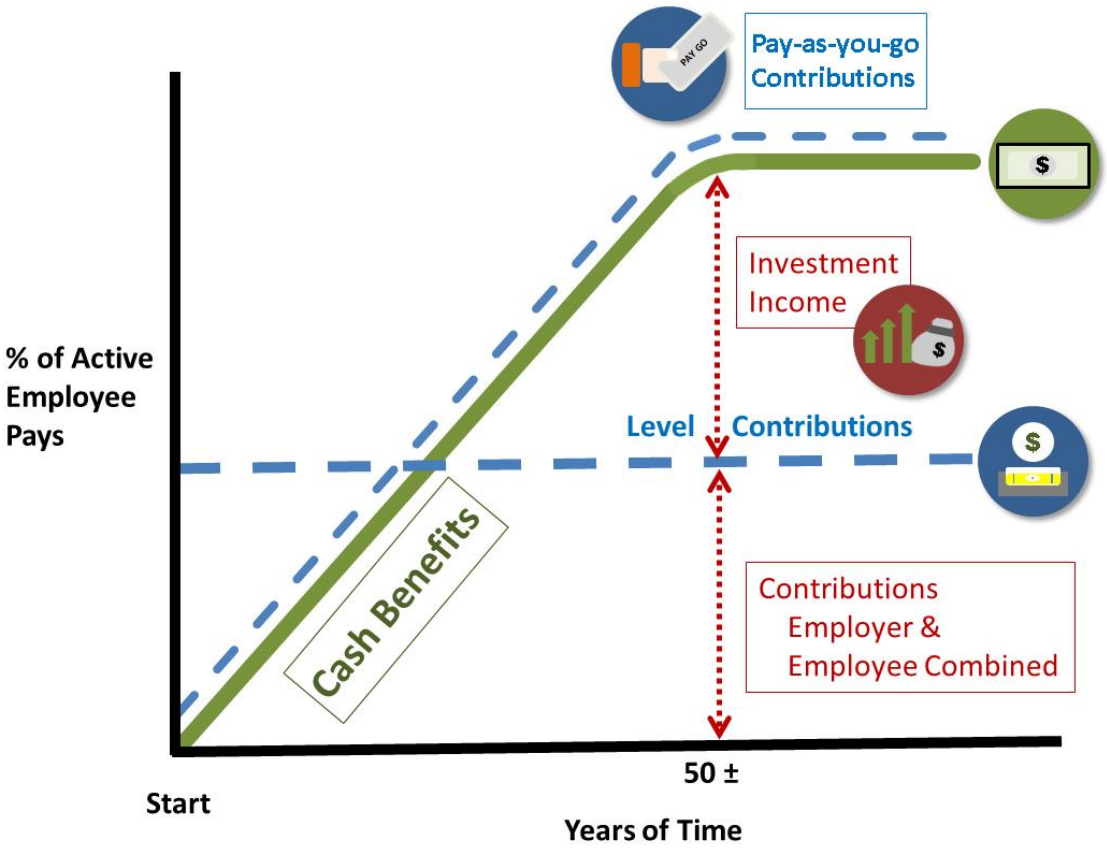
Computing Contributions to Support Fund Benefits. From a given schedule of benefits and from employee and asset data, the actuary calculates the contribution rates to support the benefits by means of ***an actuarial valuation and a funding method***.

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 Board of Trustees 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 precision.

AJRS 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 page E-3 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 Social Security) which is an ***increasing contribution method***; and the ***level contribution method*** which equalizes contributions between the generations.

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

A. ***Census Data***, furnished by the plan administrator.

Retired lives now receiving benefits

Former members with vested benefits not yet payable

Active members

B. \+ ***Asset data*** (cash & investments), furnished by the plan administrator

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*** (the long-term, planned pattern for employer contributions)

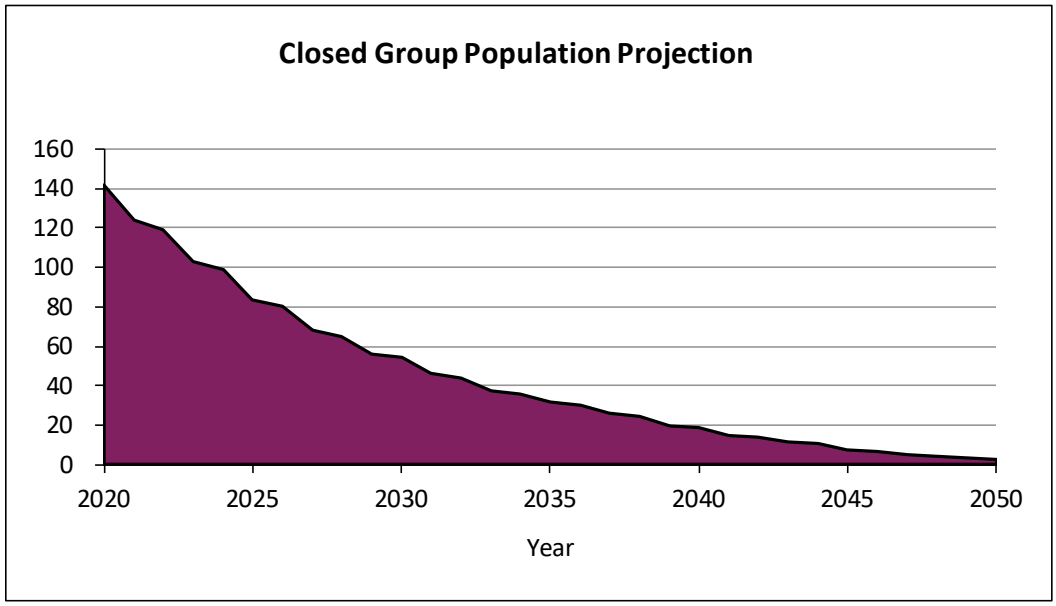
F. \+ ***Mathematically combining the assumptions, the funding method, and the data***

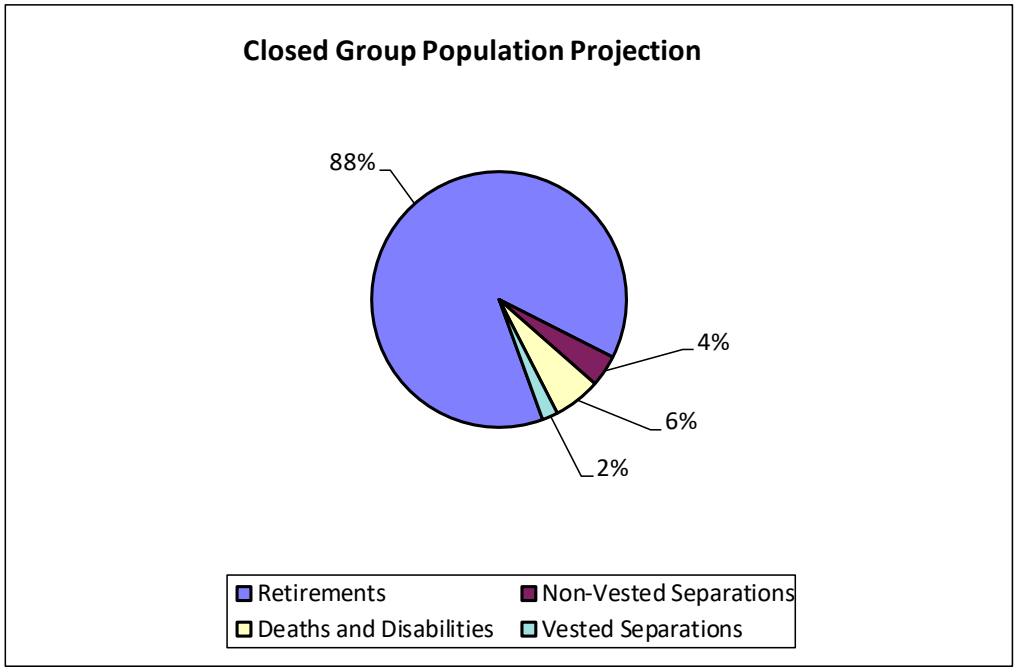
G. = Determination of:

Plan financial position; and/or

New Employer Contribution Rate

Expected Development of Present Population
June 30, 2020





The charts above show the expected future development of the present population in simplified terms. The Retirement System presently covers 142 active members. Eventually, 4% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. Approximately 90% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or retiring from vested deferred status. About 6% of the present population is expected to become eligible for death-in-service or disability benefits. Within 8 years, over half of the covered membership is expected to consist of new hires.

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.

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.

Glossary
(Concluded)

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.

SECTION F

REQUIRED SUPPLEMENTAL INFORMATION

Schedule of Funding Progress

($ Thousands)

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)]
6/30/99	$ 91,783	$ 82,776	($9,007)	110.9 %	$13,891	-
6/30/00	107,059	83,211	(23,848)	128.7 %	14,371	-
6/30/01	119,191	116,073	(3,118)	102.7 %	14,869	-
6/30/02	124,212	124,734	522	99.6 %	15,487	3 %
6/30/03	126,520	137,925	11,405	91.7 %	15,935	72 %
6/30/04	129,065	141,775	12,710	91.0 %	16,282	78 %
6/30/05	135,062	150,580	15,519	89.7 %	16,638	93 %
6/30/06	145,050	156,510	11,459	92.7 %	17,009	67 %
6/30/07	159,587	157,373	(2,215)	101.4 %	17,334	-
6/30/08	169,061	165,747	(3,314)	102.0 %	18,074	-
6/30/09	167,433	180,166	12,732	92.9 %	18,875	67 %
6/30/10	165,244	182,912	17,668	90.3 %	18,630	95 %
6/30/11	165,377	186,635	21,258	88.6 %	19,338	110 %
6/30/12	167,796	195,455	27,658	85.8 %	19,202	144 %
6/30/13	182,596	203,134	20,537	89.9 %	19,586	105 %
6/30/14	201,792	208,006	6,213	97.0 %	19,782	31 %
6/30/15	215,448	254,714	39,266	84.6 %	22,308	176 %
6/30/16	225,254	260,522	35,268	86.5 %	22,308	158 %
6/30/17	238,956	270,382	31,426	88.4 %	22,918	137 %
6/30/18	249,096	279,175	30,078	89.2 %	23,435	128 %
6/30/19	260,671	284,488	23,817	91.6 %	23,603	101 %
6/30/20	**277,318**	**296,654**	**19,336**	**93.5 %**	**24,586**	**79 %**

Schedule of Employer Contributions

Year Ended June 30	Annual Required Contribution	Percent Contributed
1999	$3,160,812	100%
2000	3,183,709	100%
2001	3,136,072	100%
2002	3,319,233	100%
2003	4,065,638	100%
2004	4,126,190	100%
2005	4,774,986	100%
2006	4,904,699	100%
2007	5,182,016	100%
2008	5,144,958	100%
2009	4,466,571	100%
2010	4,667,612	100%
2011	5,220,623	100%
2012	5,465,079	100%
2013	5,672,291	100%
2014	6,117,327	100%
2015	5,690,381	100%
2016	5,561,289	100%
2017	8,485,361	100%
2018	8,421,173	100%
2019	8,233,959	100%
2020	**8,572,697**	**100%**

Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest valuation date follows:

Valuation Date	June 30, 2020
Actuarial Cost Method	Entry Age
Amortization Method	Level Percent-of-Payroll
Remaining Amortization Period	Variable, please refer to page A-3
Asset Valuation Method	4-year smoothed market with 25% corridor
Actuarial Assumptions:	
Investment Rate of Return	5.75%
Projected Salary Increases	3.25%
Including Price Inflation at	2.50%
Cost-of-Living Adjustments	Pre July 1, 1983 Retirees: Increased with increases in active Judges pay. Post June 30, 1983 Retirees: 3.0%, Compound.

Retirees and beneficiaries receiving benefits	148
Terminated plan members entitled to but not yet receiving benefits	8
Active plan members	142
Total	298

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October 29, 2020

Mr. Duncan Baird
Executive Director
Arkansas Judicial Retirement System
One Union National Plaza
124 West Capitol, Suite 400
Little Rock, Arkansas 72201

Re: Arkansas Judicial Retirement System - Annual Actuarial Valuation and 2019/2020 Gain/(Loss) Analysis of Financial Experience

Dear Duncan:

Enclosed are 20 copies of this report.

Sincerely,

Mita D. Drazilov, ASA, FCA, MAAA

MDD:rmn
Enclosures

One Towne Square | Suite 800 | Southfield, Michigan 48076-3723