



Arkansas Bureau of Legislative Research 9/30/24 Actuarial Report – Key Findings

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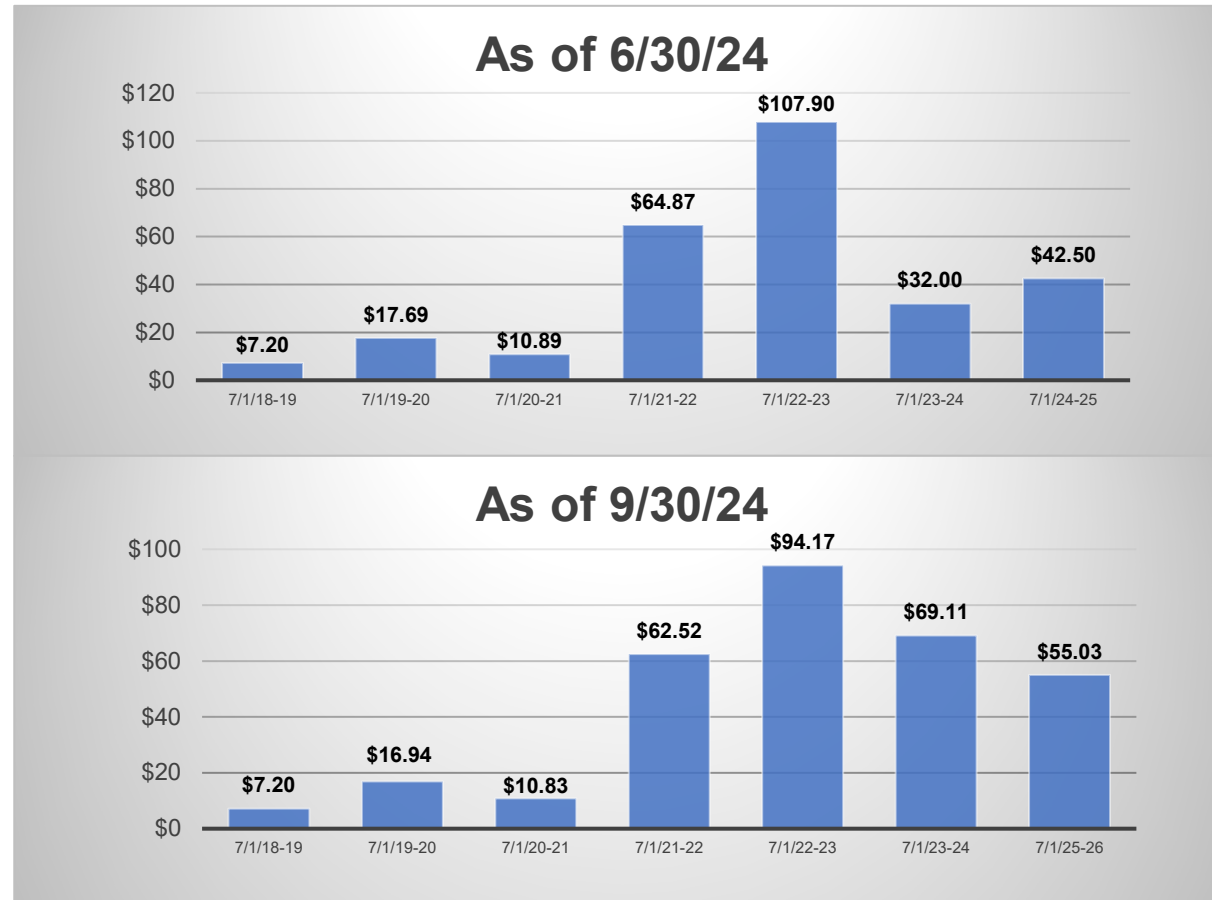


Key Findings

- 1 7/1/23-24 Costs Higher than Expected
- 2 Large Claims at end of 7/1/23-24 Year
- 3 Flood & Earthquake Modeled Losses
- 4 Conclusions



Change in Losses - 6/30/24 to 9/30/24



Notes:

1. As of 6/30/24, 7/1/23-24 claims appeared lower than the two prior years.
2. Between 6/30/24 and 9/30/24, large claims emerged at the end of the 7/1/23-24 year which changed prior view of the year.
3. With now three consecutive high costs years, we adjusted model inputs producing a higher estimate for 7/1/25-26.
4. 10.3% higher property values for 7/1/25-26 compared to 7/1/24-25 contributed to the increase.



Claims Occurring Late in 7/1/23-24 Year

Change in Claim Values from 6/30/24 to 9/30/24



Entity (1)	Date of Loss (2)	Policy Period (3)	Claim Number (4)	Claimant (5)	Cause of Loss (6)	Change in Value 6/30/24 to 9/30/24		
						Paid Loss & ALAE (13)	Case Reserve (14)	Reported Incurred Loss & ALAE (15)
AMAIT	01/17/24	7/1/23-24	172554	UA - Medical Sciences (UAMS)	Freezing	3,617	400,000	403,617
AMAIT	05/17/24	7/1/23-24	173616	Office of Secretary of State	Fire	1,766,325	-874,142	892,183
AMAIT	05/26/24	7/1/23-24	173645	Northwest Arkansas Community College	Wind/Hail	120,143	3,700,000	3,820,143
APSIT	05/26/24	7/1/23-24	24-0034	Rogers SD	Wind	5,500,000	14,475,000	19,975,000
APSIT	05/26/24	7/1/23-24	24-0035	Ozark Unlimited Coop	Wind	500,000	1,500,500	2,000,500
Total						7,890,086	19,201,358	27,091,444



Catastrophe Models use a variety of data to simulate potential catastrophic events and estimate the resulting financial losses across a portfolio of assets. Used to support insurance pricing and underwriting and reinsurance buying decisions. Three vendors: RMS, AIR, CoreLogic

<u>Exposure Data</u>	<u>Hazard Data</u>	<u>Vulnerability Data</u>
- Location/Address - geocoding - Building Characteristics – occupancy, construction type, age, # stories, roof type, etc. - Property Value	- Historical weather/event data – hurricane tracks, earthquake magnitudes, flood levels, storm surge, etc. - Topographical data – elevation, slope, flood zone - Geological Data – fault lines, soil composition	- Damage functions (relationship between hazard intensity and damage level for different building types) - Socioeconomic factors (population density, infrastructure quality)

The models simulate thousands of potential catastrophic events based on historical data and statistical analysis, varying parameters like location, intensity, and duration.

For each simulated event, the model calculates the potential damage to exposed assets based on their location, construction type, and the intensity of the hazard

Average Annual Loss (AAL): expected average loss per year



Modeled vs. Actual Average Annual Loss (AAL)



Peril	Historical vs Modeled Average Annual Loss *			
	AMAIT	APSIT	ASBA	Total
(1) Total Severe Storm				
(a) Modeled AAL	12,232,609	7,545,860	10,981,167	30,759,636
(b) Historical AAL	1,346,723	6,587,302	19,472,409	27,406,433
(2) Earthquake				
(a) Modeled AAL	3,305,413	1,412,798	3,917,709	8,635,920
(b) Historical AAL	0	161	141	302
(3) Flood				
(a) Modeled AAL	18,873,408	4,242,844	3,548,943	26,665,195
(b) Historical AAL	649,641	161,825	156,183	967,650
(4) Earthquake and Flood (2)+(3)				
(a) Modeled AAL	22,178,821	5,655,642	7,466,652	35,301,115
(b) Historical AAL	649,641	161,986	156,324	967,952
(5) Number of Years of Historical Data	23	21	16	



1. Projected losses for the 7/1/25-26 fiscal year based on claim data through 9/30/24 are significantly higher (> 30%) above our prior estimate for the 7/1/24-25 fiscal year.
2. Large claims occurring just prior to 6/30/24 and not fully reflected in the data until 9/30/24 is the cause, along with exposure (insured values) growth of 10.3%.
3. Actual earthquake and flood losses over the past 16-23 fiscal years have been minimal and well below modeled losses (by nearly \$35 million per year). This represents an opportunity for retaining risk over time