ARKANSAS STATE HIGHWAY EMPLOYEES RETIREMENT SYSTEM (ASHERS)

ACTUARIAL VALUATION
AS OF JUNE 30, 2026

Osborn, Carreiro & Associates, Inc.
ACTUARIES ● CONSULTANTS ● ANALYSTS
124 West Capitol Avenue, Suite 1690
Little Rock, AR 72201 (501)376-8043

Osborn, Carreiro & Associates, Inc.

ACTUARIES ● CONSULTANTS ● ANALYSTS

One Union National Plaza, Suite 1690
124 West Capitol Avenue
Little Rock, Arkansas 72201
(501)376-8043 fax (501)376-7847

October 15, 2026

Board of Trustees
Arkansas State Highway Employees
Retirement System (ASHERS)
P. O. Box 2261
Little Rock, AR 72203

RE: Actuarial Valuation as of June 30, 2026

Ladies and Gentlemen:

This report presents the results of our actuarial valuation of the assets and liabilities of the Arkansas State Highway Employees Retirement System (ASHERS) as of June 30, 2026. This valuation determines the contributions for the 2026-27 Plan Year (July 1, 2026 to June 30, 2027). The primary purposes of the valuation report are to determine the adequacy of the current employer contribution rate, to describe the current financial condition of ASHERS, and to analyze changes in the condition of the system.

This report together with the GASB report and the information presented in person to the board should be considered together as the complete report.

Actuarial Status of Plan

The funded status of the plan increased from 81.11% to 83.59% this year (about 90% on a market value basis). This is the ratio of the actuarial value (smoothed) assets to the actuarial accrued liabilities of the plan. This is detailed in the report. The equivalent funding period has decreased from 21 to 16 years based on current contributions. The total contribution rate for fiscal 2027 is projected to be just about the Actuarially Determined Contribution and above the 18-year period to fully fund the unfunded actuarial accrued liabilities.

Funding Policy

The Board adopted a funding policy which would define the Actuarially Determined Contribution on November 7, 2023 for use beginning with the 2023 valuation. It formalizes the definition of four metrics the Board will review each year. These metrics are included in the format of the Executive Summary and Discussion and the Determination of Contribution Rate.

Accounting Information

A separate report with the reporting standard of GASB Statement 67 and 68 based on the same assumptions and methods will be sent under separate cover.

Organization of Report

Following this cover letter and a table of contents, there is an Executive Summary of the results of the valuation as well as a discussion of the highlights. The Exhibits that follow show the details of the calculations. The Appendices disclose the plan provisions and assumptions used.

Assumptions

There were no changes in plan provisions or assumptions reflected in this valuation. The last change in assumptions was reflected in the June 30, 2021 actuarial valuation.

Statement of Qualifications

This report has been prepared by actuaries who have experience valuing public employee retirement systems, with the undersigned taking the primary responsibility. To the best of our knowledge, this report is complete and accurate and was completed in accordance with standards of practice promulgated by the Actuarial Standards Board and in conformance with applicable Arkansas law. The actuaries 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 in this report.

The actuaries know of no significant conflicts of interest with the plan sponsor. We have previously disclosed that we also serve the Bureau of Legislative Research by preparing reports for the Joint Retirement Committee. We do not view this relationship as a significant conflict of interest.

We look forward to discussing this report with you in detail. Please let us know if you have any questions or comments.

Sincerely,

Jody Carreiro

Jody Carreiro, FCA, ASA, EA, MAAA
Actuary

TABLE OF CONTENTS

		Page
	Cover Letter	
	Executive Summary	2
	Discussion	3
EXHIBIT		
1	Costs and Liabilities	
	Actuarial Present Value of Future Benefits	6
	Analysis of Normal Cost	7
	Development of Unfunded Accrued Liability	8
	Actuarial Gain (Loss) for the Year	9
	Actual versus Expected Actuarial Assets	10
2	Development of Contribution Rates	11
3	Summary of Financial Information	13
	Development of Actuarial Value of Assets	15
	History of Cash Flows	16
4	Summary of Participant Data	17
5	Review of Future Uncertainties	23
APPENDIX		
1	Summary of Plan Provisions	25
2	Summary of Changes in Plan Provisions	31
3	Actuarial Assumptions and Funding Policy	35
4	Definition of Actuarial Terms	41

EXECUTIVE SUMMARY

A brief summary of the more important figures developed in this valuation, with comparable results from prior reports, follows:

	6/30/2024	6/30/2025	6/30/2026
Number in Plan			
a) Active Members	3,597	3,819	3,875
b) Members in DROP	275	262	261
c) Members Receiving Benefits	3,625	3,662	3,681
d) Inactive Members	383	393	392
Market Value of Assets	$ 1,612,068,530	$ 1,643,132,180	$ 1,804,941,701
Actuarial Value of Assets	$ 1,606,778,467	$ 1,589,888,199	$ 1,679,583,014
Actuarial Accrued Liability	$ 1,922,066,478	$ 1,960,160,814	$ 2,009,214,229
Unfunded Actuarial Accrued Liability	$ 315,288,011	$ 370,272,615	$ 329,631,215
Funded Percentage (Based on Actuarial Assets)	83.60%	81.11%	83.59%
Funded Percentage (Based on Market Value of Assets)	83.87%	83.83%	89.83%
Contribution Rates for the year beginning On the Valuation Date			
Employee	7.00%	7.00%	7.00%
Employer	14.90%	14.90%	14.90%
Total	21.90%	21.90%	21.90%
Actuarially Determined Contribution Rate	22.14%	23.59%	22.14%
Needed to Fund UAAL in 18 years	22.12%	23.12%	21.02%
Equivalent Funding Period	18.5 years	21.0 years	16.0 years

Discussion

Introduction

The results of the June 30, 2026 actuarial valuation of the Arkansas State Highway Employees Retirement System (ASHERS) performed by Osborn, Carreiro & Associates, Inc. are summarized in this report. The purpose of any actuarial valuation is to provide an estimate of how well the employer is meeting its emerging pension liabilities.

We have relied on the employee data and asset information provided by the staff of ASHERS. While not auditing or verifying the data at the source, we have performed such tests for consistency and reasonableness as has been deemed necessary to be satisfied with the appropriateness of using the data supplied. There were no significant adjustments made to the data that was supplied by staff. We did remove the seasonal workers that were included in the file we received.

Key Metrics

The key metrics that the Board has agreed to review are outlined in the funding policy adopted in 2023. The Board adopted a traffic signal approach to be used in judging these metrics, as follows:

Funded Percentage	**Under 75%**	**75% to 82%**	**Over 82%**
Equivalent Funding Period	**Over 20 Years**	**17 to 20 Years**	**Under 17 Years**
Cash Flow Percentage	**Over 7.0%**	**6.5% to 7.0%**	**Under 6.5%**
Actual to ADC	**Under 95%**	**95% to 100%**	**Over 100%**

Funded Status

The Funded Status of the plan is typically discussed in terms of the Funded Percentage. The Funded Percentage is 83.59% as of the valuation date compared with 81.11% last year. This increase from last year is mainly due to investment gains from the prior fiscal year.

The breakdown for this metric is over 82% (green) and under 75% (red) and between those two yellow. The Funded Percentages for the past few years are as follows:

Valuation Date	Based on Actuarial Value	Based on Market Value
6/30/2020	82.35%	80.78%
6/30/2021	88.88%	96.14%
6/30/2022	86.20%	80.28%
6/30/2023	84.23%	80.17%
6/30/2024	83.60%	83.87%
6/30/2025	81.11%	83.83%
6/30/2026	83.59%	89.83%

The Funded Status of a plan is more than just a measurement of the Funded Percentage. We also need to consider whether the contribution policy will provide funding for the long term. Beginning July 1, 2020, the employees contribute 7.0% and the employer contributes 14.9% of pay for a total 21.9% of pay. Beginning July 1, 2021, the employer contributions are 14.9% for all members on DROP.

Discussion (Continued)

We develop in this report an Actuarially Determined Contribution (ADC) as a help in knowing if the current contribution structure will continue to move the plan consistently toward being fully funded. The next two metrics point to that goal.

Equivalent Funding Period

The Equivalent Funding Period is a measurement of the number of years under current assumptions that the current contribution structure will need to fully fund the Unfunded Actuarial Accrued Liability (UAAL). The goals of the Board is under 17 years (green). If the metric is over 20 years (red) it deserves attention and between these amounts (yellow) it deserves monitoring. The measure of this metric for the past few years is as follows:

Valuation Date	Equivalent Funding Period
6/30/2020	39.5 years
6/30/2021	12.5
6/30/2022	18.0
6/30/2023	19.1
6/30/2024	18.5
6/30/2025	**21.0**
6/30/2026	16.0

Actual to Actuarially Determined Contributions

The other metric that is developed in Exhibit 2 is the Actuarially Determined Contribution. This amount is based on the funding policy and is a contribution that relies on level funding principles to fully fund the UAAL in a reasonable period of time. In general, the layers of amortization are funded over 18 years. The concept is to fund at least the ADC, so that over 100% is considered green. If this ratio falls below 95% (red), then it deserves immediate discussion.

Since this is a new calculation, we only show this metric starting with the 6/30/2021 valuation. The calculation for this ratio for the past few years is as follows:

Valuation Date	Ratio of Actual Contributions To ADC
6/30/2021	113%
6/30/2022	101.2%
6/30/2023	97.4%
6/30/2024	98.8%
6/30/2025	**90.7%**
6/30/2026	96.8%

Discussion (Continued)

The changes in Funded Percentage and the contribution measurements all stem from the calculation of the Actuarial Value of Assets (AVA). The formula "saves up" gains to offset future losses and since all of the loss pieces have now been fully recognized, the formula has "pushed" down the AVA to be somewhat lower than the market value. ***If the market value had been used in place of the AVA, all three of these metrics would be improved. Therefore, I with $125 million of other unrecognized gains and these good metrics, I consider the plan to be headed in a good direction.***

Cash Flow Percentage

The other metric that is to be reviewed in each valuation is the Cash Flow Percentage. This amount is developed in Exhibit 3 and shows a longer history. If the non-investment cash flows are over 7.0% of the market value of assets (red), then the plan would need to payout almost all of their assumed investment earnings. The plan is mature, so we expect to be paying out more, but if this goes too high the Board should be concerned. The goal is to keep this ratio below 6.5% (green) and to monitor when between 6.5% and 7.0% (yellow). The ratio for the past several years is as follows:

Valuation Date	Cash Flow Percentage
6/30/2020	7.0%
6/30/2021	5.8%
6/30/2022	6.6%
6/30/2023	6.6%
6/30/2024	6.2%
6/30/2025	6.2%
6/30/2026	5.7%

Legislative Changes

There were no legislative changes that were included to change the plan provisions for this valuation report, that is, the legislative session this year did not change any benefit provisions.

EXHIBIT 1
COSTS AND LIABILITIES

ACTUARIAL PRESENT VALUE OF FUTURE BENEFITS

		6/30/2025	6/30/2026
A.	Active Members		
	1. Retirement Benefits	$ 499,099,565	$ 542,382,532
	2. Disability Benefits	66,246,404	72,194,624
	3. Death Benefits	3,111,410	3,326,750
	4. Deferred Termination Benefits	21,363,617	23,600,908
	5. Refunds of Contributions	5,678,538	6,380,663
	6. Total Active Members	$ 595,499,534	$ 647,885,477
B.	Deferred Retirement Option Plan (DROP)		
	1. Future DROP Deposits and Retirement Benefits	$ 131,852,896	$ 130,439,528
	2. Expected Payouts of Current DROP Deposits	250,798,593	249,575,070
	3. Total DROP Members	$ 382,651,489	$ 380,014,598
C.	Inactive Members		
	1. Vested Terminations	$ 11,381,175	$ 15,293,060
	2. Non-vested Terminations	3,298,240	3,588,322
	3. Total Inactive Members	$ 14,679,415	$ 18,881,382
D.	Retired Members Receiving Benefits		
	1. Service Retirements	$ 1,025,757,288	$ 1,037,864,194
	2. Disability Retirements	75,280,889	75,890,698
	3. Beneficiaries	89,118,383	88,790,344
	4 Total Retired Members	$ 1,190,156,560	$ 1,202,545,236
E.	Total Actuarial Present Value of Future Benefits (A6 + B3 + C3 + D4)	$ 2,182,986,998	$ 2,249,326,693

EXHIBIT 1 (continued)

ANALYSIS OF NORMAL COST

		6/30/2025	6/30/2026
A.	Normal Cost (to fund current Active Members) (Percentage of Payroll)		
	1. Retirement Benefits	8.06%	8.04%
	2. Disability Benefits	1.78%	1.78%
	3. Death Benefits	0.08%	0.08%
	4. Deferred Termination Benefits	1.24%	1.24%
	5. Refunds of Contributions	0.58%	0.59%
	6. Total Normal Cost	11.74%	11.73%
B.	Present Value of Future Normal Costs		
	1. Annualized Salaries (excludes DROPs)	$ 216,794,889	$ 246,621,125
	2. Projected Payroll for upcoming Fiscal Year	231,475,443	248,090,684
	3. Present Value of Future Salaries	1,734,607,966	1,888,781,990
	4. Dollar Value of Normal Cost (A6 X B2)	27,181,976	29,111,796
	5. Present Value of Future Normal Costs (A6 X B3)	203,642,975	221,554,127

EXHIBIT 1 (continued)

DEVELOPMENT OF UNFUNDED ACTUARIAL LIABILITY

		6/30/2025	6/30/2026
A.	Actuarial Accrued Liabilities – Active Members		
	1. Present Value of Future Benefits	$ 595,499,534	$ 647,885,477
	2. Less Present Value of Future Normal Costs	203,642,975	221,554,127
	3. Accrued Liability – Actives	$ 391,856,559	$ 426,331,350
B.	Actuarial Accrued Liabilities – DROP Members		
	1. Present Value of Future Benefits	$ 382,651,489	$ 380,014,598
	2. Less Present Value Future DROP Contributions	19,183,209	18,558,337
	3. Accrued Liability – DROP	$ 363,468,280	$ 361,456,261
C.	Actuarial Accrued Liabilities – Inactive Members	$ 14,679,415	$ 18,881,382
D.	Actuarial Accrued Liabilities – Retired Members	$ 1,190,156,560	$ 1,202,545,236
E.	Total Actuarial Accrued Liabilities (A3 + B3 +C + D)	$ 1,960,160,814	$ 2,009,214,229
F.	Actuarial Value of Assets (Developed in Exhibit 3)	1,589,888,199	1,679,583,014
G.	Unfunded Actuarial Accrued Liability (E – F)	$ 370,272,615	$ 329,631,215

EXHIBIT 1 (continued)

Actual Versus Expected Actuarial Assets

		6/30/2025	6/30/2026
1.	Actuarial assets, beginning of year	$ 1,606,778,467	$ 1,589,888,199
2.	Total contributions during year	49,741,461	53,749,316
3.	Benefits paid during year	(139,144,763)	(142,954,099)
4.	Refunds paid during year	(2,311,226)	(2,601,782)
5.	Assumed net investment income at 7.5%		
	a. Beginning of year assets	120,508,385	119,241,615
	b. Contributions	1,865,305	2,015,599
	c. Benefits	(5,217,929)	(5,360,779)
	d. Refunds	(86,671)	(97,567)
	e. Total	$ 117,069,090	$ 115,798,868
6.	Expected actuarial assets, end of year (Sum of items 1 through 5)	1,632,133,030	1,613,880,502
7.	Actuarial Value of Assets, end of year	1,589,888,199	1,679,883,014
8.	Asset gain/(loss) for year (7 – 6)	(42,244,831)	65,702,512
9.	Asset gain/(loss) as a percentage of end of year assets (8 / 7)	(2.66%)	3.91%

EXHIBIT 1 (continued)

ACTUARIAL GAIN OR LOSS FOR THE YEAR

		6/30/2025	6/30/2026
A.	Calculation of actuarial gain or loss		
1.	Unfunded actuarial liability (UAAL), previous year	$ 315,288,011	$ 370,272,615
2.	Normal cost for the year	24,817,997	27,181,976
3.	Contributions for the year	(49,741,461)	(53,749,316)
4.	Interest at 7.5%		
a.	On UAAL	$ 23,646,601	$ 27,770,446
b.	On normal cost	930,675	1,019,324
c.	On contributions	(1,865,305)	(2,015,599)
d.	Total	$ 22,711,971	$ 26,774,171
5.	Expected UAAL (sum of items 1 – 4)	313,076,518	370,479,446
6.	Actual UAAL	370,272,615	329,631,215
7.	Gain (loss) for the year (item 5 – item 6)	$ (57,196,097)	$ 40,848,231
B.	Source of gains and losses		
8. a.	Asset gain (loss) for the year	$ (42,244,831)	$ 65,702,512
b.	Gain (loss) from change in assumption	0	0
c.	Gain (loss) from change in method/discount	0	0
d.	Gain (loss) from Legislative change	0	0
e.	Gain (loss) from COLA different than exp.	(6,489,549)	(4,024,264)
f.	Gain (loss) from active salary above exp.	2,569,712	(970,120)
g.	Other gain (loss) from liability experience (balancing item)	(11,031,429)	(19,859,897)
h.	Total Gain (loss) for the year (Total all item 8 amounts)	$ (57,196,097)	$ 40,848,231
9.	Total Actuarial Accrued Liabilities (end of year)	$ 1,960,160,814	$ 2,009,214,229

EXHIBIT 2

DEVELOPMENT OF CONTRIBUTION RATES

		6/30/2025	6/30/2026
A.	Expected Contributions		
1.	Annualized salaries (excludes DROPs)	$ 216,794,889	$ 246,621,125
2.	Projected payroll for upcoming fiscal year	231,475,443	248,090,684
3.	Current Employee Contribution Rate	7.00%	7.00%
4.	Current Employer Contribution Rate	14.90%	14.90%
5.	Total Contribution Rate	21.90%	21.90%
6.	Contribution in Dollars (A2 X A5)	50,693,122	54,331,860
7.	Expected Contribution from DROP Salary	3,610,157	3,608,295
8.	Total Expected Contributions	54,303,279	57,940,154
B.	Unfunded Actuarial Accrued Liability	$ 370,272,615	$ 329,631,215
C.	Calculation of Actuarially Determined Contribution		
1.	Scheduled Amortization of UAAL at mid-year	$ 32,665,836	$ 30,731,167
2.	Normal Cost Rate	11.74%	11.73%
3.	Normal Cost Amount (C2 X A2)	27,175,217	29,101,037
4.	Total Actuarially Determined Contribution	59,841,053	59,832,204
5.	Expected Total Contribution A8	54,303,279	57,940,154
6.	Actual to ADC Ratio	90.7%	96.8%
7.	Actuarially Determined Contribution Rate	23.59%	22.14%
D.	Calculation of 18-year Payoff Rate		
1.	18-year Amortization of UAAL at mid-year	$ 29,954,175	$ 26,666,382
2.	Less Expected DROP Contributions	3,610,157	3,608,295
3.	Contribution Needed to meet goal (D1 – D2)	26,344,017	23,058,087
4.	D3 as percentage of payroll (D3/A2)	11.38%	9.29%
5.	Normal Cost	11.74%	11.73%
6.	Total Contribution Needed to meet goal	23.12%	21.02%
E.	Calculation of Funding Period		
1.	Total Expected Contributions (A8)	$ 54,303,279	$ 57,940,154
2.	Amount needed to pay Normal Cost	27,175,217	29,101,067
3.	Amount remaining to payoff UAAL (E1 – E2)	27,128,062	28,839,117
4.	Years to fund UAAL using amount in E3 Based on 3% payroll growth	20.99 years	16.03 years

EXHIBIT 2 (continued)

AMORTIZATION SCHEDULE

Based on the Funding Policy adopted by the Board beginning with the June 30, 2023 valuation, the below table shows the layers of UAAL that are being amortized for the current valuation period.

Description	Date Added	Initial Balance	Initial Period	Remain Period	Remaining Balance	Amortization Payment
Initial Layer	6/30/2021	198,449,851	20	15	189,491,636	17,370,610
2022 Gain/Loss	6/30/2022	55,817,062	18	14	52,712,261	5,078,878
2023 Gain/Loss	6/30/2023	44,056,499	18	15	41,920,666	4,062,046
2024 Gain/Loss	6/30/2024	23,230,347	18	16	21,596,153	1,989,958
2025 Gain/Loss	6/30/2025	59,192,631	18	17	58,453,685	5,144,320
2026 Gain/Loss	6/30/2026	- 34,543,187	18	18	- 34,543,187	- 2,914,644
Unfunded Actuarial Accrued Liability					329,631,215	30,731,167
Average Funding Period					14.65	

EXHIBIT 3

SUMMARY OF FINANCIAL INFORMATION

(Items D-E determined by Osborn, Carreiro and Associates, Inc.)

	Plan Year Ended		
	6/30/2024	6/30/2025	6/30/2026
A. INCOME			
1. Contributions			
Employee	$ 13,409,742	$ 15,093,054	$ 16,397,098
State	31,269,008	34,648,407	37,352,218
Other	3,745	16,221	5,530
2. Investment Income			
Interest/Dividends	35,387,945	34,374,117	32,756,183
Net Income-Securities Lending	0	357,048	617,430
Realized Gain	132,166,176	58,289,455	117,246,739
Unrealized Gain	40,601,010	39,160,139	113,788,384
Investment Expense	(9,293,267)	(9,298,377)	(9,801,748)
Net Investment Income	198,861,864	122,882,382	254,606,988
3. Adjustment to Previous Year	0	0	0
TOTAL INCOME	$ 243,544,359	$ 172,640,064	$ 308,361,834
B. EXPENSES			
1. Administrative	$ 105,651	$ 120,425	$ 996,432
2. Benefit Payments			
Contribution Refunds	2,216,775	2,311,226	2,601,782
Death Benefits	1,035,000	900,000	915,385
DROP Payouts	20,313,055	22,254,068	23,751,685
Monthly Benefits	112,407,085	115,990,695	118,287,029
	135,971,915	141,455,989	145,555,881
TOTAL EXPENSES	$ 136,077,566	$ 141,576,414	$ 146,552,313
TOTAL INCOME OVER EXPENSES	$ 107,466,793	$ 31,063,650	$ 161,809,521

EXHIBIT 3 (Continued)

	6/30/2024	6/30/2025	6/30/2026
C. ASSETS (Market)			
1. Short Term			
Cash	$ 392,437	$ 321,592	$ 3,392,907
Money Market	173,069,692	108,103,293	125,005,155
2. Corporate Bonds	186,393,185	195,834,360	210,691,045
3. Common Stocks	948,392,797	1,016,137,327	1,138,980,047
4. U.S. Government Agency Obligations	301,556,311	319,475,907	324,441,679
5. Net Securities Lending	(24,394)	(4,568)	15,460
6. Receivables			
Member contributions	535,550	692,991	139,476
State contributions	1,248,906	1,549,279	1,776,814
Interest and dividends	2,675,278	2,163,192	2,308,125
Miscellaneous	91,062	54,963	129,624
7. Liabilities	(2,262,294)	(1,196,156)	(1,938,631)
TOTAL ASSETS	$ 1,612,068,530	$ 1,643,132,180	$ 1,804,941,701
D. RATIO OF ASSETS TO ANNUAL EXPENSES:	11.85	11.61	12.31
E. INVESTMENT RETURN:			
Gross	14.31%	8.46%	16.61%
Net of Investment Expense	13.63%	7.85%	15.95%
Return on Actuarial Value of Assets:	7.65%	4.80%	11.82%

EXHIBIT 3 (Continued)

	7/1/2024	7/1/2025	7/1/2026
F. DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS			
1. Investment income for year	$ 198,861,863	$ 122,882,382	$ 254,606,988
1b. Adjustment for change in discount	0	0	0
2. Expenses and fees for year	101,905	104,204	990,902
3. Actual net investment income	198,759,958	122,778,178	253,616,086
4. Market Value (beginning of year)	1,504,601,737	1,612,068,530	1,643,132,180
5. Contributions during year	44,678,750	49,741,461	53,749,316
6. Benefits paid during year	135,971,915	141,455,989	145,555,881
7. Expected investment income at 7.5% (after 2021)			
Market Value	112,845,130	120,905,140	123,234,914
Contributions	1,675,453	1,865,305	2,015,599
Benefits	- 5,098,947	- 5,304,600	- 5,458,346
Total	109,421,636	117,465,845	119,792,167
8. Investment gain for year	89,338,322	5,312,333	133,823,919
9. Deferral of investment gain			
Current year (75%)	67,003,742	3,984,250	100,367,940
Current year – 1 (50%)	9,181,140	44,669,161	2,656,167
Current year – 2 (25%)	(70,894,819)	4,590,570	22,334,581
Total	5,290,063	53,243,981	125,358,687
10. Market value (end of year)	1,612,068,530	1,643,132,180	1,804,941,701
11. Preliminary AVA (end of year) (10) – (9)	1,606,778,467	1,589,888,199	1,679,583,014
12. Final AVA within 20% corridor	$ 1,606,778,467	$ 1,589,888,199	$ 1,679,583,014

EXHIBIT 3 (Continued)

HISTORY OF CASH FLOW

Year Ending June 30	Contributions for the Year	Expenditures During the Year: Benefit Payments	Expenditures During the Year: Refund of Contributions	Expenditures During the Year: Expenses	Expenditures During the Year: Total	External Cash Flow for the Year	Market Value of Assets	External Cash Flow as Percent of Market Value
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1999	21,460,290	(27,868,587)	(1,218,372)	(1,776,862)	(30,863,821)	(9,403,531)	870,332,321	(1.1%)
2000	20,635,998	(32,437,078)	(860,532)	(2,231,766)	(35,529,375)	(14,893,377)	1,020,171,033	(1.5%)
2001	21,319,262	(35,505,451)	(1,134,443)	(3,179,023)	(39,818,918)	(18,499,656)	998,671,310	(1.9%)
2002	23,395,271	(40,606,836)	(658,917)	(3,545,184)	(44810,937)	(21,415,666)	875,304,832	(2.4%)
2003	23,656,596	(48,128,153)	(907,236)	(4,056,463)	(53,091,851)	(29,435,255)	891,122,027	(3.3%)
2004	23,623,171	(51,764,755)	(604,562)	(3,736,002)	(56,105,319)	(32,482,148)	981,026,764	(3.3%)
2005	23,814,179	(53,952,761)	(974,389)	(4,157,579)	(59,084,730)	(35,270,551)	1,041,898,315	(3.4%)
2006	23,956,626	(57,570,547)	(790,218)	(4,295,209)	(62,655,974)	(38,699,348)	1,098,788,670	(3.5%)
2007	23,742,542	(62,317,277)	(1,243,841)	(4,458,889)	(68,020,007)	(44,277,465)	1,186,151,377	(3.7%)
2008	24,286,799	(65,483,982)	(1,154,502)	(4,584,201)	(71,222,685)	(46,935,886)	1,242,354,294	(3.8%)
2009	24,730,528	(69,635,808)	(861,725)	(4,726,929)	(75,224,462)	(50,493,934)	994,466,871	(5.1%)
2010	26,691,696	(73,650,896)	(803,288)	(4,176,401)	(78,630,585)	(51,938,889)	1,052,235,399	(4.9%)
2011	26,574,184	(77,553,673)	(960,668)	(5,253,653)	(83,767,994)	(57,193,810)	1,298,501,306	(4.4%)
2012	26,521,075	(82,216,303)	(912,512)	(5,861,735)	(88,990,550)	(62,469,475)	1,230,012,388	(5.1%)
2013	26,712,669	(89,037,077)	(1,084,539)	(6,542,055)	(96,663,601)	(69,950,932)	1,326,032,436	(5.3%)
2014	27,499,336	(93,712,721)	(1,741,876)	(6,650,036)	(102,104,633)	(74,605,297)	1,492,232,422	(5.0%)
2015	28,197,463	(100,328,585)	(1,917,221)	(7,883,940)	(110,129,746)	(81,932,283)	1,443,476,293	(5.7%)
2016	28,611,588	(105,056,553)	(1,699,287)	(8,127,098)	(114,882,938)	(86,271,350)	1,304,869,720	(6.6%)
2017	28,318,809	(109,874,806)	(2,029,791)	(8,211,585)	(120,116,182)	(91,797,373)	1,354,321,200	(6.8%)
2018	28,457,459	(113,476,915)	(2,270,815)	(8,312,995)	(124,060,725)	(95,603,266)	1,472,472,865	(6.5%)
2019	28,531,322	(117,889,214)	(1,523,052)	(8,741,812)	(128,154,078)	(99,622,756)	1,386,076,598	(7.2%)
2020	33,474,207	(120,815,379)	(1,974,259)	(8,733,902)	(131,523,540)	(98,049,333)	1,407,173,769	(7.0%)
2021	35,519,843	(123,682,368)	(2,054,337)	(8,766,468)	(134,503,173)	(98,983,330)	1,715,093,810	(5.8%)
2022	39,927,660	(125,578,090)	(2,357,761)	(9,224,154)	(137,160,005)	(97,232,345)	1,468,838,071	(6.6%)
2023	42,400,373	(129,349,597)	(2,459,421)	(9,439,629)	(141,248,647)	(98,848,274)	1,504,601,737	(6.6%)
2024	44,678,750	(133,755,140)	(2,216,775)	(9,398,917)	(145,370,832)	(100,692,082)	1,612,068,530	(6.2%)
2025	49,741,461	(139,144,763)	(2,311,226)	(9,402,581)	(150,858,570)	(101,117,109)	1,643,132,180	(6.2%)
2026	53,749,316	(142,954,099)	(2,601,782)	(10,792,650)	(156,348,531)	(102,599,215)	1,804,941,701	(5.7%)

Column (2) includes employee and employer contributions, as well as any account reinstatement receipts during the year.
Column (5) includes both administrative and investment expenses; Column (7) = Column (2) + Column (6)

EXHIBIT 4

EMPLOYEE PROFILE

Employee data needed for the valuation was obtained from the records furnished by the system. The following table shows a detailed breakdown of the included participants and salaries by age and years of actual ASHERS credited service. This does not include reciprocal service which determines eligibility.

All Actives – Actual Service

		Years of Service							
Age		0-4.9	5-9.9	10-14.9	15-19.9	20-24.9	25-29.9	Over 30	Total
Under 25	Count	473	23						496
	Salary	21,814,218	1,280,332						23,094,550
25-29	Count	324	139	12					475
	Salary	17,475,678	8,345,079	733,105					26,553,862
30-34	Count	210	127	92	14				443
	Salary	10,794,740	8,547,988	6,428,954	962,533				26,734,215
35-39	Count	173	98	69	58	14			412
	Salary	8,788,114	5,733,214	5,012,884	5,151,551	955,789			25,641,552
40-44	Count	168	86	80	57	75	11		477
	Salary	8,271,481	5,072,580	5,578,385	4,682,877	6,294,242	813,736		30,713,301
45-49	Count	127	78	64	62	90	60	2	483
	Salary	6,589,614	4,525,546	4,225,586	4,136,510	7,685,764	5,151,698	157,286	32,472,004
50-54	Count	130	76	67	52	58	61	10	454
	Salary	6,316,943	4,408,141	4,438,620	3,698,662	4,974,717	5,437,605	1,073,306	30,347,994
55-59	Count	112	71	69	44	53	33	8	390
	Salary	5,478,629	3,773,447	4,057,384	3,190,700	3,710,914	2,713,145	736,775	23,660,994
60-64	Count	67	58	39	23	6	1	4	198
	Salary	3,274,992	3,321,937	2,326,203	1,574,621	375,640	64,375	273,275	11,211,043
65-69	Count	17	12	2	2			1	34
	Salary	741,341	739,921	106,725	62,477			61,755	1,712,219
70 & Over	Count	7	4		1			1	13
	Salary	322,725	184,910		43,854			102,561	654,050
Total	Count	1,808	772	494	313	296	166	26	3,875
	Salary	89,868,475	45,933,095	32,907,846	23,503,785	23,997,066	14,180,559	2,404,958	232,795,784

Average Attained Age: 40.9 years
Average Actual Service: 8.4 years
Average Salary: $ 60,076

EXHIBIT 4

RETIREE PROFILE

Retiree data needed for the valuation was obtained from the records furnished by the administrator. The following table shows a detailed breakdown of the included retirees and beneficiaries by age and years since retirement. Benefits listed are annual amounts of annuities paid monthly.

All Regular Retirees Receiving Annuities

		Years since Retirement							
Age		0-.9	1-1.9	2-2.9	3-3.9	4-4.9	5-9.9	Over 10	Total
Under 45	Count								-
	Benefit								-
45-49	Count	4	3						7
	Benefit	106,853	74,511						181,364
50-54	Count	7	7	5		4	6		29
	Benefit	271,937	331,288	159,482		144,297	259,373		1,166,377
55-59	Count	15	11	15	9	15	26	5	96
	Benefit	517,806	400,024	568,166	378,345	775,896	1,155,001	216,569	4,011,807
60-64	Count	55	53	47	21	33	100	39	348
	Benefit	1,424,982	1,616,956	1,595,643	741,502	1,133,242	4,154,211	1,559,351	12,225,887
65-69	Count	44	42	49	64	64	194	172	629
	Benefit	660,928	819,051	1,098,430	1,502,289	1,742,221	6,486,794	7,538,061	19,847,774
70-74	Count	2	8	12	12	19	249	358	660
	Benefit	4,102	42,882	118,592	69,738	239,079	6,761,798	14,894,733	22,130,924
75-79	Count		1	2		2	32	501	538
	Benefit		3,629	24,092		16,305	490,050	19,311,205	19,845,281
80-84	Count		1				3	252	256
	Benefit		792				40,239	9,799,122	9,840,153
85 & Over	Count		1					186	187
	Benefit		3,493					8,092,658	8,096,151
Total	Count	127	127	130	106	137	610	1,513	2,750
	Benefit	2,986,608	3,292,626	3,564,405	2,691,874	4,051,040	19,347,466	61,411,699	97,345,718

Average Attained Age:	72.3 years
Average Years since Retirement:	12.3 years
Average Annual Benefit:	$35,398

EXHIBIT 4

DISABLED PROFILE

Retiree data needed for the valuation was obtained from the records furnished by the administrator. The following table shows a detailed breakdown of the included retirees and beneficiaries by age and years since retirement. Benefits listed are annual amounts of annuities paid monthly.

All Disability Retirees Receiving Annuities

		Years since Retirement							
Age		0-.9	1-1.9	2-2.9	3-3.9	4-4.9	5-9.9	Over 10	Total
Under 45	Count	1					1		2
	Benefit	6,589					4,886		11,475
45-49	Count		1	1	1	3	1	1	8
	Benefit		29,130	19,719	20,198	68,183	10,932	5,697	153,859
50-54	Count	5	1		1	1	4	11	23
	Benefit	56,249	20,570		20,267	10,788	60,160	158,477	326,511
55-59	Count	3	6	5	5	3	18	20	60
	Benefit	63,828	154,742	97,707	86,034	86,926	239,234	347,624	1,076,095
60-64	Count	2	2	1	3	2	23	35	68
	Benefit	31,458	59,762	7,430	23,580	27,129	332,614	597,460	1,079,433
65-69	Count			1			14	57	72
	Benefit			7,200			151,494	898,615	1,057,309
70-74	Count						3	63	66
	Benefit						23,311	1,239,783	1,263,094
75-79	Count							49	49
	Benefit							941,696	941,696
80-84	Count							25	25
	Benefit							591,463	591,463
85 & Over	Count							10	10
	Benefit							256,443	256,443
Total	Count	11	10	8	10	9	64	271	383
	Benefit	158,124	264,204	132,056	150,079	193,026	822,631	5,037,258	6,757,378

Average Attained Age: 67.1 years
Average Years since Retirement: 15.5 years
Average Annual Benefit: $17,643

EXHIBIT 4

SURVIVOR PROFILE

Retiree data needed for the valuation was obtained from the records furnished by the administrator. The following table shows a detailed breakdown of the included retirees and beneficiaries by age and years since retirement. Benefits listed are annual amounts of annuities paid monthly.

All Survivors Receiving Annuities

		Years since Retirement							
Age		0-.9	1-1.9	2-2.9	3-3.9	4-4.9	5-9.9	Over 10	Total
Under 45	Count	2	4	3	3	5	4		21
	Benefit	21,248	47,286	34,906	16,419	69,704	35,229		224,792
45-49	Count	1	3			2	1		7
	Benefit	20,035	48,339			49,605	4,060		122,039
50-54	Count		1	1	2	2	8	3	17
	Benefit		23,010	19,059	19,591	27,668	99,938	25,592	214,858
55-59	Count	4	3	2	3	1	6	1	20
	Benefit	100,083	64,522	20,741	32,823	24,416	135,204	3,140	380,929
60-64	Count	4	3	2	1	3	8	20	41
	Benefit	18,116	56,064	32,787	19,506	43,466	77,728	324,521	572,188
65-69	Count	5	6	8	3	5	24	37	88
	Benefit	73,321	64,566	96,549	39,047	64,978	389,979	594,679	1,323,119
70-74	Count	7	9	8	6	8	24	32	94
	Benefit	126,238	193,302	89,136	98,272	132,407	364,505	467,532	1,471,392
75-79	Count	5	12	12	7	8	27	36	107
	Benefit	109,084	281,057	263,283	204,992	125,544	512,598	584,898	2,081,456
80-84	Count	4	3	9	5	4	15	28	68
	Benefit	58,121	83,924	233,609	84,234	101,718	226,609	524,510	1,312,725
85 & Over	Count	1	2	7	3	3	18	51	85
	Benefit	9,230	27,101	166,044	74,883	33,399	443,272	1,146,736	1,900,665
Total	Count	33	46	52	33	41	135	208	548
	Benefit	535,476	889,171	956,114	589,767	672,905	2,289,122	3,671,608	9,604,163

Average Attained Age:	72.9 years
Average Years since Retirement:	9.3 years
Average Annual Benefit:	$17,526

EXHIBIT 4

DROP PROFILE

Retiree data needed for the valuation was obtained from the records furnished by the administrator. The following table shows a detailed breakdown of the included retirees and beneficiaries by age and years since retirement. Benefits listed are annual amounts of the current DROP deposits paid monthly.

All Current DROP Participants

		Years since Retirement							
Age		0-.9	1-1.9	2-2.9	3-3.9	4-4.9	5-9.9	Over 10	Total
Under 45	Count								-
	Benefit								-
45-49	Count								-
	Benefit								-
50-54	Count	13	5	6	1	2	4		31
	Benefit	621,140	245,995	225,677	63,020	91,606	154,679		1,402,117
55-59	Count	11	8	4	7	8	17	1	56
	Benefit	439,355	351,558	134,873	399,755	408,189	659,546	38,377	2,431,653
60-64	Count	32	29	21	15	16	19	7	139
	Benefit	661,562	698,341	506,035	512,606	505,795	816,537	277,698	3,978,574
65-69	Count	7	9	7	9	1			33
	Benefit	69,796	98,945	104,790	146,257	10,569			430,357
70-74	Count	1				1			2
	Benefit	6,705				12,104			18,809
75-79	Count								-
	Benefit								-
80-84	Count								-
	Benefit								-
85 & Over	Count								-
	Benefit								-
Total	Count	64	51	38	32	28	40	8	261
	Benefit	1,798,558	1,394,839	971,375	1,121,638	1,028,263	1,630,762	316,075	8,261,510

Average Attained Age: 60.8 years
Average Years since DROP: 3.1 years
Average Annual Benefit: $31,653

EXHIBIT 4

VESTED TERMINATED MEMBERS

Vested Terminated Member data needed for the valuation was obtained from the records furnished by the administrator. These are the members who have left employment, did not withdraw their employee contributions, and are eligible for a benefit that begins later, typically age 65. The following table shows a detailed breakdown of the included members and beneficiaries by time until benefit commencement. Benefits listed are annual amounts of the benefits payable.

Benefits Commence Within number of years	Number of Members	Annual Benefit
1 year	14	124,005
2 years	6	38,292
3 years	10	54,895
4 years	8	69,875
5 years	10	77,699
5 to 10 years	58	531,186
Over 10 years	286	2,890,419
Total	392	3,785,371

Average Attained Age:	47.2 years
Average Years until Benefit Commencement:	17.9 years
Average Annual Benefit:	$ 9,657

EXHIBIT 5

REVIEW OF FUTURE UNCERTAINTIES

Introduction

The calculations in this report are based on the data and assumptions as outlined. This report is based on the participant and financial data supplied by the plan sponsor. We did not audit this data, although we did review it for reasonableness and consistency. We have relied on the data provided to us. If any of this data is incorrect or incomplete, the results of our calculations could be materially different.

The funding policy gives the Board a path of contributions that lead to full funding. Actual future measurements of the Actuarially Determined Contributions and funded status may differ significantly from expected future measurements. There are several areas of risk that may cause the calculations to differ, including: plan experience differing from the anticipated economic assumptions (investment return, inflation, and salary increases), plan experience differing from the expected demographic assumptions (rates of termination, disability, retirement and death). The user should understand the ongoing risks involved in using these results.

This section of the report provides additional information to help the user of the report understand the uncertainties involved with this type of actuarial valuation.

Plan Maturity

A significant issue that the plan has to deal with is the maturity of the plan. This means that the plan is at a point where there are significant benefits being paid by the plan. This has happened while the total active population has remained fairly level. This is illustrated below:

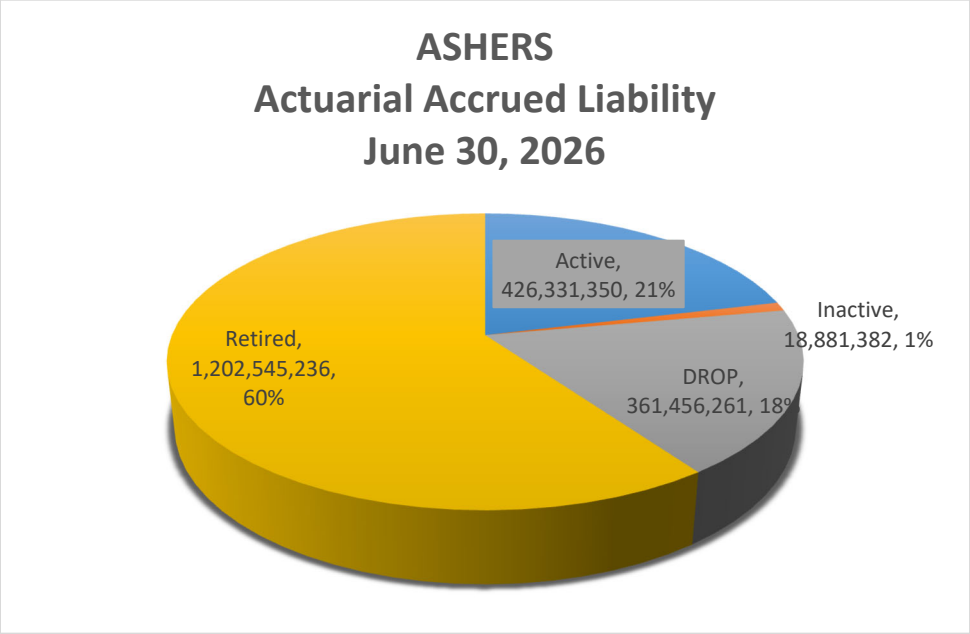


Exhibit 5 (Continued)

As seen in the nearby graph, over 60% of the liabilities of the plan are associated with participants who are currently receiving benefits. The DROP participants and former participants who still have balances make up 20% of the liabilities. This means that 80% of the liabilities of the plan are "locked in", that is, they have been fully determined and are awaiting payout. This means that changes in assumptions and most changes in plan provisions do not alter these liabilities. This makes it difficult to make small changes to affect the plan.

This is the reason the Board puts so much emphasis on the Cash Flow Percentage, one of the funding policy's key metrics. The history of this ratio has already been reported here on page 16. As discussed, if this ratio becomes too high it is hard to manage investment policy and curtail UAAL growth.

Asset Smoothing

We have discussed in meetings and will note here that 2022 produced a significant investment loss that was be ultimately absorbed into the Actuarial Value of Assets in this report. There have been gains in the past 3 years, but the plan has absorbed all of those losses in the Actuarial Value of Assets. Positively, the AVA has $125 million of gains to recognize in the next 3 years.

Future Investment Returns

The biggest risk in managing ongoing contribution rates is the uncertainty of future investment returns. The Board and Actuary are comfortable with the long term assumption at this time, but variations in the actual results are inevitable. We can see one illustration of this in the GASB Disclosure Report. In that report, we calculate the amount of the liabilities and Unfunded Actuarial Accrued Liability assuming the assumed return is one percent higher and lower. If the plan earned 6.5% over the long term instead of 7.5%, then the liabilities of the plan would be about $222 million higher. That is, $2,231 million compared to the reported amount of $2,009 million.

The Actuarial Standards of Practice #4 also requires that we convey the liability if the liability were calculated using a low default risk obligation measurement. In other words, a measurement where we use a discount rate that is generally similar to the rate that governments can borrow. This report uses the same index as the GASB report which for June 30, 2026 is 4.32%. If liabilities were calculated using that discount rate, they would be about $2,821 million. This does not change our strong funding policy which will fully fund all benefits as time passes and can adjust for future uncertainties. Another way to view this information is that the roughly $800 million difference is the added value of a diversified portfolio over a fully immunized portfolio.

APPENDIX 1

PRINCIPAL PROVISIONS OF THE PLAN

EFFECTIVE DATE:	July 1, 1949.
EMPLOYEE:	Employees of the Arkansas State Highway System.
EMPLOYER:	Arkansas State Highway System.
PLAN YEAR:	July 1 to June 30.
PARTICIPATION:	Immediate upon full-time employment.
EMPLOYER CONTRIBUTIONS:	The State contributes 14.90% (beginning 7/1/2019, previously 12.90%) of the total payroll earnings of members. Beginning 7/1/2021, a contribution is made for salaries of those members on DROP. Previously, the State did not contribute for members in the Tier I portion of DROP and contributed 6.9% of payroll for members in the Tier II portion of DROP.
EMPLOYEE CONTRIBUTIONS:	1. Each Member must contribute 7.0% (for 7/1/2020 and after) of his annual Compensation while in the service of the Employer. A Member who began service before 7/1/2021 and participates in the Tier I portion of DROP has their member's contributions suspended while on Tier I and begins paying a 6% contribution rate on Tier II. 2. Within certain terms, conditions, and limitations, a Member voluntarily may make additional contributions in order to obtain creditable service for prior service.
COMPENSATION:	The total remuneration earned by an employee for services rendered during any consecutive twelve (12) months or fraction thereof.
FINAL AVERAGE COMPENSATION:	Average compensation over 60 consecutive months that produces the highest average. This changed beginning 7/1/2021 and the 36 month average is maintained until the 60 month average is greater.
CREDITED SERVICE:	Completed years and days of service since date of hire.
RECIPROCAL SERVICE:	Service completed in any reciprocal state system as defined by law. Used to determine eligibility for benefits.

Appendix 1 (Continued)

NORMAL RETIREMENT:

Eligibility:

Earliest of the following:

(a) Completion of 28 years of creditable service,
(b) Age 60 and 20 years of creditable service,
(c) Age 62 and 15 years of creditable service,
(d) Age 65 and 5 years of creditable service.

Benefit Formula:

Years of credited service times 2.2% of Final Average Compensation, plus post-retirement health care supplements. The minimum annual normal retirement benefit is $1,800. The health care supplements are depended on years of service at retirement, the benefits are provided as follows:

(a) For members who retired before or on June 30, 2009: $1,500 health care offset amount will be provided.

(b) For members who retire after June 30, 2009:
    1. With less than 10 years of accrued service: No health care offset amount will be provided.
    2. With 10 or more years of accrued service but less than 15 years of accrued service at retirement: $900 health care offset amount will be provided.
    3. With 15 or more years of accrued service but less than 20 years of accrued service at retirement: $1,200 health care offset amount will be provided.
    4. With 20 or more years of accrued service at retirement: $1,500 health care offset amount will be provided.

For members who retire after June 30, 2013 the health care offset is prorated for any service earned with a reciprocal retirement system.

Those who elect DROP after July 1, 2021 will not be paid a health care offset during the DROP period. It will begin upon ultimate retirement.

Appendix 1 (Continued)

Normal Form: Monthly benefit for life of Member plus, upon death, a refund of the excess (if any) of (i) the Member's accumulated contribution account at time of retirement over (ii) the total annuity payments received.

Optional Form: Option A: 10 years certain or life, or

Option B: Joint & 50% contingent survivor, with a pop up to the life only amount if the joint pensioner predeceases the member.

DEFERRED RETIREMENT OPTION PLAN (DROP):

Eligibility: Earliest of the following:

(a) Completion of 30 years of creditable service,
(b) Age 60 and 20 years of creditable service,
(c) Age 62 and 15 years of creditable service,
(d) Age 65 and 5 years of creditable service.

Benefit: Active members eligible for normal retirement are eligible to participate in the DROP program while continuing active employment. During DROP, the member will receive the regular retiree cost of living adjustments. A member can remain in DROP to the later of age 65 or the completion of five years of participation in DROP. DROP is divided into Tier I and Tier II. Tier I consists of the first five years of DROP participation, while Tier II is the remaining period. In Tier I, 90% of the retirement annuity will be deposited in the DROP account, whereas in Tier II, 79% of the retirement annuity will be deposited. The DROP account is credited with interest in Tier I and Tier II (as set by the Board, currently 6%).

The member contributions, for those hired before July 1, 2021, cease during DROP until the member enters Tier II. For those hired July 1, 2021 and after, the employee contribution will continue during the entire DROP period. While on DROP, the employer contributes the employer rate, currently 14.90% (beginning July 1, 2021). At actual retirement, the member will receive the DROP balance and commence receiving the regular annuity payments.

Appendix 1 (Continued)

EARLY RETIREMENT:

Eligibility: Age 55 with 5 or more years of creditable service.

Benefit: Normal retirement benefit earned to the date of retirement, reduced .8% for each of the first 60 months and .3% for each of the next 60 months that the early retirement date precedes the normal retirement date. The minimum annual early retirement benefit is $1,800.

DISABILITY BENEFITS:

Benefit:

1. Less than 1 Year of Creditable Service: Refund of member contributions without interest.
2. At least 1 Year of Creditable Service: Refund of member contributions with interest. Interest credits are currently 3% per annum.
3. At least 5 or more Years of Creditable Service: If he leaves his contribution account on deposit, a monthly annuity payable to the member for life based upon his years of creditable service and commencing upon disability.

TERMINATION OF SERVICE:

1. Less than 1 Year of Creditable Service: Refund of member contributions without interest.
2. At least 1 Year of Creditable Service: Refund of member contributions with interest. Interest credits are currently 3% per annum.
3. At least 5 or more Years of Creditable Service: If he leaves his contribution account on deposit, a monthly annuity payable to the member for life based upon his years of creditable service and commencing upon eligibility for retirement.

Appendix 1 (Continued)

DEATH BEFORE RETIREMENT:

1. Less than 1 Year of Creditable Service: Refund of member contributions without interest.

2. At least 1 Year of Creditable Service: Refund of member contributions with interest.

3. At least 5 Years of Creditable Service: If the beneficiary leaves the Member's contribution account on deposit, an annuity payable under either Option A or B as elected by the beneficiary.

   (a) Option A: A reduced annuity payable for 10 years in an amount equal to what the member would have received under retirement Option A commencing immediately.
   (b) Option B: An annuity payable for the life of the beneficiary in an amount equal to 50% of what the member would have received under retirement Option B commencing at the time the Member would have become eligible for retirement.

4. An additional lump sum death benefit equal to $15,000.

DEATH AFTER RETIREMENT:

If no option was elected, refund of the excess (if any) of (i) the Member's accumulated account (including interest) at retirement over (ii) the total annuity payments received. If an option is elected, death benefits are payable in accordance with such option.

An additional lump sum death benefit of $7,500 is provided for retirees (not beneficiaries).

Appendix 1 (Continued)

AUTOMATIC POST RETIREMENT INCREASES:

Effective July 1 2017, the benefit increase will be the lesser of 3% or the percentage change in the Consumer Price Index for Urban Wage Earners and Clerical Workers as determined by the United States Department of Labor over the one-year period ending in the December immediately preceding the date of which the redetermined amount is being calculated. However, the redetermined amount of the benefit to be paid shall not be less than the redetermined amount of the benefit paid in the preceding year.

Previously, benefits increase by 1 1/2% of the base benefit each year after June 30, 1976 through June 30, 1978, by 3% of the base benefit each year after June 30, 1978, through June 30, 1995, and by 3% of the previous year's benefit each year after June 30, 1995 for those who are retired for at least one year on the July 1 determination date. This benefit was limited by the Consumer Price Index until June 30, 1999. Effective July 1, 1999, the benefit increase is 3% with no ties to the Consumer Price Index.

Effective July 1, 2019, the amount of the health care offset described above is not eligible for a cost of living increase. All cost of living increases granted before July 1, 2019 on the health care offset remain in place.

Recent COLA amounts are as follows:

1999-2016	3.00%
2017	2.07%
2018	2.18%
2019	1.77%
2020	2.31%
2021	1.45%
2022	3.00%
2023	3.00%
2024	3.00%
2025	2.77%
2026	2.57%

APPENDIX 2

LEGISLATED PLAN CHANGES ENACTED BY THE LEGISLATURE OF THE STATE OF ARKANSAS

Session Year:			
1991	1.	ACT 198	Provide a one-time payment equal to 3.0% of the July 1, 1991 annualized annuity for members retired on or prior to January 1, 1990.
	2.	ACT 243	Permit members to accrue more than 35 years of creditable service. (Retroactively applied).
	3.	ACT 245	Effective July 1, 1991, increase annuities by the sum of $50 per month for members receiving benefits prior to, on, or subsequent to July 1, 1991. The increase is also added to the base annuity.
	4.	ACT 246	Effective July 1, 1991, increase the benefit formula multiplier to 2.06% of average compensation times number of years of creditable service.
	5.	ACT 380	4.0% ad hoc increase payable on July 1, 1991 for those members retired on June 1, 1991, based on benefit payable on June 1, 1991. The increase is also added to the base annuity.
	6.	ACT 381	Benefits from reciprocal retirement systems are to be based on the highest final average salary at the time of retirement. (Retroactively applied).
1993	1.	ACT 929	2.9% ad hoc increase payable on July 1, 1993 for those members retired on June 1, 1993, based on benefits payable June 1, 1993. The increase is also added to the base annuity.
	2.	ACT 930	Effective July 1, 1993, the average compensation is based on a forty-eight (48) month averaging period. (Previously sixty (60) months.)
1995	1.	ACT 407	Cost of living increase up to 3% of the member's previous year's benefit for those members retired for at least twelve full months after the effective date of each increase. Increases are effective July 1 and will be limited to the lesser of 3% or the Consumer Price Index but may not result in a decrease in benefits otherwise payable.

Appendix 2 (Continued)

1997	1.	ACT 1067	Creates an active member death benefit of 10 years certain and life. Five years of service eligibility for benefit.
	2.	ACT 1089	Creates a $15,000 death benefit for active and vested-terminated members.
	3.	ACT 1073	Creates a DROP program for active members eligible for normal retirement.
	4.	ACT 386	Increases the multiplier from 2.06% to 2.10%. Grants 2.0% ad hoc to retirees.
	5.	ACT 349	Changes 48-month FAE to 36 months. Grants 2.2% ad hoc to retirees.
	6.	ACT 347	Changes 10-year vesting requirement to 5 years.
1999	1.	ACT 311	Increases the $50 per month supplement to $125 per month to current and future retirees.
	2.	ACT 1325	Active members can retire with full benefit if they have 28 years of creditable service.
	3.	ACT 335	Cost of living increase will be 3% and is not limited by the Consumer Price Index.
2001	1.	ACT 482	Provides $7,500 lump sum death benefit for retirees (not beneficiaries).
	2.	ACT 539	Increases the multiplier from 2.1% to 2.2%. Grant 4.8% ad hoc to retirees.
2003	1.	ACT 776	Allows members who enter DROP prior to age 60 to remain in DROP until age 65, beyond the five-year limit previously set. During this time, known as Tier II DROP, 79% of the retirement annuity will be deposited in the DROP account. Furthermore, the member contributes 6.00% of their total payroll earnings and the employer contributes 6.90%.
	2.	ACT 205	Changes the factors used for determining optional forms of payment to actuarially equivalent factors. Current retirees had their benefits increased to reflect the new factors effective July 1, 2003.

Appendix 2 (Continued)

2009 1. ACT 439 Changes from 5 years vesting requirement to 10 years vesting requirement on health care coverage. Prorated the $125 per month health care supplements as follows:

a. With less than 10 years of service at retirement: No health care supplements.
b. With 10 or more years of service but less than 15 years of service at retirement: $75/month (or 60% of $125/month).
c. With 15 or more years of service but less than 20 years of service at retirement: $100/month (or 80% of $125/month).
d. With 20 or more years of service at retirement: $125/month (or100% of $125/month).

2. Trustees used provision of Act 1073 of 1997 to reduce the interest credited on DROP accounts to 6%, effective 7/1/2009.

2011 1. ACT 564 Establishes the cost for purchasing service credit as the actuarial equivalent cost. This applies to all types of service credit including military service, service with another State agency, and reinstatement of forfeited service.

2013 1. ACT 309 Prorates the Health Care Offset paid by the Arkansas State Highway Employees Retirement System (ASHERS), for members who also have service in a reciprocal retirement system.

2. ACT 310 Excludes lump sum termination payments (accrued leave, compensation, etc.) from inclusion in the Average Compensation and credited service used in the determination of retirement benefits paid by the Arkansas State Highway Employees Retirement System (ASHERS).

2017 1. ACT 610 Cost of living increase will be the lesser of 3% or the percentage change in the Consumer Price Index for Urban Wage Earners and Clerical Workers as determined by the United States Department of Labor over the one-year period ending in the December immediately preceding the date of which the redetermined amount is being calculated. However, the redetermined amount of the benefit to be paid shall not be less than the redetermined amount of the benefit paid in the preceding year.

Appendix 2 (Continued)

	2.	ACT 461	A member of the Arkansas State Highway Employees' Retirement System may purchase creditable service in the retirement system, without interest, for a period not to exceed five years of service for active service by the member in the United States Armed Forces if the member (1) has five years of actual service in the system as of August 20, 2015; and (2) shows that he or she relied upon the ten-year service time requirement before applying to purchase military service credit under this ACT. The purchase of military service credit under this ACT shall be made in the form of a cash payment or automatic payroll deductions for period not to exceed three years.
2019	1.	ACT 294	Effective July 1, 2019, the amount of the health care offset (also called supplement) is not eligible for a cost of living increase. All cost of living increases granted before July 1, 2019 on the health care offset remain in place.
	2.	ACT 295	Effective July 1, 2019, the employee contribution maximum is 7% of compensation. This can only increase by 0.5% per year, so the rate beginning July 1, 2019 will be 6.5% and the rate beginning July 1, 2020 will be 7.0% of compensation. The employer rate increased to a maximum of 14.9% and that increase was effective July 1, 2019.
2021	1.	ACT 137	The employer contribution rate will be based on the recommendation of the actuary and then presented for approval to the Commission.
	2.	ACT 138	The employer contribution beginning July 1, 2021 will apply to salaries for Tier 1 and Tier 2 DROP participants. Those hired 7/1/2021 and after will pay employee contributions on DROP salaries.
	3.	ACT 139	The length of time to be married before being eligible for survivor benefits was reduced from 2 years to 1 year.
	4.	ACT 149	The definition of final average compensation went from 3 years to 5 years. There is a provision so that those employed at 7/1/2021 do not see a decrease in final average compensation.
	5.	ACT 150	Those who elect DROP after July 1, 2021 will not be paid a health care offset during the DROP period. It will begin upon ultimate retirement.
	6.	ACT 711	There were various changes in reciprocal service beginning 7/1/2021. ASHERS benefits for those who begin reciprocal service after 7/1/2021 will be based on the ASHERS definition of final average compensation.

APPENDIX 3

ACTUARIAL COST METHODS AND ASSUMPTIONS

INVESTMENT YIELD RATE: 7.5% per annum, compounded annually. (Effective June 30,2021) The expected rate of return on pension plan investments for the purpose of GASB is also 7.50%.

MORTALITY:

a. Healthy Post-retirement (Effective June 30, 2021)
   - Male: Pub-2010 Public Retirement Plans for males, amount weighted Mortality Table for General employees with below median income, scaled at 105% with no setback. Generational mortality improvements are in accordance with MP-2020 from the table's base year of 2010 (both before and after the measurement date)
   - Female: Pub-2010 Public Retirement Plans for females, amount weighted Mortality Table for General employees with below median income, scaled at 105% with no setback. Generational mortality improvements are in accordance with MP-2020 from the table's base year of 2010 (both before and after the measurement date)

b. Disabled Post-retirement (Effective June 30, 2021)
   - Male: Pub-2010 Public Retirement Plans for disabled males, amount weighted Mortality Table for General employees with below median income, with no scale and no setback. Generational mortality improvements are MP-2020 from the table's base year of 2010 (both before and after the measurement date)
   - Female: Pub-2010 Public Retirement Plans for disabled females, amount weighted Mortality Table for General employees with below median income, with no scale and no setback. Generational mortality improvements are MP-2020 from the table's base year of 2010 (both before and after the measurement date)

c. Healthy Pre-retirement (Effective June 30, 2021)
   - Male: Pub-2010 Public Retirement Plans for male employees, amount weighted Mortality Table for General employees with below median income, no scale, no setback. Generational mortality improvements are in accordance with MP-2020 from the table's base year of 2010 (both before and after the measurement date)
   - Female: Pub-2010 Public Retirement Plans for female employees, amount weighted Mortality Table for General employees with below median income, no scale, no setback. Generational mortality improvements are in accordance with MP-2020 from the table's base year of 2010 (both before and after the measurement date)

Appendix 3 (Continued)

RETIREMENT RATES (Continued Effective June 30, 2021):

The following probabilities of retirement were assumed for members eligible to retire:

	Early Retirement Rate	Normal Retirement Rate	
Age	Males and Females	Males	Females
48		5.0%	5.0%
49		5.0%	5.0%
50		6.5%	5.0%
51		8.0%	6.0%
52		9.5%	7.0%
53		11.0%	8.0%
54		12.5%	9.0%
55	1.0%	14.0%	10.0%
56	1.0%	15.5%	15.0%
57	2.0%	20.0%	15.0%
58	2.0%	25.0%	25.0%
59	3.0%	25.0%	25.0%
60	3.0%	15.0%	15.0%
61	8.0%	20.0%	20.0%
62	20.0%	45.0%	45.0%
63	20.0%	25.0%	25.0%
64	15.0%	25.0%	25.0%
65		40.0%	40.0%
66		40.0%	40.0%
67		40.0%	40.0%
68		40.0%	40.0%
69		40.0%	40.0%
70		100.0%	100.0%

Appendix 3 (Continued)

DISABILITY RATES (Continued Effective June 30, 2021):

Rates based on the experience of other large public sector retirement systems through age 82; thereafter, Non-Disabled Mortality is assumed.

Age	Rates of Decrement Due to Disability
20	.00192
25	.00192
30	.00192
35	.00192
40	.00480
45	.00624
50	.01176
55	.02136
60	.03384
65	.03984

WITHDRAWAL RATES (for causes other than death, disability, or retirement)
(Effective June 30, 2021):

Select and ultimate rates are used based on age and service. Sample rates are shown.

Probability of Decrement Due to Withdrawal

Years of Service

Male Members

Age	0	1	2	3	4	5+
20	.4306	.2764	.1850	.1357	.1323	.1095
30	.2984	.2268	.1431	.0991	.0869	.0607
40	.2368	.1815	.0983	.0743	.0549	.0274
50	.1677	.1279	.0983	.0599	.0379	.0164
60	.0138	.1275	.0971	.0770	.0476	.0311

Female Members

Age	0	1	2	3	4	5+
20	.4672	.3279	.2363	.1539	.1099	.0776
30	.2875	.2404	.1681	.1115	.0803	.0582
40	.2138	.1750	.1030	.0767	.0504	.0373
50	.1766	.1288	.0949	.0561	.0353	.0174
60	.2045	.1433	.0842	.0491	.0242	.0007

Appendix 3 (Continued)

SALARY SCALES (Effective June 30, 2021):

Future compensation is assumed to increase by an inflation (growth) increase rate of 2.5% plus a productivity component of 1.00%, and plus a step-rate/promotional component based on service. Rates are illustrated below:

Years of Service	Step-rate/ Promotional Component	Total Salary Scale
0	9.00%	12.00%
1	7.00%	10.00%
2	4.50%	7.50%
3	2.00%	5.00%
4-6	1.50%	4.50%
7-10	1.00%	4.00%
11-13	0.75%	3.75%
14-16	0.50%	3.50%
17-19	0.50%	3.25%
20+	0.00%	3.00%

FUTURE INCREASE IN TOTAL PAYROLL (Effective June 30, 2021):

3.0% per annum. Used for purposes of funding the Unfunded Actuarial Accrued Liability.

COST OF LIVING INCREASE (Effective June 30, 2021):

All benefit in pay status are assumed to be increased by 2.25% annually.

PROVISION FOR EXPENSE (Effective June 30, 1997):

The assumed investment return rate represents the anticipated net rate of return after payment of all administrative and investment expenses.

ELECTION RATES (Effective June 30, 2004):

After their initial vesting, members are assumed to elect the greater value of their deferred annuity or a refund of their account balances. 100% of non-vested members are assumed to take a refund.

ELECTION OF DROP ENTRY (Effective June 30, 2015):

100% of participants who are eligible to enter DROP are assumed to elect to participate in DROP, except as noted below. Members who elect into DROP are assumed to retire at the normal retirement patterns. Members who first become eligible to DROP prior to age 60 (at 30 years of service) are assumed to enter DROP after attaining 31 years of service. Members past their first eligibility are assumed to enter DROP immediately.

Appendix 3 (Continued)

INTEREST CREDITING RATE ON DROP ACCOUNTS (Effective June 30, 2012):

6.0% interest credit on DROP accounts.

DROP ACCOUNTS PAYOUT PERIOD (Effective June 30, 2015):

It is assumed that members who participate in DROP will receive their DROP accounts in equal installments over a 10-year period.

ASSET VALUATION METHOD (Adopted June 30, 2021):

The actuarial value of assets is equal to the market value of assets less a four-year phase-in of the excess (shortfall) between expected investment return and actual income with the resulting value not being less than 80% or more than 120% of the market value of assets.

The actuarial value of assets was marked to the market for June 30, 2012 valuation. This was done to prevent an expected divergence away from the market value of assets.

The return for 2021 was reduced by the amount of the liability change due to change in discount rate. This made a one time additional recognition of market return.

ACTUARIAL COST METHOD:

The funding period required to amortize the unfunded actuarial accrued liability (UAAL) is determined using the Entry Age Actuarial Cost Method.

The Individual Entry Age Normal actuarial cost method assigns the Plan's total unfunded liabilities (the actuarial present value of future benefits less the actuarial value of assets) to various periods. The unfunded actuarial accrued liability is assigned to years prior to the valuation, and the normal cost is assigned to the year following the valuation. The remaining costs are the normal costs for future years. Then each year's contribution is composed of (i) that year's normal cost, plus (ii) a payment used to reduce the unfunded actuarial accrued liability.

The normal contribution is determined using the Entry Age Normal method. Under this method, a calculation is made to determine the rate of contribution which, if applied to the compensation of each individual member during the entire period of anticipated covered service (prior to DROP entry), would be required to meet the cost of all benefits payable on his behalf. The salary-weighted average of these rates is the normal cost rate. This calculation reflects the plan provisions that apply to each individual member. The employer normal cost rate is equal to (i) the normal cost rate, minus (ii) the member contribution rate.

Appendix 3 (Continued)

The actuarial accrued liability is the difference between the total present value of future benefits and the actuarial present value of future normal costs. The unfunded actuarial accrued liability (UAAL) is the excess of the actuarial accrued liability over the actuarial value of assets.

Since the State statutes governing the System establish the current employee and State contribution rates, the actuarial valuation determines the number of years required to amortize (or fund) the UAAL on a level percentage of payroll basis, taking into account the payroll growth assumption and the normal cost expressed as a percent of pay. Because of this amortization procedure, any change in the unfunded actuarial accrued liability due to (i) actuarial gains and losses, (ii) changes in actuarial assumptions, or (iii) amendments, affects the funding period.

FUNDING OF UNFUNDED ACTUARIAL ACCRUED LIABILITY:

The total normal cost for benefits provided by the System is 11.75% of payroll, which is 10.15% of payroll less than the total contributions scheduled for the year under current law (14.90% from Employer plus 7.0% from employees). This remaining 10.15% of payroll along with any contributions received on behalf of members on DROP are assumed to be utilized to fund the unfunded actuarial accrued liability over a period of years in the future, assuming that total payroll is increased by 3.0% per year. The calculation is detailed in Exhibit 2 of this report.

APPENDIX 4

DEFINITION OF ACTUARIAL TERMS

ACTUARIAL ACCRUED LIABILITY:

The present value of benefits payable in the future less the present value of future normal costs for present members.

ACTUARIAL ASSUMPTIONS:

Assumptions as to future experience under the System. Assumptions include future fund earnings rates, rates of future salary increases, and rates of death (both before and after retirement), disability, retirement, and withdrawal.

ACTUARIAL GAIN OR ACTUARIAL LOSS:

A measure of the difference between actual experience and assumed experience of the System. The actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, actuarial liabilities emerge which may be the same as forecasted or they may be larger or smaller than projected. Actuarial gains are due to favorable experience, i.e., actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains or losses will be amortized according to the plan's funding policy.

ACTUARIAL LIABILITIES:

The actuarially determined present value of future benefits to be provided by the System. Separate actuarially determined present values are calculated for retired members and non-retired members. When applied to active members, benefits which will be earned through future service and future salary increases are taken into account as defined by the actuarial cost method.

ACTUARIAL VALUE OF ASSETS:

The market value of assets of the System adjusted to recognize investment earnings above or below the investment return assumption uniformly over a four-year period.

ACTUARIALLY DETERMINED:

Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

ACTUARIALLY DETERMINED CONTRIBUTION (ADC):

The contribution amount expressed as a percentage of payroll that will fund the normal cost of the plan as well as the amortization of the UAAL according to the funding policy of the plan.

APPENDIX 4 (Continued)

DEFINED BENEFITS:

Benefits which are defined by a specific formula applied to a specific member's compensation and specific years of service. The amount of the benefit is not a function of contributions or actual earnings on those contributions.

EQUIVALENT FUNDING PERIOD:

The number of years in the future that will be required to fund (i.e., pay off or fully fund) the unfunded actuarial accrued liability, based on the actuarial assumptions and assuming no future actuarial gains or losses.

FUNDED RATIO:

The ratio of the actuarial value of assets to the actuarial accrued liability. The funding ratio is a measure of the funded status of the plan.

FUTURE BENEFITS:

Benefits specified in the law which will become payable at some time in the future when the member satisfies the requirement to receive such benefits.

FUTURE CONTRIBUTIONS:

Contributions to be made by the member or the State in the future, as required by the law and approved by the State Highway Commission.

NORMAL COST:

The average annual actuarial cost of the benefits provided by the System for the current employees as defined by the Cost Method.

PRESENT VALUE:

The actuarially determined lump sum value as of the valuation date of a series of payments to be made in the future, where the lump sum value is equal to the sum of the discounted value of each future payment. The discounted value of each payment is the product of (a) the amount of the payment, (b) the probability that the payment will be made (based on the current actuarial assumptions as to the future experience), and (c) the time value of money (based on the current assumed interest rate).

UNFUNDED ACTUARIAL ACCRUED LIABILITY:

That portion of the actuarial accrued liability (including the present value of benefits presently being paid to retired members and the value of any miscellaneous liabilities) that exceeds the value of current actuarial value of assets.