

Arkansas State Police Retirement System

GASB Statement Nos. 67 and 68 Accounting and
Financial Reporting for Pensions
June 30, 2020





November 20, 2020

Board of Trustees
Arkansas State Police Retirement System
Little Rock, Arkansas

Ladies and Gentlemen:

This report provides information required by the Retirement System in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67 "Financial Reporting for Pension Plans" and Governmental Account Standards Board (GASB) Statement No. 68 "Accounting and Financial Reporting for Pensions."

Our actuarial calculations for this report were prepared for the purpose of complying with the requirements of GASB Statement Nos. 67 and 68. These calculations have been made on a basis that is consistent with our understanding of these accounting standards.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Statement Nos. 67 and 68. The calculation of the plan's liability for this report may not be applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the Arkansas State Police Retirement System only in its entirety and only with the permission of the Board of Trustees. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by Retirement System staff, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different, please let us know. This information was checked for internal consistency, but it was not audited.

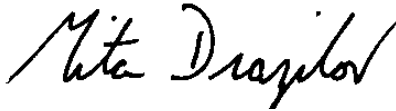
This information is presented in draft form for review by the plan's auditor. Please let us know if there are any items that the auditor changes so that we may maintain consistency with the plan's financial statements.

Please see the actuarial valuation report as of June 30, 2020 for additional discussions of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

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.

To the best of our knowledge, this report is complete, accurate, and in accordance with generally recognized actuarial methods. Mita D. Drazilov and Heidi G. Barry are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the Academy of Actuaries to render the actuarial opinions herein. The signing individuals are independent of the plan sponsor.

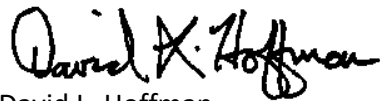
Respectfully submitted,



Mita D. Drazilov, ASA, FCA, MAAA



Heidi G. Barry, ASA, FCA, MAAA



David L. Hoffman

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SECTION A

EXECUTIVE SUMMARY

Executive Summary as of June 30, 2020

Actuarial Valuation Date	June 30, 2020
Measurement Date of the Net Pension Liability	June 30, 2020
Employer's Fiscal Year Ending Date (Reporting Date)	June 30, 2020

Membership

Number of	
- Retirees and Beneficiaries and DROP Members	746
- Inactive, Nonretired Members	108
- Active Members	482
- Total	1,336
Covered Payroll #	\$ 33,311,093

Net Pension Liability

Total Pension Liability	\$ 476,569,897
Plan Fiduciary Net Position	338,183,678
Net Pension Liability	\$ 138,386,219
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	70.96%
Net Pension Liability as a Percentage of Covered Payroll	415.44%

Development of the Single Discount Rate

Single Discount Rate	7.15%
Long-Term Expected Rate of Investment Return	7.15%
Long-Term Municipal Bond Rate*	2.45%
Last year ending June 30 in the 2021 to 2120 projection period for which projected benefit payments are fully funded	2120

Total Pension Expense \$ 23,615,090

Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	\$ 6,031,082	\$ 1,497,925
Changes in assumptions	2,536,947	1,562,322
Net difference between projected and actual earnings on pension plan investments	17,409,291	5,251,326
Total	\$ 25,977,320	\$ 8,311,573

* Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of June 30, 2020. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax-exempt securities.

Including pay for DROP participants.



Discussion

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state or local governments to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to Arkansas State Police Retirement System (ASPRS) subsequent to the measurement date of June 30, 2020.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience.

Pension plans that prepare their own, stand-alone financial statements are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The *statement of fiduciary net position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *statement of changes in fiduciary net position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

Notes to Financial Statements

GASB Statement No. 68 requires the notes of the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans, to include certain additional information. The list of disclosure items should include:

- A description of benefits provided by the plan;
- The type of employees and number of members covered by the pension plan;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- The pension plan's fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability;
- The net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

Retirement systems that issue stand-alone financial statements are required to disclose additional information in accordance with GASB Statement No. 67. This information includes:

- The composition of the pension plan's Board and the authority under which benefit terms may be amended;
- A description of how fair value is determined;
- Information regarding certain reserves and investments, which include concentrations of investments greater than or equal to 5%, receivables, and insurance contracts excluded from plan assets;
- Annual money-weighted rate of return; and
- A description of the terms of the plan's Deferred Retirement Option Program (DROP) and the total DROP balance for those members currently participating in the DROP.

Required Supplementary Information

GASB Statement No. 67 requires a 10-year fiscal history of:

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- A comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled-forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2020 and a measurement date of June 30, 2020

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects: (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits); and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.15%; the municipal bond rate is 2.45% (based on the weekly rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index"); and the resulting Single Discount Rate is 7.15%.

SECTION B

FINANCIAL STATEMENTS

Statement of Pension Expense Under GASB Statement No. 68

Fiscal Year Ended June 30, 2020

Total Pension Expense

1. Service Cost	\$ 5,861,499
2. Interest on the Total Pension Liability	31,967,469
3. Current-Period Benefit Changes	997,533
4. Employee Contributions (made negative for addition here)	-
5. Projected Earnings on Plan Investments (made negative for addition here)	(23,924,681)
6. Pension Plan Administrative Expense	195,463
7. Other Changes in Plan Fiduciary Net Position	-
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	3,420,532
9. Recognition of Outflow (Inflow) of Resources due to Assets	<u>5,097,275</u>
10. Total Pension Expense	\$ 23,615,090

Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2020

A. Outflows (Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ 7,543,752
2. Assumption Changes (gains) or losses	\$ -
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	4.5067
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	\$ 1,673,897
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ -
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$ 1,673,897
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	\$ 5,869,855
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ -
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$ 5,869,855

B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 17,223,836
2. Recognition period for Assets {in years}	5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$ 3,444,767
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ 13,779,069



Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods

Fiscal Year Ended June 30, 2020

A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Due to Liabilities	\$ 5,448,382	\$ 2,027,850	\$ 3,420,532
2. Due to Assets	8,842,758	3,745,483	5,097,275
3. Total	\$ 14,291,140	\$ 5,773,333	\$ 8,517,807

B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 2,113,802	\$ 1,038,913	\$ 1,074,889
2. Assumption Changes	3,334,580	988,937	2,345,643
3. Net Difference between projected and actual earnings on pension plan investments	8,842,758	3,745,483	5,097,275
4. Total	\$ 14,291,140	\$ 5,773,333	\$ 8,517,807

C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	\$ 6,031,082	\$ 1,497,925	\$ 4,533,157
2. Assumption Changes	2,536,947	1,562,322	974,625
3. Net Difference between projected and actual earnings on pension plan investments	17,409,291	5,251,326	12,157,965
4. Total	\$ 25,977,320	\$ 8,311,573	\$ 17,665,747

D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending June 30	Net Deferred Outflows of Resources
2021	\$ 3,347,786
2022	3,911,001
2023	6,114,028
2024	4,292,932
2025	-
Thereafter	-
Total	\$ 17,665,747

Statement of Outflows and Inflows Arising from the Current and Prior Reporting Periods Fiscal Year Ended June 30, 2020

Year Established	Initial Amount	Initial Recognition Period	Current Year Recognition	Remaining Recognition	Remaining Recognition Period
Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities					
2016	\$ 1,757,687	4.9518	\$ 337,851	\$ -	0.0000
2017	(3,052,763)	4.7608	(641,229)	(487,847)	0.7608
2018	467,389	4.5798	102,054	161,227	1.5798
2019	(1,805,446)	4.5399	(397,684)	(1,010,078)	2.5399
2020	7,543,752	4.5067	1,673,897	5,869,855	3.5067
Total			\$ 1,074,889	\$ 4,533,157	
Deferred Outflow (Inflow) due to Assumption Changes					
2016	\$ -	4.9518	\$ -	\$ -	0.0000
2017	15,875,267	4.7608	3,334,580	2,536,947	0.7608
2018	(4,529,133)	4.5798	(988,937)	(1,562,322)	1.5798
2019	-	4.5399	-	-	2.5399
2020	-	4.5067	-	-	3.5067
Total			\$ 2,345,643	\$ 974,625	
Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments					
2016	\$ 20,939,581	5.0000	\$ 4,187,917	\$ -	0.0000
2017	(11,198,217)	5.0000	(2,239,643)	(2,239,645)	1.0000
2018	(7,529,201)	5.0000	(1,505,840)	(3,011,681)	2.0000
2019	6,050,370	5.0000	1,210,074	3,630,222	3.0000
2020	17,223,836	5.0000	3,444,767	13,779,069	4.0000
Total			\$ 5,097,275	\$ 12,157,965	

Statement of Fiduciary Net Position as of June 30, 2020

Any Additional Required Information to Be Provided by System

Assets

Cash and Deposits	\$	-
Receivables		
Contributions		-
Accounts Receivable - Other		-
Total Receivables		-
Investments		
Securities Lending Collateral	\$	-
Investment Assets		-
Other		-
Total Investments	\$	-
Total Assets	\$	-

Liabilities

Payables		
Accrued Expense and Other Liabilities	\$	-
Investment Principal Payable		-
Securities Lending Liability		-
Total Liabilities	\$	-

Net Position Restricted for Pensions		<u><u>\$ 338,183,678</u></u>
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Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2020

Additions

Contributions		
Employer	\$	21,873,425
Employee		-
Other		-
Total Contributions		\$ 21,873,425
Investment Income		
Net Appreciation in Fair Value of Investments	\$	8,407,067
Interest and Dividends		-
Less Investment Expense		(1,706,222)
Net Investment Income	\$	6,700,845
Other	\$	-
Total Additions	\$	28,574,270

Deductions

Benefit payments, including refunds of employee contributions	\$	27,934,141
Pension Plan Administrative Expense		195,463
Other		-
Total Deductions	\$	28,129,604
Net Increase in Net Position	\$	444,666

Net Position Restricted for Pensions

Beginning of Year	\$ 337,739,012
End of Year	\$ 338,183,678

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios

Current Period

Fiscal Year Ended June 30, 2020

A. Total pension liability	
1. Service Cost	\$ 5,861,499
2. Interest on the Total Pension Liability	31,967,469
3. Changes of benefit terms	997,533
4. Difference between expected and actual experience of the Total Pension Liability	7,543,752
5. Changes of assumptions	0
6. Benefit payments, including refunds of employee contributions	(27,934,141)
7. Net change in total pension liability	<u>\$ 18,436,112</u>
8. Total pension liability – beginning	458,133,785
9. Total pension liability – ending	<u><u>\$ 476,569,897</u></u>
B. Plan fiduciary net position	
1. Contributions – employer	\$ 21,873,425
2. Contributions – employee	-
3. Net investment income	6,700,845
4. Benefit payments, including refunds of employee contributions	(27,934,141)
5. Pension Plan Administrative Expense	(195,463)
6. Other	-
7. Net change in plan fiduciary net position	<u>\$ 444,666</u>
8. Plan fiduciary net position – beginning	337,739,012
9. Plan fiduciary net position – ending	<u><u>\$ 338,183,678</u></u>
C. Net pension liability	<u><u>\$ 138,386,219</u></u>
D. Plan fiduciary net position as a percentage of the total pension liability	70.96%
E. Covered-employee payroll #	\$ 33,311,093
F. Net pension liability as a percentage of covered-employee payroll	415.44%

Includes pay for DROP participants.

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios Multiyear

Fiscal year ending June 30,	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability							
Service Cost	\$ 5,861,499	\$ 6,691,528	\$ 6,577,148	\$ 5,473,626	\$ 5,488,445	\$ 6,101,608	\$ 4,866,199
Interest on the Total Pension Liability	31,967,469	31,299,758	30,678,211	30,322,786	29,469,678	29,218,802	28,558,511
Benefit Changes	997,533	-	-	-	-	-	-
Difference between Expected and Actual Experience	7,543,752	(1,805,446)	467,389	(3,052,763)	1,757,687	(3,107,531)	(454,349)
Assumption Changes	-	-	(4,529,133)	15,875,267	-	8,703,080	8,970,858
Benefit Payments	(27,934,141)	(24,930,275)	(24,185,418)	(24,631,787)	(26,035,466)	(23,358,801)	(21,688,239)
Refunds	-	-	-	-	-	-	-
Net Change in Total Pension Liability	18,436,112	11,255,565	9,008,197	23,987,129	10,680,344	17,557,158	20,252,980
Total Pension Liability - Beginning	458,133,785	446,878,220	437,870,023	413,882,894	403,202,550	385,645,392	365,392,412
Total Pension Liability - Ending (a)	\$ 476,569,897	\$ 458,133,785	\$ 446,878,220	\$ 437,870,023	\$ 413,882,894	\$ 403,202,550	\$ 385,645,392
Plan Fiduciary Net Position							
Employer Contributions	\$ 21,873,425	\$ 21,254,010	\$ 21,003,650	\$ 19,961,066	\$ 19,713,295	\$ 19,784,130	\$ 19,501,684
Employee Contributions	-	-	-	-	-	94,814	-
Pension Plan Net Investment Income	6,700,845	17,031,467	28,823,332	31,484,250	(210,045)	6,131,684	43,307,746
Benefit Payments	(27,934,141)	(24,930,275)	(24,185,418)	(24,631,787)	(26,035,466)	(23,358,801)	(21,688,239)
Refunds	-	-	-	-	-	-	-
Pension Plan Administrative Expense	(195,463)	(554,441)	(228,430)	(208,424)	(205,342)	(196,231)	(189,658)
Other	-	-	-	-	-	6	-
Net Change in Plan Fiduciary Net Position	444,666	12,800,761	25,413,134	26,605,105	(6,737,558)	2,455,602	40,931,533
Plan Fiduciary Net Position - Beginning	337,739,012	324,938,251	299,525,117	272,920,012	279,657,570	277,201,968	236,270,435
Plan Fiduciary Net Position - Ending (b)	\$ 338,183,678	\$ 337,739,012	\$ 324,938,251	\$ 299,525,117	\$ 272,920,012	\$ 279,657,570	\$ 277,201,968
Net Pension Liability - Ending (a) - (b)	138,386,219	120,394,773	121,939,969	138,344,906	140,962,882	123,544,980	108,443,424
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	70.96 %	73.72 %	72.71 %	68.41 %	65.94 %	69.36 %	71.88 %
Covered-Employee Payroll #	\$ 33,311,093	\$ 30,287,691	\$ 29,593,145	\$ 29,076,764	\$ 29,448,593	\$ 29,929,358	\$ 28,548,873
Net Pension Liability as a Percentage of Covered-Employee Payroll	415.44 %	397.50 %	412.05 %	475.79 %	478.67 %	412.79 %	379.85 %
Notes to Schedule:	N/A	N/A	N/A	N/A	N/A	N/A	N/A

In 2017 and thereafter, actual DROP participant pays were used. In 2016, \$67,241 was used as an estimate of average annual pay for DROP participants. In 2015, \$75,000 was used as an estimate of average annual pay for DROP participants.



Schedules of Required Supplementary Information

Schedule of the Net Pension Liability Multiyear

Ultimately 10 Fiscal Years Will Be Displayed

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll#	Net Pension Liability as a % of Covered Payroll
2014	\$385,645,392	\$277,201,968	\$ 108,443,424	71.88%	\$28,548,873	379.85%
2015	403,202,550	279,657,570	123,544,980	69.36%	29,929,358	412.79%
2016	413,882,894	272,920,012	140,962,882	65.94%	29,448,593	478.67%
2017	437,870,023	299,525,117	138,344,906	68.41%	29,076,764	475.79%
2018	446,878,220	324,938,251	121,939,969	72.71%	29,593,145	412.05%
2019	458,133,785	337,739,012	120,394,773	73.72%	30,287,691	397.50%
2020	476,569,897	338,183,678	138,386,219	70.96%	33,311,093	415.44%

In 2017 and thereafter, actual DROP participant pays were used. In 2016, \$67,241 was used as an estimate of average annual pay for DROP participants. In 2015, \$75,000 was used as an estimate of average annual pay for DROP participants.

Schedule of Contributions Multiyear (\$ in Millions)

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll#	Actual Contribution as a % of Covered Payroll
2011	\$ 12.6	\$ 14.1	\$ (1.5)	\$ 28.2	50.00%
2012	14.1	19.7	(5.6)	29.5	66.78%
2013	13.6	19.5	(5.9)	28.1	69.40%
2014	14.0	19.5	(5.5)	29.1	67.01%
2015	14.2	19.8	(5.6)	29.9	66.22%
2016	14.3	19.7	(5.4)	29.4	67.01%
2017	14.1	20.0	(5.9)	29.1	68.73%
2018	15.2	21.0	(5.8)	30.0	70.00%
2019	15.6	21.3	(5.7)	30.3	70.30%
2020	16.9	21.9	(5.0)	33.3	65.77%

In 2017 and thereafter, actual DROP participant pays were used. In 2016, \$67,241 was used as an estimate of average annual pay for DROP participants. In 2015, \$75,000 was used as an estimate of average annual pay for DROP participants.

Notes to Schedule of Contributions

Valuation Date: June 30, 2019

Methods and Assumptions Used to Determine Contribution Rates for Fiscal Year Ending June 30, 2020:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	20 years
Asset Valuation Method	4-Year smoothed market
Inflation	2.50% price inflation
Salary Increases	3.55% to 7.75% including inflation
Investment Rate of Return	7.15%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition.
Mortality	Based on RP-2006 Healthy Annuitant benefit weighted generational mortality tables for males and females. Mortality rates are multiplied by 135% for males and 125% for females and are adjusted for future mortality improvements using Scale MP-2017.

Other Information:

Notes None

Schedule of Investment Returns Multiyear

To Be Provided by System

Last 10 Fiscal Years

FY Ending June 30,	Annual Return¹
2011	
2012	
2013	
2014	
2015	
2016	
2017	
2018	
2019	
2020	

¹ Annual money-weighted rate of return, net of investment expenses.

SECTION D

NOTES TO FINANCIAL STATEMENTS

Long-Term Expected Return on Plan Assets

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the current asset allocation percentage and by adding expected price inflation. Best estimates of arithmetic real rates of return for the 10-year period from 2020 to 2029 were based upon capital market assumptions provided by the plan's investment consultant(s). For each major asset class that is included in the pension plan's current asset allocation as of June 30, 2020, these best estimates are summarized in the following table:

Asset Allocation

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Broad Domestic Equity	37%	6.22%
International Equity	24%	6.69%
Real Assets	16%	4.81%
Absolute Return	5%	3.05%
Domestic Fixed	18%	0.57%
Total	100%	
Total Real Rate of Return		4.93%
Plus: Price Inflation - Actuary's Assumption		2.50%
Less: Investment Expenses (Passive)		0.00%
Net Expected Return		7.43%

Single Discount Rate

A Single Discount Rate of 7.15% was used to measure the total pension liability. This Single Discount Rate was based on the expected rate of return on pension plan investments of 7.15%. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 7.15%, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

	1% Decrease 6.15%	Current Single Discount Rate 7.15%	1% Increase 8.15%
Total Pension Liability (TPL)	\$ 528,577,374	\$ 476,569,897	\$ 424,240,340
Net Position Restricted for Pensions	<u>338,183,678</u>	<u>338,183,678</u>	<u>338,183,678</u>
Net Pension Liability (NPL)	\$ 190,393,696	\$ 138,386,219	\$ 86,056,662

Disclosure Regarding the Deferred Retirement Option Program

To Be Provided by System



Summary of Population Statistics as of June 30, 2020

Inactive Plan Members or Beneficiaries Currently Receiving Benefits (Including DROP participants)	746
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	108
Active Plan Members	<u>482</u>
Total Plan Members	1,336

SECTION E

SUMMARY OF BENEFITS

Summary of Non-Contributory Benefit Provisions (Last Changed as of 7-1-2009)

The Non-Contributory Plan was created by Act 793 of 1977 and was effective January 1, 1978. All non-retired members are now covered by non-contributory benefits. Act 1071 of 1997 created a Tier Two benefit plan for all officers hired on or after April 3, 1997. Existing members of the plan in effect prior to this date (Tier One) had one year to elect coverage under Tier Two.

Voluntary Retirement

With a full benefit, after 30 years of actual service, regardless of age, or at age 65 with 5 actual years of service for Tier One and Tier Two. The age requirement is reduced by 1 month for every 2 months of Public Safety service credit, but not below age 52 for Tier One or age 55 for Tier Two members.

Public Safety service credit is granted at the rate of 1.5 months of credit for each month of actual Public Safety employment for Tier One. Service is credited at a rate of one for one in Tier Two.

With a reduced benefit, once a member's age is within 10 years of becoming eligible for full benefits. The reduction for Tier One is equal to 1/2 of 1% for each month retirement precedes Normal Retirement Age. The reduction for Tier Two is equal to 3/4 of 1% for each month retirement precedes Normal Retirement Age.

Final Average Pay (FAP)

Average of the highest 60 calendar months' pays for Tier One or 48 calendar months for Tier Two.

Full Age & Service Retirement Benefit

Tier One: 1.55% of FAP times years and months of credited service. Tier Two: 2.475% of FAP times credited service. If retirement is prior to age 62, an additional .322% of FAP times credited service will be paid until the retiree attains age 62 for Tier One or .513% of FAP times credited service for Tier Two.

Public Safety service credit is granted at the rate of 1.5 months of credit for each month of actual Public Safety employment for Tier One. Service is credited at a rate of one for one in Tier Two.

For Tier One, the portion of the SPRS benefit based on service before 1978 cannot be less than the amount provided by contributory provisions in effect at time of retirement; and if there is credited service for time prior to July 1, 1991, the benefit cannot be less than under the provisions in effect July 1, 1990, (using Social Security offset), plus increases granted since that date.

For Tier One, the minimum monthly benefit is \$150 minus any age and beneficiary option reductions.

Vested and Reduced Early Retirement Benefits

5 years of actual service, and leaving System-covered employment before full retirement age.

Deferred full retirement benefit, based on service and pay at termination, begins when full retirement age would have been reached by continuing covered employment.

In place of a deferred full benefit, a qualifying member may elect an immediate reduced benefit, provided the member is within 10 years of full retirement age. The reduced amount is the full amount reduced by 1/2 of 1% for Tier One and/or 3/4 of 1% for Tier Two for each month of difference in benefit commencement ages.

Death While in System Covered Employment

Member's accumulated contributions before 1978 are refundable.

If the deceased member has 5 or more years of service and has qualifying dependents, monthly benefits are payable instead. A surviving spouse receives a benefit as if the member had retired and elected the joint & 75% survivor option. Payment begins immediately if the member was eligible for a full age and service benefit or had 20 years of service; or payment begins at the spouse's age 50 if the member had 15 or more years of service; or payment begins at the spouse's age 62 if the member had less than 15 years of service.

If a member is killed while in the official line of duty and the surviving spouse is eligible for a deferred benefit, then the surviving spouse may elect to receive a reduced benefit immediately. The reduction of the benefit shall be 1/2 of 1% per month for each of the first 60 months that the benefit commences before when it would have otherwise commenced, plus; 1/4 of 1% per month for each month more than 60 months that the benefit commences before when it would have otherwise commenced. However, the total reduction shall not be more than 50%.

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

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

Total and Permanent Disability

Tier One eligibility: Disabled after 5 years of service.

Tier Two eligibility: Disabled after 5 years of service.

Amount is computed as an age and service benefit, based on service and pay to the time of disability.

Death After Retirement

Retiring member can provide protection for a beneficiary by electing an option which provides beneficiary protection by reducing the retired employee's benefit amount.

Under Tier One, if a straight life annuity is paid, upon the retiree's death, 50% of the retiree's benefit is continued to a surviving spouse. If the deceased retiree leaves children under age 18, 75% of the retiree's benefit is continued to the surviving spouse. If there is no surviving spouse, the 75% will be divided among the children under age 18.

Under Tier Two, if a straight life annuity is elected, no survivor benefit is payable.

Benefit Increases After Retirement

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

Member Contributions

None.

Arkansas State Police Officers Deferred Retirement Option Plan – Tier I (Act 967 of 1995)

Tier One members with 30 years of credited service and who are eligible to receive a service retirement pension may participate.

Participating members may continue in employment for up to 7 years and have their accrued monthly benefit (at date of participation) credited to an individual account in the Deferred Retirement Option Plan in lieu of any further benefit accruals.

The Deferred Retirement Option Plan accounts accumulate with interest and are paid to the member at termination of active membership in either a lump sum or as an annuity of equivalent value. Interest is credited annually at a rate established by the Board of Trustees.

Arkansas State Police Officers Deferred Retirement Option Plan – Tier II (Act 1242 of 2009)

Tier Two members with at least 30 years of credited service and are eligible to receive a service retirement pension may participate.

Participating members may continue in employment for up to 7 years and have seventy-two percent (72%) of their accrued monthly benefit (at date of participation) credited to an individual account in the Deferred Retirement Option Plan in lieu of any further benefit accruals.

The Deferred Retirement Option Plan accounts accumulate with interest and are paid to the member at termination of active membership in either a lump sum or as an annuity of equivalent value. Interest is credited annually to participant accounts at a rate established by the Arkansas State Police Retirement System Board of Trustees that shall not be greater than five percent (5%) nor less than one percent (1%) per annum.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Summary of Actuarial Assumptions Used for State Police Actuarial Valuations Assumptions Adopted by Board of Trustees after Consulting with Actuary

In accordance with Section 24-6-204 of the Arkansas Code, the Board of Trustees adopts the actuarial assumptions used for actuarial valuation purposes.

The actuarial assumptions used in the valuation are shown in this section. Assumptions were established based upon an Experience Study covering the period July 1, 2012 through June 30, 2017 (please see our report dated August 9, 2018). The actuarial assumptions represent estimates of future experience.

Economic Assumptions

The investment return rate used in making the valuation was 7.15% per year, compounded annually (net after administrative and investment expenses). The assumed real rate of return is the portion of investment return which is more than the wage inflation rate. Considering assumed wage inflation of 3.25%, the 7.15% investment return rate translates to an effective assumed real rate of return of 3.90%. The wage inflation assumption was revised for the June 30, 2015 valuation and the investment assumption was revised for the June 30, 2017 valuation.

Pay increase assumptions for individual active members are shown on page 29. Part of the assumption for each age is for a merit and/or seniority increase, and the other 3.25% recognizes wage inflation. The wage inflation assumption consists of 2.5% for price inflation and 0.75% for real wage growth. The pay increase assumption for individual active members was revised for the June 30, 2018 valuation.

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

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

Non-Economic Assumptions

The mortality tables used to measure retired life mortality were the RP-2006 Healthy Annuitant benefit weighted generational mortality tables for males and females. The disability post-retirement mortality tables used were the RP-2006 Disabled Retiree benefit weighted generational mortality tables for males and females. The death-in-service mortality tables used were the RP-2006 Employee benefit weighted generational mortality tables for males and females. Mortality rates are multiplied by 135% for males and 125% for females and are adjusted for fully generational mortality improvements using Scale MP-2017. This assumption was first used for the June 30, 2018 valuation.

The probabilities of retirement for members eligible to retire are shown on page 28. The assumption was revised for the June 30, 2018 valuation.

The probabilities of death-in-service, disability and withdrawal from service are shown for sample ages on page 29. The assumption for death-in-service was revised for the June 30, 2018 valuation.

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

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

Unfunded actuarial accrued liabilities are amortized to produce contribution amounts (principal & interest) which are level percent-of-payroll contributions.

Present assets (cash & investments) were valued on a market related basis in which differences between actual and assumed returns are phased-in over a four-year period.

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).

Single Life Retirement Values Based on the RP-2006 Healthy Annuitant Generational Mortality Tables and 7.15% Interest

Sample Attained Ages	Present Value of \$1.00 Monthly for Life		Present Value of \$1.00 Monthly for Life Increasing 3% Annually		Future Life Expectancy (Years) 2020 *	
	Men	Women	Men	Women	Men	Women
40	\$ 156.04	\$ 159.90	\$ 229.33	\$ 239.04	41.05	44.75
45	150.92	155.90	216.34	227.64	36.15	39.77
50	144.42	150.52	201.40	214.01	31.39	34.85
55	136.40	143.37	184.56	197.93	26.82	30.01
60	126.59	134.42	165.79	179.69	22.45	25.36
65	114.88	123.53	145.33	159.53	18.36	20.96
70	101.09	110.25	123.32	137.25	14.55	16.80
75	85.16	94.51	100.11	113.27	11.06	12.94
80	67.86	76.97	76.92	88.85	8.00	9.52
85	50.77	59.12	55.66	65.87	5.48	6.66

* Applicable to calendar year 2020. Life expectancies and rates in future years are determined by the fully generational MP-2017 projection scale.

Sample Attained Ages	\$100 Benefit Increasing 3% Yearly
55	\$100.00
60	115.93
65	134.39
70	155.79
75	180.60
80	209.36

Probabilities of Retirement for Members Eligible to Retire

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year		Years of Service	Percent of Eligible Active Members Retiring Within Next Year
	Tier One	Tier Two		Tier Two
	47	1%		-
48	1%	-		
49	1%	-		
50	6%	1%	30	25%
51	6%	1%	31	15%
52	8%	1%	32	15%
53	8%	6%	33	20%
54	8%	6%	34	35%
55	10%	25%	35	40%
56	10%	20%	36 & Over	100%
57	10%	18%		
58	25%	18%		
59	40%	20%		
60	50%	25%		
61	60%	30%		
62	80%	100%		
63	80%	100%		
64	100%	100%		
65	100%	100%		

A member is assumed to be eligible to retire at age 52 (55 for Tier Two) with 17 years of service, or at any age with 30 years of service (Tier Two). A member is assumed to be eligible to retire early at age 47 (50 for Tier 2) with 17 years of service. For a Tier 2 member with 30 or more years of service at the beginning of a year, the percents shown for service-based retirement (30 or more years) take precedence over the percents associated with age-based retirement.

It was assumed that members eligible to enter the DROP will do so to maximize the value of their benefits.

Separations from Active Employment before Age and Service Retirement & Individual Pay Increases

Sample Ages	Percent of Active Members Separating Within the Next Year				Pay Increase Assumptions for Active Members		
	Death		Disability	Other	Merit & Seniority	Base (Economic)	Increase Next Year
	Male	Female					
20	0.05%	0.02%	0.06%	5.50%	4.50%	3.25%	7.75%
25	0.07%	0.02%	0.09%	5.50%	3.90%	3.25%	7.15%
30	0.07%	0.03%	0.19%	5.50%	2.90%	3.25%	6.15%
35	0.08%	0.04%	0.31%	4.18%	1.90%	3.25%	5.15%
40	0.09%	0.06%	0.43%	2.64%	1.38%	3.25%	4.63%
45	0.13%	0.08%	0.55%	1.43%	1.10%	3.25%	4.35%
50	0.22%	0.13%	0.67%	0.55%	0.80%	3.25%	4.05%
55	0.37%	0.22%	0.79%	0.00%	0.60%	3.25%	3.85%

Miscellaneous and Technical Assumptions

June 30, 2020

Marriage Assumption:	95% of males and 95% of females are assumed to be married for purposes of death-in-service benefits. 90% of males and 90% of females are assumed to be married for purposes of death-after-retirement benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
Pay Increase Timing:	Beginning of 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 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.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Disability and withdrawal decrements do not operate during the period a member is assumed to be eligible for an unreduced benefit.
DROP Participants:	It was assumed that members will participate in the forward DROP to the extent that participating in the forward DROP would provide the highest value of benefits.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year.
Service Load:	A load was added to the normal cost and actuarial accrued liability of 0.25% and approximately \$1.0 million, respectively, to account for the change in Tier 2 DROP eligibility from actual service to credited service (Act 950 of 2019). Actuarial accrued liabilities were also increased by \$2 million to account for revisions to the data submitted.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.
Tier One DROP Interest Credit:	Interest is assumed to be credited at 3.25%.
Tier Two DROP Interest Credit:	Interest is assumed to be credited at 3.25%.
Administrative Expenses:	The normal cost was increased by 0.70% of payroll to fund administrative expenses.

SECTION G

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The *Single Discount Rate* (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects: (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits); and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.15%; the municipal bond rate is 2.45%; and the resulting Single Discount Rate is 7.15%.

The tables in this section provide background for the development of the Single Discount Rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the SDR. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

Single Discount Rate Development Projection of Contributions

Fiscal Year Ending 6/30	Contributions from Current Employees	Normal Cost and Expense Contributions	UAL Contributions	Total Contributions
2021	\$ -	\$ 7,592,533	\$ 9,004,174	\$ 16,596,707
2022	-	7,343,726	9,622,379	16,966,105
2023	-	7,089,065	10,462,067	17,551,131
2024	-	6,867,697	11,244,907	18,112,604
2025	-	6,657,460	11,610,367	18,267,827
2026	-	6,444,069	11,987,704	18,431,773
2027	-	6,246,203	12,377,305	18,623,509
2028	-	6,058,830	12,779,567	18,838,398
2029	-	5,858,547	13,194,903	19,053,450
2030	-	5,649,766	13,623,736	19,273,502
2031	-	5,456,424	14,066,509	19,522,933
2032	-	5,255,762	14,523,669	19,779,431
2033	-	5,020,756	14,995,690	20,016,445
2034	-	4,778,834	15,483,049	20,261,884
2035	-	4,519,061	15,986,247	20,505,308
2036	-	4,269,619	16,505,802	20,775,420
2037	-	4,041,995	17,042,240	21,084,236
2038	-	3,814,432	17,596,112	21,410,545
2039	-	3,611,576	18,167,987	21,779,562
2040	-	3,414,542	-	3,414,542
2041	-	3,161,902	-	3,161,902
2042	-	2,883,778	-	2,883,778
2043	-	2,621,377	-	2,621,377
2044	-	2,357,603	-	2,357,603
2045	-	2,100,389	-	2,100,389
2046	-	1,857,460	-	1,857,460
2047	-	1,624,559	-	1,624,559
2048	-	1,397,356	-	1,397,356
2049	-	1,155,631	-	1,155,631
2050	-	903,823	-	903,823
2051	-	689,868	-	689,868
2052	-	531,161	-	531,161
2053	-	402,140	-	402,140
2054	-	292,088	-	292,088
2055	-	185,088	-	185,088
2056	-	85,882	-	85,882
2057	-	22,467	-	22,467
2058	-	-	-	-
2059	-	-	-	-
2060	-	-	-	-
2061	-	-	-	-
2062	-	-	-	-
2063	-	-	-	-
2064	-	-	-	-
2065	-	-	-	-
2066	-	-	-	-
2067	-	-	-	-
2068	-	-	-	-
2069	-	-	-	-
2070	-	-	-	-

Single Discount Rate Development Projection of Plan Fiduciary Net Position

Fiscal Year Ending 6/30	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.15%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2021	\$ 338,183,678	\$ 16,596,707	\$ 33,803,823	\$ 235,577	\$ 23,567,322	\$ 344,308,306
2022	344,308,306	16,966,105	32,643,421	228,032	24,059,244	352,462,201
2023	352,462,201	17,551,131	33,348,835	220,283	24,638,290	361,082,505
2024	361,082,505	18,112,604	33,217,765	213,474	25,279,212	371,043,081
2025	371,043,081	18,267,827	32,314,392	207,048	26,028,810	382,818,279
2026	382,818,279	18,431,773	33,170,062	200,586	26,846,662	394,726,066
2027	394,726,066	18,623,509	33,507,666	194,547	27,693,156	407,340,518
2028	407,340,518	18,838,398	34,052,198	188,775	28,583,711	420,521,653
2029	420,521,653	19,053,450	34,767,999	182,554	29,508,788	434,133,338
2030	434,133,338	19,273,502	36,012,397	175,984	30,446,266	447,664,724
2031	447,664,724	19,522,933	37,211,144	169,924	31,380,621	461,187,211
2032	461,187,211	19,779,431	38,203,725	163,760	32,321,834	474,920,991
2033	474,920,991	20,016,445	38,928,633	156,672	33,286,908	489,139,040
2034	489,139,040	20,261,884	39,856,771	149,315	34,279,771	503,674,609
2035	503,674,609	20,505,308	41,297,898	141,365	35,277,265	518,017,919
2036	518,017,919	20,775,420	41,486,338	133,671	36,305,952	533,479,282
2037	533,479,282	21,084,236	42,105,126	126,645	37,400,796	549,732,542
2038	549,732,542	21,410,545	42,287,208	119,767	38,568,212	567,304,324
2039	567,304,324	21,779,562	43,011,137	113,634	39,812,341	585,771,456
2040	585,771,456	3,414,542	43,688,589	107,521	40,463,940	585,853,829
2041	585,853,829	3,161,902	45,151,675	99,616	40,409,829	584,174,269
2042	584,174,269	2,883,778	45,780,097	90,914	40,258,197	581,445,232
2043	581,445,232	2,621,377	46,730,176	82,677	40,020,762	577,274,517
2044	577,274,517	2,357,603	47,121,714	74,354	39,699,825	572,135,878
2045	572,135,878	2,100,389	47,587,509	66,244	39,307,296	565,889,810
2046	565,889,810	1,857,460	47,921,394	58,595	38,840,706	558,607,987
2047	558,607,987	1,624,559	48,789,899	51,267	38,281,617	549,672,997
2048	549,672,997	1,397,356	48,897,932	44,098	37,631,240	539,759,562
2049	539,759,562	1,155,631	49,263,272	36,469	36,901,369	528,516,822
2050	528,516,822	903,823	49,962,251	28,505	36,064,389	515,494,279
2051	515,494,279	689,868	49,916,928	21,735	35,127,591	501,373,075
2052	501,373,075	531,161	49,575,439	16,721	34,124,523	486,436,599
2053	486,436,599	402,140	48,963,608	12,661	33,073,670	470,936,139
2054	470,936,139	292,088	48,212,703	9,203	31,988,023	454,994,344
2055	454,994,344	185,088	48,114,320	5,836	30,848,000	437,907,277
2056	437,907,277	85,882	47,066,926	2,713	29,659,697	420,583,218
2057	420,583,218	22,467	45,582,775	710	28,471,012	403,493,212
2058	403,493,212	-	43,783,048	-	27,311,542	387,021,706
2059	387,021,706	-	42,623,493	-	26,174,568	370,572,781
2060	370,572,781	-	41,491,497	-	25,038,240	354,119,523
2061	354,119,523	-	40,344,118	-	23,902,142	337,677,547
2062	337,677,547	-	39,194,158	-	22,766,942	321,250,331
2063	321,250,331	-	38,027,696	-	21,633,378	304,856,013
2064	304,856,013	-	36,817,615	-	20,503,698	288,542,096
2065	288,542,096	-	35,567,384	-	19,381,177	272,355,888
2066	272,355,888	-	34,280,861	-	18,269,062	256,344,089
2067	256,344,089	-	32,962,211	-	17,170,546	240,552,424
2068	240,552,424	-	31,616,326	-	16,088,727	225,024,825
2069	225,024,825	-	30,248,791	-	15,026,549	209,802,583
2070	209,802,583	-	28,865,176	-	13,986,769	194,924,176

Single Discount Rate Development Projection of Plan Fiduciary Net Position (Concluded)

Fiscal Year Ending 6/30	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.15%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2071	\$ 194,924,176	\$ -	\$ 27,470,464	\$ -	\$ 12,971,963	\$ 180,425,675
2072	180,425,675	-	26,068,471	-	11,984,576	166,341,781
2073	166,341,781	-	24,662,002	-	11,026,991	152,706,770
2074	152,706,770	-	23,253,887	-	10,101,559	139,554,442
2075	139,554,442	-	21,847,185	-	9,210,589	126,917,846
2076	126,917,846	-	20,445,233	-	8,356,327	114,828,940
2077	114,828,940	-	19,051,915	-	7,540,921	103,317,946
2078	103,317,946	-	17,671,645	-	6,766,378	92,412,680
2079	92,412,680	-	16,309,544	-	6,034,506	82,137,642
2080	82,137,642	-	14,971,435	-	5,346,852	72,513,059
2081	72,513,059	-	13,663,184	-	4,704,657	63,554,533
2082	63,554,533	-	12,390,295	-	4,108,843	55,273,081
2083	55,273,081	-	11,158,378	-	3,560,000	47,674,703
2084	47,674,703	-	9,973,621	-	3,058,340	40,759,421
2085	40,759,421	-	8,842,331	-	2,603,642	34,520,733
2086	34,520,733	-	7,770,642	-	2,195,228	28,945,318
2087	28,945,318	-	6,764,532	-	1,831,933	24,012,720
2088	24,012,720	-	5,829,370	-	1,512,107	19,695,457
2089	19,695,457	-	4,969,949	-	1,233,617	15,959,125
2090	15,959,125	-	4,189,578	-	993,886	12,763,433
2091	12,763,433	-	3,489,416	-	789,992	10,064,009
2092	10,064,009	-	2,868,796	-	618,788	7,814,001
2093	7,814,001	-	2,325,257	-	477,008	5,965,752
2094	5,965,752	-	1,855,284	-	361,370	4,471,838
2095	4,471,838	-	1,454,680	-	268,629	3,285,787
2096	3,285,787	-	1,118,704	-	195,630	2,362,713
2097	2,362,713	-	842,237	-	139,344	1,659,820
2098	1,659,820	-	619,574	-	96,910	1,137,155
2099	1,137,155	-	444,451	-	65,692	758,396
2100	758,396	-	310,264	-	43,325	491,457
2101	491,457	-	210,332	-	27,750	308,875
2102	308,875	-	138,177	-	17,230	187,928
2103	187,928	-	87,788	-	10,353	110,492
2104	110,492	-	53,826	-	6,009	62,675
2105	62,675	-	31,785	-	3,365	34,255
2106	34,255	-	18,045	-	1,815	18,025
2107	18,025	-	9,838	-	943	9,130
2108	9,130	-	5,148	-	472	4,453
2109	4,453	-	2,586	-	228	2,095
2110	2,095	-	1,248	-	106	952
2111	952	-	581	-	48	419
2112	419	-	262	-	21	178
2113	178	-	114	-	9	73
2114	73	-	48	-	4	29
2115	29	-	19	-	1	11
2116	11	-	8	-	1	4
2117	4	-	3	-	0	1
2118	1	-	1	-	0	0
2119	0	-	0	-	0	0
2120	0	-	0	-	0	0

Single Discount Rate Development

Present Values of Projected Benefits

Fiscal Year Ending 6/30	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ^{-(a)-.5}	(g)=(e)*vf ^{-(a)-.5}	(h)=(c)/(1+sdr) ^{-(a)-.5}
2021	\$ 338,183,678	\$ 33,803,823	\$ 33,803,823	\$ -	\$ 32,656,507	\$ -	\$ 32,656,507
2022	344,308,306	32,643,421	32,643,421	-	29,431,162	-	29,431,162
2023	352,462,201	33,348,835	33,348,835	-	28,060,811	-	28,060,811
2024	361,082,505	33,217,765	33,217,765	-	26,085,418	-	26,085,418
2025	371,043,081	32,314,392	32,314,392	-	23,682,699	-	23,682,699
2026	382,818,279	33,170,062	33,170,062	-	22,687,640	-	22,687,640
2027	394,726,066	33,507,666	33,507,666	-	21,389,224	-	21,389,224
2028	407,340,518	34,052,198	34,052,198	-	20,286,346	-	20,286,346
2029	420,521,653	34,767,999	34,767,999	-	19,330,639	-	19,330,639
2030	434,133,338	36,012,397	36,012,397	-	18,686,431	-	18,686,431
2031	447,664,724	37,211,144	37,211,144	-	18,020,016	-	18,020,016
2032	461,187,211	38,203,725	38,203,725	-	17,266,157	-	17,266,157
2033	474,920,991	38,928,633	38,928,633	-	16,419,766	-	16,419,766
2034	489,139,040	39,856,771	39,856,771	-	15,689,451	-	15,689,451
2035	503,674,609	41,297,898	41,297,898	-	15,171,950	-	15,171,950
2036	518,017,919	41,486,338	41,486,338	-	14,224,152	-	14,224,152
2037	533,479,282	42,105,126	42,105,126	-	13,472,993	-	13,472,993
2038	549,732,542	42,287,208	42,287,208	-	12,628,331	-	12,628,331
2039	567,304,324	43,011,137	43,011,137	-	11,987,419	-	11,987,419
2040	585,771,456	43,688,589	43,688,589	-	11,363,722	-	11,363,722
2041	585,853,829	45,151,675	45,151,675	-	10,960,598	-	10,960,598
2042	584,174,269	45,780,097	45,780,097	-	10,371,580	-	10,371,580
2043	581,445,232	46,730,176	46,730,176	-	9,880,376	-	9,880,376
2044	577,274,517	47,121,714	47,121,714	-	9,298,330	-	9,298,330
2045	572,135,878	47,587,509	47,587,509	-	8,763,643	-	8,763,643
2046	565,889,810	47,921,394	47,921,394	-	8,236,240	-	8,236,240
2047	558,607,987	48,789,899	48,789,899	-	7,825,954	-	7,825,954
2048	549,672,997	48,897,932	48,897,932	-	7,319,909	-	7,319,909
2049	539,759,562	49,263,272	49,263,272	-	6,882,501	-	6,882,501
2050	528,516,822	49,962,251	49,962,251	-	6,514,376	-	6,514,376
2051	515,494,279	49,916,928	49,916,928	-	6,074,164	-	6,074,164
2052	501,373,075	49,575,439	49,575,439	-	5,630,060	-	5,630,060
2053	486,436,599	48,963,608	48,963,608	-	5,189,526	-	5,189,526
2054	470,936,139	48,212,703	48,212,703	-	4,768,959	-	4,768,959
2055	454,994,344	48,114,320	48,114,320	-	4,441,650	-	4,441,650
2056	437,907,277	47,066,926	47,066,926	-	4,055,026	-	4,055,026
2057	420,583,218	45,582,775	45,582,775	-	3,665,104	-	3,665,104
2058	403,493,212	43,783,048	43,783,048	-	3,285,484	-	3,285,484
2059	387,021,706	42,623,493	42,623,493	-	2,985,041	-	2,985,041
2060	370,572,781	41,491,497	41,491,497	-	2,711,866	-	2,711,866
2061	354,119,523	40,344,118	40,344,118	-	2,460,918	-	2,460,918
2062	337,677,547	39,194,158	39,194,158	-	2,231,239	-	2,231,239
2063	321,250,331	38,027,696	38,027,696	-	2,020,378	-	2,020,378
2064	304,856,013	36,817,615	36,817,615	-	1,825,560	-	1,825,560
2065	288,542,096	35,567,384	35,567,384	-	1,645,887	-	1,645,887
2066	272,355,888	34,280,861	34,280,861	-	1,480,498	-	1,480,498
2067	256,344,089	32,962,211	32,962,211	-	1,328,557	-	1,328,557
2068	240,552,424	31,616,326	31,616,326	-	1,189,277	-	1,189,277
2069	225,024,825	30,248,791	30,248,791	-	1,061,910	-	1,061,910
2070	209,802,583	28,865,176	28,865,176	-	945,718	-	945,718

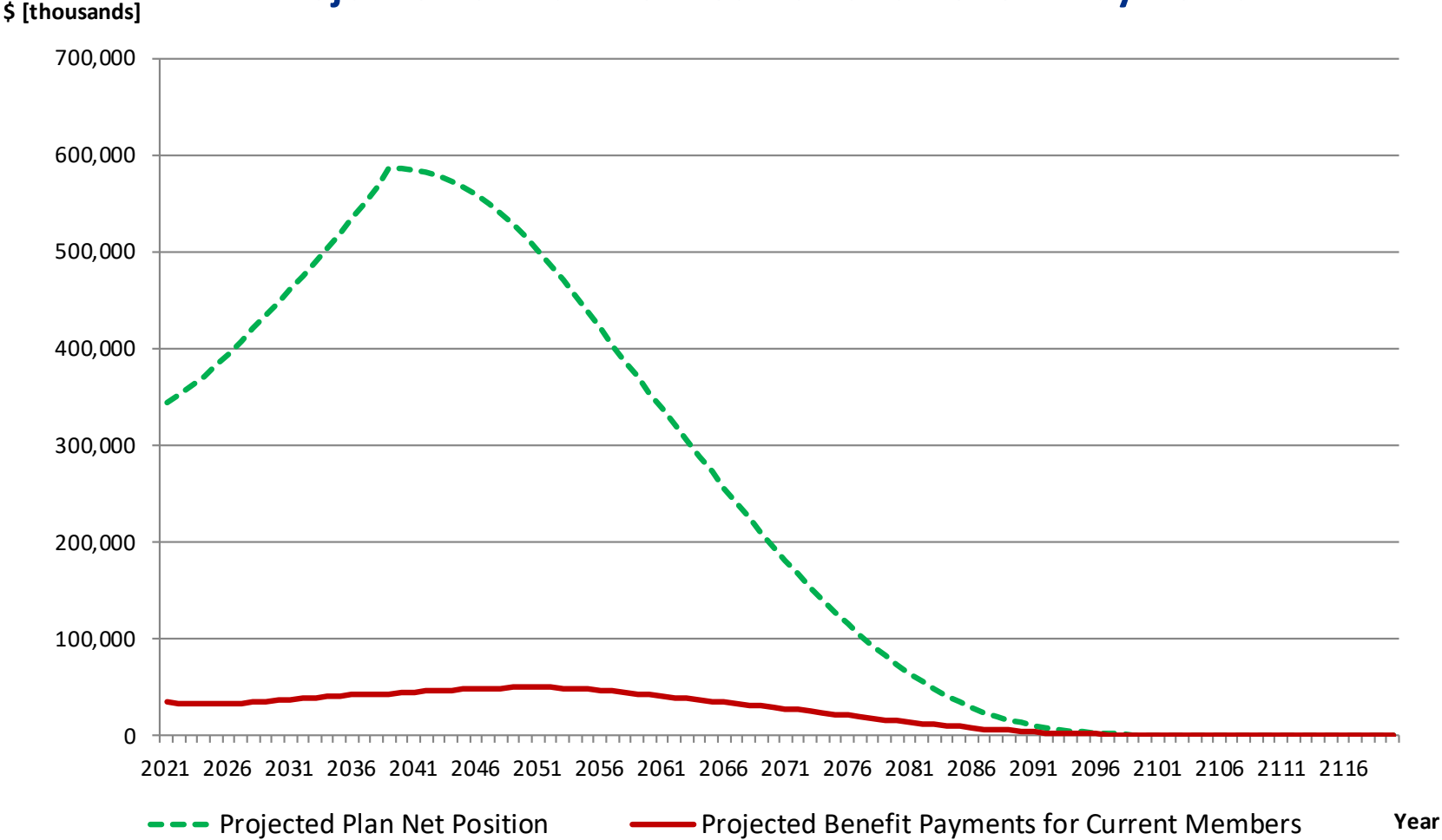


Single Discount Rate Development Present Values of Projected Benefits (Concluded)

Fiscal Year Ending 6/30	Projected		Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit	Present Value of Unfunded Benefit	Present Value of Benefit
	Beginning Plan Net Position	Projected Benefit Payments			Payments using Expected Return Rate (v)	Payments using Municipal Bond Rate (vf)	Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ^{-(a)-.5}	(g)=(e)*vf ^{-(a)-.5}	(h)=(c)/(1+sdr) ^{-(a)-.5}
2071	\$ 194,924,176	\$ 27,470,464	\$ 27,470,464	\$ -	\$ 839,965	\$ -	\$ 839,965
2072	180,425,675	26,068,471	26,068,471	-	743,907	-	743,907
2073	166,341,781	24,662,002	24,662,002	-	656,809	-	656,809
2074	152,706,770	23,253,887	23,253,887	-	577,982	-	577,982
2075	139,554,442	21,847,185	21,847,185	-	506,783	-	506,783
2076	126,917,846	20,445,233	20,445,233	-	442,615	-	442,615
2077	114,828,940	19,051,915	19,051,915	-	384,929	-	384,929
2078	103,317,946	17,671,645	17,671,645	-	333,217	-	333,217
2079	92,412,680	16,309,544	16,309,544	-	287,012	-	287,012
2080	82,137,642	14,971,435	14,971,435	-	245,883	-	245,883
2081	72,513,059	13,663,184	13,663,184	-	209,423	-	209,423
2082	63,554,533	12,390,295	12,390,295	-	177,240	-	177,240
2083	55,273,081	11,158,378	11,158,378	-	148,967	-	148,967
2084	47,674,703	9,973,621	9,973,621	-	124,265	-	124,265
2085	40,759,421	8,842,331	8,842,331	-	102,819	-	102,819
2086	34,520,733	7,770,642	7,770,642	-	84,328	-	84,328
2087	28,945,318	6,764,532	6,764,532	-	68,511	-	68,511
2088	24,012,720	5,829,370	5,829,370	-	55,100	-	55,100
2089	19,695,457	4,969,949	4,969,949	-	43,842	-	43,842
2090	15,959,125	4,189,578	4,189,578	-	34,492	-	34,492
2091	12,763,433	3,489,416	3,489,416	-	26,810	-	26,810
2092	10,064,009	2,868,796	2,868,796	-	20,571	-	20,571
2093	7,814,001	2,325,257	2,325,257	-	15,561	-	15,561
2094	5,965,752	1,855,284	1,855,284	-	11,587	-	11,587
2095	4,471,838	1,454,680	1,454,680	-	8,479	-	8,479
2096	3,285,787	1,118,704	1,118,704	-	6,086	-	6,086
2097	2,362,713	842,237	842,237	-	4,276	-	4,276
2098	1,659,820	619,574	619,574	-	2,936	-	2,936
2099	1,137,155	444,451	444,451	-	1,965	-	1,965
2100	758,396	310,264	310,264	-	1,280	-	1,280
2101	491,457	210,332	210,332	-	810	-	810
2102	308,875	138,177	138,177	-	497	-	497
2103	187,928	87,788	87,788	-	294	-	294
2104	110,492	53,826	53,826	-	169	-	169
2105	62,675	31,785	31,785	-	93	-	93
2106	34,255	18,045	18,045	-	49	-	49
2107	18,025	9,838	9,838	-	25	-	25
2108	9,130	5,148	5,148	-	12	-	12
2109	4,453	2,586	2,586	-	6	-	6
2110	2,095	1,248	1,248	-	3	-	3
2111	952	581	581	-	1	-	1
2112	419	262	262	-	0	-	0
2113	178	114	114	-	0	-	0
2114	73	48	48	-	0	-	0
2115	29	19	19	-	0	-	0
2116	11	8	8	-	0	-	0
2117	4	3	3	-	0	-	0
2118	1	1	1	-	0	-	0
2119	0	0	0	-	0	-	0
2120	0	0	0	-	-	-	-
Totals					\$ 539,760,761	\$ -	\$ 539,760,761



Projection of Plan Net Position and Benefit Payments



SECTION H

GLOSSARY OF TERMS

Glossary of Terms

<i>Actuarial Accrued Liability (AAL)</i>	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
<i>Actuarial Assumptions</i>	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
<i>Accrued Service</i>	Service credited under the system which was rendered before the date of the actuarial valuation.
<i>Actuarial Equivalent</i>	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
<i>Actuarial Cost Method</i>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
<i>Actuarial Gain (Loss)</i>	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
<i>Actuarial Present Value (APV)</i>	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
<i>Actuarial Valuation</i>	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.
<i>Actuarial Valuation Date</i>	The date as of which an actuarial valuation is performed.
<i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i>	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically, the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

Glossary of Terms

<i>Amortization Payment</i>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<i>Amortization Method</i>	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
<i>Cost-of-Living Adjustments</i>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i>	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
<i>Covered-Employee Payroll</i>	The payroll of employees that are provided with pensions through the pension plan.
<i>Deferred Retirement Option Program (DROP)</i>	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.
<i>Deferred Inflows and Outflows</i>	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
<i>Discount Rate</i>	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: <ol style="list-style-type: none">1. The benefit payments to be made while the pension plan’s fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

Glossary of Terms

Entry Age Actuarial Cost Method (EAN)

The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit age(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.

GASB

The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.

Fiduciary Net Position

The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.

Long-Term Expected Rate of Return

The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.

Money-Weighted Rate of Return

The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.

Multiple-Employer Defined Benefit Pension Plan

A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.

Municipal Bond Rate

The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.

Net Pension Liability (NPL)

The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.

Non-Employer Contributing Entities

Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contributing entities.

Normal Cost

The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.

Glossary of Terms

<i>Other Postemployment Benefits (OPEB)</i>	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits.
<i>Real Rate of Return</i>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<i>Service Cost</i>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<i>Total Pension Expense</i>	<p>The total pension expense is the sum of the following items that are recognized at the end of the employer’s fiscal year:</p> <ol style="list-style-type: none">1. Service Cost2. Interest on the Total Pension Liability3. Current-Period Benefit Changes4. Employee Contributions (made negative for addition here)5. Projected Earnings on Plan Investments (made negative for addition here)6. Pension Plan Administrative Expense7. Other Changes in Plan Fiduciary Net Position8. Recognition of Outflow (Inflow) of Resources due to Liabilities9. Recognition of Outflow (Inflow) of Resources due to Assets
<i>Total Pension Liability (TPL)</i>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<i>Unfunded Actuarial Accrued Liability (UAAL)</i>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<i>Valuation Assets</i>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.



November 20, 2020

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

Dear Duncan:

Please find enclosed 15 copies of the June 30, 2020 GASB Statements No. 67 and No. 68 Accounting and Financial Reporting for Pensions report of the Arkansas State Police Retirement System.

Sincerely,

A handwritten signature in black ink that reads "David L. Hoffman". The signature is written in a cursive, slightly slanted style.

David L. Hoffman

DLH:dj
Enclosures