

Arkansas State Police Retirement System

GASB Statement Nos. 67 and 68 Accounting and
Financial Reporting for Pensions
June 30, 2019



November 22, 2019

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, 2019 for additional discussions of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, this report is complete, accurate, and in accordance with generally recognized actuarial methods. Heidi G. Barry is a Member of the American Academy of Actuaries (MAAA) and meets 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,



Heidi G. Barry, ASA, FCA, MAAA



David L. Hoffman

HGB/DLH:ah

Table of Contents

		<u>Page</u>
Section A	Executive Summary	
	Executive Summary.....	1
	Discussion.....	2
Section B	Financial Statements	
	Statement of Pension Expense	5
	Statement of Outflows and Inflows Arising from Current Reporting Period	6
	Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods.....	7-8
	Statement of Fiduciary Net Position.....	9
	Statement of Changes in Fiduciary Net Position	10
Section C	Required Supplementary Information	
	Schedule of Changes in Net Pension Liability and Related Ratios Current Period	11
	Schedule of Changes in Net Pension Liability and Related Ratios Multiyear	12
	Schedule of Net Pension Liability Multiyear	13
	Schedule of Contributions Multiyear.....	14
	Notes to Schedule of Contributions.....	15
	Schedule of Investment Returns Multiyear	16
Section D	Notes to Financial Statements	
	Asset Allocation.....	17
	Sensitivity of Net Pension Liability to the Single Discount Rate Assumption.....	18
	Disclosure Regarding the Deferred Retirement Option Program.....	19
	Summary of Population Statistics	20
Section E	Summary of Benefits.....	21
Section F	Actuarial Cost Method and Actuarial Assumptions	
	Actuarial Assumptions, Input to Discount Rates, Mortality Assumptions, and..... Experience Studies	25
	Miscellaneous and Technical Assumptions	30
Section G	Calculation of the Single Discount Rate	
	Calculation of the Single Discount Rate	31
	Projection of Contributions.....	32
	Projection of Plan Fiduciary Net Position	33
	Present Values of Projected Benefits.....	35
	Projection of Plan Net Position and Benefit Payments	37
Section H	Glossary of Terms.....	38

SECTION A

EXECUTIVE SUMMARY

Executive Summary as of June 30, 2019

Actuarial Valuation Date	June 30, 2019
Measurement Date of the Net Pension Liability	June 30, 2019
Employer's Fiscal Year Ending Date (Reporting Date)	June 30, 2019

Membership

Number of	
- Retirees and Beneficiaries and DROP Members	735
- Inactive, Nonretired Members	102
- Active Members	473
- Total	1,310
Covered Payroll #	\$ 30,287,691

Net Pension Liability

Total Pension Liability	\$ 458,133,785
Plan Fiduciary Net Position	337,739,012
Net Pension Liability	\$ 120,394,773
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	73.72%
Net Pension Liability as a Percentage of Covered Payroll	397.50%

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*	3.13%
Last year ending June 30 in the 2020 to 2119 projection period for which projected benefit payments are fully funded	2119

Total Pension Expense	\$ 22,843,241
------------------------------	----------------------

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	\$ 601,132	\$ 2,536,838
Changes in assumptions	5,871,527	2,551,259
Net difference between projected and actual earnings on pension plan investments	9,028,213	8,996,809
Total	\$ 15,500,872	\$ 14,084,906

* 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 28, 2019. 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, 2019.

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, 2019 and a measurement date of June 30, 2019.

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 3.13% (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, 2019

Total Pension Expense

1. Service Cost	\$ 6,691,528
2. Interest on the Total Pension Liability	31,299,758
3. Current-Period Benefit Changes	-
4. Employee Contributions (made negative for addition here)	-
5. Projected Earnings on Plan Investments (made negative for addition here)	(23,081,837)
6. Pension Plan Administrative Expense	554,441
7. Other Changes in Plan Fiduciary Net Position	0
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	2,685,040
9. Recognition of Outflow (Inflow) of Resources due to Assets	4,694,311
10. Total Pension Expense	\$ 22,843,241

Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2019

A. Outflows (Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ (1,805,446)
2. Assumption Changes (gains) or losses	\$ -
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	4.5399
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	\$ (397,684)
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	<u>\$ (397,684)</u>
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	\$ (1,407,762)
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	<u>\$ (1,407,762)</u>

B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 6,050,370
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	\$ 1,210,074
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ 4,840,296

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

Fiscal Year Ended June 30, 2019

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

	<u>Outflows of Resources</u>	<u>Inflows of Resources</u>	<u>Net Outflows of Resources</u>
1. Due to Liabilities	\$ 5,224,537	\$ 2,539,497	\$ 2,685,040
2. Due to Assets	8,439,794	3,745,483	4,694,311
3. Total	\$ 13,664,331	\$ 6,284,980	\$ 7,379,351

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

	<u>Outflows of Resources</u>	<u>Inflows of Resources</u>	<u>Net Outflows of Resources</u>
1. Differences between expected and actual experience	\$ 457,013	\$ 1,550,560	\$ (1,093,547)
2. Assumption Changes	4,767,524	988,937	3,778,587
3. Net Difference between projected and actual earnings on pension plan investments	8,439,794	3,745,483	4,694,311
4. Total	\$ 13,664,331	\$ 6,284,980	\$ 7,379,351

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

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>	<u>Net Deferred Outflows of Resources</u>
1. Differences between expected and actual experience	\$ 601,132	\$ 2,536,838	\$ (1,935,706)
2. Assumption Changes	5,871,527	2,551,259	3,320,268
3. Net Difference between projected and actual earnings on pension plan investments	9,028,213	8,996,809	31,404
4. Total	\$ 15,500,872	\$ 14,084,906	\$ 1,415,966

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

<u>Year Ending June 30</u>	<u>Net Deferred Outflows of Resources</u>
2020	\$ 3,399,143
2021	(1,770,878)
2022	(1,207,663)
2023	995,364
2024	-
Thereafter	-
Total	\$ 1,415,966

Statement of Outflows and Inflows Arising from the Current and Prior Reporting Periods Fiscal Year Ended June 30, 2019

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					
2015	\$ (3,107,531)	4.7884	\$ (511,647)	\$ -	0.0000
2016	1,757,687	4.9518	354,959	337,851	0.9518
2017	(3,052,763)	4.7608	(641,229)	(1,129,076)	1.7608
2018	467,389	4.5798	102,054	263,281	2.5798
2019	(1,805,446)	4.5399	(397,684)	(1,407,762)	3.5399
Total			\$ (1,093,547)	\$ (1,935,706)	
Deferred Outflow (Inflow) due to Assumption Changes					
2015	\$ 8,703,080	4.7884	\$ 1,432,944	\$ -	0.0000
2016	-	4.9518	-	-	0.9518
2017	15,875,267	4.7608	3,334,580	5,871,527	1.7608
2018	(4,529,133)	4.5798	(988,937)	(2,551,259)	2.5798
2019	-	4.5399	-	-	3.5399
Total			\$ 3,778,587	\$ 3,320,268	
Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments					
2015	\$ 15,209,020	5.0000	\$ 3,041,804	\$ -	0.0000
2016	20,939,581	5.0000	4,187,916	4,187,917	1.0000
2017	(11,198,217)	5.0000	(2,239,643)	(4,479,288)	2.0000
2018	(7,529,201)	5.0000	(1,505,840)	(4,517,521)	3.0000
2019	6,050,370	5.0000	1,210,074	4,840,296	4.0000
Total			\$ 4,694,311	\$ 31,404	

Statement of Fiduciary Net Position as of June 30, 2019

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		\$ 337,739,012
---	--	-----------------------

Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2019

Additions

Contributions	
Employer	\$ 21,254,010
Employee	-
Other	-
Total Contributions	<u>\$ 21,254,010</u>
Investment Income	
Net Appreciation in Fair Value of Investments	\$ 19,152,128
Interest and Dividends	-
Less Investment Expense	(2,120,661)
Net Investment Income	<u>\$ 17,031,467</u>
Other	\$ -
Total Additions	<u>\$ 38,285,477</u>

Deductions

Benefit payments, including refunds of employee contributions	\$ 24,930,275
Pension Plan Administrative Expense	554,441
Other	-
Total Deductions	<u>\$ 25,484,716</u>
Net Increase in Net Position	\$ 12,800,761

Net Position Restricted for Pensions

Beginning of Year	<u>\$ 324,938,251</u>
End of Year	<u>\$ 337,739,012</u>

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, 2019

A. Total pension liability	
1. Service Cost	\$ 6,691,528
2. Interest on the Total Pension Liability	31,299,758
3. Changes of benefit terms	-
4. Difference between expected and actual experience of the Total Pension Liability	(1,805,446)
5. Changes of assumptions	0
6. Benefit payments, including refunds of employee contributions	(24,930,275)
7. Net change in total pension liability	\$ 11,255,565
8. Total pension liability – beginning	446,878,220
9. Total pension liability – ending	<u><u>\$ 458,133,785</u></u>
B. Plan fiduciary net position	
1. Contributions – employer	\$ 21,254,010
2. Contributions – employee	-
3. Net investment income	17,031,467
4. Benefit payments, including refunds of employee contributions	(24,930,275)
5. Pension Plan Administrative Expense	(554,441)
6. Other	-
7. Net change in plan fiduciary net position	\$ 12,800,761
8. Plan fiduciary net position – beginning	324,938,251
9. Plan fiduciary net position – ending	<u><u>\$ 337,739,012</u></u>
C. Net pension liability	<u><u>\$ 120,394,773</u></u>
D. Plan fiduciary net position as a percentage of the total pension liability	73.72%
E. Covered-employee payroll #	\$ 30,287,691
F. Net pension liability as a percentage of covered-employee payroll	397.50%

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,	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	\$ 6,691,528	\$ 6,577,148	\$ 5,473,626	\$ 5,488,445	\$ 6,101,608	\$ 4,866,199
Interest on the Total Pension Liability	31,299,758	30,678,211	30,322,786	29,469,678	29,218,802	28,558,511
Benefit Changes	-	-	-	-	-	-
Difference between Expected and Actual Experience	(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	(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	11,255,565	9,008,197	23,987,129	10,680,344	17,557,158	20,252,980
Total Pension Liability - Beginning	446,878,220	437,870,023	413,882,894	403,202,550	385,645,392	365,392,412
Total Pension Liability - Ending (a)	\$ 458,133,785	\$ 446,878,220	\$ 437,870,023	\$ 413,882,894	\$ 403,202,550	\$ 385,645,392
Plan Fiduciary Net Position						
Employer Contributions	\$ 21,254,010	\$ 21,003,650	\$ 19,961,066	\$ 19,713,295	\$ 19,784,130	\$ 19,501,684
Employee Contributions	-	-	-	-	94,814	-
Pension Plan Net Investment Income	17,031,467	28,823,332	31,484,250	(210,045)	6,131,684	43,307,746
Benefit Payments	(24,930,275)	(24,185,418)	(24,631,787)	(26,035,466)	(23,358,801)	(21,688,239)
Refunds	-	-	-	-	-	-
Pension Plan Administrative Expense	(554,441)	(228,430)	(208,424)	(205,342)	(196,231)	(189,658)
Other	-	-	-	-	6	-
Net Change in Plan Fiduciary Net Position	12,800,761	25,413,134	26,605,105	(6,737,558)	2,455,602	40,931,533
Plan Fiduciary Net Position - Beginning	324,938,251	299,525,117	272,920,012	279,657,570	277,201,968	236,270,435
Plan Fiduciary Net Position - Ending (b)	\$ 337,739,012	\$ 324,938,251	\$ 299,525,117	\$ 272,920,012	\$ 279,657,570	\$ 277,201,968
Net Pension Liability - Ending (a) - (b)	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	73.72 %	72.71 %	68.41 %	65.94 %	69.36 %	71.88 %
Covered-Employee Payroll #	\$ 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	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

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%

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)

Last 10 Fiscal Years

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll#	Actual Contribution as a % of Covered Payroll
2010	\$ 12.7	\$ 20.5	\$ (7.8)	\$ 28.5	71.93%
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%

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, 2018

Methods and Assumptions Used to Determine Contribution Rates for Fiscal Year Ending June 30, 2019:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	21 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 The actuarial assumptions for were updated in the June 30, 2018 actuarial valuation as a result of a 5-year experience study.

Schedule of Investment Returns Multiyear

To Be Provided by System

Last 10 Fiscal Years

<u>FY Ending June 30,</u>	<u>Annual Return¹</u>
2010	
2011	
2012	
2013	
2014	
2015	
2016	
2017	
2018	
2019	

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 2019 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, 2019, 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%	6.20%
International Equity	24%	6.33%
Real Assets	16%	3.32%
Absolute Return	5%	3.56%
Domestic Fixed	18%	1.54%
Total	100%	
Total Real Rate of Return		4.80%
Plus: Price Inflation - Actuary's Assumption		2.50%
Less: Investment Expenses (Passive)		0.00%
Net Expected Return		7.30%

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%	Discount Discount Rate 7.15%	1% Increase 8.15%
Total Pension Liability (TPL)	\$ 513,265,259	\$ 458,133,785	\$ 412,310,647
Net Position Restricted for Pensions	<u>337,739,012</u>	<u>337,739,012</u>	<u>337,739,012</u>
Net Pension Liability (NPL)	\$ 175,526,247	\$ 120,394,773	\$ 74,571,635

Disclosure Regarding the Deferred Retirement Option Program

To Be Provided by System

Summary of Population Statistics As of June 30, 2019

Inactive Plan Members or Beneficiaries Currently Receiving Benefits (Including DROP participants)	735
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	102
Active Plan Members	<u>473</u>
Total Plan Members	1,310

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 actual 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 27. 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 28. 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) 2018 *	
	Men	Women	Men	Women	Men	Women
40	\$ 155.86	\$ 159.76	\$ 228.83	\$ 238.62	40.85	44.56
45	150.67	155.71	215.75	227.14	35.96	39.59
50	144.07	150.25	200.67	213.41	31.19	34.66
55	135.97	143.05	183.75	197.25	26.62	29.83
60	126.16	134.08	165.01	179.03	22.29	25.20
65	114.46	123.16	144.61	158.86	18.22	20.82
70	100.62	109.76	122.59	136.46	14.43	16.66
75	84.59	93.92	99.31	112.42	10.95	12.82
80	67.26	76.39	76.15	88.07	7.90	9.42
85	50.25	58.64	55.03	65.27	5.41	6.59

* Applicable to calendar year 2019. 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	0.23%	0.14%	0.67%	0.55%	0.80%	3.25%	4.05%
55	0.38%	0.22%	0.79%	0.00%	0.60%	3.25%	3.85%

Miscellaneous and Technical Assumptions

June 30, 2019

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.
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 3.13%; 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
2020	\$ -	\$ 6,904,044	\$ 8,537,065	\$ 15,441,110
2021	-	6,721,362	8,587,684	15,309,047
2022	-	6,505,622	8,835,875	15,341,496
2023	-	6,284,386	9,263,903	15,548,289
2024	-	6,084,071	9,564,981	15,649,052
2025	-	5,882,401	9,875,842	15,758,243
2026	-	5,669,900	10,196,806	15,866,706
2027	-	5,468,380	10,528,203	15,996,583
2028	-	5,280,804	10,870,370	16,151,174
2029	-	5,080,117	11,223,657	16,303,774
2030	-	4,864,837	11,588,425	16,453,261
2031	-	4,667,591	11,965,049	16,632,640
2032	-	4,487,153	12,353,914	16,841,066
2033	-	4,290,559	12,755,416	17,045,975
2034	-	4,075,746	13,169,967	17,245,712
2035	-	3,839,286	13,597,991	17,437,277
2036	-	3,612,916	14,039,925	17,652,841
2037	-	3,410,035	14,496,222	17,906,257
2038	-	3,224,903	14,967,349	18,192,252
2039	-	3,056,751	15,453,789	18,510,540
2040	-	2,870,227	-	2,870,227
2041	-	2,633,446	-	2,633,446
2042	-	2,374,918	-	2,374,918
2043	-	2,130,707	-	2,130,707
2044	-	1,885,355	-	1,885,355
2045	-	1,648,159	-	1,648,159
2046	-	1,425,098	-	1,425,098
2047	-	1,218,557	-	1,218,557
2048	-	1,018,660	-	1,018,660
2049	-	808,880	-	808,880
2050	-	611,604	-	611,604
2051	-	461,202	-	461,202
2052	-	344,938	-	344,938
2053	-	241,672	-	241,672
2054	-	158,408	-	158,408
2055	-	86,710	-	86,710
2056	-	25,038	-	25,038
2057	-	-	-	-
2058	-	-	-	-
2059	-	-	-	-
2060	-	-	-	-
2061	-	-	-	-
2062	-	-	-	-
2063	-	-	-	-
2064	-	-	-	-
2065	-	-	-	-
2066	-	-	-	-
2067	-	-	-	-
2068	-	-	-	-
2069	-	-	-	-

Single Discount Rate Development Projection of Plan Fiduciary Net Position

Fiscal Year	Projected	Projected	Projected	Projected	Projected	Projected
Ending	Beginning Plan	Projected Total	Benefit	Administrative	Investment	Projected Ending
6/30	Net Position	Contributions	Payments	Expenses	Earnings at 7.15%	Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2020	\$ 337,739,012	\$ 15,441,110	\$ 32,278,109	\$ 214,678	\$ 23,549,265	\$ 344,236,600
2021	344,236,600	15,309,047	31,620,643	209,133	24,032,497	351,748,368
2022	351,748,368	15,341,496	31,555,585	202,564	24,573,245	359,904,960
2023	359,904,960	15,548,289	32,333,266	195,821	25,136,621	368,060,783
2024	368,060,783	15,649,052	32,380,056	189,723	25,721,873	376,861,929
2025	376,861,929	15,758,243	31,622,489	183,583	26,381,822	387,195,921
2026	387,195,921	15,866,706	32,466,181	177,208	27,095,096	397,514,334
2027	397,514,334	15,996,583	32,688,627	171,147	27,829,823	408,480,965
2028	408,480,965	16,151,174	33,202,948	165,439	28,601,499	419,865,251
2029	419,865,251	16,303,774	34,534,669	159,244	29,374,268	430,849,380
2030	430,849,380	16,453,261	35,644,696	152,509	30,126,123	441,631,560
2031	441,631,560	16,632,640	36,746,178	146,357	30,864,869	452,236,534
2032	452,236,534	16,841,066	37,583,266	140,756	31,601,235	462,954,813
2033	462,954,813	17,045,975	38,251,625	134,722	32,351,521	473,965,963
2034	473,965,963	17,245,712	39,077,906	128,103	33,117,039	485,122,705
2035	485,122,705	17,437,277	40,374,295	120,784	33,876,187	495,941,091
2036	495,941,091	17,652,841	40,472,261	113,723	34,654,082	507,662,029
2037	507,662,029	17,906,257	40,985,663	107,352	35,483,218	519,958,490
2038	519,958,490	18,192,252	40,996,592	101,623	36,372,280	533,424,808
2039	533,424,808	18,510,540	41,601,251	96,425	37,325,244	547,562,915
2040	547,562,915	2,870,227	42,172,115	90,625	37,766,778	545,937,180
2041	545,937,180	2,633,446	43,463,167	83,209	37,597,121	542,621,371
2042	542,621,371	2,374,918	43,971,959	75,085	37,333,368	538,282,612
2043	538,282,612	2,130,707	44,789,622	67,384	36,986,110	532,542,424
2044	532,542,424	1,885,355	45,065,468	59,599	36,557,649	525,860,361
2045	525,860,361	1,648,159	45,438,262	52,079	36,058,715	518,076,894
2046	518,076,894	1,425,098	45,636,235	45,024	35,487,653	509,308,385
2047	509,308,385	1,218,557	46,339,191	38,483	34,828,981	498,978,249
2048	498,978,249	1,018,660	46,329,776	32,147	34,083,907	487,718,893
2049	487,718,893	808,880	46,515,368	25,513	33,265,206	475,252,097
2050	475,252,097	611,604	46,786,359	19,264	32,357,598	461,415,676
2051	461,415,676	461,202	46,185,836	14,501	31,384,275	447,060,816
2052	447,060,816	344,938	45,663,983	10,832	30,372,281	432,103,220
2053	432,103,220	241,672	44,890,679	7,590	29,326,467	416,773,091
2054	416,773,091	158,408	43,888,471	4,981	28,262,740	401,300,786
2055	401,300,786	86,710	43,435,828	2,729	27,169,933	385,118,873
2056	385,118,873	25,038	42,282,115	790	26,051,360	368,912,366
2057	368,912,366	-	40,474,008	-	24,955,267	353,393,626
2058	353,393,626	-	39,404,416	-	23,883,255	337,872,465
2059	337,872,465	-	38,274,990	-	22,813,172	322,410,647
2060	322,410,647	-	37,172,787	-	21,746,376	306,984,235
2061	306,984,235	-	36,072,891	-	20,682,030	291,593,374
2062	291,593,374	-	34,951,877	-	19,620,967	276,262,465
2063	276,262,465	-	33,790,599	-	18,565,606	261,037,472
2064	261,037,472	-	32,592,886	-	17,519,099	245,963,685
2065	245,963,685	-	31,362,956	-	16,484,534	231,085,263
2066	231,085,263	-	30,105,249	-	15,464,913	216,444,927
2067	216,444,927	-	28,824,260	-	14,463,134	202,083,802
2068	202,083,802	-	27,524,970	-	13,481,961	188,040,793
2069	188,040,793	-	26,212,833	-	12,523,985	174,351,945

Single Discount Rate Development

Projection of Plan Fiduciary Net Position

(Concluded)

Fiscal Year	Projected	Projected	Projected	Projected	Projected	Projected
Ending	Beginning Plan	Total	Benefit	Administrative	Investment	Ending
6/30	Net Position	Contributions	Payments	Expenses	Earnings at 7.15%	Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2070	\$ 174,351,945	\$ -	\$ 24,893,219	\$ -	\$ 11,591,595	\$ 161,050,320
2071	161,050,320	-	23,570,875	-	10,686,986	148,166,431
2072	148,166,431	-	22,249,608	-	9,812,208	135,729,030
2073	135,729,030	-	20,932,379	-	8,969,212	123,765,863
2074	123,765,863	-	19,621,934	-	8,159,885	112,303,813
2075	112,303,813	-	18,321,057	-	7,386,052	101,368,808
2076	101,368,808	-	17,032,779	-	6,649,460	90,985,490
2077	90,985,490	-	15,760,674	-	5,951,745	81,176,561
2078	81,176,561	-	14,508,902	-	5,294,385	71,962,045
2079	71,962,045	-	13,282,402	-	4,678,638	63,358,281
2080	63,358,281	-	12,086,775	-	4,105,474	55,376,980
2081	55,376,980	-	10,927,715	-	3,575,532	48,024,797
2082	48,024,797	-	9,810,573	-	3,089,100	41,303,324
2083	41,303,324	-	8,740,600	-	2,646,106	35,208,830
2084	35,208,830	-	7,723,319	-	2,246,089	29,731,600
2085	29,731,600	-	6,764,082	-	1,888,168	24,855,686
2086	24,855,686	-	5,867,692	-	1,571,033	20,559,027
2087	20,559,027	-	5,038,260	-	1,292,962	16,813,729
2088	16,813,729	-	4,279,034	-	1,051,847	13,586,542
2089	13,586,542	-	3,592,557	-	845,221	10,839,206
2090	10,839,206	-	2,979,932	-	670,310	8,529,583
2091	8,529,583	-	2,440,357	-	524,128	6,613,354
2092	6,613,354	-	1,971,340	-	403,596	5,045,610
2093	5,045,610	-	1,568,798	-	305,645	3,782,457
2094	3,782,457	-	1,227,898	-	227,306	2,781,866
2095	2,781,866	-	943,587	-	165,752	2,004,031
2096	2,004,031	-	710,625	-	118,322	1,411,727
2097	1,411,727	-	523,545	-	82,545	970,727
2098	970,727	-	376,597	-	56,176	650,306
2099	650,306	-	263,914	-	37,225	423,617
2100	423,617	-	179,771	-	23,973	267,818
2101	267,818	-	118,779	-	14,976	164,015
2102	164,015	-	75,968	-	9,058	97,105
2103	97,105	-	46,924	-	5,294	55,475
2104	55,475	-	27,922	-	2,986	30,539
2105	30,539	-	15,978	-	1,622	16,184
2106	16,184	-	8,781	-	849	8,251
2107	8,251	-	4,631	-	427	4,047
2108	4,047	-	2,342	-	207	1,913
2109	1,913	-	1,138	-	97	872
2110	872	-	532	-	44	383
2111	383	-	240	-	19	162
2112	162	-	104	-	8	66
2113	66	-	43	-	3	26
2114	26	-	17	-	1	10
2115	10	-	7	-	0	4
2116	4	-	3	-	0	1
2117	1	-	1	-	0	0
2118	0	-	0	-	0	0
2119	0	-	0	-	0	0

Single Discount Rate Development

Present Values of Projected Benefits

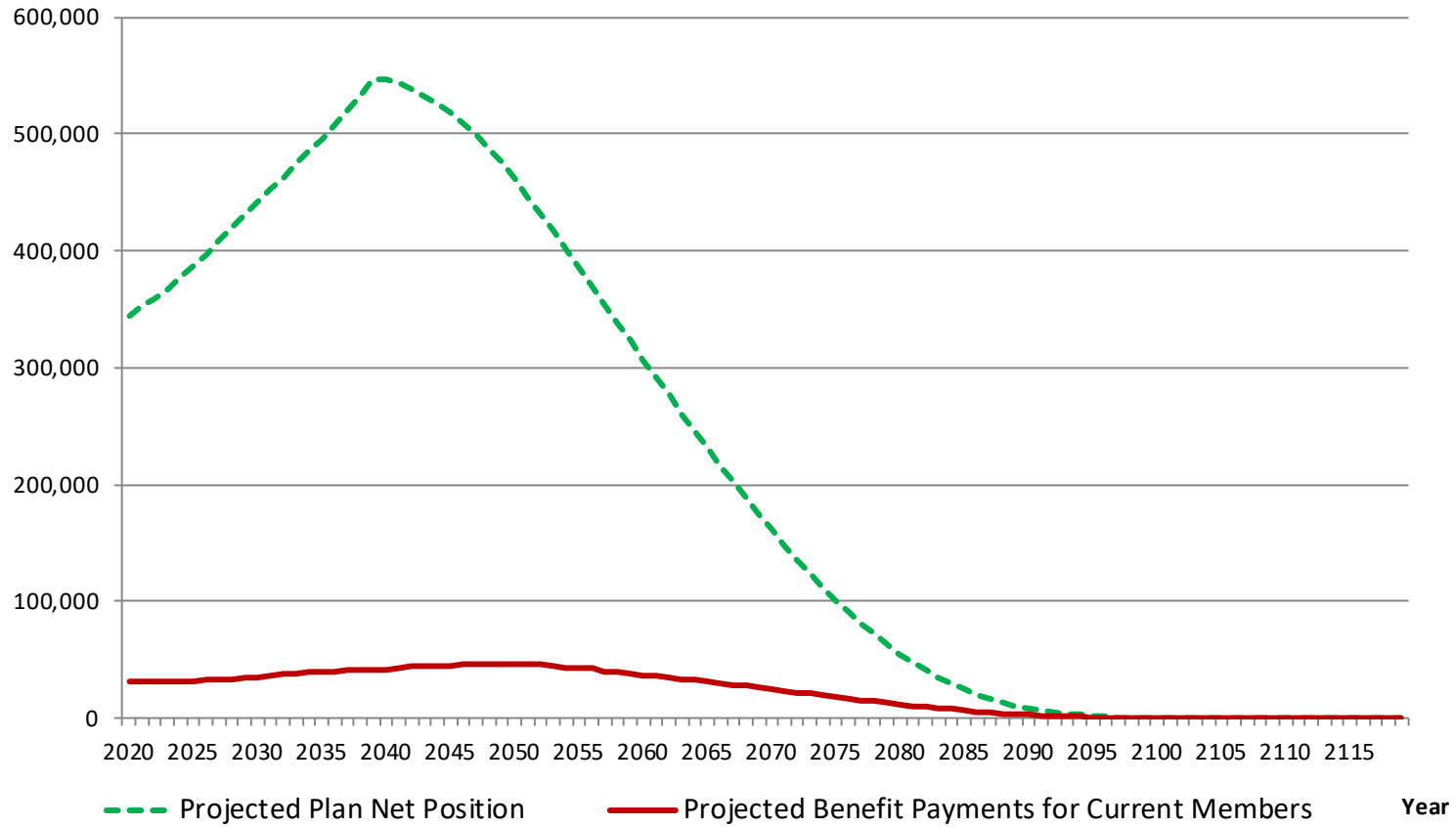
Fiscal Year Ending 6/30	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ⁿ ((a)-.5)	(g)=(e)*vf ⁿ ((a)-.5)	(h)=(c)/(1+sdr) ⁿ ((a)-.5)
2020	\$ 337,739,012	\$ 32,278,109	\$ 32,278,109	\$ -	\$ 31,182,577	\$ -	\$ 31,182,577
2021	344,236,600	31,620,643	31,620,643	-	28,509,029	-	28,509,029
2022	351,748,368	31,555,585	31,555,585	-	26,551,912	-	26,551,912
2023	359,904,960	32,333,266	32,333,266	-	25,390,833	-	25,390,833
2024	368,060,783	32,380,056	32,380,056	-	23,730,823	-	23,730,823
2025	376,861,929	31,622,489	31,622,489	-	21,629,132	-	21,629,132
2026	387,195,921	32,466,181	32,466,181	-	20,724,405	-	20,724,405
2027	397,514,334	32,688,627	32,688,627	-	19,474,009	-	19,474,009
2028	408,480,965	33,202,948	33,202,948	-	18,460,487	-	18,460,487
2029	419,865,251	34,534,669	34,534,669	-	17,919,654	-	17,919,654
2030	430,849,380	35,644,696	35,644,696	-	17,261,442	-	17,261,442
2031	441,631,560	36,746,178	36,746,178	-	16,607,419	-	16,607,419
2032	452,236,534	37,583,266	37,583,266	-	15,852,302	-	15,852,302
2033	462,954,813	38,251,625	38,251,625	-	15,057,592	-	15,057,592
2034	473,965,963	39,077,906	39,077,906	-	14,356,373	-	14,356,373
2035	485,122,705	40,374,295	40,374,295	-	13,842,873	-	13,842,873
2036	495,941,091	40,472,261	40,472,261	-	12,950,501	-	12,950,501
2037	507,662,029	40,985,663	40,985,663	-	12,239,647	-	12,239,647
2038	519,958,490	40,996,592	40,996,592	-	11,425,955	-	11,425,955
2039	533,424,808	41,601,251	41,601,251	-	10,820,790	-	10,820,790
2040	547,562,915	42,172,115	42,172,115	-	10,237,308	-	10,237,308
2041	545,937,180	43,463,167	43,463,167	-	9,846,675	-	9,846,675
2042	542,621,371	43,971,959	43,971,959	-	9,297,193	-	9,297,193
2043	538,282,612	44,789,622	44,789,622	-	8,838,148	-	8,838,148
2044	532,542,424	45,065,468	45,065,468	-	8,299,188	-	8,299,188
2045	525,860,361	45,438,262	45,438,262	-	7,809,464	-	7,809,464
2046	518,076,894	45,636,235	45,636,235	-	7,320,102	-	7,320,102
2047	509,308,385	46,339,191	46,339,191	-	6,936,871	-	6,936,871
2048	498,978,249	46,329,776	46,329,776	-	6,472,666	-	6,472,666
2049	487,718,893	46,515,368	46,515,368	-	6,064,951	-	6,064,951
2050	475,252,097	46,786,359	46,786,359	-	5,693,219	-	5,693,219
2051	461,415,676	46,185,836	46,185,836	-	5,245,118	-	5,245,118
2052	447,060,816	45,663,983	45,663,983	-	4,839,808	-	4,839,808
2053	432,103,220	44,890,679	44,890,679	-	4,440,361	-	4,440,361
2054	416,773,091	43,888,471	43,888,471	-	4,051,543	-	4,051,543
2055	401,300,786	43,435,828	43,435,828	-	3,742,190	-	3,742,190
2056	385,118,873	42,282,115	42,282,115	-	3,399,713	-	3,399,713
2057	368,912,366	40,474,008	40,474,008	-	3,037,174	-	3,037,174
2058	353,393,626	39,404,416	39,404,416	-	2,759,600	-	2,759,600
2059	337,872,465	38,274,990	38,274,990	-	2,501,636	-	2,501,636
2060	322,410,647	37,172,787	37,172,787	-	2,267,472	-	2,267,472
2061	306,984,235	36,072,891	36,072,891	-	2,053,552	-	2,053,552
2062	291,593,374	34,951,877	34,951,877	-	1,856,962	-	1,856,962
2063	276,262,465	33,790,599	33,790,599	-	1,675,468	-	1,675,468
2064	261,037,472	32,592,886	32,592,886	-	1,508,242	-	1,508,242
2065	245,963,685	31,362,956	31,362,956	-	1,354,481	-	1,354,481
2066	231,085,263	30,105,249	30,105,249	-	1,213,406	-	1,213,406
2067	216,444,927	28,824,260	28,824,260	-	1,084,251	-	1,084,251
2068	202,083,802	27,524,970	27,524,970	-	966,287	-	966,287
2069	188,040,793	26,212,833	26,212,833	-	858,818	-	858,818

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	Present Value of	Present Value of
	Beginning Plan Net Position	Projected Benefit Payments			Funded Benefit Payments using Expected Return Rate (v)	Unfunded Benefit Payments using Municipal Bond Rate (vf)	Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ⁿ ((a)-.5)	(g)=(e)*vf ⁿ ((a)-.5)	(h)=(c)/(1+sdr) ⁿ ((a)-.5)
2070	\$ 174,351,945	\$ 24,893,219	\$ 24,893,219	\$ -	\$ 761,160	\$ -	\$ 761,160
2071	161,050,320	23,570,875	23,570,875	-	672,634	-	672,634
2072	148,166,431	22,249,608	22,249,608	-	592,561	-	592,561
2073	135,729,030	20,932,379	20,932,379	-	520,280	-	520,280
2074	123,765,863	19,621,934	19,621,934	-	455,164	-	455,164
2075	112,303,813	18,321,057	18,321,057	-	396,629	-	396,629
2076	101,368,808	17,032,779	17,032,779	-	344,134	-	344,134
2077	90,985,490	15,760,674	15,760,674	-	297,183	-	297,183
2078	81,176,561	14,508,902	14,508,902	-	255,324	-	255,324
2079	71,962,045	13,282,402	13,282,402	-	218,143	-	218,143
2080	63,358,281	12,086,775	12,086,775	-	185,261	-	185,261
2081	55,376,980	10,927,715	10,927,715	-	156,319	-	156,319
2082	48,024,797	9,810,573	9,810,573	-	130,973	-	130,973
2083	41,303,324	8,740,600	8,740,600	-	108,903	-	108,903
2084	35,208,830	7,723,319	7,723,319	-	89,807	-	89,807
2085	29,731,600	6,764,082	6,764,082	-	73,404	-	73,404
2086	24,855,686	5,867,692	5,867,692	-	59,428	-	59,428
2087	20,559,027	5,038,260	5,038,260	-	47,622	-	47,622
2088	16,813,729	4,279,034	4,279,034	-	37,747	-	37,747
2089	13,586,542	3,592,557	3,592,557	-	29,577	-	29,577
2090	10,839,206	2,979,932	2,979,932	-	22,896	-	22,896
2091	8,529,583	2,440,357	2,440,357	-	17,499	-	17,499
2092	6,613,354	1,971,340	1,971,340	-	13,193	-	13,193
2093	5,045,610	1,568,798	1,568,798	-	9,798	-	9,798
2094	3,782,457	1,227,898	1,227,898	-	7,157	-	7,157
2095	2,781,866	943,587	943,587	-	5,133	-	5,133
2096	2,004,031	710,625	710,625	-	3,608	-	3,608
2097	1,411,727	523,545	523,545	-	2,481	-	2,481
2098	970,727	376,597	376,597	-	1,665	-	1,665
2099	650,306	263,914	263,914	-	1,089	-	1,089
2100	423,617	179,771	179,771	-	692	-	692
2101	267,818	118,779	118,779	-	427	-	427
2102	164,015	75,968	75,968	-	255	-	255
2103	97,105	46,924	46,924	-	147	-	147
2104	55,475	27,922	27,922	-	82	-	82
2105	30,539	15,978	15,978	-	44	-	44
2106	16,184	8,781	8,781	-	22	-	22
2107	8,251	4,631	4,631	-	11	-	11
2108	4,047	2,342	2,342	-	5	-	5
2109	1,913	1,138	1,138	-	2	-	2
2110	872	532	532	-	1	-	1
2111	383	240	240	-	0	-	0
2112	162	104	104	-	0	-	0
2113	66	43	43	-	0	-	0
2114	26	17	17	-	0	-	0
2115	10	7	7	-	0	-	0
2116	4	3	3	-	0	-	0
2117	1	1	1	-	0	-	0
2118	0	0	0	-	0	-	0
2119	-	-	-	-	-	-	-
Totals	\$ 515,178,088	\$ -	\$ 515,178,088	\$ -	\$ -	\$ -	\$ 515,178,088

Projection of Plan Net Position and Benefit Payments

\$ [thousands]



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>	The total pension expense is the sum of the following items that are recognized at the end of the employer’s fiscal year: <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.