

Arkansas Local Police and Fire Retirement System

GASB Statement Nos. 67 and 68 Accounting and
Financial Reporting for Pensions
December 31, 2017





April 2, 2018

Board of Trustees
Arkansas Local Police and Fire Retirement System

Dear Trustees:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the Arkansas Local Police and Fire Retirement System ("LOPFI"). These calculations have been made on a basis that is consistent with our understanding of these Statements. This report does not include Pension and Relief Funds under LOPFI Administration. Calculations required for compliance with GASB Statement No. 68 for Pension and Relief Funds under LOPFI Administration will be issued in separate reports.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. 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 LOPFI only in its entirety and only with the permission of LOPFI. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by LOPFI, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not audited. We are not responsible for the accuracy or completeness of the data provided by LOPFI staff.

This report complements the actuarial valuation report that was provided to LOPFI and should be considered in conjunction with that report. Please see the actuarial valuation report as of December 31, 2017 for additional discussion of the nature of actuarial calculations and more information related to participant data, demographic assumptions, and benefit provisions. The economic assumptions for purposes of the GASB disclosures were selected by the actuary based on the results of an experience study covering the period from January 1, 2012 through December 31, 2016.

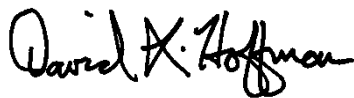
To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Arkansas Local Police and Fire Retirement System. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

It is our understanding that this information, which was previously issued in draft form, has been reviewed and approved by the plan's auditor. This information is intended to assist in preparation of the financial statements of the Arkansas Local Police and Fire Retirement System. Financial statements are the responsibility of management, subject to the auditor's review. 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.

The signing individuals are independent of the plan sponsor.

Heidi G. Barry and James R. Sparks are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,



David L. Hoffman



Heidi G. Barry, ASA, FCA, MAAA



James R. Sparks, ASA, MAAA

DLH/HGB/JRS:bd



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SECTION A

EXECUTIVE SUMMARY

Executive Summary as of December 31, 2017

	2017	
Actuarial Valuation Date	December 31, 2017	
Measurement Date of the Net Pension Liability	December 31, 2017	
Employer's Fiscal Year Ending Date (Reporting Date)	December 31, 2017	

	Paid	Volunteer
Membership		
Number of		
- Retirees and Beneficiaries (Including DROP)	2,889	2,633
- Inactive, Nonretired Members	5,452	6,042
- Active Members	6,301	7,341
- Total	14,642	16,016
Covered Payroll	\$ 339,098,676	N/A

Net Pension Liability		
Total Pension Liability	\$ 2,491,769,281	\$ 120,878,186
Plan Fiduciary Net Position	1,781,172,007	78,218,886
Net Pension Liability	\$ 710,597,274	\$ 42,659,300
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	71.48%	64.71%
Net Pension Liability as a Percentage of Covered Payroll	209.55%	N/A

Development of the Single Discount Rate		
Single Discount Rate	7.00%	7.00%
Long-Term Expected Rate of Investment Return	7.00%	7.00%
Long-Term Municipal Bond Rate*	3.31%	3.31%
Last year ending December 31 in the 2018 to 2117 projection period for which projected benefit payments are fully funded	2117	2117

Total Pension Expense \$ 152,641,133 \$ 7,570,971

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

	Paid		Volunteer	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	\$ 35,575,362	\$ 61,491	\$ -	\$ 1,318,428
Changes in assumptions	181,670,963	-	8,152,202	-
Net difference between projected and actual earnings on pension plan investments	61,496,511	78,090,113	2,618,896	3,430,783
Total	\$ 278,742,836	\$ 78,151,604	\$ 10,771,098	\$ 4,749,211

**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 December 31, 2017. 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.*

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).

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; and
- annual money-weighted rate of return.

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
- 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 December 31, 2017 and a measurement date of December 31, 2017.

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 plan's projected fiduciary net position is not sufficient to pay benefits).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.00%; the municipal bond rate is 3.31% (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 7.00%.

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 7.00% on the actuarial value of assets), it is expected that:

- (1) The unfunded liability may decrease in dollar amount each year in the future.
- (2) The unfunded liability will be paid off in approximately 17 years for paid and 16 years for volunteer, which is the number of years remaining in the closed amortization schedule of the unfunded liability beginning January 1, 2019.
- (3) The funded status of the plan will increase gradually towards a 100% funded ratio.

This funding policy results in the projected plan fiduciary net position being sufficient to pay benefits for all future years and a discount rate of 7.00%. The projections in this report are strictly for the purposes of determining the GASB discount rate and are different from a funding projection for the ongoing plan.

Limitations of Assets as a Percent of Total Pension Liability Measurements

This report includes a measure of the plan fiduciary net position as a percent of total pension liability. Unless otherwise indicated, with regard to any such measurements presented in this report:

- (1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
- (2) The measurement is inappropriate for assessing the need for or amount of future employer contributions.

Limitation of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

SECTION B

FINANCIAL STATEMENTS

Statement of Pension Expense Under GASB Statement No. 68

Fiscal Year Ended December 31, 2017

	Paid	Volunteer	Total
A. Expense			
1. Service Cost	\$ 50,862,406	\$ 2,137,477	\$ 52,999,883
2. Interest on the Total Pension Liability	162,537,756	8,007,679	170,545,435
3. Current-Period Benefit Changes	-	-	-
4. Employee Contributions (made negative for addition here)	(23,351,970)	-	(23,351,970)
5. Projected Earnings on Plan Investments (made negative for addition here)	(120,062,034)	(5,250,059)	(125,312,093)
6. Pension Plan Administrative Expense	2,826,897	123,875	2,950,772
7. Other Changes in Plan Fiduciary Net Position	-	-	-
8. Recognition of Outflow (Inflow) of Resources Due to Liabilities	70,251,705	2,171,760	72,423,465
9. Recognition of Outflow (Inflow) of Resources Due to Assets	9,576,373	380,239	9,956,612
10. Total Pension Expense	\$152,641,133	\$ 7,570,971	\$160,212,104

Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended December 31, 2017

	Paid Service	Volunteer Service
A. Outflows (Inflows) of Resources due to Liabilities		
1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ 27,865,374	\$ (578,714)
2. Assumption Changes (gains) or losses	\$ 209,424,780	\$ 10,514,403
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	4.4029	3.6685
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	\$ 6,328,868	\$ (157,752)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ 47,565,191	\$ 2,866,131
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$ 53,894,059	\$ 2,708,379
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	\$ 21,536,506	\$ (420,962)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ 161,859,589	\$ 7,648,272
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$ 183,396,095	\$ 7,227,310
B. Outflows (Inflows) of Resources due to Assets		
1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ (97,612,641)	\$ (4,288,479)
2. Recognition period for Assets {in years}	5.0000	5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$ (19,522,528)	\$ (857,696)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ (78,090,113)	\$ (3,430,783)

Paid Service

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended December 31, 2017*

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	\$ 70,324,430	\$ 72,725	\$ 70,251,705
2. Due to assets	29,098,901	19,522,528	9,576,373
3. Total	\$ 99,423,331	\$ 19,595,253	\$ 79,828,078

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	\$ 12,165,488	\$ 72,725	\$ 12,092,763
2. Assumption changes	58,158,942	-	58,158,942
3. Net difference between projected and actual earnings on pension plan investments	29,098,901	19,522,528	9,576,373
4. Total	\$ 99,423,331	\$ 19,595,253	\$ 79,828,078

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	\$ 35,575,362	\$ 61,491	\$ 35,513,871
2. Assumption changes	181,670,963	-	181,670,963
3. Net difference between projected and actual earnings on pension plan investments	61,496,511	78,090,113	(16,593,602)
4. Total	\$ 278,742,836	\$ 78,151,604	\$ 200,591,232

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

<u>Year Ending December 31</u>	<u>Net Deferred Outflows of Resources</u>
2018	\$ 79,839,314
2019	76,430,231
2020	42,130,298
2021	2,191,389
2022	-
Thereafter	-
Total	\$ 200,591,232

* Totals may not add due to rounding.

Volunteer Service

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended December 31, 2017*

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	\$ 3,411,039	\$ 1,239,279	\$ 2,171,760
2. Due to assets	1,237,935	857,696	380,239
3. Total	\$ 4,648,974	\$ 2,096,975	\$ 2,551,999

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	\$ -	\$ 1,239,279	\$ (1,239,279)
2. Assumption changes	3,411,039	-	3,411,039
3. Net difference between projected and actual earnings on pension plan investments	1,237,935	857,696	380,239
4. Total	\$ 4,648,974	\$ 2,096,975	\$ 2,551,999

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	\$ -	\$ 1,318,428	\$ (1,318,428)
2. Assumption changes	8,152,202	-	8,152,202
3. Net difference between projected and actual earnings on pension plan investments	2,618,896	3,430,783	(811,887)
4. Total	\$ 10,771,098	\$ 4,749,211	\$ 6,021,887

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

Year Ending December 31	Net Deferred Outflows of Resources
2018	\$ 2,901,953
2019	2,802,648
2020	1,174,981
2021	(857,695)
2022	-
Thereafter	-
Total	\$ 6,021,887

* Totals may not add due to rounding.

Statement of Fiduciary Net Position*

as of December 31, 2017

	2017		
	Paid	Volunteer	Total
Assets			
Cash and Short Term Investments	\$ 121,138,363	\$ 5,319,704	\$ 126,458,067
Receivables			
Accrued Interest and Other Dividends	\$ -	\$ -	\$ -
Contributions Receivable	7,198,561	316,120	7,514,681
Accounts Receivable - Other	20,616	905	21,521
Total Receivables	<u>\$ 7,219,177</u>	<u>\$ 317,025</u>	<u>\$ 7,536,202</u>
Prepaid Expense	\$ 7,231,673	\$ 317,574	\$ 7,549,247
Investments			
U.S. Government and State Obligations	\$ 183,461,807	\$ 8,056,593	\$ 191,518,400
Corporate Obligations	25,750,424	1,130,811	26,881,235
Foreign Bonds	-	-	-
Alternative Assets	162,544,055	7,138,005	169,682,060
Common and Preferred Stocks	607,465,267	26,676,399	634,141,666
Equity Mutual Collective Trusts	665,698,033	29,233,650	694,931,683
Real Estate Investments	-	-	-
Total Investments	<u>\$ 1,644,919,586</u>	<u>\$ 72,235,458</u>	<u>\$ 1,717,155,044</u>
Land, Building, Furniture and Equipment	\$ 2,023,359	\$ 88,854	\$ 2,112,213
Other Assets	\$ 75,706	\$ 3,325	\$ 79,031
Total Assets	<u>\$ 1,782,607,864</u>	<u>\$ 78,281,940</u>	<u>\$ 1,860,889,804</u>
Liabilities			
Payables			
Accounts Payable and Accrued Expenses	\$ 879,255	\$ 38,612	\$ 917,867
Refunds Payable	171,140	7,515	178,655
Due to Pension Review Board	385,462	16,927	402,389
Total Liabilities	<u>\$ 1,435,857</u>	<u>\$ 63,054</u>	<u>\$ 1,498,911</u>
Net Position Restricted for Pensions	<u>\$ 1,781,172,007</u>	<u>\$ 78,218,886</u>	<u>\$ 1,859,390,893</u>

* Prorated between groups based on information from the December 31, 2017 CAFR Report. Excludes Pension and Relief Funds under LOPFI Administration.

Statement of Changes in Fiduciary Net Position[#] for Year Ended December 31, 2017

	2017		
	Paid	Volunteer	Total
Additions			
Contributions			
Employer	\$ 72,369,349	\$ 5,040,672	\$ 77,410,021
Employee	23,351,970	-	23,351,970
Other	54,467	-	54,467
Total Contributions	\$ 95,775,786	\$ 5,040,672	\$ 100,816,458
Investment Income			
Net Appreciation in Fair Value of Investments	#	#	#
Interest and Dividends	#	#	#
Less Investment Expense	#	#	#
Net Investment Income	\$ 217,674,675	\$ 9,538,538	\$ 227,213,213
Other	\$ -	\$ -	\$ -
Total Additions	\$ 313,450,461	\$ 14,579,210	\$ 328,029,671
Deductions			
Benefit Payments, including Refunds of Employee Contributions and DROP Distributions	\$ 61,502,387	\$ 2,917,621	\$ 64,420,008
Pension Plan Administrative Expense*	2,826,897	123,875	2,950,772
Other	-	-	-
Total Deductions	\$ 64,329,284	\$ 3,041,496	\$ 67,370,780
Net Increase in Net Position	\$ 249,121,177	\$ 11,537,714	\$ 260,658,891
Amount to Reconcile Beginning and End of Year Assets	\$ -	\$ -	\$ -
Net Position Restricted for Pensions			
Beginning of Year	\$ 1,532,050,830	\$ 66,681,172	\$ 1,598,732,002
End of Year	\$ 1,781,172,007	\$ 78,218,886	\$ 1,859,390,893

[#] Breakdown not provided in income statement. Totals shown from individually reported balances.

* Prorated between groups based on information from the December 31, 2017 CAFR Report. Excludes Pension and Relief Funds under LOPFI Administration.

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability and Related Ratios Current Period Fiscal Year Ended December 31, 2017

	Paid	Volunteer	Total
A. Total Pension Liability			
1. Service Cost	\$ 50,862,406	\$ 2,137,477	\$ 52,999,883
2. Interest on the Total Pension Liability	162,537,756	8,007,679	170,545,435
3. Changes of benefit terms	-	-	-
4. Difference between expected and actual experience of the Total Pension Liability	27,865,374	(578,714)	27,286,660
5. Changes of assumptions	209,424,780	10,514,403	219,939,183
6. Benefit payments, including refunds of employee contributions & DROP distributions	(61,502,387)	(2,917,621)	(64,420,008)
7. Net change in Total Pension Liability	\$ 389,187,929	\$ 17,163,224	\$ 406,351,153
8. Total Pension Liability – beginning	2,102,581,352	103,714,962	2,206,296,314
9. Total Pension Liability – ending	\$2,491,769,281	\$ 120,878,186	\$2,612,647,467
B. Plan Fiduciary Net Position			
1. Employer contributions	\$ 72,369,349	\$ 5,040,672	\$ 77,410,021
2. Employee contributions	23,351,970	-	23,351,970
3. Other contributions	54,467	-	54,467
4. Pension plan net investment income	217,674,675	9,538,538	227,213,213
5. Benefit payments, including refunds of employee contributions & DROP distributions	(61,502,387)	(2,917,621)	(64,420,008)
6. Pension plan administrative expense	(2,826,897)	(123,875)	(2,950,772)
7. Net change in Plan Fiduciary Net Position	\$ 249,121,177	\$ 11,537,714	\$ 260,658,891
8. Plan Fiduciary Net Position – beginning	1,532,050,830	66,681,172	1,598,732,002
9. Plan Fiduciary Net Position – ending	\$1,781,172,007	\$ 78,218,886	\$1,859,390,893
C. Net Pension Liability	\$ 710,597,274	\$ 42,659,300	\$ 753,256,574
D. Plan Fiduciary Net Position as a percentage of the Total Pension Liability	71.48%	64.71%	71.17%
E. Covered Payroll	\$ 339,098,676	N/A	N/A
F. Net Pension Liability as a percentage of Covered Payroll	209.55%	N/A	N/A

Paid Service

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios

Multiyear

Ultimately 10 Fiscal Years Will Be Displayed

Fiscal year ending December 31,	2017	2016	2015	2014
Total Pension Liability				
Service Cost	\$ 50,862,406	\$ 50,307,455	\$ 48,365,128	\$ 49,060,513
Interest on the Total Pension Liability	162,537,756	149,980,786	139,022,240	127,980,919
Benefit Changes	-	-	-	50,330
Difference between Expected and Actual Experience	27,865,374	20,160,705	6,985,822	(352,391)
Assumption Changes	209,424,780	-	51,592,627	-
Benefit Payments, DROP Distributions and Refunds	(61,502,387)	(55,899,631)	(43,058,437)	(33,691,888)
Net Change in Total Pension Liability	389,187,929	164,549,315	202,907,380	143,047,483
Total Pension Liability - Beginning	2,102,581,352	1,938,032,037	1,735,124,657	1,592,077,174
Total Pension Liability - Ending (a)	<u>\$ 2,491,769,281</u>	<u>\$ 2,102,581,352</u>	<u>\$ 1,938,032,037</u>	<u>\$ 1,735,124,657</u>
Plan Fiduciary Net Position				
Employer Contributions	\$ 72,369,349	\$ 70,486,795	\$ 62,792,095	\$ 58,994,602
Employee Contributions	23,351,970	21,816,086	21,187,024	21,844,747
Other Contributions	54,467	38,872	34,066	56,744
Pension Plan Net Investment Income	217,674,675	84,905,505	1,567,555	91,210,386
Benefit Payments, DROP Distributions and Refunds	(61,502,387)	(55,899,631)	(43,058,437)	(33,691,888)
Pension Plan Administrative Expense	(2,826,897)	(2,554,334)	(2,380,241)	(2,167,353)
Net Change in Plan Fiduciary Net Position	249,121,177	118,793,293	40,142,062	136,247,238
Plan Fiduciary Net Position - Beginning	1,532,050,830	1,413,257,537	1,373,115,475	1,236,868,237
Plan Fiduciary Net Position - Ending (b)	<u>\$ 1,781,172,007</u>	<u>\$ 1,532,050,830</u>	<u>\$ 1,413,257,537</u>	<u>\$ 1,373,115,475</u>
Net Pension Liability - Ending (a) - (b)	710,597,274	570,530,522	524,774,500	362,009,182
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	71.48 %	72.87 %	72.92 %	79.14 %
Covered Payroll	\$ 339,098,676	\$ 329,344,355	\$ 320,487,331	\$ 310,870,608
Net Pension Liability as a Percentage of Covered Payroll	209.55 %	173.23 %	163.74 %	116.45 %
Notes to Schedule:	N/A	N/A	N/A	N/A

Volunteer Service

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios

Multiyear

Ultimately 10 Fiscal Years Will Be Displayed

Fiscal year ending December 31,	2017	2016	2015	2014
Total Pension Liability				
Service Cost	\$ 2,137,477	\$ 2,103,552	\$ 2,100,948	\$ 2,087,131
Interest on the Total Pension Liability	8,007,679	7,542,093	7,204,736	6,767,758
Benefit Changes	-	-	-	222,045
Difference between Expected and Actual Experience	(578,714)	(996,748)	(1,813,451)	(1,426,660)
Assumption Changes	10,514,403	-	2,138,654	-
Benefit Payments	(2,917,621)	(2,398,981)	(2,349,142)	(2,040,757)
Refunds	-	-	-	-
Net Change in Total Pension Liability	17,163,224	6,249,916	7,281,745	5,609,517
Total Pension Liability - Beginning	103,714,962	97,465,046	90,183,301	84,573,784
Total Pension Liability - Ending (a)	\$ 120,878,186	\$ 103,714,962	\$ 97,465,046	\$ 90,183,301
Plan Fiduciary Net Position				
Employer Contributions	\$ 5,040,672	\$ 4,811,421	\$ 4,832,505	\$ 4,969,527
Employee Contributions	-	-	-	-
Pension Plan Net Investment Income	9,538,538	3,686,585	74,751	3,842,540
Benefit Payments	(2,917,621)	(2,398,981)	(2,349,142)	(2,040,757)
Refunds	-	-	-	-
Pension Plan Administrative Expense	(123,875)	(111,065)	(101,882)	(91,307)
Reconciliation Adjustment	-	-	-	-
Net Change in Plan Fiduciary Net Position	11,537,714	5,987,960	2,456,232	6,680,003
Plan Fiduciary Net Position - Beginning	66,681,172	60,693,212	58,236,980	51,556,977
Plan Fiduciary Net Position - Ending (b)	\$ 78,218,886	\$ 66,681,172	\$ 60,693,212	\$ 58,236,980
Net Pension Liability - Ending (a) - (b)	42,659,300	37,033,790	36,771,834	31,946,321
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	64.71 %	64.29 %	62.27 %	64.58 %
Covered Payroll	N/A	N/A	N/A	N/A
Net Pension Liability as a Percentage of Covered Payroll	N/A	N/A	N/A	N/A
Notes to Schedule:	N/A	N/A	N/A	N/A

Schedules of Required Supplementary Information

Schedule of the Net Pension Liability Multiyear

LOPFI Paid Service Employers

Ultimately 10 Fiscal Years Will Be Displayed

FY Ending December 31,	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	\$ 1,735,124,657	\$ 1,373,115,475	\$ 362,009,182	79.14%	\$ 310,870,608	116.45%
2015	1,938,032,037	1,413,257,537	524,774,500	72.92%	320,487,331	163.74%
2016	2,102,581,352	1,532,050,830	570,530,522	72.87%	329,344,355	173.23%
2017	2,491,769,281	1,781,172,007	710,597,274	71.48%	339,098,676	209.55%

* Actual payroll reported for years beginning December 31, 2014 and thereafter. Census payroll reported for valuation at year end for years prior to December 31, 2014. Contributions are made on actual payroll during the year.

LOPFI Volunteer Service Employers

Ultimately 10 Fiscal Years Will Be Displayed

FY Ending December 31,	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	\$ 90,183,301	\$ 58,236,980	\$ 31,946,321	64.58%	N/A	N/A
2015	97,465,046	60,693,212	36,771,834	62.27%	N/A	N/A
2016	103,714,962	66,681,172	37,033,790	64.29%	N/A	N/A
2017	120,878,186	78,218,886	42,659,300	64.71%	N/A	N/A

Schedule of Contributions Multiyear

LOPFI Paid Service Employers

Last 10 Fiscal Years

FY Ending December 31,	Actuarially Determined Contribution#	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll*	Actual Contribution as a % of Covered Payroll
2008	\$ 37,419,713	\$ 37,419,713	\$ -	\$ 244,703,982	15.29%
2009	38,927,727	38,927,727	-	261,756,026	14.87%
2010	39,299,629	39,299,629	-	265,628,662	14.79%
2011	46,312,346	46,312,346	-	274,656,592	16.86%
2012	48,370,995	48,370,995	-	282,170,105	17.14%
2013	54,034,420	54,034,420	-	296,617,370	18.22%
2014	58,994,602	58,994,602	-	310,870,608	18.98%
2015	62,792,095	62,792,095	-	320,487,331	19.59%
2016	70,486,795	70,486,795	-	329,344,355	21.40%
2017	72,369,349	72,369,349	-	339,098,676	21.34%

* Actual payroll reported for years beginning December 31, 2014 and thereafter. Census payroll reported for valuation at year end for years prior to December 31, 2014. Contributions are made on actual payroll during the year.

We do not compute a dollar amount for the Actuarially Determined Contribution. It is our understanding that employers contribute the Actuarially Determined Contribution. The amount shown in this column, therefore, matches the actual contributions.

LOPFI Volunteer Service Employers

Last 10 Fiscal Years

FY Ending December 31,	Actuarially Determined Contribution#	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2008	\$ 2,595,918	\$ 2,595,918	\$ -	N/A	N/A
2009	3,031,862	3,031,862	-	N/A	N/A
2010	3,610,187	3,610,187	-	N/A	N/A
2011	3,960,764	3,960,764	-	N/A	N/A
2012	4,195,779	4,195,779	-	N/A	N/A
2013	4,359,914	4,359,914	-	N/A	N/A
2014	4,969,527	4,969,527	-	N/A	N/A
2015	4,832,505	4,832,505	-	N/A	N/A
2016	4,811,421	4,811,421	-	N/A	N/A
2017	5,040,672	5,040,672	-	N/A	N/A

We do not compute a dollar amount for the Actuarially Determined Contribution. It is our understanding that employers contribute the Actuarially Determined Contribution. The amount shown in this column, therefore, matches the actual contributions.

Paid Service

Notes to Schedule of Contributions

Valuation Date: December 31, 2015
Notes: Actuarially determined contribution rates are calculated as of December 31, which is one year prior to the beginning of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates for Fiscal Year 2017:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	17 years beginning January 1, 2019
Asset Valuation Method	5-Year smoothed market; 20% corridor
Wage Inflation	3.75%
Price Inflation	2.75%
Salary Increases	4.25% to 18.75%, including inflation
Investment Rate of Return	7.75%, as adopted by the Board
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2012 valuation pursuant to an experience study of the period 2008 - 2011.
Mortality	RP-2000 Combined Healthy Mortality Table Projected to 2017 Table, set forward two years for men. Disability post-retirement mortality was assumed to be the same as standard post-retirement mortality set forward an additional 10 years.

Other Information:
Notes: There were no changes in benefit provisions or methods in the December 31, 2015 actuarial valuation. Economic assumptions were updated in the December 31, 2015 valuation to a 7.75% investment return assumption and a 3.75% wage inflation assumption.

Volunteer Service

Notes to Schedule of Contributions

Valuation Date: December 31, 2015
Notes Actuarially determined contribution rates are calculated as of December 31, which is one year prior to the beginning of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates for Fiscal Year 2017:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Increasing Dollar, Closed
Remaining Amortization Period	16 years beginning January 1, 2019
Asset Valuation Method	5-Year smoothed market; 20% corridor
Price Inflation	2.75%
Investment Rate of Return	7.75%, as adopted by the Board
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2012 valuation pursuant to an experience study of the period 2008 - 2011.
Mortality	RP-2000 Combined Healthy Mortality Table Projected to 2017 Table, set forward two years for men. Disability post-retirement mortality was assumed to be the same as standard post-retirement mortality set forward an additional 10 years.

Other Information:

Notes There were no changes in benefit provisions or methods in the December 31, 2015 actuarial valuation. Economic assumptions were updated in the December 31, 2015 valuation to a 7.75% investment return assumption and a 2.75% price inflation assumption.

Schedule of Investment Returns Multiyear Last 10 Fiscal Years

<u>FY Ending December 31,</u>	<u>Annual Return¹</u>
2008	(25.24)%
2009	17.75 %
2010	9.57 %
2011	0.20 %
2012	11.17 %
2013	17.33 %
2014	6.80 %
2015	(0.05)%
2016	5.76 %
2017	13.91 %

¹ Money-weighted annual return determined by GRS. Monthly money-weighted returns are not available.

SECTION D

NOTES TO FINANCIAL STATEMENTS

Long-Term Expected Return on Plan Assets

Information about the assumed rate of investment return is included in the 2012-2016 five-year experience study. The assumed rate of investment return falls within a reasonable range of the long-term expected rate of return.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These real rates of return are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. For each major asset class that is included in the pension plan's target asset allocation as of December 31, 2017, these best estimates are summarized in the following table:

Asset Allocation

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>	<u>Allocation-Weighted Long-Term Expected Real Rate of Return</u>
Fixed Income	27.00%	0.78%	0.21%
Domestic Equity	42.00%	5.58%	2.34%
Foreign Equity	18.00%	7.38%	1.33%
Alternative Investments	10.00%	6.23%	0.62%
Cash	3.00%	0.00%	0.00%
Total	100.00%		4.50%
Expected Inflation			2.50%
Total Return			7.00%

Gabriel, Roeder, Smith & Company does not provide investment advice.

Single Discount Rate

A Single Discount Rate of 7.00% 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 7.00%. 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 7.00%, 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	Current Single Discount	1% Increase
	6.00%	Rate Assumption	8.00%
	6.00%	7.00%	8.00%
Paid Service	\$1,119,233,327	\$710,597,274	\$381,270,025
Volunteer Service	63,749,592	42,659,300	25,894,043
Total	\$1,182,982,919	\$753,256,574	\$407,164,068

Summary of Population Statistics

	Paid Service	Volunteer Service
Inactive Plan Members or Beneficiaries Currently Receiving Benefits (Including DROP)	2,889	2,633
Inactive Plan Members Entitled to But Not Yet Receiving Benefits #	5,452	6,042
Active Plan Members	6,301	7,341
Total Plan Members	14,642	16,016

These counts include 1,716 and 2,264 inactive linked records for paid service and volunteer service, respectively. These records will generate separate checks at retirement as well as separate counts.

SECTION E

SUMMARY OF BENEFITS

Arkansas Local Police and Fire Retirement System
Brief Summary as of December 31, 2017 of LOPFI Coverage for
BENEFIT PROGRAM 1 PAID SERVICE
Benefits and Conditions Evaluated and/or Considered
(Section references are to Arkansas Code of 1987, including
amendments from 2017 General Assembly Session)

Voluntary Retirement. Section 24-10-604. A member may retire with an age & service annuity after both (i) completing 5 years (10 years for members hired on or after July 1, 2013) of credited service, and (ii) attaining his normal retirement age. The normal retirement age is age 60 for a member with less than 20 years credited service, age 55 for a member with at least 20 years credited service or any age for a member with 28 or more years of credited service.

Compulsory Retirement. Section 24-10-605. Established by each employer.

Paid Service. Section 24-10-102(13). Covered employment which is half-time employment or more, and for which a minimum dollar amount is paid. For each calendar month in 1981, the minimum is \$500 for the month. For each later calendar year, the \$500 is indexed for inflation (Consumer Price Index). Accordingly, the monthly minimum during 2017 was \$1,382.

Volunteer Service. Section 24-10-102(14). Covered employment which cannot be classified as Paid Service.

Final Average Pay. Section 24-10-102(16)(A). The average of a member's monthly pay during the period of 36 consecutive months of credited Paid Service producing the highest monthly average, which period is contained within the 120 consecutive months of credited Paid Service immediately preceding retirement. Not applicable to Volunteer Service.

Age & Service Annuity. Section 24-10-602. The annuity, payable monthly for life, equals a specified amount multiplied by the member's number of years of credited service. The amount depends upon the conditions related to covered employment:

- A. **Paid Service Not Covered by Social Security.** For each year of such service, 2.94% of the member's final average pay.
- B. **Paid Service Also Covered by Social Security.** For each year of such service, 1.94% of the member's final average pay. In addition, there is a temporary annuity equal to 1.0% of the member's final average pay for each year of service, payable to normal Social Security retirement age.
- C. At time of retirement, the total of A plus B cannot exceed 100% of final average pay.

Early Annuity. Section 24-10-606. A member may retire with an early annuity after both (i) completing 20 years of credited service, and (ii) attaining age 50 or (iii) after completing 25 years of credited paid service. The early annuity amount, payable monthly for life, is computed in the same manner as an age & service annuity, based upon his service and pay record to time of early retirement, but reduced to reflect the fact that his age when payments begin is younger than his normal retirement age. The amount of the reduction is 1/2 of 1% (.005) for each month his age at early retirement is younger than his normal retirement age (age 55 for members with 25 years of credited paid service).

Vested Termination Annuity. Section 24-10-611. If a member leaves LOPFI-covered employment (i) before attaining his early retirement age, and (ii) after completing 5 years (10 years for members hired on or after July 1, 2013) of credited service, he becomes eligible for a vested termination annuity; provided he lives to his normal retirement age and does not withdraw his accumulated contributions. The vested annuity amount, payable monthly for life from his normal retirement age, is computed in the same manner as an age & service annuity, based upon his service and pay record to time of leaving LOPFI coverage. However, final average pay is increased by one-half of any increase in the inflation index for the period from termination of employment to beginning of annuity payments.

Non-Duty Disability Annuity. Section 24-10-607(a)(1)(A). A member with 5 or more years (10 or more years for members hired on or after July 1, 2013) of credited service who becomes totally and permanently disabled from other than duty-connected causes receives a non-duty disability annuity computed in the same manner as an age & service annuity, based upon his service and pay record to time of disability.

Duty Disability Annuity. Section 24-10-607(c)(1)(A). A member who becomes totally and permanently disabled from duty-connected causes receives a duty disability annuity computed in the same manner as an age & service annuity, based upon his service and pay record to time of disability. The minimum annuity payable is 65% of the member's final average pay.

Non-Duty Death-in-Service. Paid Member. Section 24-10-608(a)(1). Upon the death, from other than duty-connected causes, of a Paid Service member who had completed 5 years (10 years for members hired on or after July 1, 2013) of paid service, his eligible surviving dependents receive the following benefits:

(a) The surviving spouse receives an annuity equal to the Option B50 annuity (joint and 50% survivor benefit) computed based upon the deceased member's service (and pay) record to time of death. Minimum of 20% of member's final average pay, or \$125 monthly if greater.

(b) While a spouse benefit is payable, each dependent child under age 18 (age 23 if full time student) receives 10% of member's final average pay, or \$25 monthly if greater. The totals for 4 or more children cannot exceed 30% of final average pay, or \$125 monthly if greater.

(c) While no spouse benefit is payable, each dependent child under age 18 (age 23 if full time student) receives 20% of member's final average pay, or \$25 monthly if greater. The total for 3 or more children cannot exceed 50% of final average pay, or \$125 monthly if greater.

(d) If there is neither spouse nor child at time of member's death, each dependent parent receives 20% of final average pay.

Duty Death-in-Service. Section 24-10-608(b)(1). Upon the death of a Paid Service member from duty-connected causes, regardless of length of service, his eligible surviving dependents receive the same benefits as for Non-Duty Death, except that if credited service at time of death is less than 25 years, credited service is increased to 25 years.

Benefit Changes After Retirement. Section 24-10-612. There is an annual redetermination of monthly benefit amount, beginning the July first following 12 months of retirement. The redetermined amount is 3.0% of the monthly benefit from the preceding July.

Member Contributions. Sections 24-10-404 and 24-10-613. Each member contributes 8.5% of his covered pay if his covered employment is resulting in Paid Service credit and is not covered by Social Security. For other covered employment conditions, each member contributes 2.5% of his covered pay. Individual member deposit accounts do not receive interest credit. If a member leaves LOPFI-covered employment before an annuity is payable on his behalf, the member may choose to have his accumulated contributions refunded to him. If he dies, his accumulated contributions are refunded to his designated beneficiary.

Employer Contributions. Section 24-10-405. Each employer contributes the remainder amounts necessary to finance its employees' participation in LOPFI. Contributions to LOPFI are determined based upon level-rate principles, so that contribution rates do not have to increase over decades of time.

DROP (Deferred Retirement Option Plan). Sections 24-10-701 through 24-10-708. Paid service members who have attained age 55 with at least 20 years of service or members with at least 28 years of service may participate. A participant with 28 years of service will receive 75% of his accrued benefit at time of DROP election while in the DROP, payable into the participant's DROP account (which will be credited with 6% interest annually). A participant with less than 28 years of service will receive 72% of his accrued benefit at time of DROP election while in the DROP, payable into the participant's DROP account (which will be credited with 6% interest annually). The duration of participation in the DROP shall not exceed 7 years. When a member has reached year 6 of participation in the DROP, the amount of the accrued benefit at the time of DROP election shall be redetermined. The redetermined amount shall be the amount of the benefit as of the immediately preceding July 1 increased by 3%. The redetermined amount shall be payable only when the member elects to cease employment and receive a service retirement and shall not be added to the plan account. Employer and employee contributions continue and are used to finance System benefits (i.e., they are not deposited to the participant's DROP account). For additional details please refer to Arkansas Code, Title 24, Chapter 10, Subchapter 7.

Arkansas Local Police and Fire Retirement System
Brief Summary as of December 31, 2017 of LOPFI Coverage for
BENEFIT PROGRAM 2 PAID SERVICE
Benefits and Conditions Evaluated and/or Considered
(Section references are to Arkansas Code of 1987, including
amendments from 2017 General Assembly Session)

The provisions for Benefit Program 2 employers are the same as those for Benefit Program 1 employers with the following exception:

Age & Service Annuity. Section 24-10-602. The annuity, payable monthly for life, equals a specified amount multiplied by the member's number of years of credited service. The amount depends upon the conditions related to covered employment:

A. *Paid Service Not Covered by Social Security.*

- **Paid Service Before Adoption of Benefit Program 2.** For each year of such service, 2.94% of the member's final average pay.
- **Paid Service After Adoption of Benefit Program 2.** For each year of such service, 3.28% of the member's final average pay.
- At time of retirement, the total cannot exceed 100% of final average pay.

B. *Paid Service Also Covered by Social Security.*

- **Paid Service Before Adoption of Benefit Program 2.** For each year of such service, 1.94% of the member's final average pay, plus a temporary annuity equal to 1.0% of the member's final average pay for each year of service, payable to normal Social Security retirement age.
- **Paid Service After Adoption of Benefit Program 2.** For each year of such service, 2.94% of the member's final average pay.
- At time of retirement, the total cannot exceed 100% of final average pay.

Arkansas Local Police and Fire Retirement System
Brief Summary as of December 31, 2017 of LOPFI Coverage for
VOLUNTEER SERVICE
Benefits and Conditions Evaluated and/or Considered
(Section references are to Arkansas Code of 1987, including
amendments from 2017 General Assembly Session)

Voluntary Retirement. Section 24-10-604. A member may retire with an age & service annuity after both (i) completing 5 years (10 years for members hired on or after July 1, 2013) of credited service, and (ii) attaining his normal retirement age. The normal retirement age is age 60 for a member with less than 20 years credited service, age 55 for a member with at least 20 years credited service or any age for a member with 28 or more years of credited service.

Compulsory Retirement. Section 24-10-605. Established by each employer.

Paid Service. Section 24-10-102(13). Covered employment which is half-time employment or more, and for which a minimum dollar amount is paid. For each calendar month in 1981, the minimum is \$500 for the month. For each later calendar year, the \$500 is indexed for inflation (Consumer Price Index). Accordingly, the monthly minimum during 2017 was \$1,382.

Volunteer Service. Section 24-10-102(14). Covered employment which cannot be classified as Paid Service.

Age & Service Annuity. Section 24-10-102(16)(A). The annuity, payable monthly for life, equals a specified amount multiplied by the member's number of years of credited service. The amount depends upon the conditions related to covered employment:

Volunteer Service. For each year of Benefit Program 3 Volunteer Service, \$5.00 monthly, to a maximum of \$200 monthly for all volunteer service. Beginning in 2003, each July 1 these amounts are indexed for inflation by any percentage increase in the inflation index for the period from December 2003 to the December immediately preceding July 1, for members retiring in the next 12 months. Accordingly, the basic benefit factor reflected in the December 31, 2017 valuations was \$6.68 monthly. For each year of Benefit Program 4 Volunteer Service, \$10.00 monthly, to a maximum benefit of \$400 monthly for all volunteer service. Beginning in 2013, each July 1 these amounts are indexed for inflation by any percentage increase in the inflation index for the period from December 2011 to the December immediately preceding July 1, for members retiring in the next 12 months. Accordingly, the basic benefit factor reflected in the December 31, 2017 valuations was \$10.83 monthly.

Early Annuity. Section 24-10-606. A member may retire with an early annuity after both (i) completing 20 years of credited service, and (ii) attaining age 50. The early annuity amount, payable monthly for life, is computed in the same manner as an age & service annuity, based upon his service record to time of early retirement, but reduced to reflect the fact that his age when payments begin is younger than his normal retirement age. The amount of the reduction is 1/2 of 1% (.005) for each month his age at early retirement is younger than his normal retirement age.

Vested Termination Annuity. Section 24-10-611. If a member leaves LOPFI-covered employment (i) before attaining his early retirement age, and (ii) after completing 5 years (10 years for members hired on or after July 1, 2013) of credited service, he becomes eligible for a vested termination annuity; provided he lives to his normal retirement age (and does not withdraw any accumulated contributions). The vested annuity amount, payable monthly for life from his normal retirement age, is computed in the same manner as an age & service annuity, based upon his service record to time of leaving LOPFI coverage.

Non-Duty Disability Annuity. Section 24-10-607(a)(1)(A). A member with 5 or more years (10 or more years for members hired on or after July 1, 2013) of credited service who becomes totally and permanently disabled from other than duty-connected causes receives a non-duty disability annuity computed in the same manner as an age & service annuity, based upon his service record to time of disability.

Duty Disability Annuity. Section 24-10-607(c)(1)(A). A member who becomes totally and permanently disabled from duty-connected causes receives a duty disability annuity computed in the same manner as an age & service annuity, based upon his service and pay record to time of disability. If the member had less than 25 years of service at time of disability, credited service is increased to 25 years.

Non-Duty Death-in-Service. Volunteer Member. Section 24-10-609. Upon the death, from other than duty-connected causes, of a Volunteer member who had completed 5 years (10 years for members hired on or after July 1, 2013) of volunteer service, or who was eligible for normal retirement, his eligible surviving dependents receive the following benefits:

(a) The surviving spouse receives an annuity equal to the Option B50 annuity (joint and 50% survivor benefit) computed based upon the deceased member's service record to time of death.

(b) Each dependent child under age 18 (age 23 if full time student) receives \$15 monthly. The totals for 3 or more children cannot exceed \$40 monthly.

Duty Death-in-Service. Section 24-10-608(b)(1). Upon the death of a Paid Service member from duty-connected causes, regardless of length of service, his eligible surviving dependents receive the same benefits as for Non-Duty Death, except that if credited service at the time of death is less than 25 years, credited service is increased to 25 years.

Benefit Changes After Retirement. Section 24-10-612. There is an annual redetermination of monthly benefit amount, beginning the July first following 12 months of retirement. The redetermined amount is 3.0% of the monthly benefit from the preceding July.

Member Contributions. For Volunteer Service credit, members do not contribute.

Employer Contributions. Section 24-10-405. Each employer contributes the amounts necessary to finance all employees participation in LOPFI. Contributions to LOPFI are determined based upon level-rate principles, so that contribution rates do not have to increase over decades of time.

SECTION F

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Assumptions Used for LOPFI GASB Accounting Reports

The actuarial assumptions used in the calculation of the Total Pension Liabilities are shown in this section of the report. The assumptions are established by the Board after consulting with the actuary as outlined in A.C.A. 24-10-205(a)(1) with the exception of the economic assumptions. The economic assumptions for purposes of the GASB Accounting reports were selected by the actuary based on the results of an experience study covering the period from January 1, 2012 through December 31, 2016.

ECONOMIC ASSUMPTIONS

The investment return rate used in this report was 7.00% per year, compounded annually (net after administrative expenses). This rate of return is not the assumed real rate of return. The real rate of return is defined to be the portion of investment return which is more than the wage inflation rate. With a 3.25% wage inflation assumption, the 7.00% investment return rate translates to an assumed real rate of return of 3.75%.

Price inflation was assumed to be 2.50% a year. This assumption was utilized to increase the basic benefit factor for volunteer members.

Pay increase assumptions for individual active members are summarized in Schedule A-5. Part of the assumption for each age is for a merit and/or seniority increase, and the other 3.25% recognizes wage inflation.

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

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

NON-ECONOMIC ASSUMPTIONS

The mortality tables used to measure retired life mortality were the RP-2014 Healthy Annuitant benefit weighted generational mortality tables for males and females. The disability post-retirement mortality tables used were the RP-2014 Disabled Retiree benefit weighted generational mortality tables for males and females. The death-in-service mortality tables used were the RP-2014 Employee benefit weighted generational mortality tables for males and females. Fifty percent of deaths-in-service were assumed to be duty related. The tables applied credibility adjustments of 135% for males and 125% for females and were adjusted for fully generational mortality improvements using Scale MP-2016. Related retired life mortality values are shown in Schedule A-1.

The probabilities of retirement for members eligible to retire are shown in Schedule A-3.

The probabilities of withdrawal from service are summarized in Schedule A-4, and the **probabilities of disability** are summarized in Schedule A-2.

An individual entry age actuarial cost method of valuation was used in determining age & service allowance normal costs and the allocation of actuarial present values between service rendered before and after the valuation date. The entry-age actuarial cost method has the following characteristics:

- (i) the annual normal costs for each individual active member, payable from the member's actual date of employment to the member's projected date of retirement are sufficient to accumulate the actuarial present value of the member's benefit at the time of retirement; and
- (ii) each annual normal cost is: (a) a constant percentage of the member's year by year projected covered pay for paid service plans, or (b) an increasing dollar amount for volunteer service plans.

Differences in the past between assumed experience and actual experience ("actuarial gains and losses") are inevitable and become part of accrued liabilities. In LOPFI, cumulative actuarial losses and gains are the same as unfunded (or overfunded) accrued liabilities.

Unfunded accrued liabilities are amortized to produce contribution amounts (principal and interest) which are (a) level percent of payroll contributions over a period of future years for paid service plans, or (b) increasing dollar amounts for volunteer service plans.

For Benefit Program 3 volunteer service plans, the contribution rates from the December 31, 2002 valuation were developed based on a \$5.00 per month basic benefit factor. This factor is \$6.68 effective July 1, 2017 and is assumed to increase at the assumed rate of price inflation in future years. For Benefit Program 4 volunteer service plans, the contribution rates from the December 31, 2012 valuation were developed based on a \$10.00 per month basic benefit factor. This factor is \$10.83 effective July 1, 2017 and is assumed to increase at the assumed rate of price inflation in future years.

OTHER TECHNICAL ASSUMPTIONS -----

Decrements are assumed to occur at the middle of the valuation year.

The probability of being married, for death-in-service benefits, is assumed to be 90%.

Members who are eligible to participate in the DROP are assumed to participate in the DROP program in such a manner that is the most advantageous to them.

Future service credit is always assumed to accrue at the rate of 1 year of credit every 12 calendar months. Lower service accrual rates (service breaks or less-than-full-time employment) or higher service accrual rates (addition of military credit or reinstatement of prior service) are reflected as they are reported. Any lower or higher accrual rates may result in small financial gains or losses when reported.

The form of benefit payment assumed in the valuation for paid service and volunteer service plans is the Five Year Certain and Life Option. For local plans under LOPFI administration, the assumed form of benefit payment is 100% joint and survivor for police plans and the Life Option for fire plans. For local fire plans under LOPFI administration who have adopted Act 397, the assumed form of benefit payment is 100% joint and survivor.

Employer contribution dollars were assumed to be **paid in equal installments** throughout the employer fiscal year.

Present assets (cash & investments) were used based on a smoothed market value.

The data about persons now covered and about present assets were furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: plan experience differing from that anticipated by the economic and demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

Schedule A-1

Single Life Retirement Values

Based on the RP-2014 Healthy Annuitant Generational Mortality Tables and 7.00% Interest

Sample Attained Ages	Probability of Dying		Value at Retirement		Future Life Expectancy (years)*					
	Next Year*		\$1.00 Monthly for Life		2017		2022		2027	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
35	0.174%	0.136%	\$ 163.22	\$ 166.15	46.22	49.91	46.77	50.43	47.33	50.95
40	0.255%	0.208%	158.87	162.78	41.13	44.81	41.66	45.30	42.20	45.81
45	0.368%	0.265%	153.40	158.53	36.18	39.81	36.70	40.29	37.22	40.78
50	0.544%	0.339%	146.54	152.89	31.38	34.87	31.90	35.35	32.40	35.82
55	0.779%	0.472%	138.23	145.48	26.80	30.03	27.29	30.49	27.77	30.94
60	1.083%	0.701%	128.18	136.26	22.45	25.38	22.89	25.79	23.33	26.23
65	1.553%	1.050%	116.18	125.01	18.36	20.97	18.73	21.34	19.13	21.74
70	2.326%	1.638%	102.01	111.32	14.55	16.80	14.87	17.15	15.21	17.51
75	3.719%	2.680%	85.70	95.26	11.05	12.94	11.34	13.27	11.64	13.59
80	6.268%	4.570%	68.14	77.54	7.98	9.53	8.24	9.81	8.49	10.08

* Life expectancies in future years are determined by the fully generational MP-2016 projection scale.

Sample Attained Ages	Benefit Increasing 3.00% Yearly	Portion of Age 55 Lives Still Alive	Sample Attained Ages
55	\$100	100 %	55
60	116	95	60
65	134	89	65
70	156	81	70
75	181	69	75
80	209	53	80

Schedule A-2 Probabilities of Disability Retirement

Paid Service Members

Sample Ages	Percent Becoming Disabled within Next Year	
	Non-Duty	Duty
20	0.07 %	0.12 %
25	0.07	0.12
30	0.10	0.15
35	0.13	0.21
40	0.20	0.32
45	0.31	0.49
50	0.52	0.84
55	0.91	1.45
60	1.36	2.18

Volunteer Service Members

Sample Ages	Percent Becoming Disabled within Next Year	
	Non-Duty	Duty
20	0.04 %	0.00 %
25	0.04	0.00
30	0.04	0.00
35	0.04	0.00
40	0.09	0.01
45	0.12	0.01
50	0.23	0.02
55	0.41	0.04
60	0.65	0.06

Schedule A-3

Probabilities of Retirement for Members Eligible to Retire

Paid Service Members

Retirement Ages	Percents of Active Members Retiring within Next Year		Years of Service	Percents of Active Members Retiring within Next Year
	Early	Normal		
45-49	6 %			
50-54	6			
55		18 %	28	20 %
56		15	29	15
57		15	30	15
58		15	31	15
59		15	32	15
60		20	33	25
61		15	34	100
62		25		
63		25		
64		25		
65		50		
66		60		
67		70		
68		80		
69		90		
70+		100		

A member was assumed eligible for retirement after attaining age 55 with 20 years of service or age 60 with 5 years of service or any age with 28 or more years of service. A member was assumed to retire with 100% probability at 34 or more years of service credit.

A member was assumed eligible for a reduced benefit after attaining age 50 with 20 or more years of service or any age with 25 or more years of paid service credit.

The probabilities of retirement shown above represent ultimate termination of employment (whether or not the member participates in the DROP).

Schedule A-3

Probabilities of Retirement for Members Eligible to Retire (Concluded)

Volunteer Service Members

Retirement Ages	Percents of Active Members Retiring within Next Year	
	Early	Normal
Under 50		18 %
50-54	2.5 %	18
55-59		15
60-64		10
65-69		15
70-74		20
75+		100

A member was assumed to be eligible for retirement after 28 years of service, attaining age 55 with 20 years of service, or age 60 with 5 years of service.

A member was assumed eligible for a reduced benefit after attaining age 50 with 20 or more years of service.

Schedule A-4

Rates of Separation (Excluding Deaths and Disability) from Active Employment Before Retirement

Paid Service Members

Sample Ages	Years of Service	% of Active Members Separating within Next Year
ALL	0	18.00 %
	1	16.00
	2	13.00
	3	11.00
	4	10.00
25	5 & Over	9.42
30		7.92
35		6.07
40		4.84
45		3.87
50		3.08
55		0.88
60		0.00

Volunteer Service Members

Sample Ages	Years of Service	% of Active Members Separating within Next Year
ALL	0	23.00 %
	1	21.00
	2	19.00
	3	17.00
	4	15.00
25	5 & Over	9.50
30		9.50
35		9.50
40		9.50
45		9.50
50		9.50
55		9.50
60		9.50

Schedule A-5

Pay Increase Assumptions for an Individual Paid Service Member

Pay Increase Assumptions for an Individual Member			
Service Years	Merit and Seniority	Base (Economic)	Increase Next Year
1	15.00%	3.25%	18.25%
2	9.00%	3.25%	12.25%
3	4.00%	3.25%	7.25%
4	3.00%	3.25%	6.25%
5	2.00%	3.25%	5.25%
6	1.50%	3.25%	4.75%
7	1.50%	3.25%	4.75%
8	1.50%	3.25%	4.75%
9	1.00%	3.25%	4.25%
10	1.00%	3.25%	4.25%
11	0.50%	3.25%	3.75%
12	0.50%	3.25%	3.75%
13	0.50%	3.25%	3.75%
14	0.50%	3.25%	3.75%
15	0.50%	3.25%	3.75%
16	0.50%	3.25%	3.75%
17	0.50%	3.25%	3.75%
18	0.50%	3.25%	3.75%
19	0.50%	3.25%	3.75%
20+	0.50%	3.25%	3.75%

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 “risk-free” 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 plan’s projected fiduciary net position is not sufficient to pay benefits).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.00%; the municipal bond rate is 3.31%; and the resulting SDR is 7.00%.

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 Single Discount Rate. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

Paid Service
Single Discount Rate Development
Projection of Contributions Beginning January 1, 2018
(Years 1-50)

Year	Projected Payroll for Current Employees	Projected Contributions from Current Employees	Projected Service Cost and Expense Contributions	Projected UAL Contributions	Projected Total Contributions
0	\$ 339,098,676				
1	333,229,135	\$ 22,641,349	\$ 38,778,657	\$ 42,995,314	\$ 104,415,321
2	309,268,150	20,944,958	37,740,626	46,342,103	105,027,687
3	290,773,880	19,633,787	36,807,697	50,494,589	106,936,073
4	275,108,022	18,526,837	35,827,941	54,809,756	109,164,533
5	259,990,305	17,460,080	34,919,192	59,248,228	111,627,501
6	246,848,873	16,539,465	33,867,817	63,884,137	114,291,419
7	233,237,332	15,583,385	32,757,138	68,609,223	116,949,746
8	219,936,426	14,655,037	31,644,481	73,414,988	119,714,506
9	206,962,115	13,754,939	30,539,175	75,800,975	120,095,089
10	194,033,429	12,864,976	29,412,087	78,264,507	120,541,570
11	181,081,146	11,974,862	28,263,776	80,808,103	121,046,741
12	168,283,700	11,096,623	27,117,518	83,434,367	121,648,507
13	156,129,510	10,265,179	26,018,117	86,145,984	122,429,280
14	144,643,038	9,482,612	24,967,287	88,945,728	123,395,627
15	133,229,758	8,707,955	23,906,283	91,836,464	124,450,703
16	122,028,802	7,945,581	22,860,550	94,821,149	125,627,281
17	111,507,161	7,231,699	21,875,566	97,902,837	127,010,101
18	101,756,052	6,582,048	20,957,070	101,084,679	128,623,797
19	92,466,988	5,968,194	20,079,960	-	26,048,153
20	83,351,363	5,362,893	19,023,631	-	24,386,524
21	74,692,444	4,788,339	18,006,518	-	22,794,857
22	66,316,940	4,232,051	17,011,676	-	21,243,726
23	58,247,541	3,698,948	16,028,200	-	19,727,148
24	50,687,114	3,206,390	15,082,081	-	18,288,471
25	43,690,363	2,758,223	14,185,697	-	16,943,919
26	37,165,065	2,346,513	13,328,177	-	15,674,690
27	30,885,257	1,952,458	12,481,147	-	14,433,605
28	24,901,406	1,574,085	11,649,888	-	13,223,973
29	19,527,078	1,230,821	10,869,217	-	12,100,038
30	14,757,626	926,755	10,141,421	-	11,068,176
31	10,596,118	663,235	9,469,492	-	10,132,727
32	7,142,584	449,893	8,861,870	-	9,311,762
33	3,998,083	256,256	8,270,967	-	8,527,223
34	1,227,266	79,223	7,707,893	-	7,787,117
35	-	-	7,315,635	-	7,315,635
36	-	-	7,061,574	-	7,061,574
37	-	-	6,798,479	-	6,798,479
38	-	-	6,527,835	-	6,527,835
39	-	-	6,251,079	-	6,251,079
40	-	-	5,970,087	-	5,970,087
41	-	-	5,686,590	-	5,686,590
42	-	-	5,401,984	-	5,401,984
43	-	-	5,117,448	-	5,117,448
44	-	-	4,834,162	-	4,834,162
45	-	-	4,553,239	-	4,553,239
46	-	-	4,275,641	-	4,275,641
47	-	-	4,002,194	-	4,002,194
48	-	-	3,733,758	-	3,733,758
49	-	-	3,471,230	-	3,471,230
50	-	-	3,215,489	-	3,215,489

Paid Service
Single Discount Rate Development
Projection of Contributions Beginning January 1, 2018
(Years 51-100)

Year	Projected Payroll for Current Employees	Projected Contributions from Current Employees	Projected Service Cost and Expense Contributions	Projected UAL Contributions	Projected Total Contributions
51	\$ -	\$ -	\$ 2,967,339	\$ -	\$ 2,967,339
52	-	-	2,727,506	-	2,727,506
53	-	-	2,496,637	-	2,496,637
54	-	-	2,275,304	-	2,275,304
55	-	-	2,064,009	-	2,064,009
56	-	-	1,863,185	-	1,863,185
57	-	-	1,673,192	-	1,673,192
58	-	-	1,494,315	-	1,494,315
59	-	-	1,326,761	-	1,326,761
60	-	-	1,170,664	-	1,170,664
61	-	-	1,026,085	-	1,026,085
62	-	-	893,008	-	893,008
63	-	-	771,340	-	771,340
64	-	-	660,907	-	660,907
65	-	-	561,452	-	561,452
66	-	-	472,632	-	472,632
67	-	-	394,014	-	394,014
68	-	-	325,089	-	325,089
69	-	-	265,272	-	265,272
70	-	-	213,918	-	213,918
71	-	-	170,339	-	170,339
72	-	-	133,816	-	133,816
73	-	-	103,617	-	103,617
74	-	-	79,011	-	79,011
75	-	-	59,279	-	59,279
76	-	-	43,729	-	43,729
77	-	-	31,701	-	31,701
78	-	-	22,582	-	22,582
79	-	-	15,811	-	15,811
80	-	-	10,893	-	10,893
81	-	-	7,399	-	7,399
82	-	-	4,973	-	4,973
83	-	-	3,323	-	3,323
84	-	-	2,222	-	2,222
85	-	-	1,499	-	1,499
86	-	-	1,026	-	1,026
87	-	-	717	-	717
88	-	-	511	-	511
89	-	-	371	-	371
90	-	-	271	-	271
91	-	-	198	-	198
92	-	-	144	-	144
93	-	-	103	-	103
94	-	-	71	-	71
95	-	-	48	-	48
96	-	-	31	-	31
97	-	-	19	-	19
98	-	-	11	-	11
99	-	-	5	-	5
100	-	-	2	-	2

Paid Service
Single Discount Rate Development
Projection of Plan Fiduciary Net Position Beginning January 1, 2018
(Years 1-50)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
1	\$ 1,781,172,007	\$ 104,415,321	\$ 77,564,483	\$ 3,206,110	\$ 125,495,609	\$ 1,930,312,344
2	1,930,312,344	105,027,687	82,697,564	3,474,562	135,770,647	2,084,938,552
3	2,084,938,552	106,936,073	91,943,979	3,752,889	146,332,418	2,242,510,175
4	2,242,510,175	109,164,533	102,427,539	4,036,518	157,068,630	2,402,279,281
5	2,402,279,281	111,627,501	103,769,250	4,324,103	168,281,153	2,574,094,582
6	2,574,094,582	114,291,419	114,890,187	4,633,370	180,006,593	2,748,869,037
7	2,748,869,037	116,949,746	127,047,216	4,947,964	191,903,149	2,925,726,751
8	2,925,726,751	119,714,506	139,620,355	5,266,308	203,934,748	3,104,489,341
9	3,104,489,341	120,095,089	152,339,079	5,588,081	216,012,526	3,282,669,797
10	3,282,669,797	120,541,570	165,627,209	5,908,806	228,032,267	3,459,707,620
11	3,459,707,620	121,046,741	180,004,226	6,227,474	239,936,646	3,634,459,307
12	3,634,459,307	121,648,507	195,476,832	6,542,027	251,646,765	3,805,735,721
13	3,805,735,721	122,429,280	209,839,647	6,850,324	263,158,175	3,974,633,204
14	3,974,633,204	123,395,627	223,703,967	7,154,340	274,526,744	4,141,697,268
15	4,141,697,268	124,450,703	238,323,901	7,455,055	285,744,141	4,306,113,155
16	4,306,113,155	125,627,281	253,018,055	7,751,004	296,777,957	4,467,749,333
17	4,467,749,333	127,010,101	266,820,946	8,041,949	307,655,128	4,627,551,667
18	4,627,551,667	128,623,797	280,689,984	8,329,593	318,409,712	4,785,565,599
19	4,785,565,599	26,048,153	293,868,905	8,614,018	325,478,012	4,834,608,841
20	4,834,608,841	24,386,524	306,272,972	8,702,296	328,424,029	4,825,712,125
21	4,872,444,125	22,794,857	318,471,277	8,770,399	330,595,669	4,898,592,976
22	4,898,592,976	21,243,726	330,897,525	8,817,467	331,943,535	4,912,065,246
23	4,912,065,246	19,727,148	342,542,877	8,841,717	332,432,883	4,912,840,684
24	4,912,840,684	18,288,471	354,317,002	8,843,113	332,032,489	4,900,001,530
25	4,900,001,530	16,943,919	364,489,788	8,820,003	330,738,255	4,874,373,913
26	4,874,373,913	15,674,690	374,132,986	8,773,873	328,570,434	4,825,712,177
27	4,835,712,177	14,433,605	383,713,561	8,704,282	325,494,154	4,783,222,093
28	4,783,222,093	13,223,973	392,257,578	8,609,800	321,487,496	4,717,066,185
29	4,717,066,185	12,100,038	399,610,946	8,490,719	316,568,992	4,637,633,550
30	4,637,633,550	11,068,176	405,845,957	8,347,740	310,763,588	4,545,271,617
31	4,545,271,617	10,132,727	410,384,967	8,181,489	304,115,608	4,440,953,496
32	4,440,953,496	9,311,762	413,482,210	7,993,716	296,684,982	4,325,474,315
33	4,325,474,315	8,527,223	415,327,330	7,785,854	288,518,110	4,199,406,464
34	4,199,406,464	7,787,117	415,077,282	7,558,932	279,684,307	4,064,241,673
35	4,064,241,673	7,315,635	411,483,496	7,315,635	270,338,575	3,923,096,752
36	3,923,096,752	7,061,574	406,783,878	7,061,574	260,620,135	3,776,933,010
37	3,776,933,010	6,798,479	400,947,615	6,798,479	250,589,488	3,626,574,883
38	3,626,574,883	6,527,835	394,055,025	6,527,835	240,301,579	3,472,821,437
39	3,472,821,437	6,251,079	385,924,850	6,251,079	229,818,582	3,216,715,168
40	3,316,715,168	5,970,087	376,706,882	5,970,087	219,208,315	3,159,216,602
41	3,159,216,602	5,686,590	366,644,180	5,686,590	208,529,653	3,001,102,075
42	3,001,102,075	5,401,984	355,906,339	5,401,984	197,831,105	2,843,026,841
43	2,843,026,841	5,117,448	344,538,404	5,117,448	187,156,987	2,685,645,424
44	2,685,645,424	4,834,162	332,618,418	4,834,162	176,550,431	2,529,577,437
45	2,529,577,437	4,553,239	320,271,745	4,553,239	166,050,497	2,375,356,189
46	2,375,356,189	4,275,641	307,605,999	4,275,641	155,690,813	2,223,441,002
47	2,223,441,002	4,002,194	294,634,108	4,002,194	145,503,087	2,074,309,981
48	2,074,309,981	3,733,758	281,369,129	3,733,758	135,520,337	1,928,461,189
49	1,928,461,189	3,471,230	267,854,546	3,471,230	125,775,932	1,786,382,576
50	1,786,382,576	3,215,489	254,162,605	3,215,489	116,301,542	1,648,521,513

Paid Service
Single Discount Rate Development
Projection of Plan Fiduciary Net Position Beginning January 1, 2018
(Years 51-100)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
51	\$ 1,648,521,513	\$ 2,967,339	\$ 240,366,380	\$ 2,967,339	\$ 107,125,969	\$ 1,515,281,102
52	1,515,281,102	2,727,506	226,535,613	2,727,506	98,275,030	1,387,020,519
53	1,387,020,519	2,496,637	212,734,549	2,496,637	89,771,657	1,264,057,626
54	1,264,057,626	2,275,304	199,022,215	2,275,304	81,636,069	1,146,671,480
55	1,146,671,480	2,064,009	185,454,786	2,064,009	73,885,867	1,035,102,561
56	1,035,102,561	1,863,185	172,087,520	1,863,185	66,535,984	929,551,025
57	929,551,025	1,673,192	158,974,838	1,673,192	59,598,559	830,174,746
58	830,174,746	1,494,315	146,168,362	1,494,315	53,082,865	737,089,248
59	737,089,248	1,326,761	133,715,554	1,326,761	46,995,357	650,369,051
60	650,369,051	1,170,664	121,661,291	1,170,664	41,339,707	570,047,466
61	570,047,466	1,026,085	110,048,561	1,026,085	36,116,767	496,115,672
62	496,115,672	893,008	98,918,112	893,008	31,324,518	428,522,079
63	428,522,079	771,340	88,309,511	771,340	26,957,988	367,170,557
64	367,170,557	660,907	78,261,686	660,907	23,009,107	311,917,979
65	311,917,979	561,452	68,811,483	561,452	19,466,590	262,573,085
66	262,573,085	472,632	59,992,071	472,632	16,315,906	218,896,920
67	218,896,920	394,014	51,831,193	394,014	13,539,374	180,605,102
68	180,605,102	325,089	44,348,364	325,089	11,116,417	147,373,154
69	147,373,154	265,272	37,553,711	265,272	9,023,971	118,843,415
70	118,843,415	213,918	31,447,500	213,918	7,236,992	94,632,906
71	94,632,906	170,339	26,019,521	170,339	5,729,023	74,342,408
72	74,342,408	133,816	21,249,971	133,816	4,472,799	57,565,236
73	57,565,236	103,617	17,111,026	103,617	3,440,810	43,895,019
74	43,895,019	79,011	13,567,893	79,011	2,605,807	32,932,933
75	32,932,933	59,279	10,580,311	59,279	1,941,257	24,293,879
76	24,293,879	43,729	8,103,826	43,729	1,421,735	17,611,788
77	17,611,788	31,701	6,089,713	31,701	1,023,290	12,545,366
78	12,545,366	22,582	4,485,396	22,582	723,842	8,783,811
79	8,783,811	15,811	3,235,872	15,811	503,527	6,051,466
80	6,051,466	10,893	2,285,719	10,893	344,956	4,110,703
81	4,110,703	7,399	1,581,371	7,399	233,337	2,762,669
82	2,762,669	4,973	1,073,037	4,973	156,466	1,846,098
83	1,846,098	3,323	716,102	3,323	104,587	1,234,583
84	1,234,583	2,222	472,239	2,222	70,172	832,516
85	832,516	1,499	310,018	1,499	47,609	570,107
86	570,107	1,026	204,682	1,026	32,865	398,290
87	398,290	717	137,442	717	23,151	283,999
88	283,999	511	94,744	511	16,620	205,875
89	205,875	371	67,343	371	12,094	150,627
90	150,627	271	49,243	271	8,850	110,233
91	110,233	198	36,732	198	6,452	79,954
92	79,954	144	27,606	144	4,647	56,995
93	56,995	103	20,635	103	3,280	39,640
94	39,640	71	15,186	71	2,252	26,706
95	26,706	48	10,921	48	1,494	17,279
96	17,279	31	7,621	31	947	10,605
97	10,605	19	5,124	19	566	6,047
98	6,047	11	3,304	11	310	3,053
99	3,053	5	2,038	5	144	1,158
100	1,158	2	1,198	2	40	-

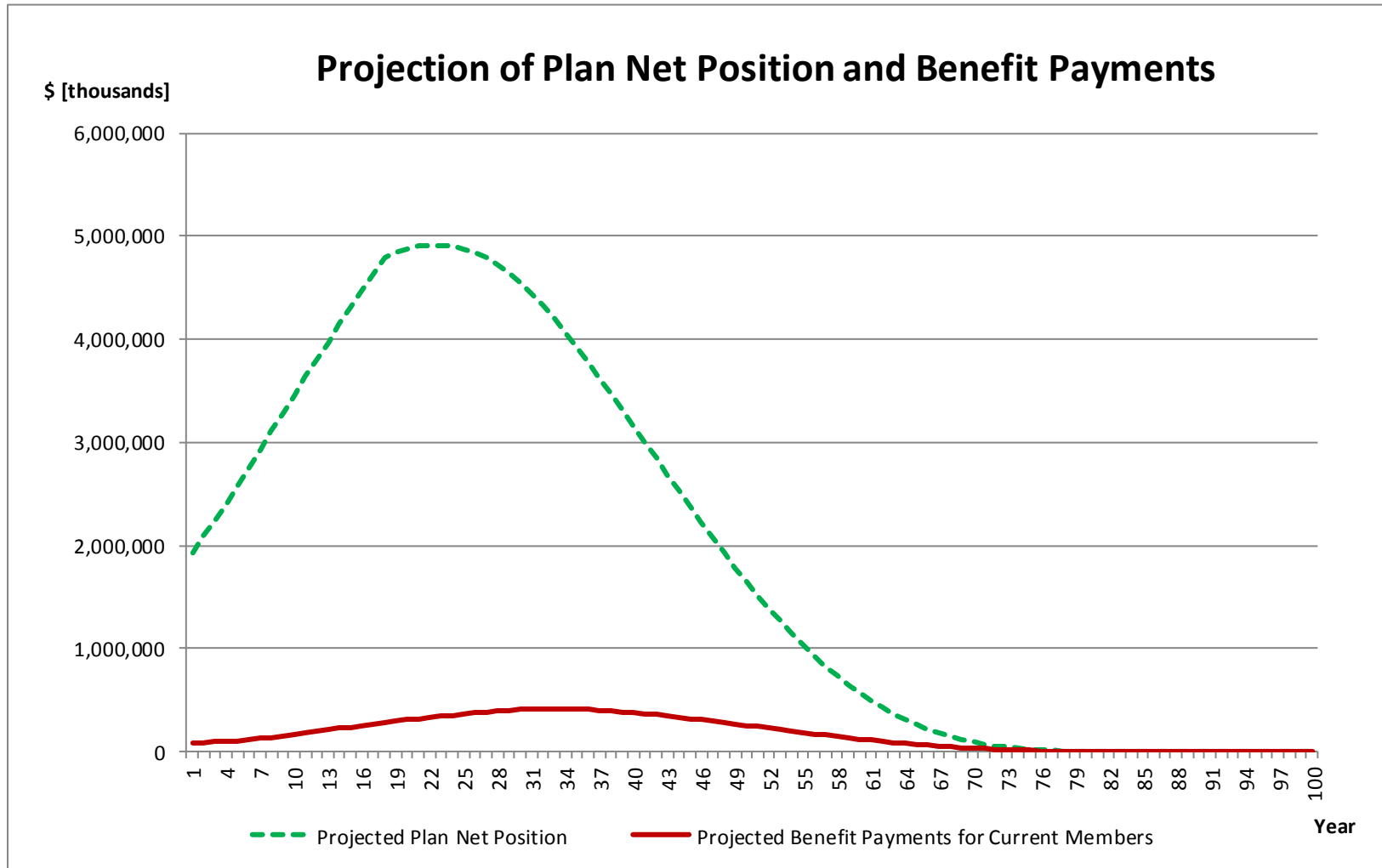
Paid Service
Single Discount Rate Development
Present Values of Projected Benefits Beginning January 1, 2018
(Years 1-50)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected 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 All 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}]
1	\$ 1,781,172,007	\$ 77,564,483	\$ 77,564,483	\$ -	\$ 74,984,416	\$ -	\$ 74,984,416
2	1,930,312,344	82,697,564	82,697,564	-	74,716,591	-	74,716,591
3	2,084,938,552	91,943,979	91,943,979	-	77,636,125	-	77,636,125
4	2,242,510,175	102,427,539	102,427,539	-	80,830,175	-	80,830,175
5	2,402,279,281	103,769,250	103,769,250	-	76,531,756	-	76,531,756
6	2,574,094,582	114,890,187	114,890,187	-	79,190,331	-	79,190,331
7	2,748,869,037	127,047,216	127,047,216	-	81,840,938	-	81,840,938
8	2,925,726,751	139,620,355	139,620,355	-	84,056,327	-	84,056,327
9	3,104,489,341	152,339,079	152,339,079	-	85,713,497	-	85,713,497
10	3,282,669,797	165,627,209	165,627,209	-	87,093,510	-	87,093,510
11	3,459,707,620	180,004,226	180,004,226	-	88,461,243	-	88,461,243
12	3,634,459,307	195,476,832	195,476,832	-	89,780,464	-	89,780,464
13	3,805,735,721	209,839,647	209,839,647	-	90,072,108	-	90,072,108
14	3,974,633,204	223,703,967	223,703,967	-	89,741,368	-	89,741,368
15	4,141,697,268	238,323,901	238,323,901	-	89,351,701	-	89,351,701
16	4,306,113,155	253,018,055	253,018,055	-	88,654,944	-	88,654,944
17	4,467,749,333	266,820,946	266,820,946	-	87,375,080	-	87,375,080
18	4,627,551,667	280,689,984	280,689,984	-	85,903,489	-	85,903,489
19	4,785,565,599	293,868,905	293,868,905	-	84,053,102	-	84,053,102
20	4,834,608,841	306,272,972	306,272,972	-	81,870,041	-	81,870,041
21	4,872,444,125	318,471,277	318,471,277	-	79,561,475	-	79,561,475
22	4,898,592,976	330,897,525	330,897,525	-	77,257,793	-	77,257,793
23	4,912,065,246	342,542,877	342,542,877	-	74,744,621	-	74,744,621
24	4,912,840,684	354,317,002	354,317,002	-	72,255,884	-	72,255,884
25	4,900,001,530	364,489,788	364,489,788	-	69,467,683	-	69,467,683
26	4,874,373,913	374,132,986	374,132,986	-	66,640,718	-	66,640,718
27	4,835,712,177	383,713,561	383,713,561	-	63,875,901	-	63,875,901
28	4,783,222,093	392,257,578	392,257,578	-	61,026,358	-	61,026,358
29	4,717,066,185	399,610,946	399,610,946	-	58,103,155	-	58,103,155
30	4,637,633,550	405,845,957	405,845,957	-	55,149,272	-	55,149,272
31	4,545,271,617	410,384,967	410,384,967	-	52,117,818	-	52,117,818
32	4,440,953,496	413,482,210	413,482,210	-	49,075,850	-	49,075,850
33	4,325,474,315	415,327,330	415,327,330	-	46,069,949	-	46,069,949
34	4,199,406,464	415,077,282	415,077,282	-	43,030,106	-	43,030,106
35	4,064,241,673	411,483,496	411,483,496	-	39,866,865	-	39,866,865
36	3,923,096,752	406,783,878	406,783,878	-	36,833,215	-	36,833,215
37	3,776,933,010	400,947,615	400,947,615	-	33,929,679	-	33,929,679
38	3,626,574,883	394,055,025	394,055,025	-	31,164,862	-	31,164,862
39	3,472,821,437	385,924,850	385,924,850	-	28,525,108	-	28,525,108
40	3,316,715,168	376,706,882	376,706,882	-	26,022,219	-	26,022,219
41	3,159,216,602	366,644,180	366,644,180	-	23,670,193	-	23,670,193
42	3,001,102,075	355,906,339	355,906,339	-	21,473,802	-	21,473,802
43	2,843,026,841	344,538,404	344,538,404	-	19,427,955	-	19,427,955
44	2,685,645,424	332,618,418	332,618,418	-	17,528,791	-	17,528,791
45	2,529,577,437	320,271,745	320,271,745	-	15,773,952	-	15,773,952
46	2,375,356,189	307,605,999	307,605,999	-	14,159,011	-	14,159,011
47	2,223,441,002	294,634,108	294,634,108	-	12,674,690	-	12,674,690
48	2,074,309,981	281,369,129	281,369,129	-	11,312,198	-	11,312,198
49	1,928,461,189	267,854,546	267,854,546	-	10,064,352	-	10,064,352
50	1,786,382,576	254,162,605	254,162,605	-	8,925,132	-	8,925,132

Paid Service Single Discount Rate Development Present Values of Projected Benefits Beginning January 1, 2018 (Years 51-100)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected 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 All 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}	
51	\$ 1,648,521,513	\$ 240,366,380	\$ 240,366,380	\$ -	\$ 7,888,473	\$ -	\$ 7,888,473	
52	1,515,281,102	226,535,613	226,535,613	-	6,948,194	-	6,948,194	
53	1,387,020,519	212,734,549	212,734,549	-	6,098,032	-	6,098,032	
54	1,264,057,626	199,022,215	199,022,215	-	5,331,746	-	5,331,746	
55	1,146,671,480	185,454,786	185,454,786	-	4,643,251	-	4,643,251	
56	1,035,102,561	172,087,520	172,087,520	-	4,026,704	-	4,026,704	
57	929,551,025	158,974,838	158,974,838	-	3,476,522	-	3,476,522	
58	830,174,746	146,168,362	146,168,362	-	2,987,350	-	2,987,350	
59	737,089,248	133,715,554	133,715,554	-	2,554,059	-	2,554,059	
60	650,369,051	121,661,291	121,661,291	-	2,171,789	-	2,171,789	
61	570,047,466	110,048,561	110,048,561	-	1,835,971	-	1,835,971	
62	496,115,672	98,918,112	98,918,112	-	1,542,316	-	1,542,316	
63	428,522,079	88,309,511	88,309,511	-	1,286,831	-	1,286,831	
64	367,170,557	78,261,686	78,261,686	-	1,065,809	-	1,065,809	
65	311,917,979	68,811,483	68,811,483	-	875,805	-	875,805	
66	262,573,085	59,992,071	59,992,071	-	713,603	-	713,603	
67	218,896,920	51,831,193	51,831,193	-	576,196	-	576,196	
68	180,605,102	44,348,364	44,348,364	-	460,758	-	460,758	
69	147,373,154	37,553,711	37,553,711	-	364,640	-	364,640	
70	118,843,415	31,447,500	31,447,500	-	285,373	-	285,373	
71	94,632,906	26,019,521	26,019,521	-	220,670	-	220,670	
72	74,342,408	21,249,971	21,249,971	-	168,430	-	168,430	
73	57,565,236	17,111,026	17,111,026	-	126,751	-	126,751	
74	43,895,019	13,567,893	13,567,893	-	93,930	-	93,930	
75	32,932,933	10,580,311	10,580,311	-	68,455	-	68,455	
76	24,293,879	8,103,826	8,103,826	-	49,002	-	49,002	
77	17,611,788	6,089,713	6,089,713	-	34,414	-	34,414	
78	12,545,366	4,485,396	4,485,396	-	23,690	-	23,690	
79	8,783,811	3,235,872	3,235,872	-	15,972	-	15,972	
80	6,051,466	2,285,719	2,285,719	-	10,544	-	10,544	
81	4,110,703	1,581,371	1,581,371	-	6,818	-	6,818	
82	2,762,669	1,073,037	1,073,037	-	4,324	-	4,324	
83	1,846,098	716,102	716,102	-	2,697	-	2,697	
84	1,234,583	472,239	472,239	-	1,662	-	1,662	
85	832,516	310,018	310,018	-	1,020	-	1,020	
86	570,107	204,682	204,682	-	629	-	629	
87	398,290	137,442	137,442	-	395	-	395	
88	283,999	94,744	94,744	-	254	-	254	
89	205,875	67,343	67,343	-	169	-	169	
90	150,627	49,243	49,243	-	115	-	115	
91	110,233	36,732	36,732	-	81	-	81	
92	79,954	27,606	27,606	-	57	-	57	
93	56,995	20,635	20,635	-	40	-	40	
94	39,640	15,186	15,186	-	27	-	27	
95	26,706	10,921	10,921	-	18	-	18	
96	17,279	7,621	7,621	-	12	-	12	
97	10,605	5,124	5,124	-	7	-	7	
98	6,047	3,304	3,304	-	5	-	5	
99	3,053	2,038	2,038	-	3	-	3	
100	1,158	1,198	1,198	-	1	-	1	
Totals	\$	2,953,549,427	\$	-	\$	2,953,549,427	\$	2,953,549,427

Paid Service



Volunteer Service

Single Discount Rate Development

Projection of Contributions Beginning January 1, 2018 (Years 1-50)

Year	Projected Number of Current Employees	Projected Contributions from Current Employees	Projected Service Cost and Expense Contributions	Projected UAL Contributions	Projected Total Contributions
0	7,341				
1	6,484	\$ -	\$ 2,480,100	\$ 3,617,718	\$ 6,097,818
2	5,812	-	2,234,805	3,708,161	5,942,967
3	5,256	-	2,034,499	3,669,987	5,704,486
4	4,779	-	1,872,296	3,755,848	5,628,144
5	4,363	-	1,732,181	3,843,442	5,575,623
6	3,979	-	1,609,904	3,932,785	5,542,689
7	3,622	-	1,496,175	4,195,444	5,691,619
8	3,293	-	1,396,677	4,300,330	5,697,007
9	2,991	-	1,297,921	4,407,838	5,705,760
10	2,712	-	1,213,050	4,518,034	5,731,085
11	2,455	-	1,135,553	4,630,985	5,766,538
12	2,221	-	1,068,111	4,746,760	5,814,871
13	2,005	-	1,005,708	4,865,429	5,871,136
14	1,808	-	949,525	4,987,065	5,936,590
15	1,626	-	897,581	5,111,741	6,009,322
16	1,461	-	855,201	5,239,535	6,094,736
17	1,310	-	816,637	5,370,523	6,187,160
18	1,170	-	779,776	-	779,776
19	1,044	-	740,612	-	740,612
20	930	-	706,320	-	706,320
21	824	-	670,690	-	670,690
22	727	-	638,444	-	638,444
23	640	-	608,688	-	608,688
24	559	-	579,258	-	579,258
25	486	-	554,478	-	554,478
26	420	-	531,397	-	531,397
27	361	-	508,241	-	508,241
28	307	-	485,008	-	485,008
29	260	-	462,624	-	462,624
30	221	-	445,965	-	445,965
31	187	-	426,344	-	426,344
32	159	-	411,934	-	411,934
33	134	-	393,330	-	393,330
34	113	-	379,618	-	379,618
35	95	-	364,986	-	364,986
36	80	-	349,176	-	349,176
37	67	-	334,257	-	334,257
38	55	-	317,618	-	317,618
39	45	-	304,118	-	304,118
40	37	-	289,443	-	289,443
41	30	-	275,580	-	275,580
42	24	-	261,697	-	261,697
43	19	-	248,397	-	248,397
44	15	-	234,585	-	234,585
45	11	-	221,660	-	221,660
46	9	-	207,727	-	207,727
47	6	-	194,951	-	194,951
48	5	-	183,897	-	183,897
49	3	-	171,673	-	171,673
50	2	-	159,292	-	159,292

Volunteer Service
Single Discount Rate Development
Projection of Contributions Beginning January 1, 2018
(Years 51-100)

Year	Projected Number of Current Employees	Projected Contributions from Current Employees	Projected Service Cost and Expense Contributions	Projected UAL Contributions	Projected Total Contributions
51	2	\$ -	\$ 147,934	\$ -	\$ 147,934
52	1	-	137,154	-	137,154
53	1	-	126,705	-	126,705
54	-	-	116,609	-	116,609
55	-	-	106,891	-	106,891
56	-	-	97,571	-	97,571
57	-	-	88,668	-	88,668
58	-	-	80,199	-	80,199
59	-	-	72,179	-	72,179
60	-	-	64,619	-	64,619
61	-	-	57,528	-	57,528
62	-	-	50,912	-	50,912
63	-	-	44,774	-	44,774
64	-	-	39,115	-	39,115
65	-	-	33,929	-	33,929
66	-	-	29,210	-	29,210
67	-	-	24,947	-	24,947
68	-	-	21,126	-	21,126
69	-	-	17,728	-	17,728
70	-	-	14,734	-	14,734
71	-	-	12,119	-	12,119
72	-	-	9,858	-	9,858
73	-	-	7,925	-	7,925
74	-	-	6,290	-	6,290
75	-	-	4,924	-	4,924
76	-	-	3,798	-	3,798
77	-	-	2,883	-	2,883
78	-	-	2,152	-	2,152
79	-	-	1,576	-	1,576
80	-	-	1,132	-	1,132
81	-	-	795	-	795
82	-	-	547	-	547
83	-	-	367	-	367
84	-	-	241	-	241
85	-	-	154	-	154
86	-	-	96	-	96
87	-	-	58	-	58
88	-	-	35	-	35
89	-	-	21	-	21
90	-	-	12	-	12
91	-	-	7	-	7
92	-	-	4	-	4
93	-	-	3	-	3
94	-	-	2	-	2
95	-	-	1	-	1
96	-	-	1	-	1
97	-	-	-	-	-
98	-	-	-	-	-
99	-	-	-	-	-
100	-	-	-	-	-

Volunteer Service
Single Discount Rate Development
Projection of Plan Fiduciary Net Position Beginning January 1, 2018
(Years 1-50)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
1	\$ 78,218,886	\$ 6,097,818	\$ 3,242,567	\$ 140,794	\$ 5,568,721	\$ 86,502,064
2	86,502,064	5,942,967	3,674,411	155,704	6,127,844	94,742,759
3	94,742,759	5,704,486	4,094,146	170,537	6,681,534	102,864,096
4	102,864,096	5,628,144	4,565,368	185,155	7,230,684	110,972,401
5	110,972,401	5,575,623	5,078,294	199,750	7,778,307	119,048,288
6	119,048,288	5,542,689	5,579,025	214,287	8,324,757	127,122,422
7	127,122,422	5,691,619	6,119,687	228,820	8,875,967	135,341,501
8	135,341,501	5,697,007	6,683,413	243,615	9,431,582	143,543,063
9	143,543,063	5,705,760	7,254,200	258,378	9,985,845	151,722,090
10	151,722,090	5,731,085	7,826,381	273,100	10,539,054	159,892,748
11	159,892,748	5,766,538	8,413,422	287,807	11,091,515	168,049,572
12	168,049,572	5,814,871	9,036,940	302,489	11,642,197	176,167,210
13	176,167,210	5,871,136	9,665,875	317,101	12,190,224	184,245,595
14	184,245,595	5,936,590	10,296,498	331,642	12,735,765	192,289,810
15	192,289,810	6,009,322	10,947,259	346,122	13,278,473	200,284,224
16	200,284,224	6,094,736	11,585,856	360,512	13,818,552	208,251,144
17	208,251,144	6,187,160	12,193,929	374,852	14,358,001	216,227,523
18	216,227,523	779,776	12,778,226	389,210	14,709,692	218,549,555
19	218,549,555	740,612	13,354,099	393,389	14,850,928	220,393,607
20	220,393,607	706,320	13,923,303	396,708	14,959,132	221,739,048
21	221,739,048	670,690	14,473,843	399,130	15,033,061	222,569,826
22	222,569,826	638,444	15,018,565	400,626	15,071,311	222,860,391
23	222,860,391	608,688	15,519,993	401,149	15,073,356	222,621,292
24	222,621,292	579,258	15,989,502	400,718	15,039,466	221,849,795
25	221,849,795	554,478	16,413,928	399,330	14,970,053	220,561,067
26	220,561,067	531,397	16,823,081	397,010	14,865,049	218,737,423
27	218,737,423	508,241	17,211,703	393,727	14,723,339	216,363,572
28	216,363,572	485,008	17,540,004	389,454	14,545,221	213,464,343
29	213,464,343	462,624	17,809,656	384,236	14,332,406	210,065,479
30	210,065,479	445,965	18,013,198	378,118	14,087,119	206,207,248
31	206,207,248	426,344	18,162,992	371,173	13,811,453	201,910,880
32	201,910,880	411,934	18,270,245	363,440	13,506,787	197,195,917
33	197,195,917	393,330	18,325,900	354,953	13,174,476	192,082,870
34	192,082,870	379,618	18,325,796	345,749	12,816,411	186,607,354
35	186,607,354	364,986	18,254,230	335,893	12,435,423	180,817,640
36	180,817,640	349,176	18,130,830	325,472	12,034,204	174,744,718
37	174,744,718	334,257	17,952,218	314,540	11,615,108	168,427,326
38	168,427,326	317,618	17,702,463	303,169	11,181,303	161,920,614
39	161,920,614	304,118	17,401,218	291,457	10,736,137	155,268,194
40	155,268,194	289,443	17,058,139	279,483	10,282,179	148,502,194
41	148,502,194	275,580	16,672,087	267,304	9,821,784	141,660,168
42	141,660,168	261,697	16,239,834	254,988	9,357,662	134,784,704
43	134,784,704	248,397	15,762,518	242,612	8,892,771	127,920,742
44	127,920,742	234,585	15,255,640	230,257	8,429,684	121,099,114
45	121,099,114	221,660	14,730,699	217,978	7,970,210	114,342,307
46	114,342,307	207,727	14,190,427	205,816	7,515,762	107,669,554
47	107,669,554	194,951	13,638,139	193,805	7,067,647	101,100,207
48	101,100,207	183,897	13,076,444	181,980	6,627,146	94,652,827
49	94,652,827	171,673	12,506,833	170,375	6,195,407	88,342,698
50	88,342,698	159,292	11,931,029	159,017	5,773,475	82,185,419

Volunteer Service
Single Discount Rate Development
Projection of Plan Fiduciary Net Position Beginning January 1, 2018
(Years 51-100)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
51	\$ 82,185,419	\$ 147,934	\$ 11,351,033	\$ 147,934	\$ 5,362,413	\$ 76,196,799
52	76,196,799	137,154	10,768,586	137,154	4,963,250	70,391,463
53	70,391,463	126,705	10,185,383	126,705	4,576,943	64,783,023
54	64,783,023	116,609	9,603,307	116,609	4,204,381	59,384,096
55	59,384,096	106,891	9,024,176	106,891	3,846,382	54,206,303
56	54,206,303	97,571	8,449,781	97,571	3,503,701	49,260,223
57	49,260,223	88,668	7,881,992	88,668	3,177,012	44,555,242
58	44,555,242	80,199	7,322,738	80,199	2,866,906	40,099,411
59	40,099,411	72,179	6,774,010	72,179	2,573,878	35,899,279
60	35,899,279	64,619	6,237,769	64,619	2,298,320	31,959,830
61	31,959,830	57,528	5,715,937	57,528	2,040,514	28,284,406
62	28,284,406	50,912	5,210,420	50,912	1,800,628	24,874,615
63	24,874,615	44,774	4,723,039	44,774	1,578,713	21,730,289
64	21,730,289	39,115	4,255,589	39,115	1,374,694	18,849,393
65	18,849,393	33,929	3,809,868	33,929	1,188,367	16,227,893
66	16,227,893	29,210	3,387,588	29,210	1,019,392	13,859,697
67	13,859,697	24,947	2,990,257	24,947	867,290	11,736,730
68	11,736,730	21,126	2,619,067	21,126	731,454	9,849,117
69	9,849,117	17,728	2,274,897	17,728	611,163	8,185,383
70	8,185,383	14,734	1,958,336	14,734	505,594	6,732,641
71	6,732,641	12,119	1,669,716	12,119	413,833	5,476,758
72	5,476,758	9,858	1,409,059	9,858	334,890	4,402,589
73	4,402,589	7,925	1,176,020	7,925	267,717	3,494,285
74	3,494,285	6,290	969,918	6,290	211,227	2,735,594
75	2,735,594	4,924	789,739	4,924	164,318	2,110,173
76	2,110,173	3,798	634,142	3,798	125,893	1,601,923
77	1,601,923	2,883	501,517	2,883	94,878	1,195,284
78	1,195,284	2,152	390,063	2,152	70,249	875,470
79	875,470	1,576	297,881	1,576	51,033	628,623
80	628,623	1,132	223,015	1,132	36,330	441,937
81	441,937	795	163,433	795	25,312	303,816
82	303,816	547	117,049	547	17,240	204,007
83	204,007	367	81,789	367	11,466	133,684
84	133,684	241	55,672	241	7,442	85,455
85	85,455	154	36,867	154	4,713	53,302
86	53,302	96	23,732	96	2,915	32,484
87	32,484	58	14,846	58	1,763	19,402
88	19,402	35	9,032	35	1,047	11,417
89	11,417	21	5,360	21	615	6,672
90	6,672	12	3,120	12	360	3,911
91	3,911	7	1,800	7	212	2,324
92	2,324	4	1,042	4	127	1,409
93	1,409	3	615	3	77	871
94	871	2	374	2	48	545
95	545	1	236	1	30	340
96	340	1	152	1	19	206
97	206	-	99	-	11	118
98	118	-	64	-	6	61
99	61	-	40	-	3	24
100	24	-	25	-	1	-

Volunteer Service Single Discount Rate Development

Present Values of Projected Benefits Beginning January 1, 2018 (Years 1-50)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected 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 All 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})
1	\$ 78,218,886	\$ 3,242,567	\$ 3,242,567	\$ -	\$ 3,134,708	\$ -	\$ 3,134,708
2	86,502,064	3,674,411	3,674,411	-	3,319,801	-	3,319,801
3	94,742,759	4,094,146	4,094,146	-	3,457,036	-	3,457,036
4	102,864,096	4,565,368	4,565,368	-	3,602,737	-	3,602,737
5	110,972,401	5,078,294	5,078,294	-	3,745,336	-	3,745,336
6	119,048,288	5,579,025	5,579,025	-	3,845,453	-	3,845,453
7	127,122,422	6,119,687	6,119,687	-	3,942,164	-	3,942,164
8	135,341,501	6,683,413	6,683,413	-	4,023,648	-	4,023,648
9	143,543,063	7,254,200	7,254,200	-	4,081,571	-	4,081,571
10	151,722,090	7,826,381	7,826,381	-	4,115,429	-	4,115,429
11	159,892,748	8,413,422	8,413,422	-	4,134,691	-	4,134,691
12	168,049,572	9,036,940	9,036,940	-	4,150,572	-	4,150,572
13	176,167,210	9,665,875	9,665,875	-	4,149,005	-	4,149,005
14	184,245,595	10,296,498	10,296,498	-	4,130,556	-	4,130,556
15	192,289,810	10,947,259	10,947,259	-	4,104,314	-	4,104,314
16	200,284,224	11,585,856	11,585,856	-	4,059,566	-	4,059,566
17	208,251,144	12,193,929	12,193,929	-	3,993,111	-	3,993,111
18	216,227,523	12,778,226	12,778,226	-	3,910,699	-	3,910,699
19	218,549,555	13,354,099	13,354,099	-	3,819,572	-	3,819,572
20	220,393,607	13,923,303	13,923,303	-	3,721,848	-	3,721,848
21	221,739,048	14,473,843	14,473,843	-	3,615,900	-	3,615,900
22	222,569,826	15,018,565	15,018,565	-	3,506,527	-	3,506,527
23	222,860,391	15,519,993	15,519,993	-	3,386,543	-	3,386,543
24	222,621,292	15,989,502	15,989,502	-	3,260,740	-	3,260,740
25	221,849,795	16,413,928	16,413,928	-	3,128,311	-	3,128,311
26	220,561,067	16,823,081	16,823,081	-	2,996,534	-	2,996,534
27	218,737,423	17,211,703	17,211,703	-	2,865,192	-	2,865,192
28	216,363,572	17,540,004	17,540,004	-	2,728,826	-	2,728,826
29	213,464,343	17,809,656	17,809,656	-	2,589,512	-	2,589,512
30	210,065,479	18,013,198	18,013,198	-	2,447,763	-	2,447,763
31	206,207,248	18,162,992	18,162,992	-	2,306,652	-	2,306,652
32	201,910,880	18,270,245	18,270,245	-	2,168,480	-	2,168,480
33	197,195,917	18,325,900	18,325,900	-	2,032,790	-	2,032,790
34	192,082,870	18,325,796	18,325,796	-	1,899,793	-	1,899,793
35	186,607,354	18,254,230	18,254,230	-	1,768,574	-	1,768,574
36	180,817,640	18,130,830	18,130,830	-	1,641,699	-	1,641,699
37	174,744,718	17,952,218	17,952,218	-	1,519,183	-	1,519,183
38	168,427,326	17,702,463	17,702,463	-	1,400,045	-	1,400,045
39	161,920,614	17,401,218	17,401,218	-	1,286,187	-	1,286,187
40	155,268,194	17,058,139	17,058,139	-	1,178,345	-	1,178,345
41	148,502,194	16,672,087	16,672,087	-	1,076,334	-	1,076,334
42	141,660,168	16,239,834	16,239,834	-	979,839	-	979,839
43	134,784,704	15,762,518	15,762,518	-	888,823	-	888,823
44	127,920,742	15,255,640	15,255,640	-	803,963	-	803,963
45	121,099,114	14,730,699	14,730,699	-	725,513	-	725,513
46	114,342,307	14,190,427	14,190,427	-	653,181	-	653,181
47	107,669,554	13,638,139	13,638,139	-	586,691	-	586,691
48	101,100,207	13,076,444	13,076,444	-	525,727	-	525,727
49	94,652,827	12,506,833	12,506,833	-	469,931	-	469,931
50	88,342,698	11,931,029	11,931,029	-	418,968	-	418,968

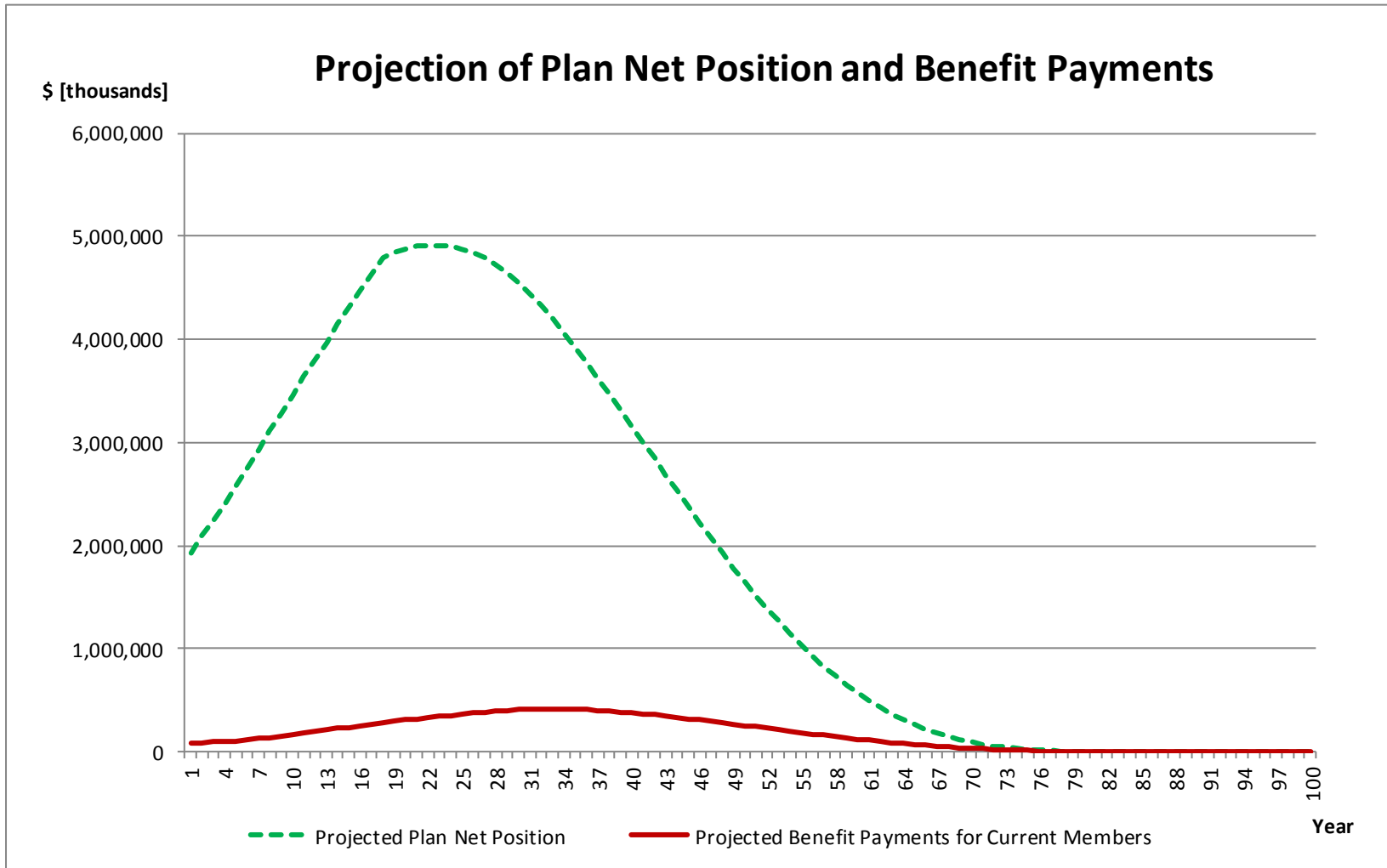
Volunteer Service

Single Discount Rate Development

Present Values of Projected Benefits Beginning January 1, 2018 (Years 51-100)

Year	Projected Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected 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 All Benefit Payments using Single Discount Rate (SDR)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ^{(a)-51}	(g)=(e)*vf ^{(a)-51}	(h)=((c)/(1+SDR) ^{(a)-51})
51	\$ 82,185,419	\$ 11,351,033	\$ 11,351,033	\$ -	\$ 372,524	\$ -	\$ 372,524
52	76,196,799	10,768,586	10,768,586	-	330,289	-	330,289
53	70,391,463	10,185,383	10,185,383	-	291,964	-	291,964
54	64,783,023	9,603,307	9,603,307	-	257,270	-	257,270
55	59,384,096	9,024,176	9,024,176	-	225,939	-	225,939
56	54,206,303	8,449,781	8,449,781	-	197,718	-	197,718
57	49,260,223	7,881,992	7,881,992	-	172,366	-	172,366
58	44,555,242	7,322,738	7,322,738	-	149,660	-	149,660
59	40,099,411	6,774,010	6,774,010	-	129,388	-	129,388
60	35,899,279	6,237,769	6,237,769	-	111,351	-	111,351
61	31,959,830	5,715,937	5,715,937	-	95,361	-	95,361
62	28,284,406	5,210,420	5,210,420	-	81,240	-	81,240
63	24,874,615	4,723,039	4,723,039	-	68,823	-	68,823
64	21,730,289	4,255,589	4,255,589	-	57,955	-	57,955
65	18,849,393	3,809,868	3,809,868	-	48,490	-	48,490
66	16,227,893	3,387,588	3,387,588	-	40,295	-	40,295
67	13,859,697	2,990,257	2,990,257	-	33,242	-	33,242
68	11,736,730	2,619,067	2,619,067	-	27,211	-	27,211
69	9,849,117	2,274,897	2,274,897	-	22,089	-	22,089
70	8,185,383	1,958,336	1,958,336	-	17,771	-	17,771
71	6,732,641	1,669,716	1,669,716	-	14,161	-	14,161
72	5,476,758	1,409,059	1,409,059	-	11,168	-	11,168
73	4,402,589	1,176,020	1,176,020	-	8,711	-	8,711
74	3,494,285	969,918	969,918	-	6,715	-	6,715
75	2,735,594	789,739	789,739	-	5,110	-	5,110
76	2,110,173	634,142	634,142	-	3,835	-	3,835
77	1,601,923	501,517	501,517	-	2,834	-	2,834
78	1,195,284	390,063	390,063	-	2,060	-	2,060
79	875,470	297,881	297,881	-	1,470	-	1,470
80	628,623	223,015	223,015	-	1,029	-	1,029
81	441,937	163,433	163,433	-	705	-	705
82	303,816	117,049	117,049	-	472	-	472
83	204,007	81,789	81,789	-	308	-	308
84	133,684	55,672	55,672	-	196	-	196
85	85,455	36,867	36,867	-	121	-	121
86	53,302	23,732	23,732	-	73	-	73
87	32,484	14,846	14,846	-	43	-	43
88	19,402	9,032	9,032	-	24	-	24
89	11,417	5,360	5,360	-	13	-	13
90	6,672	3,120	3,120	-	7	-	7
91	3,911	1,800	1,800	-	4	-	4
92	2,324	1,042	1,042	-	2	-	2
93	1,409	615	615	-	1	-	1
94	871	374	374	-	1	-	1
95	545	236	236	-	-	-	-
96	340	152	152	-	-	-	-
97	206	99	99	-	-	-	-
98	118	64	64	-	-	-	-
99	61	40	40	-	-	-	-
100	24	25	25	-	-	-	-
Totals					\$ 135,088,394	\$ -	\$ 135,088,394

Volunteer Service



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 covered employees, which is typically only the pensionable pay and does not include pay above any pay cap.
<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 plans’ 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 funding 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 ages(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 contribution entities to plan members for benefits provided through a defined benefit pension plan.

Non-Employer Contribution Entities

Non-employer contribution 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 contribution entities.

Normal Cost

The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.

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 post-employment 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.