

[www.pwc.com](http://www.pwc.com)

# *City of Memphis*

## City of Memphis Retirement System

Accounting Valuation under GASB No. 67 for the Plan Year Ending June 30, 2016

Accounting Valuation under GASB No. 68 for the Fiscal Year Ending June 30, 2016





September 16, 2016

Mr. Brian Collins  
Director, Division of Finance  
City of Memphis  
125 North Main Street  
Memphis, Tennessee 38103

Dear Mr. Collins,

We are pleased to present this report containing the results of the July 1, 2016 actuarial valuation of the City of Memphis Retirement System ("the Plan"), pursuant to our engagement letter with the City of Memphis ("the City") dated July 26, 2016.

The City of Memphis retained PricewaterhouseCoopers LLP ("PwC") to perform an actuarial valuation of the Retirement System for the purpose of calculating accounting results in accordance with Governmental Accounting Standards Board Statement No. 67 (GASB 67) for the Plan's fiscal year ending June 30, 2016 and Governmental Accounting Standards Board Statement No. 68 (GASB 68) for the City's fiscal year ending June 30, 2016. In addition, these results were prepared in accordance with Governmental Accounting Standards Board Statement No. 82 (GASB 82), which is an amendment of both GASB 67 and GASB 68. The City of Memphis also requested that we prepare the Memphis-Shelby County Airport Authority's ("Airport Authority") proportionate share of certain accounting and reporting requirements pursuant to GASB 68.

This valuation has been conducted in accordance with the required Actuarial Standards of Practice as issued by the American Academy of Actuaries.

Actuarial calculations under GASB 67 and GASB 68 are for purposes of fulfilling the Plan's and City's financial accounting requirements only and not suitable for any other purposes. The calculations reported herein have been made on a basis consistent with our understanding of GASB 67 and GASB 68, as amended by GASB 82.

In preparing the results presented in this report, we have relied upon information the City of Memphis provided to us regarding plan provisions, plan participants, unaudited plan assets, employee and employer contributions and benefit payments. The census data and plan asset information used in calculating the results herein were collected as of June 30, 2016. While the scope of our engagement did not call for us to perform an audit or independent verification of this information, we have reviewed this information for reasonableness. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information.

GASB 67 and GASB 68 require that each significant assumption reflect the best estimate of the Plan's future experience solely with respect to that assumption. The City of Memphis has determined and taken responsibility for the actuarial assumptions and the accounting policies and methods employed in the valuation of obligations and costs.

A range of results, different from those presented in this report could be considered reasonable. Future actuarial measurements may differ significantly from the current measurement presented in this report due to a number of factors including but not limited to: plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methods 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), rounding conventions and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed.

---

*PricewaterhouseCoopers LLP, One North Wacker, Chicago, IL 60606*  
*T: (312) 298 2000, [www.pwc.com/](http://www.pwc.com/)*



This report was prepared for the internal use of the City of Memphis in connection with our actuarial valuation of the Plan for determining the GASB 67 and GASB 68 results only and not for reliance by any other person. PwC disclaims any contractual or other responsibility or duty of care to others based upon the services or deliverables provided in connection with this report.

This report does not purport to comply with any other purposes not stated herein. Significantly different results from what is presented in this report may be needed for other purposes.

The content of this document is limited to the matters specifically addressed herein and does not address any other potential tax consequences, or the potential application of tax penalties, to any matter other than as set forth herein. Our conclusions are not binding upon any taxing authority or the courts and there is no assurance that any relevant taxing authority will not successfully assert a contrary position. In addition, no exceptions (including the reasonable cause exception) are available for any federal or state penalties imposed if any portion of a transaction is determined to lack economic substance or fails to satisfy any similar rule of law, and our advice will not protect you from any such penalties. This document supersedes all prior written or oral advice with respect to the issues addressed in this document and all such prior communications should not be relied upon by any person for any purpose.



Each of the undersigned actuaries is a member of the Society of Actuaries and the American Academy of Actuaries and meet the "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" relating to pension plans. To the best of our knowledge, the individuals involved in this engagement have no relationship that may impair, or appear to impair, the objectivity of our work.

Respectfully submitted,

---

Cindy Fraterrigo  
cindy.fraterrigo@us.pwc.com  
(312) 298-4320  
Member, American Academy of Actuaries  
Fellow of the Society of Actuaries

---

Shepherd M. Price  
shepherd.m.price@us.pwc.com  
(312) 298-2457  
Member, American Academy of Actuaries  
Associate of the Society of Actuaries

---

Jerrold Dubner  
jerrold.dubner@us.pwc.com  
(678) 419-1320  
Member, American Academy of Actuaries  
Associate of the Society of Actuaries

---

Antonio J. DeSario  
antonio.j.desario@us.pwc.com  
(312) 298-5491  
Member, American Academy of Actuaries  
Fellow of the Society of Actuaries

---

## TABLE OF CONTENTS

<b>I. EXECUTIVE SUMMARY</b>	<b>1</b>
<b>II. ACCOUNTING</b>	
A. Selected Notes to the Financial Statements under GASB 67 and 68	5
B. Schedule of Changes in the Net Pension Liability and Related Ratios under GASB 67 and 68	8
C. Schedule of Contributions under GASB 67 and 68	11
D. Net Pension Liability under GASB 68 for the Fiscal Year Ending June 30, 2016	12
E. Pension Expense under GASB 68 for the Fiscal Year Ending June 30, 2016	13
F. Schedule of Differences between Expected and Actual Experience under GASB 68 for the Fiscal Year Ending June 30, 2016	14
G. Schedule of Changes in Assumptions under GASB 68 for the Fiscal Year Ending June 30, 2016	15
H. Schedule of Differences between Projected and Actual Earnings on Investments under GASB 68 for the Fiscal Year Ending June 30, 2016	16
I. Determination of Resources of Deferred Outflows and Resources of Deferred Inflows for the Fiscal Year Ending June 30, 2016	17
J. Schedule of Deferred Outflows of Resources and Deferred Inflows of Resources to be Recognized in Future Pension Expense under GASB 68	18
<b>III ASSETS</b>	
A. Market Value of Assets	19
B. Reconciliation of Market Value of Assets and Investment Return	20
<b>IV. CENSUS DATA</b>	
A. Census Information	21
B. Distribution of Active Members by Age and Service	22
C. Distribution of Terminated Vested Members by Age and Service	23
D. Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired	24
E. Flow of Lives from June 30, 2015 to June 30, 2016	25
<b>V. SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS</b>	<b>26</b>
<b>VI. SUMMARY OF PLAN PROVISIONS</b>	
A. Summary of Plan Provisions: General Employees	34
B. Summary of Plan Provisions: Police and Fire Employees	44
<b>Appendix I - Memphis-Shelby County Airport Authority Proportionate Share of GASB 68 Accounting Information</b>	<b>53</b>
<b>Appendix II - Discount Rate for GASB 67 and GASB 68</b>	

## SECTION I - EXECUTIVE SUMMARY

### **HIGHLIGHTS OF THE ACTUARY'S REPORT**

This report presents results of the July 1, 2016 actuarial valuation of the City of Memphis Retirement System and is intended to provide the City with certain accounting and disclosure information related to the Plan. Accounting information for the Memphis-Shelby County Airport Authority's proportionate share of certain accounting and reporting requirements pursuant to GASB 68 may be found in Appendix II.

This report also includes financial statement reporting information for the City of Memphis for the fiscal year ending June 30, 2016 in accordance with our understanding of Government Accounting Standards Board Statement No. 68, as amended by Government Accounting Standards Board Statement No. 82. As permitted under paragraph 20 of GASB 68, the City of Memphis uses a measurement date of July 1, 2016. The valuation was performed using census data as of July 1, 2016, provided by the City and summarized in Section III, assets as of July 1, 2016 and disclosed in Section IV, assumptions and methods disclosed in Section V, and reflects the plan provisions effective July 1, 2016 as summarized in Section VI.

#### **Summary of Net Pension Liability / (Asset)**

	<u>July 1, 2015</u>	<u>July 1, 2016</u>
1. Total Pension Liability		
a. Active Participants	\$ 861,545,000	\$ 867,671,000
b. Terminated Vested Participants	5,273,000	8,573,000
c. Retiree/Beneficiary/Disabled/ DROP Participants	<u>1,716,047,000</u>	<u>1,742,568,000</u>
d. Total	\$ 2,582,865,000	\$ 2,618,812,000
2. Plan Fiduciary Net Position (Assets)	<u>\$ 2,200,549,000</u>	<u>\$ 2,091,586,000</u>
3. Net Pension Liability/(Asset) (1)(d) - (2)	\$ 382,316,000	\$ 527,226,000
4. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (2) ÷ (1)(d)	85.2%	79.9%
Valuation Interest Rate	7.50%	7.50%
Salary Scale	4.25%	4.25%
Cost-of-Living Assumption	N/A	N/A

SECTION I - EXECUTIVE SUMMARY

**HIGHLIGHTS OF THE ACTUARY'S REPORT**

**Summary of Changes in the Net Pension Liability**

	<u>July 1, 2015</u>	<u>July 1, 2016</u>
1. Expected Net Pension Liability		
a. Net Pension Liability	\$ 353,912,000	\$ 382,316,000
b. Change in Benefit Terms <sup>1</sup>	(20,805,000)	-
c. Employer Service Cost	24,870,000	20,431,000
d. Employer Contribution	(46,215,000)	(51,875,000)
e. Administrative Expenses	1,975,000	2,228,000
f. Interest to End of Year <sup>2</sup>	26,063,000	29,241,000
g. Expected Net Pension Liability	<u>\$ 339,800,000</u>	<u>\$ 382,341,000</u>
(a) + (b) + (c) + (d) + (e) + (f) + (g)		
2. Change in the Net Pension Liability (Decrease) / Increase		
a. Change due to Asset Experience <sup>3</sup>	\$ 102,573,000	\$ 167,134,000
b. Change in Assumptions <sup>4</sup>	-	(9,882,000)
c. Plan Experience - Difference due to Updated Census	14,239,000	5,374,000
d. Plan Experience - Difference in Actual and Expected Salary	(74,296,000)	(17,741,000)
e. Change in Net Pension Liability: (a) + (b) + (c) + (d)	<u>\$ 42,516,000</u>	<u>\$ 144,885,000</u>
3. Net Pension Liability at Valuation Date: (1)(g) + (2)(e)	\$ 382,316,000	\$ 527,226,000

<sup>1</sup> The plan was amended effective January 1, 2016 and the impact was reflected in the 2015 fiscal year accounting results.

<sup>2</sup> Equals difference between interest cost on the Total Pension Liability and expected return in assets on the Plan Fiduciary Net Position.

<sup>3</sup> For the 2015 fiscal year, the net investment return for the year was \$62 million compared to the expected return on assets of \$164 million.  
For the 2016 fiscal year, the net investment return for the year was \$7 million compared to the expected return on assets of \$174 million.

<sup>4</sup> The mortality assumption was updated for the July 1, 2016 valuation. Details may be found in the Summary of Assumptions and Methods section.

SECTION I - EXECUTIVE SUMMARY

**HIGHLIGHTS OF THE ACTUARY'S REPORT (CONTINUED)**

The pension expense under GASB 68 for the fiscal year ending June 30, 2016 is \$89,190,000.

**GASB 68 Information:**

Fiscal Year Ending	<u>June 30, 2015</u>	<u>June 30, 2016</u>
1. Net Pension Liability	\$ 382,316,000	\$ 527,226,000
2. Deferred (Inflows) / Outflows of Resources, after Recognition in Pension Expense		
a. Deferred (Inflows) of Resources	\$ (47,973,000)	\$ (53,570,000)
b. Deferred Outflows of Resources	82,058,000	195,250,000
c. Total	<u>\$ 34,085,000</u>	<u>\$ 141,680,000</u>
3. Pension Expense		
a. Employer Service Cost (Including Administrative Expenses)	\$ 26,845,000	\$ 22,659,000
b. Interest Cost	190,459,000	190,419,000
c. Expected Return on Assets	(164,396,000)	(161,178,000)
d. Changes in Benefit Terms	(20,805,000)	-
e. Recognition of deferred (inflows)/outflows of resources	8,431,000	37,290,000
f. Total collective pension expense	<u>\$ 40,534,000</u>	<u>\$ 89,190,000</u>

**Changes in Assumptions and Methods from Prior Year**

The healthy mortality assumption was changed from the Fully Generational RP-2014 Mortality Table with MP-2014 projection scale adjusted by a 1 year set forward to the Fully Generational RP-2014 Mortality Table with MP-2015 projection scale adjusted by a 1 year set forward.

The disabled mortality assumption was changed from the Fully Generational RP-2014 Disabled Mortality Table with MP-2014 projection scale adjusted by a 3 year set back to the Fully Generational RP-2014 Disabled Mortality Table with MP-2015 projection scale adjusted by a 3 year set back.

**Changes in Benefit Terms**

There were no changes in benefit terms adopted during the 2016 fiscal year. For a description of the changes in benefit terms adopted during the 2015 fiscal year, please refer to the prior year accounting report.



## SECTION I - EXECUTIVE SUMMARY

### **HIGHLIGHTS OF THE ACTUARY'S REPORT (CONTINUED)**

#### **Plan Experience**

Below is a table summarizing the changes in the census information over the prior fiscal year.

	<u>June 30, 2015</u>	<u>June 30, 2016</u>
Census Information		
1. Active		
a. Number <sup>1</sup>	5,691	5,710
b. Average Age	44.2	44.2
c. Average Years of Service	12.0	12.0
d. Anticipated Payroll <sup>2</sup>	\$ 316,439,000	\$ 319,820,000
e. Actual Covered Payroll <sup>3</sup>	\$ 327,627,000	\$ 300,123,000
2. Terminated Vested		
a. Number	704	798
b. Lump Sum - Refund of Contributions	\$ 5,273,000	\$ 8,573,000
3. Retiree/Beneficiary/Disabled /DROP		
a. Number	4,990	5,059
b. Annual Benefits Payable	\$ 166,089,000	\$ 169,585,000
c. DROP Account Balance	\$ 15,576,000	\$ 18,479,000

<sup>1</sup> As of June 30, 2016, actives include 3,753 grandfathered participants (2,519 Police & Fire and 1,234 General employees).

<sup>2</sup> The *anticipated payroll* is equal to actual payroll during the prior year for members who are still active on the valuation date, adjusted for one year of assumed salary increases. It does not include compensation for members who have reached the age at which retirement is assumed to occur immediately. Nor does it include compensation for employees currently participating in the DROP.

<sup>3</sup> The *actual covered payroll* is defined under GASB 82 to be payroll on which contributions to a pension plan are based. As pensionable pay is used for determining contributions under the plan, pensionable pay is shown above starting July 1, 2016. Prior to July 1, 2016 the gross payroll is shown, consistent with the requirements prior to the release of GASB 82. Note, *actual covered payroll* is for the year immediately preceding the valuation date.

---

SECTION II - ACCOUNTING

	<u>Page</u>
A. Selected Notes to the Financial Statements under GASB 67 and 68	5
B. Schedule of Changes in the Net Pension Liability and Related Ratios under GASB 67 and 68	8
C. Schedule of Contributions under GASB 67 and 68	11
D. Net Pension Liability under GASB 68 for the Fiscal Year Ending June 30, 2016	12
E. Pension Expense under GASB 68 for the Fiscal Year Ending June 30, 2016	13
F. Schedule of Differences between Expected and Actual Experience under GASB 68 for the Fiscal Year Ending June 30, 2016	14
G. Schedule of Changes in Assumptions under GASB 68 for the Fiscal Year Ending June 30, 2016	15
H. Schedule of Differences between Projected and Actual Earnings on Investments under GASB 68 for the Fiscal Year Ending June 30, 2016	16
I. Determination of Resources of Deferred Outflows and Resources of Deferred Inflows for the Fiscal Year Ending June 30, 2016	17
J. Schedule of Deferred Outflows of Resources and Deferred Inflows of Resources to be Recognized in Future Pension Expense under GASB 68	18

---

SECTION II - ACCOUNTING

**NOTES TO THE FINANCIAL STATEMENTS UNDER GASB 67 AND 68**

**A. Selected Notes to the Financial Statements under GASB 67 and 68**

1. The Plan is a single-employer plan for GASB accounting purposes.
2. Significant actuarial assumptions and other inputs used to measure the total pension liability:
  - a. Measurement Date                      July 1, 2016
  - b. Valuation Date                         July 1, 2016
  - c. Investment Yield                        7.5%
  - d. Future Salary Increases               Scale that varies by age and service with a weighted average of 4.25% per year
  - e. Cost-of-Living Increases               None assumed
  - f. Mortality Assumption                 General: Fully Generational RP-2014 Mortality Table for males and females with MP-2015 projection scale from 2014 forward and adjusted by a 1 year set forward  
  
Police and Fire: Fully Generational RP-2014 Mortality Table with Blue Collar adjustment for males and females with MP-2015 projection scale from 2014 forward and adjusted by a 1 year set forward  
  
Disabled: Fully Generational RP-2014 Disabled Mortality Table with MP-2015 projection scale from 2014 forward and adjusted by a 3 year set back
  - g. Experience Study                        May 1, 2014 experience study based on 10 years of census data (between 2003-2012)

SECTION II - ACCOUNTING

**NOTES TO THE FINANCIAL STATEMENTS UNDER GASB 67 AND 68**

**A. Selected Notes to the Financial Statements under GASB 67 and 68 (Cont.)**

2. Significant actuarial assumptions and other inputs used to measure the total pension liability (continued):

h. Discount Rate                      The discount rate used to measure the total pension liability was 7.5% as of July 1, 2016, and is equal to the long-term expected return on plan investments. The projection of cash flows used to determine the discount rate assumed that City contributions would be made at the actuarially calculated amount computed in accordance with the current funding policy adopted by the City, which requires payment of the normal cost and amortization of the unfunded actuarially accrued liability in level dollar installments over 30 years utilizing a closed period approach. Pursuant to The Public Employee Defined Benefit Financial Security Act of 2014, the City will phase into funding 100% of the actuarially calculated amount over a 5 year period beginning with the fiscal year beginning July 1, 2015. Based on this assumption, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members.

i. Discount Rate Sensitivity	<u>1% Decrease (6.5%)</u>	<u>Current Rate (7.5%)</u>	<u>1% Increase (8.5%)</u>
Net Pension Liability (000's)	\$ 816,872	\$ 527,226	\$ 283,984

j. DROP Program                      Approximate total accumulated DROP balances as of June 30, 2016 is \$18,479,000. This amount is included in the benefit obligation.

SECTION II - ACCOUNTING

**NOTES TO THE FINANCIAL STATEMENTS UNDER GASB 67 AND 68**

**A. Selected Notes to the Financial Statements under GASB 67 and 68 (Cont.)**

3. Classes of plan members covered:

a. Retired members, beneficiaries and disabled members receiving benefits <sup>1</sup>	5,059
b. Terminated vested plan members entitled to but not yet receiving benefits	798
c. Active plan members	<u>5,710</u>
d. Total membership	11,567

4. The components of the Net Pension Liability (000's) for the plan as of July 1, 2016 are as follows:

a. Total Pension Liability	\$ 2,618,812
b. Plan Fiduciary Net Position	<u>2,091,586</u>
c. Net Pension Liability	\$ 527,226
d. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	79.9%

<sup>1</sup> Includes 206 employees currently participating in the DROP and 88 employees who temporarily froze participation in the DROP Program effective November 1, 2015.

SECTION II - ACCOUNTING

**REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB 67 AND 68**

**B. Schedule of Changes in the Net Pension Liability and Related Ratios under GASB 67 and 68 <sup>1</sup>**

**Total Pension Liability (ooo's)**

(1) Year Ending June 30	(2) Beginning Total Pension Liability	(3) Total Service Cost <sup>2</sup>	(4) Interest <sup>3</sup>	(5) Experience (Gains)/ Losses <sup>4</sup>	(6) Assumption Changes	(7) Changes of Benefit Terms	(8) Benefit Payments	(9) Ending Total Pension Liability
2014	\$ 2,592,987	\$ 55,409	\$ 192,223	\$ 58,245	\$ (128,961)	\$ -	\$ (170,833)	\$ 2,599,070
2015	\$ 2,599,070	\$ 48,189	\$ 190,459	\$ (60,057)	\$ -	\$ (20,805)	\$ (173,991)	\$ 2,582,865
2016	\$ 2,582,865	\$ 44,343	\$ 190,419	\$ (12,367)	\$ (9,882)	\$ -	\$ (176,566)	\$ 2,618,812

<sup>1</sup> This schedule is prepared to illustrate the requirement to show information regarding the Net Pension Liability and Related Ratios for 10 years. The information presented above is for those years for which it is available. It was prepared prospectively from the Plan's fiscal year ending June 30, 2014 for GASB 67 purposes and prospectively from fiscal year ending June 30, 2015 for GASB 68 purposes.

<sup>2</sup> The service cost includes the employee contributing portion of the benefit earned during the measurement period.

<sup>3</sup> For the current fiscal year, includes interest at 7.5% on the beginning-of-year Total Pension Liability, after reflecting the change in benefit terms, and service cost offset by interest on benefit payments.

<sup>4</sup> Assumption changes for the most recent fiscal year reflect changes to the mortality assumption.

SECTION II - ACCOUNTING

**REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB 67 AND 68**

**B. Schedule of Changes in the Net Pension Liability and Related Ratios under GASB 67 and 68 (continued) <sup>1</sup>**

**Plan Fiduciary Net Position (ooo's)**

(1) Year Ending June 30	(2) Beginning Fiduciary Net Position	(3) Employer Contribution	(4) Employee Contribution	(5) Investment Return	(6) Benefit Payments	(7) Administrative Expenses	(8) Investment Expenses	(9) Ending Fiduciary Net Position
2014	\$ 2,040,069	\$ 19,440	\$ 24,173	\$ 342,614	\$ (170,833)	\$ (1,478)	\$ (8,827)	\$ 2,245,158
2015	\$ 2,245,158	\$ 46,215	\$ 23,319	\$ 70,687	\$ (173,991)	\$ (1,975)	\$ (8,864)	\$ 2,200,549
2016	\$ 2,200,549	\$ 51,875	\$ 23,912	\$ 6,890	\$ (176,566)	\$ (2,228)	\$ (12,846)	\$ 2,091,586

<sup>1</sup> This schedule is prepared to illustrate the requirement to show information regarding the Net Pension Liability and Related Ratios for 10 years. The information presented above is for those years for which it is available. It was prepared prospectively from the Plan's fiscal year ending June 30, 2014 for GASB 67 purposes and prospectively from fiscal year ending June 30, 2015 for GASB 68 purposes.

<sup>2</sup> Asset information, including all cash flows, is provided by the City of Memphis.

SECTION II - ACCOUNTING

**REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB 67 AND 68**

**B. Schedule of Changes in the Net Pension Liability and Related Ratios under GASB 67 and 68 (continued) <sup>1</sup>**

**Net Pension Liability (000's)**

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year Ending June 30	Total Pension Liability	Net Fiduciary Position	Net Pension Liability	Fiduciary Net Position as % of Total Pension Liability	Actual Covered Employee Payroll <sup>2</sup>	Net Pension Liability as a Percentage of Covered Payroll
			(2) - (3)	(3) ÷ (2)		(4) ÷ (6)
2014	\$ 2,599,070	\$ 2,245,158	\$ 353,912	86.4%	\$ 324,000	109.2%
2015	\$ 2,582,865	\$ 2,200,549	\$ 382,316	85.2%	\$ 327,627	116.7%
2016	\$ 2,618,812	\$ 2,091,586	\$ 527,226	79.9%	\$ 300,123	175.7%

<sup>1</sup> This schedule is prepared to illustrate the requirement to show information regarding the Net Pension Liability and Related Ratios for 10 years. The information presented above is for those years for which it is available. It was prepared prospectively from the Plan's fiscal year ending June 30, 2014 for GASB 67 purposes and prospectively from fiscal year ending June 30, 2015 for GASB 68 purposes.

<sup>2</sup> The *actual covered employee payroll* is defined under GASB 82 to be payroll on which contributions to a pension plan are based. As pensionable pay is used for determining contributions under the plan, pensionable pay is shown above starting July 1, 2016. Prior to July 1, 2016 the gross payroll is shown, consistent with the requirements prior to the release of GASB 82. Note, actual covered employee payroll is for the year immediately preceding the valuation date.



SECTION II - ACCOUNTING

**REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB 67 AND 68**

**C. Schedule of Contributions under GASB 67 and 68 (000's) <sup>1</sup>**

(1)	(2)	(3)	(4)	(5)	(6)
Year Ending June 30	Actuarially Determined Contribution <sup>2</sup>	Actual Employer Contributions	Contribution Excess/(Deficiency) (3) - (2)	Actual Covered Employee Payroll <sup>3</sup>	Contributions as a Percentage of Covered Payroll (3) ÷ (5)
2014	\$ 96,024	\$ 19,440	\$ (76,584)	\$ 324,000	6.0%
2015	\$ 79,742	\$ 46,215	\$ (33,527)	\$ 327,627	14.1%
2016	\$ 73,913	\$ 51,875	\$ (22,038)	\$ 300,123	17.3%

<sup>1</sup> The information presented above is for those years for which it is available. It was prepared prospectively from the Plan's fiscal year ending June 30, 2014 for GASB 67 purposes and prospectively from fiscal year ending June 30, 2015 for GASB 68 purposes.

<sup>2</sup> The actuarially determined contribution is for the fiscal year end and is based on a discount rate assumption of 7.5%. It is developed in a separate funding report for the corresponding fiscal year.

<sup>3</sup> The *actual covered employee payroll* is defined under GASB 82 to be payroll on which contributions to a pension plan are based. As pensionable pay is used for determining contributions under the plan, pensionable pay is shown above starting July 1, 2016. Prior to July 1, 2016 the gross payroll is shown, consistent with the requirements prior to the release of GASB 82. Note, actual covered employee payroll is for the year immediately preceding the valuation date.

SECTION II - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**D. Net Pension Liability under GASB 68 for the Fiscal Year Ending June 30, 2016 (000's)**

1. Total Pension Liability		
a. Total Pension Liability - Beginning of year	\$	2,582,865
b. Service Cost <sup>1</sup>		44,343
c. Interest Cost <sup>2</sup>		190,419
d. Experience (gains)/losses		(12,367)
e. Assumption Changes		(9,882)
f. Changes of Benefit Terms		-
g. Benefit Payments		(176,566)
h. Member Reassignments		-
i. Total Pension Liability - End of year	\$	<u>2,618,812</u>
2. Plan Fiduciary Net Position		
a. Plan Fiduciary Net Position - Beginning of year	\$	2,200,549
b. Employer Contributions		51,875
c. Employee Contributions		23,912
d. Non-employer Contributing Entity Contributions		-
e. Investment return		
i. Total Investment Return	\$	6,890
ii. Investment Expenses		<u>(12,846)</u>
iii. Net Investment Return	\$	(5,956)
f. Benefit Payments		(176,566)
g. Member Reassignments		-
h. Administrative Expenses		<u>(2,228)</u>
i. Plan Fiduciary Net Position - End of year	\$	<u>2,091,586</u>
3. Net Pension Liability		
a. Net Pension Liability: (1)(i) - (2)(i)	\$	<b>527,226</b>
b. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability : (2)(i) / (1)(i)		79.9%

<sup>1</sup> Determined as of the beginning of the year.

<sup>2</sup> Includes interest of 7.50% on the beginning-of-year service cost.

SECTION II - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**E. Pension Expense under GASB 68 for the Fiscal Year Ending June 30, 2016**

**Pension Expense (000's)**

1. Service cost		
a. Total Service Cost <sup>1</sup>	\$	44,343
b. Employee Contributions		(23,912)
c. Administrative Expenses		2,228
d. Net Employer Service Cost: (a) + (b) + (c)	\$	<u>22,659</u>
2. Interest Cost <sup>2</sup>	\$	190,419
3. Expected Return on Assets <sup>3</sup>	\$	(161,178)
4. Changes of Benefit Terms	\$	-
5. Recognition of deferred (inflows) / outflows of resources related to:		
a. Liability Experience (gains) / losses	\$	(14,623)
b. Assumption Changes (gains) / losses		(2,029)
c. Investment (gains) / losses		53,942
d. Total: (a) + (b) + (c)	\$	<u>37,290</u>
6. Total Collective Pension Expense: (1)(d) + (2) + (3) + (4) + (5)(d)	\$	<b>89,190</b>

<sup>1</sup> Determined as of the beginning of the year.

<sup>2</sup> Includes interest of 7.50% on the beginning-of-year service cost.

<sup>3</sup> Calculated assuming a 7.50% investment return net of expenses, and assuming actual benefit payments, administrative expenses, and contributions occur at mid-year.

SECTION II - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**F. Schedule of Differences between Expected and Actual Experience under GASB 68 for the Fiscal Year Ending June 30, 2016**

**Experience Gains and Losses (000's)**

Fiscal Year Ending June 30,	Experience (Gain)/Loss	Original Recognition Period	Increase (Decrease) in Pension Expense Arising from Recognition of Experience Gains and Losses						
			2016	2017	2018	2019	2020	2021	Thereafter
2015	\$ (60,057)	4.97	\$ (12,084)	\$ (12,084)	\$ (12,084)	\$ (11,721)	\$ -	\$ -	\$ -
2016	\$ (12,367)	4.87	\$ (2,539)	\$ (2,539)	\$ (2,539)	\$ (2,539)	\$ (2,211)	\$ -	\$ -
Net increase (decrease) in pension expense:			\$ (14,623)	\$ (14,623)	\$ (14,623)	\$ (14,260)	\$ (2,211)	\$ -	\$ -

<sup>1</sup> The effort and cost to re-create financial statement information for 10 years was not practical. Information presented above is only shown for those years for which it is available.

<sup>2</sup> Gains and losses in the liability attributable to plan experience is amortized over the expected remaining service lives of all employees provided with pension (both active and inactive employees) determined as of the beginning of the measurement period.

<sup>3</sup> Deferred outflows are presented as positive amounts and deferred inflows are presented as negative amounts. Positive amounts increase pension expense and negative amounts decrease pension expense.

SECTION II - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**G. Schedule of Changes in Assumptions under GASB 68 for the Fiscal Year Ending June 30, 2016**

**Changes in Assumptions (000's)**

Fiscal Year Ending June 30,	(Gain)/Loss Due to Change in Assumption	Original Recognition Period	Increase (Decrease) in Pension Expense Arising from Recognition of Effects of Changes of Assumptions						
			2016	2017	2018	2019	2020	2021	Thereafter
2016	\$ (9,882)	4.87	\$ (2,029)	\$ (2,029)	\$ (2,029)	\$ (2,029)	\$ (1,766)	\$ -	\$ -
Net increase (decrease) in pension expense			\$ (2,029)	\$ (2,029)	\$ (2,029)	\$ (2,029)	\$ (1,766)	\$ -	\$ -

<sup>1</sup> The effort and cost to re-create financial statement information for 10 years was not practical. Information presented above is only shown for those years for which it is available.

<sup>2</sup> Gains and losses in the liability attributable to assumption changes are amortized over the expected remaining service lives of all employees provided with pension (both active and inactive employees) determined as of the beginning of the measurement period.

<sup>3</sup> Deferred outflows are presented as positive amounts and deferred inflows are presented as negative amounts. Positive amounts increase pension expense and negative amounts decrease pension expense.

SECTION II - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**H. Schedule of Differences between Projected and Actual Earnings on Investments under GASB 68 for the Fiscal Year Ending June 30, 2016**

**Investment Gains and Losses (000's)**

Fiscal Year Ending June 30,	Investment (Gain)/Loss	Original Recognition Period	Increase (Decrease) in Pension Expense Arising from Recognition of Investment Gains and Losses				
			2016	2017	2018	2019	2020
2015	\$ 102,573	5.00	\$ 20,515	\$ 20,515	\$ 20,515	\$ 20,513	\$ -
2016	\$ 167,134	5.00	\$ 33,427	\$ 33,427	\$ 33,427	\$ 33,427	\$ 33,426
Net increase (decrease) in pension expense			\$ 53,942	\$ 53,942	\$ 53,942	\$ 53,940	\$ 33,426

<sup>1</sup> The effort and cost to re-create financial statement information for 10 years was not practical. Information presented above is only shown for those years for which it is available.

<sup>2</sup> Gains and losses in the assets attributable to investment experience is amortized over a five-year period determined as of the beginning of the measurement period. For this purpose, the investment gain or loss is net of investment expenses.

<sup>3</sup> Deferred outflows are presented as positive amounts and deferred inflows are presented as negative amounts. Positive amounts increase pension expense and negative amounts decrease pension expense.

SECTION II - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**I. Determination of Resources of Deferred Outflows and Resources of Deferred Inflows for the Fiscal Year Ending June 30, 2016**

Deferred Outflows and Inflows (000's)		Established in Fiscal Year Ending June 30,	Cumulative		Balances at June 30, 2016	
			Loss	(Gain)	Amounts Recognized in Expense through June 30, 2016	Deferred Outflows of Resources
		(a)	(b)	(c)	(d) = (a) - (c)	(e) = (b) - (c)
a. Experience (Gains) and Losses	2015		\$ (60,057)	\$ (24,168)	\$ -	\$ (35,889)
	2016		\$ (12,367)	\$ (2,539)	\$ -	\$ (9,828)
					\$ -	\$ (45,717)
b. Changes in Assumptions	2016		\$ (9,882)	\$ (2,029)	\$ -	\$ (7,853)
					\$ -	\$ (7,853)
c. Investment (Gains) and Losses	2015	\$ 102,573		\$ 41,030	\$ 61,543	\$ -
	2016	\$ 167,134		\$ 33,427	\$ 133,707	\$ -
					\$ 195,250	\$ -
d. Collective Deferred Outflows/(Inflows) of Resources: (a) + (b) + (c)					<b>\$ 195,250</b>	<b>\$ (53,570)</b>

<sup>1</sup> The effort and cost to re-create financial statement information for 10 years was not practical. Information presented above is only shown for those years for which it is available.

<sup>2</sup> Deferred outflows of resources are presented as positive amounts. Deferred inflows of resources are presented as negative amounts.

SECTION II - ACCOUNTING

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**J. Schedule of Deferred Outflows of Resources and Deferred Inflows of Resources to be Recognized in Future Pension Expense under GASB 68 <sup>1</sup>**

**Future Amortization of Deferred Outflows and Inflows (000's)**

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions recognized in pension expense as follows:

Year Ending June 30:

2017	\$	37,290
2018	\$	37,290
2019	\$	37,651
2020	\$	29,449
2021	\$	-
Thereafter	\$	-

<sup>1</sup> The effort and cost to re-create financial statement information for 10 years was not practical. Information presented above is only shown for those years for which it is available.



---

SECTION III - ASSETS

**ASSETS**

	<u>Page</u>
A. Market Value of Assets	19
B. Reconciliation of Market Value of Assets and Investment Return	20

SECTION III - ASSETS

**A. Market Value of Assets**

	<u>Market Value</u> <u>June 30, 2015</u>	<u>Market Value</u> <u>June 30, 2016</u>
1607 Capital Partners	\$ 137,498,161	\$ 110,405,458
Acadian EM Equity II	88,673,180	99,326,396
Barrow, Hanley, et al	90,167,953	62,921,990
Bernzott	-	11,751,480
Matarin	-	11,126,777
Profit	-	11,041,935
Summit Creek	-	5,304,460
BlackRock Granite Property Fund	37,148,935	41,439,755
City Managed	-	15,817,230
Cash Management Account (In-House)	9,572,626	-
Cornerstone	7,194,524	-
Cornerstone VIII	-	5,006,305
Cornerstone X	-	5,937,463
Fidelity Real Estate Growth III Fund	8,773,991	5,726,103
Herndon	98,134,284	65,573,313
Long Wharf Real Estate Partners	15,109,382	-
Long Wharf Fund IV	-	19,351,252
Long Wharf Fund V	-	5,210,839
Mackay Shields	194,977,577	162,960,095
Marathon Asset Management	121,688,052	111,220,302
T.A. Realty	-	4,872,132
Martin Currie	634	-
Navellier & Associates	101,051,876	65,692,982
Nicholas Investment Partners	28,122,630	33,500,239
Northern Trust	100,663,060	52,894,228
Paradigm Small Cap	45,414,464	31,831,572
PIMCO	189,193,619	125,892,322
Gerding Edlen	-	5,403,649
Principal Global Investors	94,138,464	78,245,123
Prudential Core Conserv Bond	204,662,406	143,970,272
Pantheon Fund V	-	8,523,167
NB Crossroads Fund XXI	-	4,636,020
SSM Partners	-	2,840,174
Grosvenor	-	40,741,748
Aetos	-	40,362,400
Rhumblin S&P 500	221,845,032	160,118,411
Rowe Price Fleming	247	-
RREEF America REIT II	13,633,390	14,658,570
RREEF Real Estate Securities Commingled Fund	22,433,118	27,524,652
Smith Graham	190,727,520	140,030,411
SouthernSun	40,401,885	28,321,170
Brandywine	-	226,828,538
Strategic Global Advisors	31,972,220	29,148,197
Winslow Capital Management	107,349,767	75,428,919
<b>Total</b>	<b>\$ 2,200,549,000</b>	<b>\$ 2,091,586,048</b>

SECTION III - ASSETS

**B. Reconciliation of Market Value of Assets and Investment Return**

1. Market Value of Assets at July 1, 2015	\$ 2,200,549,000
2. Contributions	
a. Employer Contributions	\$ 51,875,000
b. Employee Contributions	<u>23,912,000</u>
c. Total	\$ 75,787,000
3. Benefit Payments in 2015 - 2016	\$ 176,566,000
4. Expenses	
a. Investment Fees	\$ 12,846,000
b. Administrative Fees	<u>2,228,000</u>
c. Total	\$ 15,074,000
5. Interest and Dividend Income	\$ 53,554,000
6. Unrealized Gain/(Loss)	\$ (82,543,000)
7. Net Realized Gain/(Loss)	\$ 19,957,000
8. Other Revenue <sup>1</sup>	<u>\$ 15,922,000</u>
9. Total Income: (5) + (6) + (7) + (8)	\$ 6,890,000
10. Market Value of Assets at July 1, 2016: (1) + (2) - (3) - (4) + (9)	\$ 2,091,586,000
11. Investment Return: $[2 \times (9)] \div [(1) + (10) - (9)]$	0.32%

<sup>1</sup> Provided by the City.

SECTION IV - CENSUS DATA

**CENSUS DATA**

	<u>Page</u>
A. Census Information	21
B. Distribution of Active Members by Age and Service	22
C. Distribution of Terminated Vested Members by Age and Service	23
D. Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired	24
E. Flow of Lives from June 30, 2015 to June 30, 2016	25

SECTION IV - CENSUS DATA

**A. Census Information**

	<u>June 30, 2015</u>	<u>June 30, 2016</u>
1. Active		
a. Number <sup>1</sup>	5,691	5,710
b. Average Age	44.2	44.2
c. Average Years of Service	12.0	12.0
d. Anticipated Payroll	\$ 316,439,000	\$ 319,820,000
e. Actual Covered Payroll	\$ 327,627,000	\$ 300,123,000
2. Terminated - Vested and Nonvested		
a. Number	704	798
b. Lump Sum- Refund of Contribution	5,273,000	8,573,000
3. Retiree, Beneficiary, and DROP Enrollees <sup>2</sup>		
a. Number	4,348	4,427
b. Annual Benefits Payable	\$ 149,000,000	\$ 152,660,000
c. DROP Account Balance	\$ 15,576,000	\$ 18,479,000
4. Disabled		
a. Number	642	632
b. Annual Benefits Payable	\$ 17,089,000	\$ 16,925,000

<sup>1</sup> As of June 30, 2016, actives include 3,753 grandfathered participants (2,519 Police & Fire and 1,234 General employees).

<sup>2</sup> Includes deferred beneficiaries

SECTION IV - CENSUS DATA

**B. Distribution of Active Members by Age and Service**

Attained Age	Distribution of Active Members by Age and Service as of June 30, 2016										
	Under 1 year	1 to 4 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	30 to 34 years	35 to 39 years	Over 40 years	Total
<25	94	40									134
25-29	125	248	68								441
30-34	84	229	310	39	1						663
35-39	55	158	299	206	50						768
40-44	29	106	160	274	274	62					905
45-49	28	108	128	222	370	246	25				1,127
50-54	26	93	69	142	185	172	87	9			783
55-59	12	68	69	78	120	86	52	29	5	1	520
60-64	11	41	32	53	63	35	15	6		1	257
65-69	3	18	27	22	22	14	4		1	1	112
70&Up											
Total	467	1,109	1,162	1,036	1,085	615	183	44	6	3	5,710

SECTION IV - CENSUS DATA

**C. Distribution of Terminated Members by Age and Service**

Attained Age	Distribution of Terminated Vested Members by Age and Service as of June 30, 2016							Total
	Under 5 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	Over 30 years	
<25	7							7
25-29	41	80						121
30-34	42	148	3					193
35-39	35	102	13	4				154
40-44	17	68	11	6	2			104
45-49	19	39	13	8	2	1		82
50-54	6	38	5	10	4	3	1	67
55-59	6	17	8	4	1			36
60-64	10	3		3				16
65-69	5	9	2	1	1			18
70&Up								
Total	188	504	55	36	10	4	1	798

SECTION IV - CENSUS DATA

**D. Distribution of Retired, Beneficiaries, Disabled, and DROP Members by Age and Number of Years Retired <sup>1</sup>**

Attained Age	Distribution of Retired Members, Beneficiaries, and Disabled Members by Age and Number of Years Retired as of June 30, 2016							Total
	Under 5 years	5 to 9 years years	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	Over 30 years	
<40	1	11	9	18	3	5	6	53
40-44		3	11	13	7	4	2	40
45-49		2	10	33	20	90	4	159
50-54		5	10	21	29	202	99	366
55-59	1	6	11	24	27	134	337	540
60-64		3	12	19	50	90	586	760
65-69		11	14	33	38	62	806	964
70-74		2	5	13	19	37	731	807
75-79		1		7	17	16	560	601
80-84				1	3	10	402	416
85-89						3	237	240
90&Up						2	111	113
Total	2	44	82	182	213	655	3,881	5,059

<sup>1</sup> Includes 206 employees currently participating in the DROP and 88 employees who temporarily froze participation in the DROP Program effective November 1, 2015.



SECTION IV - CENSUS DATA

**E. Flow of Lives from June 30, 2015 to June 30, 2016**

	<u>Actives</u>	<u>Terminated<sup>1</sup></u>	<u>Disabled</u>	<u>Retired<sup>2</sup></u>	<u>Beneficiary</u>	<u>DROP<sup>3</sup></u>	<u>Total</u>
June 30, 2015	5,691	704	642	3,080	966	302	11,385
New Entrants:	474	39 <sup>4</sup>					513
Rehires:	15	(12)		(3)			
DROP:	(74)					74	
Vested Terminations:	(106)	106					
Retirements:	(72)	(2)	(1)	157		(82)	
Disablements:	(19)		21	(3)	1		
Beneficiary					82		82
Death	(12)	(1)	(29)	(93)	(46)		(181)
Refunded	(187)	(36)	(1)	(2)	(6)		(232)
Data Adjustments:							
June 30, 2016	5,710	798	632	3,136	997	294	11,567

<sup>1</sup> Includes nonvested terminated participants scheduled to receive a refund of their employee contributions.

<sup>2</sup> As of June 30, 2015, this included 11 participants who are retirement eligible, but have not commenced benefit payments. As of June 30, 2016, this includes 11 participants who are retirement eligible, but have not commenced benefit payments.

<sup>3</sup> Includes 88 participants who elected to temporarily suspend (or freeze) in the DROP participation effective November 1, 2015.

<sup>4</sup> These participants were hired after the prior valuation date and terminated employment prior to the current valuation date.

---

SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**ACTUARIAL ASSUMPTIONS AND METHODS**

	<u>Page</u>
A. Actuarial Assumptions	26
B. Actuarial Assumptions Rationale	32
B. Actuarial Methods for GASB 67 and GASB 68 Purposes	33

SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**A. Actuarial Assumptions**

The assumptions used in the valuation were selected and approved by the City of Memphis. The actuary and other economic and investment professionals provide advice for selecting the economic and demographic assumptions. The assumptions are considered reasonable for purposes of this valuation.

Interest Rate / Investment Return                      7.5% per year for GASB 67 and GASB 68 purposes

Interest Crediting Rate

    Cash Balance Account                      6.5% (valuation interest rate less 1.0%)

    IRC 401(a) Account                      5.5%

Future Salary Increases                      The salary scale was based on an experience study performed in 2014. Rates vary by age and service with a weighted average of 4.25%.

Age	<u>Years of Service</u>			
	1	2	3	4+
< 25	7.25%	10.75%	8.75%	6.50%
26-30	8.25%	10.25%	8.00%	5.75%
31-35	7.75%	9.25%	7.00%	5.00%
36-40	6.75%	8.00%	6.00%	4.50%
41-45	5.50%	6.75%	5.50%	4.44%
46- 50	5.50%	6.75%	5.50%	4.38%
51- 55	5.50%	6.75%	5.50%	4.31%
56	5.50%	6.75%	5.50%	4.23%
57	5.50%	6.75%	5.50%	4.20%
58	5.50%	6.75%	5.50%	4.18%
59	5.50%	6.75%	5.50%	4.15%
60	5.50%	6.75%	5.50%	4.13%
61	5.50%	6.75%	5.50%	4.11%
62	5.50%	6.75%	5.50%	4.10%
63	5.50%	6.75%	5.50%	4.09%
64	5.50%	6.75%	5.50%	4.08%
>=65	5.50%	6.75%	5.50%	4.06%

SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**A. Actuarial Assumptions (continued)**

Cost of Living Increases      None assumed

Mortality

*Service Cost*

General: Fully Generational RP-2014 Mortality Table for males and females with MP-2014 projection scale and adjusted by a 1 year set forward.

Police and Fire: Fully Generational RP-2014 Mortality Table with Blue Collar adjustment for males and females with MP-2014 projection scale and adjusted by a 1 year set forward.

Disabled: Fully Generational RP-2014 Disabled Mortality Table with MP-2015 projection scale and adjusted by a 3 year set back.

*Net Pension Liability*

General: Fully Generational RP-2014 Mortality Table for males and females with MP-2015 projection scale from 2014 forward and adjusted by a 1 year set forward.

Police and Fire: Fully Generational RP-2014 Mortality Table with Blue Collar adjustment for males and females with MP-2015 projection scale from 2014 forward and adjusted by a 1 year set forward.

Disabled: Fully Generational RP-2014 Disabled Mortality Table with MP-2015 projection scale from 2014 forward and adjusted by a 3 year set back.

Account Balance  
Conversion

Account balances under the 2016 Plan (effective July 1, 2016) are converted at 5.0% interest and the applicable mortality table under IRC 417(e) in effect on the current valuation date.

SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**A. Actuarial Assumptions (continued)**

Termination                      Select and Ultimate rates. Sample rates are shown below:

*Police & Fire: Males*

Age	Years of Service					
	0	1	2	3	4	5+
20	13.0%	5.0%	5.0%	5.0%	5.0%	5.0%
25	15.0%	5.0%	5.0%	5.0%	5.0%	4.0%
30	17.0%	5.0%	4.0%	4.0%	3.0%	3.0%
35	15.0%	5.0%	5.0%	5.0%	4.0%	3.0%
40	18.0%	4.0%	4.0%	4.0%	2.0%	2.0%
45	17.0%	20.0%	5.0%	5.0%	2.0%	2.0%
50	15.0%	20.0%	5.0%	5.0%	2.0%	2.0%
55	15.0%	20.0%	5.0%	5.0%	2.0%	2.0%

*General: Males*

Age	Years of Service					
	0	1	2	3	4	5+
20	55.0%	52.0%	47.0%	45.0%	40.0%	40.0%
25	63.0%	57.0%	31.0%	17.0%	7.0%	9.5%
35	22.0%	22.0%	17.0%	7.0%	7.0%	6.0%
40	26.0%	4.0%	11.0%	11.0%	10.0%	5.0%
45	5.0%	5.0%	5.0%	5.0%	5.0%	4.0%
50	5.0%	5.0%	5.0%	5.0%	4.0%	4.0%
55	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**A. Actuarial Assumptions (continued)**

Termination (continued)

*General, Police & Fire:*

*Females*

Age	Years of Service					
	0	1	2	3	4	5+
20	25.0%	22.0%	20.0%	20.0%	20.0%	5.0%
25	24.0%	16.0%	14.0%	10.0%	12.0%	6.0%
30	26.0%	17.0%	12.0%	13.0%	13.0%	6.0%
35	14.0%	11.0%	15.0%	11.0%	11.0%	4.0%
40	18.0%	14.0%	8.0%	8.0%	7.0%	4.0%
45	18.0%	14.0%	8.0%	8.0%	5.0%	4.0%
50	6.0%	6.0%	7.0%	7.0%	5.0%	4.0%
55	6.0%	6.0%	7.0%	7.0%	5.0%	4.0%

SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**A. Actuarial Assumptions (continued)**

Retirement Rates

For both General employees and Police and Fire employees, the rates vary by age, gender and grandfather status:

*Grandfathered*

General		Age	Police and Fire
Males	Females		Males & Females
20%	15%	45 - 49	25%
25%	20%	50 - 54	25%
25%	30%	55 - 59	25%
25%	20%	60 - 64	40%
100%	100%	65 - 69	100%
100%	100%	70	100%

*Nongrandfathered*

General - Males & Females		Police & Fire - Males and Females	
Age	Rate	Age	Rate
62	20%	52	20%
63	20%	53	20%
64	20%	54	20%
65	100%	55	20%
		56	20%
		57	20%
		58	20%
		59	20%
		60	100%

Disability

1968 Social Security Experience Table. Sample rates are shown below:

Age	Combined Male / Female
20	0.10%
25	0.10%
30	0.10%
35	0.10%
40	0.17%
45	0.28%
50	0.63%
55+	1.33%

---

SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**A. Actuarial Assumptions (continued)**

Marriage	80% of male General Employees, 50% of female General Employees, and 80% of Police and Fire Employees are assumed to be married. Wives are assumed to be three years younger than their husbands.
Death/Disability	Deaths and disabilities for active General Employees are assumed to be not line-of-duty. Deaths and disabilities for active Police and Fire Employees are assumed to be line-of-duty.
Form of Payment	It has been assumed that benefits will be paid in the normal annuity form applicable to the particular benefit.  All grandfathered General Employees (1948 Plan or 1978 Plan only) who terminate prior to retirement age are assumed to elect to receive their employee contributions times the applicable return multiple.  All nongrandfathered General Employees who terminate prior to ten years of service will elect to receive a refund of their employee contributions under the 1978 Plan times the applicable return multiple, plus the employee account balance under the 2016 Plan. Those who withdraw after ten years of service will elect to receive their entire accrued benefit as a lifetime annuity and commencing at age 60.  All Police and Fire Employees who terminate prior to ten years of service will receive a refund of their employee contributions under the 1978 Plan times the applicable return multiple, plus the employee account balance under the 2016 Plan. Those who withdraw after ten years of service will receive their entire accrued benefit as a lifetime annuity and commencing at age 60.
Expense Load	None.
Changes in Assumptions	The healthy mortality assumption was changed from the Fully Generational RP-2014 Mortality Table with MP-2014 projection scale (adjusted by a 1 year set forward) to the Fully Generational RP-2014 Mortality Table with MP-2015 projection scale (adjusted by a 1 year set forward).  The disabled mortality assumption was changed from the Fully Generational RP-2014 Disabled Mortality Table with MP-2014 projection scale (adjusted by a 3 year set back) to the Fully Generational RP-2014 Disabled Mortality Table with MP-2015 projection scale (adjusted by a 3 year set back).



---

SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**B. Actuarial Assumptions Rationale**

Interest Rate / Investment Return	Equal to the single rate of return as the City's funding policy requires fully funding the actuarially determined contribution by the 2020 fiscal year. It is developed pursuant to paragraphs 40 - 45 of GASB 67 and paragraphs 26 - 31 of GASB 68.
Future Salary Increases <sup>1</sup>	This assumption is set considering underlying inflation and historical salary increases coupled with management's best estimate of future expectations.
Cost of Living Increases	This assumption is set considering underlying inflation and historical cost of living increases coupled with management's best estimate of future expectations.
Mortality <sup>1</sup>	Mortality rates are set based on the SOA's recent study of US mortality trends for pensions and adjusted based on future expectations with periodic monitoring of observed gains and losses caused by mortality patterns different than assumed.
Disability <sup>1</sup>	Disability rates are set based on the plan's historical experience observed in the 2014 experience study and future expectations with periodic monitoring of observed gains and losses caused by disability patterns different than assumed.
Termination <sup>1</sup>	Termination rates are set based on the plan's historical experience observed in the 2014 experience study and future expectations with periodic monitoring of observed gains and losses caused by termination patterns different than assumed.
Retirement <sup>1</sup>	Retirement rates are set based on the plan's historical experience observed in the 2014 experience study and future expectations with periodic monitoring of observed gains and losses caused by retirement patterns different than assumed.
Marriage <sup>1</sup>	Marital rates are set based on the plan's historical experience and future expectations with periodic monitoring of observed gains and losses caused by marital patterns different than assumed.
Form of Payment	This assumption is based on historical experience and management's best expectations given the current plan provisions.

<sup>1</sup> Note, assumptions were updated based on an experience study performed on May 1, 2014 based on 10 years of census data (between 2003-2012).

---

SECTION V - ACTUARIAL ASSUMPTIONS AND METHODS

**C. Actuarial Methods for GASB 67 and GASB 68 Purposes**

1. Actuarial Cost Method

The actuarial cost method is the Entry Age Normal Actuarial Cost Method. This method determines a normal cost rate as a fixed percentage of compensation for each active participant. The current year's normal cost is the participant's compensation multiplied by the normal cost rate. Annual contributions in this amount, from the date the participant entered the plan (or would have entered, if the plan had always been in effect and the participant had entered at the earliest possible date) until retirement, would be sufficient to provide for the actuarial present value of the participant's plan benefits. The total normal cost is the sum of the normal costs for all active participants.

The actuarial accrued liability is the present value of future benefits, for both active and inactive participants, less the present value of future normal costs.

2. Asset Valuation Method

Fair value of assets.

3. Changes in Actuarial Methods

No changes from the prior year.

---

SECTION VI - SUMMARY OF PLAN PROVISIONS

**SUMMARY OF PLAN PROVISIONS**

	<u>Page</u>
A. Summary of Plan Provisions: General Employees	34
B. Summary of Plan Provisions: Police and Fire Employees	44

---

SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions: General Employees**

**The following is a summary of the plan provisions. Please refer to the plan document for a full explanation of the plan and plan provisions.**

<b>Effective Date</b>	Originally effective October 1, 1948. Revised July 1, 1978, January 1, 1990, December 1, 2000, July 1, 2012 and July 1, 2016.
<b>Participation</b>	
<i>1948 Plan</i>	All regular salaried employees on their date of hire and hired before July 1, 1978.
<i>1978 Plan</i>	All regular salaried employees on their date of hire and hired on or after July 1, 1978 but prior to July 1, 2016.
<i>2016 Plan</i>	All regular salaried employees on their date of hire and hired on or after July 1, 2016. In addition, any nongrandfathered employee in the 1978 Plan will participate in the 2016 Plan as of July 1, 2016.  For this purpose, a nongrandfathered employee is any employee with less than 7½ Years of Service as of July 1, 2016.
<b>Compensation</b>	Basic salary, excluding overtime, but including shift premium, hazardous pay, longevity pay and incentive pay.
<b>Average Monthly Compensation</b>	For 1948 Plan employees and 1978 Plan employees hired before July 1, 2012, the highest average monthly Compensation received for any five consecutive years of service, or the most recent year's earnings, if greater.  For 1978 Plan employees hired after June 30, 2012, highest average monthly Compensation received for any three consecutive years of service.
<b>Year of Service</b>	One year of service is earned for each 12-month period beginning at date of employment. Fractional periods (months and days) are also credited.

SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions: General Employees (continued)**

**Accrued Benefit**

*1948 Plan*

An employee in the 1948 Plan may choose between (1) and (2):

(1) The sum of (a) and (b):

(a)  $2\frac{1}{4}\%$  of Average Monthly Compensation times Years of Service before 1/1/90, *plus*  
 $2\frac{1}{2}\%$  of Average Monthly Compensation times Years of Service after 1/1/90.

Total Years of Service in part (a) must not exceed 25 years.

(b) 1% of Average Monthly Compensation times Years of Service in excess of 25

The maximum total retirement benefit is  $72\frac{1}{2}\%$  of the Average Monthly Compensation.

(2) Return of Employee Contributions in accordance with the following schedule:

<u>Years of Service</u>	<u>Return Multiple</u>
less than 5	1.0
5 to 14	1.5 - 2.9
15 or more	3.0

SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions: General Employees (continued)**

**Accrued Benefit (continued)**

*1978 Plan*

A grandfathered employee is any employee hired before July 1, 2016 and who has 7½ or more Years of Service as of July 1, 2016. All other employees are nongrandfathered.

The Accrued Benefit for nongrandfathered employees will be based on Average Monthly Compensation and Years of Service as of June 30, 2016 after which future benefits will be earned under the 2016 Plan.

An employee in the 1978 Plan may choose between (1) and (2):

(1) The sum of (a) and (b):

(a) For employees hired before July 1, 2012: 2¼% of Average Monthly Compensation times Years of Service before 1/1/90, plus 2½% of Average Monthly Compensation times Years of Service after 1/1/90.

For employees hired after June 30, 2012: 2¼% of Average Monthly Compensation times Years of Service

Total Years of Service in part (a) must not exceed 25 years.

(b) 1% of Average Monthly Compensation times Years of Service in excess of 25, up to a maximum total retirement benefit of 72½ %.

(2) Return of Employee Contributions in accordance with the following schedule:

<u>Years of Service</u>	<u>Return Multiple</u>
less than 5	1.0
5 to 14	1.5 - 2.9
15 or more	3.0

SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions: General Employees (continued)**

**Accrued Benefit (continued)**

*2016 Plan*

An employee in the 2016 Plan will be required to receive the Normal Form of Annuity derived by both a market-rate cash balance account and a defined contribution account.

*Market-rate Cash Balance Account*

Annual allocations to the cash balance account are equal to a percentage of Compensation that varies by Years of Service pursuant to the following allocation schedule:

<u>Years of Service</u>	<u>Allocation %</u>
0.00 - 4.99	5%
5.00 - 9.99	7%
10.00 - 14.99	9%
15.00 - 19.99	12%
20.00 +	15%

Interest Credits applied to the cash balance account are based on an interest crediting rate equal to the investment return on plan assets *less* one percent (1.0%).

The Normal Form of Annuity is determined based on Actuarial Equivalence of five percent (5.0%) per annum and the applicable mortality table pursuant to IRC Section 417(e)(3) for the Plan Year.

*Defined Contribution Account Balance*

Annual allocations to the defined contribution account are equal to seven and one-half percent (7.5%) of Compensation which consists of a six percent (6.0%) of Compensation as an employee contribution and one and one half percent (1.5%) of Compensation as an employer contribution. Assets are participant directed and the investment earnings are included in the defined contribution account balance.

The Normal Form of Annuity is determined based on Actuarial Equivalence of five percent (5.0%) per annum and the applicable mortality table pursuant to IRC Section 417(e)(3) for the Plan Year.

SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions: General Employees (continued)**

**Minimum Accrued Benefit**

<i>1948 Plan and 1978 Plan</i>	<u>Years of Service</u>	<u>At Age</u>	<u>Monthly Minimum Accrued Benefit</u>
	25 or more	No Restriction	\$525 plus \$21 times the lesser of 10 or Years of Service in excess of 25
	15 or more	65 or after	\$500 plus \$1 times the lesser of 25 or Years of Service
	less than 25	Before 65	The greater of \$262.50 or \$21 times Years of Service
<i>2016 Plan</i>	There is no minimum accrued benefit other than that provided for death and disability.		

**Normal Form of Annuity**

If single, an annuity for the life of the participant. A married participant will receive this annuity during his lifetime with a 75% continuation to his spouse upon his death. For 1948 Plan participants, 100% of the annuity is payable to the spouse upon the death of the participant.

**Normal Retirement**

*Elected & Appointed*

For elected and appointed participants hired before November 1, 2004, first day of month coincident with or next following completion of 12 Years of Service. Otherwise, normal retirement eligibility follows their respective plan.

Benefit Amount: Accrued Benefit



SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions: General Employees (continued)**

**Normal Retirement (continued)**

*1948 Plan*

For 1948 Plan employees, first day of the month coincident with or next following the earlier of the following dates:

- (a) Age 60 and completion of 10 Years of Service; or
- (b) Completion of 25 Years of Service.

Benefit Amount: Accrued Benefit

*1978 Plan*

For 1978 Plan employees hired before July 1, 2012, first day of the month coincident with or next following the earliest of the following dates:

- (a) Age 60 and completion of 10 Years of Service;
- (b) Age 65 and completion of 5 Years of Service; or
- (c) Completion of 25 Years of Service.

Benefit Amount: Accrued Benefit

For 1978 Plan employees hired on or after June 30, 2012, first day of the month coincident with or next following the earliest of the following dates:

- (a) Age 65 and the completion of 5 Years of Service; or
- (b) Completion of 25 Years of Service

Benefit Amount: A reduction of five percent (5%) per year for each year that the commencement date precedes the date the participant will attain age 62 applied to the Accrued Benefit.

SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions: General Employees (continued)**

**Normal Retirement (continued)**

*2016 Plan* For 2016 Plan employees, first day of the month coincident with or next following the earlier of the following dates:

- (a) Age 65 and the completion of 5 Years of Service; or
- (b) Completion of 25 Years of Service

Benefit Amount: Accrued Benefit

**Disability**

Eligibility: No service requirement for line-of-duty; five years of service for non line-of-duty.

Line-of-Duty: A participant who becomes disabled while performing City duties is entitled to receive the greater of:

- (1) 60% of Average Monthly Compensation as of date of disability; or
- (2) Accrued Benefit as of date of disability.

Non Line-of-Duty Benefit: For 1948 Plan participants, disabled employees while actively employed for reasons other than line-of-duty is entitled to receive the greater of:

- (1) 25% of Average Monthly Compensation as of date of disability; or
- (2) Accrued Benefit as of date of disability.

For 1978 Plan participants, an employee who becomes disabled while actively employed for reasons other than line-of-duty is entitled to receive the Accrued Benefit as of date of disability.

For 2016 Plan participants, an employee who becomes disabled while actively employed for reasons other than line-of-duty is entitled to receive the Accrued Benefit as of date of disability.

---

SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions: General Employees (continued)**

**Vested Termination**

Eligibility: Termination of employment after completion of 10 Years of Service.

Benefit Amount:

*1948 Plan* Accrued Benefit determined as of termination date becomes payable at age 65 for 1948 Plan employees.

*1978 Plan* Accrued Benefit determined as of termination date becomes payable at age 60 if hired before July 1, 2012 and becomes payable at age 62 if hired on or after July 1, 2012.

*2016 Plan* Accrued Benefit determined as of termination date becomes payable at age 60.

**Nonvested Termination**

Eligibility: Termination of employment before completion of 10 Years of Service.

Benefit Amount:

*1948 Plan* Return of Employee Contributions times the appropriate return multiple.

*1978 Plan* Return of Employee Contributions times the appropriate return multiple. For a nongrandfathered employee, only Employee Contributions through July , 2016 are refunded.

*2016 Plan* The portion of the cash balance account funded by employee contributions plus applicable interest credits.

SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions: General Employees (continued)**

**Involuntary Retirement**

Eligibility:

*1948 Plan*                      Completion of 15 years of service

*1978 Plan*                      Completion of 12 years of service

Note: This pension does not apply to any employee hired after November 1, 2004

Benefit Amount:                      Accrued Benefit determined as of involuntary retirement date becomes payable on date of retirement.

**Pre-Retirement Death Benefit**

Eligibility:                              No service requirement for Line-of-Duty; 5 years of service for non line-of-duty.

Line-of-Duty Benefit:                      The surviving spouse (or children) of a participant who dies while performing City duties is entitled to receive the greater of:

- (1) 60% of Average Monthly Compensation as of date of death; or
- (2) Accrued Benefit as of date of death.

Non Line-of-Duty Benefit:                      For the 1948 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 100% of the participant's Accrued Benefit as of date of the participant's death.

For the 1978 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 75% of the participant's Accrued Benefit as of date of the participant's death.

For the 2016 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 75% of the Normal Form of Annuity as of the date of the participant's death.

---

SECTION VI - SUMMARY OF PLAN PROVISIONS

**A. Summary of Plan Provisions: General Employees (continued)**

**Employee Contributions**

*1948 Plan*

Employees in the 1948 Plan must contribute five percent (5%) of Compensation.

*1978 Plan*

Employees in the 1978 Plan must contribute eight percent (8%) of Compensation.

*2016 Plan*

Employees in the 2016 Plan must contribute two percent (2%) of Compensation to the cash balance account and six percent (6%) of Compensation to the IRC section 401(a) defined contribution account.

**Changes From Prior  
Valuation**

None.



SECTION VI - SUMMARY OF PLAN PROVISIONS

**B. Summary of Plan Provisions: Police and Fire Employees (continued)**

**Accrued Benefit**

*1948 Plan*

The sum of (1) and (2):

- (1) 2¼% of Average Monthly Compensation times Years of Service before 1/1/90, plus 2½% of Average Monthly Compensation times Years of Service after 1/1/90.

Total Years of Service in part (a) must not exceed 25 years.

- (2) 1% of Average Monthly Compensation times Years of Service in excess of 25, up to a maximum total retirement benefit of 72½ %.

*1978 Plan*

A grandfathered employee is any employee hired before July 1, 2016 and who has 7½ or more Years of Service as of July 1, 2016. All other employees are nongrandfathered.

The Accrued Benefit for nongrandfathered employees will be based on Average Monthly Compensation and Years of Service as of June 30, 2016 after which future benefits will be earned under the 2016 Plan.

The sum of (1) and (2):

- (1) For employees hired before July 1, 2012: 2¼% of Average Monthly Compensation times Years of Service before 1/1/90, plus 2½% of Average Monthly Compensation times Years of Service after 1/1/90.

For employees hired after June 30, 2012: 2¼% of Average Monthly Compensation times Years of Service

Total Years of Service in part (a) must not exceed 25 years.

- (2) 1% of Average Monthly Compensation times Years of Service in excess of 25, up to a maximum total retirement benefit of 72½ %.

SECTION VI - SUMMARY OF PLAN PROVISIONS

**B. Summary of Plan Provisions: Police and Fire Employees (continued)**

**Accrued Benefit**

*2016 Plan*

An employee in the 2016 Plan will be required to receive the Normal Form of Annuity derived by both a market-rate cash balance account and a defined contribution account.

*Market-rate Cash Balance Account*

Annual allocations to the cash balance account are equal to a percentage of Compensation that varies by Years of Service pursuant to the following allocation schedule:

<u>Years of Service</u>	<u>Allocation %</u>
0.00 - 4.99	8%
5.00 - 9.99	10%
10.00 - 14.99	12%
15.00 - 19.99	15%
20.00 +	18%

Interest Credits applied to the cash balance account are based on an interest crediting rate equal to the investment return on plan assets *less* one percent (1.0%).

The Normal Form of Annuity is determined based on Actuarial Equivalence of five percent (5.0%) per annum and the applicable mortality table pursuant to IRC Section 417(e)(3) for the Plan Year.

*Defined Contribution Account Balance*

Annual allocations to the defined contribution account are equal to seven and one-half percent (7.5%) of Compensation which consists of a six percent (6.0%) of Compensation as an employee contribution and one and one half percent (1.5%) of Compensation as an employer contribution. Assets are participant directed and the investment earnings are included in the defined contribution account balance.

The Normal Form of Annuity is determined based on Actuarial Equivalence of five percent (5.0%) per annum and the applicable mortality table pursuant to IRC Section 417(e)(3) for the Plan Year.



SECTION VI - SUMMARY OF PLAN PROVISIONS

**B. Summary of Plan Provisions: Police and Fire Employees (continued)**

**Minimum Accrued Benefit**

<i>1948 Plan and 1978 Plan</i>	<u>Years of Service</u>	<u>At Age</u>	<u>Monthly Minimum Accrued Benefit</u>
	25 or more	No Restriction	\$525 plus \$21 times the lesser of 10 or Years of Service in excess of 25
	15 or more	65 or after	\$500 plus \$1 times the lesser of 25 or Years of Service
	less than 25	Before 65	The greater of \$262.50 or \$21 times Years of Service

*2016 Plan*

There is no minimum accrued benefit other than that provided for death and disability.

**Normal Form of Annuity**

If single, an annuity for the life of the participant. A married participant will receive this annuity during his lifetime with a 75% continuation to his spouse upon his death. For 1948 plan participants, 100% of the annuity is payable to the spouse upon the death of the participant.

**Normal Retirement**

*Elected & Appointed*

For elected and appointed participants hired before November 1, 2004, first day of month coincident with or next following completion of 12 Years of Service. Otherwise, normal retirement eligibility follows their respective plan.

Benefit Amount: Accrued Benefit

*1948 Plan*

For 1948 Plan employees, first day of the month coincident with or next following the earlier of the following dates:

- (a) Age 55 and completion of 10 Years of Service; or
- (b) Completion of 25 Years of Service.

Benefit Amount: Accrued Benefit

SECTION VI - SUMMARY OF PLAN PROVISIONS

**B. Summary of Plan Provisions: Police and Fire Employees (continued)**

**Normal Retirement (continued)**

*1978 Plan*

For 1978 Plan employees hired before July 1, 2012, first day of the month coincident with or next following the earliest of the following dates:

- (a) Age 55 and completion of 10 Years of Service;
- (b) Completion of 25 Years of Service.

Benefit Amount: Accrued Benefit

For 1978 Plan employees hired on or after June 30, 2012, first day of the month coincident with or next following the earliest of the following dates:

- (a) Age 55 and completion of 10 Years of Service;
- (b) Completion of 25 Years of Service.

Benefit Amount: A reduction of five percent (5%) per year for each year that the commencement date precedes the date the participant will attain age 52 applied to the Accrued Benefit.

*2016 Plan*

For 2016 Plan employees, first day of the month coincident with or next following the earlier of the following dates:

- (a) Age 55 and completion of 10 Years of Service;
- (b) Completion of 25 Years of Service.

Benefit Amount: Accrued Benefit

---

SECTION VI - SUMMARY OF PLAN PROVISIONS

**B. Summary of Plan Provisions: Police and Fire Employees (continued)**

**Disability**

Eligibility: No service requirement for line-of-duty; five years of service for non line-of-duty.

Line-of-Duty: A participant who becomes disabled while performing City duties is entitled to receive the greater of:

- (1) 60% of Average Monthly Compensation as of date of disability; or
- (2) Accrued Benefit as of date of disability.

Non Line-of-Duty: For 1948 Plan participants, an employee who becomes disabled while actively employed for reasons other than line-of-duty is entitled to receive the greater of:

- (1) 25% of Average Monthly Compensation as of date of disability; or
- (2) Accrued Benefit as of date of disability.

For 1978 Plan participants, an employee who becomes disabled while actively employed for reasons other than line-of-duty is entitled to receive the Accrued Benefit as of date of disability.

For 2016 Plan participants, an employee who becomes disabled while actively employed for reasons other than line-of-duty is entitled to receive the Accrued Benefit as of date of disability.

---

SECTION VI - SUMMARY OF PLAN PROVISIONS

**B. Summary of Plan Provisions: Police and Fire Employees (continued)**

**Vested Termination**

Eligibility: Termination of employment after completion of 10 Years of Service.

Benefit Amount:

*1948 Plan* Accrued Benefit determined as of termination date becomes payable at age 65 for 1948 Plan employees.

*1978 Plan* Accrued Benefit determined as of termination date becomes payable at age 60 if hired before July 1, 2012 and becomes payable at age 62 if hired on or after July 1, 2012.

*2016 Plan* Accrued Benefit determined as of termination date becomes payable at age 60.

**Nonvested Termination**

Eligibility: Termination of employment before completion of 10 Years of Service.

Benefit Amount:

*1948 Plan* Return of Employee Contributions.

*1978 Plan* Return of Employee Contributions. For a nongrandfathered employee, only Employee Contributions through July 1, 2016 are refunded.

*2016 Plan* The portion of the cash balance account funded by employee contributions plus applicable interest credits.

---

SECTION VI - SUMMARY OF PLAN PROVISIONS

**B. Summary of Plan Provisions: Police and Fire Employees (continued)**

**Pre-Retirement Death Benefit**

Eligibility:	No service requirement for line-of-duty; 5 years of service for non line-of-duty.
Line-of-Duty Benefit:	The surviving spouse (or children) of a participant who dies while performing City duties is entitled to receive the greater of:  (1) 60% of Average Monthly Compensation as of date of death; or (2) Accrued Benefit as of date of death.
Non Line-of-Duty Benefit:	For the 1948 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 100% of the participant's Accrued Benefit as of date of the participant's death.  For the 1978 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 75% of the participant's Accrued Benefit as of date of the participant's death.  For the 2016 Plan, the surviving spouse (or children) of a participant who dies while actively employed will receive 75% of the Normal Form of Annuity as of the date of the participant's death.

SECTION VI - SUMMARY OF PLAN PROVISIONS

**B. Summary of Plan Provisions: Police and Fire Employees (continued)**

**Employee Contributions**

Employees are required to contribute a percentage of Compensation in accordance with the following schedule:

<i>1948 Plan</i>	Years of Service at 1/1/90	Percentage
	up to 15 years	5.50%
	15-19 years	5.25%
	20 years or more	5.00%
<i>1978 Plan</i>	Date of Hire	Percentage
	After 6/30/12	8.00%
	After 6/30/83	6.50%
	Before 7/1/83	6.25%

The contribution rate for current non-vested employees as of July 1, 2012 will increase annually in 0.5% increments beginning July 1, 2012 until the contribution rate reaches 8.0%.

<i>2016 Plan</i>	Cash Balance Account	2.00%
	Defined Contribution Account	6.00%

**Changes From Prior Valuation**

None.

APPENDIX I

Page

**Memphis-Shelby County Airport Authority**

A.	Historical Contributions to City of Memphis Retirement System	53
B.	Development of Allocation Factor to Determine Airport Authority's Proportionate Share	53
C.	Selected Notes to the Financial Statements under GASB 67 and 68 for the Airport Authority	54
D.	Schedule of Proportionate Share of the Net Pension Liability and Related Ratios under GASB 67 and 68	57
E.	Schedule of Employer Contributions under GASB 67 and 68	57
F.	Pension Expense under GASB 68 for the Fiscal Year Ending June 30, 2016	58
G.	Schedule of Differences between Expected and Actual Experience under GASB 68 for the Fiscal Year Ending June 30, 2016	59
H.	Schedule of Changes in Assumptions under GASB 68 for the Fiscal Year Ending June 30, 2016	60
I.	Schedule of Differences between Projected and Actual Earnings on Investments under GASB 68 for the Fiscal Year Ending June 30, 2016	61
J.	Schedule of Change in Airport Authority's Proportionate Share of Net Pension Liability and Deferred (Inflows) / Outflows under GASB 68 for the Fiscal Year Ending June 30, 2016	62
K.	Schedule of Difference between the Airport Authority's Actual Contribution and their Proportionate Share of Total Contributions under GASB 68 for the Fiscal Year Ending June 30, 2016	63
L.	Determination of Resources of Deferred Outflows and Resources of Deferred Inflows for the Fiscal Year Ending June 30, 2016	64
M.	Schedule of Deferred Outflows of Resources and Deferred Inflows of Resources to be Recognized in Future Pension Expense under GASB 68	65

APPENDIX I

**DEVELOPMENT OF ACCOUNTING INFORMATION FOR COST-SHARING EMPLOYERS - AIRPORT AUTHORITY**

**A. Historical Contributions to City of Memphis Retirement System**

Per the direction of the City of Memphis and the Airport Authority, the allocation method for determining the Airport Authority's proportionate share of accounting information under GASB 68 is to use a historical approach equal to the ratio of the sum of Airport Authority employer contributions for the preceding five (5) fiscal years over the sum of the total employer contributions for the preceding five (5) fiscal years.

(1) Year Ending June 30	(2) Airport Authority	(3) City of Memphis	(4) Total
2011	\$ 819,000	\$ 19,313,000	\$ 20,132,000
2012	\$ 972,000	\$ 19,135,000	\$ 20,107,000
2013	\$ 1,014,000	\$ 17,954,000	\$ 18,968,000
2014	\$ 1,001,000	\$ 18,439,000	\$ 19,440,000
2015	\$ 996,000	\$ 45,219,000	\$ 46,215,000
2016	\$ 1,067,000	\$ 50,808,000	\$ 51,875,000

**B. Development of Allocation Factor to Determine Airport Authority's Proportionate Share**

a. Development of allocation percentage as of the <i>beginning</i> of the reporting period	
i. Airport Authority contributions for 2011 - 2015 fiscal years	\$ 4,802,000
ii. Total contributions for 2011 - 2015 fiscal years	\$ 124,862,000
iii. Allocation percentage as of the beginning of the reporting period (i) ÷ (ii)	3.85%
b. Development of allocation percentage as of the <i>ending</i> of the reporting period	
i. Airport Authority contributions for 2012 - 2016 fiscal years	\$ 5,050,000
ii. Total contributions for 2012 - 2016 fiscal years	\$ 156,605,000
iii. Allocation percentage as of the ending of the reporting period (i) ÷ (ii)	3.22%



---

APPENDIX I

**NOTES TO THE FINANCIAL STATEMENTS UNDER GASB 67 AND 68**

**C. Selected Notes to the Financial Statements under GASB 67 and 68 for the Airport Authority**

1. Significant actuarial assumptions and other inputs used to measure the total pension liability:

- |                             |   |
|-----------------------------|---|
| a. Measurement Date         | July 1, 2016  |
| b. Valuation Date           | July 1, 2016  |
| c. Investment Yield         | 7.5%  |
| d. Future Salary Increases  | Scale that varies by age and service with a weighted average of 4.25% per year  |
| e. Cost-of-Living Increases | None assumed.   |
| f. Mortality Assumption     | General: Fully Generational RP-2014 Mortality Table for males and females with MP-2015 projection scale from 2014 forward and adjusted by a 1 year set forward<br><br>Police and Fire: Fully Generational RP-2014 Mortality Table with Blue Collar adjustment for males and females with MP-2015 projection scale from 2014 forward and adjusted by a 1 year set forward<br><br>Disabled: Fully Generational RP-2014 Disabled Mortality Table with MP-2015 projection scale from 2014 forward and adjusted by a 3 year set back |
| g. Experience Study         | May 1, 2014 experience study based on 10 years of census data (between 2003-2012)   |

APPENDIX I

**NOTES TO THE FINANCIAL STATEMENTS UNDER GASB 67 AND 68**

**C. Selected Notes to the Financial Statements under GASB 67 and 68 for the Airport Authority (continued)**

2. Significant actuarial assumptions and other inputs used to measure the total pension liability (continued):

h. Discount Rate                      The discount rate used to measure the total pension liability was 7.5% as of July 1, 2016, and is equal to the long-term expected return on plan investments. The projection of cash flows used to determine the discount rate assumed that City contributions would be made at the actuarially calculated amount computed in accordance with the current funding policy adopted by the City, which requires payment of the normal cost and amortization of the unfunded actuarially accrued liability in level dollar installments over 30 years utilizing a closed period approach. Pursuant to The Public Employee Defined Benefit Financial Security Act of 2014, the City will phase into funding 100% of the actuarially calculated amount over a 5 year period beginning with the fiscal year beginning July 1, 2015. Based on this assumption, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members.

i. Discount Rate Sensitivity	<u>1% Decrease (6.5%)</u>	<u>Current Rate (7.5%)</u>	<u>1% Increase (8.5%)</u>
Net Pension Liability (000's)	\$ 26,303	\$ 16,977	\$ 9,144

3. The Airport Authority's proportionate share of the Net Pension Liability (000's) as of July 1, 2016 are as follows:

i. Total Pension Liability	\$ 84,326
ii. Plan Fiduciary Net Position	<u>67,349</u>
iii. Net Pension Liability	\$ 16,977
iv. Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	79.9%

APPENDIX I

**REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB 67 AND 68**

**D. Schedule of Proportionate Share of the Net Pension Liability and Related Ratios under GASB 67 and 68 <sup>1</sup>**

**Net Pension Liability (000's)**

(1)	(2)	(3)	(4)	(5)	(6)
Year Ending June 30	Proportion of of the Net Liability (Asset) <sup>2</sup>	Proportionate Share of Net Pension Liability	Actual Covered Employee Payroll <sup>3</sup>	Net Pension Liability as a Percentage of Covered Payroll  (3) ÷ (4)	Fiduciary Net Position as Percentage of Total Pension Liability
2015	3.85%	\$ 14,719	\$ 19,297	76.3%	85.2%
2016	3.22%	\$ 16,977	\$ 18,420	92.2%	79.9%

<sup>1</sup> The information presented above is for those years for which it is available. It was prepared prospectively from the Plan's fiscal year ending June 30, 2014 for GASB 67 purposes and prospectively from fiscal year ending June 30, 2015 for GASB 68 purposes.

<sup>2</sup> Based on the cost sharing allocation percentage as of the measurement date.

<sup>3</sup> The actual covered employee payroll is defined under GASB 82 to be payroll on which contributions to a pension plan are based. As pensionable pay is used for determining contributions under the plan, pensionable pay is shown above starting July 1, 2016. Prior to July 1, 2016 the gross payroll is shown, consistent with the requirements prior to the release of GASB 82. Note, actual covered employee payroll is for the year immediately preceding the valuation date.

APPENDIX I

**REQUIRED SUPPLEMENTARY INFORMATION UNDER GASB 67 AND 68**

**E. Schedule of Employer Contributions under GASB 67 and 68 (000's) <sup>1</sup>**

(1)	(2)	(3)	(4)	(5)	(6)
Year Ending June 30	Actuarially Determined Contribution <sup>2</sup>	Actual Employer Contributions	Contribution Excess/(Deficiency) (3) - (2)	Actual Covered Employee Payroll <sup>3</sup>	Contributions as a Percentage of Covered Payroll (3) ÷ (5)
2015	\$ 996	\$ 996	\$ -	\$ 19,297	5.2%
2016	\$ 2,848	\$ 1,067	\$ (1,781)	\$ 18,420	5.8%

<sup>1</sup> This schedule is prepared to illustrate the requirement to show information regarding the Net Pension Liability and Related Ratios for 10 years. The information presented above is for those years for which it is available. It was prepared prospectively from the Plan's fiscal year ending June 30, 2014 for GASB 67 purposes and respectively from fiscal year ending June 30, 2015 for GASB 68 purposes.

<sup>2</sup> Represents the portion of the Plan's actuarially determined contribution allocated to the Airport Authority. Details may be found in the funding valuation report for the corresponding fiscal year.

<sup>3</sup> The actual covered employee payroll is defined under GASB 82 to be payroll on which contributions to a pension plan are based. As pensionable pay is used for determining contributions under the plan, pensionable pay is shown above starting July 1, 2016. Prior to July 1, 2016 the gross payroll is shown, consistent with the requirements prior to the release of GASB 82. Note, actual covered employee payroll is for the year immediately preceding the valuation date.

APPENDIX I

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**F. Pension Expense under GASB 68 for the Fiscal Year Ending June 30, 2016**

**Pension Expense (000's)**

1. Service cost		
a. Total Service Cost <sup>1</sup>	\$	1,428
b. Employee Contributions		(770)
c. Administrative Expenses		72
d. Net Employer Service Cost: (a) + (b) + (c)	\$	<u>730</u>
2. Interest Cost <sup>2</sup>	\$	6,131
3. Expected Return on Assets <sup>3</sup>	\$	(5,190)
4. Changes in Benefit Terms	\$	-
5. Recognition of deferred (inflows) / outflows of resources related to:		
a. Liability Experience (gains) / losses	\$	(547)
b. Assumption Changes (gains) / losses		(65)
c. Investment (gains) / losses		1,866
d. Changes in proportion of net pension liability and deferred (inflows) / outflows		(1,373)
e. Changes in actual contributions and proportionate share of contributions		124
f. Total: (a) + (b) + (c) + (d) + (e)	\$	<u>5</u>
6. Total Collective Pension Expense: (1)(d) + (2) + (3) + (4) + (5)(f)	\$	<b>1,676</b>

<sup>1</sup> Determined as of the beginning of the year.

<sup>2</sup> Includes interest of 7.50% on the beginning-of-year service cost.

<sup>3</sup> Calculated assuming a 7.50% investment return, net of expenses, and assuming benefit payments are contributions occur at mid-year.

<sup>4</sup> The Airport Authority's proportion of components of expense is determined based on the allocation factor as of the end of the reporting period.

APPENDIX I

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**G. Schedule of Differences between Expected and Actual Experience under GASB 68 for the Fiscal Year Ending June 30, 2016**

**Experience Gains and Losses (000's)**

Fiscal Year Ending June 30,	Experience (Gain)/Loss	Original Recognition Period	Increase (Decrease) in Pension Expense Arising from Recognition of Experience Gains and Losses						
			2016	2017	2018	2019	2020	2021	Thereafter
2015	\$ (2,312)	4.97	\$ (465)	\$ (465)	\$ (465)	\$ (452)	\$ -	\$ -	\$ -
2016	\$ (398)	4.87	\$ (82)	\$ (82)	\$ (82)	\$ (82)	\$ (70)	\$ -	\$ -
Net increase (decrease) in pension expense:			\$ (547)	\$ (547)	\$ (547)	\$ (534)	\$ (70)	\$ -	\$ -

<sup>1</sup> The effort and cost to re-create financial statement information for 10 years was not practical. Information presented above is only shown for those years for which it is available.

<sup>2</sup> Gains and losses in the liability attributable to plan experience is amortized over the expected remaining service lives of all employees provided with pension (both active and inactive employees) determined as of the beginning of the measurement period.

<sup>3</sup> Deferred outflows are presented as positive amounts and deferred inflows are presented as negative amounts. Positive amounts increase pension expense and negative amounts decrease pension expense.

APPENDIX I

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**H. Schedule of Changes in Assumptions under GASB 68 for the Fiscal Year Ending June 30, 2016**

**Changes in Assumptions (000's)**

Fiscal Year Ending June 30,	(Gain)/Loss Due to Change in Assumption	Original Recognition Period	Increase (Decrease) in Pension Expense Arising from Recognition of Effects of Changes of Assumptions							
			2016	2017	2018	2019	2020	2021	Thereafter	
2016	\$ (318)	4.87	\$ (65)	\$ (65)	\$ (65)	\$ (65)	\$ (58)	\$ -	\$ -	
Net increase (decrease) in pension expense			\$ (65)	\$ (65)	\$ (65)	\$ (65)	\$ (58)	\$ -	\$ -	

<sup>1</sup> The effort and cost to re-create financial statement information for 10 years was not practical. Information presented above is only shown for those years for which it is available.

<sup>2</sup> Gains and losses in the liability attributable to assumption changes are amortized over the expected remaining service lives of all employees provided with pension (both active and inactive employees) determined as of the beginning of the measurement period.

<sup>3</sup> Deferred outflows are presented as positive amounts and deferred inflows are presented as negative amounts. Positive amounts increase pension expense and negative amounts decrease pension expense.

APPENDIX I

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**I. Schedule of Differences between Projected and Actual Earnings on Investments under GASB 68 for the Fiscal Year Ending June 30, 2016**

**Investment Gains and Losses (000's)**

Fiscal Year Ending June 30,	Investment (Gain)/Loss	Original Recognition Period	Increase (Decrease) in Pension Expense Arising from Recognition of Investment Gains and Losses						
			2016	2017	2018	2019	2020	2021	Thereafter
2015	\$ 3,949	5.00	\$ 790	\$ 790	\$ 790	\$ 789	\$ -	\$ -	\$ -
2016	\$ 5,382	5.00	\$ 1,076	\$ 1,076	\$ 1,076	\$ 1,076	\$ 1,078	\$ -	\$ -
Net increase (decrease) in pension expense			\$ 1,866	\$ 1,866	\$ 1,866	\$ 1,865	\$ 1,078	\$ -	\$ -

<sup>1</sup> The effort and cost to re-create financial statement information for 10 years was not practical. Information presented above is only shown for those years for which it is available.

<sup>2</sup> Gains and losses in the assets attributable to investment experience is amortized over a five-year period determined as of the beginning of the measurement period. For this purpose, the investment gain or loss is net of investment expenses.

<sup>3</sup> Deferred outflows are presented as positive amounts and deferred inflows are presented as negative amounts. Positive amounts increase pension expense and negative amounts decrease pension expense.



APPENDIX I

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**J. Schedule of Change in Airport Authority's Proportionate Share of Net Pension Liability and Deferred (Inflows) / Outflows under GASB 68 for the Fiscal Year Ending June 30, 2016**

**Change in Proportionate Share (000's)**

Fiscal Year Ending June 30,	(Gain)/Loss	Original Recognition Period	Increase (Decrease) in Pension Expense Arising from Change in Proportion of Net Pension Liability and Deferred (Inflows) / Outflows						
			2016	2017	2018	2019	2020	2021	Thereafter
2015	\$ (3,433)	4.97	\$ (691)	\$ (691)	\$ (691)	\$ (669)	\$ -	\$ -	\$ -
2016	\$ (3,322)	4.87	\$ (682)	\$ (682)	\$ (682)	\$ (682)	\$ (594)	\$ -	\$ -
Net increase (decrease) in pension expense			\$ (1,373)	\$ (1,373)	\$ (1,373)	\$ (1,351)	\$ (594)	\$ -	\$ -

<sup>1</sup> The effort and cost to re-create financial statement information for 10 years was not practical. Information presented above is only shown for those years for which it is available.

<sup>2</sup> Pursuant to paragraph 54 under GASB 68, gains and losses resulting from the net effect of the change in the Airport Authority's proportion of collective net pension liability and collective deferred inflows and outflows as of the beginning of the measurement period are amortized over the expected remaining service lives of all employees provided with pension (both active and inactive employees) determined as of the beginning of the measurement period.

<sup>3</sup> Deferred outflows are presented as positive amounts and deferred inflows are presented as negative amounts. Positive amounts increase pension expense and negative amounts decrease pension expense.

APPENDIX I

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**K. Schedule of Difference between the Airport Authority's Actual Contribution and their Proportionate Share of Total Contributions under GASB 68 for the Fiscal Year Ending June 30, 2016**

**Difference in Actual and Proportionate Share of Contributions (000's)**

Fiscal Year Ending June 30,	(Gain)/Loss	Original Recognition Period	Increase (Decrease) in Pension Expense Arising from Differences in Employer Actual Contribution and their Proportionate Share of the Total Contribution							
			2016	2017	2018	2019	2020	2021	Thereafter	
2015	\$ 783	4.97	\$ 158	\$ 158	\$ 158	\$ 151	\$ -	\$ -	\$ -	
2016	\$ 603	4.87	\$ 124	\$ 124	\$ 124	\$ 124	\$ 107	\$ -	\$ -	
Net increase (decrease) in pension expense			\$ 282	\$ 282	\$ 282	\$ 275	\$ 107	\$ -	\$ -	

<sup>1</sup> The effort and cost to re-create financial statement information for 10 years was not practical. Information presented above is only shown for those years for which it is available.

<sup>2</sup> Pursuant to paragraph 55 under GASB 68, gains and losses resulting from the difference between the Airport Authority's actual contributions and the Airport Authority's proportionate share of total contributions for the current reporting period are amortized over the expected remaining service lives of all employees provided with pension (both active and inactive employees) determined as of the beginning of the measurement period.

<sup>3</sup> Deferred outflows are presented as positive amounts and deferred inflows are presented as negative amounts. Positive amounts increase pension expense and negative amounts decrease pension expense.

APPENDIX I

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**L. Determination of Resources of Deferred Outflows and Resources of Deferred Inflows for the Fiscal Year Ending June 30, 2016**

**Deferred Outflows and Inflows (000's)**

	Established in Fiscal Year Ending June 30,			Cumulative Recognition through June 30, 2016 (c)	Balances at June 30, 2016	
		Loss	(Gain)		Deferred Outflows of Resources	Deferred Inflows of Resources
		(a)	(b)		(d) = (a) - (c)	(e) = (b) - (c)
<i>a. Experience (Gains) and Losses</i>	2015		\$ (2,312)	\$ (930)	\$ -	\$ (1,382)
	2016		\$ (398)	\$ (82)	\$ -	\$ (316)
					\$ -	\$ (1,698)
<i>b. Changes in Assumptions</i>	2016		\$ (318)	\$ (65)	\$ -	\$ (253)
					\$ -	\$ (253)
<i>c. Investment (Gains) and Losses</i>	2015	\$ 3,949		\$ 1,580	\$ 2,369	\$ -
	2016	\$ 5,382		\$ 1,076	\$ 4,305	\$ -
					\$ 6,675	\$ -
<i>d. Changes in Proportion</i>	2015		\$ (3,433)	\$ (1,382)	\$ -	\$ (2,051)
	2016		\$ (3,322)	\$ (682)	\$ -	\$ (2,640)
					\$ -	\$ (4,691)
<i>e. Changes in Contribution</i>	2015	\$ 783		\$ 316	\$ 467	\$ -
	2016	\$ 603		\$ 124	\$ 479	\$ -
					\$ 946	\$ -
<i>f. Collective Deferred Outflows/(Inflows) of Resources: (a) + (b) + (c) + (d) + (e)</i>					<b>\$ 7,621</b>	<b>\$ (6,642)</b>

<sup>1</sup> Deferred outflows of resources are presented as positive amounts. Deferred inflows of resources are presented as negative amounts.

---

APPENDIX I

**EMPLOYER FINANCIAL STATEMENTS UNDER GASB 68**

**M. Schedule of Deferred Outflows of Resources and Deferred Inflows of Resources to be Recognized in Future Pension Expense under GASB 68**

**Future Amortization of Deferred Outflows and Inflows (000's)**

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions recognized in pension expense as follows:

Year Ending June 30:

2017	\$	163
2018	\$	163
2019	\$	190
2020	\$	463
2021	\$	-
Thereafter	\$	-

---

APPENDIX II

Page

**Discount Rate for GASB 67 and GASB 68**

A.	Table 1: Projection of Contributions	66
B.	Table 2: Projection of Pension Plan's Net Fiduciary Position	68
C.	Table 3: Actuarial Present Values of Projected Benefit Payments	71

APPENDIX II

**Table 1: Projection of Contributions**

Year	Projected Covered-Employee Payroll <sup>1</sup>			Projected Employer and Employee Contributions					
	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Employee Contributions	Employer Contributions	UAAL Amortization	Total Employer Contribution	Phase In - Funding Policy	Total Contributions
	(a)	(b) (c) - (a)	(c)	(d) (a) × 5.68%	(e)	(f)	(g) (e) + (f)	(h)	(i) (d) + [(g) × (h)]
0	319,819,926	\$ -	319,819,926	\$ 18,165,772	\$ 22,368,600	\$ 35,816,525	\$ 58,185,125	75%	\$ 61,804,616
1	304,801,958	\$ 28,610,315	333,412,273	\$ 17,312,751	\$ 26,365,450	\$ 36,067,325	\$ 62,432,775	83%	\$ 69,131,954
2	291,543,894	\$ 56,038,400	347,582,294	\$ 16,559,693	\$ 22,332,262	\$ 46,036,339	\$ 68,368,601	92%	\$ 79,458,806
3	280,202,773	\$ 82,151,769	362,354,542	\$ 15,915,518	\$ 21,463,532	\$ 46,499,447	\$ 67,962,979	100%	\$ 83,878,497
4	268,927,318	\$ 108,827,292	377,754,610	\$ 15,275,072	\$ 20,599,833	\$ 46,499,447	\$ 67,099,279	100%	\$ 82,374,351
5	256,869,626	\$ 136,939,555	393,809,181	\$ 14,590,195	\$ 19,676,213	\$ 46,499,447	\$ 66,175,660	100%	\$ 80,765,855
6	245,023,077	\$ 165,522,994	410,546,071	\$ 13,917,311	\$ 18,768,768	\$ 46,499,447	\$ 65,268,215	100%	\$ 79,185,525
7	233,760,648	\$ 194,233,631	427,994,279	\$ 13,277,605	\$ 17,906,066	\$ 46,499,447	\$ 64,405,513	100%	\$ 77,683,117
8	219,973,486	\$ 226,210,550	446,184,036	\$ 12,494,494	\$ 16,849,969	\$ 46,499,447	\$ 63,349,416	100%	\$ 75,843,910
9	206,700,281	\$ 258,446,577	465,146,858	\$ 11,740,576	\$ 15,833,241	\$ 46,499,447	\$ 62,332,688	100%	\$ 74,073,264
10	194,393,002	\$ 290,522,597	484,915,599	\$ 11,041,523	\$ 14,890,504	\$ 46,499,447	\$ 61,389,951	100%	\$ 72,431,473
11	181,466,215	\$ 324,058,297	505,524,512	\$ 10,307,281	\$ 13,900,312	\$ 46,499,447	\$ 60,399,759	100%	\$ 70,707,040
12	169,385,541	\$ 357,623,762	527,009,304	\$ 9,621,099	\$ 12,974,932	\$ 46,499,447	\$ 59,474,379	100%	\$ 69,095,478
13	157,141,569	\$ 392,265,630	549,407,199	\$ 8,925,641	\$ 12,037,044	\$ 46,499,447	\$ 58,536,491	100%	\$ 67,462,132
14	144,614,708	\$ 428,142,297	572,757,005	\$ 8,214,115	\$ 11,077,487	\$ 46,499,447	\$ 57,576,933	100%	\$ 65,791,049
15	134,052,223	\$ 463,046,954	597,099,178	\$ 7,614,166	\$ 10,268,400	\$ 46,499,447	\$ 56,767,847	100%	\$ 64,382,013
16	124,067,749	\$ 498,408,143	622,475,893	\$ 7,047,048	\$ 9,503,590	\$ 46,499,447	\$ 56,003,036	100%	\$ 63,050,085
17	113,494,762	\$ 535,436,357	648,931,118	\$ 6,446,502	\$ 8,693,699	\$ 46,499,447	\$ 55,193,146	100%	\$ 61,639,648
18	101,681,519	\$ 574,829,172	676,510,691	\$ 5,775,510	\$ 7,788,804	\$ 46,499,447	\$ 54,288,251	100%	\$ 60,063,762
19	91,236,875	\$ 614,025,520	705,262,395	\$ 5,182,254	\$ 6,988,745	\$ 46,499,447	\$ 53,488,192	100%	\$ 58,670,446
20	82,074,302	\$ 653,161,745	735,236,047	\$ 4,661,820	\$ 6,286,891	\$ 46,499,447	\$ 52,786,338	100%	\$ 57,448,159
21	73,775,702	\$ 692,707,877	766,483,579	\$ 4,190,460	\$ 5,651,219	\$ 46,499,447	\$ 52,150,666	100%	\$ 56,341,126
22	66,272,335	\$ 732,786,796	799,059,131	\$ 3,764,269	\$ 5,076,461	\$ 46,499,447	\$ 51,575,908	100%	\$ 55,340,176
23	59,329,687	\$ 773,689,457	833,019,144	\$ 3,369,926	\$ 4,544,654	\$ 46,499,447	\$ 51,044,101	100%	\$ 54,414,027
24	52,757,744	\$ 815,664,714	868,422,458	\$ 2,996,640	\$ 4,041,243	\$ 46,499,447	\$ 50,540,690	100%	\$ 53,537,330
25	46,443,454	\$ 858,886,958	905,330,412	\$ 2,637,988	\$ 3,557,569	\$ 46,499,447	\$ 50,057,015	100%	\$ 52,695,004
26	40,185,029	\$ 903,621,926	943,806,955	\$ 2,282,510	\$ 3,078,173	\$ 46,499,447	\$ 49,577,620	100%	\$ 51,860,130
27	34,789,446	\$ 949,129,304	983,918,750	\$ 1,976,041	\$ 2,664,872	\$ 46,499,447	\$ 49,164,318	100%	\$ 51,140,359
28	29,838,410	\$ 995,896,888	1,025,735,297	\$ 1,694,822	\$ 2,285,622	\$ 46,499,447	\$ 48,785,069	100%	\$ 50,479,891
29	25,401,581	\$ 1,043,927,466	1,069,329,047	\$ 1,442,810	\$ 1,945,761	\$ 46,499,447	\$ 48,445,208	100%	\$ 49,888,018
30	21,455,073	\$ 1,093,320,459	1,114,775,532	\$ 1,218,648	\$ 1,643,459	\$ 46,499,447	\$ 48,142,905	100%	\$ 49,361,554
31	17,982,645	\$ 1,144,170,847	1,162,153,492	\$ 1,021,414	\$ 1,377,471	\$ 1,834,259	\$ 3,211,729	100%	\$ 4,233,143
32	14,794,193	\$ 1,196,750,822	1,211,545,015	\$ 840,310	\$ 1,133,235	\$ 463,108	\$ 1,596,344	100%	\$ 2,436,654
33	11,827,609	\$ 1,251,208,069	1,263,035,678	\$ 671,808	\$ 905,995	\$ -	\$ 905,995	100%	\$ 1,577,803

<sup>1</sup> For the current active population and pursuant to the assumptions set forth in Section VI. Payroll for future employees is expected to increase by 4.25% annually.

APPENDIX II

**Table 1: Projection of Contributions**

Year	Projected Covered-Employee Payroll <sup>1</sup>			Projected Employer and Employee Contributions					
	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Employee Contributions	Employer Contributions	UAAL Amortization	Total Employer Contribution	Phase In - Funding Policy	Total Contributions
	(a)	(b) (c) - (a)	(c)	(d) (a) ×	(e)	(f)	(g) (e) + (f)	(h)	(i) (d) + [(g) × (h)]
34	9,791,835	\$ 1,306,922,860	1,316,714,695	\$ 556,176	\$ 750,055	\$ -	750,055	100%	1,306,231
35	7,889,345	\$ 1,364,785,724	1,372,675,069	\$ 448,115	\$ 604,324	\$ -	604,324	100%	1,052,439
36	6,343,171	\$ 1,424,670,589	1,431,013,760	\$ 360,292	\$ 485,887	\$ -	485,887	100%	846,179
37	4,923,819	\$ 1,486,908,026	1,491,831,845	\$ 279,673	\$ 377,165	\$ -	377,165	100%	656,837
38	3,721,132	\$ 1,551,513,566	1,555,234,698	\$ 211,360	\$ 285,039	\$ -	285,039	100%	496,399
39	2,536,340	\$ 1,618,795,833	1,621,332,173	\$ 144,064	\$ 194,284	\$ -	194,284	100%	338,348
40	1,494,776	\$ 1,688,744,014	1,690,238,790	\$ 84,903	\$ 114,500	\$ -	114,500	100%	199,403
41	994,256	\$ 1,761,079,683	1,762,073,939	\$ 56,474	\$ 76,160	\$ -	76,160	100%	132,634
42	375,403	\$ 1,836,586,678	1,836,962,081	\$ 21,323	\$ 28,756	\$ -	28,756	100%	50,079
43	169,704	\$ 1,914,863,266	1,915,032,969	\$ 9,639	\$ 12,999	\$ -	12,999	100%	22,638
44	68,600	\$ 1,996,353,270	1,996,421,871	\$ 3,896	\$ 5,255	\$ -	5,255	100%	9,151
45	30,112	\$ 2,081,239,688	2,081,269,800	\$ 1,710	\$ 2,307	\$ -	2,307	100%	4,017
46	-	\$ 2,169,723,767	2,169,723,767	\$ -	\$ -	\$ -	-	100%	-
47	-	\$ 2,261,937,027	2,261,937,027	\$ -	\$ -	\$ -	-	100%	-
48	-	\$ 2,358,069,350	2,358,069,350	\$ -	\$ -	\$ -	-	100%	-
49	-	\$ 2,458,287,298	2,458,287,298	\$ -	\$ -	\$ -	-	100%	-
50	-	\$ 2,562,764,508	2,562,764,508	\$ -	\$ -	\$ -	-	100%	-
51	-	\$ 2,671,681,999	2,671,681,999	\$ -	\$ -	\$ -	-	100%	-
52	-	\$ 2,785,228,484	2,785,228,484	\$ -	\$ -	\$ -	-	100%	-
53	-	\$ 2,903,600,695	2,903,600,695	\$ -	\$ -	\$ -	-	100%	-
54	-	\$ 3,027,003,725	3,027,003,725	\$ -	\$ -	\$ -	-	100%	-
55	-	\$ 3,155,651,383	3,155,651,383	\$ -	\$ -	\$ -	-	100%	-
56	-	\$ 3,289,766,567	3,289,766,567	\$ -	\$ -	\$ -	-	100%	-
57	-	\$ 3,429,581,646	3,429,581,646	\$ -	\$ -	\$ -	-	100%	-
58	-	\$ 3,575,338,866	3,575,338,866	\$ -	\$ -	\$ -	-	100%	-
59	-	\$ 3,727,290,767	3,727,290,767	\$ -	\$ -	\$ -	-	100%	-
60	-	\$ 3,885,700,625	3,885,700,625	\$ -	\$ -	\$ -	-	100%	-
61	-	\$ 4,050,842,902	4,050,842,902	\$ -	\$ -	\$ -	-	100%	-
62	-	\$ 4,223,003,725	4,223,003,725	\$ -	\$ -	\$ -	-	100%	-
63	-	\$ 4,402,481,383	4,402,481,383	\$ -	\$ -	\$ -	-	100%	-
64	-	\$ 4,589,586,842	4,589,586,842	\$ -	\$ -	\$ -	-	100%	-
65	-	\$ 4,784,644,283	4,784,644,283	\$ -	\$ -	\$ -	-	100%	-
66	-	\$ 4,987,991,665	4,987,991,665	\$ -	\$ -	\$ -	-	100%	-
67	-	\$ 5,199,981,311	5,199,981,311	\$ -	\$ -	\$ -	-	100%	-

<sup>1</sup> For the current active population and pursuant to the assumptions set forth in Section VI.

APPENDIX II

**Table 2: Projection of Pension Plan's Fiduciary Net Position**

Year	Projected Beginning Fiduciary Net Position (a)	Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) (a) + (b) - (c) - (d) + (e)
0	\$ 2,091,586,000	\$ 61,804,616	\$ 208,320,900	\$ 2,058,938	\$ 151,398,103	\$ 2,094,408,881
1	\$ 2,094,408,881	\$ 69,131,954	\$ 186,065,072	\$ 1,900,203	\$ 152,704,978	\$ 2,128,280,539
2	\$ 2,128,280,539	\$ 79,458,806	\$ 190,261,502	\$ 1,817,549	\$ 155,474,130	\$ 2,171,134,423
3	\$ 2,171,134,423	\$ 83,878,497	\$ 194,328,025	\$ 1,746,846	\$ 158,703,779	\$ 2,217,641,827
4	\$ 2,217,641,827	\$ 82,374,351	\$ 199,066,341	\$ 1,676,552	\$ 161,964,563	\$ 2,261,237,848
5	\$ 2,261,237,848	\$ 80,765,855	\$ 204,108,164	\$ 1,601,382	\$ 164,992,154	\$ 2,301,286,310
6	\$ 2,301,286,310	\$ 79,185,525	\$ 208,909,773	\$ 1,527,528	\$ 167,763,512	\$ 2,337,798,046
7	\$ 2,337,798,046	\$ 77,683,117	\$ 214,234,924	\$ 1,457,316	\$ 170,253,072	\$ 2,370,041,995
8	\$ 2,370,041,995	\$ 75,843,910	\$ 220,004,152	\$ 1,371,363	\$ 172,394,375	\$ 2,396,904,765
9	\$ 2,396,904,765	\$ 74,073,264	\$ 224,983,393	\$ 1,288,615	\$ 174,163,585	\$ 2,418,869,606
10	\$ 2,418,869,606	\$ 72,431,473	\$ 229,661,213	\$ 1,211,889	\$ 175,581,072	\$ 2,436,009,049
11	\$ 2,436,009,049	\$ 70,707,040	\$ 234,371,407	\$ 1,131,301	\$ 176,632,561	\$ 2,447,845,943
12	\$ 2,447,845,943	\$ 69,095,478	\$ 238,932,464	\$ 1,055,987	\$ 177,295,813	\$ 2,454,248,784
13	\$ 2,454,248,784	\$ 67,462,132	\$ 243,001,875	\$ 979,655	\$ 177,568,850	\$ 2,455,298,236
14	\$ 2,455,298,236	\$ 65,791,049	\$ 246,593,689	\$ 901,560	\$ 177,456,643	\$ 2,451,050,679
15	\$ 2,451,050,679	\$ 64,382,013	\$ 248,993,045	\$ 835,711	\$ 177,000,268	\$ 2,442,604,205
16	\$ 2,442,604,205	\$ 63,050,085	\$ 251,066,359	\$ 773,466	\$ 176,243,687	\$ 2,430,058,151
17	\$ 2,430,058,151	\$ 61,639,648	\$ 253,484,128	\$ 707,551	\$ 175,164,197	\$ 2,412,670,317
18	\$ 2,412,670,317	\$ 60,063,762	\$ 255,385,018	\$ 633,905	\$ 173,734,800	\$ 2,390,449,955
19	\$ 2,390,449,955	\$ 58,670,446	\$ 255,976,137	\$ 568,791	\$ 171,997,599	\$ 2,364,573,072
20	\$ 2,364,573,072	\$ 57,448,159	\$ 255,616,006	\$ 511,669	\$ 170,027,190	\$ 2,335,920,745
21	\$ 2,335,920,745	\$ 56,341,126	\$ 254,500,199	\$ 459,934	\$ 167,880,493	\$ 2,305,182,231
22	\$ 2,305,182,231	\$ 55,340,176	\$ 252,659,646	\$ 413,156	\$ 165,607,743	\$ 2,273,057,349
23	\$ 2,273,057,349	\$ 54,414,027	\$ 250,440,490	\$ 369,874	\$ 163,247,582	\$ 2,239,908,593
24	\$ 2,239,908,593	\$ 53,537,330	\$ 247,683,712	\$ 328,903	\$ 160,832,162	\$ 2,206,265,469
25	\$ 2,206,265,469	\$ 52,695,004	\$ 244,761,667	\$ 289,539	\$ 158,386,957	\$ 2,172,296,224
26	\$ 2,172,296,224	\$ 51,860,130	\$ 241,772,461	\$ 250,522	\$ 155,920,027	\$ 2,138,053,398
27	\$ 2,138,053,398	\$ 51,140,359	\$ 238,435,293	\$ 216,885	\$ 153,449,432	\$ 2,103,991,011
28	\$ 2,103,991,011	\$ 50,479,891	\$ 234,828,615	\$ 186,019	\$ 151,004,375	\$ 2,070,460,643
29	\$ 2,070,460,643	\$ 49,888,018	\$ 230,879,275	\$ 158,359	\$ 148,614,245	\$ 2,037,925,271
30	\$ 2,037,925,271	\$ 49,361,554	\$ 226,669,914	\$ 133,756	\$ 146,310,610	\$ 2,006,793,764
31	\$ 2,006,793,764	\$ 4,233,143	\$ 221,875,716	\$ 112,108	\$ 142,491,355	\$ 1,931,530,438
32	\$ 1,931,530,438	\$ 2,436,654	\$ 217,045,306	\$ 92,230	\$ 136,959,052	\$ 1,853,788,608
33	\$ 1,853,788,608	\$ 1,577,803	\$ 211,968,898	\$ 73,736	\$ 131,284,395	\$ 1,774,608,173
34	\$ 1,774,608,173	\$ 1,306,231	\$ 206,222,955	\$ 61,044	\$ 125,547,908	\$ 1,695,178,312



APPENDIX II

**Table 2: Projection of Pension Plan's Fiduciary Net Position (cont.)**

Year	Projected Beginning Fiduciary Net Position (a)	Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) (a) + (b) - (c) - (d) + (e)
35	\$ 1,695,178,312	\$ 1,052,439	\$ 200,384,522	\$ 49,184	\$ 119,796,743	\$ 1,615,593,788
36	\$ 1,615,593,788	\$ 846,179	\$ 193,989,965	\$ 39,545	\$ 114,056,124	\$ 1,536,466,582
37	\$ 1,536,466,582	\$ 656,837	\$ 187,751,023	\$ 30,696	\$ 108,344,669	\$ 1,457,686,369
38	\$ 1,457,686,369	\$ 496,399	\$ 181,201,480	\$ 23,198	\$ 102,671,689	\$ 1,379,629,778
39	\$ 1,379,629,778	\$ 338,348	\$ 174,568,325	\$ 15,812	\$ 97,056,143	\$ 1,302,440,132
40	\$ 1,302,440,132	\$ 199,403	\$ 167,757,695	\$ 9,319	\$ 91,512,824	\$ 1,226,385,345
41	\$ 1,226,385,345	\$ 132,634	\$ 160,770,683	\$ 6,198	\$ 86,063,648	\$ 1,151,804,746
42	\$ 1,151,804,746	\$ 50,079	\$ 153,734,383	\$ 2,340	\$ 80,726,296	\$ 1,078,844,397
43	\$ 1,078,844,397	\$ 22,638	\$ 146,568,397	\$ 1,058	\$ 75,517,173	\$ 1,007,814,753
44	\$ 1,007,814,753	\$ 9,151	\$ 139,385,915	\$ 428	\$ 70,453,950	\$ 938,891,512
45	\$ 938,891,512	\$ 4,017	\$ 132,225,597	\$ 188	\$ 65,548,184	\$ 872,217,928
46	\$ 872,217,928	\$ -	\$ 125,113,095	\$ -	\$ 60,809,422	\$ 807,914,255
47	\$ 807,914,255	\$ -	\$ 118,070,321	\$ -	\$ 56,245,976	\$ 746,089,910
48	\$ 746,089,910	\$ -	\$ 111,121,413	\$ -	\$ 51,865,023	\$ 686,833,521
49	\$ 686,833,521	\$ -	\$ 104,285,832	\$ -	\$ 47,672,494	\$ 630,220,182
50	\$ 630,220,182	\$ -	\$ 97,582,308	\$ -	\$ 43,673,331	\$ 576,311,206
51	\$ 576,311,206	\$ -	\$ 91,029,096	\$ -	\$ 39,871,461	\$ 525,153,570
52	\$ 525,153,570	\$ -	\$ 84,644,788	\$ -	\$ 36,269,722	\$ 476,778,504
53	\$ 476,778,504	\$ -	\$ 78,446,901	\$ -	\$ 32,869,811	\$ 431,201,413
54	\$ 431,201,413	\$ -	\$ 72,452,023	\$ -	\$ 29,672,273	\$ 388,421,663
55	\$ 388,421,663	\$ -	\$ 66,675,708	\$ -	\$ 26,676,487	\$ 348,422,441
56	\$ 348,422,441	\$ -	\$ 61,131,538	\$ -	\$ 23,880,693	\$ 311,171,597
57	\$ 311,171,597	\$ -	\$ 55,831,227	\$ -	\$ 21,282,049	\$ 276,622,418
58	\$ 276,622,418	\$ -	\$ 50,784,596	\$ -	\$ 18,876,688	\$ 244,714,509
59	\$ 244,714,509	\$ -	\$ 45,998,627	\$ -	\$ 16,659,824	\$ 215,375,706
60	\$ 215,375,706	\$ -	\$ 41,477,778	\$ -	\$ 14,625,880	\$ 188,523,808
61	\$ 188,523,808	\$ -	\$ 37,224,905	\$ -	\$ 12,768,588	\$ 164,067,491
62	\$ 164,067,491	\$ -	\$ 33,240,918	\$ -	\$ 11,081,062	\$ 141,907,635
63	\$ 141,907,635	\$ -	\$ 29,524,961	\$ -	\$ 9,555,903	\$ 121,938,577
64	\$ 121,938,577	\$ -	\$ 26,074,777	\$ -	\$ 8,185,266	\$ 104,049,066
65	\$ 104,049,066	\$ -	\$ 22,886,784	\$ -	\$ 6,960,941	\$ 88,123,223
66	\$ 88,123,223	\$ -	\$ 19,956,117	\$ -	\$ 5,874,416	\$ 74,041,522
67	\$ 74,041,522	\$ -	\$ 17,277,014	\$ -	\$ 4,916,939	\$ 61,681,447
68	\$ 61,681,447	\$ -	\$ 14,842,563	\$ -	\$ 4,079,575	\$ 50,918,459
69	\$ 50,918,459	\$ -	\$ 12,644,834	\$ -	\$ 3,353,276	\$ 41,626,901

APPENDIX II

**Table 2: Projection of Pension Plan's Fiduciary Net Position (cont.)**

Year	Projected Beginning Fiduciary Net Position (a)	Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) (a) + (b) - (c) - (d) + (e)
70	\$ 41,626,901	\$ -	\$ 10,675,245	\$ -	\$ 2,728,933	33,680,589
71	\$ 33,680,589	\$ -	\$ 8,924,634	\$ -	\$ 2,197,421	26,953,376
72	\$ 26,953,376	\$ -	\$ 7,382,785	\$ -	\$ 1,749,654	21,320,245
73	\$ 21,320,245	\$ -	\$ 6,038,391	\$ -	\$ 1,376,672	16,658,526
74	\$ 16,658,526	\$ -	\$ 4,879,294	\$ -	\$ 1,069,724	12,848,955
75	\$ 12,848,955	\$ -	\$ 3,892,152	\$ -	\$ 820,355	9,777,158
76	\$ 9,777,158	\$ -	\$ 3,062,561	\$ -	\$ 620,517	7,335,114
77	\$ 7,335,114	\$ -	\$ 2,375,251	\$ -	\$ 462,672	5,422,535
78	\$ 5,422,535	\$ -	\$ 1,814,414	\$ -	\$ 339,880	3,948,001
79	\$ 3,948,001	\$ -	\$ 1,364,107	\$ -	\$ 245,871	2,829,765
80	\$ 2,829,765	\$ -	\$ 1,008,724	\$ -	\$ 175,089	1,996,130
81	\$ 1,996,130	\$ -	\$ 733,263	\$ -	\$ 122,709	1,385,576
82	\$ 1,385,576	\$ -	\$ 523,695	\$ -	\$ 84,635	946,516
83	\$ 946,516	\$ -	\$ 367,344	\$ -	\$ 57,462	636,635
84	\$ 636,635	\$ -	\$ 253,072	\$ -	\$ 38,429	421,991
85	\$ 421,991	\$ -	\$ 171,279	\$ -	\$ 25,343	276,055
86	\$ 276,055	\$ -	\$ 113,952	\$ -	\$ 16,508	178,611
87	\$ 178,611	\$ -	\$ 74,633	\$ -	\$ 10,648	114,625
88	\$ 114,625	\$ -	\$ 48,233	\$ -	\$ 6,821	73,213
89	\$ 73,213	\$ -	\$ 30,852	\$ -	\$ 4,355	46,716
90	\$ 46,716	\$ -	\$ 19,607	\$ -	\$ 2,782	29,891
91	\$ 29,891	\$ -	\$ 12,442	\$ -	\$ 1,784	19,233
92	\$ 19,233	\$ -	\$ 7,929	\$ -	\$ 1,151	12,455
93	\$ 12,455	\$ -	\$ 5,102	\$ -	\$ 746	8,099
94	\$ 8,099	\$ -	\$ 3,325	\$ -	\$ 485	5,259
95	\$ 5,259	\$ -	\$ 2,195	\$ -	\$ 314	3,377
96	\$ 3,377	\$ -	\$ 1,462	\$ -	\$ 199	2,114
97	\$ 2,114	\$ -	\$ 980	\$ -	\$ 122	1,256
98	\$ 1,256	\$ -	\$ 656	\$ -	\$ 70	671
99	\$ 671	\$ -	\$ 433	\$ -	\$ 34	272
100	\$ 272	\$ -	\$ 282	\$ -	\$ 10	-

APPENDIX II

**Table 3: Actuarial Present Values of Projected Benefit Payments**

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments	Present Value of Unfunded Benefit Payments	Present Value of Benefit Payments Using the Single Discount Rate
(a)	(b)	(c)	(d)	(e)	(f) $(d) \div ((1 + 7.50\%)^{((a)+0.5)})$	(g) $(e) \div ((1 + 2.03\%)^{((a)+0.5)})$	(h) $(c) \div ((1 + 7.5\%)^{((a)+0.5)})$
0	\$ 2,091,586,000	\$ 208,320,900	\$ 208,320,900	\$ -	\$ 200,922,517	\$ -	\$ 200,922,517
1	\$ 2,094,408,881	\$ 186,065,072	\$ 186,065,072	\$ -	\$ 166,936,829	\$ -	\$ 166,936,829
2	\$ 2,128,280,539	\$ 190,261,502	\$ 190,261,502	\$ -	\$ 158,792,418	\$ -	\$ 158,792,418
3	\$ 2,171,134,423	\$ 194,328,025	\$ 194,328,025	\$ -	\$ 150,871,015	\$ -	\$ 150,871,015
4	\$ 2,217,641,827	\$ 199,066,341	\$ 199,066,341	\$ -	\$ 143,767,177	\$ -	\$ 143,767,177
5	\$ 2,261,237,848	\$ 204,108,164	\$ 204,108,164	\$ -	\$ 137,124,110	\$ -	\$ 137,124,110
6	\$ 2,301,286,310	\$ 208,909,773	\$ 208,909,773	\$ -	\$ 130,558,076	\$ -	\$ 130,558,076
7	\$ 2,337,798,046	\$ 214,234,924	\$ 214,234,924	\$ -	\$ 124,545,141	\$ -	\$ 124,545,141
8	\$ 2,370,041,995	\$ 220,004,152	\$ 220,004,152	\$ -	\$ 118,975,881	\$ -	\$ 118,975,882
9	\$ 2,396,904,765	\$ 224,983,393	\$ 224,983,393	\$ -	\$ 113,180,094	\$ -	\$ 113,180,094
10	\$ 2,418,869,606	\$ 229,661,213	\$ 229,661,213	\$ -	\$ 107,472,853	\$ -	\$ 107,472,853
11	\$ 2,436,009,049	\$ 234,371,407	\$ 234,371,407	\$ -	\$ 102,025,161	\$ -	\$ 102,025,161
12	\$ 2,447,845,943	\$ 238,932,464	\$ 238,932,464	\$ -	\$ 96,754,096	\$ -	\$ 96,754,096
13	\$ 2,454,248,784	\$ 243,001,875	\$ 243,001,875	\$ -	\$ 91,536,722	\$ -	\$ 91,536,722
14	\$ 2,455,298,236	\$ 246,593,689	\$ 246,593,689	\$ -	\$ 86,409,049	\$ -	\$ 86,409,049
15	\$ 2,451,050,679	\$ 248,993,045	\$ 248,993,045	\$ -	\$ 81,162,613	\$ -	\$ 81,162,613
16	\$ 2,442,604,205	\$ 251,066,359	\$ 251,066,359	\$ -	\$ 76,128,779	\$ -	\$ 76,128,779
17	\$ 2,430,058,151	\$ 253,484,128	\$ 253,484,128	\$ -	\$ 71,499,441	\$ -	\$ 71,499,441
18	\$ 2,412,670,317	\$ 255,385,018	\$ 255,385,018	\$ -	\$ 67,009,878	\$ -	\$ 67,009,878
19	\$ 2,390,449,955	\$ 255,976,137	\$ 255,976,137	\$ -	\$ 62,479,052	\$ -	\$ 62,479,052
20	\$ 2,364,573,072	\$ 255,616,006	\$ 255,616,006	\$ -	\$ 58,038,279	\$ -	\$ 58,038,279
21	\$ 2,335,920,745	\$ 254,500,199	\$ 254,500,199	\$ -	\$ 53,753,425	\$ -	\$ 53,753,425
22	\$ 2,305,182,231	\$ 252,659,646	\$ 252,659,646	\$ -	\$ 49,641,562	\$ -	\$ 49,641,562
23	\$ 2,273,057,349	\$ 250,440,490	\$ 250,440,490	\$ -	\$ 45,772,606	\$ -	\$ 45,772,606
24	\$ 2,239,908,593	\$ 247,683,712	\$ 247,683,712	\$ -	\$ 42,110,469	\$ -	\$ 42,110,469
25	\$ 2,206,265,469	\$ 244,761,667	\$ 244,761,667	\$ -	\$ 38,710,392	\$ -	\$ 38,710,392
26	\$ 2,172,296,224	\$ 241,772,461	\$ 241,772,461	\$ -	\$ 35,569,890	\$ -	\$ 35,569,891
27	\$ 2,138,053,398	\$ 238,435,293	\$ 238,435,293	\$ -	\$ 32,631,555	\$ -	\$ 32,631,555
28	\$ 2,103,991,011	\$ 234,828,615	\$ 234,828,615	\$ -	\$ 29,895,773	\$ -	\$ 29,895,773
29	\$ 2,070,460,643	\$ 230,879,275	\$ 230,879,275	\$ -	\$ 27,342,313	\$ -	\$ 27,342,313
30	\$ 2,037,925,271	\$ 226,669,914	\$ 226,669,914	\$ -	\$ 24,970,988	\$ -	\$ 24,970,988
31	\$ 2,006,793,764	\$ 221,875,716	\$ 221,875,716	\$ -	\$ 22,737,523	\$ -	\$ 22,737,523
32	\$ 1,931,530,438	\$ 217,045,306	\$ 217,045,306	\$ -	\$ 20,690,706	\$ -	\$ 20,690,706
33	\$ 1,853,788,608	\$ 211,968,898	\$ 211,968,898	\$ -	\$ 18,797,002	\$ -	\$ 18,797,002

APPENDIX II

**Table 3: Actuarial Present Values of Projected Benefit Payments (cont.)**

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments	Present Value of Unfunded Benefit Payments	Present Value of Benefit Payments Using the Single Discount Rate
(a)	(b)	(c)	(d)	(e)	(f) (d) ÷ ((1 + 7.50%) <sup>((a)+0.5)</sup> )	(g) (e) ÷ ((1 + 2.03%) <sup>((a)+0.5)</sup> )	(h) (c) ÷ ((1 + 7.5%) <sup>((a)+0.5)</sup> )
34	\$ 1,774,608,173	\$ 206,222,955	\$ 206,222,955	\$ -	\$ 17,011,593	\$ -	\$ 17,011,593
35	\$ 1,695,178,312	\$ 200,384,522	\$ 200,384,522	\$ -	\$ 15,376,719	\$ -	\$ 15,376,719
36	\$ 1,615,593,788	\$ 193,989,965	\$ 193,989,965	\$ -	\$ 13,847,466	\$ -	\$ 13,847,466
37	\$ 1,536,466,582	\$ 187,751,023	\$ 187,751,023	\$ -	\$ 12,467,084	\$ -	\$ 12,467,084
38	\$ 1,457,686,369	\$ 181,201,480	\$ 181,201,480	\$ -	\$ 11,192,726	\$ -	\$ 11,192,726
39	\$ 1,379,629,778	\$ 174,568,325	\$ 174,568,325	\$ -	\$ 10,030,697	\$ -	\$ 10,030,697
40	\$ 1,302,440,132	\$ 167,757,695	\$ 167,757,695	\$ -	\$ 8,966,845	\$ -	\$ 8,966,845
41	\$ 1,226,385,345	\$ 160,770,683	\$ 160,770,683	\$ -	\$ 7,993,843	\$ -	\$ 7,993,843
42	\$ 1,151,804,746	\$ 153,734,383	\$ 153,734,383	\$ -	\$ 7,110,682	\$ -	\$ 7,110,682
43	\$ 1,078,844,397	\$ 146,568,397	\$ 146,568,397	\$ -	\$ 6,306,264	\$ -	\$ 6,306,264
44	\$ 1,007,814,753	\$ 139,385,915	\$ 139,385,915	\$ -	\$ 5,578,818	\$ -	\$ 5,578,818
45	\$ 938,891,512	\$ 132,225,597	\$ 132,225,597	\$ -	\$ 4,923,007	\$ -	\$ 4,923,007
46	\$ 872,217,928	\$ 125,113,095	\$ 125,113,095	\$ -	\$ 4,333,204	\$ -	\$ 4,333,204
47	\$ 807,914,255	\$ 118,070,321	\$ 118,070,321	\$ -	\$ 3,803,984	\$ -	\$ 3,803,984
48	\$ 746,089,910	\$ 111,121,413	\$ 111,121,413	\$ -	\$ 3,330,330	\$ -	\$ 3,330,330
49	\$ 686,833,521	\$ 104,285,832	\$ 104,285,832	\$ -	\$ 2,907,410	\$ -	\$ 2,907,410
50	\$ 630,220,182	\$ 97,582,308	\$ 97,582,308	\$ -	\$ 2,530,717	\$ -	\$ 2,530,717
51	\$ 576,311,206	\$ 91,029,096	\$ 91,029,096	\$ -	\$ 2,196,061	\$ -	\$ 2,196,061
52	\$ 525,153,570	\$ 84,644,788	\$ 84,644,788	\$ -	\$ 1,899,572	\$ -	\$ 1,899,572
53	\$ 476,778,504	\$ 78,446,901	\$ 78,446,901	\$ -	\$ 1,637,657	\$ -	\$ 1,637,657
54	\$ 431,201,413	\$ 72,452,023	\$ 72,452,023	\$ -	\$ 1,406,984	\$ -	\$ 1,406,984
55	\$ 388,421,663	\$ 66,675,708	\$ 66,675,708	\$ -	\$ 1,204,475	\$ -	\$ 1,204,475
56	\$ 348,422,441	\$ 61,131,538	\$ 61,131,538	\$ -	\$ 1,027,276	\$ -	\$ 1,027,276
57	\$ 311,171,597	\$ 55,831,227	\$ 55,831,227	\$ -	\$ 872,751	\$ -	\$ 872,751
58	\$ 276,622,418	\$ 50,784,596	\$ 50,784,596	\$ -	\$ 738,477	\$ -	\$ 738,477
59	\$ 244,714,509	\$ 45,998,627	\$ 45,998,627	\$ -	\$ 622,216	\$ -	\$ 622,216
60	\$ 215,375,706	\$ 41,477,778	\$ 41,477,778	\$ -	\$ 521,919	\$ -	\$ 521,919
61	\$ 188,523,808	\$ 37,224,905	\$ 37,224,905	\$ -	\$ 435,726	\$ -	\$ 435,726
62	\$ 164,067,491	\$ 33,240,918	\$ 33,240,918	\$ -	\$ 361,946	\$ -	\$ 361,946
63	\$ 141,907,635	\$ 29,524,961	\$ 29,524,961	\$ -	\$ 299,056	\$ -	\$ 299,056
64	\$ 121,938,577	\$ 26,074,777	\$ 26,074,777	\$ -	\$ 245,683	\$ -	\$ 245,683
65	\$ 104,049,066	\$ 22,886,784	\$ 22,886,784	\$ -	\$ 200,600	\$ -	\$ 200,600
66	\$ 88,123,223	\$ 19,956,117	\$ 19,956,117	\$ -	\$ 162,710	\$ -	\$ 162,710
67	\$ 74,041,522	\$ 17,277,014	\$ 17,277,014	\$ -	\$ 131,038	\$ -	\$ 131,038
68	\$ 61,681,447	\$ 14,842,563	\$ 14,842,563	\$ -	\$ 104,720	\$ -	\$ 104,720

APPENDIX II

**Table 3: Actuarial Present Values of Projected Benefit Payments (cont.)**

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Actuarial Present Value of Projected Benefit Payments		
			Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments	Present Value of Unfunded Benefit Payments	Present Value of Benefit Payments Using the Single Discount Rate
(a)	(b)	(c)	(d)	(e)	(f) $(d) \div ((1 + 7.50\%)^{((a)+0.5)})$	(g) $(e) \div ((1 + 2.03\%)^{((a)+0.5)})$	(h) $(c) \div ((1 + 7.5\%)^{((a)+0.5)})$
69	\$ 50,918,459	\$ 12,644,834	\$ 12,644,834	\$ -	\$ 82,990	\$ -	\$ 82,990
70	\$ 41,626,901	\$ 10,675,245	\$ 10,675,245	\$ -	\$ 65,175	\$ -	\$ 65,175
71	\$ 33,680,589	\$ 8,924,634	\$ 8,924,634	\$ -	\$ 50,686	\$ -	\$ 50,686
72	\$ 26,953,376	\$ 7,382,785	\$ 7,382,785	\$ -	\$ 39,004	\$ -	\$ 39,004
73	\$ 21,320,245	\$ 6,038,391	\$ 6,038,391	\$ -	\$ 29,676	\$ -	\$ 29,676
74	\$ 16,658,526	\$ 4,879,294	\$ 4,879,294	\$ -	\$ 22,306	\$ -	\$ 22,306
75	\$ 12,848,955	\$ 3,892,152	\$ 3,892,152	\$ -	\$ 16,552	\$ -	\$ 16,552
76	\$ 9,777,158	\$ 3,062,561	\$ 3,062,561	\$ -	\$ 12,115	\$ -	\$ 12,115
77	\$ 7,335,114	\$ 2,375,251	\$ 2,375,251	\$ -	\$ 8,741	\$ -	\$ 8,741
78	\$ 5,422,535	\$ 1,814,414	\$ 1,814,414	\$ -	\$ 6,211	\$ -	\$ 6,211
79	\$ 3,948,001	\$ 1,364,107	\$ 1,364,107	\$ -	\$ 4,344	\$ -	\$ 4,344
80	\$ 2,829,765	\$ 1,008,724	\$ 1,008,724	\$ -	\$ 2,988	\$ -	\$ 2,988
81	\$ 1,996,130	\$ 733,263	\$ 733,263	\$ -	\$ 2,021	\$ -	\$ 2,021
82	\$ 1,385,576	\$ 523,695	\$ 523,695	\$ -	\$ 1,342	\$ -	\$ 1,342
83	\$ 946,516	\$ 367,344	\$ 367,344	\$ -	\$ 876	\$ -	\$ 876
84	\$ 636,635	\$ 253,072	\$ 253,072	\$ -	\$ 561	\$ -	\$ 561
85	\$ 421,991	\$ 171,279	\$ 171,279	\$ -	\$ 353	\$ -	\$ 353
86	\$ 276,055	\$ 113,952	\$ 113,952	\$ -	\$ 219	\$ -	\$ 219
87	\$ 178,611	\$ 74,633	\$ 74,633	\$ -	\$ 133	\$ -	\$ 133
88	\$ 114,625	\$ 48,233	\$ 48,233	\$ -	\$ 80	\$ -	\$ 80
89	\$ 73,213	\$ 30,852	\$ 30,852	\$ -	\$ 48	\$ -	\$ 48
90	\$ 46,716	\$ 19,607	\$ 19,607	\$ -	\$ 28	\$ -	\$ 28
91	\$ 29,891	\$ 12,442	\$ 12,442	\$ -	\$ 17	\$ -	\$ 17
92	\$ 19,233	\$ 7,929	\$ 7,929	\$ -	\$ 10	\$ -	\$ 10
93	\$ 12,455	\$ 5,102	\$ 5,102	\$ -	\$ 6	\$ -	\$ 6
94	\$ 8,099	\$ 3,325	\$ 3,325	\$ -	\$ 4	\$ -	\$ 4
95	\$ 5,259	\$ 2,195	\$ 2,195	\$ -	\$ 2	\$ -	\$ 2
96	\$ 3,377	\$ 1,462	\$ 1,462	\$ -	\$ 1	\$ -	\$ 1
97	\$ 2,114	\$ 980	\$ 980	\$ -	\$ 1	\$ -	\$ 1
98	\$ 1,256	\$ 656	\$ 656	\$ -	\$ 1	\$ -	\$ 1
99	\$ 671	\$ 433	\$ 433	\$ -	\$ 0	\$ -	\$ 0
100	\$ 272	\$ 282	\$ 272	\$ 10	\$ 0	\$ -	\$ 0
					2,940,940,132	-	2,940,940,133