

# Burlington Employees' Retirement System

## Report on the Sixty-Third Actuarial Valuation (Revised)

Prepared as of June 30, 2016

April 2017

Revised

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Retirement Board  
Burlington Employees' Retirement System  
Burlington, VT 05401

Members of the Board:

Chapter 24, Article II, Section 24-60 of the Burlington Code of Ordinances provides for actuarial valuations of the assets and liabilities of the Burlington Employees' Retirement System at least once every three years and more often if the Retirement Board so directs.

This revised version of the sixty-third actuarial valuation of the System, prepared as of June 30, 2016, has now been completed and the results are presented in this report, together with the determination of the amount of contributions payable by the City in accordance with the Retirement Board's funding policy. The revision to the report was due to slight revisions to the participant data resulting from a data cleanup process by the city.

Financial disclosures for the System required under GASB Statements Nos. 67 and 68 are provided in separate reports.

The Board of Trustees and staff of the Retirement office may use this report for the review of the operation of the System. The report may also be used in the preparation of BERS' audited financial statements. Use of this report for any other purpose or by anyone other than the Board of Trustees, the staff of the Retirement office or its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. Conduent will not accept any liability for any statement made about the report without prior review by Conduent.

The actuarial assumptions and methods used in this valuation are described in Schedule B.

The results of the valuation are based on the Plan provisions in effect on June 30, 2016. A summary of the System provisions is shown in Schedule C.

Future actuarial measurements may differ significantly from current measurements due 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 methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of future results is beyond the scope of this valuation.

Where presented, references to "funded ratio" and "unfunded actuarial accrued liability" typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded actuarial accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e., purchase annuities to cover) a portion or all of its liabilities.

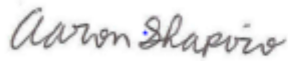
The Table of Contents, which immediately follows, outlines the material contained in the report.

We are Fellows of the Society of Actuaries and Members of the American Academy of Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Respectfully submitted,



David L. Driscoll, FSA, EA, MAAA  
Principal, Consulting Actuary



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# Table of Contents

## Section

I	Summary of Principal Results	1
II	Participant Data	3
III	Assets	4
IV	Comments on Valuation	5
V	Appropriation to be made by the City	6
VI	Experience	8

## Schedule

A	Valuation Balance Sheet	9
B	Outline of Actuarial Assumptions and Methods	10
C	Brief Summary of Principal System Provisions Interpreted for Valuation Purposes	13
D	Tables of Employee Data	19
E	Past Service Amortization Schedule	35
F	Historical and Projected Contributions	37
G	Annual Amortization of the Unfunded Past Service Liability	40

## Section I - Summary of Principal Results

For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below.

Valuation Date	June 30, 2015	June 30, 2016
Class A:		
Number of active members	174	174
Earnable compensation for employees below maximum retirement age	\$ 10,395,873	\$ 11,016,208
Number of retirees and beneficiaries	170	177
Annual retirement benefits	\$ 6,526,001	\$ 7,012,878
Number with deferred vested rights	16	15
Class B:		
Number of active members	668	680
Earnable compensation for employees below maximum retirement age	\$ 34,369,246	\$ 37,091,509
Number of retirees and beneficiaries	444	483
Annual retirement benefits	\$ 6,290,094	\$ 7,486,126
Number with deferred vested rights	367	361
Actuarial Value of Assets:		
Class A	\$ 73,971,751	\$ 76,124,499
Class B	95,117,004	99,621,460
Unfunded Past Service Cost:		
Class A	\$ 30,202,077	\$ 34,195,877
Class B	30,589,459	36,001,443
Contributions for Fiscal Year	2017	2018
Class A:		
Normal Contribution Rate	9.77%	9.39%
Past Service Contribution	\$ 2,857,214	\$ 3,283,133
Class B:		
Normal Contribution Rate	6.27%	5.18%
Past Service Contribution	\$ 2,938,570	\$ 3,531,646

Comments on the valuation results as of June 30, 2016, are given in Section IV and further discussion of the contribution levels is set forth in Section V. Section VI discusses disclosure information for accounting purposes.

Schedule B of this report outlines the full set of actuarial assumptions and methods employed. At the request of the plan sponsor, the asset valuation method was changed from the five-year expected value of assets method used in the June 30, 2015 valuation to the ten-year expected value of assets method. This change decreased the total unfunded actuarial accrued liability (UAAL) by approximately \$2.0 million and the 2018 fiscal year Past Service Contributions by approximately \$81,000 and \$110,000 for Classes A and B, respectively.

Schedule C presents a summary of the principal System provisions as interpreted for the valuation. Effective with this valuation, new provisions were reflected as follows:

- 1- Member contributions for Class B employees who elected to continue to be eligible for early retirement benefits at 2% per year reduction between ages 55 and 65, in accordance with the 2006-09 collective bargaining agreement, will be 4.8% in fiscal year 2017 and 5.2% beginning with fiscal year 2018.
- 2- Member contributions for all other Class B employees will be will be 3.8% in fiscal year 2017 and 4.2% beginning with fiscal year 2018.
- 3- For Class A employees, member contributions will be 11.0% of payroll in fiscal year 2017.
- 4- Any employee who leaves employment and withdraws contributions before vesting shall receive interest on such contributions computed at a rate of 2% per year.
- 5- For all future retirees, cost-of-living adjustments will be subject to an annual maximum of 2.75%.

## Section II - Participant Data

Participant data were furnished by the City of Burlington. Conduent did not audit the data, although they were reviewed for reasonableness and consistency with prior data. The accuracy of the results of the valuation is dependent on the accuracy of the data.

Tables 1 through 4 of Schedule D show the number and annual earnable compensation of active members who were included in the valuation, while Tables 5 through 14 of Schedule D show the number and annual retirement benefits of retirees and beneficiaries included in the valuation. In addition, there are 15 Class A former members and 361 Class B former members entitled to deferred vested benefits.

## Section III – Assets

The amount of assets taken into account in this valuation is based on information reported by the City of Burlington.

Beginning with the valuation prepared as of June 30, 2016, assets are valued on the basis of a ten-year expected average market value method. The operation of this method is described in Schedule B. Based on this method, the actuarial value of assets amount to \$175,745,959. This may be compared to the current market value of \$156,789,373.

As part of the valuation procedure, investment earnings for the year ending June 30, 2016 have been analyzed. Based on the procedures used and certain approximations, the yield for the year has been estimated to be (1.30)% based on the market value of assets and 4.44% based on the actuarial value of assets<sup>1</sup>.

Reconciliation of Market Value of Plan Assets, July 1, 2012 - June 30, 2016 <sup>2</sup>				
	July 1, 2012 - June 30, 2013	July 1, 2013 - June 30, 2014	July 1, 2014 - June 30, 2015	July 1, 2015 - June 30, 2016
Market value at beginning of period	135,532,844	144,020,307	164,216,609	161,715,857
Contributions during period	10,536,854	11,069,722	11,013,999	11,454,130
Total investment income	10,272,974	19,625,825	(557,357)	(2,088,531)
Benefit payments and expenses	(12,322,365)	(10,499,245)	(12,957,394)	(14,292,083)
Market value at end of period	144,020,307	164,216,609	161,715,857	156,789,373
Expected market value at end of period	144,518,540	156,135,228	175,332,807	171,701,654
Investment gain/(loss) for the year	(498,233)	8,081,381	(13,616,950)	(14,912,281)

Year Ended	Investment Gain / (Loss)		Weight		Weighted Gain / (Loss)
June 30, 2016	(14,912,281)	x	0.90	=	(13,421,053)
June 30, 2015	(13,616,950)	x	0.80	=	(10,893,560)
June 30, 2014	8,081,381	x	0.70	=	5,656,967
June 30, 2013	(498,233)	x	0.60	=	<u>(298,940)</u>
					(18,956,586)

Actuarial Value of Assets = Market Value **minus** weighted gain / (loss) = **\$175,745,959**

<sup>1</sup> Before the change to assets valuation method.

<sup>2</sup> Prior year asset information has been adjusted to reflect changes to contributions, benefit payments and expenses, and total investment income based on updated information provided by the City. These adjustments have been reflected in the current year AVA calculation. However, due to the immateriality of the revisions (as noted by the plan's auditor), prior year results (other than deferred asset gains and losses) and corresponding actuarial valuation reports have not been adjusted.



## Section IV - Comments on Valuation

The method used to determine Normal Cost and Accrued Actuarial Liability is the Entry Age Normal Cost Method. Under the Entry Age Normal Cost Method, an annual Normal Cost is determined for each covered active Member, which is the contribution required to provide all the projected pension benefits assuming this contribution is payable over a period ending on the date of retirement (separation from active service) expressed as a level percentage of compensation. The Actuarial Accrued Liability is determined as the excess of the total present value of all pension benefits over the total present value of future Normal Costs. The Unfunded Actuarial Accrued Liability as of the valuation date is determined as the excess of the Actuarial Accrued Liability over the assets of the Fund. The Normal Cost and Accrued Actuarial Liability are derived by making certain assumptions as to the rates of interest, mortality, turnover, etc., which are assumed to reflect experience for many years into the future. Since actual experience will differ from the assumptions, the costs determined must be regarded as estimates of the true costs of the Plan. The effects of any actuarial gains or losses are immediately reflected in the Unfunded Actuarial Accrued Liability and the Normal Cost. The unfunded actuarial accrued liability is amortized in level dollar amounts over periods up to 30 years.

Schedule A of this report contains the valuation balance sheet, which shows the present and prospective assets and liabilities of the System as of June 30, 2016. The valuation balance sheet shows that as of June 30, 2016, the System has accrued liabilities of \$245,943,279. Of this amount, \$158,296,775 represents the present value of benefits payable on account of retired members, beneficiaries and former members entitled to deferred vested benefits and \$87,646,504 represents the accrued liability for prospective benefits payable on account of active members. Against these liabilities the System has actuarial assets of \$175,745,959. The difference between the total liabilities of \$245,943,279 and the assets of \$175,745,959 is \$70,197,320, which represents the unfunded past service cost as of June 30, 2016. The System's unfunded actuarial accrued liability increased by \$9,405,784 from its level of \$60,791,536 as of June 30, 2015. An analysis by source of this increase is presented in Section VI of this report. Schedule A contains a breakdown of the assets and liabilities described above by membership class.

## Section V - Appropriation to be made by the City

Article II, Division 1, Section 24 - 32 of the Ordinances governing the operation of the System provides that the Retirement Board shall certify to the Board of Finance the amounts payable by the City to the System, including an estimated amount required for operating expenses.

The contribution by the City, excluding operating expenses, consists of:

- (i) a normal contribution to cover the cost of benefits expected to accrue under the Plan during the fiscal year following the valuation date, reduced by required Class A member contributions equal, on average to 11.00% of compensation and required Class B member contributions equal, on average to 4.24% of compensation on average, plus
- (ii) a past service contribution to liquidate the unfunded past service cost over a 30-year period from the date of establishment in accordance with the policy adopted by the Retirement Board. The initial unfunded past service cost to be amortized over 30 years was that in existence as of June 30, 2004.

Based on the latest valuation results and the adopted funding policy, the following table sets forth the basis for determining the City's contributions for the fiscal year ending June 30, 2018.

## Contributions payable by the City to the system

Contribution	Amount	Percent of Compensation
Class A		
Normal	\$ 1,072,004	9.39%*
Past Service	<u>3,283,133</u>	28.77%*
Total	\$ 4,355,137	
Class B		
Normal	\$ 2,089,872	5.18%*
Past Service	<u>3,531,646</u>	8.75%*
Total	\$ 5,621,518	

\* Estimated based on fiscal year-end 2018 budget payrolls of \$11,412,022 and \$40,383,678 for Class A and Class B, respectively.

The recommended normal contribution rates in the table above should be applied to the respective earnable compensation of Class A and Class B members of the System for the fiscal year ending 2018 in order to determine the required appropriations for currently accruing benefits. In addition, the amount estimated to be required for operating expenses of the System is to be included in the certification of the Retirement Board. Further, the table below incorporates the split of the Class B contribution between Burlington Electric Department (BED), Burlington School District (BSD), and other participating entities.

Contribution	Amount	Percent of Compensation
Burlington Electric Department (BED) - Class B		
Normal	\$ 476,088	5.12%
Past Service	<u>1,207,758</u>	13.00%
Total	\$ 1,683,846	
Burlington School District (BSD) - Class B		
Normal	\$ 639,940	7.17%
Past Service	<u>625,166</u>	7.00%
Total	\$ 1,265,106	
Other Class B Covered Employees		
Normal	\$ 973,844	4.39%
Past Service	<u>1,698,722</u>	7.66%
Total	\$ 2,672,566	

Schedule E provides a development of the past service contribution for Class A and B members of the System for the fiscal year ending 2018.

Schedule F presents historical and projected required City contributions to the Retirement System assuming all actuarial assumptions are realized. No future liability gains or losses are reflected and assets are projected to earn 8% per annum. The projected payroll is assumed to increase 3.5% per annum. The actual annual contributions required by the City will be based upon future actuarial valuations.

## Section VI – Experience

Records are maintained whereby the actual experience of active and retired members is compared to that expected on the basis of the tables adopted by the Retirement Board. In this way, deviations in the experience from that anticipated will be noted and any adjustments believed necessary will be brought to the attention of the Retirement Board in the experience studies required by the Burlington Ordinances.

During the last year, the total unfunded actuarial accrued liability (UAAL) was expected to decrease from \$60,791,536 to \$59,507,205. The actual UAAL at the end of the year was \$70,197,320. The chart below reconciles the expected to actual UAAL. The sources of changes were a \$7,185,984 liability loss, a \$5,907,922 investment loss, \$414,295 gain due to plan provisions update and \$(1,989,496) gain due assets valuation change method.

The sources of the (Gains)/Losses are as follows:

Actual UAAL as of June 30, 2015		\$ 60,791,536
Expected UAAL (Prior to Changes) as of June 30, 2016		\$ 59,507,205
Salary Increases	\$ 2,697,800	
New Participants	249,072	
Active - Retirements	1,802,498	
Active - Terminations	174,645	
Active – Mortality	36,166	
Active – Disabilities	(764,795)	
Retiree Mortality	554,481	
Deferred Vested - Retirements	1,780,480	
Other (Data Corrections, etc.)	655,637	
Total Liability (Gain)/Loss		\$ 7,185,984
Investment (Gain)/Loss		5,907,922
Newly Eligible Employees		0
Updated plan provisions		(414,295)
Change in Asset Valuation Method		(1,989,496)
Total Change in UAAL		<u>\$ 10,690,115</u>
Actual UAAL as of June 30, 2016		\$ 70,197,320

The reconciliation of the UAAL is as follows:

	Class A Members	Class B Members	Total System
Total UAAL as of June 30, 2015	\$ 30,202,077	\$ 30,589,459	\$ 60,791,536
Interest Adjustment	(445,899)	(770,183)	(1,216,082)
FY 2015-16 Experience Base	<u>4,439,699</u>	<u>6,182,167</u>	<u>10,621,866</u>
Total UAAL as of June 30, 2016	\$ 34,195,877	\$ 36,001,443	\$ 70,197,320

## Schedule A

### Valuation Balance Sheet Showing the Assets and Liabilities Accrued Under the Burlington Employees' Retirement System as of June 30, 2016

#### Assets

	Class A Members	Class B Members	Total System
Valuation Assets	\$ 76,124,499	\$ 99,621,460	\$ 175,745,959
Unfunded past service cost	<u>34,195,877</u>	<u>36,001,443</u>	<u>70,197,320</u>
Total Assets	<u>\$ 110,320,376</u>	<u>\$ 135,622,903</u>	<u>\$ 245,943,279</u>

#### Liabilities

Present value of benefits payable on account of retired members, beneficiaries and members entitled to deferred vested benefits	\$ 78,076,884	\$ 80,219,891	\$ 158,296,775
Present value of prospective benefits accrued to date on account of present active members	<u>32,243,492</u>	<u>55,403,012</u>	<u>87,646,504</u>
Total Liabilities	<u>\$ 110,320,376</u>	<u>\$ 135,622,903</u>	<u>\$ 245,943,279</u>

## Schedule B

### Outline of Actuarial Assumptions and Methods for Determination of Contribution Amounts

#### Basis for Assumptions

As required under Part II, Section 24-61 of the Burlington Code of Ordinances, experience studies are performed at least once in every five-year period. Schedule B of this report outlines the full set of actuarial assumptions and methods employed in the current valuation. The assumptions were based on a recent experience study covering the period from July 1, 2007, through June 30, 2012. The assumptions were adopted by the Board on the basis of the study.

#### Interest Rate

8% per annum, compounded annually.

#### Separations before Normal Retirement

Representative values of the assumed annual rates of withdrawal and vesting, early service retirement, death and disability are as follows:

Class A Members				
Age	Withdrawal and Vesting	Early Service Retirement	Death <sup>1</sup>	Disability <sup>1</sup>
20	14.0%			
25	7.0		.1%	.2%
30	6.0		.1	.3
35	6.0		.1	.4
40	5.0		.1	.5
42	4.6		.1	.6
45	4.0	15.0%	.1	.7
50	3.0	15.0	.2	1.3
53	1.2	20.0	.3	1.8
54	0.6	20.0	.3	2.0

Class B Members				
Age	Withdrawal and Vesting <sup>2</sup>	Early Service Retirement	Death <sup>1</sup>	Disability <sup>1</sup>
25	15.0%		.1%	.1%
30	12.0		.1	.1
35	10.0		.1	.1
40	4.0		.1	.2
45	4.0		.1	.3
50	4.0		.2	.5
55	4.0	5.0%	.4	.9
60	4.0	10.0	.6	1.7
61	4.0	15.0	.7	2.1
62	4.0	20.0	.8	2.5
63	4.0	25.0	1.0	2.9
64	4.0	25.0	1.1	3.4

<sup>1</sup> Rates reflect both ordinary and accidental occurrences.

<sup>2</sup> Rates are assumed to be higher during the first three years of membership (i.e., 27.5% at age 25, 22% at ages 30 and 35, 16.5% at ages 40 - 64).

## Schedule B (continued)

### Outline of Actuarial Assumptions and Methods for Determination of Contribution Amounts

#### Normal Service Retirement

The representative values of the assumed rates of normal service retirement are as follows:

Age	Class A	Age	Class B
55	20.0%	65	25.0%
56	20.0	66	20.0
57	20.0	67	25.0
58	20.0	68	20.0
59	20.0	69	25.0
60	100.0	70	100.0

#### Benefit Commencement after Separation

Class A vested terminations are assumed to commence benefits at age 55. Class B vested terminations prior to June 30, 2000 are assumed to commence at age 65. Class B vested retirements after June 30, 2000 are assumed to commence at age 55 with a reduced benefit.

#### Salary Increases

Representative values of the assumed annual rates of future salary increase are as follows:

Age	Class A&B
25	8.8%
30	7.0
35	5.6
40	4.9
45	4.6
50	4.3
55	4.0
59	3.9
60	3.9
65	3.8
69	3.8

For Class A Firemen and Class B AFSCME employees, salary increases rates as described above were reduced by 2% during fiscal year 2015, 1.5% during fiscal 2016, 0.5% during fiscal 2017 and 0.25% during fiscal 2018 to reflect lower short term salary increase per the collective bargaining agreements in place.

#### Deaths after Retirement

105% of the probabilities in the RP-2000 Combined Mortality Tables for Males and Females with full generational projection by Scale BB.

#### Future Expenses

No provisions made.

## Schedule B (continued)

### Outline of Actuarial Assumptions and Methods for Determination of Contribution Amounts

#### Adjustments to Allowances

Cost-of-living increases averaging 3% per year were assumed. For employees retiring after 7/1/16, cost-of-living increases were capped at 2.75%.

#### Accrual Rate Election

85% of retiring members are assumed to elect the no-COLA accrual rate and 15% of retiring members are assumed to elect the full-COLA accrual rate.

#### Funding Method

Entry Age Normal with level percentage of salary. Gains (losses), as they occur, reduce (increase) the unfunded past service cost.

#### Asset Valuation Method

Based on a ten-year expected value of assets method in which actuarial assets are set equal to the market value of assets as of the valuation date plus:

- i) nine-tenths of the difference between the expected return on market assets and the actual return on market assets during the year preceding the valuation;
- ii) eight-tenths of the difference between the expected return on market assets and the actual return on market assets during the second year preceding the valuation;
- iii) seven-tenths of the difference between the expected return on market assets and the actual return on market assets during the third year preceding the valuation; and
- iv) six-tenths of the difference between the expected return on market assets and the actual return on market assets during the fourth year preceding the valuation.

Expected return is equal to a year of expected investment earnings (based on the valuation interest rate) on the market value of assets as of the beginning of the year and the cash flow (contributions minus benefit payments) during the year, assuming mid-year contributions and benefit payments.

Difference between the expected return on market assets and the actual return on market assets for the 2011 fiscal year and prior are ignored for this purpose.

#### Revisions from Prior Year Assumptions

The asset valuation method changed from the five-year expected value of assets method to the ten-year expected value of assets method. This change decreased the UAAL by roughly \$2.0M and decreased the Past Service Contribution by roughly \$81k and \$110k for Classes A and B, respectively.

#### Miscellaneous

The valuation was prepared on an ongoing-plan basis. The valuation was based on members in the System as of the valuation date and did not take future members into account. No provision has been made for contingent liabilities with respect to non-vested terminated members who may be reemployed. The valuation assumptions include an anticipated future annual rate of inflation of approximately 3% a year.



# Schedule C

## Brief Summary of Principal System Provisions as Interpreted for Valuation Purposes

### System Name

Burlington Employees' Retirement System

### Effective Date

July 1, 1954.

### Average Final Compensation (AFC)

For Class A Police non-union employees, Class A Police employees hired after January 10, 2011, Class A Fire employees hired after October 7, 2011 or Class B AFSCME Local 1343 employees hired after June 7, 2011, or Class B IBEW Local 300 employees hired after October 30, 2012, it is the average earnable compensation during the highest 5 non-overlapping 12-month periods. For all others, it is the average earnable compensation during the highest 3 non-overlapping 12-month periods.

### Membership Eligibility

Regular employees of the City of Burlington excluding elective officers other than the mayor and excluding teachers other than certain teachers employed prior to July 1, 1947.

### Membership Classification

#### Class A

Members of the Fire and Police Departments not including clerical employees.

#### Class B

All other members.

### Service Retirement

#### Eligibility

##### Class A

For Police employees hired after January 10, 2011, age 40 and 20 years of creditable service. For Fire employees hired after October 7, 2011, age 45 and 20 years of creditable service. For all others, age 45 and 7 years of creditable service. Compulsory at age 60.

##### Class B

Age 55 and 7 years of creditable service.

#### Amount of Benefit

##### Class A

For Fire employees hired before January 1, 2007 and Police employees hired before July 1, 2006, 2.75% of AFC times creditable service not in excess of 25 years plus .5% of AFC times creditable service between 25 and 35 years. For Police employees hired after January 10, 2011, 2.5% of AFC times creditable service not in excess of 20 years plus .5% of AFC times creditable service between 20 and 25 years. For all others, 2.65% of AFC times creditable service not in excess of 25 years plus .5% of AFC times creditable service between 25 and 35 years. Benefit increased by Cost of Living Adjustment detailed below.

In lieu of this benefit, at the time of retirement, a member hired prior to July 1, 2006 may choose either (i) an accrual rate of 3.25% for the first 25 years of creditable service, plus an accrual of .5% for creditable service

## Schedule C (continued)

### Brief Summary of Principal System Provisions as Interpreted for Valuation Purposes

between 25 and 35 years, and a Cost of Living Adjustment equal to one half of the Cost of Living Adjustment detailed below, or (ii) an accrual rate of 3.8% for all years of service prior to June 30, 2006 for the first 25 years, an accrual rate of 3.6% for all years of service commencing July 1, 2006 for the first 25 years, plus an accrual rate of .5% for creditable service between 25 and 35 years, and no Cost of Living Adjustment.

A Fire employee hired on or after January 1, 2007 or a Police employee hired on or after July 1, 2006 may only select a benefit with a full Cost of Living Adjustment.

For Police employees hired after January 10, 2011 or Fire employees hired after October 7, 2011, the above benefits based on AFC and creditable service at retirement are reduced actuarially for the period of time by which retirement precedes age 50.

For Fire employees hired on or before October 7, 2011 who retire on July 1, 2013 or later, the above benefits based on AFC and creditable service at retirement are reduced actuarially until age 48 for the period of time by which retirement precedes age 55.

For all others, prior to age 55, the above benefit based on AFC and creditable service at retirement is reduced actuarially for the period of time by which retirement precedes the earlier of 25 years of creditable service and age 55. For employees who terminate with 20 to 25 years of creditable service the above benefit based on AFC and creditable service at retirement is reduced by 1.82% for each year that creditable service is less than 25 years.

#### Class B

For employees hired prior to July 1, 2006: Age 65 and older, the greater of (i) 1.6% of AFC (at age 65) times creditable service not in excess of 25 years plus .5% of AFC (at age 65) times creditable service in excess of 25 years or (ii) the actuarial equivalent of the benefit determined at age 65. This benefit will be increased by the Cost of Living Adjustment detailed below.

For employees hired on or after July 1, 2006: Age 65 and older, the greater of (i) 1.4% of AFC (at age 65) times creditable service not in excess of 25 years plus .5% of AFC (at age 65) times creditable service in excess of 25 years or (ii) the actuarial equivalent of the benefit determined at age 65. This benefit will be increased by the Cost of Living Adjustment detailed below.

In lieu of this benefit, at the time of retirement, a member may choose (i) an accrual rate of 1.9% for all years of service prior to June 30, 2006 for the first 25 years, an accrual rate of 1.8% for all years of service commencing July 1, 2006 for the first 25 years, plus an accrual of .5% for creditable service in excess of 25 years, and a Cost of Living Adjustment equal to one-half of the Cost of Living Adjustment detailed below, or (ii) an accrual rate of 2.2% for all years of service prior to June 30, 2006 for the first 25 years, an accrual rate of 2.0% for all years of service commencing July 1, 2006 for the first 25 years, plus an accrual of .5% for creditable service in excess of 25 years, and no Cost of Living Adjustment.

Except for employees detailed below, prior to age 65, the above benefit based on AFC and creditable service at retirement reduced by 2% for each year that retirement precedes age 65. For Class B IBEW employees hired before May 1, 2008, who elect a contribution rate of 4% is elected the early reduction factor is 2% for each year the retirement precedes age 65. For Class B IBEW employees hired before May 1, 2008, who elect a contribution rate of 3% the benefit is reduced by a factor which varies with age. The factor equals 1 at 65 and .4 at 50.

## Schedule C (continued)

### Brief Summary of Principal System Provisions as Interpreted for Valuation Purposes

For Class B IBEW employees hired after May 4, 2008, the benefit is reduced by a factor which varies by age. The factor equals 1 at 65 but is equal to .356 at age 55.

For Class B AFSCME Local 1343 employees hired before January 1, 2006 that meet the Rule of 82 by December 7, 2011 but retire later than December 7, 2011, the reduction is 4% per year at ages 55 to 59 for each year under age 65, and the standard 2% per year reduction for ages 60 to 65. For other Class B AFSCME Local 1343 employees retiring after December 7, 2011, there will be full actuarial reduction from ages 55 to 59 and the standard 2% per year reduction for ages 60 to 65.

### Cost of Living Adjustment

Benefits increase annually by changes in the Consumer Price Index of more than 1%. For Class A Firemen and Class B AFSCME employees retiring after 11/2/15, the maximum annual increase is 2.75%. For all other participants, the maximum annual increase is 6%. Increases are not applicable to deferred vested benefit prior to commencement, survivor income benefit, disability benefit prior to normal retirement age or members who choose to have no cost of living adjustment. For all employees retiring after July 1, 2016, the maximum annual increase is 2.75%.

### Service Adjustment

Class A service for calculation of benefits shall be adjusted such that any Class A employee shall be granted 1.07 years of credit for each year in which the employee worked prior to July 1, 1996, and 1.17 years thereafter, in a position regularly assigned a workweek consisting on average of fifty-three or more hours of work per week.

### Disability Retirement

#### Eligibility

All Members. Permanently disabled. Class B AFSCME Local 1343 employees must have 2 years of creditable service to be eligible for disabilities that are not work-related. Class A Fire employees hired after October 7, 2011 must have 1 year of creditable service to be eligible for disabilities that are not work-related. All other employees are immediately eligible.

#### Amount of Benefit

A benefit payable until normal service retirement eligibility (Class A - age 55 and 7 years of creditable service, Class B - age 65 and 7 years of creditable service). For Class A Fire employees hired after October 7, 2011, it is equal to 66 2/3% of the member's earnable compensation less workmen's compensation. For Class B IBEW employees hired after October 20, 2012, it is equal to 66 2/3% of the member's earnable compensation less workmen's compensation. For Class B AFSCME employees, it is equal to 66 2/3% of the member's earnable compensation less workmen's compensation and Social Security. For all others, it is equal to 75% of the member's earnable compensation less workmen's compensation and, in the case of Class B, less Social Security.

After normal service retirement eligibility, a service retirement benefit based on AFC at retirement and creditable service at normal service retirement eligibility, including the period while permanently disabled and receiving a disability benefit from the System.

## Schedule C (continued)

### Brief Summary of Principal System Provisions as Interpreted for Valuation Purposes

#### Accidental Death

##### Eligibility

Class A only. Death due to accident while in the performance of duty.

##### Amount of Benefit

A benefit to the spouse until death or remarriage of the greater of (i) 55% of AFC, and (ii) the participant's current accrued retirement benefit. Upon death or remarriage of the spouse, the benefit will be payable to children until age 21.

#### Survivor Income

##### Eligibility

All Members. Death in active service.

##### Amount of Benefit

###### Class A

30% of compensation during the July preceding death payable to spouse until earlier of death or 2nd anniversary of remarriage. An additional 5% per unmarried child under 21 (maximum additional 10%) is payable until benefits cease or children no longer eligible. If there is no spouse or spouse dies, the benefit is payable to unmarried children under age 21 until earlier of death, marriage or age 21.

###### Class B

30% of compensation during the July preceding death payable to spouse until earlier of death, 2nd anniversary of remarriage or age 62. Upon the spouse's attainment of age 62 (if not remarried) a benefit based on the 50% Joint and Survivor form of payment will be paid to the spouse for life. If there is no spouse or spouse dies, the benefit is payable to unmarried children under age 21 until earlier of death, marriage or age 21.

#### Return of Contributions

Accumulated contributions returned upon separation with no vested benefits under the plan or upon death with no accidental death benefit payable.

Upon death of a retired member, the excess of his contribution at retirement over the benefits paid will be paid to his beneficiary or estate.

#### Vested Retirement

##### Eligibility

For Class A Fire and Class B AFSCME employees, 5 years of creditable service unless currently vested, all others, 3 years of creditable service

##### Vesting percentage

For Class A Fire and Class B AFSCME employees, 100% after 5 years, and 0% before that unless already partially vested as of July 1, 2015 under the prior vesting schedule.

For all others, a percentage grading from 20% after completion of 3 years of service to 100% after completion of 7 years of service.

## Schedule C (continued)

### Brief Summary of Principal System Provisions as Interpreted for Valuation Purposes

#### Amount of Benefit

##### Class A

Vesting percentage times the benefit calculated using AFC and creditable service at termination. The benefit is payable commencing at age 55. Member may elect early receipt with reduction as for service retirement prior to age 55.

##### Class B

Vesting percentage times the benefit calculated using AFC and creditable service at termination. The benefit is payable commencing at age 65. Member may elect early receipt with reduction as for service retirement prior to age 65.

### Survivor Spouse's Pension

#### Eligibility

All Members. Death of a terminated member entitled to a vested retirement benefit prior to commencement of such benefit.

#### Amount of Benefit

50% of reduced accrued benefit reflecting the 50% Joint and Survivor form of payment (ages as of date payments commence) payable at member's early retirement date.

Spouse may elect to receive payments later than member's early retirement date with no reduction for receipt at member's 65th birthday.

### Offsets on Benefits

Disability and accidental death benefits are offset by workmen's compensation paid for the same disability or death.

### Contributions

#### By Members

##### Class A

11.0% of earnable compensation for Class A employees for the first 35 years of creditable service, none thereafter.

##### Class B

-Member contributions for Class B employees, who elected to continue to be eligible for early retirement benefits at 2% per year deduction between ages 55 and 65, in accordance with the 2006-09 collective bargaining agreement will be 4.8% in fiscal year 2017, and 5.2% beginning with fiscal year 2018.

-Member contributions for all other Class B employees will be will be 3.8% in fiscal year 2017, and 4.2% beginning with fiscal year 2018.

#### By City

Remainder necessary to fund for the benefits of the System on an actuarial basis. With the exception that if actuarially determined employer contribution exceeds \$9 million for fiscal year 2017, all the employee contributions will automatically increase up to 1% of wages and then re-set at the end of the year. If the actuarially determined employer contribution exceeds \$9 million for fiscal year 2018, the contribution will increase up to 2% and then re-set; further, if those increases are not enough to keep the ADEC at \$9M, the City may reopen the financial components of the Agreement (Backup trigger).

## Schedule C (continued)

### Brief Summary of Principal System Provisions as Interpreted for Valuation Purposes

#### Revisions from Prior Year Plan Provisions

Effective with this valuation, provisions under the new contracts for covered employees were reflected as follows:

- Member contributions for Class B employees, who elected to continue to be eligible for early retirement benefits at 2% per year deduction between ages 55 and 65, in accordance with the 2006-09 collective bargaining agreement will be 4.8% in fiscal year 2017, and 5.2% beginning with fiscal year 2018.
- Member contributions for all other Class B employees will be will be 3.8% in fiscal year 2017, and 4.2% beginning with fiscal year 2018.
- All employees who leave and withdraw their contributions will now receive interest of 2% per year on their contribution balances.
- Cost-of-living adjustments for all future retirees will be subject to a maximum of 2.75%

## Schedule D

**Table 1: The Number and Annual Earnable Compensation of Active Members Distributed by Age as of June 30, 2016**

### Class A Members

Age	Male		Female	
	Number	Amount	Number	Amount
22	2	86,799	1	47,948
23	2	100,798		
24	7	335,599		
25	2	108,180		
26	9	456,347		
27	5	266,941		
28	5	280,540		
29	9	500,009	1	59,407
30	3	153,396	1	59,863
31	6	340,611		
32	9	524,459	2	118,819
33	4	224,056	1	61,106
34	6	350,565		
35	11	703,874	1	53,179
36	7	460,463	3	187,825
37	5	307,966	1	55,906
38	5	317,003		
39	5	361,114		
40	5	391,738		
41	11	828,875		
42	5	355,178	1	60,378
43	5	350,051		
44	5	365,155		
45	4	287,458		
46	5	404,949		
47	4	250,736		
48	5	405,246		
49	1	71,347		
50	3	205,576		
51	1	62,946		
52	1	70,355		
53			1	98,425
55	1	70,356		
57	1	76,531		
59	1	67,778		
60			1	70,355
TOTAL	160	10,142,997	14	873,211

## Schedule D (continued)

**Table 2: The Number and Annual Earnable Compensation of Active Members Distributed by Age as of June 30, 2016**

### Class B Members

Age	Male		Female	
	Number	Amount	Number	Amount
19				
20				
21			1	14,169
22	2	69,406	1	35,718
23	1	57,591	1	41,387
24	3	126,777	6	199,835
25	1	42,186	4	113,190
26	8	342,161	6	237,956
27	8	341,292	7	246,555
28	5	234,751	5	206,225
29	5	278,755	3	103,800
30	7	377,711	4	167,249
31	4	223,375	3	157,168
32	6	304,356	11	511,306
33	5	273,109	5	230,248
34	5	240,644	5	260,985
35	13	910,614	9	397,193
36	9	460,398	8	463,029
37	4	125,360	6	345,459
38	7	445,438	1	51,199
39	10	423,867	7	380,003
40	2	103,031	6	359,080
41	10	668,045	6	294,204
42	9	566,419	4	146,288
43	8	370,291	5	235,762
44	8	435,411	5	271,405
45	13	783,047	8	427,531
46	14	854,649	9	376,572
47	14	844,750	6	284,331
48	14	726,812	3	240,544
49	9	684,534	14	541,606
50	11	688,327	9	444,520
51	8	603,459	6	320,158



## Schedule D (continued)

**Table 2: The Number and Annual Earnable Compensation of Active Members Distributed by Age as of June 30, 2016**

**Class B Members (continued)**

Age	Male		Female	
	Number	Amount	Number	Amount
52	14	884,531	6	256,193
53	11	641,756	14	744,519
54	20	1,408,926	8	322,273
55	11	683,043	10	598,258
56	17	1,091,413	12	616,912
57	7	479,099	7	412,127
58	18	1,123,299	10	493,876
59	14	710,470	4	223,213
60	8	460,378	6	393,291
61	10	686,025	6	315,579
62	10	648,315	6	271,796
63	8	547,669	6	277,315
64	9	525,703	4	217,089
65	5	339,964	3	161,937
66	1	34,871	3	111,874
67	3	175,491	2	61,048
68	2	135,029		
69	2	66,656		
72	2	100,261		
73			1	47,348
75	1	51,585		
77	1	39,498		
78				
79				
80				
81				
82				
83	1	21,634		
<b>TOTAL</b>	<b>398</b>	<b>23,462,184</b>	<b>282</b>	<b>13,629,325</b>

## Schedule D (continued)

**Table 3: The Number and Annual Earnable Compensation of Active Members Distributed by Years of Service as of June 30, 2016**

### Class A Members

Years of Service	Male		Female	
	Number	Amount	Number	Amount
0	13	717,596	1	47,948
1	9	446,189	1	59,863
2	16	806,160		
3	7	380,897	1	53,179
4	12	673,330		
5	10	591,453	1	55,906
6	4	235,443		
7	8	494,460	3	178,226
8	7	432,221	2	120,756
9	3	186,346	1	61,106
10	2	124,450	1	63,197
11	4	276,432		
12	6	385,742	1	64,250
13	4	275,296		
14	12	818,860	1	98,425
15	7	487,939		
16	10	777,279		
17	7	532,578	1	70,355
18	9	688,316		
19	4	308,998		
20	1	97,113		
21	3	254,422		
22				
23				
24				
25	1	83,699		
26				
27	1	67,778		
<b>TOTAL</b>	<b>160</b>	<b>\$10,142,997</b>	<b>14</b>	<b>\$873,211</b>

## Schedule D (continued)

**Table 4: The Number and Annual Earnable Compensation of Active Members Distributed by Years of Service as of June 30, 2016**

### Class B Members

Years of Service	Number	Male		Female	
		Number	Amount	Number	Amount
0	34		1,825,487	44	1,888,619
1	31		1,588,073	35	1,487,932
2	27		1,443,307	17	698,790
3	35		2,047,474	19	835,877
4	19		927,821	20	1,111,369
5	12		738,200	14	604,243
6	15		871,426	11	516,491
7	17		1,076,090	8	436,311
8	16		938,016	6	279,618
9	14		894,119	9	462,876
10	13		791,714	9	368,245
11	14		691,219	10	491,140
12	7		336,112	4	250,445
13	13		754,912	7	378,786
14	8		452,172	3	164,280
15	12		677,873	10	649,865
16	5		256,207	7	306,925
17	16		920,426	9	449,700
18	5		411,119	4	144,273
19	7		417,398	3	209,598
20	5		393,249	4	171,495
21	9		586,977	7	424,963
22	3		255,461	1	66,307
23	2		257,094	2	60,474
24				1	53,015
25	5		313,040		
26	4		282,655	1	75,739
27	3		221,807	1	60,186
28	6		383,825	4	263,269
29	4		251,585	3	206,281
30	3		184,433		
31	1		58,273	1	54,755
32	8		627,426	1	50,366
33	2		126,434		
34	5		323,352	1	48,542
35	3		218,366	1	53,106
36	3		211,500		
37	6		378,841		
38	3		174,466	1	53,015
39	1		51,065	1	68,605
40	1		51,585	2	124,501
43				1	59,324
49	1		51,585		
TOTAL	398		23,462,184	282	13,629,325

## Schedule D (continued)

**Table 5: The Number and Annual Retirement Benefits of Retirees Distributed by Age as of June 30, 2016**

**Class A Members**

**Service Retirements**

Age	Male		Female	
	Number	Amount	Number	Amount
44			1	48,395
45	1	41,411		
46	3	206,710		
47	3	204,960	1	61,917
48	2	94,205		
49	5	274,857		
50	6	361,799		
51	5	261,732	1	47,201
52	4	254,144		
53	6	239,863		
54	4	194,007	1	69,974
55	7	427,828	1	24,473
56	4	188,542	1	30,952
57	5	178,915		
58	5	198,625		
59	5	172,063		
60	7	253,820		
61	7	380,184		
62	1	28,572		
63	5	199,178		
64	2	102,261		
65	3	101,353		
66	9	302,538	1	8,395
67	6	216,200	1	2,075
68	5	128,355		
69	6	250,694		
70	5	161,792		
71	2	80,611		
72	7	268,589		
73	4	138,323		
74	1	31,042		
75	4	125,435		
76	1	20,306		

## Schedule D (continued)

**Table 5: The Number and Annual Retirement Benefits of Retirees Distributed by Age as of June 30, 2016**

**Class A Members (continued)  
Service Retirements**

Age	Male		Female	
	Number	Amount	Number	Amount
77	1	1,109		
80	1	43,668		
81	1	42,309		
82	1	34,942		
83	1	27,738		
84	1	27,175		
85	1	25,652		
86	1	23,100		
90	1	29,913		
TOTAL	149	6,344,520	8	293,383

## Schedule D (continued)

**Table 6: The Number and Annual Retirement Benefits of Retirees Distributed by Age as of June 30, 2016**

**Class B Members  
Service Retirements**

Age	Male		Female	
	Number	Amount	Number	Amount
55	2	34,417	1	6,587
56	1	6,385	2	32,695
57	2	53,667		
58	3	50,565	3	53,442
59	1	70,701	2	16,121
60	7	157,859	4	53,591
61	5	110,427	3	40,327
62	5	122,142	4	68,417
63	6	197,116	7	62,626
64	15	482,034	4	54,703
65	9	209,931	10	205,094
66	24	485,233	13	184,021
67	21	397,271	19	282,316
68	14	266,169	6	86,441
69	16	263,557	7	81,866
70	9	121,970	8	136,102
71	9	154,135	3	14,831
72	4	40,385	2	26,635
73	6	105,521	6	50,914
74	11	147,747	12	169,448
75	6	81,998	7	151,899
76	1	19,557	6	74,537
77	5	40,321	1	1,357
78	7	91,740	4	68,779
79	6	126,856	4	68,724
80	4	64,799	4	34,322
81	3	21,105	4	22,663
82	5	55,146	2	12,772
83	1	17,694	1	13,624
84	5	71,424	3	52,334
85	2	18,534	2	2,845
86			4	14,511
87	1	15,457	1	7,664
88	1	8,642	1	448
89	1	11,284		
90	1	5,114	1	12,393
91			1	2,047
93			1	2,340
96			1	11,283
<b>TOTAL</b>	<b>219</b>	<b>\$4,126,904</b>	<b>164</b>	<b>2,180,718</b>

## Schedule D (continued)

Table 7: The Number and Annual Retirement Benefits of Retirees Distributed by Age as of June 30, 2016

Class A Members

Disability Retirements

Age	Male		Female	
	Number	Amount	Number	Amount
48	1	34,800		
53	1	27,013		
69	1	16,670		
TOTAL	3	\$78,483		

## Schedule D (continued)

**Table 8: The Number and Annual Retirement Benefits of Retirees Distributed by Age as of June 30, 2016**

**Class B Members  
Disability Retirements**

Age	Male		Female	
	Number	Amount	Number	Amount
51	1	7,007		
52			1	10,793
54	1	6,037		
55	1	40,779		
56	2	21,190	3	59,044
57	3	63,093	1	15,509
58	2	45,814	1	872
60	1	38,866	1	23,518
61	2	37,707	2	46,542
63	4	77,370	1	5,010
64	3	55,881		
65	1	25,138	1	19,378
TOTAL	21	\$418,883	11	180,665



## Schedule D (continued)

**Table 9: The Number and Annual Retirement Benefits of Beneficiaries of Retirees Distributed by Age as of June 30, 2016**

**Class A Members**

**Beneficiaries of Deceased Members**

Age	Male		Female	
	Number	Amount	Number	Amount
21	1	15,819		
23			1	7,731
46			1	23,138
52			1	47,643
53			1	20,727
58			1	6,782
60			1	8,499
63			1	6,916
72			2	26,449
73			1	19,749
74			1	30,365
75			1	12,136
81			1	19,134
84	1	19,088		
86			1	13,691
94			1	18,624
<b>TOTAL</b>	<b>2</b>	<b>\$34,907</b>	<b>15</b>	<b>\$261,585</b>

## Schedule D (continued)

**Table 10: The Number and Annual Retirement Benefits of Beneficiaries of Retirees Distributed by Age as of June 30, 2016**

### Class B Members

#### Beneficiaries of Deceased Members

Age	Male		Female	
	Number	Amount	Number	Amount
31			1	1,093
33	1	1,456		
48			1	24,911
50			1	13,134
51			1	6,398
53	1	9,480		
54			1	11,875
55			1	375
58			1	3,856
59			1	1,788
60			2	21,492
61	1	12,774		
62			2	16,990
63			1	4,076
64			2	18,645
65	1	2,949	1	6,853
66			2	27,024
67			2	7,934
68			2	23,462
69	1	3,503	2	46,548
70			1	6,249
71			1	2,390
72			2	36,000
74			4	23,463
75	1	32,266		
76			6	50,098
77	2	18,092		
78			4	19,991
80			1	8,325
81			2	3,675
82			1	4,310
83			2	21,783
84			1	6,063
85	1	1,527	1	3,289
86			2	7,806
87			2	27,141
88			1	11,320
90	1	7,156	1	10,707
92			2	10,689
<b>TOTAL</b>	<b>10</b>	<b>89,204</b>	<b>58</b>	<b>489,752</b>

## Schedule D (continued)

**Table 11: The Number and Annual Retirement Benefits of Service Retirements Distributed by Form of Annuity as of June 30, 2016**

### Class A Members

Form	Male		Female	
	Number	Amount	Number	Amount
Life Annuity	83	\$3,890,304	6	\$282,913
Certain & Life	19	747,121		
Joint & Survivor	40	1,454,720	2	10,470
Joint & Survivor Pop-up	7	252,375		
TOTAL	149	\$6,344,520	8	\$293,383

## Schedule D (continued)

**Table 12: The Number of Retirees, Disabled Retirees, and Beneficiaries Distributed By COLA Type as of June 30, 2016**

### Class A Members

COLA Type	Male	Female
No COLA	94	8
Half COLA	14	1
Full COLA	46	14
TOTAL	154	23

## Schedule D (continued)

**Table 13: The Number and Annual Retirement Benefits of Service Retirements Distributed by Form of Annuity as of June 30, 2016**

### Class B Members

Form	Male		Female	
	Number	Amount	Number	Amount
Life Annuity	92	\$1,766,202	116	\$1,625,540
Certain & Life	24	\$343,734	19	\$153,465
Joint & Survivor	74	\$1,423,541	21	\$273,575
Joint & Survivor Pop-up	29	\$593,426	8	\$128,138
TOTAL	219	\$4,126,904	164	\$2,180,718

## Schedule D (continued)

**Table 14: The Number of Retirees, Disabled Retirees, and Beneficiaries Distributed by COLA Type as of June 30, 2016**

### Class B Members

COLA Type	Male	Female
No COLA	139	121
Half COLA	19	11
Full COLA	92	101
TOTAL	250	233

## Schedule E

### Past Service Amortization Schedule

#### Class A Members

Description	Date Established	Original Balance	July 1, 2016 Outstanding Balance	FY 2017 Past Service Contribution	July 1, 2017 Outstanding Balance	Years Remaining to Fund	FY 2018 Past Service Contribution
Initial Amortization	July 1, 2004	\$3,698,048	\$ 3,200,853	\$ 333,298	\$ 3,123,623	18	\$ 333,298
FY 2005 Experience	July 1, 2005	6,655,535	6,268,784	638,490	6,131,797	19	638,490
FY 2006 Experience	July 1, 2006	2,588,959	2,487,858	248,368	2,438,519	20	248,368
FY 2007 Experience	July 1, 2007	(1,715,997)	(1,679,263)	(164,622)	(1,648,982)	21	(164,622)
FY 2008 Experience	July 1, 2008	713,490	709,873	68,447	698,216	22	68,447
FY 2009 Experience	July 1, 2009	3,308,275	3,341,562	317,375	3,291,512	23	317,375
FY 2010 Experience	July 1, 2010	3,969,991	4,065,547	380,856	4,009,935	24	380,856
FY 2011 Experience	July 1, 2011	3,564,353	3,647,497	337,419	3,601,878	25	337,419
FY 2012 Experience	July 1, 2012	2,191,929	2,299,442	210,280	2,273,117	26	210,280
FY 2013 Experience	July 1, 2013	2,337,776	2,372,423	214,678	2,347,539	27	214,678
FY 2014 Experience	July 1, 2014	2,892,368	3,096,183	277,475	3,066,403	28	277,475
FY 2015 Experience	July 1, 2015	(50,538)	(54,581)	(4,848)	(54,099)	29	(4,848)
FY 2016 Experience	July 1, 2016		4,439,699		4,794,875	30	425,917
Total			\$34,195,877	\$ 2,857,216	\$34,074,333		\$ 3,283,302

Equivalent Single Amortization Period: 23 Years

## Schedule E

### Past Service Amortization Schedule

#### Class B Members

Description	Date Established	Original Balance	July 1, 2016 Outstanding Balance	FY 2017 Past Service Contribution	July 1, 2017 Outstanding Balance	Years Remaining to Fund	FY 2018 Past Service Contribution
Initial Amortization	July 1, 2004	\$6,322,451	\$ 5,494,685	\$ 572,148	\$ 5,362,112	18	\$ 572,148
FY 2005 Experience	July 1, 2005	6,670,273	6,367,437	648,537	6,228,295	19	648,537
FY 2006 Experience	July 1, 2006	5,080,481	4,891,690	488,349	4,794,676	20	488,349
FY 2007 Experience	July 1, 2007	(728,430)	(712,837)	(69,881)	(699,983)	21	(69,881)
FY 2008 Experience	July 1, 2008	(3,206,229)	(3,189,985)	(307,585)	(3,137,599)	22	(307,585)
FY 2009 Experience	July 1, 2009	9,475,775	9,571,121	909,045	9,427,766	23	909,045
FY 2010 Experience	July 1, 2010	4,577,654	4,687,837	439,151	4,623,713	24	439,151
FY 2011 Experience	July 1, 2011	2,690,665	2,734,545	252,965	2,700,344	25	252,965
FY 2012 Experience	July 1, 2012	1,410,313	1,479,490	135,296	1,462,553	26	135,296
FY 2013 Experience	July 1, 2013	3,153,185	3,342,912	302,497	3,307,848	27	302,497
FY 2014 Experience	July 1, 2014	(1,596,745)	(1,709,262)	(153,182)	(1,692,821)	28	(153,182)
FY 2015 Experience	July 1, 2015	(2,905,886)	(3,138,357)	(278,772)	(3,110,654)	29	(278,772)
	July 1, 2016		6,182,167		6,676,740	30	593,078
Total			\$35,999,683	\$ 2,938,568	\$35,942,990		\$ 3,531,646

Equivalent Single Amortization Period: 23 Years



## Schedule F

### Historical and Projected Contributions

#### Class A and B Employees

Fiscal Year Ending	Projected Payroll	Normal Contribution		Past Service Contribution	Contribution Shortfall	Total City Contribution	
June 30, 2010	40,328,362	3,297,021	8.2%	2,455,550	0	5,752,571	14.3%
June 30, 2011	42,563,572	3,097,260	7.3%	3,681,967	0	6,779,227	15.9%
June 30, 2012	43,148,038	3,045,975	7.1%	4,501,979	0	7,547,954	17.5%
June 30, 2013	43,477,161	3,083,144	7.1%	5,092,361	0	8,175,505	18.8%
June 30, 2014	44,616,671	2,919,432	6.5%	5,437,938	0	8,357,370	18.7%
June 30, 2015	47,918,295	3,077,388	6.4%	5,955,113	0	9,032,501	18.8%
June 30, 2016	49,392,887	3,859,534	7.8%	6,079,404		9,938,938	20.1%
June 30, 2017	50,916,072	3,582,761	7.0%	5,795,784		9,378,545	18.4%
June 30, 2018	51,795,700	3,161,876	6.1%	6,814,779		9,976,655	19.3%
June 30, 2019	53,608,550	3,272,542	6.1%	6,814,779		10,087,321	18.8%
June 30, 2020	55,484,850	3,387,081	6.1%	6,814,779		10,201,860	18.4%
June 30, 2021	57,426,820	3,505,628	6.1%	6,814,779		10,320,407	18.0%

#### Notes:

No future liability gains or losses are assumed; assets are assumed to earn 8% per annum.

Projected payroll assumed to increase 3.5% per annum.

Unfunded liability as of June 30, 2004, was amortized over 30 years.

All future changes in unfunded liability will be amortized over 30 years.

## Schedule F (continued)

### Historical and Projected Contributions

#### Class A Employees

Fiscal Year Ending	Projected Payroll	Normal Contribution		Past Service Contribution	Contribution Shortfall	Total City Contribution	
June 30, 2010	9,412,887	1,150,199	12.2%	1,123,981	0	2,274,180	24.2%
June 30, 2011	9,478,375	955,410	10.1%	1,441,355	0	2,396,765	25.3%
June 30, 2012	9,505,863	932,642	9.8%	1,822,213	0	2,754,855	29.0%
June 30, 2013	9,440,369	991,311	10.5%	2,159,631	0	3,150,942	33.4%
June 30, 2014	10,367,799	916,997	8.8%	2,369,912	0	3,286,909	31.7%
June 30, 2015	11,224,232	1,047,489	9.3%	2,584,590	0	3,632,079	32.4%
June 30, 2016	11,414,532	1,236,072	10.8%	2,862,064		4,098,136	35.9%
June 30, 2017	11,106,579	1,084,798	9.8%	2,857,214		3,942,012	35.5%
June 30, 2018	11,412,022	1,072,004	9.4%	3,283,133		4,355,137	38.2%
June 30, 2019	11,811,443	1,109,524	9.4%	3,283,133		4,392,657	37.2%
June 30, 2020	12,224,844	1,148,357	9.4%	3,283,133		4,431,490	36.2%
June 30, 2021	12,652,714	1,188,549	9.4%	3,283,133		4,471,682	35.3%

#### Notes:

No future liability gains or losses are assumed; assets are assumed to earn 8% per annum.

Projected payroll assumed to increase 3.5% per annum.

Unfunded liability as of June 30, 2004, was amortized over 30 years.

All future changes in unfunded liability will be amortized over 30 years.

## Schedule F (continued)

### Historical and Projected Contributions

#### Class B Employees

Fiscal Year Ending	Projected Payroll	Normal Contribution		Past Service Contribution	Contribution Shortfall	Total City Contribution	
June 30, 2010	30,915,475	2,146,822	6.9%	1,331,569	0	3,478,391	11.3%
June 30, 2011	33,085,197	2,141,849	6.5%	2,240,612	0	4,382,461	13.2%
June 30, 2012	33,642,175	2,113,333	6.3%	2,679,766	0	4,793,099	14.2%
June 30, 2013	34,036,792	2,091,833	6.1%	2,932,730	0	5,024,563	14.8%
June 30, 2014	34,248,872	2,002,435	5.8%	3,068,026	0	5,070,461	14.8%
June 30, 2015	36,694,063	2,029,899	5.5%	3,370,523		5,400,422	14.7%
June 30, 2016	37,978,355	2,623,462	6.9%	3,217,340		5,840,802	15.4%
June 30, 2017	39,809,493	2,497,963	6.3%	2,938,570		5,436,533	13.7%
June 30, 2018	40,383,678	2,089,872	5.2%	3,531,646		5,621,518	13.9%
June 30, 2019	41,797,107	2,163,018	5.2%	3,531,646		5,694,664	13.6%
June 30, 2020	43,260,006	2,238,724	5.2%	3,531,646		5,770,370	13.3%
June 30, 2021	44,774,106	2,317,079	5.2%	3,531,646		5,848,725	13.1%

#### Notes:

No future liability gains or losses are assumed; assets are assumed to earn 8% per annum.

Projected payroll assumed to increase 3.5% per annum.

Unfunded liability as of June 30, 2004, was amortized over 30 years.

All future changes in unfunded liability will be amortized over 30 years.

## Schedule G

### Annual Amortization of the Unfunded Past Service Liability

Fiscal Year	Beginning of FY Balance of Unfunded Liability	Amortization Payment in Fiscal Year
2017	\$ 70,197,320	\$ 5,795,784
2018	\$ 70,017,322	\$ 6,814,779
2019	\$ 68,803,929	\$ 6,814,779
2020	\$ 67,493,464	\$ 6,814,779
2021	\$ 66,078,163	\$ 6,814,779
2022	\$ 64,549,637	\$ 6,814,779
2023	\$ 62,898,830	\$ 6,814,779
2024	\$ 61,115,957	\$ 6,814,779
2025	\$ 59,190,455	\$ 6,814,779
2026	\$ 57,110,913	\$ 6,814,779
2027	\$ 54,865,007	\$ 6,814,779
2028	\$ 52,439,429	\$ 6,814,779
2029	\$ 49,819,805	\$ 6,814,779
2030	\$ 46,990,611	\$ 6,814,779
2031	\$ 43,935,081	\$ 6,814,779
2032	\$ 40,635,109	\$ 6,814,779
2033	\$ 37,071,139	\$ 6,814,779
2034	\$ 33,222,052	\$ 6,814,779
2035	\$ 29,065,037	\$ 6,814,779
2036	\$ 24,575,461	\$ 5,909,333
2037	\$ 20,632,165	\$ 4,622,306
2038	\$ 17,660,433	\$ 3,885,589
2039	\$ 15,187,678	\$ 4,120,091
2040	\$ 12,282,601	\$ 4,359,229
2041	\$ 8,905,980	\$ 3,132,809
2042	\$ 6,485,650	\$ 2,312,803
2043	\$ 4,691,699	\$ 1,722,418
2044	\$ 3,344,617	\$ 1,376,842
2045	\$ 2,235,344	\$ 859,668
2046	\$ 1,554,504	\$ 735,374
2047	\$ 943,491	\$ 1,018,970
2048	\$ 0	