

CITY OF MEMPHIS

RETIREE HEALTH AND LIFE INSURANCE BENEFITS

*GASB 45 VALUATION RESULTS
AS OF JULY 1, 2014
FISCAL YEAR ENDING JUNE 30, 2015*



October 31, 2014

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, 2014 actuarial valuation of Retiree Health and Life Insurance Benefits of the City of Memphis, pursuant to our engagement letter with the City of Memphis dated September 26, 2013.

The City of Memphis retained PricewaterhouseCoopers LLP to perform an actuarial valuation of Retiree Health and Life Insurance Benefits for the purposes of:

Calculating the necessary information for accounting and reporting requirements in accordance with Government Accounting Standards Board Statement No. 45 (GASB 45). 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 45 are for purposes of fulfilling the City's financial accounting requirements. The calculations reported herein have been made on a basis consistent with our understanding of GASB 45.

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, claims and premium data, unaudited plan assets and benefit payments. The census data, claims data and plan asset information used in calculating the results herein were collected as of June 30, 2014. 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 45 requires 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 under GASB 45.

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.

This report was prepared for the internal use of the City of Memphis in connection with our actuarial valuation of the Plan 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.

The undersigned actuaries are members 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 postretirement medical and life insurance 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.

We appreciate this opportunity to be of service to the City of Memphis. We are available to answer any questions with respect to our report.

Respectfully submitted,



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SECTION I: OVERVIEW

GASB Statements

GASB 45 provides the employer's responsibility for accounting and financial reporting for all postemployment benefits other than pensions. Such benefits are commonly referred to as "other postemployment benefits" (OPEB). GASB 43 provides the financial reporting requirements for OPEB plans themselves (as opposed to the employers).

The City of Memphis ("the City") is considered a sole employer according to the Statements. As such, the City must comply with the applicable accounting and reporting requirements of GASB 45 and adopted GASB 45 in fiscal 2008.

Valuation

Covered Group

The City of Memphis Retiree Health and Life Insurance Benefits Plan ("The Plan") provides OPEB to many of the City's retirees and their dependents based on firmly-established past practices. This valuation covers only City of Memphis employees and retirees who receive or will receive OPEB through the City's Plan.

Effective January 1, 2015 the City of Memphis has amended the Plan to grandfather the following participants:

- Post-65 Medicare A only eligible inactive
- Post-65 Medicare B only eligible inactive
- Post-65 Non-Medicare A and B eligible inactive
- Pre-65 deceased line of duty beneficiaries inactive
- Pre-65 disabled line of duty inactive

The grandfathered group will continue to receive Basic or Premier Plan coverage and pay 30% of the cost of coverage. The remaining participants are non-grandfathered and will have Pre-65 coverage available on an access-only basis and coverage starting at age 65 through a Medigap and Part D Plan that the City of Memphis will subsidize 25%. Medicare eligibility will be revisited annually to determine grandfather status.

Valuation Date, Data and Plan Provisions

This valuation report provides the City's obligations for fiscal 2015 according to GASB 45. The valuation was performed using census data and plan provisions as of July 1, 2014. The valuation was performed as of July 1, 2014 for results through June 30, 2015 (end of fiscal 2015) using the closed group projection methodology (no new hires assumed). Since the GASB requires that any such valuation must be performed as of a date within twenty-four months of the end of the valuation year, the results contained herein are appropriate for use in fiscal year ending June, 30 2014.

Discount Rate

The GASB 45 discount rate is the expected rate of return on the assets used to pay the benefits. If the retiree healthcare benefits are not pre-funded, GASB 45 specifies the use of a discount rate that reflects the expected return on the general assets of the plan sponsor. For fiscal 2014, the City of Memphis did not contribute in excess of the total annual benefit

SECTION I: OVERVIEW

payments to a GASB qualified trust for the purpose of funding future OPEB benefits. As such, the City of Memphis has chosen a discount rate of 4.50%.

Other Assumptions

Assumptions other than the discount rate are provided in Section V. The City's health benefits costs provided by Mercer were used to develop medical per capita costs. Future retiree and spouse participation assumptions were based on inactive experience. The withdrawal, mortality, spousal age difference, marriage percentage, salary scale and disability rate assumptions are the same as those used for the July 1, 2014 City of Memphis pension valuation, and based on the May 1, 2014 pension experience study. Based on current inactive experience the City of Memphis has decided to update the Medicare participation, working spouse, and tobacco surcharge assumptions. All assumptions were discussed with and approved by the City.

Cost Method

The actuarial cost method chosen by the City of Memphis is the Entry Age Normal Actuarial Cost Method (described in Appendix III). The actuarial cost method is used to develop the Actuarial Liabilities and the Annual Required Contribution (ARC). The Entry Age Normal cost method is designed to produce a relatively level normal cost (a component of the ARC) as a percentage of payroll.

Actuarial Gains and Losses

In the aggregate, the Plan experienced an actuarial gain of approximately \$718.5M (or 51.0%) at the valuation date of July 1, 2014. The major components of this gain can be described below. **Items 1-7 are changes prior to implementing access only for non-grandfathered participants and changing the post-65 plan offering.**

- 1) A loss of approximately \$50.5M (or 3.4%) due to experience and new entrants.
- 2) A gain of approximately \$150.3M (or 10.3%) due to an update in the retiree premiums.
- 3) A loss of approximately \$109.5M (or 7.5%) due to an update in retirement rates.
- 4) A gain of approximately \$11.1M (or 0.8%) due to update in withdrawal rates.
- 5) A loss of approximately \$64.3M (or 4.4%) due to update in marriage percentage and spousal age assumption.
- 6) A loss of approximately \$6.1M (or 0.4%) due to change in salary scale.
- 7) A loss of approximately \$52.4M (or 3.6%) due to update in mortality table.
- 8) A gain of approximately \$850.4M (or 58.0%) due to change in plan design benefits (access only for pre-65 non-grandfathered / modified coverage post-65).
- 9) A gain of approximately \$110.0M (or 7.5%) due to an update in claims costs.
- 10) A gain of approximately \$40.3M (or 2.8%) due to elimination of working spouses coverage.
- 11) A gain of approximately \$4.2M (or 0.3%) due to change in tobacco surcharge.
- 12) A loss of approximately \$165.0M (or 11.2%) due to change in discount rate.

A detailed reconciliation of the sources of gains and losses can be found in Exhibit V.

Annual Required Contribution (ARC)

The ARC is the employer's periodic required contribution to a defined benefit OPEB plan determined in accordance with the plan provisions, demographic participant data, actuarial

SECTION I: OVERVIEW

assumptions, actuarial cost method, and other actuarial methods prescribed by GASB 43 and GASB 45. While pre-funding is not required, the term ARC represents the employer's contribution needed each year to maintain the accrual on its Comprehensive Annual Financial Report (CAFR) at \$0. The ARC will generally increase with benefit cost increases and participant growth; however, gains/losses resulting from demographic and/or assumption changes will also alter the ARC. The ARC for fiscal 2015 is \$35.8 million.

Accounting

The Net OPEB Obligation (NOO) is the accrual on the CAFR, which means that it is an accounting measure of the employer's liability (or asset) related to the benefit plan. If the obligation is fully funded each year (i.e., if the City contributes the ARC to a qualified trust established for this purpose) then the NOO would be \$0. Given the City's NOO at the end of fiscal 2013 of \$250.9 million, the fiscal 2014 annual OPEB cost of \$37.1 million and the City's total fiscal 2015 contribution of \$40.4 million (consisting of actual net benefit payments), the NOO as of June 30, 2014 is \$247.5 million (the beginning of year balance of \$250.9 million plus the annual OPEB cost of \$37.1 million less \$40.4 million in total contribution).

GASB 45 includes substantial reporting requirements. The reporting requirements related to accounting and funding are provided in the tables of Section II.

Changes since Last Year

The last actuarial valuation of the City of Memphis Retiree Health and Life Insurance Benefits was performed as of July 1, 2012. Following is a summary of the changes that have occurred since the last valuation.

- Per capita costs and retiree premiums were updated based on benefit cost prepared by Mercer, the client's actuary. Note, the plan design was modified effective January 1, 2015 which then further modified both per capita costs and retiree premiums.
- Effective January 1, 2015, the City of Memphis has amended the OPEB Plan as follows.
 - Grandfathered individuals, as described on page 1, will continue to elect either the Basic or Premier Plan and pay 30% of the cost of coverage.
 - Non-grandfathered participants will have access only coverage to either the Basic or Premium Plan when under age 65. Upon age 65, these participants may elect a Medigap and PDP Rx plan and pay 75% of the cost of coverage.
 - Additional plan changes include the elimination of coverage for spouses who have coverage elsewhere and an increased tobacco surcharge.
- The discount rate assumption was changed from 6.10% as of July 1, 2012 to 4.50% as of July 1, 2014. This is a blended rate reflecting assets expected to be used based upon the expected return of invested assets of 9.0% and the expected return on general assets of 4.5%. It is based upon the spread between the ARC and the annual "pay as you go" amount. For the 2014 valuation year, the City of Memphis

SECTION I: OVERVIEW

contributed the “pay as you go” amount; therefore, the discount rate assumption is expected return on general assets of 4.50%.

- On May 1, 2014 PwC completed an experience study for the City of Memphis Pension Plan. The following assumptions are based on the results of the experience study and the chosen by the City of Memphis:
 - The retirement assumption for General Employees and Police and Fire Employees changed from an age graded table to a graded table that varies by age and gender.
 - The mortality table for General Employees was changed from the Fully Generational RP-2000 Combined Mortality Table for males and females to the Fully Generational RP-2014 Mortality Table for males and females with a one-year set forward. The mortality table for Police and Fire was changed from the Fully Generational RP-2000 Combined Mortality Table with Blue Collar adjustment for males and females to the Fully Generational RP-2014 Mortality Table with Blue Collar adjustment for males and females with 1 year set forward. In addition, the mortality table for disabled participants was changed to the Fully Generational RP-2014 Disabled Table with a 3-year set back.
 - The marital assumptions for General Employees were changed from 75% males and 10% of females assumed to be married to 80% of males and 50% of females assumed to be married. The marital assumption for Police and Fire was changed from 75% males and 10% females assumed to be married to 80% assumed to be married.
 - The salary increase assumption was changed from a flat 5.0% for all employees to a scale that varies by age and service. The weighted average salary increase under the new salary scale is 4.25%.
- In accordance to the plan design changes the City of Memphis decided to update the Medicare participation, working spouse, and tobacco surcharge assumption. The changes in assumptions are based on current inactive experience.

Valuation Results

The following pages (recommended for financial statement disclosure) provide the development of the ARC and the expected end of year CAFR accrual for fiscal 2014.

SECTION II: VALUATION RESULTS

Exhibit I

Determination of Annual Required Contribution (ARC) and End of Year CAFR Accrual

Cost Element	Fiscal Year Ending	
	June 30, 2015	June 30, 2014 ¹
<u>Unfunded Actuarial Accrued Liability (UAAL)</u>		
1. Actuarial accrued liability at beginning of fiscal year	\$747,977,000	\$733,654,000
2. Actuarial value of assets at beginning of fiscal year	17,733,000	17,486,000
3. Unfunded actuarial liability at beginning fiscal year	730,244,000	716,168,000
<u>Annual Required Contribution (ARC)</u>		
4. Normal cost at the beginning of the year	\$9,776,000	\$9,377,000
5. Beginning of year amortization of the unfunded actuarial liability over 30 years using level percent of pay amortization	25,196,000	24,711,000
6. Interest at 4.50% on 2 and 3 assuming mid-year contribution	<u>778,000</u>	<u>759,000</u>
7. Annual Required Contribution (ARC = 4 + 5 + 6)	<u>\$35,750,000</u>	<u>\$34,847,000</u>
<u>Annual OPEB Cost (Expense)</u>		
8. ARC	\$35,750,000	\$34,847,000
9. Interest on beginning of year CAFR accrual	11,138,000	11,289,000
10. Amortization of beginning of year CAFR accrual	(8,540,000)	(8,656,000)
11. Interest on the amortization	<u>(384,000)</u>	<u>(390,000)</u>
12. Fiscal OPEB cost (8 + 9 + 10 + 11)	<u>\$37,964,000</u>	<u>\$37,090,000</u>
<u>End of Year CAFR Accrual (Net OPEB Obligation)</u>		
13. Beginning of year CAFR accrual	\$247,515,000	\$250,868,000
14. Annual OPEB cost	37,964,000	37,090,000
15. Actual employer contribution (including benefit payments) ²	<u>(TBD)</u>	<u>(40,443,000)</u>
16. End of year CAFR accrual (13 + 14 + 15)	<u>TBD</u>	<u>\$247,515,000</u>

¹ The fiscal year ending June 30, 2014 liability is estimated based on actual fiscal year ending June 30, 2015 valuation results. Actual asset information as of June 30, 2013 and June 30, 2014 was used to determine the unfunded actuarial liability.

² Claims paid minus retiree contributions (\$52,986,000 - \$12,525,000).

SECTION II: VALUATION RESULTS

Exhibit II

Required Supplementary Information – Schedule of Employer Contributions

Fiscal Year Ended	Annual Required Contributions	Actual Contributions	Percentage Contributed
June 30, 2013	\$84,826,000	\$45,705,000 ¹	53.9%
June 30, 2014	\$34,847,000	\$40,443,000 ²	116.1%
June 30, 2015	\$35,750,000	TBD	

¹ Includes a \$11,233,000 contribution in excess of the net employer benefit payments.

² Includes a \$0 contribution in excess of the net employer benefit payments.

Exhibit III

Required Supplementary Information – Schedule of Funding Progress

The schedule of funding progress presents multi-year trend information comparing the actuarial value of plan assets at the beginning of the fiscal year to the actuarial liability at the beginning of the year.

Fiscal Year Ending	Actuarial Value of Assets (a)	Actuarial Liability (AL) (b)	Unfunded/ (Overfunded) AL (UAL) (b) - (a)	Funded Ratio (a) ÷ (b)	Covered Payroll ³ (c)	UAL as a Percentage of Covered Payroll [(b) - (a)] ÷ (c)
June 30, 2013	\$22,616,000	\$1,316,182,000	\$1,293,566,000	1.7%	\$327,738,000	394.7%
June 30, 2014	\$17,486,000	\$733,654,000	\$716,168,000	2.4%	\$284,407,000	251.8%
June 30, 2015	\$17,733,000	\$747,977,000	\$730,244,000	2.4%	\$296,494,000	246.3%

³ Covered Payroll includes all active plan participants. For fiscal 2013 the covered payroll was estimated by trending backwards the fiscal 2014 covered payroll by the assumed salary scale.

Exhibit IV

Required Supplementary Information – 3 Year Schedule of Percentage of OPEB Cost Contributed

Fiscal Year Ended	Annual OPEB Cost	Percentage of OPEB Cost Contributed ⁴	Net OPEB Obligation
June 30, 2013	\$88,984,000	51.4%	\$250,868,000
June 30, 2014	\$37,090,000	109.0%	\$247,515,000
June 30, 2015	\$37,964,000		TBD

⁴ Reflects contributions from Exhibit II

SECTION II: VALUATION RESULTS

Exhibit V

Reconciliation of Sources of (Gain)/Loss - Fiscal Year Ending June 30, 2014

Sources of (Gain)/Loss	Liability	Normal Cost
1) Actual as of June 30, 2012	\$ 1,316,182,000	\$32,402,000
2) Expected at June 30, 2014 ¹	\$1,466,513,000	\$34,378,000
3) Change due to:		
a) Census	\$50,500,000	\$(41,000)
b) Retiree Premiums (prior to plan change)	\$(150,324,000)	\$(3,588,000)
c) Retirement Rates	\$109,483,000	\$4,725,000
d) Termination Rates	\$(11,065,000)	(3,357,000)
e) Marriage Percentage & Spouse Age	\$64,318,000	\$3,094,000
f) Salary Scale	\$6,079,000	\$(162,000)
g) Mortality Table	\$52,416,000	\$487,000
h) Plan Design (access only pre-65 and 25% Medigap/RX subsidy post-65)	\$(850,408,000)	\$(28,412,000)
i) Claims Costs	\$(109,986,000)	\$(745,000)
j) Working Spouse Elimination	\$(40,352,000)	\$(426,000)
k) Tobacco Surcharge	\$(4,162,000)	\$(17,000)
l) Discount Rate	\$164,965,000	\$3,840,000
m) Total change = sum (a) through (l)	\$(718,536,000)	\$(24,602,000)
4) Actual as of June 30, 2014 = (2) + (3m)	\$747,977,000	\$9,776,000

¹ Expected June 30, 2014 liability is based on plan provisions, valuation assumptions, and expected benefit payments as of June 30, 2012.

SECTION II: VALUATION RESULTS

Exhibit VI

Required Supplementary Information – Summary of Key Actuarial Methods and Assumptions

Valuation year	July 1, 2014 – June 30, 2015
Actuarial cost method	Entry Age Normal, level percent of pay
Amortization method	30 years, level percent of pay open amortization ¹
Asset valuation method	Fair Value of Assets

¹ Open amortization means a fresh-start each year for the cumulative unrecognized amount.

Actuarial assumptions:

Discount rate	4.50%
Salary Scale	4.25%
Health care cost trend rate pre-Medicare	7.53% in fiscal 2014 decreasing to an ultimate rate of 4.5% in fiscal 2027 and after.
Health care cost trend rate post-Medicare	7.64% in fiscal 2014 decreasing to an ultimate of 4.5% in fiscal 2027 and after.
Inflation Rate	3.00%

SECTION III: CASHFLOW PROJECTION

Based on benefit costs, retiree contributions, and the assumptions shown in Section V, the City's expected cash costs and participant counts (based on enrollment as of July 1, 2014) are projected below. The projected amounts are shown by year through 2043 and then every ten years after 2050. The participant counts and cash costs include all benefits.

Fiscal Year	Participant Counts (without new hires)				Cash Cost (without new hires)
	Active	Emerging Inactives	Initial Inactives	Total Inactives	
2015	5,020	394	5,795	6,189	41,452,706
2016	4,604	646	5,650	6,296	19,002,684
2017	4,237	867	5,503	6,370	21,121,487
2018	3,896	1,077	5,353	6,430	23,177,101
2019	3,589	1,263	5,200	6,464	25,263,661
2020	3,302	1,438	5,045	6,484	27,502,999
2021	3,016	1,618	4,888	6,506	29,754,116
2022	2,746	1,790	4,729	6,518	32,046,745
2023	2,501	1,943	4,567	6,509	34,193,482
2024	2,257	2,098	4,403	6,501	36,349,478
2025	2,021	2,251	4,237	6,487	38,457,588
2026	1,802	2,391	4,069	6,460	40,318,379
2027	1,605	2,515	3,900	6,415	42,196,963
2028	1,427	2,622	3,730	6,352	43,914,483
2029	1,259	2,720	3,559	6,279	45,482,834
2030	1,101	2,809	3,388	6,198	47,079,477
2031	963	2,881	3,218	6,098	48,468,271
2032	845	2,933	3,048	5,980	49,635,297
2033	736	2,974	2,879	5,853	50,728,566
2034	615	3,025	2,712	5,737	51,700,036
2035	503	3,070	2,547	5,617	52,625,455
2036	400	3,105	2,385	5,490	53,296,909
2037	308	3,128	2,226	5,353	53,939,835
2038	234	3,132	2,070	5,202	54,409,794
2039	168	3,124	1,919	5,044	54,609,578
2040	120	3,098	1,773	4,872	54,592,714
2041	85	3,056	1,633	4,688	54,448,467
2042	60	3,001	1,498	4,499	54,150,781
2043	41	2,936	1,369	4,305	53,744,863
2050	1	2,314	657	2,971	49,034,255
2060	0	1,297	174	1,470	38,760,933
2070	0	521	38	558	24,625,183
2080	0	131	9	139	11,324,910
2090	0	13	2	15	2,848,637
2100	0	0	1	1	296,427
2110	0	0	0	0	40,719

SECTION IV: CENSUS

The City of Memphis provided the census data as of July 1, 2014. The census data provided contained only those City of Memphis employees and retirees who participate in the City's health benefits plan.

Active Plan Participants											
Completed Years of Service											
Age	< 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	39+	Total
< 25	2	24	3								29
25 to 29	15	209	137	3							364
30 to 34	5	204	281	93	1						584
35 to 39	14	100	253	278	66						711
40 to 44	6	79	180	261	362	66	6				960
45 to 49	4	48	118	218	332	214	104				1,038
50 to 54	8	41	74	122	181	193	219	23			861
55 to 59	3	39	56	84	108	93	120	49	21	6	579
60 to 64	3	15	27	62	40	43	54	22	30	29	325
65 to 69		6	11	26	23	15	20	3	4	10	118
69+	1	1	2	5	5	2	7	2	3	10	38
Total	61	766	1,142	1,152	1,118	626	530	99	58	55	5,607

Active Plan Participants			
	Males	Females	Total
Count	4,308	1,299	5,607
Average Age	44.7	46.5	45.2
Average Service	14.6	13.4	14.4

SECTION IV: CENSUS

Total Inactive Plan Participants Retirees, Surviving Spouses, Disabled

Age	Males	Females	Surviving Spouses	Total
< 40	14	7	12	33
40 to 44	18	18	31	67
45 to 49	51	27	65	143
50 to 54	112	69	124	305
55 to 59	246	124	212	582
60 to 64	474	206	402	1,082
65 to 69	641	185	525	1,351
70 to 74	479	203	376	1,058
75 to 79	340	188	257	785
80 to 84	204	158	141	503
85 to 89	89	110	54	253
90 to 94	27	52	10	89
95+	3	15	0	18
Total	2,698	1,362	2,209	6,269

Grandfathered Inactive Plan Participants Retirees, Surviving Spouses, Disabled

Age	Males	Females	Surviving Spouses	Total
< 40	11	3	11	25
40 to 44	12	5	15	32
45 to 49	23	11	28	62
50 to 54	15	14	19	48
55 to 59	25	9	18	52
60 to 64	42	11	32	85
65 to 69	404	107	327	838
70 to 74	269	102	203	574
75 to 79	86	38	61	185
80 to 84	51	37	35	123
85 to 89	17	23	9	49
90 to 94	6	13	2	21
95+	1	6	0	7
Total	962	379	760	2,101

SECTION V: ACTUARIAL ASSUMPTIONS AND METHODS

Valuation Year	July 1, 2014 – June 30, 2015
Date of Census Data	July 1, 2014
Actuarial Cost Method	Entry Age Normal, level percentage of pay
Amortization Method	30 years, level percent of pay open amortization which means a fresh-start each year for the cumulative unrecognized amount.
Asset Valuation Method	Fair Value of Assets
Per Capita Costs	The estimation of the retiree healthcare benefit obligation was based Basic and Premier Plan costs developed by Mercer, the client's actuary. We applied aging factors based upon a PwC proprietary database. Sample annual per capita costs are provided below for the fiscal year beginning July 1, 2014.

Age	Non-Medicare	Medicare A Only or Medicare B Only	Medicare A&B- Grandfathered	Medicare - Non- Grandfathered
45	\$4,615	n/a	n/a	n/a
50	5,638	n/a	n/a	n/a
65	9,027	9,064	9,102	4,726
70	10,763	9,826	8,889	4,726

2015 Calendar Year Monthly Premiums

	Basic Plan	Premier Plan
Grandfathered Premiums	Non-Medicare Retirees:	
Single	\$ 205.27	\$ 228.05
Family	\$ 431.51	\$ 452.28
	Medicare Retirees:	
Single	\$ 189.17	\$ 209.03
Family	\$ 396.86	\$ 414.56
Non-Grandfathered Premiums	Pre-65: pay access only rates	
	Post-65: \$ 295.40 ¹	

¹ Amount shown excludes Part B premium.

Tobacco Surcharge	\$120 per month per family
Life Insurance Per Capita Costs	Face amounts are \$5,000
Administrative Expenses	Included in the per capita costs

SECTION V: ACTUARIAL ASSUMPTIONS AND METHODS

**Annual Health Care
Trend Rate**

<u>Fiscal Year Ending</u>	<u>Pre-Medicare</u>	<u>Post-Medicare</u>
2015	7.53%	7.64%
2016	7.05%	7.09%
2017	6.56%	6.53%
2018	6.35%	6.33%
2019	6.15%	6.12%
2020	5.94%	5.92%
2021	5.73%	5.72%
2022	5.53%	5.51%
2023	5.32%	5.31%
2024	5.11%	5.10%
2025	4.91%	4.90%
2026	4.70%	4.70%
2027+	4.50%	4.50%

Discount Rate

4.50% per annum

Salary Scale

4.25%

Mortality

Fully Generational RP-2014 Mortality Table for males and females with one year set forward for General employees.

Fully Generational RP-2014 Mortality Table for males and females using Blue Collar adjustment with a one-year set forward for Police & Fire employees.

Fully Generational RP-2014 Mortality Table for males and females with a 3-year set back for disabled employees.

Participation Rates

100% of active employees are assumed to be eligible for Medicare Part A&B upon retirement and receive the Non-grandfathered benefit.

80% of future participating male General Employee retirees, 50% of future participating female General Employee retirees, and 80% of Police and Fire Employee retirees are assumed to have spouses that elect to be covered; these percentages are based on current experience.

Plan Election Assumption

For fiscal 2015, it is assumed that future retirees will elect Medicare when eligible. Additionally, 60% of current pre-65 retirees are assumed to elect Medicare when eligible.

Persistence Assumptions

All inactive participants are assumed to continue to receive retiree medical coverage for their lifetime.

Spousal Carveout

Starting January 1, 2015, spouses who have access to healthcare elsewhere will be carved out of the plan. Based on current inactive experience 15% of spouses of future inactive participants are assumed to have access elsewhere and are carved out of the plan.

SECTION V: ACTUARIAL ASSUMPTIONS AND METHODS

Tobacco Surcharge

Based on current inactive experience 10% of future inactive participants are assumed to pay the tobacco surcharge.

Spouse Age Difference

Husbands are assumed to be three years older than wives for future retirees who are married.

Retirement Rates

Sample rates are shown below:

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

Withdrawal 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%
30	46.0%	46.0%	18.0%	14.0%	14.0%	8.0%
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%	3.0%	4.0%
55	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%

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

Disability Rates

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

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

Changes since Last Year

Per capita costs and retiree premiums were updated based on benefit cost prepared by Mercer, the client’s actuary. Note, the plan design was modified effective January 1, 2015 which then further modified both per capita costs and retiree premiums.

Effective January 1, 2015, the City of Memphis has amended the OPEB Plan as such. Grandfathered individuals, as described on page 1, will continue to elect either the Basic or Premier Plan and pay 30% of the cost of coverage. Non-grandfathered participants will have access only coverage to either the Basic or Premium plan when under age 65. Upon age 65, these participants may elect a Medigap and PDP Rx plan and pay 75% of the cost of coverage. Additional plan changes include the elimination of coverage for spouses who have coverage elsewhere and an increased tobacco surcharge.

The discount rate assumption was changed from 6.10% as of July 1, 2012 to 4.50% as of July 1, 2014. This is a blended rate reflecting assets expected to be used based upon the expected return of invested assets of 9.0% and the expected return on general assets of 4.5%. It is based upon the spread between the ARC and the annual “pay as you go” amount. For the 2014 valuation year, the City of Memphis contributed the “pay as you go” amount; therefore, the discount rate assumption is expected return on general assets of 4.50%.

On May 1, 2014 PwC completed an experience study for the City of Memphis Pension Plan. Based on the results of the experience study and the assumptions chosen by the City of Memphis, the retirement rates, withdrawal rates, spousal age difference, marriage percentage, salary scale, and mortality assumptions were updated.

Based on current inactive experience the City of Memphis has decided to update the Medicare participation, working spouse, and tobacco surcharge assumption.

SECTION VI: SUMMARY OF PLAN PROVISIONS

Valuation Data and Plan Provisions	Census data provided as of July 1, 2014 and 2014-2015 benefit information provided
Fiscal Year (FY)	July 1 through June 30
Full Valuation	For fiscal year ending June 30, 2015
Results in this Report	Fiscal Year 2014 & Fiscal Year 2015
GASB 45 Adoption	Fiscal Year 2008
Plan Year	All benefit plans have plan year January 1 – December 31
Employee Eligibility Provisions	Eligibility for OPEB benefits is based on two pension options: normal retirement or disability retirement. The applicable pension plans are:

	Normal	Disability
<i>General Employees</i> 1948 Plan Participants	Age 60 & 10 years of service or 25 years of service	
<i>General Employees</i> 1978 Plan Participants	Age 60 & 10 years of service or Age 65 & 5 years of service or 25 years of service	Non line-of-duty: 5 years Line-of-duty: no service requirement
<i>General Employees</i> 2012 Plan Participants	Age 65 & 5 years of service or 25 years of service	

SECTION VI: SUMMARY OF PLAN PROVISIONS

<i>Police & Fire</i> 1948 Plan Participants	Age 55 & 10 years of service or 25 years of service	Non line-of-duty: 5 years
<i>Police & Fire</i> 1978 and 2012 Plan Participants	Age 55 & 10 years of service or 25 years of service	Line-of-duty: no service requirement

Spouse Eligibility for Benefits

Spouses of eligible retirees may receive postretirement medical benefits. Surviving widowed spouses are eligible if receiving a pension payment from the City of Memphis and coverage was in force prior to the retiree’s death. Working spouses with available coverage elsewhere do not receive postretirement medical benefits.

Plan Benefits Available to Retirees

The primary benefit for eligible retirees is postretirement medical coverage through either a Preferred Provider Organization (PPO/Basic) or a Point of Service Plan (POS/Premier). The City pays for costs in excess of required retiree premiums.

The City also provides two life insurance benefits: the first is a self-insured death benefit of \$5,000 and the second is a continuation of active life insurance which decreases to \$3,000 upon retirement and is fully insured.

Substantive Plan

Benefit provisions are based on firmly established past practices.

Plan Benefit Financing

Some life insurance benefits are fully insured. All other benefits are self insured.

Medicare Coordination

Coordination of Benefits (COB) is used post-65

APPENDIX I: CITY OF MEMPHIS' REPORTING REQUIREMENTS

The City of Memphis was required to implement GASB 45 for fiscal years beginning July 1, 2008 and thereafter. The reporting requirements are found in paragraphs 24 through 26 of GASB 45 and include: funding policy, annual OPEB cost, funded status and funding progress, and actuarial methods and assumptions.

The paragraphs below are intended to provide the City with information for fiscal 2013 reporting. The City's auditors should be consulted for preferred descriptions and documentation. The actual disclosure as of June 30, 2013 should be based on plan provisions and plan operation as of that date. Below are the applicable paragraphs taken directly from GASB 45.

Excerpts from GASB 45

Notes to the Financial Statements

24. Employers should include the following information in the notes to their financial statements for each defined benefit OPEB plan in which they participate, regardless of the type of plan (except as indicated). Disclosures for more than one plan should be combined in a manner that avoids unnecessary duplication.
 - a. Plan description.
 - (1) Name of the plan, identification of the public employee retirement system (PERS) or other entity that administers the plan, and identification of the plan as a single-employer, agent multiple-employer, or cost-sharing multiple-employer defined benefit OPEB plan.
 - (2) Brief description of the types of benefits and the authority under which benefit provisions are established or may be amended.
 - (3) Whether the OPEB plan issues a stand-alone financial report or is included in the report of a PERS or another entity, and, if so, how to obtain the report.
 - b. Funding policy.
 - (1) Authority under which the obligations of the plan members, employer(s), and other contributing entities (for example, state contributions to local government plans) to contribute to the plan are established or may be amended.
 - (2) Required contribution rate(s) of plan members. The required contribution rate(s) could be expressed as a rate (amount) per member or as a percentage of covered payroll.
 - (3) Required contribution rate(s) of the employer in accordance with the funding policy, in dollars or as a percentage of current-year covered payroll, and, if applicable, legal or contractual maximum contribution rates. If the plan is a single-employer or agent plan and the rate differs significantly from the ARC, disclose how the rate is determined (for example, by statute or by contract) or that the plan is financed on a pay-as-you-go basis. If the plan is a cost-sharing plan, disclose the required contributions in dollars and the percentage of that amount contributed for the current year and each of the two preceding years, and how the required contribution rate is determined (for example, by statute or by contract, or on an actuarially determined basis) or that the plan is financed on a pay-as-you-go basis.
25. Sole and agent employers should disclose the following information for each plan, in addition to the information required by paragraph 24:
 - a. For the current year, annual OPEB cost and the dollar amount of contributions made. If the employer has a net OPEB obligation, also disclose the components of annual OPEB cost (ARC, interest on the net OPEB obligation, and adjustment to the ARC), the increase or decrease in the net OPEB obligation, and the net OPEB obligation at the end of the year.
 - b. For the current year and each of the two preceding years, annual OPEB cost, percentage of annual OPEB cost contributed that year, and net OPEB obligation at the end of the year. (For the first two

APPENDIX I: CITY OF MEMPHIS' REPORTING REQUIREMENTS

- years, the required information should be presented for the transition year, and for the current and transition years, respectively.)
- c. Information about the funded status of the plan as of the most recent valuation date, including the actuarial valuation date, the actuarial value of assets, the actuarial liability, the total unfunded actuarial liability (or funding excess), the actuarial value of assets as a percentage of the actuarial liability (funded ratio), the annual covered payroll, and the ratio of the unfunded actuarial liability (or funding excess) to annual covered payroll.. The information should be calculated in accordance with the parameters. However, employers that meet the criteria in paragraph 11 may elect to use the alternative measurement method discussed in paragraphs 33 through 35. Employers that use the aggregate actuarial cost method should prepare this information using the entry age actuarial cost method for that purpose only.
 - d. Disclosure of information about actuarial methods and assumptions used in valuations on which reported information about the ARC, annual OPEB cost, and the funded status and funding progress of OPEB plans is based, including the following:
 - (1) Disclosure that actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future, and that actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future.
 - (2) Disclosure that the required schedule of funding progress immediately following the notes to the financial statements presents multiyear trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial liability for benefits.
 - (3) Disclosure that calculations are based on the types of benefits provided under the terms of the substantive plan at the time of each valuation and on the pattern of sharing of costs between the employer and plan members to that point. In addition, if applicable, the employer should disclose that the projection of benefits for financial reporting purposes *does not* explicitly incorporate the potential effects of legal or contractual funding limitations (as discussed in the disclosure of funding policy in paragraph 24b(3)) on the pattern of cost sharing between the employer and plan members in the future..
 - (4) Disclosure that actuarial calculations reflect a long-term perspective. In addition, if applicable, disclosure that, consistent with that perspective, actuarial methods and assumptions used include techniques that are designed to reduce short-term volatility in actuarial liabilities and the actuarial value of assets.
 - (5) Identification of the actuarial methods and significant assumptions used to determine the ARC for the current year and the information required by paragraph 25c. The disclosures should include:
 - (a) The actuarial cost method.
 - (b) The assumptions with respect to the inflation rate, investment return (including the method used to determine a blended rate for a partially funded plan, if applicable), postretirement benefit increases if applicable, projected salary increases if relevant to determination of the level of benefits, and, for postemployment healthcare plans, the healthcare cost trend rate. If the economic assumptions contemplate different rates for successive years (year-based or select and ultimate rates), the rates that should be disclosed are the initial and ultimate rates.
 - (c) The amortization method (level dollar or level percentage of projected payroll) and the amortization period (equivalent single amortization period, for plans that use multiple periods) for the most recent actuarial valuation and whether the period is closed or open. Employers that use the aggregate actuarial cost method should disclose that because the method does not identify or separately amortize unfunded actuarial liabilities, information about funded status and funding progress has been prepared using the entry age actuarial cost method for that purpose, and that the information presented is intended to approximate the funding progress of the plan.

APPENDIX I: CITY OF MEMPHIS' REPORTING REQUIREMENTS

Required Supplementary Information (RSI)

26. Sole and agent employers should present the following information for the most recent actuarial valuation and the two preceding valuations:
 - a. Information about the funding progress of the plan, including, for each valuation, each of the elements of information listed in paragraph 25c.
 - b. Factors that significantly affect the identification of trends in the amounts reported, including, for example, changes in benefit provisions, the size or composition of the population covered by the plan, or the actuarial methods and assumptions used. (The amounts reported for prior years should not be restated.)

APPENDIX II: GLOSSARY

Actuarial Liability (AL)

That portion, as determined by a particular Actuarial Cost Method, of the Present Value of Future Benefits (PVFB) and expenses which is not provided for by future Normal Costs. Generally this means the portion of the PVFB attributable to past service.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting OPEB costs, such as: mortality, withdrawal, disablement and retirement; changes in compensation and Government provided pension benefits; rates of investment earnings and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; characteristics of future entrants for Open Group Actuarial Cost Methods; and other relevant items.

Actuarial Cost Method

A procedure for determining an actuarially equivalent allocation of the Present Value of Future Benefits to time periods, usually in the form of a Normal Cost and an Actuarial Liability.

Actuarial Valuation

The determination, as of a valuation date, of the Normal Cost, Actuarial Liability, Actuarial Value of Assets, and related Actuarial Present Values for an OPEB plan.

Actuarial Valuation Date

The date as of which an actuarial valuation is performed.

Actuarial Value of Assets

The value of cash, investments and other property belonging to an OPEB plan, as used by the actuary for the purpose of an Actuarial Valuation.

Annual OPEB Cost (or Expense)

An accrual-basis measure of the periodic cost of an employer's participation in a defined benefit OPEB plan.

Annual Required Contributions of the Employer (ARC)

The employer's periodic required contributions to a defined benefit OPEB plan, calculated in accordance with the plan provisions, actuarial assumptions, actuarial cost method and other actuarial method prescribed by GASB 45.

Discount Rate

The rate used to adjust a series of future payments to reflect the time value of money. The GASB specifies that this rate should equal the expected return on invested assets relative to the assets that will be used to pay for the benefits specified by the OPEB plan.

APPENDIX II: GLOSSARY

Funding Policy

The program for the amounts and timing of contributions to be made by plan members, employer, and other contributing entities (for example, state government contributions to a local government plan) to provide the benefits specified by an OPEB plan.

Healthcare Cost Trend

The rate of change in per capita health claims costs over time as a result of factors such as medical inflation, utilization of healthcare services, plan design, and technological developments.

Level Dollar Amortization Method

The amount to be amortized is divided into equal dollar amounts to be paid over a given number of years; part of each payment is interest and part is principal (similar to a mortgage payment on a building). Because payroll can be expected to increase as a result of inflation, level dollar payments generally represent a decreasing percentage of payroll; in dollars adjusted for inflation, the payments can be expected to decrease over time.

Level Percentage of Projected Payroll Amortization Method

Amortization payments are calculated so that they are a constant percentage of the projected payroll of active plan members over a given number of years. The dollar amount of the payments generally will increase over time as payroll increases due to inflation; in dollars adjusted for inflation, the payments can be expected to remain level.

Normal Cost (NC)

That portion of the present value of future benefits which is allocated to a valuation year by the Actuarial Cost Method. The normal cost is specific to the cost method used.

OPEB Assets

The amount recognized by an employer for contributions to an OPEB plan greater than OPEB expense.

OPEB Expense

The amount recognized by an employer in each accounting period for contributions to an OPEB plan on the accrual basis of accounting.

Other Postemployment Benefits (OPEB)

Postemployment benefits other than pension benefits. Other postemployment benefits (OPEB) include postemployment healthcare benefits, regardless of the type of plan that provides them, and all postemployment benefits provided separately from a pension plan, excluding benefits defined as termination offers and benefits. Other types of OPEB benefits include postemployment life insurance, educational benefits, dues, discounts, and any other postemployment non-pension benefit.

APPENDIX II: GLOSSARY

Net OPEB Obligation

The cumulative difference since the effective date of the statement between the annual OPEB cost and the employer's contributions to the plan. This equals the liability amount recognized on the financial statement.

Parameters

The set of requirements for calculating actuarially determined OPEB information included in financial reports.

Pay-As-You-Go

A method of financing an OPEB plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.

Payroll Growth Rate

An actuarial assumption with respect to future increases in total covered payroll attributable to inflation; used in applying the level percentage of projected payroll amortization method.

Per Capita Costs

Expected benefit cost for the valuation year on a per individual plan participant basis. The GASB requires that per capita costs should represent the expected benefit payments specific to the characteristics of the plan participants; subsidies to or from another employee benefit group are not permitted. The per capita costs form the basis from which the present value of future benefits is developed.

Plan Assets

Resources, usually in the form of stocks, bonds, and other classes of investments, that have been segregated and restricted in a trust, or equivalent arrangement, in which (a) employer contributions to the plan are irrevocable, (b) assets are dedicated to providing benefits to retirees and their beneficiaries, and (c) assets are legally protected from creditors of the employer(s) or plan administrator, for the payment of benefits in accordance with the terms of the plan.

Plan Members

The individuals covered by the terms of an OPEB plan. The plan membership generally includes employees in active service, terminated employees who have accumulated benefits but are not yet receiving them, and retired employees and beneficiaries currently receiving benefits.

Postemployment

The period between termination of employment and retirement as well as the period after retirement.

APPENDIX II: GLOSSARY

Postemployment Healthcare Benefits

Medical, dental, vision, and other health-related benefits provided to terminated or retired employees and their dependents and beneficiaries.

Present Value of Future Benefits (PVFB)

Projected benefits estimated to be payable to plan members (retirees and beneficiaries, terminated employees entitled to benefits but not yet receiving them, and current active members upon retirement) as a result of their service through the valuation date and their expected future service. The actuarial present value of projected future benefits as of the valuation date is the present value of the cost to finance benefits payable in the future, discounted to reflect the expected effects of the time value (present value) of money and the probabilities of payment (taking into account mortality, turnover, probability of participating in plan retirement, etc.). Alternatively, it is the amount that would have to be invested on the valuation date so that the amount invested plus investment earnings will provide sufficient assets to pay the projected benefits when due. Generally the PVFB includes expenses associated with the plan (claims adjudication, investment, etc.).

Substantive Plan

The terms of an OPEB plan as understood by the employer(s) and plan members. If administrative practices are different from the written plan benefits and are expected to continue, then the substantive plan is based on such administrative practices. GASB Statements GASB 43 and GASB 45 permit use of any one of six actuarial cost methods. An actuarial cost method is a mathematical means of allocating the present value of projected future benefits to certain time periods. Each of the permitted methods is briefly described below.

APPENDIX III: ACTUARIAL COST METHODS

Unit Credit Actuarial Cost Method

A method under which the benefits (projected or unprojected) of each individual included in an Actuarial Valuation are allocated by a consistent formula to valuation years. The Actuarial Present Value of benefits allocated to a valuation year is called the Normal Cost. The Actuarial Present Value of benefits allocated to all periods prior to a valuation year is called the Actuarial Liability or Actuarial Liability. Under this method, the Actuarial Gains (Losses), as they occur, generally reduce (increase) the Unfunded Actuarial Liability.

Entry Age Actuarial Cost Method or Entry Age Normal Actuarial Cost Method

A method under which the Actuarial Present Value of the Future Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings or service of the individual between entry age and assumed exit age(s). The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Liability. Under this method, the Actuarial Gains (Losses), as they occur, reduce (increase) the Unfunded Actuarial Liability.

Attained Age Actuarial Cost Method

A method under which the excess of the Actuarial Present Value of Future Benefits over the Actuarial Liability in respect of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings or service of the individual between the valuation date and assumed exit. The portion of this Actuarial Present Value which is allocated to a valuation year is called the Normal Cost. The Actuarial Liability is determined using the Unit Credit Actuarial Cost Method. Under this method, the Actuarial Gains (Losses), as they occur, reduce (increase) the Unfunded Actuarial Liability.

Aggregate Actuarial Cost Method

A method under which the excess of the Actuarial Present Value of Future Benefits of the group included in an Actuarial Valuation over the Actuarial Value of Assets is allocated on a level basis over the earnings or service of the group between the valuation date and assumed exit. This allocation is performed for the group as a whole, not as a sum of individual allocations. That portion of the Actuarial Present Value allocated to a valuation year is called the Normal Cost. The Actuarial Liability is equal to the Actuarial Value of Assets. Under this method, the Actuarial Gains (Losses), as they occur, reduce (increase) future Normal Costs.

Frozen Entry Age Actuarial Cost Method

A method under which the excess of the Actuarial Present Value of Future Benefits of the group included in an Actuarial Valuation, over the sum of the Actuarial Value of Assets plus the Unfunded Frozen Actuarial Liability, is allocated on a level basis over the

APPENDIX III: ACTUARIAL COST METHODS

earnings or service of the group between the valuation date and assumed exit. This allocation is performed for the group as a whole, not as a sum of individual allocations. The Frozen Actuarial Liability is determined using the Entry Age Actuarial Cost Method. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. Under this method, the Actuarial Gains (Losses), as they occur, reduce (increase) future Normal Costs.

Frozen Attained Age Actuarial Cost Method

A method under which the excess of the Actuarial Present Value of Future Benefits of the group included in an Actuarial Valuation, over the sum of the Actuarial Value of Assets plus the Unfunded Frozen Actuarial Liability, is allocated on a level basis over the earnings or service of the group between the valuation date and assumed exit. This allocation is performed for the group as a whole, not as a sum of individual allocations. The Unfunded Frozen Actuarial Liability is determined using the Unit Credit Actuarial Cost Method. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. Under this method, the Actuarial Gains (Losses), as they occur, reduce (increase) future Normal Costs.