City of Annapolis
Other Postemployment Benefits

Actuarial Valuation
As of June 30, 2013

Produced by Cheiron

December 2013

Classic Values, Innovative Advice

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December 16, 2013

VIA ELECTRONIC MAIL AND U.S. MAIL

Mr. Bruce Miller, Finance Director
City of Annapolis
160 Duke of Gloucester Street
Annapolis, Maryland 21401

Re: City of Annapolis Other Postemployment Benefits Valuation

Dear Bruce:

This report documents the results of the Other Postemployment Benefits (OPEB) valuation as of June 30, 2013, covering postretirement health insurance benefits. The following report contains our findings as well as commentary about Governmental Accounting Standards Board (GASB) standards.

The purpose of this report is to present the annual actuarial valuation of the City of Annapolis postretirement health insurance benefits. This report is for the use of the City of Annapolis and its auditors in preparing financial reports in accordance with applicable law and accounting requirements.

Appendix A describes the Participant Data, Assumptions, and Methods used in calculating the figures throughout the report. In preparing our report, we relied on information (some oral and some written) supplied by the city of Annapolis. This information includes, but is not limited to, the plan provisions, employee data, and financial information. The demographic assumptions used in this report are the same as those used by the State Retirement and Pension Systems of Maryland – Employees' Pension System for the general employees covered by this plan. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Appendix B contains our understanding of the substantive plan provisions based on the information provided by your office as of the valuation date. This report does not reflect any changes adopted after June 30, 2013.

This report reflects the benefits formalized in each agreement and depends on the future experience conforming to the actuarial assumptions used. The results will change to the extent that future experience differs from the assumptions. Actuarial computations are calculated based on our understanding of GASB 43/45 and are for purposes of fulfilling employer financial accounting requirements. Determinations for purposes other than meeting employer financial accounting requirements may be significantly different from the results in these exhibits. This report does not reflect future changes in benefits, penalties, taxes, excise taxes or administrative costs that may be required as a result of the Patient Protection and Affordable Care Act of 2010, related legislation, or regulations.

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To the best of our knowledge, this report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This actuarial valuation report was prepared for the City of Annapolis for the purposes described herein, except that the plan auditor may rely on this report solely for the purpose of completing an audit related to the matters herein. This report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.

Sincerely,
Cheiron

Margaret A. Tempkin, FSA, EA, MAAA	John L. Colberg, FSA, EA, MAAA
Principal Consulting Actuary	Principal Consulting Actuary

SECTION I
INTRODUCTION

City of Annapolis has engaged Cheiron to provide a valuation of the Other Postemployment Benefit Plan. The primary purpose of performing this actuarial valuation is to:

- Estimate the current cost of the retiree health benefits using GASB 43/45 methodology under current funding strategy;
- Show sensitivities to changes in trends and assumptions; and
- Illustrate the long-term effect of GASB on the City's financial system under an actuarial funding strategy.

We have determined cost, liabilities, and other factors under the Plan on the basis that all actuarial assumptions and methods are reasonable.

GASB's OPEB Requirements:

The Governmental Accounting Standards Board (GASB) has released Statement 43 regarding financial reporting for postemployment benefits plans other than pension plans and a companion Statement (number 45) regarding the employer accounting for these plans. Statement 43 is generally applicable where an entity has a separate trust or fund for OPEB benefits. Statement 45, which takes effect in the fiscal year ending June 30, 2009, requires the Plan Sponsor to book the actuarial cost (net of employee and retiree contributions) of the plan as an expense on its financial statements and then accrue a liability to the extent actual contributions were less than this expense. Additional disclosures include a description of the plan, summary of significant accounting policies, contributions, and a Schedule of Funding Progress, along with the methods and assumptions used for those disclosures.

Funding Policy

The City of Annapolis currently pays for its postemployment health benefits on a pay-as-you-go (PAYGo) basis. We further understand that a dedicated Trust has not been established as of this valuation.

SECTION II
VALUATION RESULTS AND FUTURE PROJECTIONS

Below we summarize our analysis:

- The actuarial liability under the Entry Age Normal Actuarial Cost Method as of June 30, 2013 is $50.5 million on a pay-as-you-go funding approach, compared to $0 in assets.

- The Annual Required Contribution (ARC) under GASB 43 and 45 for FY 2014 is $4.9 million, which is $3.4 million in excess of an estimated pay-as-you-go cost of $1.5 million based on the assumptions used in this report.

- The Annual OPEB Cost (AOC) under GASB 45 is $4.9 million for the fiscal years ending June 30, 2014.

- The Net OPEB Obligation (NOO) for the fiscal year ending June 30, 2013 is $20.1 million, and for the fiscal year ending June 30, 2014, it is estimated to be $23.6 million depending on actual contributions during the fiscal year.

- The figures provided in this report are highly sensitive to the assumptions used, and we show how sensitive the results are to changes in the health care trend rate.

The remainder of this report provides additional detail on our analysis. First we present the results of our baseline actuarial study, following with sensitivity analyses to both assumptions and benefits; we then introduce options to reduce the Other Postemployment Benefit (OPEB) impact and conclude with information on the GASB OPEB requirements.

The fundamental principal underlying our analysis, as well as the proposed GASB standard, is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. The *normal cost* is the annual amount which would be sufficient to fund the plan benefits (net of retiree contributions) if it were paid from each employee's date of hire until termination or retirement. Under the method used in our analysis, the normal cost is determined as a percentage of pay. This means the underlying dollar amount is expected to increase each year as salary increases. The *actuarial liability* represents the portion of the value of the projected benefit at retirement that is allocated to service earned prior to the valuation date; that is, it represents the accumulation of past normal costs from date of hire until the valuation date. The *unfunded actuarial liability* represents the excess of the actuarial liability over plan assets. The *pay-as-you-go cost* represents the expected annual cost of health coverage less retiree contributions for current and future retirees based on the valuation assumptions. This figure can be significantly higher than the premiums because the premiums primarily reflect the cost of active, not retiree, coverage.

SECTION II
VALUATION RESULTS AND FUTURE PROJECTIONS

Information about the actuarial liabilities of the Plan as of June 30, 2013 is shown in Table II-1 below.

Table II-1
Actuarial Liability
Pay-As-You-Go Funding (4.0% assumed discount)
($ in thousands)

	General	Police/Fire	Total
Actives	$ 8,393	$ 20,562	$ 28,955
Retirees	2,607	18,984	21,591
Total	**$ 11,000**	**$ 39,546**	**$ 50,546**
Assets	0	0	0
UAL	**$ 11,000**	**$ 39,546**	**$ 50,546**

Please note, however, that GASB only requires disclosure of the above liability and does not require the entity to immediately record the entire liability on the balance sheet. GASB's requirement is that the entity is required to show the annual required contribution (ARC) as the expense, and the cumulative difference, beginning in FY10 of the Net OPEB Obligation (NOO), which is the ARC less actual contributions (plus an adjustment to avoid double-counting).

The ARC consists of two parts: (1) the *normal cost*, which represents the annual cost attributable to service earned in a given year, and (2) the 30-year amortization of the unfunded actuarial liability (UAL). The UAL under pay-as-you-go (PAYGo) funding will be larger than under actuarial funding. Not all ARC is new expense. Under the current funding method of pay-as-you-go funding, the City pays for the benefits currently provided to existing retirees. The difference between the actual contributions made (benefits provided) and the annual required contributions is the increase in expense on the financial statements of the City.

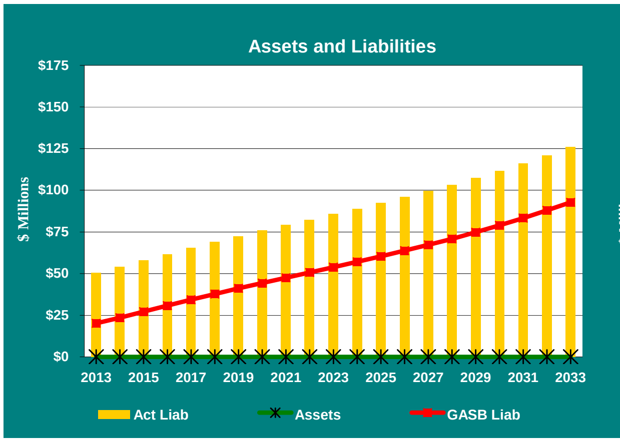
In Table II-2 below, we show the computed FY 2014 annual required contribution (ARC) under the PAYGo funding approach method and a 4.0% assumed discount rate. In addition, we have shown the PAYGo cost and the net increase.

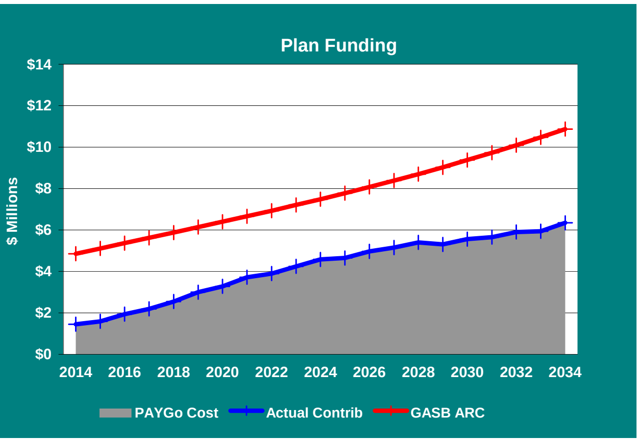
Table II-2
GASB ARC – FY2014
Pay-As-You-Go Funding (4.0% assumed discount)
($ in thousands)

	General	Police/Fire	Total
Normal Cost	$ 658	$ 2,380	$ 3,038
UAL Amortization	395	1,419	1,814
Total	**$ 1,053**	**$ 3,799**	**$ 4,852**
PAYGo Cost	294	1,158	1,452
Amt. Above PAYGo	$ 759	$ 2,641	$ 3,400

SECTION II
VALUATION RESULTS AND FUTURE PROJECTIONS

Looking beyond 2013, both the expense and liability on the financial statements increase dramatically under PAYGo funding. The charts below project the assets and liabilities and the funding costs for the next 20 years.





The left chart shows the actuarial liability increasing from about $51 million to about $126 million during the next 20 years. The red line on the same chart shows the liability appearing on the City's financial statements, which is projected to be about $93 million after 20 years.

The chart on the right shows the annual costs. Benefit payments, net of retiree contributions, are shown by the grey area and increase from $1.5 million to about $6.3 million. The blue line represents the City's contributions. Under PAYGo funding, naturally they match the net benefit payments. The ARC, shown by the red line, increases from $4.9 million to $10.9 million over the 20-year period.

Below are the expected net benefit payments that we anticipate for the next 15 years under Pay-As-You-Go.

Table II-3
Expected Net Benefit Payments
($ in thousands)

Fiscal Year Ending June 30	Expected Net Benefit Payments	Fiscal Year Ending June 30	Expected Net Benefit Payments	Fiscal Year Ending June 30	Expected Net Benefit Payments
2014	$ 1,451.5	2019	$ 2,995.3	2024	$ 4,575.9
2015	1,589.9	2020	3,278.3	2025	4,650.3
2016	1,936.6	2021	3,722.2	2026	4,964.5
2017	2,195.0	2022	3,896.3	2027	5,151.2
2018	2,541.6	2023	4,241.4	2028	5,400.1

SECTION III
RECONCILIATION WITH PRIOR RESULTS

Value of Assets

Table III-1, below, shows the change in the value of assets through fiscal year ending 2013. City of Annapolis currently does not have a trust for their other postemployment benefits and therefore there are no assets held for these benefits.

Table III-1
Market Value of Assets

	FYE 2012	FYE2013
Market Value of Assets, beginning of year	**NA**	**NA**
Contributions		
Employer	NA	NA
Employee	NA	NA
Total	NA	NA
Benefit payments*	NA	NA
Market Value of Assets, end of year	**NA**	**NA**

* Benefit payments are paid out of the general fund.

SECTION III
RECONCILIATION WITH PRIOR RESULTS

Reconciliation with Prior Results

Table III-2 provides an estimate of the major factors contributing to the change in liability since the last actuarial valuation report (AVR). Note that the expected values as of June 30, 2013 are based on assumptions and methods from the prior valuation.

Table III-2
Reconciliation with Prior Results
($ thousands)

	Actuarial Liability June 30, 2013	Normal Cost FYE 2014	FYE 2014 Annual Required Contribution
Expected values based on the 6/30/2012 actuarial valuation	**$ 48,203.5**	**$ 3,098.5**	**$ 4,828.4**
(Gain)/Loss due to:			
Demographic Changes	2,342.0	(60.4)	23.6
Plan Changes	0.0	0.0	0.0
Health Cost Assumptions	0.0	0.0	0.0
Other Assumptions	0.0	0.0	0.0
Total (Gain)/Loss	2,342.0	(60.4)	23.6
June 30, 2013 valuation results	**$ 50,545.5**	**$ 3,038.1**	**$ 4,852.0**

Below is a brief description of each of the changes shown above:

- *Demographic Changes* refer to the difference between the 6/30/2012 and 6/30/2013 census data. There was very little change in demographics over the past year.
- *Plan Changes* refers to the change in benefits provided at retirement. There were no plan changes between 6/30/2012 and 6/30/2013.
- *Health Cost Assumptions* refers to the change in expected current and future healthcare claims, expense costs, and premiums. These assumptions were not changed for this valuation.
- *Other Assumptions* refers to the change in the discount rate. There were no changes in discount rate.

SECTION IV
SENSITIVITY OF TRENDS

The liabilities and ARC produced in this report are sensitive to the assumptions used. Below we have shown the liabilities under the actuarial funding scenario using a 1% increase/decrease in health care trend rates to provide some measure of sensitivity.

Table IV-1
Actuarial Liability as of June 30, 2013
(4.00% discount rate)

Health Care Trend Rate	- 1%	Base	+ 1%
Actuarial Liability			
Actives	$ 26,807	$ 28,955	$ 30,723
Retirees	19,791	21,591	23,691
Total Actuarial Liability	**$ 46,598**	**$ 50,546**	**$ 54,414**
Assets	0	0	0
UAL	**$ 46,598**	**$ 50,546**	**$ 54,414**

Table IV-2
GASB ARC – FYE 2014
(4.00% discount rate)

Health Care Trend Rate	- 1%	Base	+ 1%
Employer Normal Cost	$ 2,307	$ 3,038	$ 4,017
UAL Amortization	1,672	1,814	1,953
Total ARC	**$ 3,979**	**$ 4,852**	**$ 5,970**
Estimated Pay as you go cost	1,452	1,452	1,452
Amount above PayGo	**$ 2,527**	$ 3,400	**$ 4,518**

SECTION V
ACTUARIAL FUNDING

To have a system where the assets will eventually accumulate to the actuarial liability, meaning that the entire liability is funded, the City of Annapolis may wish to begin funding this program on an actuarial basis by contributing the ARC. If the City were to establish a funding policy of contributing the ARC, the discount rate could be increased. Using a discount rate of 7.5% (matching the pension assumption) produces an unfunded liability of $35.5 million, rather than $50.5 million.

In addition to the change in overall liability, the annual required contribution will also decrease. Thus, in order to fund on an actuarial basis, the City needs to contribute $3.7 million, or $2.2 million above the PAYGo cost.

If the City increases its contribution, but it is still less than the actuarially funded scenario, the discount rate will increase above the 4.0% discount rate, and the resulting liabilities and ARC payments will likely fall between the two discount rate scenarios presented in this report.

Under actuarial funding, the assets will eventually accumulate to the actuarial liability, meaning that the entire liability is funded. Information about the actuarial liabilities, the assets, and the unfunded actuarial liability (UAL) of the Plan as of June 30, 2013 is shown in the table that follows.

Table V-1
Actuarial Liability
Actuarial Funding (7.5% assumed discount)
($ in thousands)

	General	Police/Fire	Total
Actives	$ 6,004	$ 13,515	$ 19,519
Retirees	2,102	13,900	16,002
Total	**$ 8,106**	**$ 27,415**	**$ 35,521**
Assets	0	0	0
UAL	**$ 8,106**	**$ 27,415**	**$ 35,521**

SECTION V
ACTUARIAL FUNDING

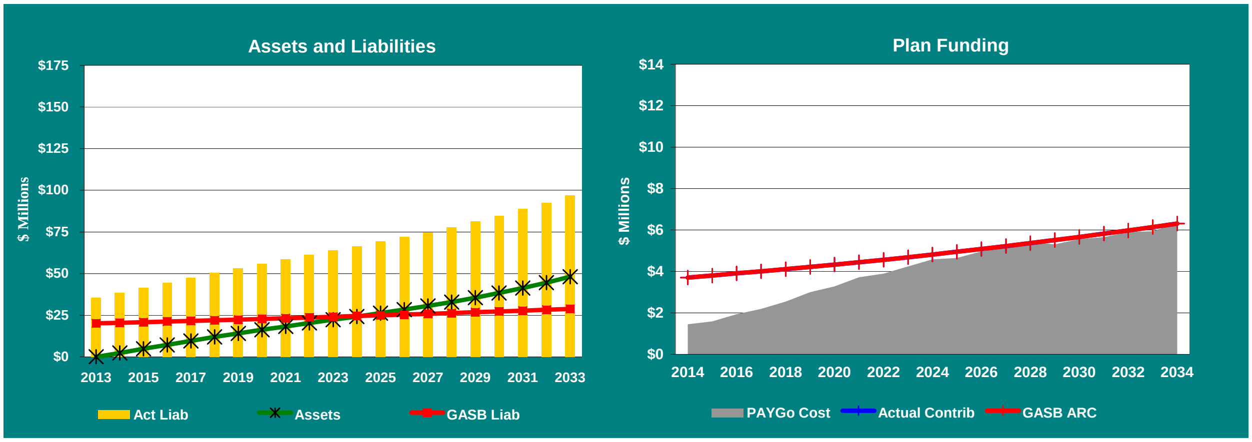
In addition to the change in overall liability, the annual required contribution will also decrease. Thus, in order to fund on an actuarial basis, the City will need to contribute an additional $2,246 thousand above the $1,452 thousand. In addition, the City would need to contribute approximately 10-11% of payroll in each future year to stay at the actuarial funding levels. The resulting information under actuarial funding for the ARC is shown below in Table V-2.

Table V-2
GASB ARC – FY2014
Actuarial Funding (7.5% assumed discount)
($ in thousands)

	General	Police/Fire	Total
Normal Cost	$ 446	$ 1,232	$ 1,678
UAL Amortization	461	1,559	2,020
Total	**$ 907**	**$ 2,791**	**$ 3,698**
PAYGo Cost	294	1,158	1,452
Amt. Above PAYGo	$ 613	$ 1,633	$ 2,246

SECTION V
ACTUARIAL FUNDING

Over time, actuarial funding builds up assets to fund the liability, as shown in the charts below. The charts below project the assets and liabilities and the funding cost for the next 20 years under one possible actuarial funding scenario.



As the graph on the left shows, the actuarial liability increases from $36 million to $97 million during the next 20 years, compared to $51 million to $126 million if unfunded. Assets over the same period are projected to grow to $48 million, funding 50% of the liability by 2033. Under this actuarial funding scenario, the liability on the City's financial statements growth is limited, rather than rapid growth shown on page 4.

The graph on the right shows the annual costs. Benefit payments, net of retiree contributions, are the same as the PAYGo scenario. The blue line (which is covered by the red line) represents the City's contribution and mirrors the ARC. The ARC increases from $3.7 million to $6.3 million over the 20-year period and is projected to have a slight decrease as a percent of payroll. Starting around 2028, the actuarial contributions are projected to be close to the pay-as-you-go costs.

SECTION V
ACTUARIAL FUNDING

Below are the employer contributions, benefit payments, assets and NOO that we anticipate for the next 15 years under Actuarial Funding.

Table V-3
Expected Contributions,
Expected Net Benefit Payments,
Assets and NOO
($ in thousands)

Fiscal Year Ending June 30	Expected Contributions	Expected Net Benefit Payments	Expected Assets	Expected NOO
2014	$ 3,699	$ 1,452	$ 2,331	$ 20,448
2015	3,803	1,590	4,800	20,818
2016	3,904	1,937	7,199	21,195
2017	4,002	2,195	9,613	21,579
2018	4,107	2,542	11,958	21,970
2019	4,216	2,995	14,120	22,368
2020	4,328	3,278	16,267	22,773
2021	4,443	3,722	18,234	23,186
2022	4,561	3,896	20,291	23,606
2023	4,685	4,241	22,273	24,033
2024	4,813	4,576	24,189	24,469
2025	4,946	4,650	26,309	24,912
2026	5,082	4,965	28,404	25,363
2027	5,222	5,151	30,609	25,823
2028	5,367	5,400	32,869	26,291

SECTION VI
ACCOUNTING DISCLOSURES

Statement No. 43 and Statement No. 45 of the Governmental Accounting Standards Board (GASB) establish standards for disclosure of other postemployment benefit information by governmental employers and plans in notes to financial statements and supplementary information. In accordance with those statements, we have prepared the following disclosures:

Schedule of Funding Progress

The schedule of funding progress compares the assets used for funding purposes to the comparable liabilities to determine how well the Plan is funded and how this status has changed over the past several years. The actuarial liability is compared to the actuarial value of assets to determine the funding ratio. The Actuarial Liability under GASB is determined assuming that the Plan is ongoing and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions.

Schedule of Employer Contributions

The schedule of employer contributions shows whether the employer has made contributions that are consistent with an actuarially sound method of funding the benefits to be provided. We have also provided a *Note to Required Supplementary Information* for the financial statements.

Table VI-1
Schedule of Funding Progress
($ thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Liabilities * (b)	Unfunded Actuarial Liabilities (UAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAL as a Percentage of Covered Payroll [(b-a)/c]
6/30/2013	$ 0	$ 50,546	$ 50,546	0%	$ 32,445	155.8%
6/30/2012	0	44,644	44,644	0%	31,842	140.2%
6/30/2011	0	46,146	46,146	0%	31,350	147.2%
6/30/2010	0	48,371	48,371	0%	30,230	160.0%
6/30/2009	0	43,567	43,567	0%	29,208	149.2%

Table VI-2
Schedule of Employer Contributions
($ in thousands)

Fiscal Year Ended June 30,	Annual Required Contribution* (ARC)	Employer Contributions	Percentage of ARC Contributed
2014	$ 4,852	*TBD After Year End*	*TBD After Year End*
2013	4,575	1,254	27.4%
2012	4,660	1,250	26.8%
2011	6,189	1,621	26.2%
2010	5,817	1,356	23.3%

* Under PAYGo Funding, 2011 was a roll forward from the 2010 valuation results.

SECTION VI
ACCOUNTING DISCLOSURES

Table VI-3 below shows the development of the Net OPEB Obligation.

Table VI-3
Development of Net OPEB Obligation
($ in thousands)

Net OPEB Obligation/(Asset) as of June 30, 2012	**$ 16,693.7**
Annual Required Contribution (ARC) for FY2013	$ 4,575.0
Adjustment to ARC	(599.1)
Interest on Net OPEB Obligation at 4.5%	667.8
Annual OPEB Cost (AOC)	$ 4,643.6
Employer Contributions:	$ (1,253.7)
Net OPEB Obligation/(Asset) as of June 30, 2013	**$ 20,083.7**

Table VI-4
Note to Required Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

Valuation Date	June 30, 2013
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level percent open
Remaining Amortization Period	30 years
Asset Valuation Method	Market Value
Actuarial Assumptions:	
Investment Rate of Return	4.0%
Rate of Salary Increases	3.5% (plus merit scale)
Rate of Medical Inflation	9.15% grading down to 4.25% over 14 years
Rate of Prescription Inflation	9.15% grading down to 4.25% over 14 years
Rate of Dental and Vision Inflation	4.5% per year

For determining the GASB ARC, the rate of employer contributions to the Plan is composed of the Normal Cost plus amortization of the Unfunded Actuarial Liability. The Normal Cost is a portion of the actuarial present value of plan benefits and expenses which is allocated to a valuation year by the actuarial cost method. The Actuarial Liability is that portion of the Present Value of Projected Benefits that will not be paid by Future Employer Normal Costs or active employee contributions. The difference between this liability and the funds accumulated as of the same date is the Unfunded Actuarial Liability.

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Participant Data as of June 30, 2013

	Police/Fire	General*	Total
Actives			
Employees	234	274	508
Average Age	38	50	44
Average Service	10	13	11
Non-Medicare - Medical			
Retirees	78	21	99
Retirees Average Age	53	58	54
Spouses	40	5	45
Non-Medicare – Prescription			
Retirees	76	21	97
Retirees Average Age	53	58	54
Spouses	40	5	45
Non-Medicare – Dental			
Retirees	78	21	99
Retirees Average Age	53	58	54
Spouses	39	5	44
Non-Medicare – Vision			
Retirees	72	20	92
Retirees Average Age	52	58	54
Spouses	34	3	37

* Contractors are not eligible for retiree medical benefits

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

	Police/Fire	General	Total
Actives (under 65 only)			
CORE Medical	28	46	74
PLUS Medical	182	191	373
Waived Medical	24	37	61
Total Medical	**234**	**274**	**508**
Dental	**210**	**244**	**454**
Vision	**207**	**245**	**452**
Prescription	**206**	**233**	**439**
Retirees (under 65 only)			
Blue Choice Medical	5	2	7
CORE Medical	33	6	39
PLUS Medical	40	13	53
Waived Medical	6	4	10
Total Medical	**84**	**25**	**109**
Dental	**78**	**21**	**99**
Vision	**72**	**20**	**92**
Prescription	**76**	**21**	**97**

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Economic Assumptions

Discount Rate:	4.0% per year
Assumed Asset Return:	7.5% per year
Salary Inflation:	3.5% per year
Medical Trend:	Pre-Medicare – 9.15% (initially applied for the costs for July 1, 2014 – June 30, 2015) grading down to 4.25% over 14 years Prescription – 9.15% (initially applied for the costs for July 1, 2014 – June 30, 2015) grading down to 4.25% over 14 years Dental and Vision – 4.5% for all future years Fixed dollar amounts in the heath care benefits (deductibles, co-pays, benefit maximums, etc.) are assumed to increase periodically to keep pace with medical trend.

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Demographic Assumptions

1. Healthy Mortality Rates

General Employees:

RP-2000 Combined Healthy Mortality Table with ages set back two years for females
There is no projection for future mortality improvements.

Annual Deaths Per 10,000 Members		
Age	Male	Female
45	15	9
50	21	14
55	36	22
60	67	39
65	127	76
70	222	134
75	378	230
80	644	376

Police and Fire:

RP-2000 Projected to 2016 with Scale AA for males and females
There is no projection for future mortality improvements.

Annual Deaths Per 10,000 Members		
Age	Male	Female
20	3	2
25	4	2
30	4	3
35	8	4
40	10	7
45	14	10
50	20	15
55	33	26
60	62	49
65	119	95
70	206	163
75	353	270
80	612	443
85	1,069	752
90	1,798	1,297
95	2,648	1,926
100	3,428	2,363
105	3,979	2,931

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

2. Disabled Mortality Rates

General Employees:

Male (RP-2000 Disabled Retiree Table set back 4 years)
Female (RP-2000 Disabled Retiree Table)

Annual Deaths Per 10,000 Members		
Age	**Male**	**Female**
45	226	75
50	238	115
55	303	165
60	367	218
65	435	280
70	522	376
75	658	522
80	870	723

Police and Fire:

RP-2000 Mortality Table Projected to 2016 with Scale AA, set forward 5 years

Annual Deaths Per 10,000 Disabled Members		
Age	**Male**	**Female**
30	8	4
35	10	7
40	14	10
45	20	15
50	33	26
55	62	49
60	119	95
65	206	163
70	353	270

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

3. Disability Rates

General Employees:

Annual Disabilities Per 10,000 Members				
	Ordinary Disability		Accidental Disability	
Age	**Male**	**Female**	**Male**	**Female**
25	12	9	3	2
30	12	9	3	2
35	21	15	4	3
40	40	27	6	4
45	51	41	5	4
50	61	58	4	4
55	81	81	4	4

Police and Fire:

Annual Disabilities Per 10,000 Members	
Age	**Male and Female**
20	13
25	20
30	28
35	35
40	43
45	50
50	50
55	50
60	0

100% of disabilities are assumed to be service-connected.

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

4. Termination Rates

General Employees:

Annual Terminations Per 1,000 Male Members				
	Years of Service			
Age	**0**	**3**	**9**	**9+**
25	200	90	50	50
30	200	90	50	40
35	200	90	50	40
40	200	90	50	30
45	200	90	50	25
50	200	90	50	25
55	200	90	50	20

Annual Terminations Per 1,000 Female Members				
	Years of Service			
Age	**0**	**3**	**9**	**9+**
25	200	80	45	45
30	200	80	45	30
35	200	80	45	30
40	200	80	45	25
45	200	80	45	25
50	200	80	45	20
55	200	80	45	15

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Police and Fire:

Annual Terminations Per 1,000 Members	
Years of Service	**Terminations**
1	100
2	50
3	30
4	30
5	30
6	30
7	30
8	10
9	10
10+	10

5. Retirement Rates

General Employees:

Annual Retirements Per 1,000 Members Early				
	First Year Eligible		**Subsequent Years**	
Age	**Male**	**Female**	**Male**	**Female**
45	0	0	0	0
50	0	0	0	0
55	30	35	70	100
60	80	80	45	55
65	N/A	N/A	N/A	N/A
70	N/A	N/A	N/A	N/A

Annual Retirements Per 1,000 Members Normal				
	First Year Eligible		**Subsequent Years**	
Age	**Male**	**Female**	**Male**	**Female**
45	140	160	70	100
50	140	160	70	100
55	140	170	70	100
60	140	260	110	160
65	50	60	200	230
70	50	60	150	160
75	1,000	1,000	1,000	1,000

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Police and Fire:

Retirement Pattern for 100 Members with 20 Years of Service		
	Number Retiring	
Year of Service	**Police**	**Fire**
20	35	15
21	30	15
22-24	15	15
25	50	33
26	15	15
27	75	15
28-29	15	25
30	15	50
31-34	15	30
35	100	100

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Claim and Expense Assumptions

The following claim & expense assumptions are applicable to the 12-month period beginning July 1, 2012 and include medical and drugs. Claim costs for dependents are for spouses plus the cost for dependent children. Subsequent years' costs are based on the assumptions below adjusted with trend.

		Males			Female Spouses	
Age	**EPO**	**Core**	**Plus**	**EPO**	**Core**	**Plus**
45	$ 4,054	$ 3,727	$ 4,932	$ 7,238	$ 6,626	$ 8,472
50	5,288	4,860	6,432	8,472	7,760	9,972
55	6,904	6,347	8,398	10,088	9,246	11,939
64	11,307	10,394	13,754	14,491	13,293	17,294
		Females			**Male Spouses**	
Age	**EPO**	**Core**	**Plus**	**EPO**	**Core**	**Plus**
45	$ 6,336	$ 5,824	$ 7,707	$ 9,520	$ 8,724	$ 11,247
50	7,253	6,667	8,823	10,437	9,567	12,363
55	8,398	7,719	10,215	11,582	10,619	13,755
64	11,642	10,701	14,160	14,826	13,601	17,701

City of Annapolis – Annual Drug Claims				
	Retirees		Spouses	
Age	**Male**	**Female**	**Male**	**Female**
45	$ 1,138	$ 1,522	$ 2,096	$ 2,480
50	1,572	2,008	2,529	2,966
55	2,099	2,584	3,057	3,542
64	3,140	3,429	4,098	4,386

City of Annapolis – Additional Annual Claims		
Plan	**Individual**	**Husband/Wife**
Dental Core	$ 205.92	$ 383.40
Dental Plus	344.64	748.08
Vision Core	77.04	165.84
Vision Plus	102.12	219.60

The above claim cost assumptions were increased by 9.50% for pre-Medicare medical and drug and by 4.5% for dental and vision to apply for the period July 1, 2013 through June 30, 2014.

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Retiree and Spouse Contributions:

The future (retire after 7/1/2012) General retiree and spouse will pay the remainder of the retiree premiums for the Core plan after the City pays 2.5% multiplied by each year of service up to a max of 75%. All SRA employees not in ASFCME will have to buy up for other options.

The future (retire after 7/1/2008 and vested as of 7/1/2012) Police and Fire retiree and spouse will pay 30% of the retiree premiums for the Core plan. For those participants not vested as of 7/1/2012, they will pay the remainder of the retiree premiums for the Core plan after the City pays 2.5% multiplied by each year of service up to a max of 70%. All Police and Fire will have to buy up for other options.

City of Annapolis – Monthly Retiree Premiums for Contributions (100% cost)				
	EPO	**Core**	**Plus**	**RX**
Individual	$ 518.01	$ 466.78	$ 568.97	$ 133.99
Parent/Child	1,030.87	933.32	1,138.38	266.81
Husband/Wife	1,325.99	1,196.27	1,567.22	440.22
Family	1,495.71	1,330.86	1,745.89	448.25
	Dental Core	**Dental Plus**	**Vision Core**	**Vision Plus**
Individual	$ 17.16	$ 28.72	$ 6.42	$ 8.51
Parent/Child	31.95	44.98	13.82	18.30
Husband/Wife	31.95	62.34	13.82	18.30
Family	47.32	83.49	13.82	18.30

The premiums are assumed to increase with medical trends. For the current retirees, actual retiree contributions were provided and are assumed to increase with trend. For this valuation, the above retiree contribution rates, as well as the actual contributions for current retirees, were increased by 9.50% for pre-Medicare medical and drug and by 4.5% for dental and vision.

Percentage of Employees Electing Coverage at Retirement:

It is assumed that 100% will elect coverage and will select the same coverage at retirement. Thus if a retiree has Plus benefits, they will pay the difference between Plus and Core.

Family Composition:

We have assumed that those electing coverage also cover their spouses. We have assumed that 51% of the population is married with General males four years older than their wives, and Police/Fire males one year older than their wives.

APPENDIX A
PARTICIPANT DATA, ASSUMPTIONS AND METHODS

Methodology

The Entry Age Actuarial Cost Method was used to value the Plan's actuarial liabilities and to set the normal cost. Under this method, the normal cost rate is the percentage of pay contribution which would be sufficient to fund the plan benefits if it were paid from each member's entry into the System until termination or retirement. A sample new entrant population based on ages of recently hired participants was used to value the normal cost.

For this year's valuation we completed a partial roll-forward, meaning that claims and trends have been kept the same as the prior year valuation, but the census data has been updated. The claim and expense assumptions for non-Medicare retirees were based on the premium rates for the collection of plans offered for the plan year ending June 30, 2013. We assumed that claims and contributions increased with the appropriate trends for the fiscal year ending June 30, 2014.

This valuation does not recognize any changes that have been negotiated or adopted after June 30, 2013.

APPENDIX B
SUBSTANTIVE PLAN PROVISIONS

Summary of Key Substantive Plan Provisions

Eligibility:

For Police/Fire: The City will provide to employees and eligible dependents, at cost of co-pay and deductibles, medical, hospitalization, major medical, dental, vision care, and co-pay prescription insurance coverage in effect at the time of retirement for employees who retire with 20 years of service under Retirement Plan for Members of the Police and Fire Departments of the City of Annapolis. Employees who retired after 7/1/2002, but before 7/1/2008 will pay 20% of the premiums. Employees retiring after 7/1/2008 and those vested has of 7/1/2012 will pay 30% of the premiums. Employees not vested as of 7/1/2012, will pay the remainder of the retiree premiums for the Core plan after the City pays 2.5% multiplied by each year of service up to a max of 70%. Coverage continues until retiree and/or spouse reaches Medicare eligibility age. Additional Medicare coverage is provided at full cost to retiree and/or spouse.

For General: The City will provide to employees and eligible dependents, at cost of co-pay and deductibles, medical, hospitalization, major medical, dental, vision care, and co-pay prescription insurance coverage in effect at the time of retirement for employees who retire with 20 years of service under State Retirement and Pension Systems of Maryland – Employees' Pension System. Employees who retired after 7/1/2012, will pay the remainder of the retiree premiums for the Core plan after the City pays 2.5% multiplied by each year of service up to a max of 75%. Coverage continues until retiree and/or spouse reaches Medicare eligibility age. Additional Medicare coverage is provided at full cost to retiree and/or spouse.

Employee Contributions:

No employee contributions are required prior to retirement to fund the City of Annapolis Other Postemployment Benefits Plan.

APPENDIX B
SUBSTANTIVE PLAN PROVISIONS

Benefits for Retirees

MEDICAL & PRESCRIPTION PLAN CHOICES

The City of Annapolis offers several medical plan options through CareFirst BlueCross BlueShield. Retirees may select from one of the following medical plans: CareFirst BlueChoice EPO, Core Plan, and the Plus Plan. Prescription drug benefits are provided through ExpressScripts and are the same regardless of the medical plan. The plans are summarized on the following page. Participants may choose one of the following coverage levels: Individual, Parent and Child, Husband and Wife or Family and may choose medical and drug coverage separately.

DENTAL PLAN CHOICES

The Core dental plan is a DHMO offered through DentaQuest Advantage. Members must use network providers and there are no deductibles to satisfy. The Plus dental plan is a Regional PPO plan through CareFirst BCBS. Benefits are summarized below.

CORE DENTAL PLAN SUMMARY		**PLUS DENTAL PLAN SUMMARY**		
DentaQuest Advantage - DHMO	**In Network Only ***	**CareFirst Regional - PPO**	**In Network**	**Out of Network ***
Maximum Benefit	$2,000	Maximum Benefit	$1,500	$1,500
Deductible - Individual	$25	Deductible - Individual	$25	$50
Deductible - Family	$75	Deductible - Family	$75	$150
Level I - Preventive	$0-115 Copay	Class I - Preventive *(Deductible Waived)*	100%	75% of AB
Level II - Primary Restorative	$13-780 Copay	Class II - Basic Services	80%	60% of AB
Level III - Major Restorative	$40-2300 Copay	Class III - Major Surgical Services	80%	60% of AB
Level IV - Child Orthodontia	Not Covered	Class IV - Major Restorative Services	50%	35% of AB
Level IV - Adult Orthodontia	Not Covered	Class V - Orthodontia *(Deductible Waived)* -$800 Maximum Lifetime Benefit	50%	35% of AB

* This plan requires members to use network providers. Benefits under this plan are paid according to a fee schedule. Participating providers and a fee schedule is available online by visiting www.dentaquestdental.com.

* Reimbursement is based on CareFirst's Allowed Benefit (AB). Participating providers may be found by visiting www.carefirst.com and selecting the Regional Preferred PPO dental plan.

VISION PLAN CHOICES

Both SpectraFlex Vision Options, Core and Plus, offer the Vision Service Plan (VSP). Each plan includes coverage for a comprehensive eye examination and select lenses and frames. The Core Plan provides services every 24 months and the Plus Plan allows services to be rendered every 12 months. The VSP plan allows members to access care either through the VSP provider network or through any provider. When accessing care in network, examinations are covered in full after a $10 copayment. Members choosing care from non-VSP providers are required to pay in full when receiving services and submit a claim form for reimbursement.

APPENDIX B
SUBSTANTIVE PLAN PROVISIONS

CAREFIRST BLUECROSS BLUESHIELD	EPO Medical Plan	Core Medical Plan		Plus Medical Plan	
	In Network Only *	In Network	Out of Network **	In Network	Out of Network **
Maximum Benefit (Lifetime)	Unlimited	Unlimited		Unlimited	
Deductible - Individual, Family	N/A	N/A	$300 / $900	N/A	$100 / $200
Out-of-Pocket Maximum - Individual, Family	N/A	$1,000 / $2,000		$800 / $1,600	
INPATIENT SERVICES					
Hospitalization	$100 Copay; 100%	$100 Copay; 90%	$100 Copay; 70%	$100 Copay; 100%	$100 Copay; 80%
Medical/Surgical	100%	90%	70%	100%	80%
Maternity Care	100%	90%	70%	100%	80%
OUTPATIENT SERVICES					
Physician Visits	$15 Copay	$15 Copay	70%	$15 Copay	80%
Specialists	$25 Copay	$15 Copay	70%	$15 Copay	80%
Routine Physicals *(PCP/Specialist)*	$15/25 Copay	$15 Copay	70%	$15 Copay	80%
Diagnostic/Xray/Lab - Provider's Office	100%	$15 Copay	70%	$10 Copay	80%
Outpatient Surgery	$20 Copay	90%	70%	100%	80%
Well Child Care	$15 Copay	$15 Copay	70%	$10 Copay	80%
Durable Medical Equipment	75%	90%	70%	100%	80%
Emergency Room (illness)	$75 Copay	$50 Copay; 90%	$50 Copay; 90%	$50 Copay; 100%	$50 Copay; 100%
Emergency Room (injury)	$75 Copay	$25 Copay; 90%	$25 Copay; 90%	$25 Copay; 100%	$25 Copay; 100%
Urgent Care Facility	$30 Copay	$25 Copay	70%	$25 Copay	80%
MENTAL ILLNESS - SUBSTANCE ABUSE					
Inpatient Psychiatric	100%	90%	70%	100%	80%
Outpatient Psychiatric Visits 1-5	80%	80%	80%	80%	80%
Outpatient Psychiatric Visits 6-30	65%	65%	65%	65%	65%
Outpatient Psychiatric Visits 31+	50%	50%	50%	50%	50%
Alcohol/Substance Abuse	Same as Psychiatric Benefits	Same as Psychiatric Benefits		Same as Psychiatric Benefits	
PRESCRIPTION DRUG PLANS					
Prescription Drug Program	ExpressScripts	ExpressScripts		ExpressScripts	
Annual Maximum Benefit	N/A	N/A		N/A	
Generic - Preferred - Non-Preferred	30-Day Supply: $10 - $25 - $40	30-Day Supply: $10 - $25 - $40		30-Day Supply: $10 - $25 - $40	
90-Day Supply / Mail-Order	$20 - $50 - $80	$20 - $50 - $80		$20 - $50 - $80	
Non-Covered Drugs	100% ES Discounted Cost	100% ES Discounted Cost		100% ES Discounted Cost	

* Members must select a Primary Care Physician to oversee all medical care. Referrals to specialists are required.

** Out of network benefits are reimbursed based on an Allowed Benefit (AB) set by CareFirst BCBS; therefore, members will be responsible for any difference between the provider’s charge and the CareFirst Allowed Benefit. Members accessing care from CareFirst providers will not be balance billed in excess of the Allowed Benefit.

APPENDIX C
GLOSSARY OF TERMS

1. **Actuarial Assumptions**
   Assumptions as to the occurrence of future events affecting pension costs such as: mortality, withdrawal, and retirement; changes in compensation; rates of investment earnings, and asset appreciation or depreciation; procedures used to determine the actuarial value of assets; and other relevant items.

2. **Actuarial Cost Method**
   A procedure for determining the actuarial present value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a normal cost and an actuarial liability.

3. **Actuarial Gain (Loss)**
   A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

4. **Actuarial Liability**
   The portion of the actuarial present value of projected benefits which will not be paid by future normal costs. It represents the value of the past normal costs with interest to the valuation date.

5. **Actuarial Present Value (Present Value)**
   The value as of a given date of a future amount or series of payments. The actuarial present value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made. As a simple example: assume you owe $100 to a friend one year from now. Also, assume there is a 1% probability of your friend dying over the next year, in which case you won't be obligated to pay him. If the assumed investment return is 10%, the actuarial present value is:

Amount		Probability of Payment		1 / (1+Discount Rate)		
$100	x	(1 - .01)	x	1/(1+.1)	=	$90

6. **Actuarial Valuation**
   The determination, as of a specified date, of the normal cost, actuarial liability, actuarial value of assets, and related actuarial present values for a pension plan.

7. **Actuarial Value of Assets**
   The value of cash, investments and other property belonging to a pension plan as used by the actuary for the purpose of an actuarial valuation. The purpose of an actuarial value of assets is to smooth out fluctuations in market values. This way, long-term costs are not distorted by short-term fluctuations in the market.

APPENDIX C
GLOSSARY OF TERMS

8. Amortization Payment
The portion of the pension plan contribution which is designed to pay interest and principal on the unfunded actuarial liability in order to pay for that liability in a given number of years.

9. Entry Age Normal Actuarial Cost Method
A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages.

10. Normal Cost
That portion of the actuarial present value of plan benefits and expenses which is allocated to a valuation year by the actuarial cost method.

11. Unfunded Actuarial Liability
The excess of the actuarial liability over the actuarial value of assets.

12. Funded Percentage
The ratio of the actuarial value of assets to the actuarial liabilities.

13. Mortality Table
A set of percentages which estimates the probability of death at a particular point in time. Typically, the rates are annual and based on age and sex.

14. Discount Rate
The assumed interest rate used for converting projecting dollar related values to a present value as of the valuation date.

15. Medical Trend
The assumed increase in dollar related values in the future due to the increase in the cost of health care.