THE ANNE ARUNDEL COUNTY
FIRE SERVICE
RETIREMENT PLAN

ACTUARIAL VALUATION
AS OF
JANUARY 1, 2011

Bolton Partners, Inc.
100 Light Street, 9th Floor
Baltimore, MD 21202

TABLE OF CONTENTS

BOLTON PARTNERS

May 2, 2011

PERSONAL & CONFIDENTIAL
Andrea Fulton
Personnel Officer
Anne Arundel County Government
P.O. Box 6675
Annapolis, MD 21401

Re: Fire Service Retirement Plan Valuation

Dear Andrea:

The following report sets forth the actuarial valuation as of January 1, 2011 of the Anne Arundel County Fire Service Retirement Plan, for the plan year beginning on that date. The valuation is based on participant data submitted by the personnel department of Anne Arundel County, Aetna and Prudential and unaudited asset data submitted by the County.

INVESTMENT PERFORMANCE

The market value of plan assets as of December 31, 2010 was $383,732,755. The average investment return for the fund on a market basis for the year ended December 31, 2010 was 14.3% and 1.8% on an actuarial basis.

The plan utilizes an actuarial averaging method to smooth out swings in investment performance and thus in asset values from year to year. Under the method, investment gains or losses above or below the 8% actuarial assumption are phased in over a five year period. As of December 31, 2010, the actuarial value of assets was $425,830,155. Details of the development of the actuarial value of assets are set forth later in this report.

PRINCIPAL RESULTS

The principal purpose of the valuation is to set forth the County's contributions for the fiscal year ending June 30, 2012. In addition, the report sets forth the information on the plan for the County's financial statements and for the plan's own financial statements. The January 1, 2010 results reflect the revised results provided in a May 12, 2010 letter and the difference from last year's valuation report is attributable to increased employee contribution percentages.

The total recommended employer contribution for the fiscal year ending June 30, 2012 increased from $14,209,656 to $14,580,535. This is in addition to employee contributions of 5% of pay for FSL and 7.25% for FR1. The increase can be broken down to the following factors:

January 1, 2010 valuation	29.0%
Investment Loss	0.2%
Expense Load	0.0%
Pay Increases	(0.4%)
New Entrants/Change in Normal Cost	0.1%
COLA	(0.8%)
Asset Method Change	3.1%
Demographics and Other Changes	(0.7%)
January 1, 2010 valuation	30.5%

The overall funded ratio for the plan decreased from 91.9% to 91.7% (due to the asset method change described on page 4).

The Normal Cost was adjusted upward to reflect Bill 74-09 which increased the FY10 pensionable pay and has a temporary effect. Pay amounts shown in this report (and employer contributions as a percentage of payroll) are based on cash payroll amounts that exclude the extra pay used for pension purposes.

The balance of this report sets forth details of changes in participation in the plan and the results of the valuation. A statement of funding progress under GASB 25 is also included.

Sincerely,

BOLTON PARTNERS, INC.

Thomas B. Lowman, FSA

David W. Ballard, CEBS

TBL/DWB/mmg

Trust Fund Asset Statement

TRUST FUND ASSET STATEMENT FOR YEAR ENDED DECEMBER 31, 2010

Original Market Value 1/1/2010	$ 335,070,709
Audit Adjustment	$ 0
Market Value 1/1/2010	$ 335,070,709
Receipts:	
Employer Contributions	$ 14,576,652
Employee Contributions	2,422,671
Interest and Dividends	6,098,412
Realized and Unrealized Gain/(Loss)	42,914,766
Other	598,441
Total Receipts:	$ 66,610,942
Disbursements:	
Benefit Payments	$ 17,426,610
Administrative Expenses	387,013
Investment Expenses	1,718,380
Total Disbursements	$ 19,532,002
Net Increase/(Decrease)	$ 47,078,940
Preliminary Ending Value 12/31/2010	$ 382,149,649
Contribution Receivable	$ 1,583,106
Ending Value 12/31/2010	$ 383,732,755

(Note: There may be some dollar rounding differences.)

Development of Actuarial Value of Assets

ACTUARIAL VALUE OF ASSETS

		2009	2010
1.	**AVA/MVA Beginning of Year**	**$390,551,359**	**$335,070,709**
2.	Contributions	14,709,784	16,999,323
3.	Benefit Payments	17,793,064	17,426,610
4.	Administrative Expenses	367,355	387,013
5.	Expected 8% Return	31,106,083	26,773,085
6.	**Expected Asset Value** (1. + 2. – 3. – 4. + 5.)	**$418,206,807**	**$361,029,494**
7.	Market Value End of Year	$335,070,709	$382,149,649
8.	Prior Deferred Gain/(Loss)	**($75,858,266)**	N/A
9.	**Asset Gain/(Loss)** (7. – 8. – 6.)	**($7,277,832)**	**$21,120,155**
10.	80% of 2009 Gain/(Loss) of ($7,277,832)	($5,822,265)	
11.	60% of 2008 Gain/(Loss) of ($147,705,104)	($88,623,063)	
12.	40% of 2007 Gain/(Loss) of $22,276,085	$8,910,434	
13.	20% of 2006 Gain/(Loss) of $19,271,816	$3,854,363	
14.	**Initial Actuarial Value of Assets 1/1/2010**	**$416,751,240**	
15.	Contribution Receivable	$1,439,806	
16.	Audit Adjustment	$0	
17.	**Final Actuarial Value of Assets 1/1/2010**	**$418,191,046**	
18.	80% of 2010 Gain/(Loss) of $21,120,155		$16,896,124
19.	60% of 2009 Gain/(Loss) of ($7,277,832)		($4,366,699)
20.	40% of 2008 Gain/(Loss) of ($147,705,104)		($59,082,042)
21.	20% of 2007 Gain/(Loss) of $22,276,085		$4,455,217
22.	**Initial Actuarial Value of Assets 1/1/2011**		**$424,247,049**
23.	Contribution Receivable		$1,583,106
24.	Audit Adjustment		$0
25.	**Final Actuarial Value of Assets 1/1/2011**		**$425,830,155**
	Rate of Return on Actuarial Value of Assets *(net of investment expenses)*	**7.6%**	**1.8%**

Effective with the 1/1/2011 actuarial valuation, the actuarial value of assets is calculated by spreading the market value investment gains or losses in excess of the assumed rate of return over a 5-year period. The actuarial value of assets as of 1/1/2011 using the prior method is $449,253,388. An amortization charge of $23,423,233 is established to reflect this change (see page 8).

Participant Summary

PARTICIPANT SUMMARY

			Inactive Participants		
	Active Non-Drop Participants	Active DROP	With Deferred Benefits	Receiving Benefits	Total
Participants as of January 1, 2010	757	63	0	414	1,234
Retired	(2)	(6)	0	8	0
Entered DROP	(47)	47	0	0	0
Terminated Non-Vested	(14)	0	0	0	(14)
Disabled	(5)	0	0	5	0
Deceased	(1)	0	0	(5)	(6)
New Beneficiary	0	0	0	2	2
QDRO Put in Pay	0	0	0	3	3
Rehired	1	(1)	0	0	0
Transfers	0	0	0	0	0
New Hires	0	0	0	0	0
Data Adjustment	0	0	0	0	0
Net Change	(68)	40	0	13	(15)
Participants as of January 1, 2011	689	103	0	427	1,219

Service - Age Distribution

AGE, SERVICE AND AVERAGE SALARY DISTRIBUTION

Age as of 1/1/2011	Under 1	01-04	05-09	10-14	15-19	20-24	25-29	30-34	35-39	40 +	Total
Under 25	0	53	3	0	0	0	0	0	0	0	56
	0	39,397	47,321	0	0	0	0	0	0	0	39,822
25-29	0	91	37	0	0	0	0	0	0	0	128
	0	40,728	49,219	0	0	0	0	0	0	0	43,182
30-34	0	50	63	11	0	0	0	0	0	0	124
	0	40,608	50,908	59,650	0	0	0	0	0	0	47,530
35-39	0	29	39	35	11	1	0	0	0	0	115
	0	42,499	49,752	65,344	78,121	81,531	0	0	0	0	55,658
40-44	0	13	32	27	38	21	0	0	0	0	131
	0	40,829	50,799	66,482	80,768	86,092	0	0	0	0	67,393
45-49	0	6	8	16	20	32	9	0	0	0	91
	0	43,693	51,134	65,028	77,261	83,299	81,339	0	0	0	73,127
50-54	0	2	1	4	4	18	6	1	0	0	36
	0	46,971	55,987	63,921	82,124	82,772	82,562	77,006	0	0	77,677
55-59	0	0	0	1	2	2	1	0	1	0	7
	0	0	0	57,948	78,931	78,154	77,006	0	98,509	0	78,233
60-64	0	0	0	1	0	0	0	0	0	0	1
	0	0	0	63,880	0	0	0	0	0	0	63,880
65-69	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
70 & Up	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
Total	0	244	183	95	75	74	16	1	1	0	689
	0	40,754	50,280	64,802	79,468	83,800	81,527	77,006	98,509	0	56,521

Excludes DROP participants

Average Age: 36.73

Average Service: 9.83

Average Salary: $56,521

Actuarial Costs

ACTUARIAL COSTS

	As of 01/01/2010*	As of 01/01/2011
Participants		
Active excluding DROP	757	693
Active DROP	63	99
Retirees and Beneficiaries	414	427
Total	1,234	1,219
Active Payroll (Rate at January 1st)	$ 49,064,454	$ 47,840,812
1. Actuarial Liability		
Active Participants	$224,081,585	$233,324,017
Participants Receiving Benefits	231,194,224	231,165,590
Total	$455,275,809	$464,489,607
2. Actuarial Value of Assets	$418,191,046	$425,830,155
3. Unfunded Actuarial Liability (1-2)	$ 37,084,763	$ 38,659,452
4. County's Normal Cost	$ 10,491,238	$ 10,688,840
5. Amortization Payment	$ 2,291,851	$ 2,434,655
6. Estimated Expenses	$ 374,000	$ 377,000
7. Total Recommended Contributions as of January 1st (4 + 5 + 6)	$ 13,157,089	$ 13,500,495
8. Total Recommended Contribution as of December 31st (7 x 1.08)	$ 14,209,656	$ 14,580,535
9. Contribution as a % of total payroll	29.0%	30.5%

** Reflects increased employee contribution percentage*

UNFUNDED LIABILITY AMORTIZATION SCHEDULE

	Amortization Period			Balances		
Charges	Date Created	Initial Years	Years Left	Initial	Outstanding	2011 Payment
Unfunded Accrued Liability	01/01/2004	30	23	$15,137,045	$16,673,084	$1,112,849
Actuarial Loss	01/01/2006	30	25	$ 1,910,765	$ 2,061,215	$ 131,137
Actuarial Loss	01/01/2008	30	27	$ 2,970,298	$ 3,119,729	$ 190,298
Actuarial Loss	01/01/2009	30	28	$27,797,740	$28,754,215	$1,720,690
Asset Method Change	01/01/2011	30	30	$23,423,233	$23,423,233	$1,353,503
Credits						
Actuarial Gain	01/01/2005	30	24	$ 2,021,367	$ 2,205,147	$ 143,581
Actuarial Gain	01/01/2007	30	26	$ 471,511	$ 502,224	$ 31,266
Assumption Change	01/01/2008	30	28	$ 536,383	$ 563,366	$ 34,365
Actuarial Gain	01/01/2010	30	29	$ 9,592,406	$ 9,761,161	$ 573,694
Actuarial Gain	01/01/2011	30	30	$22,340,126	$22,340,126	$1,290,916
Net Total					$38,659,452	$2,434,655

Note: Bases are amortized as an equal percent of payroll each year. Total payroll is assumed to increase 3.5% annually.

Assumptions and Methods

ASSUMPTIONS AND METHODS

Funding Method: Projected Unit Credit Actuarial Cost Method. The contribution equals the sum of the normal cost and the amount necessary to amortize the frozen unfunded actuarial liabilities over a period of years. Amortization payments increase 3.5% (costs are also shown using the Projected Unit Credit Method).

Asset Method: Asset smoothing method. Spreading the investment gains or losses in excess of the assumed return over a 5-year period. Actuarial Value of Assets recognizes adjustments resulting from an audit.

Interest: 8% compounded annually.

COLA Increases: Benefits accrued before Bill 88-96 are assumed to increase by 3.5% of the current benefit each year from retirement.

Benefits accrued after Bill 88-96 are assumed to increase by 2.1% of the current benefit each year from retirement.

Salary Increases: The following graded schedule is used:

Attained Age	% Increase at Attained Age
20	7.0%
25	6.5%
30	6.0%
35	5.5%
40	5.0%
45	4.5%
50	4.5%

Mortality: *Healthy:* RP-2000 Blue Collar Mortality table for males and females projected to 2011 using scale AA. Pre-Termination mortality uses 70% of the rates.

ASSUMPTIONS AND METHODS
(continued)

Disabled: RP-2000 Blue Collar Mortality table for males and females set forward five years and then projected to 2011 using scale AA.

Disability:

Sample rates are:

Age	Rate
30	0.2448%
35	0.3621%
40	0.7472%
45	1.2495%
50	1.8386%
55	0.0000%

75% of disablement is assumed to be duty-related.

Turnover:

Sample rates are:

Age	Rate
20	5.1750%
25	4.0140%
30	2.6172%
35	1.7154%
40	1.1408%
45	0.6344%
50	0.0000%

Retirement[1]:

Sample Rates

	Service						
Age	20	22	24	27	30	32	34
40	7.50%	10.00%	18.33%	10%	50%	50%	100%
45	7.50%	10.00%	18.33%	10%	50%	50%	100%
50	18.00%	20.00%	58.33%	50%	50%	50%	100%
55	50.00%	50.00%	50.00%	50%	50%	50%	100%
59	100.00%	100.00%	100.00%	100%	100%	100%	100%

[1] Reflected "20 and out" provision

ASSUMPTIONS AND METHODS
(continued)

DROP load: To reflect the cost of the more valuable benefits provided from the deferred retirement option program the following loads were applied:

Sample Load Rates

	Service			
Age	23	27	30	35
44	0.4%	1.4%	2.3%	12.0%
50	2.0%	3.7%	4.5%	14.6%
55	2.7%	4.6%	5.4%	15.6%
60	3.2%	5.3%	6.1%	16.4%

Disability Leave: Service credit for benefit formula purposes is increased by 1.75% to account for disability leave which is converted to service credit at retirement.

Military Service: Active liabilities (which depend on credit service) are loaded by 3.25% to account for future crediting of military service.

Other Methods and Assumptions: Administrative Expenses are $377,000 for FY2012 and $374,000 for FY2011 (average of actual expenses for the two years preceding the valuation date).

Marriage: It is assumed that 85% of employees who die are married and males are four years older than their spouses.

Death: 100% of deaths are assumed to be non-duty-related.

ASSUMPTIONS AND METHODS
(continued)

Valuation Procedures:

Generally, the plan provides a 100% survivor benefit to the spouse at the time of the retiree's death. This allows for post retirement marriages. We have valued the forms of payment originally coded in the data or based this on marital status at time of retirement (generally a 100% survivor benefit but not always). Starting with the 2008 valuation, all new retirements are valued with a 100% Joint and Survivor form of payment.

We suggest monitoring this form of payment to see if this reasonably models the combination of single retirees and future remarriages.

CIGNA Benefits:

Our calculations reflect that some benefits have already been purchased.

Plan Provisions

PLAN PROVISIONS

Normal Retirement:	20 years of service[2] or age 50 with 5 years of service.
Normal Form of Benefit:	For single participants, monthly life annuities with payments guaranteed for 5 years. For married participants, unreduced 100% Joint & Survivor Annuity with payments guaranteed for 5 years.
Cost of Living Increase (for benefits accrued as of 1/31/97):	Retiree benefits are adjusted each year. The revised benefit amount is the lesser of: a. Base benefit multiplied by ratio of current 12 month average CPI to 12 month average CPI at retirement. b. Prior year benefit increased by 4%.
Cost of Living Increase (for benefits accrued after1/31/97):	Retiree benefits are adjusted each year. The revised benefit amount is the lesser of: a. Prior year benefit multiplied by 60% of the increase in the current March CPI from March CPI for prior year, or b. Prior year benefit increased by 2.5%.
Employee Contributions:	5% of pay rate for FSL and 7.25% of pay rate for FR1.
Compensation:	Regular annual rate of pay, exclusive of extra compensation of any kind such as overtime pay, bonuses, and commissions. Some members receive a special FY11 increase for pension purposes.
Final Earnings:	The average of the highest 3 years of the last 5 years annual basic pay.

[2] Effective 7/1/2002

PLAN PROVISIONS
(continued)

Benefit Formula:	2 ½% of final earnings for each year of service up to 20 years plus 2% of final earnings for each year of service after 20 years (maximum 70% plus 2% times unused disability credit and pre-employment military service credit)
Termination Prior to Retirement:	Return of employee contributions with 3% interest.
Disability:	Must be totally and permanently disabled (except as the result of activities specified in the County code) regardless of length of service.
Line of Duty Disability:	The greater of the accrued benefit or 66 2/3% of final earnings, payable immediately, unreduced.
Non-Line of Duty Disability:	The greater of the accrued benefit or 20% of final earnings, payable immediately, unreduced.
Pre-Retirement Spouse's Benefit:	
Line of Duty Death Benefit:	Greater of accrued benefit or 66 2/3% of final earnings.
Non-Line of Duty Death Benefit:	Accrued benefit.
Other Pre-Retirement Death Benefits:	Return of employee contributions with 3% interest.
Deferred Retirement Option Program (DROP):	Allows accumulation of pension after 20 years of County service. DROP period must be between 3 and 5 years.

Summary of Legislative Changes

SUMMARY OF MAJOR LEGISLATIVE CHANGES

County Council Bill No. 48-89: Effective 9/13/89.

The previously combined Police and Fire plan was separated into distinct plans for each group.

The reduction for retirement prior to age 50 was changed to 0.2% per month from 0.3% per month.

County Council Bill No. 34-92: Effective 6/1/92 through 8/31/92.

Participants over age 50 or with at least 20 years of service could elect to retire with an additional pension equal to 1/12 of 2.5% of final earnings for the first 20 years of service, plus 1/12 of 2% of final earnings for each additional year of service. The additional amount could be taken as a pension increase, a lump sum, or as a temporary supplement to age 62. Appropriate actuarial adjustments apply.

State House Bill No. 687: Effective 7/1/90.

County employees were given the opportunity to apply for credit under the County's plan for previous service with the State of Maryland (or a political subdivision of the State).

County Council Bill 88-96: Effective 12/4/96.

The previous method of calculating cost of living increases will only apply to benefits accrued as of 1/31/97. The cost of living increase for future benefits is a compound increase equal to 60% of the annual change in the CPI, not to exceed 2.5%. Employees hired, or rehired, on or after 12/4/96 will be Tier Two employees and will have different benefits than current employees.

SUMMARY OF MAJOR LEGISLATIVE CHANGES
(continued)

Recodification:	Effective 2/25/2002. Allows a benefit based on disability leave service and pre-plan military service to be paid over the 70% cap. Normal Retirement was changed to the earlier of 20 years of service or age 50 with 5 years of service. Elimination of Tier 2 benefits implemented a Deferred Retirement Option Program (DROP), a voluntary program that provides an alternative way to earn and receive retirement benefits.
County Council Bill 74-09:	Effective 12/11/2009. For non-represented members, FY2010 annual pay shall be determined by increasing FY2009 annual pay by an assumed 3% for determining the final average basic pay. For represented members, FY2010 annual pay shall be determined by increasing FY2009 annual pay by an assumed 5% for determining the final average basic pay.
County Council Bill 6-10:	Effective 4/18/2010. Provides for a disability benefit for those participants who are totally and permanently disabled as a result of qualified military service.
County Council Bill 41-10:	Effective 7/1/2010. Reduced the DROP interest rate from 8% to 4.25%. Increased the contribution rate for all but Battalion Chief, Division Chief, Deputy Chief and Fire Chief to 7.25%.

Statement No. 25 of the GASB

STATEMENT NO. 25 OF THE GOVERNMENTAL ACCOUNTING STANDARDS BOARD

Schedules of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Unfunded AAL (UAAL) (b - a)	Actuarial Accrued Liability (AAL) (b)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a)/c)
01/01/1997	$149,030,187	$33,562,970	$182,593,157	81.6%	$22,760,946	113.1%
01/01/1998	$166,272,032	$28,978,353	$195,250,385	85.2%	$24,008,491	123.1%
01/01/1999	$185,328,626	$29,363,810	$214,692,436	86.3%	$24,874,704	113.1%
01/01/2000	$207,721,341	$29,712,456	$237,433,797	87.5%	$25,551,279	108.9%
01/01/2001	$225,133,219	$39,498,937	$264,632,156	85.1%	$27,373,670	144.3%
01/01/2002	$241,162,428	$39,924,293	$281,086,721	85.8%	$30,548,866	130.7%
01/01/2003	$256,190,269	$40,287,968	$296,478,237	86.4%	$32,000,686	125.9%
01/01/2004	$286,763,188	$15,137,045	$301,900,234	95.0%	$31,463,220	48.1%
01/01/2005	$313,478,279	$13,381,977	$326,860,256	95.9%	$34,871,614	38.4%
01/01/2006	$340,274,675	$15,511,721	$355,786,396	95.6%	$38,592,322	40.2%
01/01/2007	$368,413,752	$15,280,517	$383,694,268	96.0%	$43,527,351	35.1%
01/01/2008[1]	$395,884,441	$18,467,029	$414,351,470	95.5%	$43,941,526	42.0%
01/01/2008[2]	$395,884,441	$17,930,646	$413,815,087	95.7%	$43,941,526	40.8%
01/01/2009	$390,551,359	$45,969,499	$436,520,858	89.5%	$48,824,352	94.2%
01/01/2010	$418,191,046	$37,084,763	$455,275,809	91.9%	$49,064,454	75.6%
01/01/2011[3]	$449,253,388	$15,236,219	$464,489,607	96.7%	$47,840,812	31.8%
01/01/2011[4]	$425,830,155	$38,659,452	$464,489,607	91.7%	$47,840,812	80.8%

Schedules of County's Contributions

Year Ended December 31	*Annual Required Contribution*	*Actual Contribution*	*Percentage Contributed*
2010	$14,213,332	$14,648,580[5]	103.1%

[1] *Prior to Assumption Changes*
[2] *After Assumption Changes*
[3] *Prior to Asset Method Change.*
[4] *After Asset Method Change.*
[5] *On an accrual basis. Subject to verification.*

STATEMENT NO. 25 OF THE GOVERNMENTAL ACCOUNTING STANDARDS BOARD

(continued)

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

Actuarial cost method	Projected Unit Credit
Amortization method	Level percent of pay
Remaining amortization period	Remaining Amortization periods range from 23 to 30 years with an average of 27 years.
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return	8.0%
Projected salary increases	Varies by age
Post Retirement Cost-of-living adjustments	3.5% for pre 2/97 accruals 2.1% for post 2/97 accruals

ACTUARIAL CERTIFICATION

The information contained in this report was prepared for the internal use of The Anne Arundel County Fire Service Retirement Plan and its auditors in connection with our actuarial valuations of the pension plan. It is neither intended nor necessarily suitable for other purposes. Bolton Partners, Inc. is not responsible for the consequences of any other use. A valuation report is a snapshot of a plan's estimated financial condition at a particular point in time; it does not predict a pension plan's future financial condition or its ability to pay benefits in the future.

In preparing the results presented in this report, we have relied upon information provided to us regarding plan provisions, plan participants, and plan assets. We have reviewed this information for overall reasonableness and consistency, but have neither audited nor independently verified this information. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information. The plan sponsor is solely responsible for the validity and completeness of this information.

The valuation summarized in this report involves actuarial calculations that require assumptions about future events. We believe that the assumptions and methods used in this report are reasonable and appropriate for the purposes for which they have been used.

Future actuarial measurements may differ significantly from the current measurements presented in this report, due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report and is currently compliant with the Continuing Professional Development requirement of the Society of Actuaries. We are not aware of any direct or material indirect financial interest or relationship, including investments or other services that could create a conflict of interest that would impair the objectivity of our work.

BOLTON PARTNERS, INC.

Thomas B. Lowman, FSA, EA, MAAA