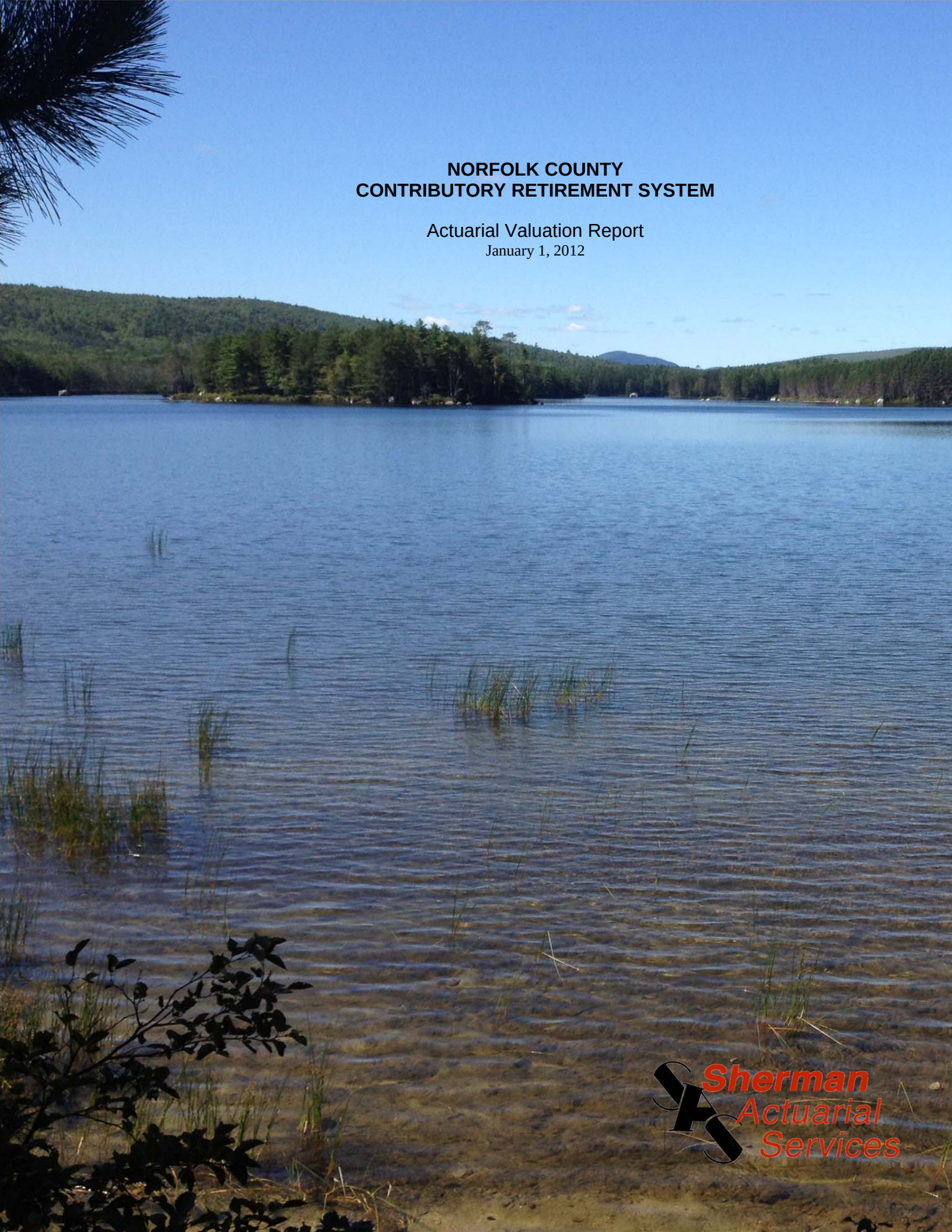

NORFOLK COUNTY
CONTRIBUTORY RETIREMENT SYSTEM

Actuarial Valuation Report

January 1, 2012

Sherman Actuarial Services

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Report Summary:

Highlights	**January 1, 2010**	**January 1, 2012**
Contributions		
Funding Schedule FY 2013	$42,714,639	$42,714,639
Funding Schedule FY 2014	44,800,000	44,800,000
Funded Ratios		
GAS No. 25	60.0%	53.9%
Participants		
Actives	5,526	5,008
Retirees and Beneficiaries	2,557	2,613
Inactives	2,059	2,154
Disabled	313	328
Total	10,455	10,103
Payroll		
Payroll of Active Members	$223,332,595	$229,095,409
Average Payroll	40,415	45,746
Normal Cost		
Employer	8,381,932	10,528,885
Employee	18,649,762	19,571,812
Administrative Expenses	1,307,000	1,450,000
Total	28,338,694	31,550,697
Actuarial Accrued Liabilities		
Actives	491,501,685	547,208,005
Retirees, Beneficiaries, Disabilities and Inactives	510,379,370	581,752,283
Total	1,001,881,055	1,128,960,288
Actuarial Value of Assets	600,790,835	608,235,096
Unfunded Actuarial Accrued Liabilities	$401,090,220	$520,725,192

Introduction

The purpose of this report is to present the findings of an actuarial valuation as of January 1, 2012, of Norfolk County Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2012.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Norfolk County Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2012.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last two years, the total unfunded actuarial accrued liability increased by 29.8% to $520,725,192. The increase is the result of net unfavorable actuarial experience during the preceding two years. The sources of the (gain)/loss are as follows:

Investment	69,081,183
Salary Increases	(8,230,336)
New Participants	3,801,189
Active - Retirements	3,335,937
Active - Terminations	961,002
Active - Mortality	(340,999)
Active - Disabilities	6,463,029
Inactive - Mortality and data adjustments	(4,002,091)
Other	(7,518,813)
Total (gain)/loss	86,896,739

The mortality assumptions were modified to be in compliance with Actuarial Standards of Practice #35 and to better match expected experience. The effects of these changes on the unfunded actuarial accrued liability and normal cost are as follows:

Accrued Liability	27,598,754
Normal Cost	482,444

Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	January 1, 2010	January 1, 2012
Superannuation	$18,754,055	$21,268,096
Termination	2,840,569	2,528,461
Death	1,487,616	1,278,015
Disability	3,949,454	5,026,125
Administrative Expenses	1,307,000	1,450,000
Total Normal Cost	28,338,694	31,550,697
% of Pay	12.7%	13.8%
Employee Contributions	18,649,762	19,571,812
% of Pay	8.4%	8.5%
Employer Normal Cost	$9,688,932	$11,978,885
% of Pay	4.3%	5.2%

Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits based on the past service of the actives and inactives. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	January 1, 2010	January 1, 2012
Actives		
Superannuations	$435,397,880	$496,548,173
Termination	10,485,593	9,499,919
Death	15,996,465	14,393,390
Disability	29,621,747	26,766,523
Retirees and Inactives		
Retirees and Beneficiaries	405,898,721	464,716,266
Terminated (Refund)	10,817,007	0
Disabled	93,663,642	101,912,469
Total	$1,001,881,055	$1,128,960,288

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Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	January 1, 2010	January 1, 2012
Actives		
Superannuation	$582,102,302	$656,051,507
Termination	21,728,648	19,472,470
Death	26,971,386	23,588,155
Disability	65,584,128	71,175,129
Retirees and Inactives		
Retirees and Beneficiaries	405,898,721	464,716,266
Terminated (Refund)	10,817,007	0
Disabled	93,663,642	101,912,469
Total	$1,206,765,834	$1,352,039,544

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	January 1, 2010	January 1, 2012
Cash equivalents	$11,297,968	$12,873,999
Short term investments	0	0
Fixed income securities	125,572,835	117,940,196
Equities	223,212,650	268,159,076
International	43,301,926	37,032,914
Real Estate	23,269,599	46,944,913
Venture Capital	0	0
Other	73,665,627	88,400,983
Accounts receivable	7,888,791	4,503,322
Accounts payable	(1,914,344)	(1,318,597)
Accrued income	967,180	930,305
Total Market Value	$507,262,231	$575,467,110
Total Actuarial Value	$600,790,835	$608,235,096

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the actuarial value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8.25%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 20%. The calculation of the actuarial value of assets as of January 1, 2012 is presented in Table V.

Table V

		January 1, 2012
(1)	Market value at January 1, 2011	$577,063,401
(2)	2011 Contributions	$65,516,703
(3)	2011 Benefit Payments	($69,789,026)
(4)	Net interest adjustment at 8.25% on (1), (2), and (3) to December 31, 2011	$47,431,497
(5)	Expected market value on January 1, 2012 (1) + (2) + (3) + (4)	$620,222,575
(6)	Actual market value on January 1, 2012	$575,467,110
(7)	2011 (Gain) / Loss	$44,755,465
(8)	80% of 2011 (Gain) / Loss	$35,804,372
(9)	2010 (Gain) / Loss	($48,991,245)
(10)	60% of 2010 (Gain) / Loss	($29,394,747)
(11)	2009 (Gain) / Loss	($53,073,929)
(12)	40% of 2009 (Gain) / Loss	($21,229,571)
(13)	2008 (Gain) / Loss	$237,939,661
(14)	20% of 2008 (Gain) / Loss	$47,587,932
(15)	Actuarial value on January 1, 2012, (6) + (8) + (10) + (12) + (14)	$608,235,095
(16)	but not less than 80% nor greater than 120% of (6)	$608,235,095
(17)	Ratio of actuarial value to market value	105.69%
(18)	2011 Market Value Return on Assets	0.47%
(19)	2011Actuarial Value Return on Assets	2.04%
(20)	2010 Market Value Return on Assets	18.10%
(21)	2010Actuarial Value Return on Assets	3.34%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	January 1, 2010	January 1, 2012
Actuarial Accrued Liability	$1,001,881,055	$1,128,960,288
Actuarial Assets	600,790,835	608,235,096
Unfunded Actuarial Accrued Liability	$401,090,220	$520,725,192
Funded Status	60.0%	53.9%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the prior unfunded actuarial accrued liability by June 30, 2031
  $ 492,694,174 over 19 years with 4.0% increasing payments
- Increasing amortization of the 2002 Early Retirement Incentive by June 30, 2028
  $ 8,619,776 over 16 years with 4.5% increasing payments
- Increasing amortization of the 2003 Early Retirement Incentive by June 30, 2028
  $ 5,457,672 over 16 years with 4.5% increasing payments
- Interest adjustment for payments deposited semiannually.

The Board opted to use funding relief granted under Chapter 32 of the Massachusetts General Laws. Appropriations after FYE14 will be increased 10% per year while necessary in order to achieve full funding status by 2031. The pension appropriation is shown in Table VII.

Table VII

	January 1, 2010	January 1, 2012
Normal cost	$9,688,932	$11,978,885
Amortization payment of the unfunded liability	25,766,208	36,305,682
Amortization payment of 2002 ERI liability	634,249	692,616
Amortization payment of 2003 ERI liability	401,579	438,535
Total cost	$36,490,968	$49,415,718
% of Pay	16.3%	21.6%
Fiscal 2013 cost	$42,714,639	$42,714,639
Fiscal 2014 cost	$44,800,000	$44,800,000

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2035 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 17 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost for FYE represents 18.7% of payroll, increasing to 24.1% during the period that the appropriations increase 10% per year, then reducing to 21.6% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of about 3.5%. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

P:\Norfolk\Val12\[Norfolk12_Val 12k 8 25% new assumptions 10% ARC.xlsx]Approp. Results

Appropriation Forecast

Fiscal Year Ending	Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2013	$229,095,409	$19,571,812	$12,717,375	$29,997,264	$42,714,639	18.6	53.9
2014	$239,404,702	$20,639,942	$13,090,705	$31,709,295	$44,800,000	18.7	56.1
2015	$250,177,914	$21,764,570	$13,471,883	$35,808,117	$49,280,000	19.7	58.3
2016	$261,435,920	$22,948,619	$13,860,859	$40,347,141	$54,208,000	20.7	60.5
2017	$273,200,537	$24,195,159	$14,257,561	$45,371,239	$59,628,800	21.8	62.8
2018	$285,494,561	$25,507,417	$14,661,899	$50,929,781	$65,591,680	23.0	65.1
2019	$298,341,816	$26,888,782	$15,073,755	$56,899,181	$71,972,936	24.1	67.3
2020	$311,767,198	$28,342,819	$15,492,988	$59,182,968	$74,675,956	24.0	69.7
2021	$325,796,722	$29,873,268	$15,919,428	$61,558,457	$77,477,885	23.8	72.0
2022	$340,457,574	$31,484,064	$16,352,874	$64,029,335	$80,382,209	23.6	74.4
2023	$355,778,165	$33,179,338	$16,793,093	$66,599,431	$83,392,524	23.4	76.9
2024	$371,788,182	$34,963,432	$17,239,818	$69,272,733	$86,512,551	23.3	79.4
2025	$388,518,650	$36,840,906	$17,692,741	$72,053,387	$89,746,128	23.1	81.9
2026	$406,001,990	$38,816,551	$18,151,517	$74,945,705	$93,097,222	22.9	84.4
2027	$424,272,079	$40,895,402	$18,615,756	$77,954,174	$96,569,930	22.8	87.0
2028	$443,364,323	$43,082,746	$19,085,018	$81,083,461	$100,168,479	22.6	89.6
2029	$463,315,717	$45,384,138	$19,558,818	$81,909,785	$101,468,603	21.9	92.2
2030	$484,164,925	$47,805,412	$20,036,612	$85,186,176	$105,222,788	21.7	94.8
2031	$505,952,346	$50,352,698	$20,517,801	$88,593,623	$109,111,424	21.6	97.4
2032	$528,720,202	$53,032,434	$21,001,724	$0	$21,001,724	4.0	100.0
2033	$552,512,611	$55,851,382	$21,487,650	$0	$21,487,650	3.9	100.0
2034	$577,375,678	$58,816,645	$21,974,782	$0	$21,974,782	3.8	100.0
2035	$603,357,584	$61,935,682	$22,462,242	$0	$22,462,242	3.7	100.0
2036	$630,508,675	$65,216,329	$22,949,076	$0	$22,949,076	3.6	100.0
2037	$658,881,566	$68,666,814	$23,434,238	$0	$23,434,238	3.6	100.0
2038	$688,531,236	$72,295,780	$23,916,593	$0	$23,916,593	3.5	100.0
2039	$719,515,142	$75,549,090	$24,992,840	$0	$24,992,840	3.5	100.0
2040	$751,893,323	$78,948,799	$26,117,517	$0	$26,117,517	3.5	100.0
2041	$785,728,523	$82,501,495	$27,292,806	$0	$27,292,806	3.5	100.0
2042	$821,086,306	$86,214,062	$28,520,982	$0	$28,520,982	3.5	100.0
2043	$858,035,190	$90,093,695	$29,804,426	$0	$29,804,426	3.5	100.0
2044	$896,646,773	$94,147,911	$31,145,625	$0	$31,145,625	3.5	100.0

* Calendar basis

** Beginning of Fiscal Year

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GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to $0. The required disclosure information is shown in Table VIII.

Table VIII

		January 1, 2010	January 1, 2012
(1)	Actuarial Accrued Liability	$1,001,881,055	$1,128,960,288
(2)	Actuarial Value of Assets	600,790,835	608,235,096
(3)	Unfunded Actuarial Accrued Liability	401,090,220	520,725,192
(4)	Funded Ratio (2)/(1)	60.0%	53.9%
(5)	Covered Payroll	$223,332,595	$229,095,409
(6)	UAAL as a percentage of payroll: (3)/(5)	179.6%	227.3%
(7)	Annual Required Contribution (ARC)	$39,749,856	$42,714,639
(8)	Net Pension Obligation	$0	$0

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PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Sherman Actuarial Services as of January 1, 2012.

The normal cost for employees on that date was:	$19,571,812	8.5% of pay
The normal cost for the employer was:	10,528,885	4.6% of pay

The actuarial liability for active members was:	$547,208,005
The actuarial liability for retired and inactive members was:	581,752,283
Total actuarial accrued liability:	1,128,960,288
System assets as of that date:	608,235,096
Unfunded actuarial accrued liability:	$520,725,192

The ratio of system's assets to total actuarial liability was 53.9%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.25%
Rate of Salary Increase:	4.00%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/12	$608,235,096	$1,128,960,288	$520,725,192	53.9%	$229,095,409	227.3%
01/01/10	600,790,835	1,001,881,055	401,090,220	60.0%	223,332,595	179.6%
01/01/08	596,157,147	907,719,124	311,561,977	65.7%	223,814,977	139.2%
01/01/07	533,077,948	855,677,413	322,599,465	62.3%	219,620,865	146.9%
01/01/05	467,186,566	762,900,650	295,714,084	61.2%	196,639,163	150.4%
01/01/03	415,150,776	675,275,257	260,124,481	61.5%	185,281,985	140.4%
01/01/00	371,646,793	533,959,970	162,313,177	69.6%	163,542,978	99.2%
01/01/97	258,771,070	392,463,080	133,692,010	65.9%	126,219,194	105.9%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2012

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0	0
	#DIV/0!		0	0	0	0	0	0	0	0	#DIV/0!
20-24	131	0	1	0	0	0	0	0	0	0	132
	24,239		0	0	0	0	0	0	0	0	24,227
25-29	218	63	2	0	0	0	0	0	0	0	283
	34,191	44,742	0	0	0	0	0	0	0	0	36,642
30-34	125	106	32	0	0	0	0	0	0	0	263
	39,882	52,994	53,776	0	0	0	0	0	0	0	46,857
35-39	94	93	99	23	1	0	0	0	0	0	310
	36,008	52,288	61,831	59,913	0	0	0	0	0	0	50,996
40-44	189	136	141	120	40	2	0	0	0	0	628
	28,691	44,274	58,859	69,011	67,919	0	0	0	0	0	49,180
45-49	217	199	162	102	85	38	1	0	0	0	804
	27,936	35,490	45,453	60,272	69,966	70,513	0	0	0	0	43,958
50-54	189	227	231	114	73	80	29	1	0	0	944
	28,541	33,302	40,349	49,163	66,544	73,824	72,646	98,597	0	0	43,271
55-59	100	166	234	114	97	57	42	37	2	0	849
	29,293	33,247	38,107	42,962	55,398	67,632	81,064	74,170	54,133	0	44,463
60-64	43	81	126	91	71	55	25	16	7	0	515
	33,749	35,213	38,481	41,294	45,740	49,362	69,539	70,767	76,209	0	43,255
65-69	16	35	30	34	27	26	12	5	3	0	188
	24,301	40,226	42,786	40,910	39,279	47,567	0	65,958	84,626	0	42,844
70+	4	11	16	14	11	19	7	6	6	0	94
	15,721	0	30,647	31,887	32,107	42,196	50,317	33,168	68,199	0	37,045
Total Employees	1,326	1,117	1,074	612	405	277	116	65	18	0	5,010
Average Salary	#DIV/0!	39,142	45,033	52,131	58,164	62,072	65,536	69,292	72,489	0	43,980

P:\Norfolk\Val12\Report\[RET1.XLS]Retirees

Retiree Distribution as of January 1, 2012

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	2	0	2	12,968	0	12,968
40-44	1	0	1	12,861	0	12,861
45-49	5	3	8	158,988	25,531	184,520
50-54	27	9	36	555,831	103,648	659,479
55-59	72	48	120	2,445,875	593,660	3,039,535
60-64	193	141	334	7,212,156	2,066,297	9,278,453
65-69	274	222	496	9,226,818	3,787,275	13,014,093
70-74	194	235	429	5,331,517	3,885,804	9,217,321
75-79	170	224	394	3,800,476	3,320,479	7,120,955
80-84	168	199	367	3,164,838	2,498,039	5,662,877
85-89	99	169	268	1,518,323	1,544,538	3,062,861
90-94	30	93	123	326,124	597,643	923,766
95+	13	26	39	106,669	130,540	237,209
Total	1248	1369	2617	33,873,445	18,553,452	52,426,897
Average (Age/Payment)	72.37	75.94	74.24	27,142	13,553	20,033
Frequency Percent	47.7	52.3	100	64.6	35.4	100

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Disabled Retiree Distribution as of January 1, 2012

	Number of Employees			Total Payments		
Attained Age	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	1	0	1	30,711	0	30,711
35-39	1	2	3	39,998	48,647	88,645
40-44	14	0	14	442,644	0	442,644
45-49	18	2	20	792,102	75,430	867,532
50-54	22	9	31	847,483	208,320	1,055,803
55-59	26	5	31	915,794	115,415	1,031,209
60-64	63	9	72	2,200,129	125,438	2,325,567
65-69	53	7	60	1,609,087	179,619	1,788,706
70-74	49	5	54	1,368,426	124,284	1,492,709
75-79	19	1	20	516,860	31,317	548,176
80-84	14	2	16	265,401	26,363	291,764
85-89	4	1	5	75,946	14,203	90,149
90-94	1	0	1	13,768	0	13,768
95-99	0	0	0	0	0	0
Total	285	43	328	9,118,349	949,034	10,067,383
Average (Age/Payment)	64.28	62.05	63.99	31,994	22,071	30,693
Frequency Percent	86.9	13.1	100	90.6	9.4	100

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2012	$63,207,631	$19,571,812	$42,714,639	$59,559,710	$58,638,531
2013	66,827,009	20,639,942	44,800,000	64,235,497	62,848,430
2014	70,280,944	21,764,570	49,280,000	66,947,276	67,710,902
2015	74,129,808	22,948,619	54,208,000	69,675,612	72,702,423
2016	77,774,548	24,195,159	59,628,800	72,413,412	78,462,823
2017	81,495,170	25,507,417	65,591,680	75,166,442	84,770,369
2018	85,167,691	26,888,782	71,972,936	78,111,594	91,805,621
2019	89,138,410	28,342,819	74,675,956	85,394,651	99,275,015
2020	93,064,032	29,873,268	77,477,885	93,291,406	107,578,528
2021	97,000,616	31,484,064	80,382,209	101,868,277	116,733,934
2022	101,071,215	33,179,338	83,392,524	111,190,435	126,691,083
2023	105,312,635	34,963,432	86,512,551	121,322,396	137,485,744
2024	109,732,046	36,840,906	89,746,128	132,332,826	149,187,814
2025	114,336,915	38,816,551	93,097,222	144,296,137	161,872,996
2026	119,135,026	40,895,402	96,569,930	157,292,974	175,623,280
2027	124,134,488	43,082,746	100,168,479	171,410,730	190,527,467
2028	129,343,751	45,384,138	101,468,603	186,696,405	204,205,394
2029	134,771,619	47,805,412	105,222,788	203,141,571	221,398,152
2030	140,427,266	50,352,698	109,111,424	220,990,019	240,026,876
2031	146,320,250	53,032,434	21,001,724	247,350,954	175,064,862
2032	152,460,531	55,851,382	21,487,650	261,624,633	186,503,134
2033	158,858,487	58,816,645	21,974,782	276,836,310	198,769,249
2034	165,524,932	61,935,682	22,462,242	293,054,113	211,927,106
2035	172,471,131	65,216,329	22,949,076	310,351,438	226,045,712
2036	179,708,825	68,666,814	23,434,238	328,807,370	241,199,596
2037	187,250,247	72,295,780	23,916,593	348,507,138	257,469,264
2038	195,108,142	75,549,090	24,992,840	369,507,889	274,941,677
2039	203,295,792	78,948,799	26,117,517	391,940,259	293,710,784
2040	211,827,033	82,501,495	27,292,806	415,910,819	313,878,088
2041	218,936,717	86,214,062	28,520,982	441,606,456	337,404,784

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2012, and does not take into account any subsequent changes.

1. Administration

Each of the contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

(i) Group 1: Most general employees in State and local government

(ii) Group 2: Certain specified hazardous duty positions

(iii) Group 3: State police officers and inspectors

(iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. Salary

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. Member Contributions

Member contributions vary depending upon date hired as follows:

Date of Hire	Member Contribution Rate
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of $30,000

5. Average Salary

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. Creditable Service

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

(i) completion of 20 years of service

(ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member

(iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

Age at	Percentage of Average Salary		
Retirement	Group 1	Group 2	Group 4
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

8. Deferred Vested Retirement

a. Eligibility:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus $729.84 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability

a. Eligibility:

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits

a. Occupational Death:

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of $250 per month to the surviving spouse, plus $120 for the first child, plus $90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of $250 per month plus $120 for the first child and $90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is $12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

(i) Option A – Life annuity

(ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member

(iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2012.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.25% per annum, net if investment expenses.

5. Salary Scale

The assumed annual rate for pensionable earnings increases is 4%.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and $12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). The actuarial value of assets is determined using a five-year smoothing of asset returns greater than or less than the assumed rate of return, with a 20% corridor.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

Service	General Employees	Police and Fire Employees
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females, with 15 years of improvements using Scale AA. The previous actuarial valuation did not include any adjustment for mortality improvement. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

Age	Male General Employees	Female General Employees	Male and Female Police and Fire Employees
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

Attained Age	General Employees	Police and Fire Employees
20	0.0001	0.0010
30	0.0003	0.0030
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for plan year 2012 is $1,450,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. Actuarial Accrued Liability

That portion of the Actuarial Present Value of projected plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. Actuarial Cost Method

A procedure for allocating the Actuarial Present Value of projected pension plan benefits between service in the current year (Normal Cost), prior service (Actuarial Accrued Liability), and future service (Present Value of Future Normal Costs).

4. Actuarial Present Value

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. Forecast

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

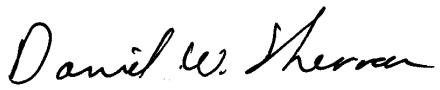
That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the Norfolk County Retirement System contributing as of January 1, 2012, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

The report was prepared under the supervision of Daniel Sherman, an Associate of the Society of Actuaries and a Member of the American Academy of Actuaries, who takes responsibility for the overall appropriateness of the analysis, assumptions and results. Daniel Sherman is deemed to meet the General Qualification Standard and the basic education and experience requirement in the pension area. Based on over thirty years of performing valuations of similar complexity, Mr. Sherman is qualified by experience in pension valuation. Daniel Sherman has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sherman Actuarial Services, LLC



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Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 11-4086

October 2013