

**TOWN OF NORTH ATTLEBORO
CONTRIBUTORY RETIREMENT SYSTEM**

Actuarial Valuation Report

January 1, 2011

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Report Summary:

<u>Highlights</u>	<u>January 1, 2010</u>	<u>January 1, 2011</u>
<u>Contributions</u>		
Funding Schedule FY 2012	\$2,743,649	\$2,743,649
Funding Schedule FY 2013	2,839,252	\$3,182,392
<u>Funded Ratios</u>		
GAS No. 25	75.3%	73.4%
<u>Participants</u>		
Actives	518	504
Retirees and Beneficiaries	193	192
Inactives	167	164
Disabled	<u>21</u>	<u>23</u>
Total	899	883
<u>Payroll</u>		
Payroll of Active Members	\$19,802,963	\$20,663,594
Average Payroll	38,230	40,999
<u>Normal Cost</u>		
Employer	1,002,448	1,131,697
Employee	1,672,066	1,750,689
Administrative Expenses	<u>165,000</u>	<u>175,000</u>
Total	2,839,514	3,057,386
<u>Actuarial Accrued Liabilities</u>		
Actives	50,029,457	53,570,422
Retirees, Beneficiaries, Disabilities and Inactives	<u>37,460,067</u>	<u>39,506,080</u>
Total	87,489,524	93,076,502
<u>Actuarial Value of Assets</u>	<u>65,858,791</u>	<u>68,362,115</u>
<u>Unfunded Actuarial Accrued Liabilities</u>	\$21,630,733	\$24,714,387

Introduction

This report presents the Town of North Attleboro actuarial valuation findings as of January 1, 2011, under the Commonwealth of Massachusetts Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2011.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Town of North Attleboro 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, 2011.

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 year, the total unfunded actuarial accrued liability increased by 14.3% to \$24,714,387. The increase was a result of unfavorable actuarial experience during the year. The actuarial value of assets had a return of 3.39% which is less than the expected investment return assumption of 8.00%. The sources of the (gain)/loss are as follows:

Investment	3,044,075
Salary Increases	(3,063,946)
New Participants	2,277,325
Active – Retirements	350,980
Active – Terminations	884,824
Active – Mortality	(18,082)
Active – Disabilities	462,181
Inactive - Mortality and data adjustments	(91,964)
Contributions and benefit payments	(1,824,948)
Other, including data and interest on employee deductions	851,301
Total (gain)/loss	<u>2,871,746</u>

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

	<u>January 1, 2010</u>	<u>January 1, 2011</u>
Superannuation	\$1,881,260	\$1,989,555
Termination	256,822	236,323
Death	143,561	149,125
Disability	392,871	507,383
Administrative Expenses	<u>165,000</u>	<u>175,000</u>
Total Normal Cost	2,839,514	3,057,386
% of Pay	14.3%	14.8%
Employee Contributions	1,672,066	1,750,689
% of Pay	8.4%	8.5%
Employer Normal Cost	\$1,167,448	\$1,306,697
% of Pay	5.9%	6.3%

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		
		<u>January 1, 2010</u>	<u>January 1, 2011</u>
Actives			
Superannuations		\$43,294,698	\$47,168,181
Termination		901,359	956,596
Death		1,653,752	1,777,775
Disability		4,179,648	3,667,870
Retirees and Inactives			
Retirees and Beneficiaries		29,330,218	30,319,478
Terminated (Refund)		1,399,163	1,096,792
Disabled		<u>6,730,686</u>	<u>8,089,810</u>
Total		\$87,489,524	\$93,076,502

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

	<u>January 1, 2010</u>	<u>January 1, 2011</u>
Actives		
Superannuation	\$60,397,085	\$65,173,239
Termination	1,944,838	1,932,068
Death	2,854,122	3,023,648
Disability	8,355,905	8,999,096
Retirees and Inactives		
Retirees and Beneficiaries	29,330,218	30,319,478
Terminated (Refund)	1,399,163	1,096,792
Disabled	<u>6,730,686</u>	<u>8,089,810</u>
Total	\$111,012,017	\$118,634,131

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

	<u>January 1, 2010</u>	<u>January 1, 2011</u>
Cash equivalents	\$2,695,782	\$1,428,698
Short term investments	0	0
Fixed income securities	20,239,327	19,388,745
Equities	23,546,672	33,628,409
International	5,527,985	6,229,970
Real Estate	5,542,358	5,074,775
Venture Capital	0	0
Other	0	0
Accounts receivable	81,937	13,236
Accounts payable	(35,239)	(63,185)
Accrued income	<u>33</u>	<u>135</u>
Total Market Value	\$57,598,855	\$65,700,783
Total Actuarial Value	\$65,858,791	\$68,362,115

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the market value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8%) 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, 2011 is presented in Table V.

Table V

	<u>January 1, 2011</u>
(1) Market value at January 1, 2010	\$57,598,855
(2) 2010 Contributions	\$4,890,938
(3) 2010 Payments	(\$4,622,962)
(4) Net interest adjustment at 8% on (1), (2), and (3) to December 31, 2010	\$4,618,627
(5) Expected market value on January 1, 2011	\$62,485,458
(1) + (2) + (3) + (4)	
(6) Actual market value on January 1, 2011	\$65,700,783
(7) 2010 (Gain) / Loss	(\$3,215,325)
(8) 80% of 2010 (Gain) / Loss	(\$2,572,260)
(9) 2009 (Gain) / Loss	(\$5,929,081)
(10) 60% of 2009 (Gain) / Loss	(\$3,557,449)
(11) 2008 (Gain) / Loss	\$21,031,440
(12) 40% of 2008 (Gain) / Loss	\$8,412,576
(13) 2007 (Gain) / Loss	\$1,892,320
(14) 20% of 2007 (Gain) / Loss	\$378,464
Actuarial value on January 1, 2011, (6) + (8) + (10) + (12) + (14)	
(15) but not less than 80% nor greater than 120% of (6)	\$68,362,115
(16) Ratio of actuarial value to market value	104.05%
(17) Actuarial Value Return for 2009	15.00%
(18) Actuarial Value Return for 2010	3.39%
(19) Market Value Return for 2009	20.47%
(20) Market Value Return for 2010	13.57%

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

	<u>January 1, 2010</u>	<u>January 1, 2011</u>
Actuarial Accrued Liability	\$87,489,524	\$93,076,502
Actuarial Assets	<u>65,858,791</u>	<u>68,362,115</u>
Unfunded Actuarial Accrued Liability	\$21,630,733	\$24,714,387
Funded Status	75.3%	73.4%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Sections 22D and 22F of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2040, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the unfunded actuarial accrued liability by June 30, 2033
\$ 24,675,021 over 22 years with 4.0% increasing payments
- Level amortization of the Early Retirement Incentive by June 30, 2018
\$ 39,366 over 7 years
- Interest adjustment for payments deposited at the beginning of the fiscal year.

The pension appropriation is shown in Table VII.

Table VII

	<u>January 1, 2010</u>	<u>January 1, 2011</u>
Normal cost	\$1,167,448	\$1,306,697
Amortization payment of the accrued liability	1,377,973	1,620,154
Amortization payment of 1992 ERI liability	<u>7,001</u>	<u>7,001</u>
Total cost	\$2,552,422	\$2,933,852
% of Pay	12.9%	14.2%
Fiscal 2012 cost	\$2,743,649	\$2,743,649
Fiscal 2013 cost	\$2,839,252	\$3,182,392

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 2037 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 decrease during the next 22 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 14.7% of payroll for FYE 2013, decreasing to 12.3% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 4.5% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

Appropriation Forecast

<u>Fiscal Year</u>	<u>Employee Payroll*</u>	<u>Employee Contribution</u>	<u>Employer Normal Cost with Interest</u>	<u>Amortization Payments with Interest</u>	<u>Employer Total Cost with Interest</u>	<u>Employer Total Cost % of Payroll</u>	<u>Funded Ratio %**</u>
2012	\$20,663,594	\$1,750,689	\$1,357,959	\$1,385,690	\$2,743,649	13.3	73.1
2013	\$21,593,456	\$1,846,984	\$1,400,867	\$1,781,525	\$3,182,392	14.7	74.1
2014	\$22,565,161	\$1,948,400	\$1,444,886	\$1,852,495	\$3,297,381	14.6	75.4
2015	\$23,580,593	\$2,055,203	\$1,490,030	\$1,926,304	\$3,416,334	14.5	76.6
2016	\$24,641,720	\$2,167,673	\$1,536,311	\$2,003,065	\$3,539,376	14.4	77.9
2017	\$25,750,598	\$2,286,104	\$1,583,741	\$2,082,897	\$3,666,638	14.2	79.1
2018	\$26,909,375	\$2,410,804	\$1,765,812	\$2,165,922	\$3,931,734	14.6	80.3
2019	\$28,120,296	\$2,542,098	\$1,682,080	\$2,244,992	\$3,927,072	14.0	81.5
2020	\$29,385,710	\$2,680,326	\$1,733,005	\$2,334,791	\$4,067,796	13.8	82.6
2021	\$30,708,067	\$2,825,847	\$1,785,107	\$2,428,183	\$4,213,290	13.7	83.8
2022	\$32,089,930	\$2,979,037	\$1,838,388	\$2,525,310	\$4,363,698	13.6	84.9
2023	\$33,533,976	\$3,140,292	\$1,892,851	\$2,626,323	\$4,519,174	13.5	86.1
2024	\$35,043,005	\$3,310,027	\$1,948,492	\$2,731,376	\$4,679,868	13.4	87.3
2025	\$36,619,941	\$3,488,680	\$2,005,307	\$2,840,631	\$4,845,938	13.2	88.4
2026	\$38,267,838	\$3,676,708	\$2,063,291	\$2,954,256	\$5,017,547	13.1	89.6
2027	\$39,989,891	\$3,874,594	\$2,122,432	\$3,072,426	\$5,194,858	13.0	90.8
2028	\$41,789,436	\$4,082,845	\$2,182,718	\$3,195,323	\$5,378,041	12.9	92.0
2029	\$43,669,960	\$4,301,992	\$2,244,131	\$3,323,136	\$5,567,267	12.7	93.3
2030	\$45,635,109	\$4,532,595	\$2,306,652	\$3,456,062	\$5,762,714	12.6	94.6
2031	\$47,688,688	\$4,775,240	\$2,370,256	\$3,594,304	\$5,964,560	12.5	95.9
2032	\$49,834,679	\$5,030,545	\$2,434,912	\$3,738,076	\$6,172,988	12.4	97.2
2033	\$52,077,240	\$5,299,158	\$2,500,588	\$3,887,599	\$6,388,187	12.3	98.6
2034	\$54,420,716	\$5,581,759	\$2,567,244	\$0	\$2,567,244	4.7	100.0
2035	\$56,869,648	\$5,879,063	\$2,634,836	\$0	\$2,634,836	4.6	100.0
2036	\$59,428,782	\$6,191,821	\$2,703,312	\$0	\$2,703,312	4.5	100.0
2037	\$62,103,077	\$6,520,823	\$2,772,615	\$0	\$2,772,615	4.5	100.0
2038	\$64,897,716	\$6,814,260	\$2,897,383	\$0	\$2,897,383	4.5	100.0
2039	\$67,818,113	\$7,120,902	\$3,027,765	\$0	\$3,027,765	4.5	100.0
2040	\$70,869,928	\$7,441,342	\$3,164,014	\$0	\$3,164,014	4.5	100.0
2041	\$74,059,075	\$7,776,203	\$3,306,395	\$0	\$3,306,395	4.5	100.0
2042	\$77,391,733	\$8,126,132	\$3,455,183	\$0	\$3,455,183	4.5	100.0
2043	\$80,874,361	\$8,491,808	\$3,610,666	\$0	\$3,610,666	4.5	100.0

* Calendar basis

** Beginning of Fiscal Year

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

	<u>January 1, 2010</u>	<u>January 1, 2011</u>
(1) Actuarial Accrued Liability	\$87,489,524	\$93,076,502
(2) Actuarial Value of Assets	<u>65,858,791</u>	<u>68,362,115</u>
(3) Unfunded Actuarial Accrued Liability	21,630,733	24,714,387
(4) Funded Ratio (2)/(1)	75.3%	73.4%
(5) Covered Payroll	\$19,802,963	\$20,663,594
(6) UAAL as a percentage of payroll: (3)/(5)	109.2%	119.6%
(7) Annual Required Contribution (ARC)	\$2,673,646	\$2,743,649
(8) Net Pension Obligation	\$0	\$0

**PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS**

The most recent actuarial valuation of the System was prepared by Buck Consultants as of January 1, 2011.

The normal cost for employees on that date was:	\$1,750,689	8.5% of pay
The normal cost for the employer was:	1,131,697	5.5% of pay
The actuarial liability for active members was:		\$53,570,422
The actuarial liability for retired and inactive members was:		39,506,080
Total actuarial accrued liability:		93,076,502
System assets as of that date:		68,362,115
Unfunded actuarial accrued liability:		\$24,714,387

The ratio of system's assets to total actuarial liability was 73.4%

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

Investment Return:	8.0%
Rate of Salary Increase:	4.5%

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
01/01/11	\$68,362,115	\$93,076,502	\$24,714,387	73.4%	\$20,663,594	119.6%
01/01/10	65,858,791	87,489,524	21,630,733	75.3%	19,802,963	109.2%
01/01/09	56,668,376	82,122,479	25,454,103	69.0%	20,117,831	126.5%
01/01/08	63,704,468	76,813,575	13,109,107	82.9%	19,877,795	65.9%
01/01/06	53,591,084	64,875,957	11,284,873	82.6%	17,860,878	63.2%
01/01/04	47,165,481	57,218,053	10,052,572	82.4%	16,376,143	61.4%
01/01/02	40,232,054	49,619,671	9,387,617	81.1%	15,515,521	60.5%
01/01/00	37,496,091	41,776,394	4,280,303	89.8%	13,315,066	32.1%
01/01/98	29,744,805	35,015,145	5,270,340	84.9%	11,451,863	46.0%
01/01/97	24,406,100	29,456,842	5,050,742	82.9%	10,355,645	48.8%

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2011

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	0	0	0	0	0	0	0	0	0
20-24		7	0	0	0	0	0	0	0	0	7
		30,246	0	0	0	0	0	0	0	0	30,246
25-29		13	7	0	0	0	0	0	0	0	20
		33,000	53,186	0	0	0	0	0	0	0	40,065
30-34		17	12	7	0	0	0	0	0	0	36
		42,199	52,797	63,747	0	0	0	0	0	0	49,922
35-39		17	8	19	9	1	0	0	0	0	54
		23,216	60,213	58,830	51,784	82,745	0	0	0	0	47,091
40-44		19	20	12	4	13	1	0	0	0	69
		23,647	28,642	53,969	53,474	69,632	101,958	0	0	0	41,896
45-49		23	20	18	6	16	11	0	0	0	94
		23,777	26,277	32,570	62,937	70,880	66,230	0	0	0	41,477
50-54		20	18	19	8	12	0	5	0	0	82
		25,896	24,684	38,550	29,436	58,563	0	64,367	0	0	36,033
55-59		5	11	21	11	9	8	5	2	0	72
		31,289	30,772	26,932	39,764	59,079	55,329	57,103	47,857	0	39,632
60-64		6	8	8	10	6	3	1	3	1	46
		26,306	40,755	30,822	39,897	53,895	52,768	72,015	57,650	146,394	43,531
65-69		0	3	7	2	5	0	0	1	0	18
		0	26,273	39,933	15,999	21,712	0	0	14,484	0	28,522
70+		0	1	1	0	1	0	1	1	1	6
		0	21,268	31,594	0	39,691	0	57,200	29,100	17,761	32,769
Total Employees		127	108	112	50	63	23	12	7	2	504
Average Salary		28,198	35,138	41,550	43,229	60,764	62,236	61,380	44,607	82,078	40,999

Retiree Distribution as of January 1, 2011

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	0	0	0	0	0	0
40-44	0	3	3	0	22,513	22,513
45-49	3	0	3	47,572	0	47,572
50-54	1	1	2	11,248	8,496	19,744
55-59	9	6	15	292,628	116,110	408,738
60-64	15	17	32	448,257	216,919	665,176
65-69	11	26	37	311,854	349,444	661,298
70-74	15	15	30	359,133	161,407	520,540
75-79	12	12	24	330,208	130,266	460,474
80-84	6	16	22	128,498	161,904	290,402
85-89	7	12	19	110,279	128,682	238,961
90-94	0	2	2	-	8,448	8,448
95-99	0	3	3	-	13,341	13,341
Total	79	113	192	2,039,678	1,317,531	3,357,208
Average (Age/Payment)	70.0	72.7	71.6	25,819	11,660	17,485
Frequency Percent	41.1	58.9	100.0	60.8	39.2	100.0

Disabled Retiree Distribution as of January 1, 2011

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	0	0	0	0	0	0
40-44	1	1	2	43,348	28,488	71,836
45-49	1	2	3	49,460	74,872	124,332
50-54	2	0	2	73,738	0	73,738
55-59	3	0	3	112,790	0	112,790
60-64	3	0	3	134,627	0	134,627
65-69	4	0	4	87,205	0	87,205
70-74	2	0	2	43,515	0	43,515
75-79	1	0	1	28,177	0	28,177
80-84	2	0	2	52,555	0	52,555
85-89	0	0	0	0	-	0
90-94	1	0	1	16,409	0	16,409
95-99	0	0	0	0	0	0
Total	20	3	23	641,824	103,361	745,184
Average (Age/Payment)	65.3	46.3	62.8	32,091	34,454	32,399
Frequency Percent	87.0	13.0	100.0	86.1	13.9	100.0

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
2011	\$5,922,178	\$1,750,689	\$2,743,649	\$5,588,181	\$4,160,341
2012	5,119,092	1,846,984	3,182,392	5,651,648	5,561,933
2013	5,433,938	1,948,400	3,297,381	6,087,988	5,899,831
2014	5,765,714	1,765,812	3,416,334	6,550,882	5,967,314
2015	6,184,149	2,167,673	3,539,376	7,039,123	6,562,023
2016	6,589,612	2,286,104	3,666,638	7,552,502	6,915,632
2017	6,996,932	2,410,804	3,931,734	7,960,829	7,306,435
2018	7,497,725	2,542,098	3,927,072	8,663,664	7,635,108
2019	8,033,748	2,680,326	4,067,796	9,258,449	7,972,823
2020	8,561,247	2,825,847	4,213,290	9,880,835	8,358,725
2021	9,098,568	2,979,037	4,363,698	10,533,971	8,778,138
2022	9,641,357	3,140,292	4,519,174	11,220,719	9,238,828
2023	10,187,790	3,310,027	4,679,868	11,944,469	9,746,574
2024	10,798,555	3,488,680	4,845,938	12,706,619	10,242,681
2025	11,445,936	3,676,708	5,017,547	13,507,337	10,755,657
2026	12,132,127	3,874,594	5,194,858	14,347,907	11,285,232
2027	12,859,457	4,082,845	5,378,041	15,229,578	11,831,008
2028	13,630,390	4,301,992	5,567,267	16,153,570	12,392,440
2029	14,447,541	4,532,595	5,762,714	17,121,050	12,968,817
2030	15,313,681	4,775,240	5,964,560	18,133,122	13,559,241
2031	16,231,747	5,030,545	6,172,988	19,190,819	14,162,605
2032	17,204,851	5,299,158	6,388,187	20,295,072	14,777,566
2033	18,236,294	5,581,759	2,567,244	21,288,089	11,200,798
2034	19,329,572	5,879,063	2,634,836	22,145,299	11,329,626
2035	20,488,394	6,191,821	2,703,312	23,010,508	11,417,247
2036	21,716,687	6,520,823	2,772,615	23,880,280	11,457,031
2037	23,018,617	6,814,260	2,897,383	24,748,575	11,441,601
2038	24,398,599	7,120,902	3,027,765	25,612,701	11,362,769
2039	25,861,312	7,441,342	3,164,014	26,467,407	11,211,451
2040	26,729,311	7,776,203	3,306,395	27,333,475	11,686,762
2041	27,626,444	8,126,132	3,455,183	28,236,570	12,191,442

EXHIBIT 5 - SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2011, and does not take into account any subsequent changes.

1. Administration

Each of the 106 contributory retirement systems for public employees for 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:

<u>Date of Hire</u>	<u>Member Contribution Rate</u>
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later	9.0% of Salary
plus	
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
- (iv) if an employee is a State Police officer (Group 3), attainment of age 50

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:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
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, 2011.

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 8.0% per annum.

5. Salary Scale

It is assumed that salaries including longevity will increase according to the following table:

<u>Year</u>	<u>Rate</u>
2011	4.5%
2012+	5.0%

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 unrealized gains and losses. The result must be within 20% of market value.

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:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
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. 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:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0100	0.0150	0.0200
51	0.0100	0.0150	0.0200
52	0.0100	0.0200	0.0200
53	0.0100	0.0250	0.0500
54	0.0200	0.0250	0.0750
55	0.0200	0.0550	0.1500
56	0.0250	0.0650	0.1000
57	0.0250	0.0650	0.1000
58	0.0500	0.0650	0.1000
59	0.0650	0.0650	0.1500
60	0.1200	0.0500	0.2000
61	0.2000	0.1300	0.2000
62	0.3000	0.1500	0.2500
63	0.2500	0.1250	0.2500
64	0.2200	0.1800	0.3000
65	0.4000	0.1500	1.0000
66	0.2500	0.2000	1.0000
67	0.2500	0.2000	1.0000
68	0.3000	0.2500	1.0000
69	0.3000	0.2000	1.0000
70	1.0000	1.0000	1.0000

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:

<u>Attained Age</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
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 fiscal year 2011 is \$175,000 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 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 pension plan benefits between Normal Cost and Actuarial Accrued Liability.

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 Town of North Attleboro Retirement System contributing as of January 1, 2011, 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.

Daniel Sherman is an Associate of the Society of Actuaries. He is a Member of the American Academy of Actuaries and meets the Qualification Standards of the Academy to render the actuarial opinions contained herein. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions concerning it.

Buck Consultants, LLC

Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 11-04086

October 2011

BREAKOUTS

Breakouts

	<u>Total</u>	<u>Town</u>	<u>Housing</u>	<u>Electric</u>	<u>School</u>	<u>Landfill</u>	<u>Water</u>	<u>Sewer</u>
(1) Payroll of Active Participants	\$20,663,594	\$11,272,524	\$348,242	\$2,058,873	\$5,354,998	\$188,154	\$772,563	\$668,240
Percentage of Total Payroll	100.00%	54.55%	1.69%	9.96%	25.92%	0.91%	3.74%	3.23%
(2) Total Employer Contributions								
(a) ERI	\$7,001	\$0	\$7,001	\$0	\$0	\$0	\$0	\$0
(b) Remaining Amortizations*	1,620,154	883,794	27,381	161,367	419,944	14,743	60,594	52,331
(c) Employer Normal Cost*	1,123,822	613,045	18,993	111,933	291,295	10,227	42,031	36,298
(d) Administrative Expenses*	<u>182,875</u>	<u>99,758</u>	<u>3,091</u>	<u>18,214</u>	<u>47,401</u>	<u>1,664</u>	<u>6,840</u>	<u>5,907</u>
(e) Total Appropriation	\$2,933,852	\$1,596,597	\$56,466	\$291,514	\$758,640	\$26,634	\$109,465	\$94,536
(3) Fiscal 2013 Appropriation	\$3,182,392	\$1,732,026	\$60,935	\$316,242	\$822,990	\$28,894	\$118,749	\$102,556
Percent of Total Appropriation	100.00%	54.43%	1.91%	9.94%	25.86%	0.91%	3.73%	3.22%
(4) Fiscal 2014 Appropriation	\$3,297,381	\$1,794,753	\$62,878	\$327,695	\$852,795	\$29,940	\$123,050	\$106,270
Percent of Total Appropriation	100.00%	54.43%	1.91%	9.94%	25.86%	0.91%	3.73%	3.22%

*Allocated based on the ratio of the division payroll to the total payroll.