



**NORFOLK COUNTY
CONTRIBUTORY RETIREMENT SYSTEM**

December 31, 2014 Actuarial Valuation Report
GASB 67 & 68

TABLE OF CONTENTS

	<u>Page</u>
REPORT SUMMARY	
Introduction	1
GASB Statements No. 67 & No. 68	2
EXHIBITS	
1 Age/Service Distribution with Salary	14
2 Retiree Distribution	15
3 Disabled Retiree Distribution	16
4 Summary of Plan Provisions	17
5 Actuarial Methods and Assumptions	26
CERTIFICATION	31

Introduction

This report presents the Governmental Accounting Standards Statements 67 & 68 based on the findings of an actuarial valuation as of January 1, 2014, of the Norfolk County Contributory Retirement System.

The actuarial valuation is based on:

- Provisions of Chapter 32 of the Massachusetts General Laws, "M.G.L.", as of January 1, 2014.
- 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, 2014.

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.

GASB Statements No. 67 and No. 68

Effective for periods beginning after June 15, 2013, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 67 and 68. These statements, which amend GASB Statements No. 25 and No. 27, 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.

The statement requires the system to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position. The statement of fiduciary net position presents the following items as of the end of the plan's reporting period, as applicable:

- Assets
- Deferred outflows of resources (consumption of net assets by the employers that is applicable to a future reporting period)
- Liabilities
- Deferred inflows of resources (acquisition of net assets by the employers that is applicable to a future reporting period)
- Fiduciary net position (Assets + Deferred outflows – Liabilities – Deferred inflows)

The system is considered a cost-sharing multiple-employer pension plan since pension obligations exist for employees of more than one employer and plan assets can be used to pay the benefits of the employees of any employer.

This report does not include all items required under GASB Statements No. 67 and No. 68. Rather, it provides all items required that are not readily available from other sources such as the Annual Statement of the Financial Condition prepared by the Board, Chapter 32 of the Massachusetts General Laws and investment reports prepared by the plan's investment consultant.

Discount Rate

The discount rate, and all other actuarial assumptions, are the as those described in Exhibit 5. The discount rate was selected based on a projection of employer and employee contributions, benefit payments, expenses and the long term expected rate of return on trust assets. Under Chapter 32 of the Massachusetts Laws, employers are required to make the necessary contributions to the trust such that the plan reaches a full funding status by 2040. In addition, Chapter 32 also gives the Retirement Board the right to go directly to the Assessors of the community and add an additional property tax to bills for amounts not paid by employer.

Based on these laws and assumptions, the pensions plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The Board selected 8.25% as the long term expectation of investment returns. The average return for the 29 years ending as of December 31, 2013 was 8.85%. The average return for the past 5 years ending December 31, 2013 was 10.11%.

Net Position Restricted for Pensions

The Net Position Restricted for Pensions as of December 31, 2014 is \$781,947,029. The 2014 Annual Statement of the Financial Condition contains the values for previous years and the changes in Net Position Restricted for Pensions. Investments are reported at fair value.

December 31, 2013 Net Position	752,852,919
Employer Contributions	48,383,549
Employee Contributions	26,322,747
Other Payments	2,021,259
Benefit Payments	(81,095,470)
Expenses	(1,627,744)
Investment Income	<u>35,089,769</u>
December 31, 2014 Net Position	781,947,029

Pension Liability as of December 31, 2014

The following presents the changes in the pension liability during 2014.

December 31, 2013 Liability	1,247,596,772
Service Cost	31,799,628
Interest on Liability and Service Cost	105,550,203
Change in Plan Provisions	0
Experience (Gain) and Loss	0
Change in Assumptions	0
Benefit Payments	(81,095,470)
Interest on Benefit Payments	(3,278,901)
Other	<u>0</u>
December 31, 2014 Liability	1,300,572,232

Net Pension Liability as of December 31, 2014

The following presents the net pension liability of the system calculated using the discount rate of 8.25%, as well as what the system's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.25%) or 1-percentage-point higher (9.25%) than the current rate:

	1% Decrease (7.25%)	Current Discount Rate (8.25%)	1% Increase (9.25%)
Total Pension Liability	1,432,798,827	1,300,572,232	1,186,931,148
Plan Fiduciary Net Position	<u>781,947,029</u>	<u>781,947,029</u>	<u>781,947,029</u>
Net Pension Liability	650,851,798	518,625,203	404,984,119

The Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 60.1%.

	<u>Unit</u>	1% Decrease (7.25%)	Current Discount Rate (8.25%)	1% Increase (9.25%)
Avon Housing Auth.	AHA	507,872	461,002	420,721
Town of Avon	AVO	27,872,210	25,300,009	23,089,351
Town of Bellingham	BEL	63,041,899	57,224,044	52,223,936
Bellingham Hous. Auth.	BHA	899,881	816,835	745,462
Town of Canton	CAN	108,371,634	98,370,501	89,775,107
Canton Housing Auth.	CHA	2,518,537	2,286,112	2,086,357
Cohasset Housing Auth.	CHH	379,550	344,523	314,420
Town of Cohasset	COH	47,285,021	42,921,298	39,170,931
Charles Riv. Poll. Cont.	CRP	3,451,050	3,132,568	2,858,851
County of Norfolk	CTY	53,133,692	48,230,221	44,015,973
Town of Dover	DOV	28,196,316	25,594,204	23,357,840
Dover/Shearborne Schl.	DSR	15,608,388	14,167,959	12,929,995
Foxboro Housing Auth.	FHA	1,426,521	1,294,874	1,181,731
Franklin Housing Auth.	FHH	1,736,678	1,576,408	1,438,665
Town of Foxboro	FOX	91,910,474	83,428,467	76,138,675
Town of Franklin	FRA	111,132,064	100,876,183	92,061,849
Holbrook Housing Auth	HHA	808,281	733,689	669,581
Town of Holbrook	HOL	45,267,826	41,090,261	37,499,886
Massachusetts Respiratory	HOS	0	0	0
King Phillip Reg School	KPR	15,631,111	14,188,586	12,948,819
Town of Medway	MDW	47,499,290	43,115,793	39,348,431
Town of Medfield	MED	51,199,376	46,474,414	42,413,584
Medfield Housing Auth.	MHA	523,298	475,005	433,500
Medway Housing Auth.	MHH	1,959,741	1,778,886	1,623,451
Town of Millis	MIL	38,311,443	34,775,852	31,737,216
Millis Housing Auth.	MLH	497,615	451,693	412,225
Norfolk Housing Auth.	NHA	488,716	443,614	404,852
Norfolk Cnty Mos. Con.	NMC	3,882,675	3,524,361	3,216,410
Town of Norfolk	NOR	44,206,891	40,127,235	36,621,007
Town of Plainville	PLA	35,135,402	31,892,913	29,106,182
Town of Randolph	RAN	117,495,846	106,652,680	97,333,608
Norfolk County Ret BD	RET	0	0	0
Randolph Housing Auth	RHA	2,071,403	1,880,243	1,715,951
Town of Sharon	SHA	91,762,911	83,294,522	76,016,433
Sharon Housing Auth.	SHH	551,069	500,213	456,506
Stoughton Hous. Auth.	STH	2,269,384	2,059,952	1,879,958
Town of Stoughton	STO	114,669,834	104,087,468	94,992,537
Town of Walpole	WAL	108,555,298	98,537,215	89,927,254
Town of Westwood	WES	97,823,191	88,795,526	81,036,772
Walpole Housing Auth.	WHA	1,437,907	1,305,209	1,191,163
Town of Wrentham	WRE	40,318,880	36,598,031	33,400,177
Wrentham Hous. Auth.	WRH	592,638	537,946	490,942
Dedham-Westwood Water Dist	DWW	<u>12,367,014</u>	<u>11,225,717</u>	<u>10,244,839</u>
		1,432,798,827	1,300,572,232	1,186,931,148

Employer Contributions during 2014 (including receivables)

	<u>Unit</u>	<u>Contribution</u>	<u>Portion</u>
Avon Housing Auth.	AHA	17,065	0.0353%
Town of Avon	AVO	918,361	1.8981%
Town of Bellingham	BEL	2,077,165	4.2931%
Bellingham Hous. Auth.	BHA	29,651	0.0613%
Town of Canton	CAN	3,570,734	7.3801%
Canton Housing Auth.	CHA	82,984	0.1715%
Cohasset Housing Auth.	CHH	1,557,993	3.2201%
Town of Cohasset	COH	12,754	0.0264%
Charles Riv. Poll. Cont.	CRP	113,709	0.2350%
County of Norfolk	CTY	2,920,654	6.0365%
Town of Dover	DOV	929,040	1.9202%
Dover/Shearborne Schl.	DSR	514,281	1.0629%
Foxboro Housing Auth.	FHA	47,934	0.0991%
Franklin Housing Auth.	FHH	57,223	0.1183%
Town of Foxboro	FOX	3,028,356	6.2591%
Town of Franklin	FRA	3,661,687	7.5680%
Holbrook Housing Auth	HHA	26,633	0.0550%
Town of Holbrook	HOL	1,491,528	3.0827%
Massachusetts Respiratory	HOS	-	0.0000%
King Phillip Reg School	KPR	515,030	1.0645%
Town of Medway	MDW	1,565,052	3.2347%
Town of Medfield	MED	1,686,967	3.4867%
Medfield Housing Auth.	MHA	17,584	0.0363%
Medway Housing Auth.	MHH	64,572	0.1335%
Town of Millis	MIL	1,262,323	2.6090%
Millis Housing Auth.	MLH	16,721	0.0346%
Norfolk Housing Auth.	NHA	16,422	0.0339%
Norfolk Cnty Mos. Con.	NMC	127,930	0.2644%
Town of Norfolk	NOR	1,456,572	3.0105%
Town of Plainville	PLA	1,157,676	2.3927%
Town of Randolph	RAN	3,871,367	8.0014%
Norfolk County Ret BD	RET	-	0.0000%
Randolph Housing Auth	RHA	68,251	0.1411%
Town of Sharon	SHA	3,023,493	6.2490%
Sharon Housing Auth.	SHH	18,517	0.0383%
Stoughton Hous. Auth.	STH	76,256	0.1576%
Town of Stoughton	STO	3,778,253	7.8090%
Town of Walpole	WAL	3,576,785	7.3926%
Town of Westwood	WES	3,223,173	6.6617%
Walpole Housing Auth.	WHA	47,378	0.0979%
Town of Wrentham	WRE	1,328,466	2.7457%
Wrentham Hous. Auth.	WRH	19,528	0.0404%
Dedham-Westwood Water Dist	DWW	407,481	0.8422%
		<u>48,383,549</u>	<u>100.0000%</u>

Pension Expense for 2014

Service Cost	31,799,628
Interest	102,271,302
Difference in Experience - Amortization	0
Change in Assumptions - Amortization	0
Changes in Plan Provisions	0
Employee Contributions	(26,322,747)
Projected Earnings	(61,860,541)
Administration Expense	1,627,744
Other Changes in Fiduciary Net Position	0
Asset (Gain) / Loss Amortization	<u>5,354,154</u>
Total Expense	52,869,540

Schedules of Required Supplementary Information

	<u>2014</u>
Total Pension Liability – Beginning	1,247,596,772
Total Pension Liability – Ending (a)	1,300,572,232
Plan Fiduciary Net Position – Beginning	752,852,919
Plan Fiduciary Net Position – Ending (b)	781,947,029
Net Pension Liability – Ending (a) – (b)	518,625,203
Plan Fiduciary Net Positions as a percentage of the Total Pension Liability	60.1%
Covered-employee payroll	246,722,941
Net Pension Liability as a percentage of Covered-employee Payroll	210.2%

Schedule of Net Position Restricted for Pensions Amortization Recognition

Below is the schedule of amortization adjustments to the Pension Expense for the coming years. A positive number indicates that the actual return was less than the expected return and will be added to the Pension Expense.

<u>Year</u>	<u>(Gain) / Loss</u>	<u>Period</u>	<u>Increase (Decrease) arising from (Gains) or Losses</u>				
			<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
2014	21,416,618	5	4,283,324	4,283,324	4,283,324	4,283,324	4,283,322

Schedule of Pension Amounts

	Unit	BOY Net Pension Liability	EOY Net Pension Liability	Differences between Expected and Actual Experience	Net Asset (Gain) / Loss	Changes in Assumptions	Changes in Proportion and Differences between Employer Contributions and proportionate share of contributions	Total Deferred Outflows	Differences between Expected and Actual Experience
Avon Housing Auth.	AHA	175,368	183,833	0	7,591	0	0	7,591	0
Town of Avon	AVO	9,624,243	10,088,807	0	416,617	0	0	416,617	0
Town of Bellingham	BEL	21,768,298	22,819,057	0	942,313	0	0	942,313	0
Bellingham Hous. Auth.	BHA	310,728	325,727	0	13,451	0	0	13,451	0
Town of Canton	CAN	37,420,606	39,226,903	0	1,619,874	0	0	1,619,874	0
Canton Housing Auth.	CHA	869,648	911,626	0	37,646	0	0	37,646	0
Cohasset Housing Auth.	CHH	131,058	137,385	0	5,673	0	0	5,673	0
Town of Cohasset	COH	16,327,466	17,115,594	0	706,788	0	0	706,788	0
Charles Riv. Poll. Cont.	CRP	1,191,644	1,249,165	0	51,584	0	0	51,584	0
County of Norfolk	CTY	18,347,005	19,232,617	0	794,211	0	0	794,211	0
Town of Dover	DOV	9,736,157	10,206,122	0	421,462	0	0	421,462	0
Dover/Shearborne Schl.	DSR	5,389,559	5,649,714	0	233,305	0	0	233,305	0
Foxboro Housing Auth.	FHA	492,576	516,353	0	21,323	0	0	21,323	0
Franklin Housing Auth.	FHH	599,673	628,619	0	25,959	0	0	25,959	0
Town of Foxboro	FOX	31,736,585	33,268,514	0	1,373,823	0	0	1,373,823	0
Town of Franklin	FRA	38,373,779	40,226,086	0	1,661,135	0	0	1,661,135	0
Holbrook Housing Auth	HHA	279,099	292,571	0	12,082	0	0	12,082	0
Town of Holbrook	HOL	15,630,930	16,385,437	0	676,636	0	0	676,636	0
Massachusetts Respiratory	HOS	0	0	0	0	0	0	0	0
King Phillip Reg School	KPR	5,397,405	5,657,939	0	233,644	0	0	233,644	0
Town of Medway	MDW	16,401,452	17,193,152	0	709,991	0	0	709,991	0
Town of Medfield	MED	17,679,088	18,532,460	0	765,298	0	0	765,298	0
Medfield Housing Auth.	MHA	180,694	189,416	0	7,822	0	0	7,822	0
Medway Housing Auth.	MHH	676,697	709,361	0	29,293	0	0	29,293	0
Town of Millis	MIL	13,228,899	13,867,460	0	572,656	0	0	572,656	0
Millis Housing Auth.	MLH	171,826	180,120	0	7,438	0	0	7,438	0

Schedule of Pension Amounts

	Unit	BOY Net Pension Liability	EOY Net Pension Liability	Differences between Expected and Actual Experience	Net Asset (Gain) / Loss	Changes in Assumptions	Changes in Proportion and Differences between Employer Contributions and proportionate share of contributions	Total Deferred Outflows	Differences between Expected and Actual Experience
Norfolk Housing Auth.	NHA	168,753	176,899	0	7,305	0	0	7,305	0
Norfolk Cnty Mos. Con.	NMC	1,340,684	1,405,399	0	58,036	0	0	58,036	0
Town of Norfolk	NOR	15,264,591	16,001,414	0	660,778	0	0	660,778	0
Town of Plainville	PLA	12,132,216	12,717,839	0	525,183	0	0	525,183	0
Town of Randolph	RAN	40,571,186	42,529,562	0	1,756,257	0	0	1,756,257	0
Norfolk County Ret BD	RET	0	0	0	0	0	0	0	0
Randolph Housing Auth	RHA	715,253	749,779	0	30,962	0	0	30,962	0
Town of Sharon	SHA	31,685,632	33,215,101	0	1,371,617	0	0	1,371,617	0
Sharon Housing Auth.	SHH	190,284	199,469	0	8,237	0	0	8,237	0
Stoughton Hous. Auth.	STH	783,616	821,441	0	33,921	0	0	33,921	0
Town of Stoughton	STO	39,595,366	41,506,640	0	1,714,016	0	0	1,714,016	0
Town of Walpole	WAL	37,484,025	39,293,383	0	1,622,620	0	0	1,622,620	0
Town of Westwood	WES	33,778,240	35,408,720	0	1,462,202	0	0	1,462,202	0
Walpole Housing Auth.	WHA	496,508	520,474	0	21,493	0	0	21,493	0
Town of Wrentham	WRE	13,922,065	14,594,085	0	602,662	0	0	602,662	0
Wrentham Hous. Auth.	WRH	204,637	214,515	0	8,858	0	0	8,858	0
Dedham-Westwood Water Dist	DWW	<u>4,270,316</u>	<u>4,476,445</u>	<u>0</u>	<u>184,855</u>	<u>0</u>	<u>0</u>	<u>184,855</u>	<u>0</u>
		494,743,853	518,625,203	0	21,416,618	0	0	21,416,618	0

Schedule of Pension Amounts

	Unit	Changes in Assumptions	Changes in Proportion and Differences between Employer Contributions and proportionate share of contributions	Total Deferred Inflows	Proportionate share of plan Pension Expense	Net Amortization from changes in Share Proportions	Total Employer Pension Expense	Total Employer Pension Revenue
Avon Housing Auth.	AHA	0	0	0	18,740	0	18,740	716
Town of Avon	AVO	0	0	0	1,028,470	0	1,028,470	39,320
Town of Bellingham	BEL	0	0	0	2,326,214	0	2,326,214	88,934
Bellingham Hous. Auth.	BHA	0	0	0	33,205	0	33,205	1,269
Town of Canton	CAN	0	0	0	3,998,858	0	3,998,858	152,881
Canton Housing Auth.	CHA	0	0	0	92,933	0	92,933	3,553
Cohasset Housing Auth.	CHH	0	0	0	14,005	0	14,005	535
Town of Cohasset	COH	0	0	0	1,744,793	0	1,744,793	66,705
Charles Riv. Poll. Cont.	CRP	0	0	0	127,342	0	127,342	4,868
County of Norfolk	CTY	0	0	0	1,960,606	0	1,960,606	74,956
Town of Dover	DOV	0	0	0	1,040,430	0	1,040,430	39,777
Dover/Shearborne Schl.	DSR	0	0	0	575,941	0	575,941	22,019
Foxboro Housing Auth.	FHA	0	0	0	52,638	0	52,638	2,012
Franklin Housing Auth.	FHH	0	0	0	64,083	0	64,083	2,450
Town of Foxboro	FOX	0	0	0	3,391,449	0	3,391,449	129,659
Town of Franklin	FRA	0	0	0	4,100,716	0	4,100,716	156,775
Holbrook Housing Auth	HHA	0	0	0	29,825	0	29,825	1,140
Town of Holbrook	HOL	0	0	0	1,670,359	0	1,670,359	63,860
Massachusetts Respiratory	HOS	0	0	0	0	0	0	0
King Phillip Reg School	KPR	0	0	0	576,780	0	576,780	22,051
Town of Medway	MDW	0	0	0	1,752,699	0	1,752,699	67,008
Town of Medfield	MED	0	0	0	1,889,231	0	1,889,231	72,227
Medfield Housing Auth.	MHA	0	0	0	19,309	0	19,309	738
Medway Housing Auth.	MHH	0	0	0	72,313	0	72,313	2,765
Town of Millis	MIL	0	0	0	1,413,673	0	1,413,673	54,046
Millis Housing Auth.	MLH	0	0	0	18,362	0	18,362	702

Schedule of Pension Amounts

	Unit	Changes in Assumptions	Changes in Proportion and Differences between Employer Contributions and proportionate share of contributions	Total Deferred Inflows	Proportionate share of plan Pension Expense	Net Amortization from changes in Share Proportions	Total Employer Pension Expense	Total Employer Pension Revenue
Norfolk Housing Auth.	NHA	0	0	0	18,033	0	18,033	689
Norfolk Cnty Mos. Con.	NMC	0	0	0	143,269	0	143,269	5,477
Town of Norfolk	NOR	0	0	0	1,631,212	0	1,631,212	62,363
Town of Plainville	PLA	0	0	0	1,296,478	0	1,296,478	49,566
Town of Randolph	RAN	0	0	0	4,335,536	0	4,335,536	165,752
Norfolk County Ret BD	RET	0	0	0	0	0	0	0
Randolph Housing Auth	RHA	0	0	0	76,434	0	76,434	2,922
Town of Sharon	SHA	0	0	0	3,386,004	0	3,386,004	129,451
Sharon Housing Auth.	SHH	0	0	0	20,334	0	20,334	777
Stoughton Hous. Auth.	STH	0	0	0	83,739	0	83,739	3,201
Town of Stoughton	STO	0	0	0	4,231,258	0	4,231,258	161,766
Town of Walpole	WAL	0	0	0	4,005,635	0	4,005,635	153,140
Town of Westwood	WES	0	0	0	3,609,625	0	3,609,625	138,000
Walpole Housing Auth.	WHA	0	0	0	53,058	0	53,058	2,028
Town of Wrentham	WRE	0	0	0	1,487,746	0	1,487,746	56,878
Wrentham Hous. Auth.	WRH	0	0	0	21,868	0	21,868	836
Dedham-Westwood Water Dist	DWW	<u>0</u>	<u>0</u>	<u>0</u>	<u>456,336</u>	<u>0</u>	<u>456,336</u>	<u>17,446</u>
		0	0	0	52,869,540	0	52,869,540	2,021,259

EXHIBITS

Exhibit 1 - Age/Service Distribution with Salary as of January 1, 2014

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	3 21,550	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 21,550
20-24	113 28,196	3 27,065	1 35,465	0 0	0 0	0 0	0 0	0 0	0 0	0 0	117 28,229
25-29	292 35,012	49 52,685	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	341 37,552
30-34	155 40,254	152 53,773	29 56,158	0 0	0 0	0 0	0 0	0 0	0 0	0 0	336 47,743
35-39	116 36,699	104 53,418	79 63,124	22 66,370	0 0	0 0	0 0	0 0	0 0	0 0	321 50,652
40-44	167 32,772	108 47,593	124 60,758	120 73,198	25 73,231	2 54,108	0 0	0 0	0 0	0 0	546 52,875
45-49	225 29,525	188 37,195	136 51,746	115 64,006	91 73,138	40 74,990	1 54,674	0 0	0 0	0 0	796 47,417
50-54	179 33,949	228 33,908	210 40,878	145 50,853	65 67,124	82 76,920	28 72,845	3 52,626	0 0	0 0	940 45,355
55-59	99 29,769	162 34,035	215 38,502	159 44,060	59 56,177	92 68,308	42 86,616	26 85,075	3 65,963	0 0	857 45,963
60-64	54 36,952	97 39,549	136 38,639	105 41,509	64 47,711	72 56,442	24 84,141	21 80,014	11 92,380	0 0	584 46,709
65-69	22 29,296	28 33,538	38 39,319	33 38,308	35 43,668	28 44,643	10 57,097	6 79,646	5 82,265	0 0	205 41,856
70+	5 16,431	18 43,324	16 33,842	16 39,263	8 25,855	22 39,102	12 55,740	3 36,046	7 55,380	0 0	107 39,845
Total Employees	1,430	1,137	984	715	347	338	117	59	26	0	5,153
Average Salary	33,449	41,622	46,113	53,475	60,382	64,715	76,850	78,579	77,426	0	46,038

Exhibit 2 - Retiree Distribution as of January 1, 2014

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	1	1	0	4,644	4,644
35-39	0	0	0	0	0	0
40-44	3	0	3	30,062	0	30,062
45-49	7	3	10	127,658	31,235	158,892
50-54	23	9	32	557,772	76,910	634,682
55-59	80	57	137	2,865,840	639,337	3,505,177
60-64	177	133	310	6,875,286	2,081,593	8,956,879
65-69	254	249	503	9,632,486	4,441,673	14,074,159
70-74	241	267	508	7,302,658	4,753,214	12,055,872
75-79	165	230	395	4,450,217	3,942,335	8,392,551
80-84	133	213	346	2,799,154	3,060,741	5,859,895
85-89	90	176	266	1,745,735	1,957,358	3,703,094
90-94	36	102	138	461,550	897,160	1,358,711
95+	13	29	42	127,383	184,727	312,111
Total	1222	1469	2691	36,975,802	22,070,927	59,046,729
Average (Age/Payment)	72.10	75.86	74.15	30,258	15,024	21,942
Frequency Percent	45.4	54.6	100	62.6	37.4	100

Exhibit 3 - Disabled Retiree Distribution as of January 1, 2014

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	1	1	0	5,031	5,031
25-29	0	0	0	0	0	0
30-34	1	0	1	31,611	0	31,611
35-39	1	1	2	32,373	48,393	80,766
40-44	6	3	9	209,673	87,596	297,269
45-49	22	1	23	840,548	51,429	891,977
50-54	21	6	27	876,878	144,339	1,021,216
55-59	38	7	45	1,418,222	134,022	1,552,244
60-64	41	9	50	1,565,005	193,678	1,758,683
65-69	59	11	70	2,002,672	219,900	2,222,573
70-74	42	8	50	1,261,785	202,079	1,463,865
75-79	27	4	31	760,498	100,217	860,715
80-84	13	4	17	300,395	48,100	348,496
85-89	1	2	3	16,266	27,292	43,559
90-94	3	0	3	54,505	0	54,505
95-99	0	0	0	0	0	0
Total	275	57	332	9,370,431	1,262,079	10,632,510
Average (Age/Payment)	64.61	63.89	64.49	34,074	22,142	32,026
Frequency Percent	82.8	17.2	100	88.1	11.9	100

EXHIBIT 4 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2015, and does not take into account any subsequent changes.

1. Administration

Each of the 104 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.

Chapter 176 of the Acts of 2011 created different plan provisions within these groups for those hired on or after April 2, 2012.

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
1979 and Later	Plus 2.0% of Salary in excess of \$30,000

For Group 1 employees who become members on or after April 2, 2012, the Contribution Rate shall be 6% after the completion of 30 years of service.

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.). For employees who become members on or after April 2, 2012, the averaging period shall be five years.

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) for a Group 1 employee hired on or after April 2, 2012, attainment of age 60 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 for those hired prior to April 2, 2012:

<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

For those hired after April 1, 2012 who retire with less than 30 years of service, the following rates are applied:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
67 or Over	.0250	.0250	.0250
66	.0235	.0250	.0250
65	.0220	.0250	.0250
64	.0205	.0250	.0250
63	.0190	.0250	.0250
62	.0175	.0250	.0250
61	.0160	.0235	.0250
60	.0145	.0220	.0250
59		.0205	.0250
58		.0190	.0250
57		.0175	.0250
56		.0160	.0235
55		.0145	.0220
54			.0205
53			.0190
52			.0175
51			.0160
50			.0145

For those hired after April 1, 2012 who retire with at least 30 years of service, the following rates are applied:

Age at Retirement	Percentage of Average Salary		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
67 or Over	.02500	.02500	.02500
66	.02375	.02500	.02500
65	.02250	.02500	.02500
64	.02125	.02500	.02500
63	.02000	.02500	.02500
62	.01875	.02500	.02500
61	.01750	.02375	.02500
60	.01625	.02250	.02500
59		.02125	.02500
58		.02000	.02500
57		.01875	.02500
56		.01750	.02375
55		.01625	.02250
54			.02125
53			.02000
52			.01875
51			.01750
50			.01625

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 \$450 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 or age 60 if hired on or after April 2, 2012).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55 (age 60 if hired on or after April 2, 2012). 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 (age 60 if hired on or after April 2, 2012), 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 \$15,000. 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 5 – 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, 2015.

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.

5. Salary Scale

It is assumed that salaries including longevity will increase at a rate of 4.00% per year.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$15,000 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).

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, adjusted to 2015 with Scale AA. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members. Sample rates are as follows:

<u>Age</u>	<u>Healthy Male</u>	<u>Healthy Female</u>	<u>Disabled Male</u>	<u>Disabled Female</u>
25	0.000376	0.000207	0.000382	0.000223
30	0.000444	0.000264	0.000562	0.000350
35	0.000773	0.000475	0.000904	0.000554
40	0.001079	0.000706	0.001215	0.000852
45	0.001508	0.001124	0.001734	0.001326
50	0.002138	0.001676	0.002667	0.002018
55	0.003624	0.002717	0.004693	0.003478
60	0.006747	0.005055	0.008757	0.006657
65	0.012737	0.009706	0.016075	0.012163
70	0.022206	0.016742	0.027281	0.020665
75	0.037834	0.028106	0.046906	0.034105
80	0.064368	0.045879	0.080486	0.056294
85	0.110757	0.077446	0.136043	0.096337
90	0.183408	0.131682	0.216605	0.157618
95	0.267491	0.194509	0.299852	0.215240
100	0.344556	0.237467	0.371685	0.254498

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages for those hired prior to April 2, 2012:

<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	0.02000
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

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages for those hired on or after April 2, 2012:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0000	0.0000	0.0100
51	0.0000	0.0000	0.0100
52	0.0000	0.0000	0.0200
53	0.0000	0.0000	0.0200
54	0.0000	0.0000	0.0200
55	0.0000	0.0000	0.0500
56	0.0000	0.0000	0.0750
57	0.0000	0.0000	0.1500
58	0.0000	0.0000	0.1000
59	0.0000	0.0000	0.1000
60	0.0500	0.0650	0.1000
61	0.0650	0.0650	0.1500
62	0.2000	0.1500	0.2000
63	0.2000	0.1300	0.2000
64	0.3000	0.1500	0.3000
65	0.2500	0.1250	1.0000
66	0.2200	0.1800	1.0000
67	0.4000	0.2500	1.0000
68	0.3000	0.2000	1.0000
69	0.3000	0.2000	1.0000
70	1.0000	1.0000	1.0000

12. 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).

13. 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.

14. 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 2015 is \$1,550,000 and is anticipated to increase at 4.5% per year.

CERTIFICATION:

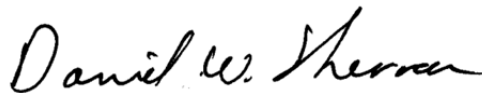
This report fairly represents the actuarial position of the Norfolk County Retirement System as of December 31, 2014, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

The funded status measure is appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations. The funded status measure is appropriate for assessing the need for or the amount of future contributions. The funded status measure would be different if the measure reflected the market value of assets rather than the actuarial value of assets.

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. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

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.. Daniel Sherman has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sherman Actuarial Services, LLC



Daniel W. Sherman, ASA, MAAA

July, 2015