



**NORFOLK COUNTY
CONTRIBUTORY RETIREMENT SYSTEM**

December 31, 2015 Actuarial Valuation Report
GASB 67 & 68

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Introduction

This report presents the Governmental Accounting Standards Statements 67 & 68 based on the findings of an actuarial valuation as of January 1, 2016, 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, 2016.
- 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
- Assets as of December 31, 2015

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2016.

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 8.00% as the long term expectation of investment returns. The average return for the 31 years ending as of December 31, 2015 was 8.52%. The average return for the past 5 years ending December 31, 2015 was 7.11%.

Net Position Restricted for Pensions

The Net Position Restricted for Pensions as of December 31, 2015 is \$767,348,723. The 2015 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, 2014 Net Position	781,947,029
Employer Contributions	53,201,068
Employee Contributions	26,920,011
Other Payments	2,697,174
Benefit Payments	(84,888,358)
Expenses	(1,699,750)
Investment Income	<u>(10,828,451)</u>
December 31, 2015 Net Position	767,348,723

Pension Liability as of December 31, 2015

The following presents the changes in the pension liability during 2015.

December 31, 2014 Liability	1,300,572,232
Service Cost	31,963,567
Interest on Liability and Service Cost	109,934,203
Change in Plan Provisions	0
Experience (Gain) and Loss	13,828,826
Change in Assumptions	(57,518,820)
Benefit Payments	(84,888,358)
Interest on Benefit Payments	(3,330,211)
Other	<u>0</u>
December 31, 2015 Liability	1,310,561,438

Net Pension Liability as of December 31, 2015

The following presents the net pension liability of the system calculated using the discount rate of 8.00%, 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 (7.00%) or 1-percentage-point higher (9.00%) than the current rate:

	1% Decrease (7.00%)	Current Discount Rate (8.00%)	1% Increase (9.00%)
Total Pension Liability	1,448,607,345	1,310,561,438	1,192,735,366
Plan Fiduciary Net Position	<u>767,348,723</u>	<u>767,348,723</u>	<u>767,348,723</u>
Net Pension Liability	681,258,622	543,212,715	425,386,643

The Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 58.6%.

		1% Decrease	Current	1% Increase
	<u>Unit</u>	<u>(7.00%)</u>	<u>(8.00%)</u>	<u>(9.00%)</u>
Avon Housing Auth.	AHA	476,647	431,224	392,455
Town of Avon	AVO	27,297,066	24,695,775	22,475,501
Town of Bellingham	BEL	65,955,737	59,670,445	54,305,772
Bellingham Hous. Auth.	BHA	630,383	570,310	519,037
Town of Canton	CAN	110,834,151	100,272,144	91,257,173
Canton Housing Auth.	CHA	2,124,902	1,922,408	1,749,574
Cohasset Housing Auth.	CHH	348,872	315,626	287,250
Town of Cohasset	COH	53,064,533	48,007,716	43,691,581
Charles Riv. Poll. Cont.	CRP	3,427,092	3,100,506	2,821,755
County of Norfolk	CTY	47,836,488	43,277,881	39,386,981
Town of Dover	DOV	27,971,899	25,306,300	23,031,136
Dover/Shearborne Schl.	DSR	16,436,019	14,869,739	13,532,874
Foxboro Housing Auth.	FHA	1,233,812	1,116,235	1,015,880
Franklin Housing Auth.	FHH	1,846,777	1,670,787	1,520,575
Town of Foxboro	FOX	92,705,258	83,870,855	76,330,443
Town of Franklin	FRA	110,259,917	99,752,632	90,784,368
Holbrook Housing Auth	HHA	1,059,459	958,497	872,324
Town of Holbrook	HOL	43,748,259	39,579,243	36,020,870
Massachusetts Respiratory	HOS	0	0	0
King Phillip Reg School	KPR	16,205,259	14,660,969	13,342,874
Town of Medway	MDW	51,747,979	46,816,625	42,607,574
Town of Medfield	MED	53,373,627	48,287,355	43,946,078
Medfield Housing Auth.	MHA	324,780	293,830	267,413
Medway Housing Auth.	MHH	1,920,308	1,737,311	1,581,118
Town of Millis	MIL	36,462,361	32,987,659	30,021,902
Millis Housing Auth.	MLH	808,603	731,546	665,777
Norfolk Housing Auth.	NHA	663,505	600,276	546,308
Norfolk Cnty Mos. Con.	NMC	4,179,853	3,781,531	3,441,552
Town of Norfolk	NOR	44,873,382	40,597,146	36,947,258
Town of Plainville	PLA	39,216,853	35,479,659	32,289,859
Town of Randolph	RAN	119,896,229	108,470,645	98,718,588
Norfolk County Ret BD	RET	0	0	0
Randolph Housing Auth	RHA	1,389,833	1,257,388	1,144,343
Town of Sharon	SHA	86,702,229	78,439,888	71,387,747
Sharon Housing Auth.	SHH	529,566	479,101	436,027
Stoughton Hous. Auth.	STH	1,532,093	1,386,091	1,261,475
Town of Stoughton	STO	114,050,312	103,181,819	93,905,254
Town of Walpole	WAL	105,153,134	95,132,503	86,579,612
Town of Westwood	WES	107,020,294	96,821,731	88,116,969
Walpole Housing Auth.	WHA	1,170,231	1,058,713	963,530
Town of Wrentham	WRE	41,010,540	37,102,416	33,766,722
Wrentham Hous. Auth.	WRH	547,495	495,322	450,790
Dedham-Westwood Water Dist	DWW	12,571,609	11,373,590	10,351,047

Employer Contributions during 2015

	<u>Unit</u>	<u>Contribution</u>	<u>Portion</u>
Avon Housing Auth.	AHA	18,965	0.0356%
Town of Avon	AVO	969,509	1.8223%
Town of Bellingham	BEL	2,341,492	4.4012%
Bellingham Hous. Auth.	BHA	22,250	0.0418%
Town of Canton	CAN	3,990,657	7.5011%
Canton Housing Auth.	CHA	89,480	0.1682%
Cohasset Housing Auth.	CHH	13,562	0.0255%
Town of Cohasset	COH	1,706,914	3.2084%
Charles Riv. Poll. Cont.	CRP	120,377	0.2263%
County of Norfolk	CTY	3,056,908	5.7460%
Town of Dover	DOV	1,023,985	1.9247%
Dover/Shearborne Schl.	DSR	560,895	1.0543%
Foxboro Housing Auth.	FHA	38,396	0.0722%
Franklin Housing Auth.	FHH	62,747	0.1179%
Town of Foxboro	FOX	3,318,800	6.2382%
Town of Franklin	FRA	3,947,535	7.4200%
Holbrook Housing Auth	HHA	28,723	0.0540%
Town of Holbrook	HOL	1,662,447	3.1248%
Massachusetts Respiratory	HOS		0.0000%
King Phillip Reg School	KPR	587,229	1.1038%
Town of Medway	MDW	1,902,885	3.5768%
Town of Medfield	MED	1,889,872	3.5523%
Medfield Housing Auth.	MHA	16,770	0.0315%
Medway Housing Auth.	MHH	69,273	0.1302%
Town of Millis	MIL	1,355,413	2.5477%
Millis Housing Auth.	MLH	24,856	0.0467%
Norfolk Housing Auth.	NHA	25,056	0.0471%
Norfolk Cnty Mos. Con.	NMC	141,912	0.2667%
Town of Norfolk	NOR	1,645,469	3.0929%
Town of Plainville	PLA	1,234,888	2.3212%
Town of Randolph	RAN	4,319,218	8.1187%
Norfolk County Ret BD	RET		0.0000%
Randolph Housing Auth	RHA	74,216	0.1395%
Town of Sharon	SHA	3,343,148	6.2840%
Sharon Housing Auth.	SHH	20,002	0.0376%
Stoughton Hous. Auth.	STH	72,916	0.1371%
Town of Stoughton	STO	4,028,761	7.5727%
Town of Walpole	WAL	3,972,135	7.4663%
Town of Westwood	WES	3,583,777	6.7363%
Walpole Housing Auth.	WHA	43,307	0.0814%
Town of Wrentham	WRE	1,422,787	2.6744%
Wrentham Hous. Auth.	WRH	14,649	0.0275%
Dedham-Westwood Water Dist	DWW	438,887	0.8250%

Pension Expense for 2015

Service Cost	31,963,567
Interest	106,603,992
Difference in Experience - Amortization	2,822,209
Change in Assumptions - Amortization	(11,738,535)
Changes in Plan Provisions	0
Employee Contributions	(26,920,011)
Projected Earnings	(64,358,205)
Administration Expense	1,699,750
Other Changes in Fiduciary Net Position	0
Asset (Gain) / Loss Amortization	<u>19,320,655</u>
Total Expense	59,393,422

Reconciliation of Net Pension Liability for 2015

NPL Beginning	518,625,203
Expense	59,393,422
Contribution	(53,201,068)
Deferred Outflows	74,206,995
Deferred Inflows	(53,114,663)
Revenue	<u>(2,697,174)</u>
NPL Ending	543,212,715

Schedules of Required Supplementary Information

	<u>2015</u>
Total Pension Liability – Beginning	1,300,572,232
Total Pension Liability – Ending (a)	1,310,561,438
Plan Fiduciary Net Position – Beginning	781,947,029
Plan Fiduciary Net Position – Ending (b)	767,348,723
Net Pension Liability – Ending (a) – (b)	543,212,715
Plan Fiduciary Net Positions as a percentage of the Total Pension Liability	58.6%
Covered-employee payroll	\$267,454,300
Net Pension Liability as a percentage of Covered-employee Payroll	203.1%

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.

Investment Return

<u>Year</u>	<u>(Gain) / Loss</u>	<u>Period</u>	<u>Increase (Decrease) arising from (Gains) or Losses</u>				
			<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
2015	75,186,656	5	15,037,331	15,037,331	15,037,331	15,037,331	15,037,331
2014	21,416,618	5	4,283,324	4,283,324	4,283,324	4,283,322	

Experience

<u>Year</u>	<u>(Gain) / Loss</u>	<u>Period</u>	<u>Increase (Decrease) arising from (Gains) or Losses</u>				
			<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
2015	13,828,826	4.90	2,822,209	2,822,209	2,822,209	2,822,209	2,539,988

Assumptions

<u>Year</u>	<u>(Gain) / Loss</u>	<u>Period</u>	<u>Increase (Decrease) arising from (Gains) or Losses</u>				
			<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>
2015	(57,518,820)	4.90	(11,738,535)	(11,738,535)	(11,738,535)	(11,738,535)	(10,564,681)

Schedule of Pension Amounts

		EOY Net	Differences	Net Asset	Changes in	Changes in Proportion	Recognition of	Total
	Unit	Pension	between	Loss	Assumptions	and Differences	previous	Changes in
		Liability	Expected			between Employer	Deferred	Deferred
			and Actual			Contributions and	Outflows	Outflows
			Experience			proportionate share of		
						contributions		
Avon Housing Auth.	AHA	178,738	3,622	19,791	0	0	(1,518)	21,895
Town of Avon	AVO	10,236,116	207,405	1,133,433	0	0	(83,323)	1,257,515
Town of Bellingham	BEL	24,732,716	501,136	2,738,625	0	562,591	(188,463)	3,613,889
Bellingham Hous. Auth.	BHA	236,387	4,790	26,175	0	0	(2,690)	28,275
Town of Canton	CAN	41,561,656	842,125	4,602,075	0	294,487	(323,975)	5,414,712
Canton Housing Auth.	CHA	796,816	16,145	88,231	0	0	(7,529)	96,847
Cohasset Housing Auth.	CHH	130,823	2,651	14,486	0	0	(1,135)	16,002
Town of Cohasset	COH	19,898,649	403,188	2,203,355	0	1,293,300	(141,358)	3,758,485
Charles Riv. Poll. Cont.	CRP	1,285,124	26,039	142,300	0	0	(10,317)	158,022
County of Norfolk	CTY	17,938,186	363,465	1,986,275	0	0	(158,842)	2,190,898
Town of Dover	DOV	10,489,172	212,532	1,161,454	0	0	(84,292)	1,289,694
Dover/Shearborne Schl.	DSR	6,163,337	124,882	682,459	0	151,212	(46,661)	911,892
Foxboro Housing Auth.	FHA	462,667	9,375	51,231	0	0	(4,265)	56,341
Franklin Housing Auth.	FHH	692,522	14,032	76,682	0	21,659	(5,192)	107,181
Town of Foxboro	FOX	34,763,509	704,381	3,849,324	0	0	(274,765)	4,278,940
Town of Franklin	FRA	41,346,324	837,762	4,578,231	0	0	(332,227)	5,083,766
Holbrook Housing Auth	HHA	397,286	8,050	43,991	0	60,354	(2,416)	109,979
Town of Holbrook	HOL	16,405,143	332,402	1,816,523	0	0	(135,327)	2,013,598
Massachusetts Respiratory	HOS	0	-	0	0	0	-	0
King Phillip Reg School	KPR	6,076,804	123,129	672,878	0	107,212	(46,729)	856,490
Town of Medway	MDW	19,404,955	393,185	2,148,689	0	1,054,485	(141,998)	3,454,361
Town of Medfield	MED	20,014,556	405,536	2,216,189	0	398,840	(153,060)	2,867,505
Medfield Housing Auth.	MHA	121,789	2,468	13,486	0	0	(1,564)	14,390
Medway Housing Auth.	MHH	720,095	14,591	79,735	0	0	(5,859)	88,467
Town of Millis	MIL	13,673,007	277,043	1,513,996	0	0	(114,531)	1,676,508
Millis Housing Auth.	MLH	303,218	6,144	33,575	0	82,481	(1,488)	120,712
Norfolk Housing Auth.	NHA	248,807	5,041	27,550	0	48,419	(1,461)	79,549
Norfolk Cnty Mos. Con.	NMC	1,567,401	31,759	173,557	0	62,646	(11,607)	256,355
Town of Norfolk	NOR	16,827,052	340,951	1,863,240	0	48,495	(132,156)	2,120,530
Town of Plainville	PLA	14,705,913	297,972	1,628,369	0	880,397	(105,037)	2,701,701

Schedule of Pension Amounts

		EOY Net	Differences	Net Asset	Changes in	Changes in Proportion	Recognition of	Total
	Unit	Pension	between	Loss	Assumptions	and Differences	previous	Changes in
		Liability	Expected			between Employer	Deferred	Deferred
			and Actual			Contributions and	Outflows	Outflows
			Experience			proportionate share of		
						contributions		
Town of Randolph	RAN	44,959,841	910,980	4,978,352	0	245,096	(351,252)	5,783,176
Norfolk County Ret BD	RET	0	-	0	0	0	-	0
Randolph Housing Auth	RHA	521,173	10,560	57,709	0	0	(6,192)	62,077
Town of Sharon	SHA	32,512,436	658,769	3,600,065	0	0	(274,323)	3,984,511
Sharon Housing Auth.	SHH	198,582	4,024	21,989	0	0	(1,647)	24,366
Stoughton Hous. Auth.	STH	574,519	11,641	63,616	0	0	(6,784)	68,473
Town of Stoughton	STO	42,767,683	866,562	4,735,617	0	0	(342,803)	5,259,376
Town of Walpole	WAL	39,431,333	798,961	4,366,187	0	0	(324,524)	4,840,624
Town of Westwood	WES	40,131,499	813,147	4,443,715	0	2,018,197	(292,441)	6,982,618
Walpole Housing Auth.	WHA	438,825	8,891	48,591	0	0	(4,299)	53,183
Town of Wrentham	WRE	15,378,527	311,601	1,702,847	0	3,407	(120,533)	1,897,322
Wrentham Hous. Auth.	WRH	205,305	4,160	22,733	0	0	(1,772)	25,121
Dedham-Westwood Water								
Dist	DWW	<u>4,714,223</u>	<u>95,520</u>	<u>522,001</u>	<u>0</u>	<u>1,099</u>	<u>(36,971)</u>	<u>581,649</u>
		543,212,715	11,006,617	60,149,325	0	7,334,377	-4,283,324	74,206,994

Schedule of Pension Amounts

	Unit	Differences between Expected and Actual Experience	Changes in Assumptions	Changes in Proportion and Differences between Employer Contributions and proportionate share of contributions	Recognition of Previous Deferred Inflows	Total Changes in Deferred Inflows
Avon Housing Auth.	AHA	0	15,063	9,247	0	24,310
Town of Avon	AVO	0	862,668	275,701	0	1,138,369
Town of Bellingham	BEL	0	2,084,397	0	0	2,084,397
Bellingham Hous. Auth.	BHA	0	19,922	79,683	0	99,605
Town of Canton	CAN	0	3,502,688	0	0	3,502,688
Canton Housing Auth.	CHA	0	67,153	109,988	0	177,141
Cohasset Housing Auth.	CHH	0	11,025	9,257	0	20,282
Town of Cohasset	COH	0	1,676,996	0	0	1,676,996
Charles Riv. Poll. Cont.	CRP	0	108,306	21,897	0	130,203
County of Norfolk	CTY	0	1,511,775	627,894	0	2,139,669
Town of Dover	DOV	0	883,995	153,963	0	1,037,958
Dover/Shearborne Schl.	DSR	0	519,427	0	0	519,427
Foxboro Housing Auth.	FHA	0	38,992	64,413	0	103,405
Franklin Housing Auth.	FHH	0	58,364	0	0	58,364
Town of Foxboro	FOX	0	2,929,761	130,311	0	3,060,072
Town of Franklin	FRA	0	3,484,540	674,027	0	4,158,567
Holbrook Housing Auth	HHA	0	33,482	0	0	33,482
Town of Holbrook	HOL	0	1,382,575	526,189	0	1,908,764
Massachusetts Respiratory	HOS	0	0	0	0	0
King Phillip Reg School	KPR	0	512,134	0	0	512,134
Town of Medway	MDW	0	1,635,390	0	0	1,635,390
Town of Medfield	MED	0	1,686,765	0	0	1,686,765
Medfield Housing Auth.	MHA	0	10,264	53,879	0	64,143
Medway Housing Auth.	MHH	0	60,687	18,251	0	78,938
Town of Millis	MIL	0	1,152,319	629,021	0	1,781,340
Millis Housing Auth.	MLH	0	25,554	0	0	25,554
Norfolk Housing Auth.	NHA	0	20,969	0	0	20,969
Norfolk Cnty Mos. Con.	NMC	0	132,096	0	0	132,096
Town of Norfolk	NOR	0	1,418,132	0	0	1,418,132
Town of Plainville	PLA	0	1,239,369	0	0	1,239,369

Schedule of Pension Amounts

	Unit	Differences between Expected and Actual Experience	Changes in Assumptions	Changes in Proportion and Differences between Employer Contributions and proportionate share of contributions	Recognition of Previous Deferred Inflows	Total Changes in Deferred Inflows
Town of Randolph	RAN	0	3,789,076	0	0	3,789,076
Norfolk County Ret BD	RET	0	0	0	0	0
Randolph Housing Auth	RHA	0	43,923	180,626	0	224,549
Town of Sharon	SHA	0	2,740,047	1,589,745	0	4,329,792
Sharon Housing Auth.	SHH	0	16,736	7,355	0	24,091
Stoughton Hous. Auth.	STH	0	48,419	202,182	0	250,601
Town of Stoughton	STO	0	3,604,328	659,814	0	4,264,142
Town of Walpole	WAL	0	3,323,151	1,212,119	0	4,535,270
Town of Westwood	WES	0	3,382,158	0	0	3,382,158
Walpole Housing Auth.	WHA	0	36,983	79,865	0	116,848
Town of Wrentham	WRE	0	1,296,055	0	0	1,296,055
Wrentham Hous. Auth.	WRH	0	17,302	18,950	0	36,252
Dedham-Westwood Water Dist	DWW	<u>0</u>	<u>397,300</u>	<u>0</u>	<u>0</u>	<u>397,300</u>
		0	45,780,285	7,334,377	0	53,114,663

Schedule of Pension Amounts

	Unit	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	19,543	-2,371	17,172	887
Town of Avon	AVO	1,119,190	-70,693	1,048,497	50,825
Town of Bellingham	BEL	2,704,209	144,254	2,848,463	122,804
Bellingham Hous. Auth.	BHA	25,846	-20,432	5,414	1,174
Town of Canton	CAN	4,544,240	75,509	4,619,749	206,363
Canton Housing Auth.	CHA	87,122	-28,202	58,920	3,956
Cohasset Housing Auth.	CHH	14,304	-2,374	11,930	650
Town of Cohasset	COH	2,175,665	331,616	2,507,281	98,801
Charles Riv. Poll. Cont.	CRP	140,512	-5,614	134,898	6,381
County of Norfolk	CTY	1,961,313	-160,998	1,800,315	89,067
Town of Dover	DOV	1,146,858	-39,478	1,107,380	52,081
Dover/Shearborne Schl.	DSR	673,883	38,772	712,655	30,602
Foxboro Housing Auth.	FHA	50,587	-16,516	34,071	2,297
Franklin Housing Auth.	FHH	75,719	5,553	81,272	3,439
Town of Foxboro	FOX	3,800,949	-33,413	3,767,536	172,609
Town of Franklin	FRA	4,520,696	-172,828	4,347,868	205,294
Holbrook Housing Auth	HHA	43,438	15,476	58,914	1,973
Town of Holbrook	HOL	1,793,694	-134,920	1,658,774	81,455
Massachusetts Respiratory	HOS	0	0	0	0
King Phillip Reg School	KPR	664,421	27,490	691,911	30,173
Town of Medway	MDW	2,121,686	270,381	2,392,067	96,350
Town of Medfield	MED	2,188,338	102,267	2,290,605	99,377
Medfield Housing Auth.	MHA	13,316	-13,815	-499	605
Medway Housing Auth.	MHH	78,733	-4,680	74,053	3,575
Town of Millis	MIL	1,494,970	-161,288	1,333,682	67,890
Millis Housing Auth.	MLH	33,153	21,149	54,302	1,506
Norfolk Housing Auth.	NHA	27,204	12,415	39,619	1,235
Norfolk Cnty Mos. Con.	NMC	171,375	16,063	187,438	7,783
Town of Norfolk	NOR	1,839,825	12,434	1,852,259	83,550
Town of Plainville	PLA	1,607,905	225,743	1,833,648	73,018

Schedule of Pension Amounts

	Unit	Proportionate share of plan Pension Expense	Net Amortization from changes in Share Proportions	Total Employer Pension Expense	Total Employer Pension Revenue
Town of Randolph	RAN	4,915,788	62,845	4,978,633	223,236
Norfolk County Ret BD	RET	0	0	0	0
Randolph Housing Auth	RHA	56,984	-46,314	10,670	2,588
Town of Sharon	SHA	3,554,823	-407,627	3,147,196	161,432
Sharon Housing Auth.	SHH	21,712	-1,886	19,826	986
Stoughton Hous. Auth.	STH	62,816	-51,841	10,975	2,853
Town of Stoughton	STO	4,676,104	-169,183	4,506,921	212,351
Town of Walpole	WAL	4,311,316	-310,800	4,000,516	195,785
Town of Westwood	WES	4,387,871	517,487	4,905,358	199,262
Walpole Housing Auth.	WHA	47,980	-20,478	27,502	2,179
Town of Wrentham	WRE	1,681,447	873	1,682,320	76,358
Wrentham Hous. Auth.	WRH	22,448	-4,859	17,589	1,019
Dedham-Westwood Water Dist	DWW	<u>515,441</u>	<u>282</u>	<u>515,723</u>	<u>23,407</u>
		59,393,422	0	59,393,422	2,697,174

Schedule of Pension Amounts

	Unit	Net Pension Liability Beginning	Expense	Contribution	Change in Deferred Outflows	Change in Deferred Inflows	Revenue	Net Pension Liability End
Avon Housing Auth.	AHA	183,833	17,172	-18,965	21,895	-24,310	-887	178,738
Town of Avon	AVO	10,088,807	1,048,497	-969,509	1,257,515	-1,138,369	-50,825	10,236,116
Town of Bellingham	BEL	22,819,057	2,848,463	-2,341,492	3,613,889	-2,084,397	-122,804	24,732,716
Bellingham Hous. Auth.	BHA	325,727	5,414	-22,250	28,275	-99,605	-1,174	236,387
Town of Canton	CAN	39,226,903	4,619,749	-3,990,657	5,414,712	-3,502,688	-206,363	41,561,656
Canton Housing Auth.	CHA	911,626	58,920	-89,480	96,847	-177,141	-3,956	796,816
Cohasset Housing Auth.	CHH	137,385	11,930	-13,562	16,002	-20,282	-650	130,823
Town of Cohasset	COH	17,115,594	2,507,281	-1,706,914	3,758,485	-1,676,996	-98,801	19,898,649
Charles Riv. Poll. Cont.	CRP	1,249,165	134,898	-120,377	158,022	-130,203	-6,381	1,285,124
County of Norfolk	CTY	19,232,617	1,800,315	-3,056,908	2,190,898	-2,139,669	-89,067	17,938,186
Town of Dover	DOV	10,206,122	1,107,380	-1,023,985	1,289,694	-1,037,958	-52,081	10,489,172
Dover/Shearborne Schl.	DSR	5,649,714	712,655	-560,895	911,892	-519,427	-30,602	6,163,337
Foxboro Housing Auth.	FHA	516,353	34,071	-38,396	56,341	-103,405	-2,297	462,667
Franklin Housing Auth.	FHH	628,619	81,272	-62,747	107,181	-58,364	-3,439	692,522
Town of Foxboro	FOX	33,268,514	3,767,536	-3,318,800	4,278,940	-3,060,072	-172,609	34,763,509
Town of Franklin	FRA	40,226,086	4,347,868	-3,947,535	5,083,766	-4,158,567	-205,294	41,346,324
Holbrook Housing Auth	HHA	292,571	58,914	-28,723	109,979	-33,482	-1,973	397,286
Town of Holbrook	HOL	16,385,437	1,658,774	-1,662,447	2,013,598	-1,908,764	-81,455	16,405,143
Massachusetts Respiratory	HOS	0	0	0	0	0	0	0
King Phillip Reg School	KPR	5,657,939	691,911	-587,229	856,490	-512,134	-30,173	6,076,804
Town of Medway	MDW	17,193,152	2,392,067	-1,902,885	3,454,361	-1,635,390	-96,350	19,404,955
Town of Medfield	MED	18,532,460	2,290,605	-1,889,872	2,867,505	-1,686,765	-99,377	20,014,556
Medfield Housing Auth.	MHA	189,416	-499	-16,770	14,390	-64,143	-605	121,789
Medway Housing Auth.	MHH	709,361	74,053	-69,273	88,467	-78,938	-3,575	720,095
Town of Millis	MIL	13,867,460	1,333,682	-1,355,413	1,676,508	-1,781,340	-67,890	13,673,007
Millis Housing Auth.	MLH	180,120	54,302	-24,856	120,712	-25,554	-1,506	303,218
Norfolk Housing Auth.	NHA	176,899	39,619	-25,056	79,549	-20,969	-1,235	248,807
Norfolk Cnty Mos. Con.	NMC	1,405,399	187,438	-141,912	256,355	-132,096	-7,783	1,567,401
Town of Norfolk	NOR	16,001,414	1,852,259	-1,645,469	2,120,530	-1,418,132	-83,550	16,827,052
Town of Plainville	PLA	12,717,839	1,833,648	-1,234,888	2,701,701	-1,239,369	-73,018	14,705,913

Schedule of Pension Amounts

	Unit	Net Pension Liability Beginning	Expense	Contribution	Change in Deferred Outflows	Change in Deferred Inflows	Revenue	Net Pension Liability End
Town of Randolph	RAN	42,529,562	4,978,633	-4,319,218	5,783,176	-3,789,076	-223,236	44,959,841
Norfolk County Ret BD	RET	0	0	0	0	0	0	0
Randolph Housing Auth	RHA	749,779	10,670	-74,216	62,077	-224,549	-2,588	521,173
Town of Sharon	SHA	33,215,101	3,147,196	-3,343,148	3,984,511	-4,329,792	-161,432	32,512,436
Sharon Housing Auth.	SHH	199,469	19,826	-20,002	24,366	-24,091	-986	198,582
Stoughton Hous. Auth.	STH	821,441	10,975	-72,916	68,473	-250,601	-2,853	574,519
Town of Stoughton	STO	41,506,640	4,506,921	-4,028,761	5,259,376	-4,264,142	-212,351	42,767,683
Town of Walpole	WAL	39,293,383	4,000,516	-3,972,135	4,840,624	-4,535,270	-195,785	39,431,333
Town of Westwood	WES	35,408,720	4,905,358	-3,583,777	6,982,618	-3,382,158	-199,262	40,131,499
Walpole Housing Auth.	WHA	520,474	27,502	-43,307	53,183	-116,848	-2,179	438,825
Town of Wrentham	WRE	14,594,085	1,682,320	-1,422,787	1,897,322	-1,296,055	-76,358	15,378,527
Wrentham Hous. Auth.	WRH	214,515	17,589	-14,649	25,121	-36,252	-1,019	205,305
Dedham-Westwood Water Dist	DWW	<u>4,476,445</u>	<u>515,723</u>	<u>-438,887</u>	<u>581,649</u>	<u>-397,300</u>	<u>-23,407</u>	<u>4,714,223</u>
		518,625,203	59,393,424	-53,201,068	74,206,995	-53,114,663	-2,697,176	543,212,714

EXHIBITS

Exhibit 1 - Age/Service Distribution with Salary as of January 1, 2016

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	1	0	0	0	0	0	0	0	0	0	1
	55,707	0	0	0	0	0	0	0	0	0	55,707
20-24	140	1	0	0	0	0	0	0	0	0	141
	31,214	50,930	0	0	0	0	0	0	0	0	31,354
25-29	336	36	1	0	0	0	0	0	0	0	374
	38,574	50,763	37,614	0	0	0	0	0	0	0	39,696
30-34	213	122	42	0	0	0	0	0	0	0	377
	45,660	55,162	66,331	0	0	0	0	0	0	0	51,038
35-39	165	78	97	27	1	0	0	0	0	0	368
	39,900	52,348	70,461	68,873	51,204	0	0	0	0	0	52,750
40-44	175	74	89	104	28	2	0	0	0	0	472
	34,722	53,181	64,733	76,202	72,757	70,255	0	0	0	0	54,822
45-49	246	138	114	122	102	48	2	0	0	0	772
	29,748	37,984	51,959	67,437	81,602	78,887	87,292	0	0	0	50,512
50-54	250	184	173	135	81	87	26	1	0	0	937
	33,621	36,960	45,194	52,867	67,448	84,187	81,013	71,904	0	0	48,162
55-59	112	155	191	204	75	74	53	17	4	0	885
	37,255	37,487	39,630	47,241	59,100	75,819	84,886	96,136	72,796	0	49,330
60-64	70	84	125	133	73	74	24	24	12	0	619
	39,236	39,028	42,321	43,047	49,988	61,461	86,585	88,863	97,856	0	49,471
65-69	25	31	35	55	38	31	11	6	4	0	236
	34,071	38,471	40,834	46,268	42,197	53,927	52,373	81,385	59,462	0	44,898
70+	12	13	14	11	9	16	14	3	6	0	98
	30,115	43,944	32,927	39,868	48,132	41,847	55,073	62,947	53,567	0	43,022
Total Employees	1,745	916	881	791	407	332	130	51	26	0	5,280
Average Salary	36,463	43,146	49,842	54,987	63,866	71,540	78,501	88,550	77,873	0	48,665

Exhibit 2 - Retiree Distribution as of January 1, 2016

Attained Age	Number of Employees			Total Payments		
	Female	Male	Total	Female	Male	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	1	0	1	2502.36	0	2,502
30-34	1	1	2	4927.32	6,180	11,107
35-39	0	0	0	0	0	0
40-44	1	3	4	1,268	32,110	33,378
45-49	3	5	8	19,682	110,402	130,084
50-54	9	21	30	95,349	481,012	576,361
55-59	49	83	132	471,168	2,908,949	3,380,117
60-64	155	168	323	2,263,069	6,952,958	9,216,027
65-69	306	298	604	5,791,589	11,610,366	17,401,955
70-74	274	252	526	5,410,176	8,393,095	13,803,271
75-79	243	179	422	4,469,397	5,200,921	9,670,318
80-84	212	121	333	3,539,601	2,980,286	6,519,888
85-89	154	99	253	2,015,636	1,942,496	3,958,132
90-94	105	44	149	1,059,938	795,109	1,855,047
95+	34	12	46	301,747	144,874	446,621
Total	1547	1286	2833	25,446,050	41,558,758	67,004,808
Average (Age/Payment)	75.36	72.33	73.98	16,449	32,316	23,652
Frequency Percent	54.6	45.4	100	38.0	62.0	100

Exhibit 3 - Disabled Retiree Distribution as of January 1, 2016

Attained Age	Number of Employees			Total Payments		
	Female	Male	Total	Female	Male	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	1	0	1	5,338	0	5,338
30-34	0	1	1	0	32,511	32,511
35-39	0	0	0	0	0	0
40-44	3	3	6	100,519	135,700	236,219
45-49	2	22	24	83,152	834,912	918,064
50-54	7	25	32	227,911	1,079,211	1,307,122
55-59	11	39	50	249,304	1,530,228	1,779,532
60-64	9	41	50	225,493	1,589,616	1,815,110
65-69	10	57	67	202,626	2,138,524	2,341,151
70-74	9	45	54	211,357	1,542,158	1,753,515
75-79	5	36	41	135,557	1,059,500	1,195,057
80-84	3	12	15	50,217	313,188	363,406
85-89	3	6	9	46,920	114,325	161,246
90-94	0	1	1	0	13,126	13,126
95-99	0	0	0	0	0	0
Total	63	288	351	1,538,393	10,383,001	11,921,394
Average (Age/Payment)	64.16	65.39	65.17	24,419	36,052	33,964
Frequency Percent	17.9	82.1	100	12.9	87.1	100

EXHIBIT 4 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2016, 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		
	Group 1	Group 2	Group 4
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 \$751.80 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. They are based on the 2015 Experience Study conducted by Sherman Actuarial Services, LLC.

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, 2016.

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 8.00% per annum. This includes a 3% inflation assumption.

5. Salary Scale

It is assumed that salaries including longevity will increase at the following rates.

<u>Service</u>	<u>Rate</u>
0 - 1	5.50%
2	5.00%
3 - 4	4.50%
5	4.00%
6 +	3.50%

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	0.2080	0.0150
5	0.1020	0.0150
10	0.0650	0.0150
15	0.0417	0.0150
20	0.0400	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement mortality and beneficiary mortality is represented by the RP-2014 Blue Collar Mortality with Scale MP-2014, fully generational. Mortality for retired members for Group 1 and 2 is represented by the RP-2014 Blue Collar Mortality Table set forward five years for males and 3 years for females, fully generational. Mortality for retired members for Group 4 is represented by the RP-2014 Blue Collar Mortality Table set forward three years for males, and six years for females, fully generational. Mortality for disabled members for Group 1 and 2 is represented by the RP-2000 Mortality Table set forward six years. Mortality for disabled members for Group 4 is represented by the RP-2000 Mortality Table set forward two years. Generational adjusting is based on Scale MP-2014

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	0.0360	0.1019	0.0144
51	0.0405	0.0714	0.0144
52	0.0437	0.0562	0.0123
53	0.0366	0.0448	0.0210
54	0.0451	0.0488	0.0569
55	0.0477	0.0469	0.0879
56	0.0574	0.0518	0.0931
57	0.0632	0.0509	0.0897
58	0.0765	0.0552	0.0846
59	0.0917	0.0645	0.1022
60	0.1057	0.0774	0.1455
61	0.1224	0.1038	0.1844
62	0.1473	0.1168	0.2741
63	0.1777	0.1440	0.1984
64	0.2136	0.1708	0.4139
65	0.2615	0.1939	1.00000
66	0.2682	0.1959	1.00000
67	0.2500	0.2000	1.00000
68	0.2500	0.2000	1.00000
69	0.2500	0.2000	1.00000
70 to 76	0.2500	0.2500	1.00000
77 to 79	0.3500	0.2500	1.00000
80	1.0000	1.0000	1.00000

10. 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	0.0072
51	0.0000	0.0000	0.0072
52	0.0000	0.0000	0.0062
53	0.0000	0.0000	0.0105
54	0.0000	0.0000	0.0105
55	0.0000	0.0000	0.0389
56	0.0000	0.0000	0.0631
57	0.0000	0.0000	0.0897
58	0.0000	0.0000	0.0846
59	0.0000	0.0000	0.1022
60	0.0477	0.0469	0.1455
61	0.0574	0.0518	0.1844
62	0.0632	0.0509	0.2741
63	0.0765	0.0552	0.1984
64	0.0917	0.0645	0.4139
65	0.1057	0.0774	1.0000
66	0.1224	0.1038	1.0000
67	0.1473	0.1168	1.0000
68	0.1777	0.1440	1.0000
69	0.2136	0.1708	1.0000
70	0.2615	0.1939	1.0000
70 to 76	0.2682	0.1959	1.0000
77 to 79	0.2500	0.2000	1.0000
80	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	0.000100	0.000500
30	0.000152	0.000967
40	0.000663	0.002500
50	0.001271	0.007634

In addition, it is assumed for the general employees that 20% of all disabilities are ordinary (80% 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 2016 is \$1,700,000 and is anticipated to increase at 4.0% per year.

CERTIFICATION:

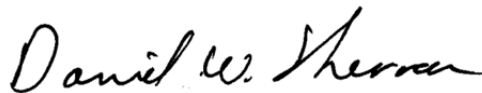
This report fairly represents the actuarial position of the Norfolk County Retirement System as of December 31, 2015, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued 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

September, 2016