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September 20, 2004

Board of Trustees  
 Essex Regional Retirement Board  
 Hawthorne Office Park  
 491 Maple Street, Suite 202  
 Danvers, MA 01923-4025

Re: **Analysis of 2003 Early Retirement Incentive (ERI) for the Essex Regional Retirement System**

Dear Trustees:

We have completed our analysis of Section 116 of Chapter 46 of the Acts of 2003, which allows for local option of an Early Retirement Incentive (ERI) for eligible employees of the Essex Regional Retirement System. The ERI was adopted by the following 8 units. We have also shown the maximum number of years that the unit adopted and noted any limits applied to the number of eligible participants:

<u>Unit</u>	<u>Maximum number of years</u>
Essex Regional Retirement	5
Georgetown	5
Groveland	5
Lynnfield	5
Merrimac	5
Merrimac Housing	5
North Andover Housing	5
Pentucket Regional School District	5

The law provides that retirement allowances of members who participated in the ERI be determined by adding up to 5 years to the member's age and/or creditable service. A member's enhanced benefit cannot exceed 80% of the average rate of annual compensation used in his/her calculation. Members retiring under the program had effective dates of retirement of December 31, 2003.

The study was based on active member data as of December 31, 2003, and additional data for retirees who were eligible for and elected the ERIP. All data was supplied by the Board.

The assumptions used were the same as those used in the January 1, 2004 actuarial valuation and are summarized in Exhibit III.



We measured the increase in the actuarial accrued liability due to the incentive for each member who retired under the program. First we valued the group as active members on January 1, 2004. Then we valued the same group as retirees after the application of the ERI. The difference between these two liabilities represents the increase in accrued liability due to the ERI of \$1,739,224.

The additional liability will be amortized as part of the System's funding schedule and will be a component of the System's annual appropriation beginning with the FY06 appropriation. Therefore, the liabilities include an interest adjustment to July 1, 2005. The cost factors by unit and in the aggregate are shown in Exhibit II. Also shown is the first payment in FY06 on a 15-year level payment and a 23-year 4.50% increasing amortization. For the System, the FY06 payment is \$222,653 and \$127,843, respectively.

This report does not address the other costs and savings associated with the ERI, including the effect on payroll costs or the cost of medical benefits.

Exhibit I shows key statistical information, by unit and in the aggregate, for the employees who elected the ERI. Exhibit II shows the costs factors.

We believe this analysis represents an accurate appraisal of the cost and liabilities of the ERI for the Essex Regional Retirement System. This analysis was performed in accordance with generally accepted actuarial principles and practices relating to pension plans. In our opinion, the actuarial assumptions used in this report are reasonable, related to plan experience and expectations, and represent our best estimate of anticipated experience.

We look forward to answering any questions you may have.

Sincerely,

Kathleen A. Riley

**Exhibit I  
Essex Region  
2003 Early Retirement Incentive Demographics**

**Essex Regional Retirement Board**

Number of Members	1
Average Service	26
Average Age	59
Average Compensation	\$62,506
Average Annual Benefit	35,718

**Merrimac**

Number of Members	2
Average Service	19
Average Age	61
Average Compensation	\$14,188
Average Annual Benefit	5,893

**Georgetown**

Number of Members	2
Average Service	23
Average Age	61
Average Compensation	\$49,788
Average Annual Benefit	31,731

**Merrimac Housing**

Number of Members	1
Average Service	12
Average Age	62
Average Compensation	\$25,728
Average Annual Benefit	8,631

**Groveland**

Number of Members	1
Average Service	26
Average Age	65
Average Compensation	\$37,777
Average Annual Benefit	25,836

**North Andover Housing**

Number of Members	1
Average Service	23
Average Age	59
Average Compensation	\$72,429
Average Annual Benefit	35,760

**Lynnfield**

Number of Members	15
Average Service	21
Average Age	61
Average Compensation	\$43,332
Average Annual Benefit	23,525

**Pentucket Regional School District**

Number of Members	1
Average Service	18
Average Age	57
Average Compensation	\$37,083
Average Annual Benefit	13,398

**Totals**

Number of Members	24
Average Service	21
Average Age	61
Average Compensation	\$42,227
Average Annual Benefit	22,811

*Notes: Average age and service are as of January 1, 2004.  
Annual benefit includes ERI.*

**Exhibit II**  
**Essex Region**  
**2003 Early Retirement Incentive Liabilities**  
**23-year Amortization Payments Increasing at 4.5%**

<b>Essex Regional Retirement Board</b>		<b>Merrimac</b>	
2004 Active Accrued Liability	\$283,638	2004 Active Accrued Liability	\$87,523
2004 Normal Cost	7,270	2004 Normal Cost	7,571
2004 Retiree Accrued Liability	398,797	2004 Retiree Accrued Liability	145,704
Increase in Liability due to ERI	115,159	Increase in Liability due to ERI	58,181
FY06 Amort. Payment	8,465	FY06 Amort. Payment	4,277
<b>Georgetown</b>		<b>Merrimac Housing</b>	
2004 Active Accrued Liability	\$481,498	2004 Active Accrued Liability	\$62,640
2004 Normal Cost	22,271	2004 Normal Cost	5,442
2004 Retiree Accrued Liability	641,883	2004 Retiree Accrued Liability	99,162
Increase in Liability due to ERI	160,385	Increase in Liability due to ERI	36,522
FY06 Amort. Payment	11,789	FY06 Amort. Payment	2,685
<b>Groveland</b>		<b>North Andover Housing</b>	
2004 Active Accrued Liability	\$180,271	2004 Active Accrued Liability	\$292,140
2004 Normal Cost	5,115	2004 Normal Cost	8,970
2004 Retiree Accrued Liability	244,269	2004 Retiree Accrued Liability	399,238
Increase in Liability due to ERI	63,998	Increase in Liability due to ERI	107,098
FY06 Amort. Payment	4,704	FY06 Amort. Payment	7,872
<b>Lynnfield</b>		<b>Pentucket Regional School District</b>	
2004 Active Accrued Liability	\$2,663,084	2004 Active Accrued Liability	\$124,166
2004 Normal Cost	114,094	2004 Normal Cost	5,147
2004 Retiree Accrued Liability	3,811,276	2004 Retiree Accrued Liability	173,855
Increase in Liability due to ERI	1,148,192	Increase in Liability due to ERI	49,689
FY06 Amort. Payment	84,399	FY06 Amort. Payment	3,652
		<b>Totals</b>	
		2004 Active Accrued Liability	\$4,174,960
		2004 Normal Cost	175,880
		2004 Retiree Accrued Liability	5,914,184
		Increase in Liability due to ERI	1,739,224
		FY06 Amort. Payment	127,843

Notes: 2004 Active liability determined as of January 1, 2004.

2004 Retiree liability determined as of January 1, 2004 and includes ERI increase.

**Exhibit II**  
**Essex Region**  
**2003 Early Retirement Incentive Liabilities**  
**15-year Level Amortization Payments**

<b>Essex Regional Retirement Board</b>		<b>Merrimac</b>	
2004 Active Accrued Liability	\$283,638	2004 Active Accrued Liability	\$87,523
2004 Normal Cost	7,270	2004 Normal Cost	7,571
2004 Retiree Accrued Liability	398,797	2004 Retiree Accrued Liability	145,704
Increase in Liability due to ERI	115,159	Increase in Liability due to ERI	58,181
FY06 Amort. Payment	14,742	FY06 Amort. Payment	7,448
<b>Georgetown</b>		<b>Merrimac Housing</b>	
2004 Active Accrued Liability	\$481,498	2004 Active Accrued Liability	\$62,640
2004 Normal Cost	22,271	2004 Normal Cost	5,442
2004 Retiree Accrued Liability	641,883	2004 Retiree Accrued Liability	99,162
Increase in Liability due to ERI	160,385	Increase in Liability due to ERI	36,522
FY06 Amort. Payment	20,532	FY06 Amort. Payment	4,675
<b>Groveland</b>		<b>North Andover Housing</b>	
2004 Active Accrued Liability	\$180,271	2004 Active Accrued Liability	\$292,140
2004 Normal Cost	5,115	2004 Normal Cost	8,970
2004 Retiree Accrued Liability	244,269	2004 Retiree Accrued Liability	399,238
Increase in Liability due to ERI	63,998	Increase in Liability due to ERI	107,098
FY06 Amort. Payment	8,193	FY06 Amort. Payment	13,711
<b>Lynnfield</b>		<b>Pentucket Regional School District</b>	
2004 Active Accrued Liability	\$2,663,084	2004 Active Accrued Liability	\$124,166
2004 Normal Cost	114,094	2004 Normal Cost	5,147
2004 Retiree Accrued Liability	3,811,276	2004 Retiree Accrued Liability	173,855
Increase in Liability due to ERI	1,148,192	Increase in Liability due to ERI	49,689
FY06 Amort. Payment	146,991	FY06 Amort. Payment	6,361
		<b>Totals</b>	
		2004 Active Accrued Liability	\$4,174,960
		2004 Normal Cost	\$175,880
		2004 Retiree Accrued Liability	5,914,184
		Increase in Liability due to ERI	1,739,224
		FY06 Amort. Payment	222,653

Notes: 2004 Active liability determined as of January 1, 2004.

2004 Retiree liability determined as of January 1, 2004 and includes ERI increase.

**Exhibit III**  
**Essex Region**  
**Actuarial Assumptions and Actuarial Cost Method**

**Mortality Rates:**

*Healthy:* 1983 Group Annuity Mortality Table with margins  
*Disabled:* PBGC Mortality Table for Disabled Lives Receiving Social Security Benefits

**Termination Rates before Retirement:**

<b>Groups 1 and 2 – Rate (%)</b>				
<b>Age</b>	<b>Mortality</b>		<b>Disability</b>	<b>Withdrawal</b>
	<b>Male</b>	<b>Female</b>		
20	0.05	0.03	0.06	12.00
25	0.07	0.03	0.09	8.78
30	0.08	0.04	0.11	5.55
35	0.09	0.05	0.15	3.93
40	0.11	0.07	0.22	2.31
45	0.16	0.10	0.36	1.89
50	0.26	0.14	0.61	1.45
55	0.44	0.23	1.01	--
60	0.80	0.44	1.63	--

*Notes: 55% of the disability rates shown represent accidental disability.  
20% of the accidental disabilities will die from the same cause as the disability.  
55% of the death rates shown represent accidental death*

<b>Group 4 - Rate (%)</b>				
<b>Age</b>	<b>Mortality</b>		<b>Disability</b>	<b>Withdrawal</b>
	<b>Male</b>	<b>Female</b>		
20	0.05	0.03	0.18	2.10
25	0.07	0.03	0.26	1.88
30	0.08	0.04	0.33	1.65
35	0.09	0.05	0.44	1.11
40	0.11	0.07	0.66	0.56
45	0.16	0.10	1.08	0.28
50	0.26	0.14	1.82	--
55	0.44	0.23	--	--
60	0.80	0.44	--	--

*Notes: 90% of the disability rates shown represent accidental disability.  
60% of the accidental disabilities will die from the same cause as the disability.  
90% of the death rates shown represent accidental death.*

**Retirement Rates:**

Age	Rate per year (%)	
	Groups 1 and 2	Group 4
50 – 54	--	2.0
55	5.0	10.0
56 – 59	3.0	10.0
60 – 61	5.0	30.0
62 – 64	15.0	30.0
65	25.0	100.0
66 – 69	15.0	--
70 – 71	50.0	--
72	100.0	--

**Unknown Data for Participants:** Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.

**Age of Spouse:** Female (or male) spouses 3 years younger (or older) than their spouses.

**Percent Married:** 75%

**Net Investment Return:** 8.50%

**Interest on Employee Contributions:** 3.5%

**Salary Increases:**

Age	Present salary as a percent of salary at 65	Annual increase
20	11.13	5.0
25	14.20	5.0
30	18.13	5.0
35	23.14	5.0
40	29.53	5.0
45	37.69	5.0
50	48.10	5.0
55	61.39	5.0
60	78.35	5.0

*Includes allowance for inflation of 4½%.*

**Administrative Expenses:** \$725,000 for calendar year 2002 (previously, \$550,000)

**Actuarial Value of Assets:** A preliminary actuarial value is first determined by taking the actuarial value of assets at the beginning of the year and adding assumed investment earnings (at the assumed actuarial rate of return) and the net new money during the year (contributions less benefit payments). Twenty percent of the difference between the market value of assets and the preliminary actuarial value is added to the preliminary actuarial value. In order that the actuarial value not differ too significantly from the market value of assets, the final actuarial value of assets must be within 20% of the market value of assets.

**Actuarial Cost Method:** Entry Age Normal Actuarial Cost Method. Entry Age is the age of the participant at Date of Hire. Normal Cost and Actuarial

Accrued Liability are calculated on an individual basis and are allocated by salary.