

**Essex Regional Retirement System**

*Actuarial Valuation and Review  
as of January 1, 2004*

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*January 25, 2005*

*Retirement Board  
Essex Regional Retirement System  
491 Maple Street, Suite 202  
Danvers, MA 01923-4025*

*Dear Board Members:*

*We are pleased to submit this Actuarial Valuation and Review as of January 1, 2004. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2005 and later years and analyzes the preceding two years' experience.*

*The census information and financial information on which our calculations were based was prepared by the staff of the Essex Regional Retirement System. That assistance is gratefully acknowledged. The actuarial calculations were completed under my supervision.*

*This actuarial valuation has been completed in accordance with generally accepted actuarial principles and practices. To the best of our knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in our opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.*

*We look forward to reviewing this report at your next meeting and to answering any questions.*

*Sincerely,*

*THE SEGAL COMPANY*

*By: \_\_\_\_\_  
Kathleen A. Riley, FSA, MAAA, EA  
Senior Vice President and Actuary*

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## SECTION 1

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## SECTION 1: Valuation Summary for the Essex Regional Retirement System

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### Purpose

This report has been prepared by The Segal Company to present a valuation of the Essex Regional Retirement System as of January 1, 2004. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of M.G.L. Chapter 32;
- The characteristics of covered active participants, inactive participants, and retired participants and beneficiaries as of January 1, 2004;
- The assets of the Plan as of December 31, 2003;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

### Significant Issues in Valuation Year

The following key findings were the result of this actuarial valuation:

- The actuarial valuation report as of January 1, 2004 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected.
- During the plan years ended 2002 and 2003, the market value rate of return was (9.68)% and 18.44%, respectively. Because the actuarial value of assets gradually recognizes market value fluctuations over a five-year period, the actuarial rates of return for the plan years ended 2002 and 2003 were (1.57)% and 6.55%, respectively. The actuarial value of assets as of December 31, 2003 was \$229.9 million, or 107.9% of the market value of assets of \$213.0 million.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment loss as of December 31, 2003 is \$16.8 million. This investment loss will be recognized in the determination of the actuarial value of assets for funding purposes in the next few years, to the extent it is not offset by recognition of investment gains derived from future experience. This implies that earning the assumed rate of investment return of 8.50% per year (net of expenses) on a **market value** basis will result in investment losses on the actuarial value of assets in the next few years. Therefore, if the actual market return is equal to the assumed 8.50% rate and all other actuarial assumptions are met, the contribution requirements would still increase in each of the next few years.

## SECTION 1: Valuation Summary for the Essex Regional Retirement System

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- The unfunded liability has increased from \$69.0 million as of January 1, 2002 to \$103.5 million as of January 1, 2004. The increase is primarily due to an investment loss of \$28.1 million and the additional liability of \$5.3 million associated with the 2002 and 2003 ERIs.
- The preliminary recommended contribution for fiscal 2005 is \$13,725,244. Under this funding schedule there are 4 years remaining for the 1992 ERI, approximately 15 years for the 2002 ERI and 24 years for the remaining unfunded liability (June 30, 2028). Under the prior funding schedule the System would have been fully funded by June 30, 2026. The 2003 ERI has been amortized over 15 years from July 1, 2005. The fiscal 2005 appropriation has been set to the previously budgeted amount plus a payment on the 2002 ERI of \$458,698 for a total of \$12,771,655. Therefore, the impact of this funding schedule will first be reflected in the fiscal 2006 appropriation. Because the fiscal 2006 appropriation would have increased 14.4% over fiscal 2005, the Board has elected to phase in the impact over a two-year period. The resulting fiscal 2006 and 2007 appropriations are \$14,048,820 (10.0% higher than fiscal 2005) including a payment of \$222,653 on the 2003 ERI and \$15,274,181 (8.7% higher than 2006).

**SECTION 1: Valuation Summary for the Essex Regional Retirement System**

**Summary of Key Valuation Results**

	<b>2004</b>	<b>2002</b>
<b>Contributions:</b>		
Recommended for fiscal 2005 and 2003	\$12,771,655	\$11,237,100
Recommended for fiscal 2006 and 2004	14,048,820	11,784,852
<b>Funding elements for plan year beginning January 1:</b>		
Normal cost, including administrative expenses	\$14,488,121	\$13,471,559
Market value of assets	213,003,325	198,241,604
Actuarial value of assets	229,852,971	218,346,198
Actuarial accrued liability	333,396,222	287,390,715
Unfunded actuarial accrued liability	103,543,251	69,044,517
<b>GASB 25/27:</b>		
Annual required contributions	\$12,771,655	\$9,840,064
Actual contributions	12,771,655	9,840,064
Percentage contributed	-	100.00%
Funded ratio	68.9%	76.0%
<b>Demographic data for plan year beginning January 1:</b>		
Number of retired participants and beneficiaries	1,498	1,424
Number of inactive participants	1,003	940
Number of active participants	3,035	3,023
Total payroll	\$89,119,646	\$81,214,562
Average payroll	29,364	26,866

**SECTION 2: Valuation Results for the Essex Regional Retirement System**

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**A. PARTICIPANT DATA**

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, inactive participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups.

More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A and B.

*A historical perspective of how the participant population has changed over the past five valuations can be seen in this chart.*

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**CHART 1**  
**Participant Population: 1995 – 2003**

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<b>Year Ended December 31</b>	<b>Active Participants</b>	<b>Inactive Participants</b>	<b>Retired Participants and Beneficiaries</b>
1995	2,900	349	1,409
1997	3,126	461	1,402
1999	2,835	626	1,429
2001	3,023	940	1,424
2003	3,035	1,003	1,498

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**SECTION 2: Valuation Results for the Essex Regional Retirement System**

**Active Participants**

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 3,035 active participants with an average age of 45.9, average years of service of 8.2 years and average payroll of \$29,364. The 3,023 active participants in the prior valuation had an average age of 45.8, average service of 7.9 years and average payroll of \$26,866.

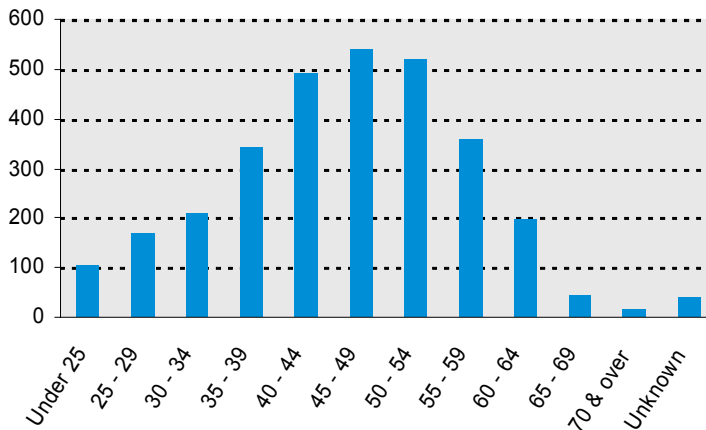
Among the active participants, there were 41 participants with unknown age. The actuarial calculations were adjusted for the missing information by assuming that it was the same as information provided for other active participants with similar known characteristics.

**Inactive Participants**

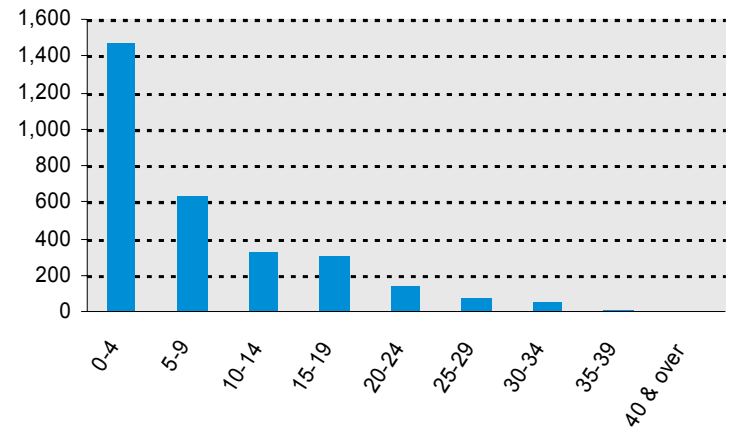
In this year's valuation, there were 1,003 participants with a vested right to a deferred or immediate vested benefit or entitled to a return of their employee contributions.

*These graphs show a distribution of active participants by age and by years of service.*

**CHART 2**  
**Distribution of Active Participants by Age as of December 31, 2003**



**CHART 3**  
**Distribution of Active Participants by Years of Service as of December 31, 2003**





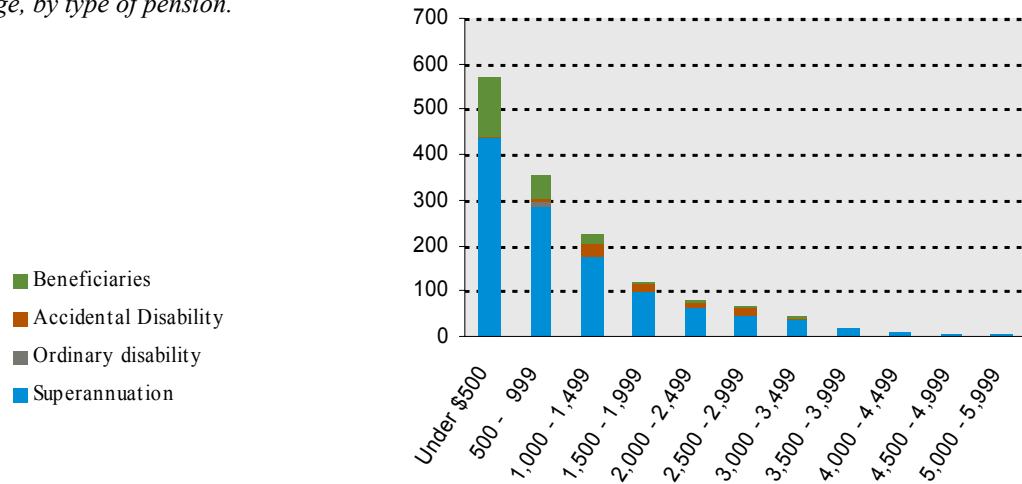
**SECTION 2: Valuation Results for the Essex Regional Retirement System**

**Retired Participants and Beneficiaries**

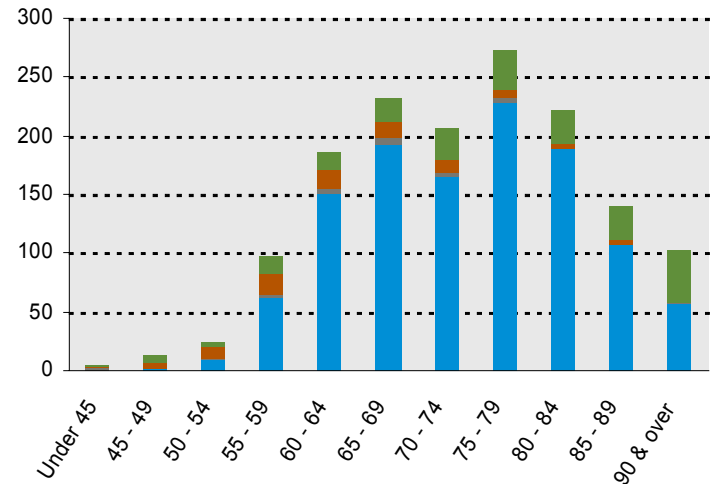
As of December 31, 2003, 1,272 retired participants and 226 beneficiaries were receiving total monthly benefits of \$1,509,750 excluding COLAs reimbursed by the Commonwealth. For comparison, in the previous valuation, there were 1,209 retired participants and 215 beneficiaries receiving monthly benefits of \$1,218,546.

*These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age, by type of pension.*

**CHART 4**  
**Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2003**



**CHART 5**  
**Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2003**



**SECTION 2: Valuation Results for the Essex Regional Retirement System**

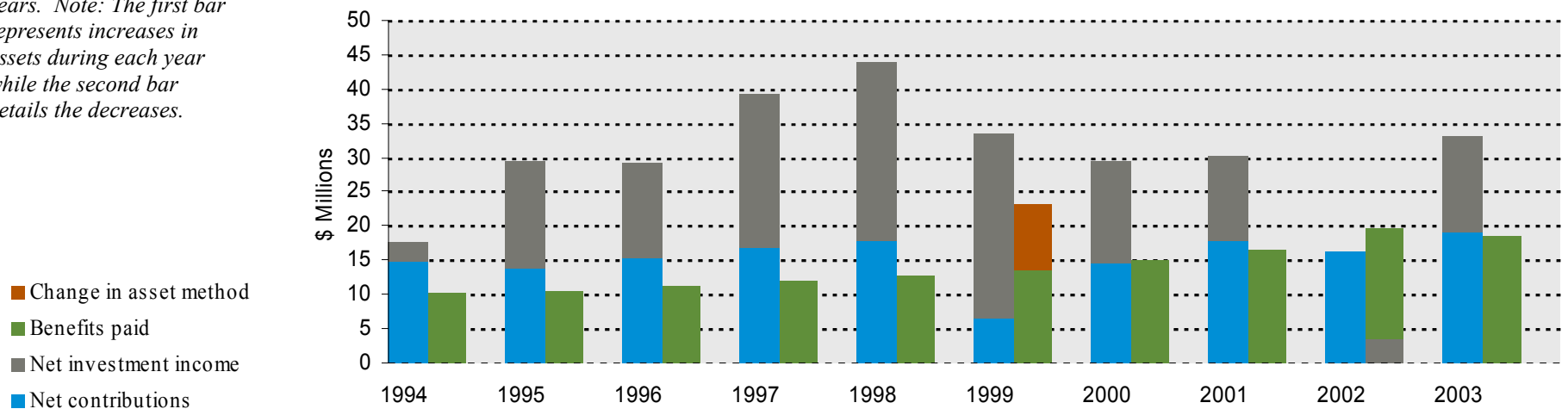
**B. FINANCIAL INFORMATION**

Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits C and D.

*The chart depicts the components of changes in the actuarial value of assets over the last ten years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.*

**CHART 6**  
**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 1994 – 2003**



## SECTION 2: Valuation Results for the Essex Regional Retirement System

It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

*The chart shows the determination of the actuarial value of assets as of the valuation date.*

### CHART 7 Determination of Actuarial Value of Assets

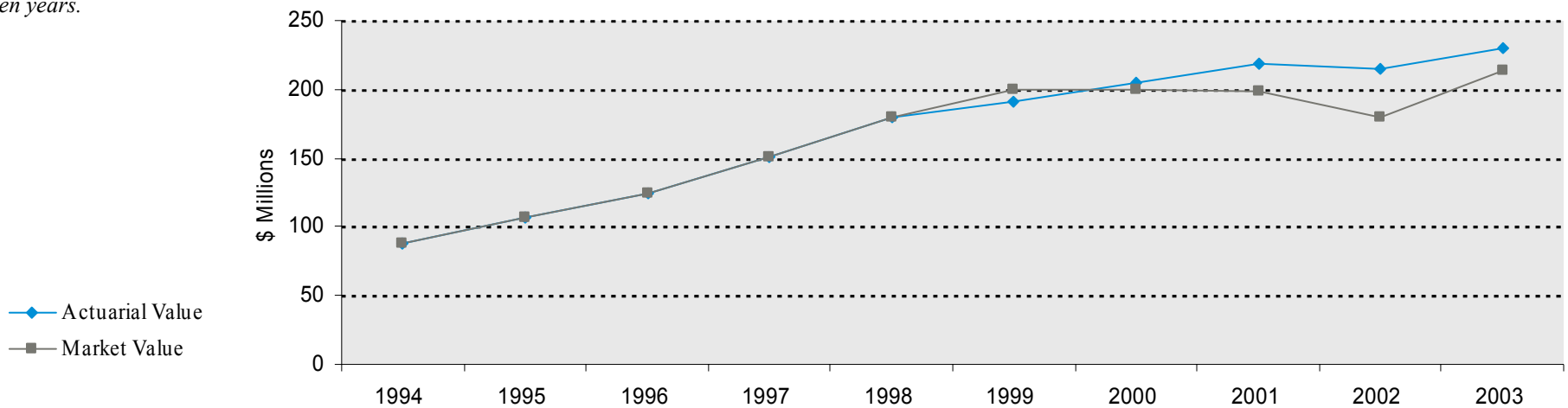
	Year Ended	
	December 31, 2003	December 31, 2002
1. Actuarial value of assets	\$215,232,362	\$218,346,198
2. Contributions, less benefit payments and expenses during the year	516,325	326,083
3. Average actuarial value of assets: (1) + [50% of (2)]	215,490,525	218,509,239
4. Expected investment income: .085 x (3)	18,316,695	18,573,285
5. Preliminary actuarial value of assets at the end of the year: (1) + (2) + (4)	234,064,382	237,245,566
6. Market value of assets at the end of the year	213,003,325	179,360,302
7. Adjustment toward market value: 20% of [(6) - (5)]	-4,212,411	-11,577,053
8. Adjustment to be within 20% corridor	0	-10,436,151
9. Final actuarial value of assets: (5) + (7) + (8)	<u>\$229,852,971</u>	<u>\$215,232,362</u>
10. Actuarial value as a percentage of market value: (9) ÷ (6)	107.9%	120.0%

## SECTION 2: Valuation Results for the Essex Regional Retirement System

Both the actuarial value and market value of assets are representations of the Essex Regional Retirement System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Essex Regional Retirement System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

*This chart shows the change in the actuarial value of assets versus the market value over the past ten years.*

**CHART 8**  
**Actuarial Value of Assets vs. Market Value of Assets as of December 31, 1994 – 2003**



**SECTION 2: Valuation Results for the Essex Regional Retirement System**

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**C. ACTUARIAL EXPERIENCE**

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term

development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss over the past two years is \$31,588,079. A discussion of the major components of the actuarial experience is on the following pages.

*This chart provides a summary of the actuarial experience over the past two years.*

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**CHART 9**  
**Actuarial Experience for Two-Year Period Ended December 31, 2003**

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1. Net (loss) from investments*	-\$28,096,737
2. Net gain from administrative expenses	225,959
3. Net (loss) from other experience**	<u>-3,717,301</u>
4. Net experience (loss): (1) + (2) + (3)	-\$31,588,079

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\* Details in Chart 10

\*\* Details in Chart 13

**SECTION 2: Valuation Results for the Essex Regional Retirement System**

**Investment Rate of Return**

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Essex Regional Retirement System’s investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.50%. The actual rate of return on an actuarial basis for the 2003 and 2002 plan years was 6.55% and (1.57%), respectively.

Since the actual return for each of the least two years was less than the assumed return, the Essex Regional Retirement System experienced an actuarial loss during the two-year period ending December 31, 2003 with regard to its investments.

*This chart shows the gain/(loss) due to investment experience.*

**CHART 10  
Actuarial Value Investment Experience**

	Year Ended	
	December 31, 2003	December 31, 2002
1. Actual return	\$14,104,284	-\$3,439,919
2. Average value of assets	215,490,525	218,509,239
3. Actual rate of return: (1) ÷ (2)	6.55%	-1.57%
4. Assumed rate of return	8.50%	8.50%
5. Expected return: (2) x (4)	\$18,316,695	\$18,573,285
6. Actuarial gain/(loss): (1) – (5)	<u>-\$4,212,411</u>	<u>-\$22,013,204</u>

**SECTION 2: Valuation Results for the Essex Regional Retirement System**

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last ten years, including five-year and ten-year averages.

Based upon this experience and future expectations, we have maintained the assumed rate of return of 8.50%.

**CHART 11**

**Investment Return – Actuarial Value vs. Market Value: 1994 - 2003**

Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
1994	\$2,628,191	3.16	\$2,628,191	3.16
1995	15,598,581	17.49	15,598,581	17.49
1996	13,834,571	12.79	13,834,571	12.79
1997	22,380,523	17.70	22,380,523	17.70
1998	25,963,975	17.14	25,963,975	17.14
1999	17,379,065	9.85	26,882,041	15.23
2000	14,947,945	7.86	603,619	0.30
2001	12,428,468	6.05	-2,834,776	-1.41
2002	-3,439,919	-1.57	-19,207,385	-9.68
2003	14,104,283	6.55	33,126,697	18.44
Total	\$135,825,683		\$118,976,037	
	Five-year average return	5.51%		4.03%
	Ten-year average return	8.68%		7.85%

*Note: Each year's yield is weighted by the average asset value in that year.*

*Prior to December 31, 1999 the actuarial value of assets was equal to the market value of assets.*

**SECTION 2: Valuation Results for the Essex Regional Retirement System**

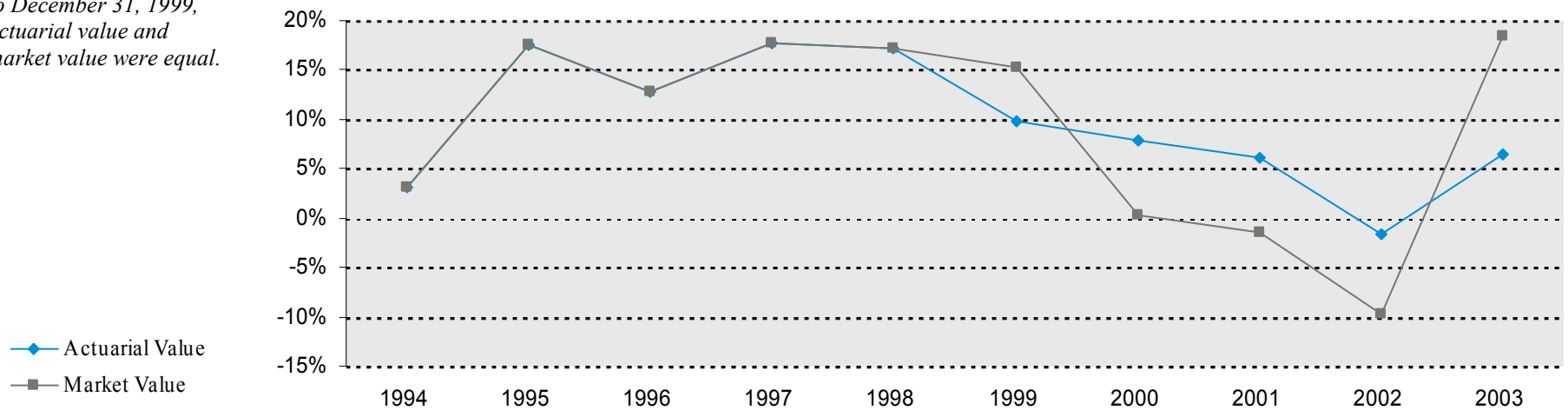
Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

**Administrative Expenses**

Administrative expenses for the years ended December 31, 2003 and 2002 were \$659,662 and \$640,963, respectively, compared to the assumption of \$725,000 for calendar 2002 and \$757,625 for calendar 2003. This resulted in a gain of \$225,959 for the two-year period, including an adjustment for interest. The assumption for calendar 2004 is \$725,000.

*This chart illustrates how this leveling effect has actually worked over the years 1994 - 2003. Prior to December 31, 1999, actuarial value and market value were equal.*

**CHART 12**  
**Market and Actuarial Rates of Return for Years Ended December 31, 1994 - 2003**





**SECTION 2: Valuation Results for the Essex Regional Retirement System**

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**Other Experience**

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),

- the number of disability retirements, and
- salary increases different than assumed.

The net loss from this other experience for the two-year period ending December 31, 2003 amounted to (\$3,717,301) which is 1.1% of the actuarial accrued liability. Detail is shown in the chart below.

*The chart shows elements of the experience gain/(loss) for the most recent years.*

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**CHART 13**

**Experience Due to Changes in Demographics for Two-Year Period Ended December 31, 2003**

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1. 2002 ERI	-\$3,520,283
2. 2003 ERI	-1,739,224
3. Miscellaneous gain	<u>1,542,206</u>
4. Net gain/(loss)	-\$3,717,301

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**SECTION 2: Valuation Results for the Essex Regional Retirement System**

**D. RECOMMENDED CONTRIBUTION**

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability.

The preliminary recommended contribution is based on a 4-year level amortization of the 1992 ERI liability, schedules as elected by the units for the 2002 ERI liability, a 15-year level amortization of the 2003 ERI liability deferred to 2006 and a 24-year increasing (4.50% per year) amortization of the remaining unfunded liability. This differs from the prior funding schedule by extending the payments on the remaining unfunded liability from 2026 to 2028, and including the 2002 and 2003 ERI liability

payments. The fiscal 2005 appropriation has been set to the budgeted amount plus payments on the 2002 ERI for a total amount of \$12,771,655.

Due to the increase in the appropriation, the Board has elected to phase in the increase by adopting a funding schedule with an appropriation of \$14,048,820 for fiscal 2006 and \$15,274,181 for fiscal 2007. This funding schedule will fully fund the System by June 30, 2028.

Exhibit G in Section 3 shows the recommended contributions through fiscal 2028 based on this funding schedule.

*The chart compares this valuation's recommended contribution with the prior valuation.*

**CHART 14  
Recommended Contribution**

	Year Beginning January 1			
	2004	% of Payroll	2002	% of Payroll
1. Total normal cost	\$13,763,121	14.74%	\$12,746,559	15.00%
2. Administrative expenses	725,000	0.77%	725,000	0.85%
3. Expected employee contributions	<u>-8,018,118</u>	<u>-8.58%</u>	<u>-7,061,698</u>	<u>-8.31%</u>
4. Employer normal cost: (1) + (2) + (3)	\$6,470,003	6.93%	\$6,409,861	7.54%
5. Actuarial accrued liability	333,396,222		287,390,715	
6. Actuarial value of assets	<u>229,852,971</u>		<u>218,346,198</u>	
7. Unfunded actuarial accrued liability: (5) - (6)	\$103,543,251		\$69,044,517	
8. Employer normal cost projected to July 1, 2004 and 2002, adjusted for timing	6,750,253	7.07%	6,687,506	7.69%
9. Projected unfunded actuarial accrued liability	107,854,102		71,919,071	
10. Payment on projected unfunded actuarial accrued liability, adjusted for timing	6,974,991	7.30%	4,589,352	5.28%
11. Preliminary recommended contribution: (8) + (10)	13,725,244	14.37%	11,276,858	12.98%
12. Budgeted appropriation	<u>\$12,771,655</u>	<u>13.38%</u>	<u>\$11,237,100</u>	<u>12.93%</u>
13. Projected payroll	\$95,482,467		\$86,896,912	

*\*Recommended contributions are assumed to be paid on July 1 and December 31.*

**SECTION 2: Valuation Results for the Essex Regional Retirement System**

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**Reconciliation of Recommended Contribution**

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

*The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.*

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**CHART 15**

**Reconciliation of Recommended Contribution from July 1, 2002 to July 1, 2004**

<b>Preliminary Recommended Contribution as of July 1, 2002</b>	\$11,276,858
Expected increase	\$1,033,226
Effect of investment loss	1,958,096
Effect of change in amortization schedule	-364,685
Effect of 2002 ERI	458,698
Effect of net other changes	<u>-636,949</u>
<b>Total change</b>	<u>\$2,448,386</u>
<b>Preliminary Recommended Contribution as of July 1, 2004</b>	\$13,725,244
<b>Budgeted Appropriation</b>	12,771,655

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**SECTION 2: Valuation Results for the Essex Regional Retirement System**

**E. INFORMATION REQUIRED BY THE GASB**

Governmental Accounting Standards Board (GASB) reporting information provides standardized information for comparative purposes of governmental pension plans. This information allows a reader of the financial statements to compare the funding status of one governmental plan to another on relatively equal terms.

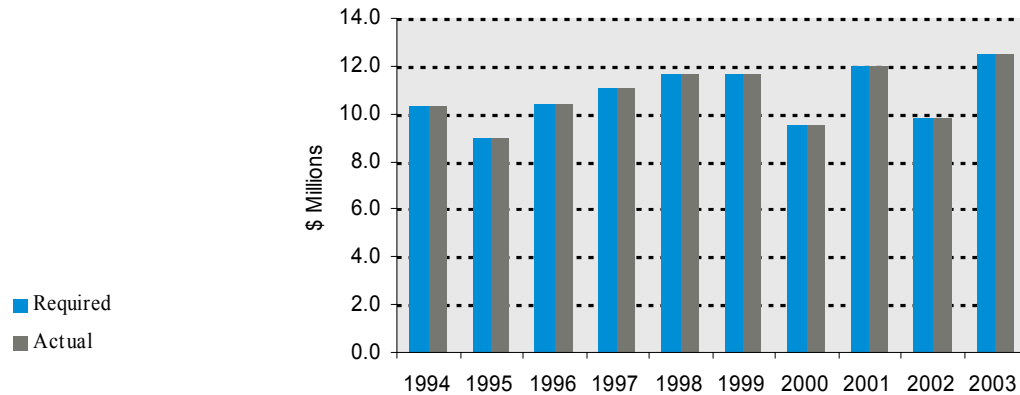
Critical information to GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded on an actuarially sound basis and in accordance with the GASB funding requirements. Chart 16 below presents a graphical representation of this information for the Plan.

The other critical piece of information regarding the Plan’s financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the plan as calculated under GASB. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other changes.

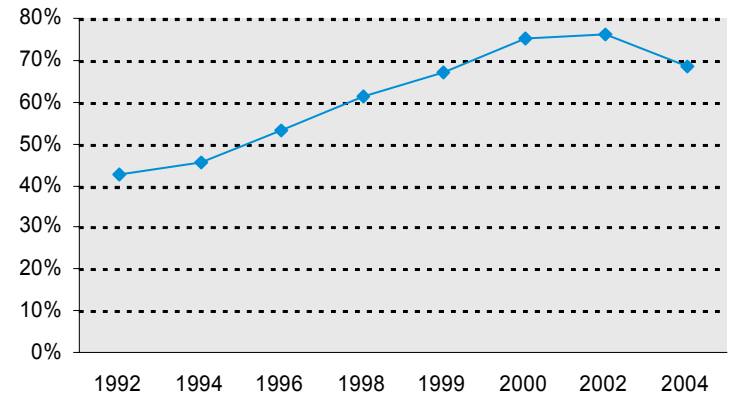
The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

*These graphs show key GASB factors.*

**CHART 16**  
**Required Versus Actual Contributions**



**CHART 17**  
**Funded Ratio**



**SECTION 3: Supplemental Information for the Essex Regional Retirement System**

**EXHIBIT A**

**Table of Plan Coverage**

<b>Category</b>	<b>Year Ended December 31</b>		<b>Change From Prior Year</b>
	<b>2003</b>	<b>2001</b>	
<b>Active participants in valuation:</b>			
Number	3,035	3,023	0.4%
Average age	45.9	45.8	N/A
Average service	8.2	7.9	N/A
Total payroll	\$89,119,646	\$81,214,562	10.9%
Average payroll	29,364	26,866	10.5%
Account balances	59,453,781	52,136,731	14.0%
Number with unknown age	41	42	-2.4%
<b>Inactive participants with a vested right to a return of their contributions or a deferred or immediate benefit</b>			
	1,003	940	6.7%
<b>Retired participants:</b>			
Number in pay status	1,163	1,108	5.0%
Average age	73.9	74.3	N/A
Average monthly benefit	\$1,023	\$854	19.8%
<b>Disabled participants:</b>			
Number in pay status	109	101	7.9%
Average age	63.4	63.0	N/A
Average monthly benefit	\$1,675	\$1,621	3.3%
<b>Beneficiaries in pay status</b>			
	226	215	5.1%

**SECTION 3: Supplemental Information for the Essex Regional Retirement System**

**EXHIBIT B**

**Participants in Active Service as of December 31, 2003  
By Age, Years of Service, and Average Payroll**

Age	Years of Service									
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over
Under 25	105	104	1	--	--	--	--	--	--	--
	\$19,877	\$19,893	\$18,283	--	--	--	--	--	--	--
25 - 29	171	153	18	--	--	--	--	--	--	--
	\$24,593	\$24,693	\$23,751	--	--	--	--	--	--	--
30 - 34	209	139	45	22	3	--	--	--	--	--
	\$30,518	\$26,826	\$38,206	\$38,003	\$31,399	--	--	--	--	--
35 - 39	343	188	80	43	32	--	--	--	--	--
	\$31,189	\$22,404	\$38,191	\$47,005	\$44,041	--	--	--	--	--
40 - 44	493	276	91	44	74	8	--	--	--	--
	\$28,663	\$19,542	\$28,608	\$48,264	\$48,295	\$54,585	--	--	--	--
45 - 49	538	253	131	49	51	34	19	1	--	--
	\$28,259	\$21,089	\$23,862	\$31,295	\$44,292	\$51,537	\$59,903	\$59,115	--	--
50 - 54	519	180	126	67	59	34	34	18	1	--
	\$31,420	\$21,451	\$28,701	\$31,136	\$35,675	\$50,298	\$54,868	\$56,575	\$44,596	--
55 - 59	357	79	86	61	51	23	20	27	8	2
	\$32,559	\$19,913	\$27,834	\$27,516	\$35,091	\$37,535	\$55,254	\$63,248	\$47,723	\$65,442
60 - 64	197	45	41	31	28	31	7	9	5	--
	\$30,502	\$21,588	\$32,624	\$32,509	\$33,015	\$30,084	\$35,857	\$40,099	\$44,654	--
65 - 69	44	10	10	8	8	6	1	--	1	--
	\$26,688	\$15,462	\$26,267	\$27,760	\$30,853	\$38,020	\$28,493	--	\$31,462	--
70 & over	18	3	1	1	3	4	1	1	1	3
	\$32,320	\$10,458	\$23,289	\$53,272	\$44,919	\$31,556	\$1,350	\$79,600	\$58,830	\$24,353
Unknown	41	38	3	--	--	--	--	--	--	--
	\$17,580	\$16,534	\$30,836	--	--	--	--	--	--	--
Total	3,035	1,468	633	326	309	140	82	56	16	5
	\$29,364	\$21,619	\$29,504	\$35,466	\$40,572	\$43,210	\$53,532	\$57,601	\$46,246	\$40,789

**SECTION 3: Supplemental Information for the Essex Regional Retirement System**

**EXHIBIT C**

**Summary Statement of Income and Expenses on an Actuarial Value Basis**

	Year Ended December 31, 2003	Year Ended December 31, 2002
<b>Contribution income:</b>		
Employer contributions	\$12,454,333	\$9,790,796
Employee contributions	7,302,261	7,250,128
Federal grant reimbursement	62,236	49,268
Less administrative expenses	<u>-659,662</u>	<u>-640,963</u>
Net contribution income	\$19,159,168	\$16,449,229
<b>Net investment income:</b>	<u>14,104,284</u>	<u>-3,439,919</u>
<b>Total income available for benefits</b>	<b>\$33,263,451</b>	<b>\$13,009,310</b>
<b>Less benefit payments:</b>		
Pensions and annuities	\$17,531,672	\$15,275,080
Net (8)c reimbursements	26,973	372
Refunds to members	<u>1,084,197</u>	<u>847,694</u>
Net benefit payments	\$18,642,842	\$16,123,146
<b>Change in reserve for future benefits</b>	<b>\$14,620,609</b>	<b>-\$3,113,836</b>

**SECTION 3: Supplemental Information for the Essex Regional Retirement System**

**EXHIBIT D**

**Development of the Fund Through December 31, 2003**

<b>Year Ended December 31</b>	<b>Employer Contributions</b>	<b>Employee Contributions</b>	<b>Other Contributions</b>	<b>Net Investment Return*</b>	<b>Administrative Expenses</b>	<b>Benefit Payments</b>	<b>Actuarial Value of Assets at End of Year</b>
1997	\$11,028,739	\$6,300,509	\$8,981	\$22,380,523	\$490,875	\$11,950,228	\$151,293,926
1998	11,668,239	6,671,730	11,866	25,963,975	432,057	12,748,299	180,034,664
1999	11,588,914	-4,662,709	50,776	7,876,089	413,112	13,613,882	190,363,716
2000	9,567,297	5,935,785	30,972	14,947,945	1,018,310	15,048,275	204,779,130
2001	11,977,601	6,517,779	36,960	12,428,468	723,373	16,670,367	218,346,198
2002	9,790,796	7,250,128	49,268	-3,439,919	640,963	16,123,146	215,232,362
2003	12,454,333	7,302,261	62,236	14,104,283	659,662	18,642,842	229,852,971

\* *Net of investment fees.*



**SECTION 3: Supplemental Information for the Essex Regional Retirement System**

**EXHIBIT E**

**Development of Unfunded Actuarial Accrued Liability and (Gain)/Loss**

	Year Ended	
	December 31, 2003	December 31, 2002
1. Unfunded actuarial accrued liability at beginning of year	\$71,515,932	\$69,044,517
2. Normal cost at beginning of year	14,077,779	13,471,559
3. Total contributions	-19,818,830	-17,090,192
4. Interest		
(a) For whole year on (1) + (2)	\$7,275,465	\$7,013,866
(b) For half year on (3)	<u>-1,095,175</u>	<u>-923,819</u>
(c) Total interest	<u>6,180,290</u>	<u>6,090,047</u>
5. Expected unfunded actuarial accrued liability	\$71,955,171	\$71,515,932
6. Actual unfunded actuarial accrued liability at end of year	103,543,251	N/A
7. (Gain)/loss for two-year period: (6) – (5)	31,588,079	N/A

**SECTION 3: Supplemental Information for the Essex Regional Retirement System**

**EXHIBIT F**

**Table of Amortization Bases as of July 1, 2004**

<b>Type*</b>	<b>Annual Payment</b>	<b>Years Remaining</b>	<b>Outstanding Balance</b>
1992 ERI liability	\$41,019	4.00	\$142,839
2002 ERI liability	458,698	varies	3,666,844
2003 ERI liability	- -	15.00	1,811,634
Remaining unfunded liability	<u>6,475,274</u>	24.00	<u>102,232,785</u>
Total	\$6,974,991		\$107,854,102

*Notes: Payments include adjustment for timing.*

*Does not reflect adjustment to set fiscal 2005 appropriation to budgeted amount.*

*Refer to Exhibit G for information on payments in fiscal year 2006 and later.*

**SECTION 3: Supplemental Information for the Essex Regional Retirement System**

**EXHIBIT G**

**Funding Schedule**

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of 1992 ERI Liability	(4) Amortization of 2002 ERI Liability	(5) Amortization of 2003 ERI Liability	(6) Amortization of Remaining Unfunded Liability	(7) Total Plan Cost: (2) + (3) + (4) + (5) + (6)	(8) Total Unfunded Accrued Liability
2005	\$6,750,253	\$41,019	\$458,698	-	\$5,521,685	\$12,771,655	\$107,854,102
2006	7,054,014	41,019	458,917	\$222,653	6,272,217	14,048,820	110,620,375
2007	7,371,445	41,019	459,144	222,653	7,179,920	15,274,181	112,586,960
2008	7,703,160	41,019	459,382	222,653	7,503,016	15,929,230	113,755,488
2009	8,049,802	-	459,631	222,653	7,840,652	16,572,738	114,679,606
2010	8,412,043	-	370,136	222,653	8,193,481	17,198,313	115,366,677
2011	8,790,585	-	370,408	222,653	8,562,188	17,945,834	115,832,200
2012	9,186,161	-	370,692	222,653	8,947,487	18,726,993	115,945,032
2013	9,599,538	-	370,989	222,653	9,350,123	19,543,303	115,657,544
2014	10,031,517	-	371,299	222,653	9,770,879	20,396,348	114,917,263
2015	10,482,935	-	371,623	222,653	10,210,568	21,287,779	113,666,425
2016	10,954,667	-	371,962	222,653	10,670,043	22,219,325	111,841,489
2017	11,447,627	-	372,316	222,653	11,150,195	23,192,791	109,372,608
2018	11,962,770	-	372,686	222,653	11,651,954	24,210,063	106,183,048
2019	12,501,095	-	373,073	222,653	12,176,291	25,273,112	102,188,564
2020	13,063,644	-	9,379	222,653	12,724,224	26,019,900	97,296,717
2021	13,651,508	-	9,802	-	13,296,814	26,958,124	91,793,200
2022	14,265,826	-	10,243	-	13,895,171	28,171,240	85,449,418
2023	14,907,788	-	10,704	-	14,520,453	29,438,945	77,929,835
2024	15,578,638	-	11,186	-	15,173,874	30,763,698	69,105,863
2025	16,279,677	-	11,689	-	15,856,698	32,148,064	58,836,692
2026	17,012,262	-	12,215	-	16,570,249	33,594,726	46,968,199
2027	17,777,814	-	12,765	-	17,315,910	35,106,489	33,331,752
2028	18,577,816	-	13,339	-	18,095,126	36,686,281	17,742,913

Notes: Recommended contributions are assumed to be paid on July 1 and December 31.

Assumes payments increase at 4.50% per year.

Assumes contribution of budgeted amount for fiscal year 2005.

**SECTION 3: Supplemental Information for the Essex Regional Retirement System**

**EXHIBIT H**

**Unit Allocation of ERI Amortizations**

**Fiscal 2005 Allocation of 1992 and 2002 ERI Amortizations and Fiscal 2006 Allocation of 2003 ERI**

Unit	1992 ERI	2002 ERI	2003 ERI
Boxford	\$14,812	--	--
Essex Agricultural School	--	\$89,758	--
Essex Regional Retirement Board	--	18,460	\$14,742
Georgetown	--	59,567	20,532
Groveland	--	--	8,193
Hamilton	15,342	--	--
Ipswich Housing Authority	6,512	27,294	--
Lynnfield	--	--	146,991
Lynnfield Water	4,353	--	--
Merrimac	--	38,918	7,448
Merrimac Housing	--	--	4,675
Nahant Housing Authority	--	4,846	--
North Andover Housing	--	5,748	13,711
Pentucket Regional School District	--	31,672	6,361
Rockport	--	8,052	--
Salisbury	--	103,401	--
Triton Regional School District	--	30,993	--
West Newbury	--	29,687	--
Wenham Housing	--	6,170	--
Essex Housing	--	4,122	--
Total	\$41,019	\$458,688	\$222,653

*Notes: 1992 ERI payments are level.*

*2002 ERI payments are 15 year level amortizations, except Essex Agricultural School (5 year level) and Nahant Housing (24 year 4.5% increasing).*

*2003 ERI payments are 15 year level amortizations.*

*Payments include adjustment for timing.*

### SECTION 3: Supplemental Information for the Essex Regional Retirement System

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#### EXHIBIT I

#### Definitions of Pension Terms

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The following list defines certain technical terms for the convenience of the reader:

#### **Assumptions or Actuarial**

##### **Assumptions:**

The estimates on which the cost of the Plan is calculated including:

- (a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;
- (b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates — the rate or probability of retirement at a given age;
- (d) Turnover rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

##### **Normal Cost:**

The amount of contributions required to fund the benefit allocated to the current year of service.

##### **Actuarial Accrued Liability**

##### **For Actives:**

The equivalent of the accumulated normal costs allocated to the years before the valuation date.

##### **Actuarial Accrued Liability**

##### **For Pensioners:**

The single sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

##### **Unfunded Actuarial Accrued**

##### **Liability:**

The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

### SECTION 3: Supplemental Information for the Essex Regional Retirement System

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#### **Amortization of the Unfunded**

**Actuarial Accrued Liability:** Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

#### **Investment Return:**

The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

**SECTION 4: Reporting Information for the Essex Regional Retirement System**

**EXHIBIT I**

**Summary of Actuarial Valuation Results**

The valuation was made with respect to the following data supplied to us:

1. Retired participants as of the valuation date (including 226 beneficiaries in pay status)	1,498
2. Participants active during the year ended December 31, 2003 (including 41 participants with unknown age) with total accumulated contributions of \$59,453,781 and projected payroll of \$93,404,002	3,035
3. Inactive participants with a vested right to a return of their contributions or a deferred or immediate benefit participants as of December 31, 2003	1,003

The actuarial factors as of the valuation date are as follows:

1. Total normal cost	\$13,763,121
2. Administrative expenses	725,000
3. Expected employee contributions	<u>-8,018,118</u>
4. Employer normal cost: (1) + (2) + (3)	\$6,470,003
5. Actuarial accrued liability	333,396,222
Retired participants and beneficiaries	\$165,395,219
Active participants	163,318,735
Inactive participants	4,682,268
6. Actuarial value of assets (\$213,003,325 at market value)	229,852,971
7. Unfunded actuarial accrued liability	103,543,251

The determination of the recommended contribution is as follows:

1. Projected employer normal cost, adjusted for timing	\$6,750,253
2. Projected unfunded actuarial accrued liability	107,854,102
3. Payment on projected unfunded actuarial accrued liability, adjusted for timing	6,974,991
4. Preliminary recommended contribution:: (1) + (3)	13,725,244
5. Budgeted appropriation	12,771,655
6. Projected payroll	95,482,467

*Note: Recommended contributions are assumed to be paid on July 1 and December 31.*

**SECTION 4: Reporting Information for the Essex Regional Retirement System**

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**EXHIBIT II**

**Supplementary Information Required by the GASB – Schedule of Employer Contributions**

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<b>Plan Year Ended December 31</b>	<b>Annual Required Contributions</b>	<b>Actual Contributions</b>	<b>Percentage Contributed</b>
1994	\$10,330,353	\$10,330,353	100.0%
1995	8,941,431	8,941,431	100.0%
1996	10,394,728	10,394,728	100.0%
1997	11,037,720	11,037,720	100.0%
1998	11,680,106	11,680,106	100.0%
1999	11,639,690	11,639,690	100.0%
2000	9,598,269	9,598,269	100.0%
2001	12,014,561	12,014,561	100.0%
2002	9,840,064	9,840,064	100.0%
2003	12,516,569	12,516,569	100.0%

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**SECTION 4: Reporting Information for the Essex Regional Retirement System**

**EXHIBIT III**

**Supplementary Information Required by the GASB – Schedule of Funding Progress**

<b>Actuarial Valuation Date*</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a) / (b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percentage of Covered Payroll [(b) - (a) / (c)]</b>
01/01/1992	\$61,357,800	\$143,785,900	\$82,428,100	42.7%	\$52,995,500	155.5%
01/01/1994	80,878,500	178,256,800	97,378,300	45.4%	62,076,500	156.9%
01/01/1996	106,176,700	200,397,500	94,220,800	53.0%	72,953,200	129.2%
01/01/1998	151,293,900	245,965,100	94,671,200	61.5%	85,785,000	110.4%
01/01/1999	180,034,700	268,386,000	88,351,300	67.1%	89,645,300	98.6%
01/01/2000	190,363,700	253,847,100	63,483,400	75.0%	69,525,900	91.3%
01/01/2002	218,346,198	287,390,715	69,044,517	76.0%	85,005,338	81.2%
01/01/2004	229,852,971	333,396,222	103,543,251	68.9%	93,404,002	110.9%

\* Years for which an actuarial valuation was not performed are omitted.

## SECTION 4: Reporting Information for the Essex Regional Retirement System

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### EXHIBIT IV

#### Supplementary Information Required by the GASB

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<b>Valuation date</b>	January 1, 2004
<b>Actuarial cost method</b>	Entry Age Normal Cost Method
<b>Amortization method</b>	Approximate level percent of payroll based on 4.5% annual increases; except level dollar for ERI liability
<b>Remaining amortization period</b>	As of July 1, 2004, 4 years remaining for 1992 ERI liability; 15 years for 2002 ERI liability and 24 years for remaining unfunded liability. 15 years from July 1, 2005 for 2003 ERI liability.
<b>Asset valuation method</b>	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 and administrative expenses). 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 to significantly from the market value of assets, the final actuarial value of assets must be within 20% of the market value of assets.
<b>Actuarial assumptions:</b>	
Investment rate of return	8.50%
Projected salary increases	5.00%
Cost of living adjustments	3.00% of first \$12,000 of retirement income.
<b>Plan membership:</b>	
Retired participants and beneficiaries receiving benefits	1,498
Inactive participants	1,003
Active participants	<u>3,035</u>
Total	5,536

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**SECTION 4: Reporting Information for the Essex Regional Retirement System**

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**EXHIBIT VI**

**Actuarial Assumptions and Actuarial Cost Method**

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**Mortality Rates:**

*Healthy:* 1994 Group Annuity Mortality Table  
*Disabled:* PBGC Mortality Table for Disabled Lives Receiving Social Security Disability Benefits

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**Termination Rates before Retirement:**

**Groups 1 and 2 Rate (%)**

**Mortality**

<b>Age</b>	<b>Male</b>	<b>Female</b>	<b>Disability</b>	<b>Withdrawal</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	1.46
55	0.44	0.23	1.01	0.00
60	0.80	0.44	1.63	0.00

*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 represent accidental death.*

**SECTION 4: Reporting Information for the Essex Regional Retirement System**

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<b>Group 4 Rate (%)</b>				
<b>Mortality</b>				
<b>Age</b>	<b>Male</b>	<b>Female</b>	<b>Disability</b>	<b>Withdrawal</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 represent accidental death.*

**Retirement Rates:**

<b>Rate per year (%)</b>		
<b>Age</b>	<b>Groups 1 and 2</b>	<b>Group 4</b>
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.

**SECTION 4: Reporting Information for the Essex Regional Retirement System**

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**Percent Married:** 75%

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

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**Net Investment Return:** 8.50%

**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%.*

**Interest on Employee Contributions:** 3.50%

**Administrative Expenses:** \$725,000 for calendar year 2004, increasing 4.50% per year (previously, \$725,000)

**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 and administrative expenses). 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 to significantly from the market value of assets, the final actuarial value of assets must be within 20% of the market value of assets.

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**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.

**SECTION 4: Reporting Information for the Essex Regional Retirement System**

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**EXHIBIT VII**  
**Summary of Plan Provisions**

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This exhibit summarizes the major provisions of the Essex Regional Retirement System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

**Plan Year:** January 1 – December 31

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**Retirement Benefits**

Employees covered by the Contributory Retirement Law are classified into one of four groups depending on job classification. Group 1 comprises most positions in state and local government. It is the general category of public employees. Group 4 comprises mainly police and firefighters. Group 2 is for other specified hazardous occupations. (Officers and inspectors of the State Police are classified as Group 3.)

The annual amount of the retirement allowance is based on the member’s final three-year average salary multiplied by the number of years and full months of creditable service at the time of retirement and multiplied by a percentage according to the following table based on the age of the member at retirement:

<b>Age Last Birthday at Date of Retirement</b>			
<b>Percent</b>	<b>Group 1</b>	<b>Group 2</b>	<b>Group 4</b>
2.5	65 or over	60 or over	55 or over
2.4	64	59	54
2.3	63	58	53
2.2	62	57	52
2.1	61	56	51
2.0	60	55	50
1.9	59	--	49
1.8	58	--	48
1.7	57	--	47
1.6	56	--	46
1.5	55	--	45

## SECTION 4: Reporting Information for the Essex Regional Retirement System

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A member's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last three years of creditable service prior to retirement. The \$30,000 cap on salary used in a benefit determination for any employee hired after January 1, 1979 has been removed.

The maximum annual amount of the retirement allowance is 80 percent of the member's final three-year average salary. Any member who is a veteran also receives an additional yearly retirement allowance of fifteen dollars per year of creditable service, not exceeding three hundred dollars. The veteran allowance is paid in addition to the 80 percent maximum.

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### Employee Contributions

Employees hired before January 1, 1975 contribute 5 percent of their salary; employees hired after December 31, 1974 and before January 1, 1984 contribute 7 percent; employees hired after January 1, 1984 contribute 8 percent; employees hired after July 1, 1996 contribute 9 percent. In addition, employees hired after December 31, 1978 contribute an additional 2 percent of salary in excess of \$30,000.

Employees hired after 1983 who leave with less than five years of credited service receive no interest on their contributions and employees who leave with five but less than ten years receive one-half the rate of regular interest otherwise payable.

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### Retirement Benefits (Superannuation)

Members of Group 1, 2 or 4 may retire upon the attainment of age 55. For retirement at ages below 55, twenty years of creditable service is required.

Members who terminate before age 55 with ten or more years of creditable service are eligible for a retirement allowance upon the attainment of age 55 (provided they have not withdrawn their accumulated deductions from the Annuity Savings Fund of the system).

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### Ordinary Disability Benefits

A member who is unable to perform his job due to a non-occupational disability will receive a retirement allowance if he has ten or more years of creditable service and has not reached age 55. The annual amount of such allowance shall be determined as if the member retired for superannuation at age 55, based on the amount of creditable

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service at the date of disability. For veterans, there is a minimum benefit of 50 percent of the member's most recent year's pay plus an annuity based on his own contributions.

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### **Accidental Disability Benefit**

For a job-connected disability the benefit is 72 percent of the member's most recent annual pay plus an annuity based on his own contributions, plus additional amounts for surviving children. Benefits are capped at 75 percent of annual rate of regular compensation for employees who become members after January 1, 1988.

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### **Death Benefits**

In general, the beneficiary of an employee who dies in active service will receive a refund of the employee's own contributions. Alternatively, if the employee were eligible to retire on the date of his death, a spouse's benefit will be paid the full amount the employee would have received under Option C (previously, two-thirds of the amount). The surviving spouse of a member who dies with two or more years of credited service has the option of a refund of the employee's contributions or a monthly benefit regardless of eligibility to retire, if they were married for at least one year. There is also a minimum widow's pension of \$500 per month, and there are additional amounts for surviving children.

If an employee's death is job-connected, the spouse will receive 72 percent of the member's most recent annual pay in addition to a refund of the member's accumulated deductions, plus additional amounts for surviving children. However, in accordance with Section 100 of Chapter 32, the surviving spouse of a police officer, firefighter or corrections officer is killed in the line of duty will be eligible to receive an annual benefit equal to the maximum salary held by the member at the time of death.

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### **"Heart And Lung Law" And Cancer Presumption**

Any case of hypertension or heart disease resulting in total or partial disability or death to a uniformed fireman or permanent member of a police department is presumed to have been suffered in the line of duty, unless the contrary is shown by competent evidence. Any case of disease of the lungs or respiratory tract resulting in total disability or death to a uniformed fireman is presumed to have been suffered in



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the line of duty, unless the contrary is shown by competent evidence. There is an additional presumption for uniformed firemen that certain types of cancer are job-related if onset occurs while actively employed or within five years of retirement.

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### **Options**

Members may elect to receive a full retirement allowance payable for life under Option A. Under Option B a member may elect to receive a lower monthly allowance in exchange for a guarantee that at his death any of his contributions not expended for annuity payments will be refunded to his beneficiary. Option C allows the member to take a lesser retirement allowance in exchange for providing his survivor with two-thirds of the lesser amount. Option C pensioners who retire in 1988 or later will have their benefits converted from a reduced to a full retirement if the beneficiary predeceases the retiree.

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### **Post-Retirement Benefits**

The Board has adopted the provisions of Section 51 Chapter 127 of the Acts of 1999, which provide that the Retirement Board may approve an annual COLA in excess of the Consumer Price Index but not to exceed a 3% COLA on the first \$12,000 of a retirement allowance. Cost-of-living increases granted prior to July 1, 1998 are reimbursed by the Commonwealth and not reflected in this report.