

## **Essex Regional Retirement System**

**Actuarial Valuation and Review as of  
January 1, 2011**

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*October 24, 2011*

*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, 2011. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2012 and later years and analyzes the preceding three years' experience.*

*This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Retirement System. 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 measurements shown in this actuarial valuation may not be applicable for other purposes. 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); and changes in plan provisions or applicable law.*

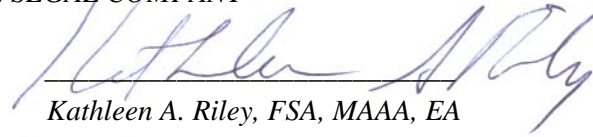
*The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in this actuarial valuation is complete and accurate. Further, in my 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: 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, 2011. 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, 2011;
- The assets of the Plan as of December 31, 2010;
- 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, 2011 is based on financial information as of that date. Changes in the value of assets subsequent to that date are not reflected. We are prepared to work with the Board to model the effects of these and any other subsequent developments.
- During the plan years ended 2008, 2009 and 2010, the market value rates of return were -32.56%, 19.62% and 11.89%, respectively. Because the actuarial value of assets gradually recognizes market value fluctuations, the actuarial rates of return for the plan years ended 2008, 2009 and 2010 were -19.39%, 6.71% and 7.66%, respectively. The actuarial value of assets as of December 31, 2010 was \$278.3 million, or 103.2% of the market value of assets of \$269.6 million (as reported in the Annual Statement). As of December 31, 2007, the actuarial value of assets was 100.6% of market value.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment loss as of December 31, 2010 is \$8.7 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 (net of investment expenses) on a **market value** basis will result in investment losses on the actuarial value of assets in the next few years.

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

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- The unfunded liability has increased from \$143.8 million as of January 1, 2008 to \$257.8 million as of January 1, 2011. Based on our prior valuation, the expected unfunded liability was \$142.8 million. The increase is primarily due to an investment loss on an actuarial basis of \$106.7 million over the three-year period, as well as a \$2.8 million loss from net 3(8)(c) reimbursements. These losses were slightly offset by a \$10.0 million gain from salary increases being less than expected (see Chart 13 in Section 2 and Exhibit E in Section 3 for more detail). There was also an increase in liability due to the assumption changes described below.
- With this valuation, we recommend the following changes:
  - The investment return assumption was lowered from 8.50% to 8.25%, net of investment expenses.
  - The administrative expense assumption was increased from \$1,000,000 for calendar 2008 to \$1,075,000 for calendar 2011, based on the projected 2011 budget.
  - The mortality table for healthy participants was changed from the 1994 Group Annuity Mortality Table to the RP-2000 Employee Mortality Table projected 10 years with Scale AA for non-retired participants and the RP-2000 Healthy Annuitant Mortality Table projected 10 years with Scale AA for retired participants.
  - The mortality table for disabled participants was changed from the 1994 Group Annuity Mortality Table set forward 10 years to the RP-2000 Healthy Annuitant Mortality Table projected 10 years with Scale AA set forward 3 years.

Changing these assumptions resulted in a net increase in the unfunded liability of \$17,118,593 and an increase in the employer normal cost of \$825,140.

- The Essex Regional Retirement System has adopted Section 101 of the Acts of 2000, increasing the supplemental annual allowance from \$6,000 per year to \$9,000 per year.
- Because the fiscal 2012 appropriation is set at the previously budgeted amount of \$21,084,190, the results of this valuation will first be reflected in the fiscal 2013 appropriation. In fiscal 2013 and later years, the recommended contribution will be the prior year's recommended contribution increased by 8.0%. This will result in a total fiscal 2013 appropriation of \$22,770,925 and a total fiscal 2014 appropriation of \$24,592,599. These amounts reflect payment of the appropriation in two equal amounts on July 1 and December 31. If the appropriation is made in one payment on July 1, the amount will be lower.
- Exhibit G in Section 3 shows the recommended contributions through fiscal 2040 based on this funding schedule. This funding schedule fully amortizes the unfunded liability by June 30, 2035.

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

### Summary of Key Valuation Results

	2011	2008
<b>Contributions:</b>		
Recommended for fiscal 2012 and 2009	\$21,084,190	\$16,995,636
Recommended for fiscal 2013 and 2010	22,770,925	18,256,245
Recommended for fiscal 2014 and 2011	24,592,599	19,610,942
<b>Funding elements for plan year beginning January 1:</b>		
Normal cost, including administrative expenses	\$18,920,068	\$16,742,705
Market value of assets	269,597,722	299,622,365
Actuarial value of assets	278,332,006	301,420,965
Actuarial accrued liability	536,115,536	445,171,554
Unfunded actuarial accrued liability	257,783,530	143,750,589
<b>GASB 25/27:</b>		
Annual required contributions (ARC)	\$21,084,190	\$21,355,202
Actual contributions	--	21,355,202
Percentage of ARC contributed	--	100.00%
Funded ratio	51.92%	67.71%
<b>Demographic data for plan year beginning January 1:</b>		
Number of retired participants and beneficiaries	1,624	1,568
Number of inactive participants entitled to a return of their employee contributions	844	880
Number of inactive participants with a vested right to a deferred or immediate benefit	70	65
Number of active participants	3,013	3,139
Total payroll	\$114,006,815	\$106,649,953
Average payroll	37,838	33,976

*Note: Recommended contributions are assumed to be paid on July 1 and December 31. Member units have the option of making one payment on July 1 or two payments on July 1 and December 31.*

## 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 eight valuations can be seen in this chart.*

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#### CHART 1

##### Participant Population: 1995 – 2010

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Year Ended December 31	Active Participants	Inactive Participants	Retired Participants and Beneficiaries
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
2005	2,949	887	1,508
2007	3,139	945	1,568
2010	3,013	914	1,624

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

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### Active Participants

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 3,013 active participants with an average age of 48.4, average years of service of 10.3 years and average payroll of \$37,838. The 3,139 active participants in the prior valuation had an average age of 47.4, average service of 9.2 years and average payroll of \$33,976.

Among the active participants, there were none with unknown age.

### Inactive Participants

In this year's valuation, there were 70 participants with a vested right to a deferred or immediate vested benefit and 844 participants entitled to a return of their employee contributions.

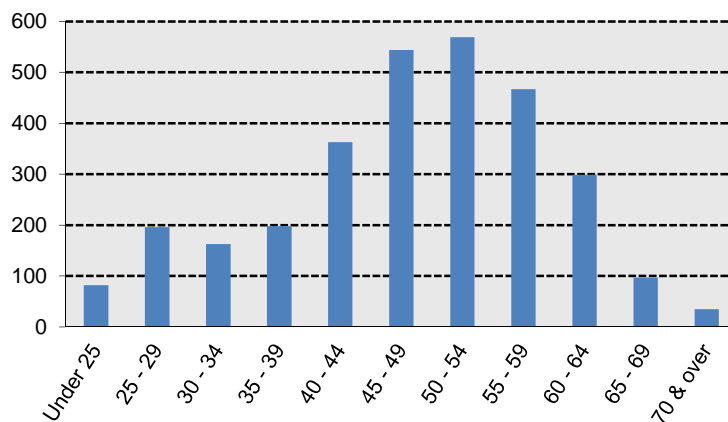
*These graphs show a distribution of active participants by age and by years of service.*

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**CHART 2**

**Distribution of Active Participants by Age as of December 31, 2010**

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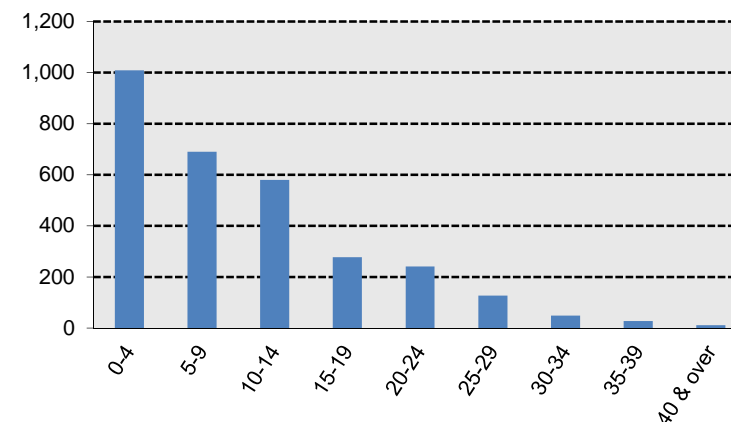


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**CHART 3**

**Distribution of Active Participants by Years of Service as of December 31, 2010**

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

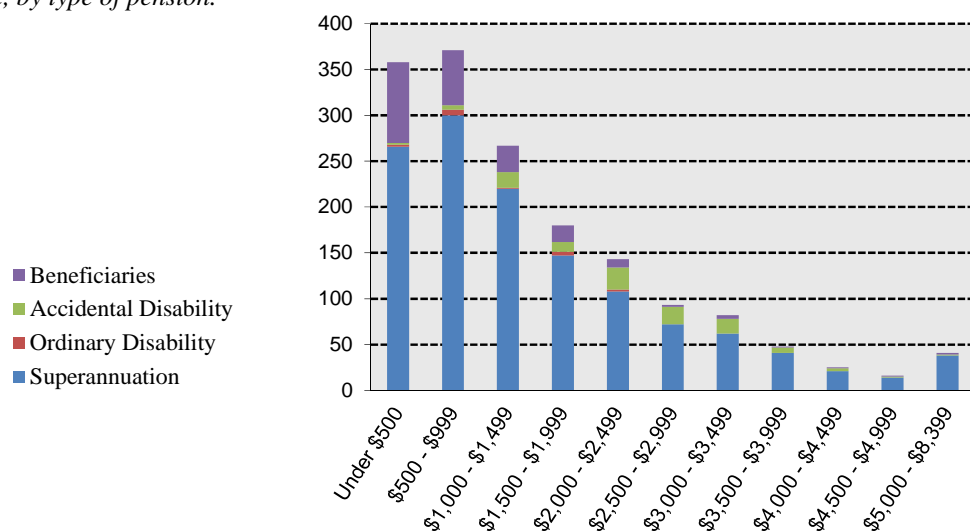
### Retired Participants and Beneficiaries

As of December 31, 2010, 1,409 retired participants and 215 beneficiaries were receiving total monthly benefits of \$2,473,727, excluding COLAs reimbursed by the Commonwealth. For comparison, in the previous valuation, there were 1,344 retired participants and 224 beneficiaries receiving monthly benefits of \$2,058,323, excluding COLAs reimbursed by the Commonwealth.

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

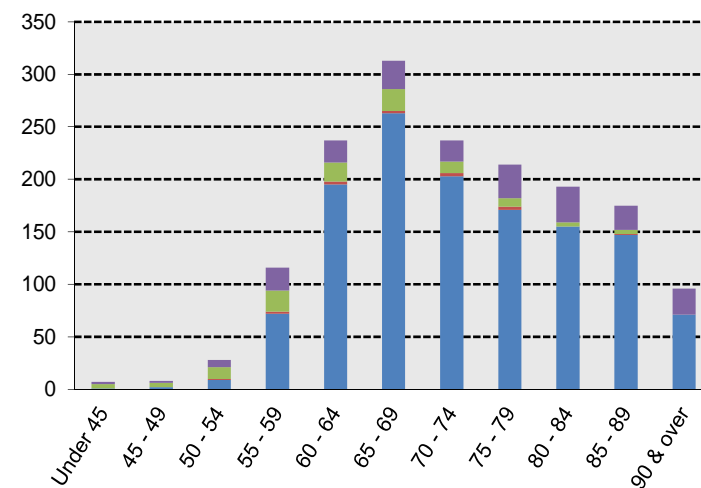
**CHART 4**

**Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2010**



**CHART 5**

**Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2010**



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

### B. FINANCIAL INFORMATION

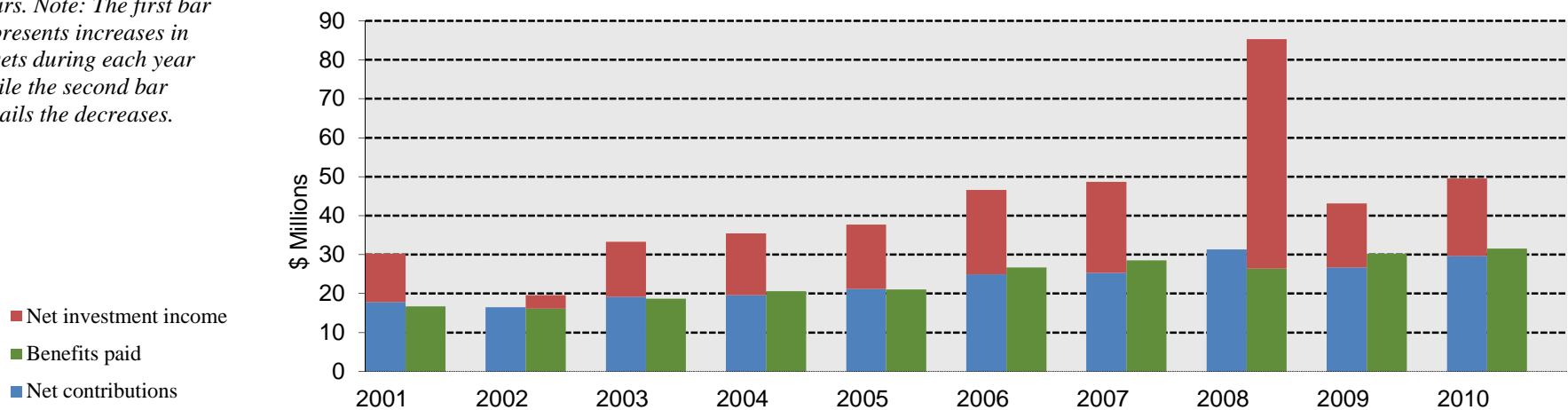
Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments. Retirement plan assets change as a result of the net impact of these income and expense components.

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, 2001 – 2010**



## 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,		
	2010	2009	2008
1. Actuarial value of assets prior year	\$260,326,732	\$247,398,732	\$301,420,965
2. Contributions, less benefit payments and expenses during the year	-1,859,882	-3,547,969	4,910,635
3. Average actuarial value of assets: (1) + [50% of (2)]	259,396,791	245,624,748	303,876,282
4. Expected investment income: .085 x (3)	22,048,727	20,878,104	25,829,483
5. Preliminary actuarial value of assets at the end of the year: (1) + (2) + (4)	280,515,577	264,728,867	332,161,083
6. Market value of assets at the end of the year	269,597,722	242,718,192	206,165,610
7. Adjustment toward market value: 20% of [(6) - (5)]	-2,183,571	-4,402,135	-25,199,095
8. Adjustment to be within 20% corridor	0	0	-59,563,256
9. Final actuarial value of assets: (5) + (7) + (8)	<u>\$278,332,006</u>	<u>\$260,326,732</u>	<u>\$247,398,732</u>
10. Actuarial value as a percentage of market value: (9) ÷ (6)	103.2%	107.3%	120.0%

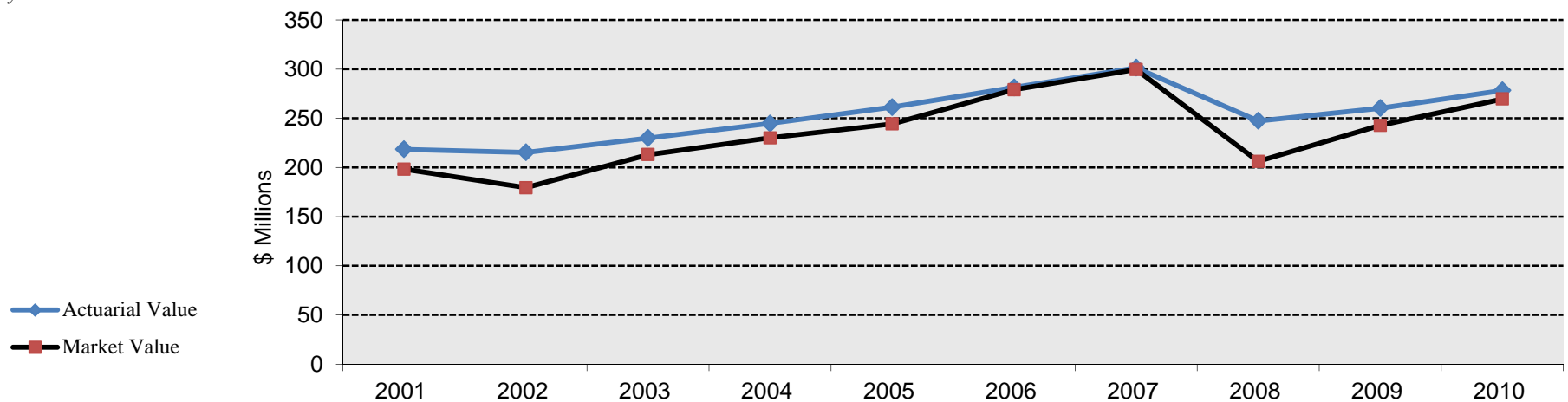
## SECTION 2: Valuation Results for the Essex Regional Retirement System

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, 2001 – 2010**



## 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 three years is \$97,818,861, as shown in Chart 9. 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 three years.*

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### CHART 9

#### Actuarial Experience for Three-Year Period Ended December 31, 2010

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1. Net loss from investments*	-\$106,744,246
2. Net gain from administrative expenses	105,035
3. Net gain from other experience**	<u>8,820,350</u>
4. Net experience loss: (1) + (2) + (3)	-\$97,818,861

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\* Details in Chart 10

\*\* Details in Chart 13

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

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### 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 for 2010, 2009 and 2008 was 8.50%. The actual rates of return on an actuarial basis for 2010, 2009 and 2008 were 7.66%, 6.71% and -19.39%, respectively.

Since the actual return for the three years were less than the assumed return, the Essex Regional Retirement System experienced an actuarial loss during the three-year period ending December 31, 2010 with regard to its investments of \$106,744,246, including adjustments for interest on the 2009 and 2008 investment losses.

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

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### CHART 10 Actuarial Value Investment Experience

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	Year Ended		
	December 31, 2010	December 31, 2009	December 31, 2008
1. Actual return	\$19,865,156	\$16,475,969	-\$58,932,868
2. Average value of assets	259,396,791	245,624,748	303,876,282
3. Actual rate of return: (1) ÷ (2)	7.66%	6.71%	-19.39%
4. Assumed rate of return	8.50%	8.50%	8.50%
5. Expected return: (2) x (4)	\$22,048,727	\$20,878,104	\$25,829,483
6. Actuarial gain/(loss): (1) – (5)	<u>-\$2,183,571</u>	<u>-\$4,402,135</u>	<u>-\$84,762,351</u>

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## 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 lowered the assumed rate of return from 8.50% to 8.25%.

### CHART 11

#### Investment Return – Actuarial Value vs. Market Value: 2001 - 2010

Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
2001	\$12,428,468	6.05%	-\$2,834,776	-1.41%
2002	-3,439,919	-1.57	-19,207,385	-9.68
2003	14,104,284	6.55	33,126,697	18.44
2004	15,847,026	6.91	18,109,749	8.52
2005	16,532,047	6.76	14,037,992	6.10
2006	21,605,069	8.29	36,545,751	15.02
2007	23,321,535	8.34	23,663,231	8.53
2008	-58,932,868	-19.39	-98,367,390	-32.56
2009	16,475,969	6.71	40,100,551	19.62
2010	<u>19,865,156</u>	7.66	<u>28,739,412</u>	11.89
Total	\$77,806,767		\$73,913,832	
	Five-year average return	1.66%		2.42%
	Ten-year average return	3.16%		3.23%

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



## 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.

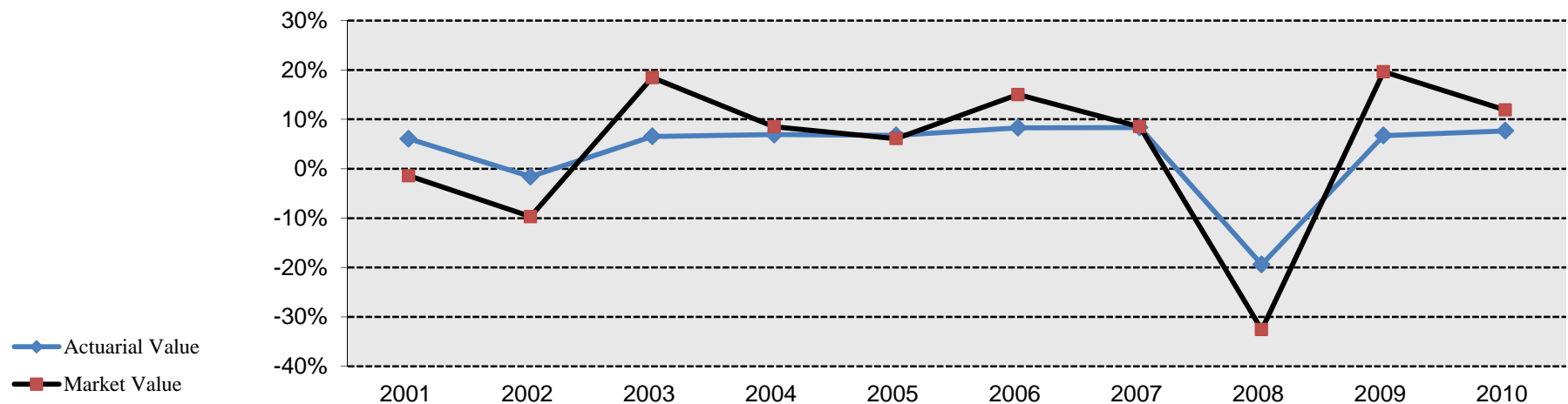
### Administrative Expenses

Administrative expenses for the years ended December 31, 2008, 2009 and 2010 were \$972,743, \$1,139,779 and \$988,549, respectively, compared to the assumption of \$1,000,000, \$1,045,000 and \$1,092,025 for calendar 2008, 2009 and 2010, respectively. This resulted in a gain of \$105,035 for the three-year period, including an adjustment for interest. We have changed the assumption to \$1,075,000 for calendar 2011.

*This chart illustrates how this leveling effect has actually worked over the years 2001 - 2010.*

**CHART 12**

**Market and Actuarial Rates of Return for Years Ended December 31, 2001 - 2010**



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

### 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 gain from this other experience for the three-year period ending December 31, 2010 amounted to \$8,820,350, which is 1.6% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the Essex Regional Retirement System for the three-year period ending December 31, 2010 is shown in the chart below.

With this valuation, we recommend the following changes:

- The investment return assumption was lowered from 8.50% to 8.25%, net of investment expenses.
- The administrative expense assumption was increased from \$1,000,000 for calendar 2008 to \$1,075,000 for calendar 2011, based on the projected 2011 budget.
- The mortality table for healthy participants was changed from the 1994 Group Annuity Mortality Table to the RP-2000 Employee Mortality Table projected 10 years with Scale AA for non-retired participants and the RP-2000 Healthy Annuitant Mortality Table projected 10 years with Scale AA for retired participants.
- The mortality table for disabled participants was changed from the 1994 Group Annuity Mortality Table set forward 10 years to the RP-2000 Healthy Annuitant Mortality Table projected 10 years with Scale AA set forward 3 years.

Changing these assumptions resulted in a net increase in the unfunded liability of \$17,118,593 and an increase in the employer normal cost of \$825,140.

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

### CHART 13

#### Experience Due to Changes in Demographics for Three-Year Period Ended December 31, 2010

1. Salary increases less than expected for continuing actives	\$9,984,808
2. Net 3(8)(c) reimbursements	-2,821,251
3. Deaths among retired members and beneficiaries	-153,102
4. Miscellaneous gain	<u>1,809,895</u>
5. Total	\$8,820,350

## 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 of \$25,920,813 is based on schedules as elected by the units for the 2002 and 2003 ERI liabilities and a 24-year increasing (4.0% per year) amortization of the remaining unfunded liability.

Because the fiscal 2012 appropriation has already been budgeted at \$21,084,190, the results of this valuation will first be reflected in the fiscal 2013 appropriation. For fiscal 2013-fiscal 2020, appropriations have been

calculated as 8% increases over the prior year's appropriation. This will result in a fiscal 2013 appropriation of \$22,770,925 and a fiscal 2014 appropriation of \$24,592,599.

These figures assume that contributions will be made on July 1 and December 31. Units that make their appropriation on July 1 will pay a lower amount.

Exhibit G in Section 3 shows the recommended contributions through fiscal 2040 based on this funding schedule. The current funding schedule fully amortizes the unfunded liability by June 30, 2035.

### CHART 14

#### Recommended Contribution

	Year Beginning January 1			
	2011		2008	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost	\$17,845,068	14.91%	\$15,742,705	14.09%
2. Administrative expenses	1,075,000	0.90%	1,000,000	0.90%
3. Expected employee contributions	<u>-11,104,835</u>	<u>-9.28%</u>	<u>-10,086,458</u>	<u>-9.03%</u>
4. Employer normal cost: (1) + (2) + (3)	\$7,815,233	6.53%	\$6,656,247	5.96%
5. Actuarial accrued liability	536,115,536		445,171,554	
6. Actuarial value of assets	<u>278,332,006</u>		<u>301,420,965</u>	
7. Unfunded actuarial accrued liability: (5) - (6)	\$257,783,530		\$143,750,589	
8. Employer normal cost projected to July 1, 2011 and 2008, adjusted for timing*	8,149,051	6.66%	6,944,564	-6.08%
9. Projected unfunded actuarial accrued liability	268,206,389		149,735,405	
10. Payment of projected unfunded actuarial accrued liability, adjusted for timing	17,771,762	14.52%	11,042,330	9.67%
11. Preliminary recommended contributions: (8) + (10), adjusted for timing	25,920,813	21.18%	17,986,894	15.75%
12. Budgeted appropriation	<u>\$21,084,190</u>	<u>17.23%</u>	<u>\$16,995,636</u>	<u>14.88%</u>
13. Projected payroll	\$122,370,929		\$114,213,048	

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

## 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 the GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded within the range of the GASB reporting requirements. Chart 15 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

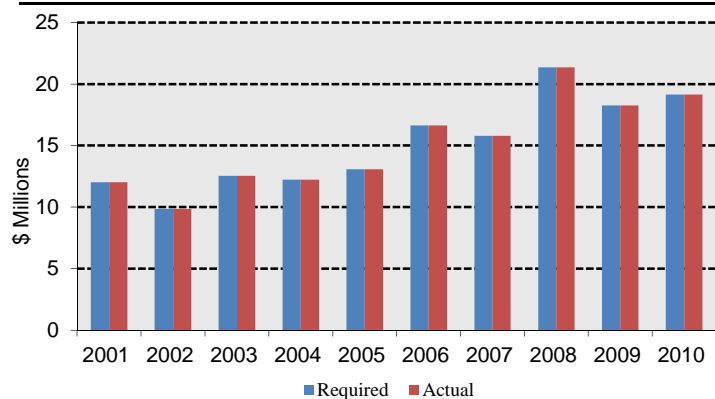
actuarial value of assets to the actuarial accrued liabilities of the plan as calculated under the GASB standards. High ratios indicate a well-funded plan with assets sufficient to pay most benefits. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

Although the GASB requires that the actuarial value of assets be used to determine the funded ratio, Chart 16 shows the funded ratio calculated using both the actuarial value of assets (51.92%) and the market value of assets (50.29%).

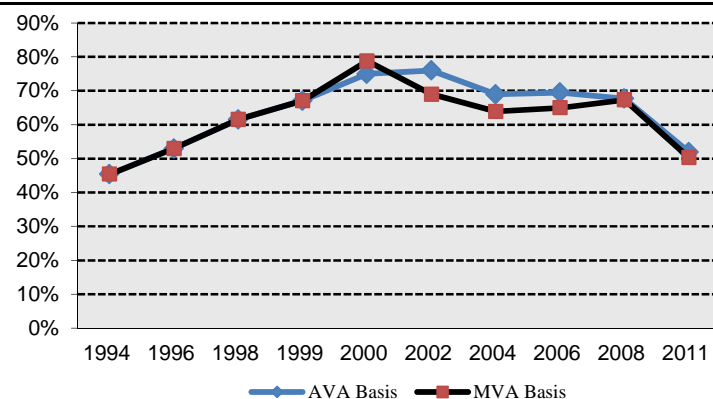
The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

*These graphs show key GASB factors.*

**CHART 15**  
**Required Versus Actual Contributions**



**CHART 16**  
**Funded Ratio**



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

#### EXHIBIT A

#### Table of Plan Coverage

	Year Ended December 31		Change From Prior Valuation
Category	2010	2007	
Active participants in valuation:			
Number	3,013	3,139	-4.0%
Average age	48.4	47.4	N/A
Average years of service	10.3	9.2	N/A
Total payroll	\$114,006,815	\$106,649,953	6.9%
Average payroll	37,838	33,976	11.4%
Member contributions	91,373,199	76,473,235	19.5%
Inactive participants with a vested right to a deferred or immediate benefit	70	65	7.7%
Inactive participants entitled to a return of their contributions	844	880	-4.1%
Retired participants:			
Number in pay status	1,289	1,227	5.1%
Average age	73.2	73.5	N/A
Average monthly benefit	\$1,558	\$1,342	16.1%
Disabled participants:			
Number in pay status	120	117	2.6%
Average age	64.3	63.1	N/A
Average monthly benefit	\$2,229	\$2,063	8.0%
Beneficiaries in pay status	215	224	-4.0%

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

#### EXHIBIT B

#### Participants in Active Service as of December 31, 2010 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	82	82	--	--	--	--	--	--	--	--
	\$25,458	\$25,458	--	--	--	--	--	--	--	--
25 - 29	196	166	29	1	--	--	--	--	--	--
	31,736	30,633	\$36,918	\$64,517	--	--	--	--	--	--
30 - 34	163	82	59	22	--	--	--	--	--	--
	40,911	34,899	47,510	45,620	--	--	--	--	--	--
35 - 39	198	73	64	47	12	2	--	--	--	--
	43,421	31,144	47,902	53,125	\$55,642	\$46,776	--	--	--	--
40 - 44	363	137	86	64	48	27	1	--	--	--
	39,979	26,444	36,126	46,974	62,493	62,689	\$84,128	--	--	--
45 - 49	544	180	132	96	45	69	21	1	--	--
	38,395	27,078	30,858	37,143	59,660	60,692	67,814	\$77,104	--	--
50 - 54	569	149	137	131	54	49	37	10	2	--
	36,610	27,322	29,507	33,619	40,874	57,165	64,252	83,793	\$44,935	--
55 - 59	467	85	90	125	57	43	30	21	13	3
	39,664	33,566	31,599	38,158	33,889	44,388	55,901	71,360	63,535	\$71,512
60 - 64	299	39	71	61	48	37	19	11	9	4
	38,192	29,055	32,649	36,131	37,574	43,740	40,947	57,168	68,010	80,816
65 - 69	97	14	17	21	9	10	17	4	2	3
	32,475	14,359	32,554	29,996	42,595	42,207	31,694	40,870	48,901	53,387
70 & over	35	2	5	12	5	4	3	2	1	1
	31,421	44,263	16,939	24,905	37,982	44,482	35,953	8,395	63,542	71,635
Total	3,013	1,009	690	580	278	241	128	49	27	11
	\$37,838	\$28,892	\$34,728	\$38,696	\$46,287	\$53,535	\$54,588	\$65,770	\$62,565	\$69,963

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

**EXHIBIT C**

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

	<b>Year Ended December 31, 2010</b>	<b>Year Ended December 31, 2009</b>	<b>Year Ended December 31, 2008</b>
<b>Contribution income:</b>			
Employer contributions	\$19,035,175	\$18,195,293	\$21,287,681
Employee contributions	11,526,968	9,536,441	10,900,168
Federal grant reimbursements	101,572	62,768	67,521
Less administrative expenses	<u>-988,549</u>	<u>-1,139,779</u>	<u>-972,743</u>
Net contribution income	\$29,675,166	\$26,654,723	\$31,282,627
<b>Investment income</b>	<u>19,865,156</u>	<u>16,475,969</u>	<u>-58,932,868</u>
<b>Total income available for benefits</b>	\$49,540,322	\$43,130,692	-\$27,650,241
<b>Less benefit payments:</b>			
Pensions and annuities	-\$29,413,252	-\$27,155,852	-\$25,270,503
Net (8)c reimbursements	-1,077,440	-1,593,708	-12,434
Refunds to members	-1,049,356	-1,509,632	-1,089,055
Workers Compensation Settlements	<u>5,000</u>	<u>56,500</u>	<u>0</u>
Net benefit payments	-\$31,535,048	-\$30,202,692	-\$26,371,992
<b>Change in reserve for future benefits</b>	\$18,005,274	\$12,928,000	-\$54,022,233

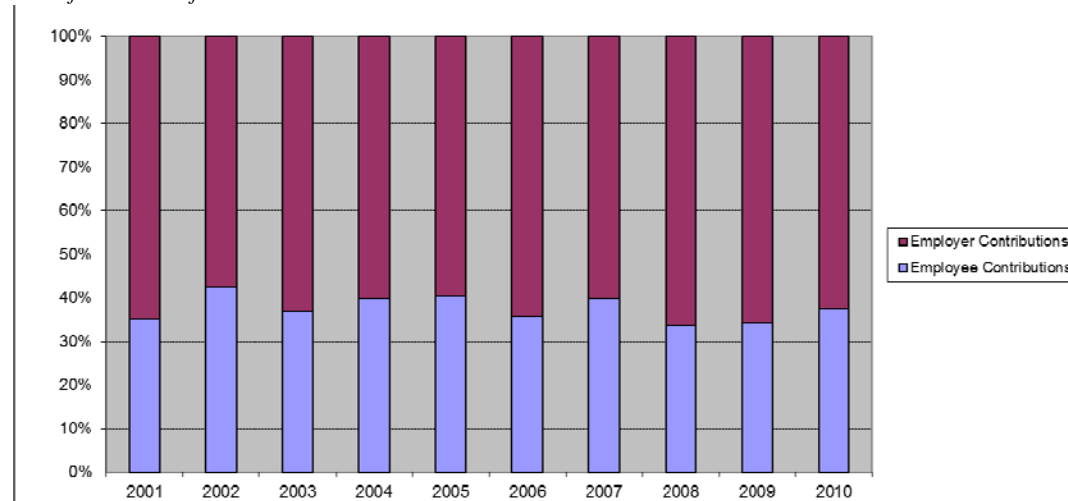
### SECTION 3: Supplemental Information for the Essex Regional Retirement System

#### EXHIBIT D

#### Development of the Fund Through December 31, 2010 and Comparison of Employer and Employee Contributions

Year Ended December 31	Employer Contributions	Employee Contributions	Employee Contributions as a Percent of Total Contributions	Other Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
2001	\$11,977,601	\$6,517,779	35.17%	\$36,960	\$12,428,468	\$723,373	\$16,670,367	\$218,346,198
2002	9,790,796	7,250,128	42.42%	49,268	-3,439,919	640,963	16,123,146	215,232,362
2003	12,454,333	7,302,261	36.85%	62,236	14,104,284	659,662	18,642,842	229,852,971
2004	12,126,061	8,079,621	39.79%	97,715	15,847,026	705,375	20,627,326	244,670,693
2005	12,958,665	8,906,195	40.51%	121,346	16,532,047	816,262	21,045,637	261,327,047
2006	16,501,107	9,219,178	35.68%	121,168	21,605,069	889,755	26,661,251	281,222,564
2007	15,729,201	10,503,973	39.95%	59,663	23,321,535	958,885	28,457,086	301,420,965
2008	21,287,681	10,900,168	33.79%	67,521	-58,932,868	972,743	26,371,992	247,398,732
2009	18,195,293	9,536,441	34.31%	62,768	16,475,969	1,139,779	30,202,692	260,326,732
2010	19,035,175	11,526,968	37.59%	101,572	19,865,156	988,549	31,535,048	278,332,006

\* Net of investment fees



Note: Other contributions have been included with employer contributions for the purposes of this graph.



**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, 2010	December 31, 2009	December 31, 2008	
1. Unfunded actuarial accrued liability at beginning of year	\$142,718,211	\$140,641,746	\$143,750,589	
2. Normal cost at beginning of year	18,283,453	17,496,127	16,742,705	
3. Total contributions	-30,663,715	-27,794,502	-32,255,369	
4. Interest				
(a) For whole year on (1) + (2)	\$13,685,141	\$13,441,719	\$13,641,930	
(b) For half year on (3)	<u>-1,177,014</u>	<u>-1,066,879</u>	<u>-1,238,109</u>	
(c) Total interest	<u>12,508,127</u>	<u>12,374,840</u>	<u>12,403,821</u>	
5. Expected unfunded actuarial accrued liability	\$142,846,076	\$142,718,211	\$140,641,746	
6. Changes due to:				
(a) Investment loss	\$106,744,246	--	--	
(b) Net gain from other experience	-8,925,385	--	--	
(c) Assumption changes	17,118,593	--	--	
(d) Total changes	<u>114,937,454</u>	--	--	
7. Unfunded actuarial accrued liability at end of year	<u>\$257,783,530</u>	--	--	

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

**EXHIBIT F**

**Table of Amortization Bases**

Type	Annual Payment	Years Remaining	Outstanding Balance as of July 1, 2011
2002 ERI liability	\$379,843	varies	\$2,152,982
2003 ERI liability	229,030	varies	1,372,930
Remaining unfunded liability	<u>17,162,889</u>	24.00	<u>264,680,477</u>
Total	\$17,771,762		\$268,206,389

*Notes: Does not reflect adjustment to set fiscal 2012 appropriation to budgeted amount.  
Refer to Exhibit G for information on payments in fiscal year 2013 and later.  
Recommended contributions are assumed to be paid on July 1 and December 31.*

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

#### EXHIBIT G

#### Funding Schedule

Payments calculated to increase at 8.0% per year and fully fund the Plan by 2035.

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of 2002 ERI Liability	(4) Amortization of 2003 ERI Liability	(5) Amortization of Remaining Unfunded Liability	(6) Total Plan Cost: (2) + (3) + (4) + (5)	(7) Total Unfunded Actuarial Accrued Liability at Beginning of Fiscal Year	(8) Percent Increase in Total Cost
2012	\$8,149,051	\$379,843	\$229,030	\$12,326,266	\$21,084,190	\$268,206,389	- -
2013	8,515,759	343,537	199,370	13,712,259	22,770,925	278,703,345	8.00%
2014	8,898,968	343,842	199,653	15,150,136	24,592,599	288,479,759	8.00%
2015	9,299,422	344,160	199,948	16,716,477	26,560,007	297,380,364	8.00%
2016	9,717,896	344,492	200,257	18,422,163	28,684,808	305,221,890	8.00%
2017	10,155,201	344,840	200,580	20,278,972	30,979,593	311,791,301	8.00%
2018	10,612,185	345,203	200,917	22,299,655	33,457,960	316,842,747	8.00%
2019	11,089,733	345,582	201,270	24,498,012	36,134,597	320,094,165	8.00%
2020	11,588,771	9,208	201,638	27,050,275	38,849,892	319,922,874	7.51%
2021	12,110,266	9,622	8,938	28,132,286	40,261,112	317,385,431	3.63%
2022	12,655,228	10,055	9,341	29,257,578	41,932,202	313,694,421	4.15%
2023	13,224,713	10,508	9,761	30,427,881	43,672,863	308,503,792	4.15%
2024	13,819,825	10,981	10,200	31,644,996	45,486,002	301,642,016	4.15%
2025	14,441,717	11,475	10,659	32,910,796	47,374,647	292,921,502	4.15%
2026	15,091,594	11,991	11,139	34,227,228	49,341,952	282,137,194	4.15%
2027	15,770,716	12,531	11,640	35,596,317	51,391,204	269,065,051	4.15%
2028	16,480,398	13,095	12,164	37,020,170	53,525,827	253,460,394	4.15%
2029	17,222,016	-	-	38,500,976	55,722,992	235,056,124	4.10%
2030	17,997,007	-	-	40,041,015	58,038,022	213,588,789	4.15%
2031	18,806,872	-	-	41,642,656	60,449,528	188,716,021	4.16%
2032	19,653,181	-	-	43,308,362	62,961,543	160,091,496	4.16%
2033	20,537,574	-	-	45,040,697	65,578,271	127,337,704	4.16%
2034	21,461,765	-	-	46,842,325	68,304,090	90,043,270	4.16%
2035	22,427,544	-	-	48,716,018	71,143,562	47,760,053	4.16%
2036	23,436,783	-	-	-	23,436,783	-	-67.06%
2037	24,491,438	-	-	-	24,491,438	-	4.50%
2038	25,593,553	-	-	-	25,593,553	-	4.50%
2039	26,745,263	-	-	-	26,745,263	-	4.50%
2040	27,948,800	-	-	-	27,948,800	-	4.50%

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

Item (2) is assumed to increase 4.5% per year.

Fiscal 2012 appropriation is budgeted amount determined previously.

Schedule reflects deferred investment losses.

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

#### EXHIBIT H

#### Unit Allocation of ERI Amortizations

#### Fiscal 2012 Allocation of 2002 and 2003 ERI Amortizations

Unit	2002 ERI	2003 ERI
Essex Regional Retirement Board	\$33,372	\$27,861
Georgetown	59,567	20,532
Groveland	--	6,126
Ipswich Housing Authority	27,294	--
Lynnfield	--	146,991
Merrimac	38,918	7,448
Nahant Housing Authority	6,595	--
North Andover Housing	--	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	<u>4,122</u>	<u>--</u>
Total	\$379,843	\$229,030

Notes: 2002 ERI payments are level (ending in fiscal 2019), except Nahant Housing (4.5% increasing, ending in fiscal 2028) and Essex Regional Retirement Board (level, ending in fiscal 2012).

2003 ERI payments are level (ending in fiscal 2020), except for Groveland (4.5% increasing, ending in 2028) and Essex Regional Retirement Board (level, ending in fiscal 2012).

### 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 are many 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 215 beneficiaries in pay)	1,624
2. Participants active during the year ended December 31, 2010 with total accumulated contributions of \$91,373,199 and projected 2011 total payroll of \$119,707,156	3,013
3. Inactive participants with a right to a return of their employee contributions as of December 31, 2010	844
4. Inactive participants with a vested right to a deferred or immediate benefit as of December 31, 2010	70

The actuarial factors as of January 1, 2011 are as follows:

1. Normal cost	\$17,845,068
2. Administrative expenses	1,075,000
3. Expected employee contributions	<u>-11,104,835</u>
4. Employer normal cost: (1) + (2) + (3)	\$7,815,233
5. Actuarial accrued liability	536,115,536
Retired participants and beneficiaries	\$275,459,912
Active participants	253,348,484
Inactive participants	7,307,140
6. Actuarial value of assets (\$269,597,722 at market value as reported on the Annual Statement)	278,332,006
7. Unfunded actuarial accrued liability: (5) – (6)	257,783,530

The determination of the recommended contribution is as follows:

1. Projected employer normal cost, adjusted for timing	\$8,149,051
2. Projected unfunded actuarial accrued liability	268,206,389
3. Payment on projected unfunded actuarial accrued liability (final payment in fiscal 2035), adjusted for timing	17,771,762
4. Preliminary recommended contribution: (1) + (3)	25,920,813
5. Budgeted appropriation	21,084,190
6. Projected payroll as of July 1, 2011	122,370,929
7. Budgeted appropriation as percentage of projected payroll: (5) ÷ (6)	17.23%

*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>
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%
2004	12,223,776	12,223,776	100.0%
2005	13,080,011	13,080,011	100.0%
2006	16,622,274	16,622,274	100.0%
2007	15,788,864	15,788,864	100.0%
2008	21,355,202	21,355,202	100.0%
2009	18,258,062	18,258,062	100.0%
2010	19,136,746	19,136,746	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/ (Overfunded) 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>
01/01/1994	\$80,878,500	\$178,256,800	\$97,378,300	45.37%	\$62,076,500	156.87%
01/01/1996	106,176,700	200,397,500	94,220,800	52.98%	72,953,200	129.15%
01/01/1998	151,293,900	245,965,100	94,671,200	61.51%	85,785,000	110.36%
01/01/1999	180,034,700	268,386,000	88,351,300	67.08%	89,645,300	98.56%
01/01/2000	190,363,700	253,847,100	63,483,400	74.99%	69,525,900	91.31%
01/01/2002	218,346,198	287,390,715	69,044,517	75.98%	85,005,338	81.22%
01/01/2004	229,852,971	333,396,222	103,543,251	68.94%	93,404,002	110.86%
01/01/2006	261,327,047	376,034,621	114,707,574	69.50%	98,641,094	116.29%
01/01/2008	301,420,965	445,171,554	143,750,589	67.71%	111,726,856	128.66%
01/01/2011	278,332,006	536,115,536	257,783,530	51.92%	119,707,156	215.35%

## 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, 2011
<b>Actuarial cost method</b>	Entry Age Normal Cost Method
<b>Amortization method</b>	Level dollar for ERI liability for most units, 4.5% annual increases for ERI liability for other units, increasing amortization for the remaining unfunded liability. Increase in total appropriation not to exceed 8%.
<b>Remaining amortization period</b>	As of July 1, 2011, schedules as selected by units for 2002 ERI liability, schedules as selected by units for 2003 ERI liability and 24 years for remaining unfunded liability.
<b>Asset valuation method</b>	Sum of actuarial value at beginning of year and increase in cost value during year excluding realized appreciation or losses plus 20 percent of market value at end of year (as reported in the Annual Statement) in excess of that preliminary value, adjusted to be within 20 percent of their market value.
<b>Actuarial assumptions:</b>	
Investment rate of return	8.25% (previously, 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	1,624
Inactive participants entitled to a return of their employee contributions	844
Inactive participants with a vested right to a deferred or immediate benefit	70
Active participants	<u>3,013</u>
Total	5,551

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

### EXHIBIT V

#### Actuarial Assumptions and Actuarial Cost Method

##### Mortality Rates:

<i>Pre-Retirement:</i>	RP-2000 Employee Mortality Table projected 10 years with Scale AA (previously, 1994 Group Annuity Mortality Table)
<i>Healthy Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table projected 10 years with Scale AA (previously, 1994 Group Annuity Mortality Table)
<i>Disabled Retiree:</i>	RP-2000 Healthy Annuitant Mortality Table projected 10 years with Scale AA set forward 3 years (previously, 1994 Group Annuity Mortality Table set forward 10 years)
	The RP-2000 Employee Mortality Table and RP-2000 Healthy Annuitant Mortality Table reasonably reflect the projected mortality experience of the Plan as of the measurement date. The additional projection of 10 years is a provision made for future mortality improvement.

##### Termination Rates before Retirement:

##### Groups 1 and 2 - Rate (%)

Age	Mortality		Disability	Withdrawal
	Male	Female		
20	0.03	0.02	0.03	12.00
25	0.03	0.02	0.04	8.78
30	0.04	0.02	0.06	5.55
35	0.07	0.04	0.07	3.93
40	0.10	0.06	0.11	2.31
45	0.13	0.10	0.18	1.89
50	0.18	0.14	0.30	1.46
55	0.25	0.23	0.50	--
60	0.42	0.37	0.81	--

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

Group 4 - Rate (%)				
Age	Mortality		Disability	Withdrawal
	Male	Female		
20	0.03	0.02	0.09	2.10
25	0.03	0.02	0.13	1.88
30	0.04	0.02	0.17	1.65
35	0.07	0.04	0.22	1.11
40	0.10	0.06	0.33	0.56
45	0.13	0.10	0.54	0.28
50	0.18	0.14	0.91	--
55	0.25	0.23	--	--
60	0.42	0.37	--	--

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:

Rate per year (%)		
Age	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.

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

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<b>Percent Married:</b>	75%
<b>Age of Spouse:</b>	Females three years younger than their spouses.
<b>Benefit Election:</b>	All participants are assumed to elect the Life Annuity form of payment.
<b>Net Investment Return:</b>	8.25% (previously, 8.50%)
<b>Salary Increases:</b>	5.00%
<b>Interest on Employee Contributions:</b>	3.50%
<b>Administrative Expenses:</b>	\$1,075,000 for calendar year 2011, increasing 4.50% per year (previously, \$1,000,000 for calendar 2008)
<b>2010 Salary:</b>	Salary in the data, except for 2010 hires, whose salary was estimated from contributions.
<b>Total Service:</b>	Total creditable service reported in the data.
<b>Actuarial Value of Assets:</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 (as reported in the Annual Statement), the final actuarial value of assets must be within 20% of the market value of assets.
<b>Actuarial Cost Method:</b>	Entry Age Normal Actuarial Cost Method. Entry Age is the age of the participant less total creditable service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary.  This valuation reflects a change in valuation software.

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### Changes in Assumptions:

With this valuation, we recommend the following changes:

- The investment return assumption was lowered from 8.50% to 8.25%, net of investment expenses.
- The administrative expense assumption was increased from \$1,000,000 for calendar 2008 to \$1,075,000 for calendar 2011, based on the projected 2011 budget.
- The mortality table for healthy participant was changed from the 1994 Group Annuity Mortality Table to the RP-2000 Employee Mortality Table projected 10 years with Scale AA for non-retired participants and the RP-2000 Healthy Annuitant Mortality Table projected 10 years with Scale AA for retired participants.
- The mortality table for disabled participants was changed from the 1994 Group Annuity Mortality Table set forward 10 years to the RP-2000 Healthy Annuitant Mortality Table projected 10 years with Scale AA set forward 3 years.

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

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### EXHIBIT VI

#### Summary of Plan Provisions

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This exhibit summarizes the major provisions of Chapter 32 of the Laws of Massachusetts.

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**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:

Age Last Birthday at Date of Retirement			
Percent	Group 1	Group 2	Group 4
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

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

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

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annual rate of regular compensation received during the last three years of creditable service prior to retirement.

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 \$15 per year of creditable service, not exceeding \$300. The veteran allowance is paid in addition to the 80 percent maximum.

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### Employee Contributions

<u>Date of Hire</u>	<u>Contribution Rate</u>
Prior to January 1, 1975	5%
January 1, 1975 – December 31, 1983	7%
January 1, 1984 – June 30, 1996	8%
July 1, 1996 onward	9%

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 or her job due to a non-occupational disability will receive a retirement allowance if he or she 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



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of creditable 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 or her 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 or her 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 death, a spouse's benefit will be paid equal to the amount the employee would have received under Option C. 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 \$250 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, permanent member of a police department, or certain employees of a county correctional facility 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 the line of duty, unless the contrary is

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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 the time of death any contributions not expended for annuity payments will be refunded to the beneficiary. Option C allows the member to take a lesser retirement allowance in exchange for providing a survivor with two-thirds of the lesser amount. Option C pensioners will have 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.

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### Changes in Plan Provisions

The Essex Regional Retirement System has adopted Section 101 of Chapter 32 of the Acts of 2000, increasing the supplemental annual allowance from \$6,000 per year to \$9,000 per year.