

**State-Boston Retirement System**

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

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*July 21, 2004*

*Retirement Board  
State-Boston Retirement System  
City Hall, Room 816  
Boston, MA 02201*

*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 year's experience.*

*The census information and financial information on which our calculations were based was prepared by the staff of the State-Boston 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: Valuation Summary for the State-Boston Retirement System**

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### **Purpose**

This report has been prepared by The Segal Company to present a valuation of the State-Boston 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 vested 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 (11.00)% and 22.78%, respectively. The actuarial rates of return for the plan years ended 2002 and 2003 were (5.01)% and 6.84%, respectively. The actuarial value of assets as of December 31, 2003 was \$3,384,813,539, or 104.6% of the market value of assets.
- The unfunded liability has increased from \$1,419,952,477 as of January 1, 2002 to \$2,036,028,141 as of January 1, 2004. This increase is primarily due to an investment loss of \$511,374,430 and the additional liability of \$61,810,652 associated with the 2002 ERI.
- The expense assumption has been lowered to \$3,800,000 for the 2004 calendar year from \$4,200,000 for calendar year 2002.

## SECTION 1: Valuation Summary for the State-Boston Retirement System

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- With the prior valuation, the Board adopted a funding schedule which reduces the unfunded actuarial accrued liability to zero over a 21-year period in payments which increase at the rate of 4.50% per year. This report includes a recommended contribution based on the remaining 19-year schedule and five alternative schedules which result in a lower recommended contribution.
- As indicated in Section 2, Subsection B of this report, the total unrecognized investment loss as of December 31, 2004 is \$147,997,606. 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 8.00% 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 8.00% 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 State-Boston Retirement System**

**Summary of Key Valuation Results**

	January 1, 2004	January 1, 2002
<b>Contributions</b>		
Recommended for fiscal 2005 and 2003	\$169,953,176	\$155,944,000
Recommended for fiscal 2006 and 2004	212,310,852	158,184,853
<b>Funding elements for plan year beginning January 1:</b>		
Normal cost, including administrative expenses	\$140,012,414	\$140,341,967
Market value of assets	3,236,815,933	3,003,192,343
Actuarial value of assets	3,384,813,539	3,376,177,877
Actuarial accrued liability	5,420,841,680	4,796,130,324
Unfunded actuarial accrued liability	2,036,028,141	1,419,952,447
<b>GASB 25/27</b>		
Annual required contributions	\$164,069,015	\$152,882,000
Actual contributions	--	152,882,000
Percentage contributed	--	100.00%
Funded ratio	62.44%	70.30%
<b>Demographic data</b>		
Number of retired participants and beneficiaries	14,034	13,144
Number of inactive participants	5,294	3,560
Number of active participants	20,456	22,003
Total payroll*	\$1,017,821,901	\$1,002,963,447
Average payroll*	49,757	45,583

\* Figures for 2002 include adjustment paid in 2001 for retroactive salary increases for firefighters of 4.5% for fiscal years 1999 and 2000.

**SECTION 2: Valuation Results for the State-Boston 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	21,128	1,425	13,339
1996	18,641	3,703	13,492
1999	19,953	1,459	13,381
2001	22,003	3,560	13,144
2003	20,456	5,294	14,034

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**SECTION 2: Valuation Results for the State-Boston 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 20,456 active participants with an average age of 44.6, average years of service of 12.9 years and average payroll of \$49,757. The 22,003 active participants in the prior valuation had an average age of 44.5, average service of 12.6 years and average payroll of \$45,583.

Among the active participants, there were 144 participants (0.7%) with unknown age and/or service information. The actuarial calculations were adjusted for the missing information by assuming that it was the same as

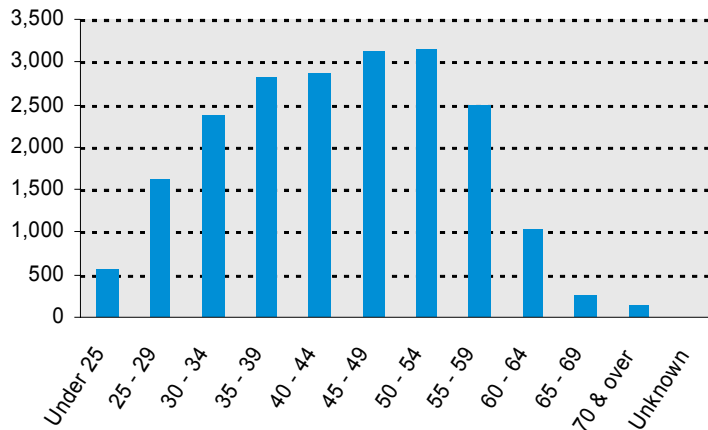
information provided for other active participants with similar known characteristics.

**Inactive Participants**

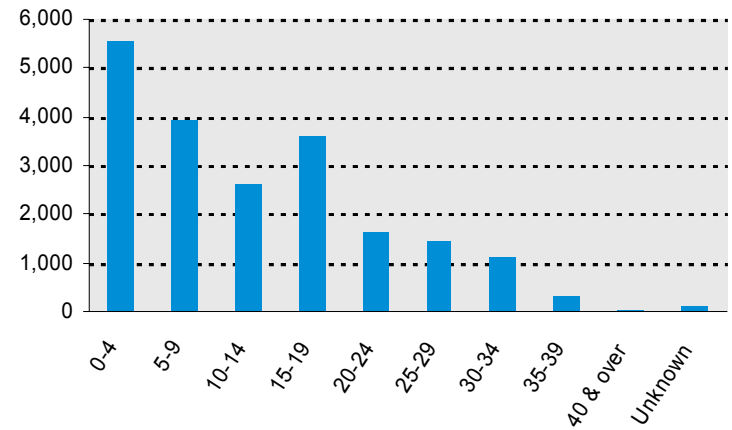
In this year's valuation, there were 5,294 participants with a vested right to a deferred or immediate vested benefit or a return of their employee contributions.

*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**





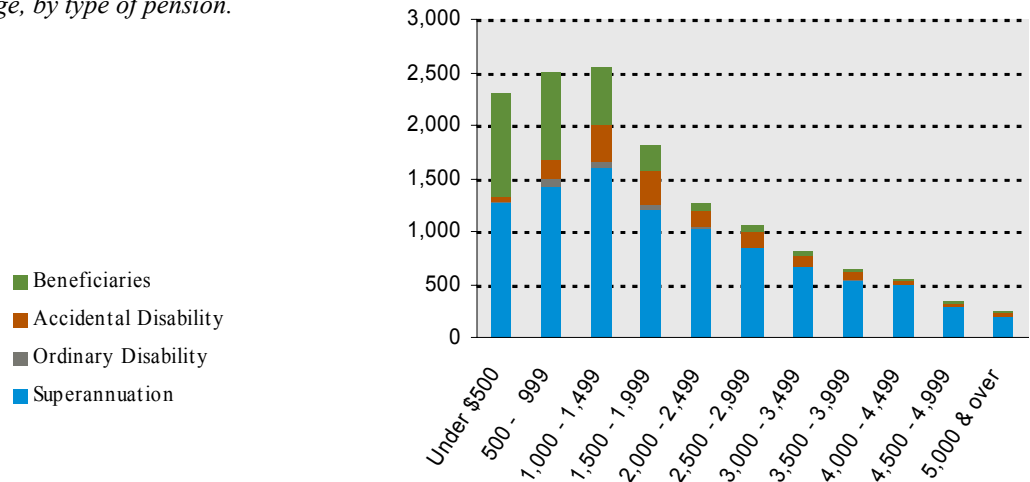
**SECTION 2: Valuation Results for the State-Boston Retirement System**

**Retired Participants and Beneficiaries**

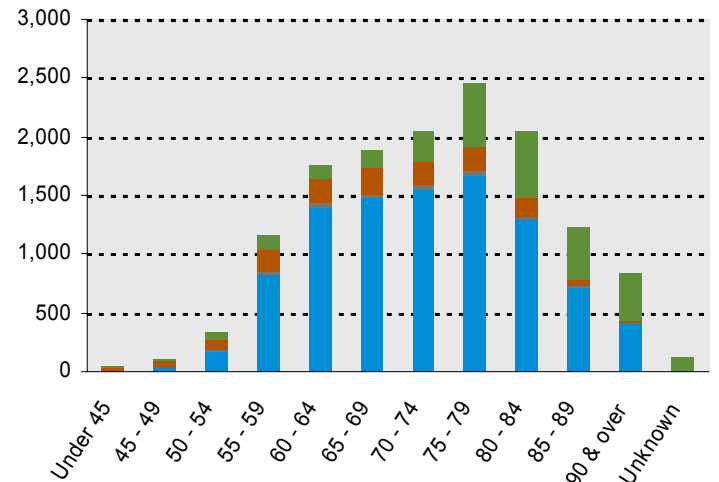
As of December 31, 2003, 11,221 retired participants and 2,813 beneficiaries were receiving total monthly benefits of \$24,783,105. For comparison, in the previous valuation, there were 10,261 retired participants and 2,883 beneficiaries receiving monthly benefits of \$19,136,567.

*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 State-Boston Retirement System**

**B. FINANCIAL INFORMATION**

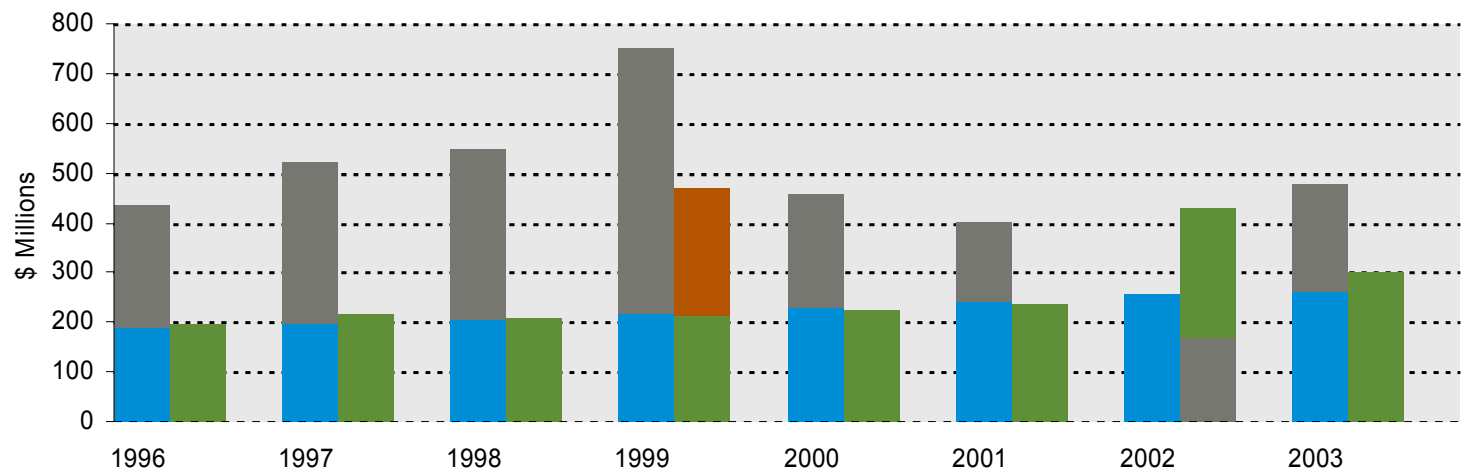
Retirement plan funding anticipates that, over the long term, both net contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

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 eight years. Note: The first bar represents increases in assets during each year while the second bar details the decreases. Investment income is on a market value basis prior to 2000.*

**CHART 6**  
**Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 1996 – 2003**

- Change in asset method
- Benefits paid
- Net investment income
- Net contributions



**SECTION 2: Valuation Results for the State-Boston 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 at the beginning of the year	\$3,204,892,546	\$3,376,177,877
2. Contributions, less benefit payments and expenses during the year	-37,952,893	-2,060,985
3. Average actuarial value of assets: (1) + 50% of (2)	3,185,916,099	3,375,147,385
4. Expected investment income: .08 x (3)	254,873,288	270,011,791
5. Preliminary actuarial value of assets at the end of the year: (1) + (2) + (4)	3,421,812,941	3,644,128,683
6. Market value of assets at the end of the year	3,236,815,933	2,670,743,788
7. Adjustment toward market value: 20% of [(6) - (5)]	-36,999,402	-194,676,979
8. Adjustment to be within 20% corridor	0	-244,559,158
9. Final actuarial value of assets: (5) + (7) + (8)	<u>\$3,384,813,539</u>	<u>\$3,204,892,546</u>
10. Actuarial value as a percentage of market value: (9) ÷ (6)	104.6%	120.0%

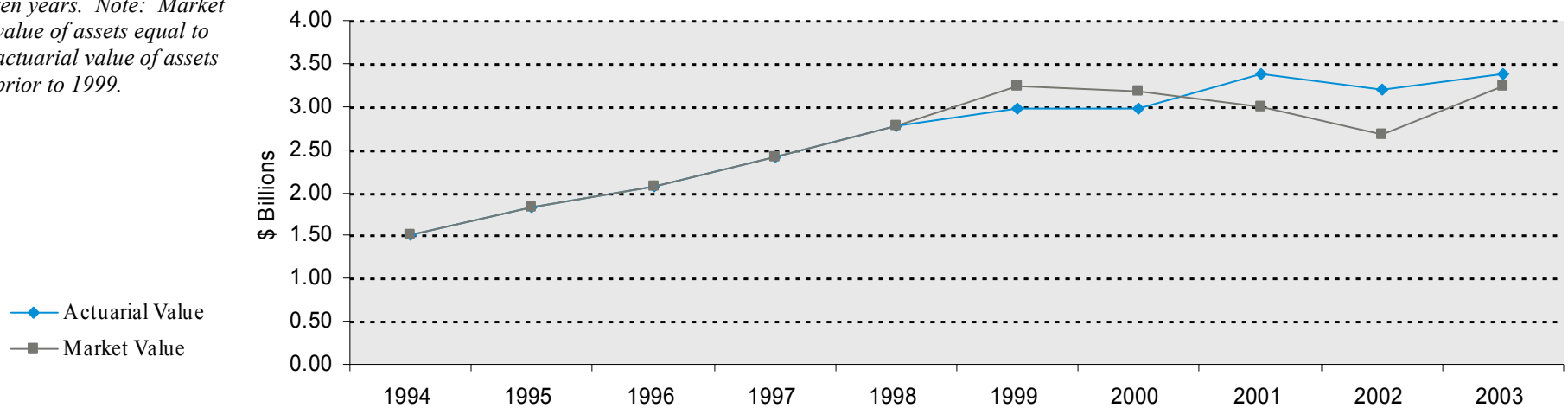
## SECTION 2: Valuation Results for the State-Boston Retirement System

Both the actuarial value and market value of assets are representations of the State-Boston 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 State-Boston Retirement System's liabilities are compared to its 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. Note: Market value of assets equal to actuarial value of assets prior to 1999.*

**CHART 8**

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



**SECTION 2: Valuation Results for the State-Boston 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. To the extent these assumptions are not met, future contribution requirements will be adjusted. If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

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 gain/(loss) is (\$623,859,170), (\$511,374,430) from investments and (\$112,484,740) from all other sources. 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 with interest*	-\$511,374,430
2. Net gain from administrative expenses	4,972,205
3. Net loss from other experience**	<u>-117,456,945</u>
4. Net experience gain/(loss): (1) + (2) + (3)	-\$623,859,170

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\* Details in Chart 10

\*\* Details in Chart 13

**SECTION 2: Valuation Results for the State-Boston 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 State-Boston Retirement System’s investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets is 8.00%. The actual rate of return on an actuarial basis for the 2003 and 2002 plan years was 6.84% and (5.01%), respectively.

Since the actual return for the year was less than the assumed return, the State-Boston 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  
Investment Experience For Year Ended**

	Year Ended	
	December 31, 2003	December 31, 2002
1. Net investment income	\$217,873,886	-\$169,224,346
2. Average actuarial value of assets	3,185,916,099	3,375,147,385
3. Rate of return: (1) ÷ (2)	6.84%	-5.01%
4. Assumed rate of return	8.00%	8.00%
5. Expected net investment income: (2) x (4)	\$254,873,288	\$270,011,791
6. Actuarial gain/(loss): (1) – (5)	<u>-\$36,999,402</u>	<u>-\$439,236,137</u>

**SECTION 2: Valuation Results for the State-Boston 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 eight years, including a five-year average.

Based upon this experience and future expectations, we have maintained the assumed rate of return of 8.00%.

**CHART 11**

**Investment Return – Actuarial Value vs. Market Value: 1996 - 2003**

Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
1996	\$242,465,109	13.37	\$242,465,109	13.37
1997	326,844,858	16.00	326,844,858	16.00
1998	342,723,960	14.54	342,723,960	14.54
1999	279,508,594	10.36	534,161,685	19.80
2000	230,167,878	7.72	-57,650,028	-1.78
2001	163,719,630	5.10	-176,101,089	-5.54
2002	-169,224,346	-5.01	-330,387,570	-11.00
2003	217,873,886	6.84	604,025,038	22.78
Total	\$1,634,079,569		\$1,486,081,963	
	Five-year average return	4.67%		3.89%

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

**SECTION 2: Valuation Results for the State-Boston Retirement System**

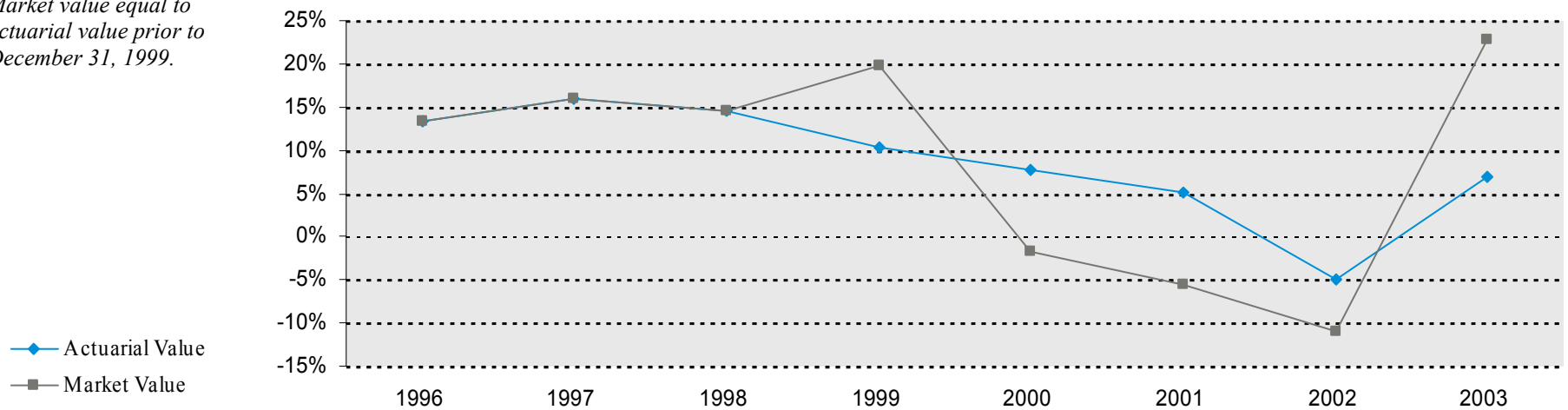
Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

**Administrative Expenses**

Administrative expenses for the years ended December 31, 2003 and 2002 were \$1,996,345 and \$2,145,099, respectively, compared to the assumption of \$4,200,000 per year. This resulted in a gain of \$4,972,205 for the two-year period, including an adjustment for interest. The administrative expense assumption was lowered from \$4,200,000 to \$3,800,000.

*This chart illustrates how this leveling effect has actually worked over the years 1996 - 2003. Note: Market value equal to actuarial value prior to December 31, 1999.*

**CHART 12**  
**Market and Actuarial Rates of Return: December 31, 1996 - 2003**





**SECTION 2: Valuation Results for the State-Boston 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 (\$117,456,945) which is 2.1% of the actuarial accrued liability.

A brief summary of the demographic gain/(loss) experience of the State-Boston Retirement System for the two-year period ending December 31, 2003 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 from Sources Other than Investments and Administrative Expenses for Two-Year Period Ended December 31, 2003**

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1. 2002 ERI	-\$61,810,652
2. Net 3(8)c reimbursements to other systems	-15,067,229
3. Miscellaneous	<u>-40,579,064</u>
4. Total	-\$117,456,945

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## SECTION 2: Valuation Results for the State-Boston 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.

We have determined the fiscal 2005 appropriation using a 19-year increasing (4.5% per year) amortization payment. Exhibit E in Section 3 shows the Funding Schedule for this recommended contribution as well as alternative schedules.

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

#### CHART 14 Recommended Contribution

	Year Beginning January 1			
	2004		2002	
	Amount	% of Payroll	Amount	% of Payroll
1. Total normal cost	\$136,212,414	12.76%	\$136,141,967	12.94%
2. Administrative expenses	3,800,000	0.36%	4,200,000	0.40%
3. Expected employee contributions	<u>95,126,762</u>	<u>8.91%</u>	<u>91,260,867</u>	<u>8.67%</u>
4. Employer normal cost: (1) + (2) - (3)	\$44,885,652	4.20%	\$49,081,100	4.66%
5. Actuarial accrued liability	5,420,841,680		4,796,130,324	
6. Actuarial value of assets	<u>3,384,813,539</u>		<u>3,376,177,877</u>	
7. Unfunded actuarial accrued liability: (5) - (6)	\$2,036,028,141		\$1,419,952,447	
8. Employer normal cost projected to July 1, 2004 and 2002, adjusted for timing	47,684,536	4.37%	52,141,595	4.85%
9. Projected unfunded actuarial accrued liability	2,115,902,512		1,475,657,870	
10. 19-year and 21-year increasing payments on projected unfunded actuarial accrued liability, adjusted for timing	153,170,070	14.04%	99,528,126	9.25%
11. Total recommended contribution: (8) + (10)	200,854,606	18.41%	151,669,721	14.10%
12. Budgeted appropriation	<u>169,953,176</u>	<u>15.57%</u>	<u>155,944,000</u>	<u>14.50%</u>
13. Projected payroll	\$1,091,246,433		\$1,075,838,956	

*Notes: Recommended contributions are assumed to be paid monthly.  
Amortization payments increase at 4.5% per year.*

**SECTION 2: Valuation Results for the State-Boston Retirement System**

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The recommended contribution is based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. It includes all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

**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.*

**CHART 15**

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

<b>Actual Appropriation as of July 1, 2002</b>	\$155,944,000
Expected increase	\$9,359,171
Effect of investment loss	38,470,617
Effect of 2002 ERI	4,650,005
Effect of change in administrative expense assumption	-424,942
Effect of net other changes	<u>-7,144,245</u>
<b>Total change</b>	<u>\$44,910,606</u>
<b>Recommended Contribution as of July 1, 2004</b>	\$200,854,606
<b>Budgeted Appropriation as of July 1, 2004</b>	\$169,953,176

**SECTION 2: Valuation Results for the State-Boston 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.

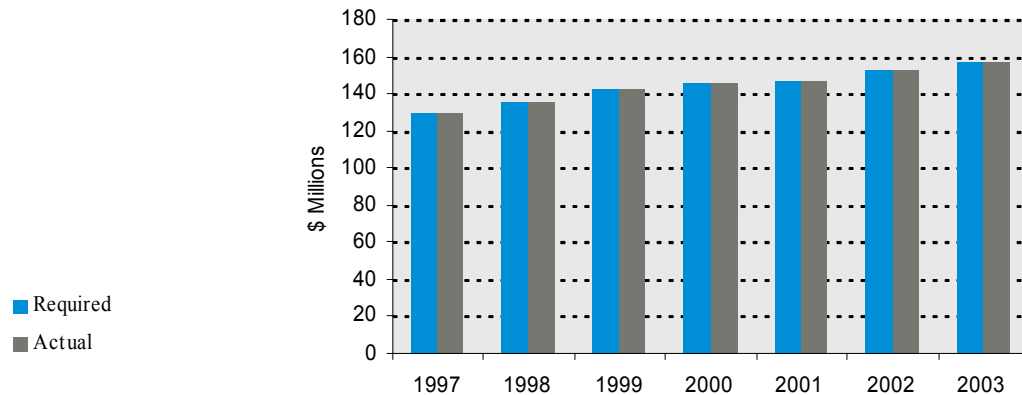
Critical information to GASB is the historical comparison of the GASB required contribution to the actual contributions. This comparison demonstrates whether a plan is being funded on an actuarially sound basis and in accordance with the GASB funding requirements. Chart 16 below presents a graphical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

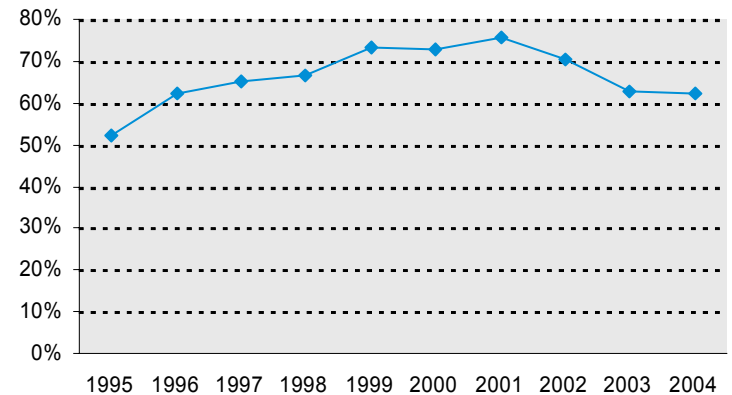
The details regarding the calculations of these values and other GASB numbers may be found in Section 4, Exhibits II, III, and IV.

*These graphs show key GASB factors.*

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



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



**SECTION 3: Supplemental Information for the State-Boston 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	20,456	22,003	-7.0%
Average age	44.6	44.5	N/A
Average service	12.9	12.6	N/A
Total payroll*	\$1,017,821,901	\$1,002,963,447	1.5%
Average payroll*	49,757	45,583	9.2%
Account balances	872,838,111	838,212,396	4.1%
Number with unknown age and/or service information	144	74	94.6%
<b>Inactive employees with vested rights to a return of their employee contributions or a deferred or immediate vested benefit participants</b>			
	5,294	3,560	48.7%
<b>Retired participants:</b>			
Number in pay status	9,538	8,609	10.8%
Average age	72.3	73.6	N/A
Average monthly benefit	\$1,969	\$1,600	23.1%
<b>Disabled participants:</b>			
Number in pay status	1,683	1,652	1.9%
Average age	67.7	67.9	N/A
Average monthly benefit	\$1,975	\$1,715	15.2%
<b>Beneficiaries in pay status</b>			
	2,813	2,883	-2.4%

\* Figures for 2001 include adjustment paid in 2001 for retroactive salary increases for firefighters of 4.5% for fiscal years 1999 and 2000.

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT B**

**Participants in Active Service During Year Ended 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	Unknown
Under 25	573	552	21	--	--	--	--	--	--	--	--
	\$29,831	\$29,827	\$29,917	--	--	--	--	--	--	--	--
25 - 29	1,619	1,282	316	18	--	--	--	--	--	--	3
	\$39,266	\$39,193	\$39,993	436,263	--	--	--	--	--	--	\$11,729
30 - 34	2,371	1,009	949	294	72	--	--	--	--	--	47
	\$45,737	\$39,607	\$50,894	\$51,570	\$44,485	--	--	--	--	--	\$38,625
35 - 39	2,819	763	740	678	567	39	--	--	--	--	32
	\$47,652	\$37,475	\$46,990	\$55,471	\$52,145	\$52,768	--	--	--	--	\$54,108
40 - 44	2,856	597	547	504	895	278	15	--	--	--	20
	\$50,083	\$34,866	\$43,961	\$54,345	\$58,541	\$59,988	\$65,277	--	--	--	\$36,765
45 - 49	3,120	542	494	453	778	530	299	13	--	--	11
	\$50,891	\$34,570	\$40,166	\$49,047	\$57,921	\$60,758	\$65,345	\$67,996	--	--	\$26,821
50 - 54	3,157	377	373	332	630	416	665	335	17	--	12
	\$56,833	\$36,416	\$43,072	\$47,169	\$55,290	\$63,095	\$71,252	\$71,897	\$57,794	--	\$36,366
55 - 59	2,499	250	279	202	423	238	311	623	160	3	10
	\$58,276	\$34,394	\$42,742	\$47,458	\$52,360	\$58,620	\$67,126	\$74,085	\$73,627	\$65,193	\$41,591
60 - 64	1,032	114	159	92	193	96	98	112	147	17	4
	\$51,497	\$30,309	\$36,254	\$42,034	\$46,561	\$58,253	\$57,841	\$66,972	\$75,569	\$67,254	\$14,590
65 - 69	263	45	42	33	53	22	23	22	16	6	1
	\$36,838	\$16,257	\$27,589	\$37,706	\$39,649	\$54,410	\$44,045	\$45,892	\$52,694	\$64,049	\$5,200
70 & over	146	25	20	16	17	13	19	12	5	16	3
	\$31,807	\$13,194	\$25,138	\$32,837	\$30,474	\$42,160	\$36,736	\$35,120	\$48,466	\$53,526	\$528
Unknown	1	1	--	--	--	--	--	--	--	--	--
	\$36,773	\$36,773	--	--	--	--	--	--	--	--	--
Total	20,456	5,557	3,940	2,622	3,628	1,632	1,430	1,117	345	42	143
	\$49,757	\$36,297	\$44,579	\$51,074	\$54,800	\$60,339	\$67,241	\$71,671	\$72,339	\$61,419	\$38,670

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT B (Continued) Boston Housing Authority**  
**Participants in Active Service During Year Ended December 31, 2003**  
**By Age, Years of Service, and Average Payroll**

Age	Years of Service										Unknown	
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over		
Under 25	9	8	1	--	--	--	--	--	--	--	--	--
	\$29,402	\$28,514	\$36,500	--	--	--	--	--	--	--	--	--
25 - 29	48	36	12	--	--	--	--	--	--	--	--	--
	\$35,454	\$35,365	\$35,722	--	--	--	--	--	--	--	--	--
30 - 34	65	44	11	5	4	--	--	--	--	--	--	1
	\$39,319	\$37,900	\$42,570	\$47,175	\$38,796	--	--	--	--	--	--	\$28,811
35 - 39	104	48	17	12	23	3	--	--	--	--	--	1
	\$41,168	\$39,942	\$44,215	\$40,098	\$40,838	\$47,041	--	--	--	--	--	\$50,969
40 - 44	122	50	9	17	37	7	1	--	--	--	--	1
	\$44,773	\$40,894	\$55,849	\$46,267	\$47,899	\$41,640	\$41,839	--	--	--	--	\$22,838
45 - 49	138	43	11	17	32	26	8	1	--	--	--	--
	\$46,953	\$45,923	\$46,955	\$49,272	\$47,035	\$43,926	\$52,966	\$79,715	--	--	--	--
50 - 54	106	36	10	15	25	14	4	2	--	--	--	--
	\$47,624	\$44,498	\$55,711	\$49,718	\$43,325	\$51,028	\$52,667	\$67,595	--	--	--	--
55 - 59	95	31	11	10	24	8	2	9	--	--	--	--
	\$44,674	\$41,380	\$38,214	\$50,859	\$45,830	\$48,768	\$52,600	\$48,565	--	--	--	--
60 - 64	50	12	4	8	10	10	2	2	1	1	--	--
	\$44,573	\$35,400	\$42,746	\$43,944	\$45,378	\$54,947	\$41,351	\$43,103	\$55,781	\$53,361	--	--
65 - 69	19	9	1	5	2	1	--	--	1	--	--	--
	\$38,907	\$35,519	\$73,673	\$35,867	\$39,471	\$50,969	--	--	\$36,642	--	--	--
70 & over	5	1	--	--	--	--	--	3	--	1	--	--
	\$37,255	\$24,937	--	--	--	--	--	\$40,990	--	\$38,367	--	--
Total	761	318	87	89	157	69	17	17	2	2	3	3
	\$43,616	\$40,124	\$45,130	\$46,365	\$45,144	\$47,531	\$50,832	\$50,657	\$46,212	\$45,864	\$34,206	

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT B (Continued) Boston Redevelopment Authority  
Participants in Active Service During Year Ended 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	4	4	--	--	--	--	--	--	--	--
	\$38,846	\$38,846	--	--	--	--	--	--	--	--
25 - 29	8	8	--	--	--	--	--	--	--	--
	\$44,994	\$44,994	--	--	--	--	--	--	--	--
30 - 34	20	11	7	1	1	--	--	--	--	--
	\$58,577	\$56,037	\$66,060	\$59,289	\$33,418	--	--	--	--	--
35 - 39	14	6	4	1	3	--	--	--	--	--
	\$56,329	\$50,323	\$59,748	\$102,018	\$48,554	--	--	--	--	--
40 - 44	13	4	3	1	4	1	--	--	--	--
	\$62,426	\$57,172	\$51,349	\$71,185	\$73,437	\$63,874	--	--	--	--
45 - 49	10	3	2	--	3	--	2	--	--	--
	\$69,172	\$93,522	\$63,394	--	\$61,241	--	\$50,324	--	--	--
50 - 54	13	2	1	1	2	2	4	1	--	--
	\$73,782	\$123,076	\$49,483	\$49,927	\$69,427	\$81,432	\$64,370	\$54,409	--	--
55 - 59	12	2	1	2	2	4	--	1	--	--
	\$65,371	\$55,603	\$66,879	\$58,554	\$44,748	\$81,238	--	\$74,813	--	--
60 - 64	10	--	2	2	2	1	--	2	--	1
	\$67,287	--	\$63,575	\$41,941	\$47,497	\$51,298	--	\$92,391	--	\$130,768
65 - 69	1	--	--	--	--	--	--	--	1	--
	\$56,363	--	--	--	--	--	--	--	\$56,363	--
70 & over	4	1	--	--	--	--	--	--	1	2
	\$62,748	\$58,266	--	--	--	--	--	--	\$80,344	\$56,191
Total	109	41	20	8	17	8	6	4	2	3
	\$61,492	\$57,526	\$61,288	\$60,426	\$57,641	\$75,373	\$59,688	\$78,501	\$68,354	\$81,050



**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT B (Continued) Boston Water & Sewer Commission  
Participants in Active Service During Year Ended December 31, 2003  
By Age, Years of Service, and Average Payroll**

Age	Years of Service										Unknown	
	Total	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & over		
Under 25	29	29	--	--	--	--	--	--	--	--	--	--
	\$32,074	\$32,074	--	--	--	--	--	--	--	--	--	--
25 - 29	32	24	7	1	--	--	--	--	--	--	--	--
	\$35,312	\$35,056	\$36,926	\$30,147	--	--	--	--	--	--	--	--
30 - 34	53	22	21	7	2	--	--	--	--	--	--	1
	\$40,493	\$39,703	\$41,362	\$44,724	\$42,424	--	--	--	--	--	--	\$6,144
35 - 39	81	22	19	20	18	1	--	--	--	--	--	1
	\$46,293	\$40,182	\$46,324	\$50,650	\$49,056	\$49,169	--	--	--	--	--	\$40,383
40 - 44	75	17	12	18	14	13	--	--	--	--	--	1
	\$49,381	\$36,231	\$45,656	\$56,412	\$52,277	\$56,478	--	--	--	--	--	\$58,258
45 - 49	97	9	14	17	23	25	9	--	--	--	--	--
	\$49,677	\$41,936	\$54,925	\$44,392	\$51,423	\$51,808	\$48,852	--	--	--	--	--
50 - 54	57	10	4	7	8	10	10	6	2	--	--	--
	\$57,921	\$43,756	\$81,269	\$58,874	\$46,979	\$59,680	\$54,429	\$79,704	\$65,802	--	--	--
55 - 59	34	3	6	3	5	8	1	3	5	--	--	--
	\$51,834	\$47,685	\$41,821	\$42,506	\$51,543	\$53,371	\$43,129	\$53,650	\$70,418	--	--	--
60 - 64	14	2	2	4	5	--	--	--	1	--	--	--
	\$46,974	\$34,704	\$46,665	\$41,321	\$52,527	--	--	--	\$66,982	--	--	--
65 - 69	1	--	--	--	1	--	--	--	--	--	--	--
	\$55,441	--	--	--	\$55,441	--	--	--	--	--	--	--
70 & over	2	--	--	1	--	1	--	--	--	--	--	--
	\$50,197	--	--	\$43,265	--	\$57,129	--	--	--	--	--	--
Total	475	138	85	78	76	58	20	9	8	--	--	3
	\$47,064	\$37,481	\$46,981	\$49,673	\$50,448	\$54,474	\$51,354	\$71,019	\$68,835	--	--	\$34,928

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT B (Continued) Public Health Commission  
Participants in Active Service During Year Ended 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	Unknown
Under 25	40	40	--	--	--	--	--	--	--	--	--
	\$29,503	\$29,503	--	--	--	--	--	--	--	--	--
25 - 29	103	89	14	--	--	--	--	--	--	--	--
	\$36,224	\$35,039	\$43,760	--	--	--	--	--	--	--	--
30 - 34	151	88	56	1	3	--	--	--	--	--	3
	\$40,390	\$38,698	\$44,960	\$28,449	\$24,501	--	--	--	--	--	\$24,580
35 - 39	159	73	51	24	9	2	--	--	--	--	--
	\$43,635	\$37,602	\$45,640	\$54,016	\$51,837	\$51,201	--	--	--	--	--
40 - 44	124	52	28	10	29	4	1	--	--	--	--
	\$46,916	\$38,746	\$49,615	\$51,439	\$56,990	\$45,472	\$64,554	--	--	--	--
45 - 49	122	35	20	12	19	17	16	2	--	--	1
	\$47,736	\$36,241	\$43,416	\$45,571	\$49,166	\$57,809	\$66,268	\$77,475	--	--	\$7,988
50 - 54	108	23	24	8	15	17	13	7	--	--	1
	\$49,002	\$34,798	\$44,549	\$54,487	\$62,203	\$56,537	\$55,078	\$50,938	--	--	\$20,018
55 - 59	50	9	12	5	8	5	3	5	3	--	--
	\$48,699	\$28,746	\$42,385	\$55,024	\$61,631	\$66,513	\$44,724	\$56,897	\$49,404	--	--
60 - 64	24	9	3	3	3	--	1	1	3	1	--
	\$44,640	\$36,515	\$43,821	\$33,504	\$52,921	--	\$35,873	\$90,150	\$56,512	\$56,426	--
65 - 69	4	2	--	1	--	--	--	--	1	--	--
	\$47,005	\$38,634	--	\$75,133	--	--	--	--	\$35,619	--	--
70 & over	1	1	--	--	--	--	--	--	--	--	--
	\$15,631	\$15,631	--	--	--	--	--	--	--	--	--
Total	886	421	208	64	86	45	34	15	7	1	5
	\$43,557	\$36,135	\$45,312	\$51,136	\$54,788	\$56,905	\$59,144	\$59,077	\$50,481	\$56,426	\$20,349

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT B (Continued) Suffolk County**  
**Participants in Active Service During Year Ended 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	Unknown
Under 25	35	35	--	--	--	--	--	--	--
	\$36,225	\$36,225	--	--	--	--	--	--	--
25 - 29	111	90	20	--	--	--	--	--	1
	\$39,224	\$38,712	\$43,388	--	--	--	--	--	\$2,017
30 - 34	173	40	61	65	6	--	--	--	1
	\$47,522	\$42,083	\$49,364	\$48,941	\$50,618	--	--	--	\$41,897
35 - 39	284	39	60	139	42	1	--	--	3
	\$48,219	\$43,556	\$47,864	\$49,213	\$49,359	\$53,890	--	--	\$52,006
40 - 44	176	24	18	64	52	15	--	--	3
	\$52,349	\$49,107	\$50,325	\$51,611	\$57,720	\$51,598	--	--	\$16,808
45 - 49	125	16	9	43	21	27	9	--	--
	\$54,092	\$55,515	\$40,461	\$52,142	\$53,991	\$61,568	\$52,317	--	--
50 - 54	71	10	10	26	8	7	7	3	--
	\$52,512	\$48,859	\$52,967	\$48,517	\$53,880	\$60,715	\$56,524	\$65,646	--
55 - 59	39	2	6	17	6	3	4	--	1
	\$51,126	\$37,220	\$51,680	\$50,083	\$55,907	\$59,695	\$47,612	--	\$52,990
60 - 64	12	3	1	4	3	--	--	1	--
	\$42,968	\$36,898	\$40,071	\$39,595	\$44,349	--	--	\$73,422	--
65 - 69	2	--	--	1	--	--	--	1	--
	\$47,457	--	--	\$46,526	--	--	--	\$48,388	--
70 & over	1	--	--	--	--	--	--	--	1
	\$1,140	--	--	--	--	--	--	--	\$1,140
Total	1,029	259	185	359	138	53	20	5	10
	\$48,441	\$41,987	\$48,111	\$49,818	\$53,707	\$58,383	\$52,849	\$63,750	\$30,449

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT B (Continued) Teachers**  
**Participants in Active Service During Year Ended 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	Unknown
Under 25	136	134	2	--	--	--	--	--	--	--	--
	\$41,364	\$41,338	\$43,110	--	--	--	--	--	--	--	--
25 - 29	588	512	72	3	--	--	--	--	--	--	1
	\$46,690	\$46,194	\$50,854	\$42,748	--	--	--	--	--	--	\$12,496
30 - 34	694	317	281	70	8	--	--	--	--	--	18
	\$54,416	\$50,027	\$57,195	\$63,720	\$49,127	--	--	--	--	--	\$54,489
35 - 39	553	181	137	162	59	6	--	--	--	--	8
	\$56,999	\$50,573	\$56,686	\$62,103	\$62,902	\$53,549	--	--	--	--	\$63,463
40 - 44	564	125	109	107	191	30	--	--	--	--	2
	\$61,109	\$50,852	\$59,626	\$64,370	\$66,126	\$69,116	--	--	--	--	\$9,290
45 - 49	737	122	89	102	229	109	84	--	--	--	2
	\$64,767	\$52,235	\$59,673	\$66,378	\$68,063	\$69,547	\$71,830	--	--	--	\$39,092
50 - 54	1,150	85	85	109	267	136	307	158	--	--	3
	\$69,697	\$56,112	\$62,846	\$65,806	\$69,152	\$71,097	\$74,329	\$74,890	--	--	\$27,429
55 - 59	1,032	59	60	63	182	94	119	350	102	--	3
	\$70,027	\$50,581	\$62,415	\$63,601	\$68,666	\$69,375	\$73,024	\$74,126	\$76,748	--	\$16,890
60 - 64	300	18	22	22	63	42	31	26	70	5	1
	\$69,540	\$47,749	\$58,576	\$64,828	\$68,380	\$72,757	\$71,601	\$76,474	\$76,332	\$73,970	\$2,772
65 - 69	57	2	5	5	12	11	7	8	5	2	--
	\$64,992	\$24,819	\$60,637	\$64,248	\$58,272	\$72,306	\$71,187	\$62,365	\$74,957	\$81,909	--
70 & over	21	1	1	2	6	2	5	--	1	3	--
	\$66,675	\$32,670	\$63,455	\$67,977	\$59,540	\$68,118	\$74,003	--	\$66,052	\$79,515	--
Total	5,832	1,556	863	645	1,017	430	553	542	178	10	38
	\$62,234	\$48,604	\$58,097	\$64,140	\$67,498	\$70,124	\$73,473	\$74,288	\$76,474	\$77,221	\$45,618

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT B (Continued) All Others**  
**Participants in Active Service During Year Ended 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	Unknown
Under 25	320	302	18	--	--	--	--	--	--	--	--
	\$23,967	\$23,721	\$28,086	--	--	--	--	--	--	--	--
25 - 29	729	523	191	14	--	--	--	--	--	--	1
	\$34,076	\$33,494	\$35,647	\$35,311	--	--	--	--	--	--	\$20,674
30 - 34	1,215	487	512	145	48	--	--	--	--	--	23
	\$41,550	\$32,564	\$48,629	\$47,471	\$44,984	--	--	--	--	--	\$29,739
35 - 39	1,624	394	452	320	413	26	--	--	--	--	19
	\$45,172	\$30,186	\$44,107	\$55,674	\$51,688	\$53,465	--	--	--	--	\$51,388
40 - 44	1,782	325	368	287	568	208	13	--	--	--	13
	\$46,893	\$25,772	\$38,174	\$51,609	\$56,888	\$60,373	\$67,136	--	--	--	\$45,016
45 - 49	1,891	314	349	262	451	326	171	10	--	--	8
	\$45,728	\$24,124	\$34,058	\$42,239	\$54,405	\$59,935	\$64,381	\$64,929	--	--	\$26,108
50 - 54	1,652	211	239	166	305	230	320	158	15	--	8
	\$48,996	\$25,519	\$34,283	\$33,627	\$43,957	\$59,644	\$70,122	\$69,819	\$56,726	--	\$41,761
55 - 59	1,237	144	183	102	196	116	182	255	50	3	6
	\$50,239	\$26,001	\$36,192	\$36,274	\$37,631	\$49,798	\$64,359	475,504	\$69,036	\$65,193	\$52,041
60 - 64	622	70	125	49	107	43	64	80	72	9	3
	\$43,628	\$23,746	\$31,302	\$32,272	\$33,412	\$45,018	\$52,035	\$63,474	\$76,016	\$59,212	\$18,529
65 - 69	179	32	36	21	38	10	16	13	8	4	1
	\$27,094	\$8,906	\$21,719	\$29,622	\$33,363	\$35,069	\$32,171	\$35,563	\$42,461	\$55,119	\$5,200
70 & over	112	21	19	13	11	10	14	9	3	10	2
	\$24,011	\$9,445	\$23,121	\$26,629	\$14,619	\$35,471	\$23,426	\$33,163	\$31,978	\$46,712	\$222
Unknown	1	1	--	--	--	--	--	--	--	--	--
	\$36,773	\$36,773	--	--	--	--	--	--	--	--	--
Total	11,364	2,824	2,492	1,379	2,137	969	780	525	148	26	84
	\$44,367	\$28,221	\$39,339	\$45,615	\$49,669	\$57,402	\$64,368	\$70,044	\$68,996	\$54,465	\$37,889

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT C**

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

	<b>Year Ended December 31, 2003</b>	<b>Year Ended December 31, 2002</b>
<b>Contribution income:</b>		
Employer contributions	\$158,243,772	\$156,085,648
Employee contributions	100,900,869	98,611,982
Other contributions	4,942,603	4,826,625
Less administrative expenses	<u>-1,996,345</u>	<u>-2,145,099</u>
Net contribution income	\$262,090,899	\$257,379,156
<b>Net investment income</b>	<u>217,873,886</u>	<u>-169,224,346</u>
<b>Total income available for benefits</b>	\$479,964,785	\$88,154,810
<b>Less benefit payments:</b>		
Pensions and annuities	\$281,607,379	\$241,806,012
Net 3(8)c reimbursements	8,288,358	6,778,871
Refunds to members	<u>10,148,055</u>	<u>10,855,258</u>
Net benefit payments	\$300,043,792	\$259,440,141
<b>Change in reserve for future benefits</b>	\$179,920,993	-\$171,285,331

**SECTION 3: Supplemental Information for the State-Boston 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>
1999	\$147,225,211	\$70,973,269	\$2,591,390	\$279,508,594	\$1,846,794	\$214,187,596	\$2,979,952,843
2000	143,856,789	82,030,990	4,381,849	230,167,878	1,787,246	226,911,018	3,211,692,085
2001	149,820,000	88,766,628	2,945,817	163,719,630	2,129,838	238,636,445	3,376,177,877
2002	156,085,648	98,611,982	4,826,625	-169,224,346	2,145,099	259,440,141	3,204,892,546
2003	158,243,772	100,900,869	4,942,603	217,873,886	1,996,345	300,043,792	3,384,813,539

\* *Net of investment fees*

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT E**

**Funding Schedules  
19-Year Schedule**

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Unfunded Liability	(4) Total Employer Contributions: (2) + (3)	(5) Unfunded Actuarial Accrued Liability
2005	\$47,684,536	\$122,268,640	\$169,953,176	\$2,115,902,512
2006	49,830,340	162,480,512	212,310,852	2,158,109,414
2007	52,072,705	169,792,135	221,864,840	2,161,903,467
2008	54,415,977	177,432,781	231,848,758	2,158,402,582
2009	56,864,696	185,417,256	242,281,952	2,146,681,234
2010	59,423,607	193,761,032	253,184,639	2,125,724,468
2011	62,097,669	202,480,279	264,577,948	2,094,420,054
2012	64,892,064	211,591,891	276,483,955	2,051,549,981
2013	67,812,207	221,113,526	288,925,733	1,995,781,236
2014	70,863,756	231,063,635	301,927,391	1,925,655,818
2015	74,052,625	241,461,499	315,514,124	1,839,579,910
2016	77,384,993	252,327,266	329,712,259	1,735,812,153
2017	80,867,318	263,681,993	344,549,311	1,612,450,938
2018	84,506,347	275,547,683	360,054,030	1,467,420,648
2019	88,309,133	287,947,328	376,256,461	1,298,456,748
2020	92,283,044	300,904,958	393,188,002	1,103,089,646
2021	96,435,781	314,445,681	410,881,462	878,627,213
2022	100,775,391	328,595,737	429,371,128	622,135,852
2023	105,310,284	343,382,545	448,692,829	330,420,013
2024	110,049,247	-	110,049,247	-
2025	115,001,463	-	115,001,463	-
2026	120,176,529	-	120,176,529	-
2027	125,584,473	-	125,584,473	-
2028	131,235,774	-	131,235,774	-

*Notes: Amortization payments increase at 4.5% per year.  
Recommended contributions are assumed to be paid monthly.  
Fiscal 2005 appropriation set to the prior budgeted amount.*



**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT E (Continued)  
Funding Schedule  
20-Year Schedule**

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Unfunded Liability	(4) Total Employer Contributions: (2) + (3)	(5) Unfunded Actuarial Accrued Liability
2005	\$47,684,536	\$122,268,640	\$169,953,176	\$2,115,902,512
2006	49,830,340	156,225,426	206,055,766	2,158,109,414
2007	52,072,705	163,255,570	215,328,275	2,168,403,942
2008	54,415,977	170,602,070	225,018,047	2,172,216,093
2009	56,864,696	178,279,163	235,143,859	2,168,698,509
2010	59,423,607	186,301,726	245,725,333	2,156,921,248
2011	62,097,669	194,685,303	256,782,972	2,135,864,515
2012	64,892,064	203,446,142	268,338,206	2,104,410,773
2013	67,812,207	212,601,219	280,413,426	2,061,336,202
2014	70,863,756	222,168,273	293,032,029	2,005,301,431
2015	74,052,625	232,165,846	306,218,471	1,934,841,503
2016	77,384,993	242,613,309	319,998,302	1,848,354,999
2017	80,867,318	253,530,908	334,398,226	1,744,092,252
2018	84,506,347	264,939,798	349,446,145	1,620,142,585
2019	88,309,133	276,862,089	365,171,222	1,474,420,477
2020	92,283,044	289,320,883	381,603,927	1,304,650,592
2021	96,435,781	302,340,323	398,776,104	1,108,351,558
2022	100,775,391	315,945,638	416,721,029	882,818,402
2023	105,310,284	330,163,191	435,473,475	625,103,536
2024	110,049,247	345,020,535	455,069,782	331,996,165
2025	115,001,463	-	115,001,463	-
2026	120,176,529	-	120,176,529	-
2027	125,584,473	-	125,584,473	-
2028	131,235,774	-	131,235,774	-

*Notes: Amortization payments increase at 4.5% per year.  
Recommended contributions are assumed to be paid monthly.  
Fiscal 2005 appropriation set to the prior budgeted amount.*

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT E (Continued)  
Funding Schedule  
21-Year Schedule**

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Unfunded Liability	(4) Total Employer Contributions: (2) + (3)	(5) Unfunded Actuarial Accrued Liability
2005	\$47,684,536	\$122,268,640	\$169,953,176	\$2,115,902,512
2006	49,830,340	150,615,038	200,445,378	2,158,109,414
2007	52,072,705	157,392,714	209,465,419	2,174,234,429
2008	54,415,977	164,475,387	218,891,364	2,184,605,877
2009	56,864,696	171,876,779	228,741,475	2,188,446,512
2010	59,423,607	179,611,234	239,034,841	2,184,902,645
2011	62,097,669	187,693,740	249,791,409	2,173,037,386
2012	64,892,064	196,139,958	261,032,022	2,151,823,321
2013	67,812,207	204,966,256	272,778,463	2,120,134,563
2014	70,863,756	214,189,737	285,053,493	2,076,738,146
2015	74,052,625	223,828,276	297,880,901	2,020,284,693
2016	77,384,993	233,900,548	311,285,541	1,949,298,301
2017	80,867,318	244,426,073	325,293,391	1,862,165,585
2018	84,506,347	255,425,246	339,931,593	1,757,123,806
2019	88,309,133	266,919,382	355,228,515	1,632,248,008
2020	92,283,044	278,930,754	371,213,798	1,485,437,090
2021	96,435,781	291,482,638	387,918,419	1,314,398,714
2022	100,775,391	304,599,357	405,374,748	1,116,632,967
2023	105,310,284	318,306,328	423,616,612	889,414,667
2024	110,049,247	332,630,113	442,679,360	629,774,201
2025	115,001,463	347,598,468	462,599,931	334,476,784
2026	120,176,529	-	120,176,529	-
2027	125,584,473	-	125,584,473	-
2028	131,235,774	-	131,235,774	-

*Notes: Amortization payments increase at 4.5% per year.  
Recommended contributions are assumed to be paid monthly.  
Fiscal 2005 appropriation set to the prior budgeted amount.*

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT E (Continued)  
Funding Schedule  
22-Year Schedule**

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Unfunded Liability	(4) Total Employer Contributions: (2) + (3)	(5) Unfunded Actuarial Accrued Liability
2005	\$47,684,536	\$122,268,640	\$169,953,176	\$2,115,902,512
2006	49,830,340	145,557,172	195,387,512	2,158,109,414
2007	52,072,705	152,107,245	204,179,950	2,179,490,717
2008	54,415,977	158,952,071	213,368,048	2,195,775,489
2009	56,864,696	166,104,914	222,969,610	2,206,249,691
2010	59,423,607	173,579,635	233,003,242	2,210,128,377
2011	62,097,669	181,390,719	243,488,388	2,206,549,399
2012	64,892,064	189,553,301	254,445,365	2,194,566,587
2013	67,812,207	198,083,199	265,895,406	2,173,142,345
2014	70,863,756	206,996,943	277,860,699	2,141,139,634
2015	74,052,625	216,311,806	290,364,431	2,097,313,271
2016	77,384,993	226,045,837	303,430,830	2,040,300,510
2017	80,867,318	236,217,900	317,085,218	1,968,610,826
2018	84,506,347	246,847,705	331,354,052	1,880,614,850
2019	88,309,133	257,955,852	346,264,985	1,774,532,378
2020	92,283,044	269,563,865	361,846,909	1,648,419,383
2021	96,435,781	281,694,239	378,130,020	1,500,153,948
2022	100,775,391	294,370,480	395,145,871	1,327,421,023
2023	105,310,284	307,617,152	412,927,436	1,127,695,928
2024	110,049,247	321,459,923	431,509,170	898,226,481
2025	115,001,463	335,925,620	450,927,083	636,013,647
2026	120,176,529	351,042,273	471,218,802	337,790,593
2027	125,584,473	-	125,584,473	-
2028	131,235,774	-	131,235,774	-

*Notes: Amortization payments increase at 4.5% per year.  
Recommended contributions are assumed to be paid monthly.  
Fiscal 2005 appropriation set to the prior budgeted amount.*

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT E (Continued)  
Funding Schedule  
23-Year Schedule**

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Unfunded Liability	(4) Total Employer Contributions: (2) + (3)	(5) Unfunded Actuarial Accrued Liability
2005	\$47,684,536	\$122,268,640	\$169,953,176	\$2,115,902,512
2006	49,830,340	140,976,408	190,806,748	2,158,109,414
2007	52,072,705	147,320,346	199,393,051	2,184,251,187
2008	54,415,977	153,949,762	208,365,739	2,205,891,488
2009	56,864,696	160,877,501	217,742,197	2,222,373,522
2010	59,423,607	168,116,988	227,540,595	2,232,974,600
2011	62,097,669	175,682,253	237,779,922	2,236,900,269
2012	64,892,064	183,587,954	248,480,018	2,233,277,938
2013	67,812,207	191,849,412	259,661,619	2,221,149,975
2014	70,863,756	200,482,636	271,346,392	2,199,466,215
2015	74,052,625	209,504,354	283,556,979	2,167,075,846
2016	77,384,993	218,932,050	296,317,043	2,122,718,602
2017	80,867,318	228,783,992	309,651,310	2,065,015,230
2018	84,506,347	239,079,272	323,585,619	1,992,457,149
2019	88,309,133	249,837,839	338,146,972	1,903,395,253
2020	92,283,044	261,080,542	353,363,586	1,796,027,774
2021	96,435,781	272,829,167	369,264,948	1,668,387,138
2022	100,775,391	285,106,479	385,881,870	1,518,325,722
2023	105,310,284	297,936,271	403,246,555	1,343,500,436
2024	110,049,247	311,343,403	421,392,650	1,141,356,016
2025	115,001,463	325,353,856	440,355,319	909,106,942
2026	120,176,529	339,994,779	460,171,308	643,717,852
2027	125,584,473	355,294,544	480,879,017	341,882,341
2028	131,235,774	-	131,235,774	-

*Notes: Amortization payments increase at 4.5% per year.  
Recommended contributions are assumed to be paid monthly.  
Fiscal 2005 appropriation set to the prior budgeted amount.*

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT E (Continued)**  
**Funding Schedule**  
**24-Year Schedule**

(1) Fiscal Year Ended June 30	(2) Employer Normal Cost	(3) Amortization of Unfunded Liability	(4) Total Employer Contributions: (2) + (3)	(5) Unfunded Actuarial Accrued Liability
2005	\$47,684,536	\$122,268,640	\$169,953,176	\$2,115,902,512
2006	49,830,340	136,810,438	186,640,778	2,158,109,414
2007	52,072,705	142,966,908	195,039,613	2,188,580,589
2008	54,415,977	149,400,418	203,816,395	2,215,091,468
2009	56,864,696	156,123,437	212,988,133	2,237,037,316
2010	59,423,607	163,148,992	222,572,599	2,253,752,066
2011	62,097,669	170,490,697	232,588,366	2,264,502,826
2012	64,892,064	178,162,778	243,054,842	2,268,483,922
2013	67,812,207	186,180,103	253,992,310	2,264,810,445
2014	70,863,756	194,558,208	265,421,964	2,252,511,242
2015	74,052,625	203,313,327	277,365,952	2,230,521,321
2016	77,384,993	212,462,427	289,847,420	2,197,673,620
2017	80,867,318	222,023,236	302,890,554	2,152,690,079
2018	84,506,347	232,014,282	316,520,629	2,094,171,971
2019	88,309,133	242,454,924	330,764,057	2,020,589,415
2020	92,283,044	253,365,396	345,648,440	1,930,270,020
2021	96,435,781	264,766,839	361,202,620	1,821,386,579
2022	100,775,391	276,681,346	377,456,737	1,691,943,735
2023	105,310,284	289,132,007	394,442,291	1,539,763,544
2024	110,049,247	302,142,947	412,192,194	1,362,469,831
2025	115,001,463	315,739,380	430,740,843	1,157,471,256
2026	120,176,529	329,947,652	450,124,181	921,942,967
2027	125,584,473	344,795,296	470,379,769	652,806,746
2028	131,235,774	360,311,085	491,546,859	346,709,503

*Notes: Amortization payments increase at 4.5% per year.  
Recommended contributions are assumed to be paid monthly.  
Fiscal 2005 appropriation set to the prior budgeted amount.*

**SECTION 3: Supplemental Information for the State-Boston Retirement System**

**EXHIBIT F**

**Department Results**

The total employer contributions will be allocated to each department based on the fiscal year payroll shown below. These results are based on a 19-year funding schedule with amortization payments increasing at 4.5%.

**Department Allocation of Cost**

<b>Department</b>	<b>Fiscal Year Payroll</b>	<b>Allocation of Cost</b>
Boston Housing Authority	\$35,590,027	\$5,542,871
Boston Redevelopment Authority	7,181,555	1,118,472
Boston Water and Sewer Commission	23,963,988	3,732,205
Public Housing Commission	41,303,888	6,432,760
Suffolk County	53,434,072	8,321,943
Teachers*	389,004,073	60,584,370
All other	<u>540,768,830</u>	<u>84,220,555</u>
Total	\$1,091,246,433	\$169,953,176

\* *Actual reimbursement based on pensions paid.*

### SECTION 3: Supplemental Information for the State-Boston Retirement System

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#### EXHIBIT G

#### 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 State-Boston 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 State-Boston 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 2,813 beneficiaries in pay status)	14,034
2. Participants active during the year ended December 31, 2003 (including 144 participants with unknown age and/or years of service) with total accumulated contributions of \$872,838,111 and projected payroll of \$1,067,492,155	20,456
3. Inactive participants as of December 31, 2003 with vested rights to a return of their employee contributions or a deferred or immediate vested benefit	5,294

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

1. Total normal cost	\$136,212,414
2. Administrative expenses	3,800,000
3. Expected employee contributions	95,126,762
4. Employer normal cost: (1) + (2) – (3)	44,885,652
5. Actuarial accrued liability	5,420,841,680
Pensioners and beneficiaries	\$2,752,737,677
Active participants	2,611,620,736
Inactive participants	56,483,267
6. Actuarial value of assets (\$3,236,815,933 at market value)	3,384,813,539
7. Unfunded actuarial accrued liability	2,036,028,141

The actuarial factors projected to July 1, 2004 are as follows:

1. Projected employer normal cost, adjusted for timing	\$47,684,536
2. Projected unfunded actuarial accrued liability	2,115,902,512
3. 19-year payment on projected unfunded actuarial accrued liability, adjusted for timing	153,170,070
4. Total recommended contribution: (1) + (3)	200,854,606
5. Budgeted appropriation	169,953,167
6. Projected payroll	1,091,246,433

*Notes: Payments increase at 4.50% per year.  
Recommended contributions are assumed to be paid monthly.*

**SECTION 4: Reporting Information for the State-Boston 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>
1997	\$129,752,000	\$129,752,000	100.0%
1998	135,695,000	135,695,000	100.0%
1999	142,502,000	142,502,000	100.0%
2000	145,541,000	145,541,000	100.0%
2001	146,882,000	146,882,000	100.0%
2002	152,882,000	152,882,000	100.0%
2003	157,064,000	157,064,000	100.0%

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**SECTION 4: Reporting Information for the State-Boston 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>
01/01/1995	\$1,509,000,000	\$2,901,000,000	\$1,392,000,000	52.00%	\$713,000,000	195.10%
01/01/1996	1,834,000,000	2,940,000,000	1,106,000,000	62.40%	777,000,000	142.30%
01/01/1997	2,062,000,000	3,173,000,000	1,111,000,000	64.99%	735,000,000	151.16%
01/01/1998	2,411,000,000	3,614,000,000	1,203,000,000	66.71%	768,000,000	156.64%
01/01/1999	2,772,000,000	3,793,000,000	1,021,000,000	73.08%	803,000,000	127.15%
01/01/2000	2,979,953,000	4,101,383,000	1,121,430,000	72.66%	943,167,000	118.90%
01/01/2001	3,211,692,000	4,256,714,000	1,045,022,000	75.45%	990,325,000	105.52%
01/01/2002	3,371,716,000	4,796,130,000	1,424,414,000	70.30%	1,052,420,000	135.35%
01/01/2003	3,204,893,000	5,121,319,000	1,916,426,000	62.58%	1,099,779,000	174.26%
01/01/2004	3,384,814,000	5,420,842,000	2,036,028,000	62.44%	1,067,492,000	190.73%

**SECTION 4: Reporting Information for the State-Boston 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>	Payments increasing at 4.50% per year
<b>Remaining amortization period</b>	19 years remaining as of January 1, 2004
<b>Asset valuation method</b>	Five-year smoothing of investment returns greater/(less) than expected
<b>Actuarial assumptions:</b>	
Investment rate of return	8.00%
Projected salary increases	6.00%
Cost of living adjustments	3.00% for the first \$12,000 of retirement income
<b>Plan membership:</b>	
Retired participants and beneficiaries receiving benefits	14,034
Terminated participants entitled to, but not yet receiving benefits	5,294
Active participants	<u>20,456</u>
Total	39,784

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**SECTION 4: Reporting Information for the State-Boston Retirement System**

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**EXHIBIT V**

**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 benefits

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**Termination Rates before Retirement:**

Age	Groups 1 and 2 - Rate (%)			
	Mortality		Disability	Withdrawal
	Male	Female		
20	0.05	0.03	0.06	6.58
25	0.07	0.03	0.09	5.27
30	0.08	0.04	0.11	4.83
35	0.09	0.05	0.15	4.47
40	0.11	0.07	0.22	3.84
45	0.16	0.10	0.36	3.21
50	0.26	0.14	0.61	1.52
55	0.44	0.23	1.01	0.33
60	0.80	0.44	1.63	0.00

*Notes: 50% of the disability rates shown represent accidental disability.  
 20% of the accidental disabilities will die from the same cause as the disability.  
 20% of the death rates shown represent accidental death.*

**SECTION 4: Reporting Information for the State-Boston Retirement System**

Age	Group 4 - Rate (%)			
	Mortality		Disability	Withdrawal
	Male	Female		
20	0.05	0.03	0.12	0.00
25	0.07	0.03	0.17	0.00
30	0.08	0.04	0.22	0.00
35	0.09	0.05	0.29	0.00
40	0.11	0.07	0.44	0.00
45	0.16	0.10	0.72	0.00
50	0.26	0.14	1.21	0.00
55	0.44	0.23	2.02	0.00
60	0.80	0.44	3.25	0.00

*Notes: 90% of the disability rates shown represent accidental disability.  
 60% of the accidental disabilities will die from the same cause as the disability.  
 50% of the death rates shown represent accidental death.*

**Retirement Rates:**

Age	Rate (%)			
	Groups 1 and 2	TARP	Age	Group 4
55	3.0	3.0	50	1.0
56	3.0	7.5	51	1.0
57	3.0	25.0	52	1.0
58	3.0	25.0	53	1.0
59	3.0	25.0	54	1.0
60	8.0	18.0	55	10.0
61	8.0	18.0	56	5.0
62	15.0	25.0	57	5.0
63	10.0	20.0	58	5.0
64	10.0	20.0	59	5.0
65	35.0	35.0	60	10.0
66	20.0	20.0	61	15.0

**SECTION 4: Reporting Information for the State-Boston Retirement System**

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**Retirement Rates (continued):**

		Rate (%)			
	Age	Groups 1 and 2	TARP	Age	Group 4
	67	20.0	20.0	62	15.0
	68	20.0	20.0	63	15.0
	69	20.0	20.0	64	25.0
	70	100.00	100.0	65	100.00

**Unknown Data for Participants:** Same as those exhibited by participants with similar known characteristics.

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

**Percent Married:** 75%

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**Net Investment Return:** 8.00%

**Salary Increases:**

Age	Present salary as a percent of salary at 65	Annual increase rate (%)
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 4.5%.*

**Interest on Employee Contributions:** 3.5%

**Administrative Expenses:** \$3,800,000 for calendar 2004 (previously, \$4,200,000 for calendar 2002)

## SECTION 4: Reporting Information for the State-Boston Retirement System

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<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 of assets is added to the preliminary actuarial value. In order that the actuarial value not differ too significantly from the market value of assets, the final actuarial value of assets must be within 20% of the market value of assets.
<b>Actuarial Cost Method:</b>	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.
<b>Changes in Assumptions:</b>	The expense assumption has been changed from \$4,200,000 for calendar 2002 to \$3,800,000 for calendar 2004.



**SECTION 4: Reporting Information for the State-Boston 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.

**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 State-Boston Retirement System

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TARP – Chapter 114 of the Acts of 2000 provides enhanced retirement benefits to teachers who elect to participate in the program and to all teachers hired on or after July 1, 2001. The retirement allowance of a participating teacher with 30 or more years of service is increased by an additional 2 percent for each full year of creditable service in excess of 24 years, up to the statutory maximum of 80 percent of the member's three-year salary average.

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.

Teachers who elect to participate in TARP and all teachers hired on or after July 1, 2001 contribute 11 percent of their salary.

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.

## **SECTION 4: Reporting Information for the State-Boston Retirement System**

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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).

### **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 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.

### **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.

### **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. 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.

## SECTION 4: Reporting Information for the State-Boston Retirement System

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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.

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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 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.

### Changes in Plan Provisions:

There have been no changes in plan provisions since the last valuation.