Commonwealth of Massachusetts

ACTUARIAL VALUATION REPORT

As of January 1, 2000

for the State

Contributory Retirement System

Public Employee Retirement Administration Commission

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SECTION I
INTRODUCTION AND CERTIFICATION

This report presents the results of the actuarial valuation of the State Employees' Contributory Retirement System.

The valuation was performed as of January 1, 2000 pursuant to Chapter 32 of the General Laws of the Commonwealth of Massachusetts. The actuarial assumptions used to calculate the accrued liability and the normal cost are the same as those used in the actuarial valuation as of January 1, 1998. Also, the figures in the valuation reflect a continuation of the phase-in methodology, adopted as part of the January 1, 1998 valuation, from using market value of assets to a market related or actuarial value of assets. The actuarial value methodology reduces the potential volatility of the market value approach. However, the unfunded liability as of January 1, 2000 increases as a result of the phase-in. In this valuation, assets are valued at 91% of market value. The 1998 report used 97% of market value as the actuarial value of assets. It is our opinion that the actuarial assumptions used in this report are each reasonably related to plan experience and expectations and represent our best estimate of anticipated experience under the system.

We are in the process of conducting an experience study for the Commonwealth. Any change in assumptions due to the results of this study would be reflected in the January 1, 2001 actuarial valuation.

This valuation was based on member data as of December 31, 1999, which was supplied by the State Retirement Board. Such tests as we deemed necessary were performed on the data to ensure accuracy. Asset information as of December 31, 1999 was provided by the Pension Reserve Investment Management Board.

In our opinion, this report represents an accurate appraisal of the actuarial status of the State Employees' Contributory Retirement System performed in accordance with generally accepted actuarial principles and practices relating to pension plans.

Respectfully submitted,
Public Employee Retirement Administration Commission

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JAMES R. LAMENZO
Member of the American Academy of Actuaries
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Joseph E. Connarton
Executive Director
Dated: June 30, 2000

SECTION II
SUMMARY DISCUSSION

PART A Costs under Current Valuation

Section 22C of G.L., c. 32 mandates the establishment of a funding schedule for the Commonwealth of Massachusetts pension obligation. The schedule, as mandated by law, calls for payment of the Normal Cost plus an amortization payment on the Unfunded Actuarial Liability. The provisions of Chapter 32, Section 22C require amortization payments such that the Unfunded Actuarial Liability is reduced to 0 by June 30, 2018.

The principal results of the January 1, 2000 actuarial valuation are as follows (000 omitted):

Total Normal Cost	$488,747
Employee Contributions	273,714
Net Normal Cost	$215,033
Total Actuarial Liability	$14,137,893
Assets (91% of market value)	13,364,445
Unfunded Actuarial Liability	$773,448

Please see page 8 for more detail of these amounts.

SECTION II
SUMMARY DISCUSSION (Continued)

PART B Comparison with Prior Valuation

Below we have shown the comparison between the current valuation and the January 1, 1998 valuation ($000's omitted).

	1/1/00	1/1/98	Increase (Decrease)	Increase (Decrease)
Total Normal Cost	$488,747	$406,905	$81,842	20.1%
Employee Contributions	273,714	250,194	23,520	9.4%
Net Normal Cost	$215,033	$156,711	$58,322	37.2%
Actuarial Liability				
Actives	$8,153,972	$6,039,252	$2,114,720	35.0%
Retirees and Inactives	5,983,921	5,321,759	662,162	12.4%
Total	$14,137,893	$11,361,011	$2,776,882	24.4%
Assets (Actuarial Value)	13,364,445	9,914,030	3,450,415	34.8%
Unfunded Actuarial Liability	**$773,448**	**$1,446,981**	**$(673,533)**	**(46.5%)**
Funded Ratio	**94.5%**	**87.3%**	**7.2%**	

The development of the actuarial gain/(loss) based on the January 1, 2000 valuation is displayed on Page 9. The difference between this amount and the actual Unfunded Actuarial Liability is known as the Actuarial Gain or Loss. For the period from January 1, 1998 to January 1, 2000, the Actuarial Gain was $2.54 billion. The figure primarily reflects an asset gain over the two year period.

In 1999 PERAC tested and implemented new actuarial software. Based on the new software, the unfunded liability as of January 1, 1998 would have been approximately $2.2 billion and the funded ratio 81.7%.

We estimated the accrued liability for members who transferred to the State system as the result of county abolition, since the credited service provided only reflects State service. We estimated service for these members based on the annuity savings fund balances provided as of December 31, 1999. The total estimated accrued liability for these members is $250 million.

SECTION II
SUMMARY DISCUSSION (Continued)

PART B Comparison with Prior Valuation (continued)

We have shown below a comparison of the number of members, payroll amounts, average age and average service.

	1/1/00	1/1/98	% Difference
Actives			
Number	85,572	82,631	3.6%
Total Payroll	$3,471,633,269	$3,110,976,196	11.6%
Average Salary	$40,570	$37,649	7.8%
Average Age	44.6	44.3	0.7%
Average Service	11.5	11.5	0%

	1/1/00	1/1/98	% Difference
Retirees and Survivors			
Number	43,737	43,144	1.4%
Total Benefits	$633,838,149	$567,020,779	11.8%
Average Benefits	$14,492	$13,143	10.3%
Average Age	72.2	71.9	0.4%

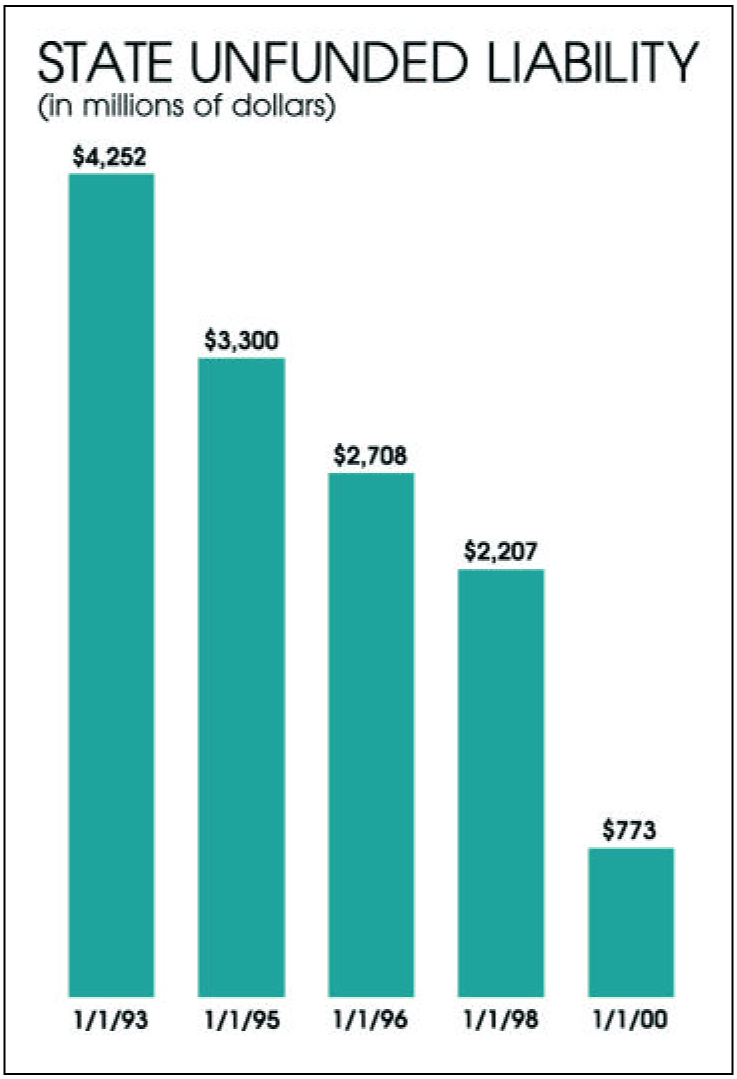
The increase in the number of active members from January 1, 1998 to January 1, 2000 primarily reflects an increase due to members transferring to the State as a result of county abolition. There was also a decrease due to the former members employed by the University of Massachusetts Medical Center.

Benefits will continue to increase over time as both active payroll and the number of retirees increase. Total benefit payments increased about $33 million per year over the two year period.

PART C Funding Progress
Unfunded Liability

The chart below shows how the State unfunded actuarial accrued liability (UAL) has decreased over the past 10 years. The UAL represents the actuarial accrued liability less the actuarial value of plan assets. When there is no UAL, a system is said to be "fully funded".

The actuarial value of assets used to derive the UAL from January 1, 1990 to January 1, 1996 reflects the market value of plan assets. To reduce the potential volatility of the market value approach, in the January 1, 1998 actuarial valuation, we began implementing a method that averages realized and unrealized asset gains and losses over 5 years. Therefore, gains and losses in a given year are not fully reflected in the actuarial value of assets until 5 years later. On January 1, 1998, we began phasing-in this methodology and used 97% of market value as the actuarial value of assets. As of January 1, 2000, we used 91% of market value as the actuarial value of assets. We expect the methodology to be completely phased-in by January 1, 2002.



If market value of assets were used in the January 1, 2000 valuation, there would be no unfunded liability.

After the January 1, 1998 valuation report was released, we implemented a new, state-of-the-art actuarial valuation software system. The figures in the chart below for 1998 and prior years reflect an adjustment to show what the estimated UAL would have been in each year using the new software.

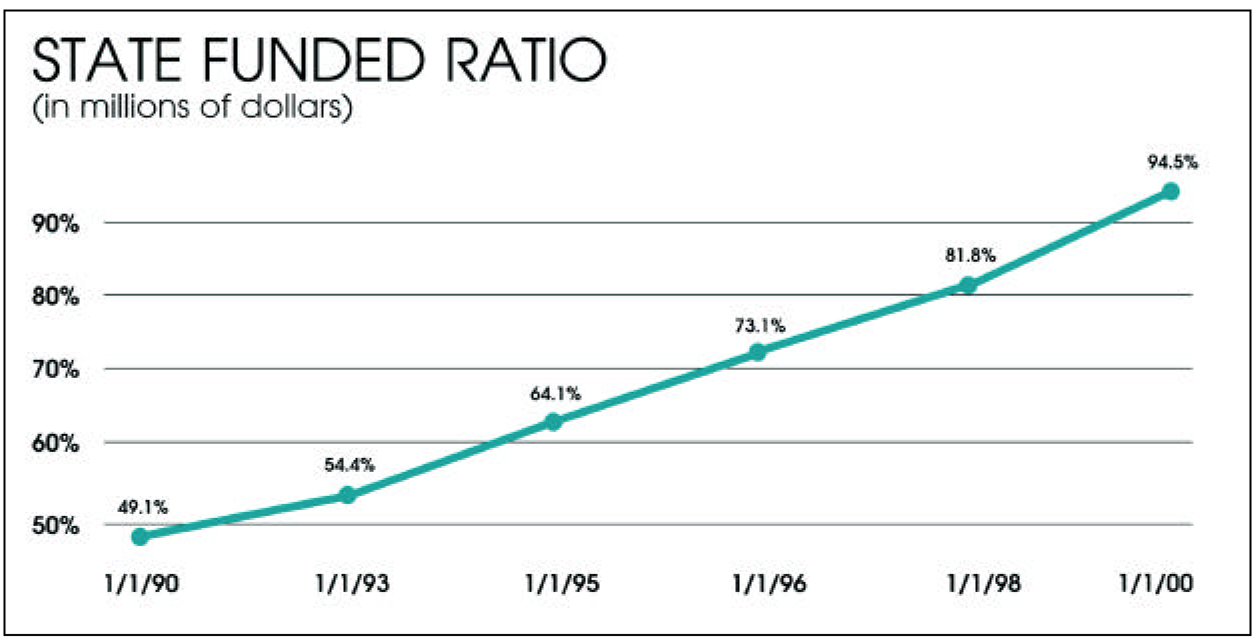
Funded Ratio

The chart below shows how the State's funded ratio progress over the past 10 years. The funded ratio represents the actuarial value of plan assets divided by the actuarial accrued liability. When the funded ratio reaches 100%, a system is said to be"fully funded".

The actuarial value of assets used to derive the funded ratio from January 1, 1990 to January 1, 1996 reflects the market value of plan assets. To reduce the potential volatility of the market value approach, in the January 1, 1998 actuarial valuation, we began implementing a methodology that averages realized and unrealized asset gains and losses over 5 years. Therefore, gains and losses in a given year are not fully reflected in the actuarial value of assets until 5 years later. On January 1, 1998, we began phasing-in this methodology and used 97% of market value as the actuarial value of assets. As of January 1, 2000, we used 91% of market value as the actuarial value of assets. We expect the methodology to be completely phased-in by January 1, 2002.

If market value of assets were used in the January 1, 2000 valuation, the funded ratio would be greater than 100%.

After the January 1, 1998 valuation report was released, we implemented a new, state-of-the-art actuarial valuation software system. The figures in the chart below for 1998 and prior years reflect an adjustment to show what the estimated funded ratio would have been in each year using the new software.



SECTION II
SUMMARY DISCUSSION (Continued)

PART D Considerations for the Future

The Commonwealth of Massachusetts must make payments in accordance with s. 22C of G.L. c. 32 for the State Employees' Contributory Retirement System. In addition to the State system, the Commonwealth must also pay the costs for the State Teachers' Contributory Retirement System, for the Boston teachers and for the cost-of-living allowances (COLA) granted to retirees and survivors of all local systems from 1981-1996. The results for all of these groups as of January 1, 2000 will be shown in the Commonwealth Valuation Report issued later this year.

PART E Other Information Available in this Report

As we stated in Part A of this section, the valuation results by type of benefit are on page 8. The development of the Actuarial Gain (Loss), as discussed in Part B is on Page 9.

We have included a summary of asset information on Page 10 and 11. Assets are shown on both a market value and an actuarial value basis. For purposes of developing the Unfunded Actuarial Liability, we have used the actuarial value of assets. See Section VII for discussion.

On Pages 12 to 15, demographic information regarding the members of the State Employees' Retirement System is presented. In conducting valuations PERAC uses data provided by the retirement boards and works with those boards to improve the accuracy of that data. These charts display age, service and salary information for active members and age and benefit information for retirees and survivors.

A description of the funding method used in calculating valuation results is on Page 16, and the actuarial assumptions used are on Pages 17 to 19.

A brief summary of plan provisions appears on Pages 20 to 25.

Finally, a glossary of actuarial terminology is presented on Pages 26 to 27.

SECTION III
SUMMARY OF VALUATION RESULTS

A. Number of Members on Current Valuation Date	
l. Active Members	85,572
2. Vested Terminated Members	2,986
3. Retired Members and Survivors	43,737
Total	132,295
B. Total Regular Compensation of Active Members	$3,471,633,269
C. Normal Cost	
l. Superannuation	$315,977,714
2. Termination	25,620,063
3. Disability	100,411,456
4. Death	46,737,889
Total Normal Cost	$488,747,122
Employee Contribution	273,714,248
Net Employer Normal Cost	$215,032,874
D. Actuarial Liability	
l. Superannuation	$7,046,716,633
2. Termination	125,081,158
3. Disability	601,255,603
4. Death	380,918,429
Total Actives	$8,153,971,823
Vested Terminated Members	248,415,004
Non-Vested Terminated Members	68,215,348
Retirees and Survivors	5,667,291,293
Total Actuarial Liability	$14,137,893,468
Actuarial Value of Assets	13,364,445,089
Unfunded Actuarial Liability	**$773,448,379**
Funded Ratio (Ratio of Assets to Actuarial Liability)	94.5%

SECTION IV
DEVELOPMENT OF ACTUARIAL GAIN OR LOSS

A. Development of Expected Unfunded Actuarial Liability ($000,000's omitted)

1.	Unfunded Actuarial Liability (UAL) 1/98	1,447
2.	Employer Normal Cost (8.25%)	157
3.	Interest on (1) and (2) at 8.25%	132
4.	Allocation of appropriation paid during 1998	434
5.	Interest on (4) assuming mid year payment	18
6.	Expected UAL 1/99: (1)+(2)+(3)-(4)-(5)	1,284
7.	Change in unfunded liability due to actuarial software (as of 1/99)	1,186
8.	Change in unfunded liability due to continued phase-in of asset valuation method	357
9.	Expected UAL 1/99 after adjustments: (6)+(7)+(8)	2,827
10.	Estimated employer normal cost for 1999 (8.25%)	212
11.	Interest on (9) and (10) at 8.25%	251
12.	Allocation of appropriation paid during 1999	399
13.	Interest on (12) assuming mid year payment	16
14.	Expected UAL 1/00: (9)+(10)+(11)-(12)-(13)	2,875
15.	Change in liability due to continued phase-in of asset valuation method	441
16.	Expected UAL 1/00 after adjustment: (14)+(15)	3,316
17.	UAL 1/00	773
18.	Total gain/(loss): (16)-(17)	2,543

SECTION V
STATE ASSETS 12/31/99
(000's omitted)

A. Breakdown of Assets

Investment in the Pension Reserve Investment Trust	
Market value	$14,686,203
Actuarial value (91% of market value)	$13,364,445

SECTION V
STATE ASSETS 12/31/99
(000's omitted)

B. Development of Actuarial Value of Assets (AVA)

A. Development of 12/31/99 actuarial value	
1. Market value 12/31/98	11,877,584
2. Actuarial value 12/31/98 (as calculated)	10,846,515
3. Employee contributions 1999 (est.)	262,517
4. Employer contributions 1999 (est.)	447,000
5. Benefit payments 1999 (est.)	(620,000)
6. Expected Investment return on (2): .0825 x (2)	894,837
7. Expected Investment return on (3)+(4)+(5): ½ x .0825 x [(3) + (4) + (5)]	3,693
8. Expected AVA 12/31/99: (2)+(3)+(4)+(5)+(6)+(7)	11,834,562
B. Previous differences not yet amortized	
1. Unrecognized amount of 12/31/98 difference:	
a. .6 x 1997 gain	439,068
b. .8 x 1998 gain	592,001
c. Total	1,031,069
C. Gain/(loss) from 1999	
1. Market value 12/31/99	14,686,203
2. Expected market value 12/31/99:A(8)+B(1c)	12,865,631
3. Gain/ (loss) from 1999 investment	1,820,572
D. Development of AVA 12/31/99	
1. 1999 gain	1,820,572
2. 1998 gain	740,001
3. 1997 gain	731,780
4. 20% of 1999 g/(l)	364,114
5. 20% of 1998 g/(l)	148,000
6. 20% of 1997 g/(l)	146,356
7. Total	658,471
8. Actuarial value 12/31/99: A(8)+D(7)	12,493,033
9. % of Market Value	85.1%
E. Actuarial value scheduled phase-in (91% of Market Value)	13,364,445
F. Actuarial Value: greater of D(8) and E	13,364,445

SECTION VI
INFORMATION ON SYSTEM MEMBERSHIP

A critical element of an actuarial valuation is accurate and up-to-date membership information which is provided by the retirement board. As a part of this valuation, PERAC analyzed the member information submitted as of 12/31/99 by the State Board of Retirement.

Part A Active Members

	Actives	Vested Terms
Number of Members	85,572	2,986
Average Age	44.6	47.5
Average Service	11.5	15.1
Average Salary	$40,570	$40,139
Average Annuity Savings Fund Balance	$32,116	$41,225

Age by Service Distribution of Active Members

Years of Service

Present Age	*0 - 4*	*5 -9*	*10 - 14*	*15 - 19*	*20 - 24*	*25 - 29*	*30 +*	**Total**
0-24	2,296	16						2,312
25-29	5,898	1,034	74					7,006
30-34	4,865	2,802	1,758	100				9,525
35-39	3,642	2,323	3,601	1,776	101			11,443
40-44	3,164	2,132	3,164	3,147	1,252	65		12,924
45-49	2,736	1,765	2,791	2,764	2,499	960	55	13,570
50-54	2,138	1,507	2,467	2,211	2,116	1,846	559	12,844
55-59	1,252	952	1,696	1,529	1,316	1,237	928	8,910
60-64	533	509	967	843	696	575	584	4,707
65 +	203	221	451	443	409	243	361	2,331
Total	26,727	13,261	16,969	12,813	8,389	4,926	2,487	85,572

SECTION VI
INFORMATION ON SYSTEM MEMBERSHIP (Continued)

Part A Active Members (continued)

Salary by Age Distribution of Active Members

Present Age	*Number of Participants*	*Total Salary*	*Average Salary*
0 - 24	2,312	$56,020,428	$24,230
25 - 29	7,006	$219,819,409	$31,376
	4*	$97,353	$24,338
30 - 34	9,525	$348,772,305	$36,617
	106*	$3,443,278	$32,484
35 - 39	11,443	$441,601,330	$38,591
	413*	$15,328,915	$37,116
40 - 44	12,924	$518,681,056	$40,133
	683*	$26,669,651	$39,048
45 - 49	13,570	$587,389,337	$43,286
	664*	$28,360,288	$42,711
50 - 54	12,844	$574,834,320	$44,755
	684*	$29,218,093	$42,717
55 - 59	8,910	$403,037,951	$45,234
	262*	$10,583,548	$40,395
60 - 64	4,707	$214,012,780	$45,467
	113*	$4,175,474	$36,951
65 +	2,331	$107,464,353	$46,102
	57*	$1,977,662	$34,696
Total	85,572	$3,471,633,269	$40,570
	2,986*	$119,854,262	$40,139

* Vested Terminated Members

SECTION VI

INFORMATION ON SYSTEM MEMBERSHIP (Continued)

Part B Retirees and Survivors

	Superannuation	*Acc Dis*	*Ord Dis*	*Survivors*	**Total**
Number of Members	34,098	2,433	746	6,460	43,737
Average Age	72.8	63.1	66.8	73.0	72.2
Avg. Annual Benefit	$15,321	$20,695	$12,358	$8,027	$14,492
	Benefit by Payment and Retirement Type				
Annuity	$82,682,399	$2,359,918	$925,830	$6,651,924	$92,620,071
Pension	$439,730,864	$47,991,433	$8,293,030	$45,202,751	$541,218,078
TOTAL	$522,413,263	$50,351,351	$9,218,860	$51,854,675	$633,838,149

SECTION VI
INFORMATION ON SYSTEM MEMBERSHIP (Continued)

Part B Retirees and Survivors (continued)

Benefit by Age Distribution

Present Age	*Number of Members*	*Total Benefits*	*Average Benefits*
less than 40	180	$3,060,035	$17,000
40 -44	307	$4,942,710	$16,100
45 - 49	753	$12,639,192	$16,785
50 - 54	1,484	$26,389,136	$17,782
55 - 59	2,553	$41,164,608	$16,124
60 - 64	4,406	$77,246,126	$17,532
65 - 69	7,266	$130,766,680	$17,997
70 - 74	8,770	$142,107,929	$16,204
75 - 79	8,166	$105,108,226	$12,871
80 - 84	5,592	$54,563,095	$9,757
85 - 89	2,885	$24,303,853	$8,424
90 +	1,375	$11,546,559	$8,397
Totals	43,737	$633,838,149	$14,492

SECTION VII
VALUATION COST METHODS

Part A Actuarial Cost Method

The Actuarial Cost Method which was used to determine pension liabilities and costs for benefits payable under the State Contributory Retirement System for the year beginning January 1, 2000 is known as the Entry Age Normal Cost Method. Under this method the Normal Cost for each active participant on the valuation date is determined as the level percent of salary, which, if paid annually from the date the participant first became a member of the retirement system, would fully fund by retirement, death, disability or termination, the projected benefits which the participant is expected to receive. The Actuarial Liability for each participant is determined as the present value as of the valuation date of all projected benefits which the participant is expected to receive, minus the present value of future annual Normal Cost payments expected to be made to the fund. Since only active members have a Normal Cost, the Actuarial Liability for inactives, retirees and survivors is simply equal to the present value of all projected benefits. The sum of Normal Cost and Actuarial Liability for each participant is equal to the Normal Cost and Actuarial Liability for the Plan. The Unfunded Actuarial Liability is the Actuarial Liability less the actuarial value of assets.

The Normal Cost for a participant will remain a level percent of salary for each year of participation except for changes in provisions of the Plan or the actuarial assumptions employed in projection of benefits and present value determinations. The Normal Cost for the entire system will also change due to addition of new participants or the retirement, death or termination of participants. The Actuarial Liability for a participant will increase each year to reflect the additional accrual of Normal Cost. It will also change if the Plan provisions or actuarial assumptions are changed.

Differences each year between the actual experience of the Plan and the experience projected by the actuarial assumptions are reflected by adjustments to the Unfunded Actuarial Liability. An experience difference which increases the Unfunded Actuarial Liability is called an Actuarial Loss and one which decreases the Unfunded Actuarial Liability is called an Actuarial Gain.

Part B Asset Valuation Method

In valuations prior to the 1998 valuation, plan assets were determined at market value. As part of the 1998 valuation, this methodology was adjusted to reduce the potential volatility in market value from year to year. Typical methodologies used to develop an actuarial value of assets recognize asset gains and losses over a 5-year period. Since actual investment returns exceeded the expected return over the 5 years ended December 31, 1998, if a 5-year average method has been adopted and phased-in completely, the actuarial value as of January 1, 1998 would have been approximately 80% of the market value. For the 1998 valuation, we began to phase in an actuarial value of assets methodology by adopting an approach of using 97% of market value as the actuarial value of assets as of January 1, 1998. With this valuation we have adopted a 5-year average asset methodology. To continue the phase-in process, the actuarial value of assets as of January 1, 2000 is not less than 91% of the market value.

SECTION VIII
ACTUARIAL ASSUMPTIONS

Rate of Investment Return	8.25% per year
Rate of Salary Increase	6.0% per year
Interest Rate credited to the Annuity Savings Fund	5.5% per year
Assumed rate of Cost of Living Increases (COLA)	3% per year
Mortality Rate	1983 Group Annuity Mortality Table (gender distinct). This is applicable to both pre-retirement and post-retirement benefits. For disabled members, the mortality rate is assumed to be in accordance with the 1983 Group Annuity Mortality Table (gender distinct) with ages set forward 10 years. It is assumed that 55% of pre-retirement deaths are job-related for Group 1 and 2 members and 90% are job-related for Group 3 and 4 members. For members retired under an Accidental (job-related) Disability 40% of deaths are assumed to be from the same cause as the disability.
Rate of Withdrawal	Based on an analysis of past experience. Sample annual rates are shown below:

Age	Groups 1&2	Group 3 &4
20	0.1200	0.0210
30	0.0555	0.0165
40	0.0231	0.0056
50	0.0146	0.0000

SECTION VIII
ACTUARIAL ASSUMPTIONS (Continued)

Rate of Disability

Based on an analysis of past experience. Sample annual rates are shown below:

Age	Groups 1&2	Group 3	Group 4
20	0.0006	0.0011	0.0010
30	0.0011	0.0025	0.0023
40	0.0024	0.0096	0.0087
50	0.0061	0.0000	0.0110
60	0.0123	0.0000	0.0150

It is also assumed that 55% of disabilities will be job-related for Group 1 and 2 members and 90% will be job-related for Groups 3 and 4 members.

Rate of Retirement (Superannuation)

Based on an analysis of past experience. Annual rates are shown below:

Age	Groups l&2	Group 3	Group 4
43	0.0000	0.0030	0.0000
44	0.0000	0.0050	0.0000
45	0.0000	0.0075	0.0000
46	0.0000	0.0105	0.0000
47	0.0000	0.0500	0.0000
48	0.0000	0.0500	0.0000
49	0.0000	0.1000	0.0000
50	0.0000	0.2000	0.3201
5l	0.0000	0.2500	0.0718
52	0.0000	0.2500	0.0593
53	0.0000	0.2500	0.0803
54	0.0000	0.2500	0.0769
55	0.1255	1.0000	0.1554
56	0.0321	1.0000	0.0907
57	0.0310	1.0000	0.0909
58	0.0334	1.0000	0.1194
59	0.0348	1.0000	0.1136
60	0.0784	1.0000	0.2395
61	0.0692	1.0000	0.1360
62	0.1511	1.0000	0.1950

SECTION VIII
ACTUARIAL ASSUMPTIONS (Continued)

Age	Groups 1 & 2	Group 3	Group 4
63	0.1071	1.0000	0.1253
64	0.1037	1.0000	0.1873
65	0.3568	1.0000	1.0000
66	0.2214	1.0000	1.0000
67	0.2159	1.0000	1.0000
68	0.2164	1.0000	1.0000
69	0.2536	1.0000	1.0000
70	1.0000	1.0000	1.0000

Administrative Expenses

Assumed to be paid separately and are not included in the appropriation.

SECTION IX
SUMMARY OF PLAN PROVISIONS

ADMINISTRATION : There are 106 contributory retirement systems for public employees in Massachusetts. Each system is governed by a retirement board and all boards, although operating independently, are governed by one retirement law, Chapter 32 of the Massachusetts General Laws. This law in general provides uniform benefits, uniform contribution requirements and a uniform accounting and funds structure for all systems.

PARTICIPATION : Participation is mandatory for all full-time employees. Eligibility with respect to part-time, provisional, temporary, seasonal or intermittent employment is governed by regulations promulgated by the retirement board, and approved by PERAC. Membership is optional for certain elected officials.

There are 4 classes of membership in the State Retirement System:

Group 1 - General employees, including clerical, administrative, technical and all other employees not otherwise classified.

Group 2 - Certain specified hazardous duty positions.

Group 3 - State Police Officers and Inspectors.

Group 4 - Police officers, firefighters, state correction officers and other hazardous positions specified in the statute.

MEMBER CONTRIBUTIONS : Member contributions vary depending on the most recent date of membership:

Prior to 1975 - 5% of regular compensation
1975 - 1983 -7% of regular compensation
1984 to 6/30/96 - 8% of regular compensation
7/1/96 to present - 9% of regular compensation
7/1/96 to present - 12% of regular compensation (State Police)
1979 to present - an additional 2% of regular compensation in excess of $30,000.

RATE OF INTEREST : Regular Interest on regular deductions made after January 1, 1984 is a rate established by PERAC in consultation with the Commissioner of Banks. The rate is obtained from the average rates paid on individual savings accounts by a representative sample of at least 10 financial institutions.

SECTION IX
SUMMARY OF PLAN PROVISIONS (Continued)

RETIREMENT AGE: There is no mandatory retirement age for most employees. Certain public safety personnel are required to retire at age 65. Mandatory retirement age for state police officers is age 55, but the Commonwealth has been enjoined from enforcing this provision in conjunction with ongoing litigation.

Members over the age of 70 may elect to continue making contributions on regular compensation and continue to accrue additional years of creditable service.

SUPERANNUATION RETIREMENT : A member is eligible for a superannuation retirement allowance (service retirement), upon meeting the following conditions:

completion of 20 years of service, or

attainment of age 55 if hired prior to 1978, or if classified in Group 4, or

hired after 1978, with 10 years of service and age 55.

AMOUNT OF BENEFIT : A member's annual allowance is determined by multiplying average salary by a benefit rate related to the member's age and job classification at retirement, and the resulting product by his creditable service. The amount determined by the benefit formula cannot exceed 80% of the employees' highest three year average salary (75% for Group 3 members). For veterans as defined in G.L. c. 32, s. 1, there is an additional benefit of $15 per year for each year of service, up to a maximum of 20 years.

Salary is defined as gross regular compensation.

Average Salary is the average annual rate of regular compensation received during the 3 consecutive years that produce the highest average, or, if greater, during the last three years (whether or not consecutive) preceding retirement.

The Benefit Rate varies with the member's retirement age, but the highest rate of 2.5% applies to Group 1 employees who retire at or after age 65, Group 2 employees who retire at or after age 60, and Group 4 employees who retire at or after age 55. A .1% reduction is applied for each year of age under the maximum age for the member's group. Group 2 employees who terminate from service under age 55, the benefit rate for a Group 1 employee shall be used.

For Group 3 members, the rate is 3% for any age.

SECTION IX
SUMMARY OF PLAN PROVISIONS (Continued)

DEFERRED VESTED BENEFIT : A participant who has completed 10 or more years of creditable service is eligible for a deferred vested retirement benefit. Elected officials and others who were hired prior to 1978 may be vested after 6 years in accordance with G.L. c. 32, s. 10

The participant's accrued benefit is payable commencing at age 55, or the completion of 20 years, or may be deferred until later at the participant's option.

WITHDRAWAL OF CONTRIBUTIONS : If a member is under age 55, member contributions may be withdrawn. Employees who first become members on or after January 1, 1984, may receive only limited interest on their contributions if they voluntarily terminate their service. Those who leave service with less than 5 years receive no interest; those who leave service with greater than 5 but less than 10 years receive 50% of interest.

DISABILITY RETIREMENT : The Massachusetts Retirement Plan provides 2 types of disability retirement benefits:

Ordinary Disability:

Eligibility: Non-veterans who become totally and permanently disabled by reason of a non-job related condition before attaining age 55 with at least 10 years of creditable service.

Veterans with ten years of creditable service who become totally and permanently disabled by reason of a non-job related condition prior to reaching “maximum age”.

Retirement Allowance: Equal to the accrued superannuation retirement benefit as if the member was age 55. If the member is a veteran, the benefit is 50% of the member's final rate of salary during the preceding 12 months, plus an annuity based upon accumulated member contributions plus credited interest. If the member is over age 55, he or she will receive not less than the superannuation allowance to which he or she is entitled.

Accidental Disability:

Eligibility: Applies to members who become permanently and totally incapacitated for further duty as a result of a personal injury sustained or hazard undergone while in the performance of duties. There are no minimum age or service requirements. The member must file his or her application prior to attaining statutory "maximum age."

SECTION IX
SUMMARY OF PLAN PROVISIONS (Continued)

Retirement Allowance: 72% of salary plus an annuity based on accumulated member contributions, with interest. This amount is not to exceed 100% of pay (75% for members hired after 1987). There is an additional pension of $527.28 per year, per child who is under 18 at the time of the member's retirement, with no age limitation if the child is mentally or physically incapacitated from earning. The additional pension may continue up to age 21 for any child who is a full time student at an accredited educational institution.

The retirement allowance of any member retired subsequent to January 12, 1988 for accidental disability after attaining age 55 with less than ten years of creditable service is recalculated as a superannuation as of the date the member attains age 65.

ACCIDENTAL DEATH

Eligibility: Applies to members who die as a result of a work-related injury or if the member was retired for accidental disability and the death was the natural and proximate result of the injury or hazard undergone on account of which such member was retired.

Allowance: An immediate payment to a named beneficiary equal to the accumulated deductions at the time of death, plus a pension equal to 72% of current salary and payable to the surviving spouse, dependent children or the dependent parent, plus a supplement of $312 per year, per child, payable to the spouse or legal guardian until all dependent children reach age 18 or 21 if a full time student, unless mentally or physically incapacitated.

The surviving spouse of a member of a police department or fire department or any corrections officer who, under specific and limited circumstances detailed in the statute, suffers an accident and is killed or sustains injuries resulting in his death, may receive a pension equal to the maximum salary for the position held by the member upon his death. In addition, an eligible family member may receive a one time payment of $100,000.00 from the State Retirement Board.

DEATH AFTER ACCIDENTAL DISABILITY RETIREMENT

Effective November 7, 1996, Accidental Disability retirees were allowed to select Option C at retirement and provide a benefit for an eligible survivor. For Accidental Disability retirees prior to November 7, 1996, who could not select Option C, if the member's death is from a cause unrelated to the condition for which the member received accidental disability benefits, a surviving spouse will receive an annual allowance of $6,000 until remarriage or death.

SECTION IX
SUMMARY OF PLAN PROVISIONS (Continued)

DEATH IN ACTIVE SERVICE :

Eligibility: At least 2 years of service

Allowance: An allowance equal to that which would have been payable had the member retired and elected Option C on the day before his or her death. For death occurring prior to the member's superannuation retirement age, the age 55 benefit rate is used. The minimum annual allowance payable to the surviving spouse of a member in service who dies with at least two years of creditable service is $3,000, provided that the member and the spouse were married for at least one year and living together on the member's date of death.

The surviving spouse of such a member in service receives an additional allowance equal to the sum of $1,440 per year for the first child and $1,080 per year for each additional child.

COST OF LIVING

Chapter 17 of the Acts of 1997 provides that the first $12,000 of a retiree’s total allowance is subject to an annual cost-of-living adjustment. The percentage is based on the increase in the Consumer Price Index used for indexing Social Security benefits but cannot exceed 3.0%. This benefit is subject to an annual vote of the Massachusetts General Court.

METHODS OF PAYMENT

A member may elect to receive his or her retirement allowance in one of 3 optional forms of payment.

Option A: Total annual allowance, payable in monthly installments, commencing at retirement and terminating at the member's death.

Option B: A reduced annual allowance, payable in monthly installments, commencing at retirement and terminating at the death of the member, provided, however, that if the total amount of the annuity portion received by the member is less than the amount of his or her accumulated deductions, including interest, the difference or balance of his accumulated deductions will be paid in a lump sum to the retiree's beneficiary or beneficiaries of choice.

SECTION IX
SUMMARY OF PLAN PROVISIONS (Continued)

Option C: A reduced annual allowance, payable in monthly installments, commencing at retirement. At the death of the retired employee, 2/3 of the allowance is payable to the member's designated beneficiary (who may be the spouse, or former spouse who remains unmarried for a member whose retirement becomes effective on or after February 2, 1992, child, parent, sister, or brother of the employee) for the life of the beneficiary. For members who retired on or after January 12, 1988, if the beneficiary pre-deceases the retiree, the benefit payable increases (or pops up) based on the factor used to determine the Option C benefit at retirement. For members who retired prior to January 12, 1988, if the beneficiary pre-deceases the retiree, the benefit payable “pops up” in the same fashion. The Option C became available to accidental disability retirees on November 7, 1996.

ALLOCATION OF PENSION COSTS : If a member's total creditable service was partly earned by employment in more than one retirement system, the cost of the "pension portion" is allocated between the different systems pro rata based on the member's service within each retirement system.

SECTION X
GLOSSARY OF TERMS

ACTUARIAL ACCRUED LIABILITY That portion of the Actuarial Present Value of pension plan benefits which is not provided by future Normal Costs or employee contributions. It is the portion of the Actuarial Present Value attributable to service rendered as of the Valuation Date.

ACTUARIAL ASSUMPTIONS Assumptions, based upon past experience or standard tables, used to predict the occurrence of future events affecting the amount and duration of pension benefits, such as: mortality, withdrawal, disablement and retirement; changes in compensation; rates of investment earnings and asset appreciation or depreciation; and any other relevant items.

ACTUARIAL COST METHOD (or FUNDING METHOD) A procedure for allocating the Actuarial Present Value of all past and future pension plan benefits to the Normal Cost and the Actuarial Accrued Liability.

ACTUARIAL GAIN OR LOSS (or EXPERIENCE GAIN or LOSS) A measure of the difference between actual experience and that expected based upon the set of Actuarial Assumptions, during the period between two Actuarial Valuation dates.

Note: The effect on the Accrued Liability and/or the Normal Cost resulting from changes in the Actuarial Assumptions, the Actuarial Cost Method or pension plan provisions would be described as such, not as an Actuarial Gain (Loss).

ACTUARIAL PRESENT VALUE The dollar value on the valuation date of all benefits expected to be paid to current members based upon the Actuarial Assumptions and the terms of the Plan.

AMORTIZATION PAYMENT That portion of the pension plan appropriation which represents payments made to pay interest on and the reduction of the Unfunded Accrued Liability.

ANNUAL STATEMENT The statement submitted to PERAC each year that describes the asset holdings and Fund balances as of December 3l and the transactions during the calendar year that affected the financial condition of the retirement system.

ANNUITY RESERVE FUND The fund into which total accumulated deductions, including interest, is transferred at the time a member retires, and from which annuity payments are made.

ANNUITY SAVINGS FUND The fund in which employee contributions plus interest credited are held for active members and for former members who have not withdrawn their contributions and are not yet receiving a benefit (inactive members).

SECTION X
GLOSSARY OF TERMS (Continued)

ASSETS The value of securities as described in Section VII.

COST OF BENEFITS The estimated payment from the pension system for benefits for the fiscal year. This is the minimum amount payable during the first six years of some Funding Schedules.

EXPENSE FUND The fund into which the appropriation for administrative expenses is paid and from which all such expenses are paid.

FUNDING SCHEDULE The schedule based upon the most recently approved actuarial valuation which sets forth the amount which would be appropriated to the pension system in accordance with Section 22D of M.G.L. Chapter 32.

GASB Governmental Accounting Standards Board

NORMAL COST Total Normal Cost is that portion of the Actuarial Present Value of pension plan benefits which is to be paid in a single fiscal year. The Employee Normal Cost is the amount of the expected employee contributions for the fiscal year. The Employer Normal Cost is the difference between the total Normal Cost and the Employee Normal Cost.

PENSION BENEFIT OBLIGATION The portion of the Actuarial Present Value attributable to past service in accordance with the Projected Unit Credit cost method as stipulated by GASB Statement Number 5.

PENSION FUND The fund into which appropriation amounts as determined by PERAC are paid and from which pension benefits are paid.

PENSION RESERVE FUND The fund which shall be credited with all amounts set aside by a system for the purpose of establishing a reserve to meet future pension liabilities. These amounts would include excess interest earnings.

SPECIAL FUND FOR MILITARY SERVICE CREDIT The fund which is credited with amounts paid by the Commonwealth equal to the amount which would have been contributed by a member during a military leave of absence as if the member had remained in active service of the Commonwealth. In the event of retirement or a non-job related death, such amount is transferred to the Annuity Reserve Fund. In the event of termination prior to retirement or death, such amount shall be transferred to the Pension Fund.

UNFUNDED ACCRUED LIABILITY The excess of the Actuarial Accrued Liability over the Assets.