Commonwealth

ACTUARIAL VALUATION REPORT

JANUARY 1, 2000

Public Employee Retirement Administration Commission

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Commonwealth of Massachusetts

ACTUARIAL VALUATION REPORT

As of January 1, 2000

for the

Commonwealth's Total Pension Obligation

Public Employee Retirement Administration Commission

TABLE OF CONTENTS

Section I
Introduction and Certification

This report presents the results of the actuarial valuation of the pension benefits that are the obligation of the Commonwealth of Massachusetts as follows:

- State Employees Retirement System
- Massachusetts Teachers' Retirement System
- Boston Teachers
- Cost of Living Allowances to Local Systems

The valuation was performed as of January 1, 2000 pursuant to Chapter 32 of the General Laws of the Commonwealth of Massachusetts and based on the plan provisions at that time. 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. 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.

We are in the process of conducting an experience study for the Commonwealth. Any change in assumptions due to the results of that study will 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 Boston, State, and Teachers' Retirement Boards. We performed a number of tests on the data to ensure reasonableness and made specific assumptions for a number of questionable State Teacher data items. Asset information as of December 31, 1999 was provided by the Pension Reserve Investment Management Board and by the Annual Statement of Financial Condition submitted to this office by the Boston Retirement Board.

In our opinion the actuarial assumptions used in this report are reasonable, are related to plan experience and expectations, and represent our best estimate of anticipated experience under the system. We believe this report represents an accurate appraisal of the actuarial status of the Commonwealth's total pension obligation 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: September 7, 2000

Section II
Summary Discussion

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. Under the present schedule, the amortization payments to eliminate the initial unfunded liability by the end of FY2017 are level. In addition there are various bases (gains, ERI) which are also being amortized on a level dollar basis.

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

Total Normal Cost	$968,764
Employee Contributions	577,600
Net Normal Cost	$391,164
Total Actuarial Liability	$32,742,638
Assets (Actuarial Value)	27,905,556
Unfunded Actuarial Liability	$4,837,082

Section II
Summary Discussion (Continued)

B. Comparison with Prior Valuation

A comparison of the current valuation and the January 1, 1998 valuation is shown below. ($000's omitted).

	1/1/00	1/1/98	Increase (Decrease)	Increase (Decrease)
Total Normal Cost	$968,764	$772,751	$196,013	25.4%
Employee Contributions	577,600	503,131	74,469	14.8%
Net Normal Cost	$391,164	$269,620	121,544	45.1%
Actuarial Liability				
Actives	$19,641,978	$15,323,506	$4,318,472	28.2%
Retirees and Inactives	13,100,660	11,263,721	1,836,939	16.3%
Total	$32,742,638	$26,587,227	$6,155,411	23.2%
Assets	27,905,556	20,783,497	7,122,059	34.3%
Unfunded Actuarial Liability	$4,837,082	$5,803,730	($966,648)	(16.7%)
Funded Ratio	85.2%	78.2%	7.0%	

The development of the expected unfunded liability on January 1, 2000 is shown on page 8. The difference between the expected and actual unfunded liability is known as the actuarial gain or loss. For the period from January 1, 1998 to January 1, 2000 the actuarial gain was $4.7 billion. This figure primarily reflects an asset gain over the two year period.

In total, there was a non-investment related loss (loss on actuarial accrued liability) of $125 million. For State employees there was a loss of approximately $221 million primarily due to the transfer of members due to county abolition. There was a loss for State Teachers of approximately $2 million even though there was a 7,300 increase in the number of active members. The resulting overall increase in payroll was offset by the payroll increases for continuing members being less than assumed. For Boston Teachers and local COLA there was a gain of $100 million primarily due to updated data.

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 $7.8 billion and the funded ratio 72.6%

This valuation continues the phase-in methodology with respect to the actuarial value of assets. As of January 1, 2000 the actuarial value of assets is 91% of the market value. As of January 1, 1998 the actuarial value of assets was 97% of the market value. We expect the phase-in to be complete by January

Section II
Summary Discussion (Continued)

B. Comparison with Prior Valuation (continued)

1, 2002. The increase in unfunded liability due to the phase-in during 1998 and 1999 (97% to 91% of market value) is $1.8 billion.

We have detailed a number of the assumptions we made for missing or questionable data for active members of the Teachers' Retirement System in Section VII. We believe our assumptions with respect to data to be conservative based on our detailed review and comparison of salary and other information provided to us as part of the January 1, 2000, 1999, and 1998 data submissions, our request for 1999 individual pay records for approximately 500 members, and our discussions and individual data requests concerning various other issues. We believe the assumptions we have made provide reasonable valuation results on an overall basis for the Commonwealth and likely overstate the plan liabilities that would be determined for the Teachers' System if the payroll and total credited service for each member were accurately reflected in the data made available to PERAC.

As in past valuations, the assets allocated to Boston teachers are based on the allocation of the total accrued liability between Boston teachers and other members of the State-Boston Retirement System. If only the annuity savings fund and annuity reserve fund for Boston teachers were included in valuation assets, the overall Commonwealth unfunded liability would increase by $500 million and the funded ratio would decrease to 83.7%

Recently the Legislature enacted Chapter 114 of the Acts of 2000, *An Act Improving Teacher Recruitment, Retention, and Retirement*. Any member of the State Teachers' Retirement System or any teacher who is a member of the State-Boston retirement system before July 1, 2001 may elect to participate in this alternative retirement program. This valuation does not reflect the estimated cost and liability of the program.

Section II
Summary Discussion (Continued)

C. Funding Progress

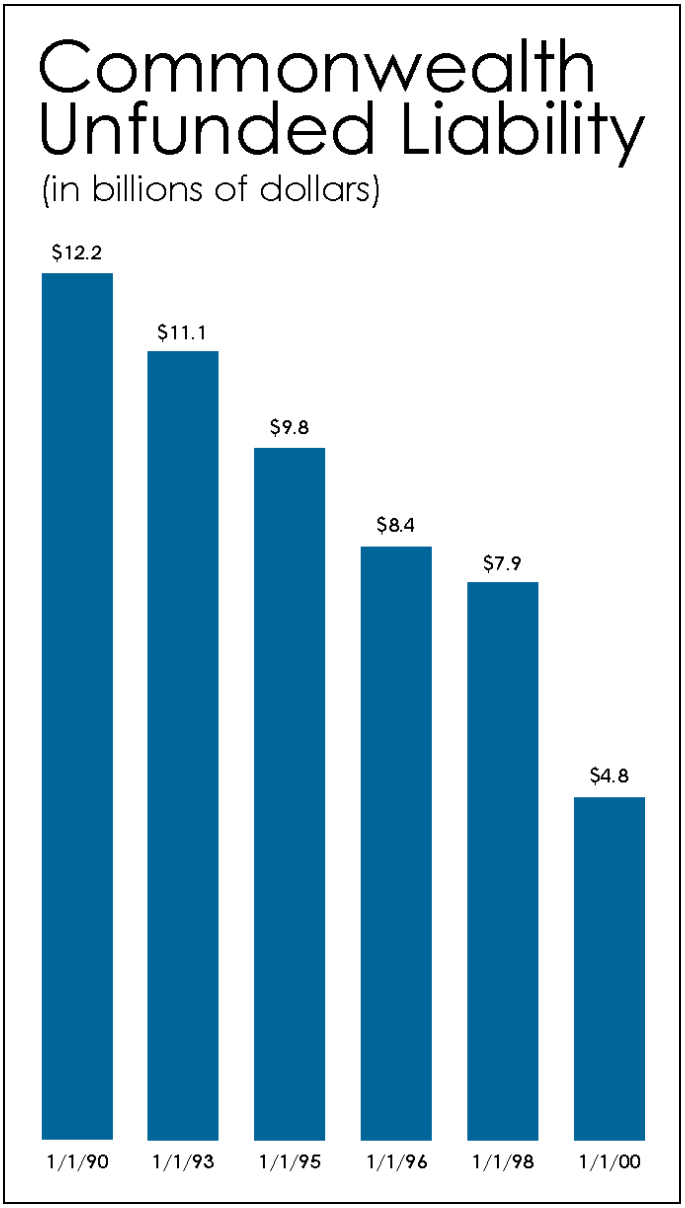
Unfunded Liability

The chart below shows how the total Commonwealth's 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. In the January 1, 1998 actuarial valuation, we began implementing a method that averages realized and unrealized asset gains and losses over 5 years to reduce the potential volatility of the market value approach. 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 unfunded liability would be $2.1 billion.

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.



Section II
Summary Discussion (Continued)

C. Funding Progress

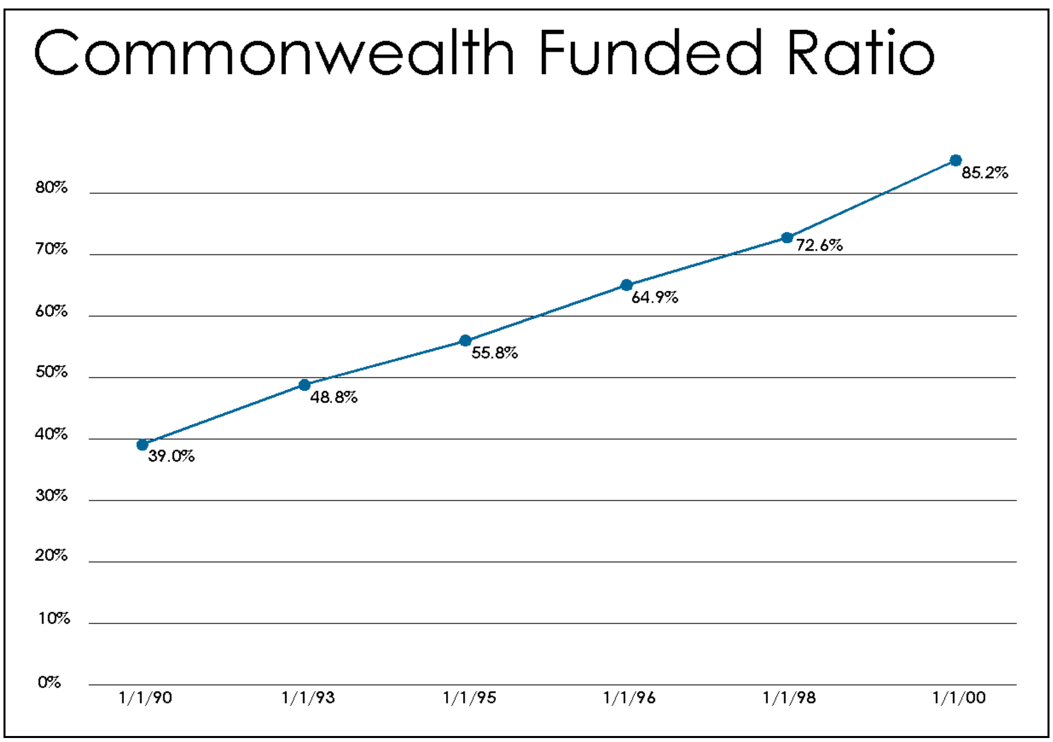
Funded Ratio

The chart below shows the Commonwealth'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. In the January 1, 1998 actuarial valuation, we began implementing a methodology that averages realized and unrealized asset gains and losses over 5 years to reduce the potential volatility of the market value approach. 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 93.7%.

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.



Commonwealth's Total Pension Obligation - 1/1/00

Section III
Summary of Valuation Results

A. Number of Members on Current Valuation Date

	State Employees	State Teachers	Boston Teachers	Local COLA	Total
1. Active Members	85,572	82,242	5,128	N/A	
2. Vested Terminated Members	2,986	N/A	307	N/A	
3. Retired Members and Survivors	43,737	31,746	2,241	N/A	
Total	132,295	113,988	7,676	N/A	
B. Total Active Payroll (000's omitted)	$3,471,633	$3,703,587	$285,234	N/A	
C. Normal Cost (000's omitted)					
1. Superannuation	$315,978	$339,715	$26,914		
2. Termination	25,620	21,033	1,123		
3. Disability	100,411	46,856	3,577		
4. Death	46,738	37,877	2,922		
Total Normal Cost	$488,747	$445,481	$34,536		$968,764
Employee Contribution	273,714	282,671	21,215		577,600
Net Employer Normal Cost	**$215,033**	**$162,810**	**$13,321**	N/A	**$391,164**
D. Actuarial Liability (000's omitted)					
1. Active					
a. Superannuation	$7,046,717	$9,692,159	$826,330		
b. Termination	125,081	85,349	8,574		
c. Disability	601,256	380,611	30,148		
d. Death	380,918	430,856	33,979		
Total Actives	$8,153,972	$10,588,975	$899,031		$19,641,978
Vested Terminated Members (a)	248,415	175,000	43,423		466,838
Non-Vested Terminated Members	68,215	N/A	7,498		75,713
Retirees and Survivors	5,667,291	5,656,296	431,522	$803,000	12,558,109
Total Actuarial Liability	$14,137,893	$16,420,271	$1,381,474	$803,000	$32,742,638
Assets (Actuarial Value) (b)	13,364,445	13,681,111	860,000	0	27,905,556
Unfunded Actuarial Liability	**$773,448**	**$2,739,160**	**$521,474**	**$803,000**	**$4,837,082**
Funded Ratio (Ratio of Assets to Actuarial Liability) (c)	94.5%	83.3%	62.3%	0.0%	85.2%

(a) Total inactive liability (including non-vested terminated members) for State Teachers estimated to be $175 million.

(b) Reflects 91% of market value. Assumes 29.9% of Boston Retirement System assets allocated to Boston Teachers.

(c) If only annuity savings and annuity reserve funds are included in Boston Teacher assets, total funded ratio would be 83.7%.

Commonwealth's Total Pension Obligation - 1/1/00

Section IV
Development of the Actuarial Gain or Loss
($000,000's omitted)

		State	Teachers	Boston Teachers	Local COLA	Total
1.	Unfunded Actuarial Liability (UAL) 1/98	1,447	2,925	520	912	5,804
2.	Employer Normal Cost (8.25%)	157	102	11	-	270
3.	Interest on (1) and (2) at 8.25%	132	250	44	75	501
4.	Allocation of appropriation paid during 1998	434	418	40	103	995
5.	Interest on (4) assuming mid year payment	18	17	2	4	41
6.	Expected UAL 1/99: (1)+(2)+(3)-(4)-(5)	1,284	2,841	533	880	5,539
7.	Change in unfunded liability due to actuarial software (as of 1/99)	1,186	1,293	54	-	2,533
8.	Change in unfunded liability due to continued phase-in of asset valuation method	357	365	25	-	747
9.	Expected UAL 1/99 after adjustments: (6)+(7)+(8)	2,827	4,499	612	880	8,819
10.	Estimated employer normal cost for 1999 (8.25%)	212	153	14	-	379
11.	Interest on (9) and (10) at 8.25%	251	384	52	73	759
12.	Allocation of appropriation paid during 1999	399	384	43	101	927
13.	Interest on (12) assuming mid year payment	16	16	2	4	38
14.	Expected UAL 1/00: (9)+(10)+(11)-(12)-(13)	2,875	4,636	633	847	8,992
15.	Change in liability due to continued phase-in of asset valuation method	441	451	29		916
16.	Expected UAL 1/00 after adjustment: (14)+(15)	3,316	5,087	662	847	9,908
17.	UAL 1/00	773	2,739	521	803	5,176
18.	Total gain/(loss): (16)-(17)	2,543	2,348	141	44	4,732

Section V
Information Required by Auditors

A. Overview

In November of 1994, GASB issued Statements No. 25, 26 and 27, relating to Financial Reporting and Accounting for Pension Plans. We have included in this report the actuarial information required by Statement No. 27. The Commonwealth of Massachusetts chose to begin implementing Statement No. 27 for the reporting year Fiscal 1996.

Under GASB Statement No. 27, the calculation of an Annual Required Contribution (ARC) is required for each year. This calculation is to be based upon the same methods and assumptions as are applied in determining funding requirements, but with certain limiting parameters within which these methods and assumptions must fall. At this time, the methods and assumptions used by the Commonwealth to determine the funding schedule are well within the parameters established by Statement No. 27.

In order to calculate the ARC in the first year for which Statement No. 27 is in effect, a Net Pension Obligation (NPO) at transition must be calculated. This is essentially the cumulative difference between the employer's required contributions and the contributions actually made by the employer for all years beginning with Fiscal Year 1988.

As part of this valuation we brought the NPO forward from FY98 to FY00. For FY00 in accordance with GASB Statement No 27, amortization cost was determined on a schedule which is equivalent to that of the current schedule.

Note that, in any year, the amount of the ARC will not equal the Commonwealth's appropriation amounts because of the following:

1. The ARC is based upon the most recent valuation, whereas the funding schedule is generally submitted to the legislature 15 months after the valuation upon which it is based. The funding schedule is then set for the upcoming three fiscal years.

2. Amortization bases of actuarial gains and losses (typically 15 years) are part of the funding schedule. However, the amortization cost GASB reflects is an amortization of the entire unfunded liability which is roughly equivalent to the current schedule.

3. Although there is no difference in the totals, contributions have been allocated slightly differently among the State and COLA portions. For purposes of Statement No. 27, a larger contribution was made to COLA, with lesser amounts to State. This was done so the NPO for the local COLA remains at 0. No assets are attributed to the local COLA.

Section V
B. GASB Statement No. 27 ($000's omitted)

	State	Teachers	Boston Teachers	COLA	Total
1. Annual Required Contribution (ARC) for FY99					
a. Normal Cost	209,706	151,945	14,015	0	375,666
b. Amortization Cost	109,748	221,832	39,439	69,174	440,193
c. ARC: (a) + (b)	319,454	373,777	53,453	69,174	815,858
2. Amount under (over) funded from prior year (NPO)	(1,250,766)	(852,267)	(11,983)	0	(2,115,016)
3. Interest on NPO	(103,188)	(70,312)	(989)	0	(174,489)
4. Amortization of NPO	(98,556)	(67,155)	(944)	0	(166,655)
5. Pension Cost: (1c) + (3) – (4)	314,822	370,620	53,409	69,174	808,025
6. Actual Contribution *	378,000	481,826	36,000	69,174	965,000
7. (5) – (6)	(63,178)	(111,206)	17,409	0	(156,975)
8. Net Pension Obligation/(Asset): (2)+ (7)	(1,313,944)	(963,474)	5,426	0	(2,271,991)

* estimated

Section V

B. GASB Statement No. 27 ($000's omitted)

	State	Teachers	Boston Teachers	COLA	Total
1. Annual Required Contribution (ARC) for FY00					
a. Normal Cost	212,841	161,150	13,185	0	387,176
b. Amortization Cost	139,243	319,722	45,081	72,085	576,131
c. ARC: (a) + (b)	352,084	480,873	58,266	72,085	963,307
2. Amount under (over) funded from prior year (NPO)	(1,313,944)	(963,474)	5,426	0	(2,271,991)
3. Interest on NPO	(108,400)	(79,487)	448	0	(187,439)
4. Amortization of NPO	(107,190)	(78,599)	443	0	(185,346)
5. Pension Cost: (1c) + (3) – (4)	350,873	479,985	58,271	72,085	961,214
6. Actual Contribution *	367,000	468,000	45,000	72,085	952,085
7. (5) – (6)	(16,127)	11,985	13,271	0	9,129
8. Net Pension Obligation/(Asset): (2)+ (7)	(1,330,071)	(951,489)	18,697	0	(2,262,862)

* estimated

Section VI
Assets
(000's omitted)

A. Breakdown of Assets

	State	Teachers
Investment in the Pension Reserve Investment Trust		
Market value	$14,686,203	$15,034,188
Actuarial value (91% of market value)	$13,364,445	$13,681,111

B. Assets for Boston Teachers

For Boston Teachers, we assumed that the market value portion of total assets is allocated in the same proportion as shown in the January 1, 1994 actuarial valuation report for the City of Boston, performed by PERA. Assets were allocated to the teachers in the same proportion as the teachers accrued liability was in relation to the system's total accrued liability.

Total City of Boston assets	$3,162,000
Market Value	
Assets allocated to Boston Teachers (29.91%)	
Market value	945,754
Actuarial value (91% of market value)	$860,000

Section VI
Assets
(000's omitted)

C. Development of Actuarial Value of Assets for State and State Teachers

	State	Teachers	Total
A. Development of 12/31/99 actuarial value			
1. Market value 12/31/98	11,877,584	12,158,140	24,035,724
2. Actuarial value 12/31/98 (as calculated)	10,846,515	11,089,445	21,935,960
3. Employee contributions 1999 (est.)	262,517	259,718	522,235
4. Employer contributions 1999 (est.)	447,000	446,000	893,000
5. Benefit payments 1999 (est.)	(620,000)	(599,000)	(1,219,000)
6. Expected Investment return on (2): .0825 x (2)	894,837	914,879	1,809,717
7. Expected Investment return on (3)+(4)+(5): ½ x .0825 x [(3) + (4) + (5)]	3,693	4,402	8,095
8. Expected AVA 12/31/99: (2)+(3)+(4)+(5)+(6)+(7)	11,834,562	12,115,444	23,950,006
B. Previous differences not yet amortized			
1. Unrecognized amount of 12/31/98 difference:			
a. .6 x 1997 gain	439,068	475,606	914,674
b. .8 x 1998 gain	592,001	593,089	1,185,090
c. Total	1,031,069	1,068,694	2,099,764
C. Gain/(loss) from 1999			
1. Market value 12/31/99	14,686,203	15,034,188	29,720,391
2. Expected market value 12/31/99:A(8)+B(1c)	12,865,631	13,184,139	26,049,770
3. Gain/ (loss) from 1999 investment	1,820,572	1,850,049	3,670,621
D. Development of AVA 12/31/99			
1. 1999 gain	1,820,572	1,850,049	3,670,621
2. 1998 gain	740,001	741,361	1,481,362
3. 1997 gain	731,780	792,676	1,524,456
4. 20% of 1999 g/(l)	364,114	370,010	734,124
5. 20% of 1998 g/(l)	148,000	148,272	296,272
6. 20% of 1997 g/(l)	146,356	158,535	304,891
7. Total	658,471	676,817	1,335,288
8. Actuarial value 12/31/99: A(8)+D(7)	12,493,033	12,792,262	25,285,294
9. % of Market Value	85.1%	85.1%	85.1%
E. Actuarial value scheduled phase-in (91% of Market Value)	13,364,445	13,681,111	27,045,556
F. Actuarial Value: greater of D(8) and E	13,364,445	13,681,111	27,045,556

Section VII
Information on System Membership

A - State Employees

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

State Active Members

	Actives	Vested Terminated
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 VII
Information on System Membership (Continued)

State 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	$587,389,338	$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 VII
Information on System Membership (Continued)

State 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 VII
Information on System Membership (Continued)

State 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
Total	43,737	$633,838,149	$14,492

Section VII
Information on System Membership

B - Massachusetts Teachers

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 actual member information submitted as of 12/31/99 by the Teachers' Retirement Board (TRB).

Teachers' Active Members

We made several assumptions with regard to missing, questionable or unavailable data. Since credited service is not provided, we estimated service based on the date of hire provided. The TRB indicated that this date of hire represents the original date of hire/membership with the Teachers' System. To the extent there are members with breaks in service, this methodology will overstate the plan's liability. For member data without a date of birth and/or date of hire, we assumed (based on credited service or date of birth) the member was hired at age 30 or current age if less than 30.

We also reviewed whether reported pay was reasonable for all members with reported pay greater than $80,000. We requested individual data sheets for about 50 members of this group. We compared annuity savings fund contributions for 1999 to both reported pay and the contribution rate for all others. Pay for all members hired after September 1, 1999 was assumed to be $30,000 unless otherwise provided by individual record listing. Pay for members hired January 1, 1999 to September 1, 1999 was annualized based on the annuity saving fund (ASF) contribution for 1999 and the date of hire unless an individual record was requested.

Members with pay less than $5,000 were assumed to be inactive unless additional information was specifically requested and provided and these members were shown to be active. Other adjustments were made for members with reported pay between $5,000 and $15,000 depending on status code, employment date, ASF balance, and refund amounts.

We could not determine the number of vested terminations and instead estimated a combined inactive (terminated vested plus terminated with an ASF balance) liability.

We believe all of the payroll changes we assumed for this valuation, in aggregate, and combined with using total creditable service based on the original date of hire with the Teachers' system, are conservative and likely overstate the plan liabilities that would be determined if the payroll and total credited service for each member were accurately reflected in the data made available to PERAC.

Section VII
Information on System Membership

Teachers' Active Members (continued)

	Actives
Number of Members	82,242
Average Age	45.3
Average Service	16.0
Average Salary	$45,033
Average Annuity Savings Fund Balance	$37,360

Age by Service Distribution of Teacher Active Members

Years of Service

Present Age	*0 - 4*	*5 -9*	*10 - 14*	*15 - 19*	*20 – 24*	*25 – 29*	*30 +*	Total
0-24	1,923	2						1,925
25-29	7,565	1,078	2					8,645
30-34	4,525	2,583	608	6				7,722
35-39	2,606	1,335	2,016	407	6			6,370
40-44	2,749	1,215	1,805	1,837	996	7		8,609
45-49	2,652	1,342	1,863	1,495	4,556	3,923	19	15,850
50-54	1,541	876	1,464	843	1,586	7,719	4,843	18,872
55-59	596	287	651	460	614	1,547	6,442	10,597
60-64	145	64	179	181	266	437	1,784	3,056
65 +	29	19	55	35	65	102	291	596
Total	24,331	8,801	8,643	5,264	8,089	13,735	13,379	82,242

Section VII
Information on System Membership (Continued)

Teachers' Active Members (continued)

Salary by Age Distribution of Teacher Active Members

Present Age	*Number of Participants*	*Total Salary*	*Average Salary*
0 – 24	1,925	$56,630,784	$29,419
25 – 29	8,645	$277,257,594	$32,071
30 – 34	7,722	$276,899,257	$35,858
35 - 39	6,370	$254,091,108	$39,889
40 - 44	8,609	$366,740,824	$42,600
45 - 49	15,850	$746,298,100	$47,085
50 - 54	18,872	$965,664,601	$51,169
55 - 59	10,597	$564,076,238	$53,230
60 - 64	3,056	$164,268,791	$53,753
65 +	596	$31,659,729	$53,120
Total	82,242	$3,703,587,026	$45,033

Section VII
Information on System Membership (Continued)

Teachers' Retirees and Survivors

	Superannuation	*Acc Dis*	*Ord Dis*	*Survivors*	**Total**
Number of Members	28,023	248	478	2,997	31,746
Average Age	72.0	65.6	65.5	68.3	71.5
Avg. Annual Benefit	$21,027	$24,989	$14,640	$8,785	$19,806
	Benefit by Payment and Retirement Type				
Annuity	$20,630,810	$32,033	$50,077	$434,984	$21,147,904
Pension	$568,620,370	$6,165,169	$6,947,973	$25,894,478	$607,627,990
Total	$589,251,181	$6,197,202	$6,998,050	$26,329,462	$628,775,895

Section VII
Information on System Membership (Continued)

Teachers' Retirees and Survivors (continued)

Benefit by Age Distribution

Present Age	*Number of Members*	*Total Benefits*	*Average Benefits*
less than 40	250	$2,079,636	$8,319
40 -44	27	$175,652	$6,506
45 - 49	153	$1,613,485	$10,546
50 - 54	758	$10,612,584	$14,001
55 - 59	2,107	$38,760,323	$18,396
60 - 64	5,078	$133,956,292	$26,380
65 - 69	6,736	$168,325,891	$24,989
70 - 74	5,755	$117,611,747	$20,436
75 - 79	4,276	$69,447,959	$16,241
80 - 84	2,948	$40,327,630	$13,680
85 - 89	2,083	$26,675,365	$12,806
90 +	1,575	$19,189,331	$12,183
Totals	31,746	$628,775,895	$19,806

Section VII
Information on System Membership (Continued)

C - Boston Teachers

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

Boston Teachers- Active Members

	Actives	Vested Terminated
Number of Members	5,128	307
Average Age	49.8	48.5
Average Service	19.3	20.4
Average Salary	$55,623	$48,404
Average Annuity Savings Fund Balance	$57,147	$25,381

Terminated vested members were not coded as such. We estimated the number of terminated vested members based on credited service and estimated the liability assuming final average earnings of $40,000 or $50,000 depending on the member's age.

Age by Service Distribution of Boston Teacher Active Members

Years of Service

Present Age	*0 - 4*	*5 -9*	*10 - 14*	*15 - 19*	*20 – 24*	*25 - 29*	*30 +*	Total
0-24								
25-29	58	50	5					113
30-34	73	193	48	4				318
35-39	34	125	146	23	3			331
40-44	35	119	208	139	60	2	2	565
45-49	42	120	233	169	262	176	5	1,007
50-54	30	87	164	181	142	445	314	1,363
55-59	20	39	99	78	90	134	424	884
60-64	5	16	45	34	38	55	179	372
65 +	1	7	25	25	31	29	57	175
Total	298	756	973	653	626	841	981	5,128

Section VII
Information on System Membership (Continued)

Boston Teachers- Active Members (continued)

Salary by Age Distribution of Boston Teacher Active Members

Present Age	*Number of Participants*	*Total Salary*	*Average Salary*
0 - 24	N/A	N/A	N/A
25 - 29	113	$5,502,685	$48,696
30 - 34	318	$16,385,928	$51,528
35 - 39	331	$17,790,120	$53,747
40 - 44	565	$31,161,453	$55,153
45 - 49	1,007	$57,557,989	$57,158
50 - 54	1,363	$79,165,520	$58,082
55 - 59	884	$50,545,128	$57,178
60 - 64	372	$19,089,880	$51,317
65 +	175	$8,034,944	$45,914
Total	5,128	$285,233,647	$55,623

Section VII
Information on System Membership (Continued)

Boston Teachers- Retirees and Survivors

Retirees and Survivors

	Superannuation	*Acc Dis*	*Ord Dis*	*Survivors*	Total
Number of Members	1,927	55	42	219	2,243
Average Age	73.5	67.4	63.7	71.0	73.0
Avg. Annual Benefit	$24,129	$24,716	$15,233	$10,150	$22,612
	Benefit by Payment and Retirement Type				
Annuity	$7,549,961	$273,068	$88,526	$379,647	$8,291,202
Pension	$38,946,279	$1,086,291	$551,259	$1,843,293	$42,427,122
TOTAL	$46,496,240	$1,359,359	$639,785	$2,222,940	$50,718,324

Section VII
Information on System Membership (Continued)

Boston Teachers- Retirees and Survivors (continued)

Benefit by Age Distribution

Present Age	*Number of Members*	*Total Benefits*	*Average Benefits*
less than 40	7	$49,010	$7,001
40 -44	2	$17,647	$8,824
45 - 49	17	$171,508	$10,089
50 - 54	56	$982,141	$17,538
55 - 59	133	$2,641,195	$19,859
60 - 64	274	$8,022,304	$29,278
65 - 69	406	$11,569,057	$28,495
70 - 74	449	$11,188,719	$24,919
75 - 79	335	$7,003,769	$20,907
80 - 84	233	$4,001,543	$17,174
85 - 89	181	$2,853,957	$15,768
90 +	150	$2,217,474	$14,783
Totals	2,243	$50,718,324	$22,612

Section VIII
Valuation Cost Methods

A Actuarial Cost Method

The Actuarial Cost Method which was used to determine pension liabilities and costs for benefits payable under the State Employees' Contributory Retirement System, the Massachusetts Teachers' Retirement System, and for the Boston Teachers, for the year beginning January 1, 1999, is known as the Entry Age Normal Cost Method. Under this method the Normal Cost for each active member on the valuation date is determined as the level percent of salary, which, if paid annually from the date the member 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 member is determined as the present value as of the valuation date of all projected benefits which the member 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 member is equal to the Normal Cost and Actuarial Liability for the Plan. The Unfunded Actuarial Liability is the Actuarial Liability minus current assets.

The Normal Cost for a member 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 members or the retirement, death or termination of members. The Actuarial Liability for a member 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.

B Asset Valuation Method

In valuations up 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 the market value approach from year to year. 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 IX
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, it is assumed that 40% of deaths are from the same cause as the disability.
Rate of Withdrawal	Based on an analysis of past experience. Sample annual rates are shown below:

Age	Teachers	Other Groups 1 & 2	Groups 3 & 4
20	0.0960	0.1200	0.0210
30	0.0444	0.0555	0.0165
40	0.0185	0.0231	0.0056
50	0.0117	0.0146	0.0000

Section IX
Actuarial Assumptions (Continued)

Rate of Disability

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

Age	Teachers	Groups 1 & 2	Group 3	Group 4
20	0.0003	0.0006	0.0011	0.0010
30	0.0006	0.0011	0.0025	0.0023
40	0.0012	0.0024	0.0096	0.0087
50	0.0031	0.0061	0.0000	0.0110
60	0.0061	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% of disabilities will be job related for Group 3 and 4 members.

Rate of Retirement (Superannuation)

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

Age	Teachers/Groups 1 & 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
51	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
63	0.1071	1.0000	0.1253
64	0.1037	1.0000	0.1873
65	0.3568	1.0000	1.0000

Section IX
Actuarial Assumptions (Continued)

Age	Teachers Groups 1 & 2	Group 3	Group 4
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.

Assumptions made with respect to data are discussed in Section VII.

Section X
Summary of Plan Provisions (as of 1/1/00)

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 four classes of membership for Commonwealth employees:

Group 1 - General employees, including teachers, 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% - 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.

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.

Section X
Summary of Plan Provisions (Continued)

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. For 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.

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.

Section X
Summary of Plan Provisions (Continued)

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."

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 (or $312.00 per year in systems in which the local option contained in G.L. c. 32, s.7 (2)(b)(iii) has not been adopted), 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. Those who became members in service after January 1, 1988 or who have not been members in service continually since that date.

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.

Section X
Summary of Plan Provisions (Continued)

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.

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.

Section X
Summary of Plan Provisions (Continued)

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.

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. Based on legislation effective July 1, 1998, members who retired prior to January 12, 1988 and whose beneficiary pre-deceases the retiree, would have their benefit "pop-up" in the same fashion. 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 XI
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 PERA 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 XI
Glossary of Terms (Continued)

ASSETS The value of securities as described in Section VIII.

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 22C of M.G.L. Chapter 32.

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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 PERA 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.