



**MILLIMAN & ROBERTSON, INC.**



**ACTUARIAL VALUATION  
CONNECTICUT STATE EMPLOYEES  
RETIREMENT SYSTEM**

**AT**

**JUNE 30, 1992**



## MILLIMAN & ROBERTSON, INC.

Actuaries and Consultants

Three Corporate Place  
Bloomfield, Connecticut 06002  
Telephone: 203/243-1188  
Fax: 203/286-0564

September 4, 1992

### PERSONAL & CONFIDENTIAL

Mr. Steven Weinberger  
Director, Retirement Division  
State of Connecticut  
55 Elm Street  
Hartford, CT 06106

Re: Connecticut State Employees Retirement System  
Estimate, Projection, and Forecast of Contributions

Dear Steve:

You asked us to estimate the contributions for the next several years. We started with the results from the July 1, 1991 valuation and made the following assumptions:

- no changes in assumptions;
- no changes in the cost method;
- no liability or asset gains or losses;
- the FY 1992-93 contribution will be \$273,338,628; and
- current employees of the Newington Children's Hospital who were members of SERS continue as such.

We used the following methodology for calculating the Past Service Cost:

- FY 1993-94 payment will be \$121,300,000;
- FY 1994-95 payment will be \$130,500,000;
- FY 1995-96 payment will be \$138,400,000;
- FY 1996-97 payment will be amortized as a level dollar amount over 36 years (40 year period starting in FY 1992-93); and
- payment of ERIP I and ERIP II will start in FY 1994-95 using 40 year level dollar amortization.

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*APPENDIX E*

*ENTRY AGE NORMAL VALUATION RESULTS*

	<i>June 30, 1992</i>	<i>June 30, 1993</i>
<b>A. Current Results</b>		
1. Present Value of Future Benefits		
- Active Members	\$5,670,333,462	\$5,462,816,433
- Retired and Beneficiaries	3,586,975,212	3,874,194,605
- Deferred Vested Members	35,857,508	34,490,397
- Total Present Value	9,293,166,182	9,371,501,435
2. Present Value Future Normal Cost Contributions	1,841,767,847	1,611,942,903
3. Total Actuarial Liability: (1)-(2)	7,451,398,335	7,759,558,532
4. Actuarial Value of Assets	3,425,886,181	3,696,176,885
5. Unfunded Actuarial Liability: (3)-(4)	4,025,512,154	4,063,381,647
6. Total Normal Cost	175,402,031	174,565,782
7. Expected Employee Contributions	30,836,060	30,267,541
8. Employer Normal Cost: (6)-(7)	144,565,971	144,298,241
<b>B. Projections to Following Year</b>		
1. Employer Normal Cost	164,831,497	164,572,786
2. Unfunded Actuarial Liability	4,241,468,887	4,257,814,019
3. Past Service Cost	362,237,226	364,976,981
4. Total Cost: (1)+(3)	527,068,723	529,549,767
5. Total Cost as a Percent of Pay	25.01%	22.62%

**CONNECTICUT STATE EMPLOYEES - CONTRIBUTION PROJECTION**  
(\$ MILLIONS)

	Estimated 1993-94	Projected 1994-95	Forecast 1995-96	Forecast 1996-97	Forecast 1997-98
1. Market Value of Assets	\$ 3,666.5	\$ 4,017.9	\$ 4,430.7	\$ 4,888.9	\$ 5,527.5
2. Actuarial Value of Assets	3,578.7	3,997.1	4,436.6	4,888.9	5,527.5
3. System Past Service Liability	6,615.0	6,898.5	7,393.6	7,932.1	8,518.5
4. Unfunded Past Service Liability: (3)-(2)	3,036.3	2,901.4	2,957.0	3,043.2	2,991.0
5. (4) projected to end of year	3,209.1	3,022.1	3,054.7	3,140.0	2,945.2
6. Amortization Period	39 years	38 years	37 years	36 years	35 years
7. Past Service Payment	121.3*	130.5*	138.4*	271.4	255.8
8. Normal Cost	185.6	203.9	221.2	239.9	260.3
9. ERIP Payment	0.0	17.4	17.4	17.4	17.4
10. Total Employer Contribution: (7)+(8)+(9)	306.9	351.8	377.0	528.7	533.5
11. Total Payroll	2,162.4	2,301.8	2,450.2	2,608.3	2,776.6
12. Total Employer Cost Percent: (10)/(11)	14.2%	15.3%	15.4%	20.3%	19.2%

\* Per SEBAC agreement

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1993-07-28

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TO :

FROM : RET-MPIP

**ACTUARIAL VALUATION OF THE CONNECTICUT STATE EMPLOYEES  
RETIREMENT SYSTEM**

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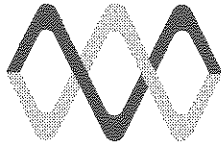
**Section**

-	Letter of Transmittal
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II	SERS Assets
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**APPENDICES**

A	Summary Statistics on SERS Membership
B	Summary of Plan Provisions
C	Actuarial Method and Assumptions
D	Actuarial Surplus Test
E	Entry Age Normal Valuation Results



## **MILLIMAN & ROBERTSON, INC.**

Actuaries and Consultants

Three Corporate Place  
Bloomfield, Connecticut 06002  
Telephone: 203/243-1138  
Fax: 203/286-0564

November 17, 1992

State of Connecticut  
State Employees Retirement Commission  
55 Elm Street  
Hartford, CT 06106

Re: Connecticut State Employees Retirement System

Members of the Commission:

At your request, we have made an actuarial valuation of the Connecticut State Employees Retirement System (SERS) as of June 30, 1992. The results of the valuation are contained in the following report.

Section I contains an Executive Summary in which we present the principal results of this valuation. Details regarding SERS assets, liabilities, and costs are found in Sections II, III, and IV, respectively. Section V contains the disclosure information required by GASB #5. The Appendices contain information regarding SERS membership, an outline of the benefit provisions, a description of the actuarial methods and assumptions employed in this valuation, details on the Actuarial Surplus as of June 30, 1992, and Entry Age Normal Results.

As developed in Section IV, the actuarially determined contribution for the fiscal year beginning July 1, 1993, including Federal reimbursements, is \$480,355,275. In accordance with the provisions of a collectively negotiated agreement (SEBAC III), \$170,148,924 of this amount will not be paid.

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November 17, 1992

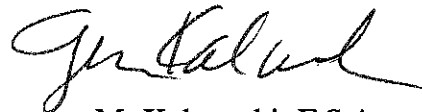
Re: Connecticut State Employees Retirement System

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In our opinion, this report fairly presents the financial and actuarial position of the Connecticut State Employees Retirement System at June 30, 1992. On the basis of the foregoing, we hereby certify that, to the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices set forth by the American Academy of Actuaries.

Respectfully submitted,

MILLIMAN & ROBERTSON, INC.



Eugene M. Kalwarski, F.S.A.  
Consulting Actuary



Althea A. Schwartz, F.S.A.  
Consulting Actuary

**SECTION I**  
**EXECUTIVE SUMMARY**



## SECTION I

### EXECUTIVE SUMMARY

#### PURPOSE OF REPORT

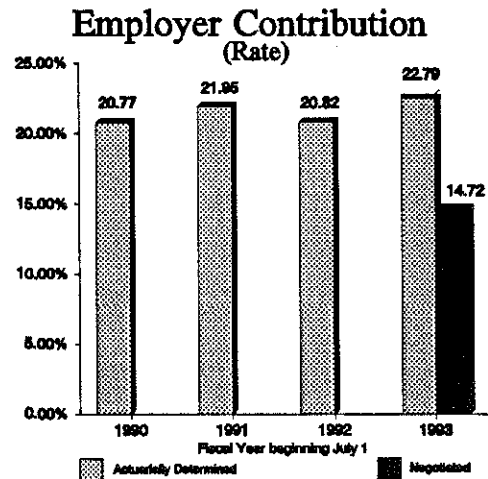
This report presents the results of the June 30, 1992 actuarial valuation of the Connecticut State Employees Retirement System (SERS). The primary purposes of performing the valuation are as follows:

- to determine the contributions to be paid by the Employer for Fiscal Year beginning July 1, 1993
- to disclose asset and liability measures as of June 30, 1992, and
- to analyze and report on trends in SERS contributions, assets, and liabilities over the past several years.

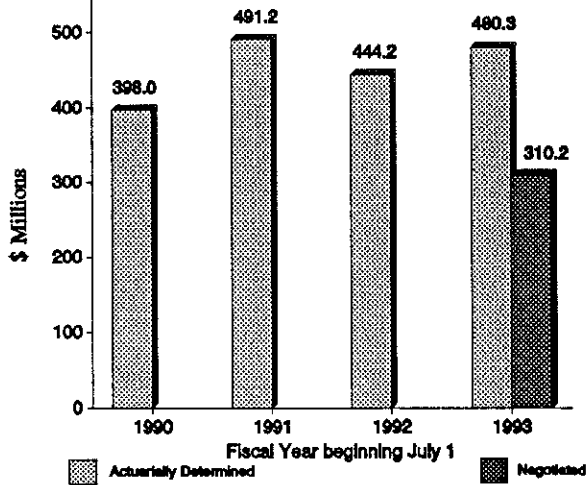
#### MAJOR FINDINGS

The major findings of the 1992 valuation are summarized and compared in the following charts:

*Until this year, the Employer's contribution rate has been relatively level. For 1993, the actuarially determined contribution rate is shown along with the rate reflecting negotiated changes (see page 9). The actuarially determined rate is higher for 1993 due primarily to contribution shortfalls.*

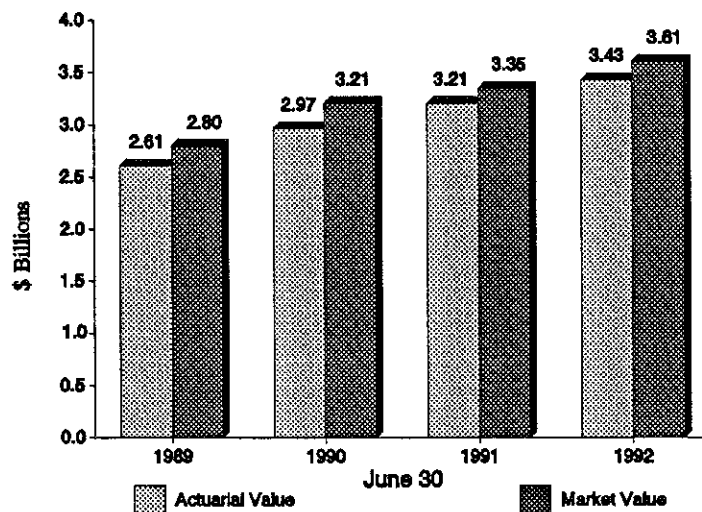


### Employer Contribution (Dollars)



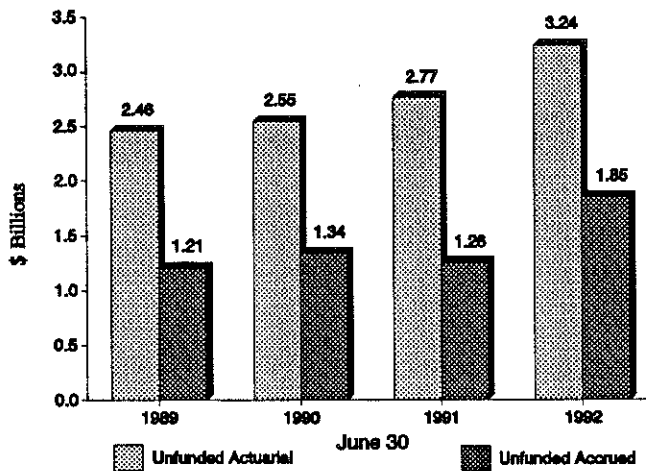
The dollar amount of the Employer's contribution equals the contribution rate shown above times the projected payroll. Growth during 1990 - 1992, was due primarily to growth in payroll. For 1993, the actuarially determined dollar amount is higher, despite a payroll drop, than in previous years due to the contribution shortfalls. The negotiated contribution amount represents the normal cost payment plus a fixed past service payment.

### SERS Assets



The SERS's assets have grown as expected in recent years due to investment performance and positive cashflow.

### SERS Unfunded Liabilities



*Unfunded "actuarial" liabilities (projected) and Unfunded "accrued" liabilities (based on service and pay on June 30) have generally increased each year for many reasons. Contributing factors include liability losses, benefit improvements, early retirement incentives, and contribution shortfalls.*

**SERS EXPERIENCE JULY 1, 1991 TO JUNE 30, 1992**

Overall, SERS experience was generally unfavorable during the valuation period. The normal cost as a percent of pay increased slightly from 8.83% to 8.96%. However, due to a lower pay base, the normal cost dollar level dropped slightly. The unfunded actuarial liability increased again this year due to asset losses, adverse experience, and the 1991-1992 Early Retirement Incentive Program. We did not see the usual movement of the membership from the more costly Tier I to the less expensive Tier II.

The following circumstances contributed to the results shown in this report:

- ▶ Two collective bargaining agreements negotiated between the State of Connecticut and the State Employees Bargaining Agent Coalition (SEBAC II and III) included several provisions with funding implications:
  - *Underfunding...*The negotiated contributions for FY 1991-92 and for FY 1992-93 together represent a shortfall of \$332.2 million to SERS.
  - *Delay of Funding...*The costs associated with the two recent retirement incentive programs will be delayed until FY 1994-95, when the cost will be amortized over a 40 year period.
  - *Extension of Funding...*The Unfunded Actuarial Liability will be amortized over 39 years. This added 10 years to amortization period for this valuation.
  - *Reduction of Funding...*The negotiated Past Service Cost that will be paid for FY 1993-94 is \$121.3 million. This is significantly less than the actuarially determined amount of \$291.4 million.
- ▶ The 1991-1992 Early Retirement Incentive Program impacted the results in two major ways:
  - The enhanced benefits increased SERS unfunded liability by \$61.7 million. For the first time, the liability for inactive participants exceeds the liability for active participants.
  - The Program had a significant impact on the system's retirement pattern. Retirements were delayed in anticipation of the Program. We also expect there will be fewer retirements over the next several years than under normal circumstances; fewer employees will be eligible to retire, and those that are eligible may be waiting in anticipation for another retirement incentive.

- ▶ There were several unexpected changes in SERS demographics stemming from the 1991-1992 Early Retirement Incentive Program, the hiring freeze, layoffs, and the general state of the economy:
  - Employees who did not take advantage of the 1991-1992 Early Retirement Incentive Program were promoted to fill the positions vacated by retiring employees.
  - There was an increase in overtime for the remaining employees during the transition to a leaner workforce.
  - Normally, retiring employees leave the more costly Tier I and are replaced by lower-paid employees who join the less expensive Tier II. This movement between tiers did not occur to the extent expected.
  - Significantly, fewer than expected employees terminated employment before retirement.
- ▶ For the second year in a row, SERS experienced an asset loss. The assumed rate of return is 8.5% while the actual return was 7.22% and 7.43% for FY 1991-92 and FY 1990-91 respectively.
- ▶ For FY 1993-94, the outflow for retirement payments will exceed the Employer's contribution by \$23.8 million. SERS will remain in a positive cashflow position because of \$30.8 million in expected member contributions during FY 1993-94, as well as anticipated income from investments.
- ▶ During the valuation process, two data-related situations were brought to light:
  - There is a relatively constant number of active employees receiving Workers' Compensation payments during any given fiscal year. Data on Workers' Compensation payment have in the past been provided to the Retirement Commission by a third-party administrator retained by the Department of Administrative Services (DAS). On July 1, 1991, DAS changed third-party administrators; unfortunately, this new vendor has been unable to supply the Commission with the information it requires. Due to this omission, there exists the possibility that the system's termination activity, as unexpectedly low as it is, may actually be overstated.
  - Based upon discussions with the Retirement Commission, we have developed a new methodology which more accurately recognizes the system's liability for terminated vested participants; as a result, SERS liability has increased by \$20.5 million.

By statute, the actuarial assumptions are based on a study of SERS's experience to be conducted once every five years. This valuation is the last one before a new experience study is performed. The upcoming experience study will provide a more up-to-date basis for our projections.

## COMPARISON OF RESULTS

The following pages detail the impact of the above factors on the increase in SERS Assets, Unfunded Liabilities and Contribution Level.

### Assets

Between June 30, 1991 and June 30, 1992, the actuarial value of assets (measured on a five year smoothing basis) increased by \$208 million. This change was attributable to the following:

	<u>(\$million)</u>
June 30, 1991 actuarial value of assets	\$3,218
Change in Assets	
• Employer and Member Contribution	283
• Benefits and Expenses	(307)
• Expected Total Return on Investments	273
• Investment Gain/(Loss)	<u>(41)</u>
Total Changes	208
June 30, 1992 actuarial value of assets	\$3,426

The expected total return on investments shown above is based on an assumed rate of return of 8.5%. However, the effective investment return on the actuarial value of assets was 7.22%, resulting in an actuarial loss of \$41 million. More details on SERS assets are presented in Section II of this report.

### Unfunded Liabilities

Two different measurements of unfunded liabilities are shown in the following chart.

- Actuarial Liability is used for determining contribution levels. It is based on future payroll projections with service credits as of June 30, 1992.
- Liability for Accrued Benefits is used for informational purposes and is based on service and payroll as of June 30, 1992. The liability for accrued benefits can be used as a measure of the funded status of the SERS, since it represents the asset requirements on a shutdown basis.
- Pension Benefit Obligation is the liability measure required by GASB #5. It is based on future payroll projections with service credits as of June 30, 1992.

The unfunded portion of the three liability measures is determined by subtracting the assets from the appropriate liability. (For the first two liability measures, the actuarial value of assets is used; for the third liability measure, the market value of assets is used.) The net changes in SERS unfunded liabilities between June 30, 1991 and June 30, 1992 are summarized below:

	June 30 (\$ million)		Increase
	1991	1992	
Unfunded Actuarial Liability	2,792	3,243	451
Unfunded Liability for Accrued Benefits	1,401	1,851	450
Unfunded Pension Benefit Obligation	2,648	3,063	415

The unfunded actuarial liability of SERS increased during the past year. Assuming future experience is exactly as assumed, the Employer makes the required contribution and there are no benefit improvements, the unfunded actuarial liability is expected to decrease each year. This is because the unfunded actuarial liability is scheduled to be amortized on a level dollar basis over a decreasing number of years. The amortization period is 39 years for the Fiscal Year beginning July 1, 1993. The following table shows the development of the unfunded accrued liability from 1991 to 1992.

	<u>(\$ Million)</u>
Unfunded Actuarial Liability, 7/1/91	\$2,791.9
• Interest and Expected Benefit Accruals	458.6
• Expected Contribution with Interest for FY 91-92	(482.2)
• Contribution Shortfall with Interest	187.9
• Asset Losses	41.0
• Liability Losses	163.4
• Impact of Early Retirement Incentive Program	61.7
• Revision in Terminated Vested Valuation Procedure	20.5
Unfunded Actuarial Liability, 7/1/92	3,242.8



**SERS Contributions**

SERS contributions projected to the Fiscal Year beginning July 1, 1993 are \$310.2 million. This compares to the prior year's recommended contribution of \$444.2 million as follows:

	<u>(\$ Million)</u>
Contribution Certified for FY 1992-93	\$444.2
• Reinstatement of Newington Children's Hospital	3.6
• Removal of Funding for 1989 Retirement Incentive Bonuses	(11.8)
• Impact of 1991-92 Contribution Shortfall	17.4
• Impact of 1992-93 Contribution Shortfall	14.4
• Impact of Change in Amortization Period	(11.9)
• Increase due to Expected Payroll Growth and Changes in Membership Profile	18.3
• Asset Losses	3.8
• Liability Losses	15.1
• Impact of Revision to TV Valuation Procedure	1.9
• Impact of 1991-1992 Early Retirement Incentive Program	(14.7)
Contribution before Negotiated Adjustments	480.3
• Deferral of Funding for 1991-1992 Early Retirement Incentive Program	(5.7)
• Negotiated Adjustment to Past Service Cost Payment in SEBAC III	(164.4)
Contribution for FY 1993-94	310.2

**ACTUARIAL SURPLUS**

There is no actuarial surplus as defined in Section 5-162h(b) of the Statute.

In concluding this executive summary, we present on the following page comparative statistics and actuarial information on both the June 30, 1992 and June 30, 1991 valuations.

Note that the 1991 results shown in this report, for comparison purposes, include the Newington Children's Hospital participants. Our prior valuation reflected the provisions of Public Act 91-10 whereby the active employees of Newington Children's Hospital were no longer covered by SERS effective July 1, 1991. Since our prior valuation, Public Act 91-10 was repealed by Public Act 92-26; the active NCH employees are still covered by SERS.

**CONNECTICUT STATE EMPLOYEES RETIREMENT SYSTEM  
PRINCIPAL RESULTS**

	June 30, 1991	June 30, 1992	% Chg
<b>SERS MEMBERSHIP</b>			
1. Active Membership			
- Number of Participants	55,814	51,133	-8.39%
- Payroll	\$1,983,608,942	\$1,931,381,254	-2.63
- Average Pay	\$35,540	\$37,772	+6.28
2. Inactive Membership			
- Number of Vested Deferred Members	727	693	-4.68
- Number of Retired Members	23,779	26,572	+11.75
- Annual Retired Members Benefits	\$262,970,516	\$334,033,224	+27.02
- Average Annual Retired Member Benefit	\$11,059	\$12,571	+13.67
<b>ASSETS AND LIABILITIES</b>			
1. Assets			
- Market Value	3,361,617,471	3,605,993,231	+7.27
- Actuarial Value	3,217,894,417	3,425,886,181	+6.46
2. Liabilities			
- Retired and Deferred Vested	2,795,890,494 <sup>(a)</sup>	3,622,832,720	+29.58
- Active Members	3,213,854,542	3,045,852,614	-5.23
- Total Liability	6,009,745,036	6,668,685,334	+10.96
- Unfunded Liability	2,791,850,619	3,242,799,153	+16.15
<b>EMPLOYER CONTRIBUTIONS</b>			
1. Contributions as a Percent of Projected Payroll			
- Normal Cost	8.83%	8.96%	+1.47%
- Unfunded Liability	11.87%	5.76% <sup>(c)</sup>	-51.22
- Total Contribution %	20.70%	14.72%	-28.89
2. Contribution Dollars Projected to the following FY			
- Normal Cost	\$191,019,008	\$188,906,351	-0.11%
- Unfunded Liability	256,780,845 <sup>(b)</sup>	121,300,000 <sup>(c)</sup>	-47.24
- Total Employer Contribution	447,799,853	310,206,351	-30.73

(a) Does not include liability for 1989 Retirement Incentive Program.

(b) Includes payment for 1989 Retirement Incentive Program.

(c) Reflects SEBAC III agreement to fund \$121,300,000 in Past Service Cost.

**SECTION II**  
**SERS ASSETS**

## SECTION II

### SERS ASSETS

In this section we present the values assigned to the assets held by SERS. These assets are valued on two different bases: the actuarial value and the market value.

#### Actuarial Value of Assets

For purposes of determining ongoing costs, the recognition of gains and losses are spread over five years. The resulting value is called the actuarial value of assets and is further adjusted as necessary so that the final actuarial value is within 20% (plus or minus) of the market value of assets.

#### Market Value of Assets

For certain accounting statement purposes, SERS assets are valued at current market rates. These values represent the "snapshot" or "cash-out" value of SERS assets as of the valuation date. In addition, the market value of assets provides a reference point to compare to current accrued liabilities.

The following tables present information regarding the actuarial and market values of SERS assets as of June 30, 1992.

<u>Table</u>	<u>Contents</u>
II-1	Market Value - Summary of Fund Transactions
II-2	Market Value - Breakdown on June 30, 1992
II-3	Actuarial Value of Assets
II-4	Development of Asset Gain/Loss
II-5	Historical Summary (Actuarial and Market)

**MARKET VALUE OF ASSETS  
SUMMARY OF FUND TRANSACTIONS**

Market Value as of July 1, 1991		\$3,361,617,471
<b><u>Contributions</u></b>		
State	\$132,341,025	
Federal	117,983,260	
Employee	<u>33,169,806</u>	
		283,494,091
<b><u>Investment Income</u></b>		
Interest and Dividends	\$152,567,822	
Realized Gains	42,882,764	
Change in Unrealized Gains	<u>72,441,760</u>	
		267,892,346
<b><u>Disbursements</u></b>		
Benefit Payments	\$304,969,899	
Employee Refunds	1,902,816	
Expenses	<u>137,962</u>	
		307,010,677
Market Value as of June 30, 1992		3,605,993,231
Rate of Return as of June 30, 1992		8.00%
Rate of Return as of June 30, 1991		<u>3.89%</u>
Change		Up 4.11%

**MARKET VALUE OF ASSETS  
BREAKDOWN ON JUNE 30, 1992**

The following is the Market Value of the State Employees Retirement Fund assets as reported to us by the Retirement Division:

	<u>Amount</u>	<u>% of Total</u>
Cash	\$ 44,384,122	1.23%
Accrued Interest	0	0.00%
Investments		
• Cash Reserve Account	\$ 129,890,999	3.60%
• Fixed Income	907,256,351	25.16%
• Equity	1,201,350,253	33.32%
• Mortgage	30,063,826	0.83%
• Real Estate	381,128,915	10.57%
• International Funds	737,732,405	20.46%
• Commercial Mortgage Fund	129,317,709	3.59%
• Venture Capital Fund	40,745,567	1.13%
• Connecticut Programs Fund	<u>4,123,084</u>	<u>0.11%</u>
	\$3,561,609,109	98.77%
Total Market Value of Assets as of June 30, 1992	\$3,605,993,231	100.00%

## ACTUARIAL VALUE OF ASSETS

<u>Ending</u>	<u>Realized Gains/Losses</u>	<u>Change in Unrealized Gains/Losses</u>	<u>Total Gains/Losses</u>
6-30-92	\$ 42,882,763	\$ 72,441,760	\$115,324,523
6-30-91	16,110,453	(45,666,489)	(29,556,036)
6-30-90	17,558,291	145,435,286	162,993,577
6-30-89	(38,287,173)	240,205,288	201,918,115

Actuarial Value of Assets as of June 30, 1992 is derived as follows:

1.	Market Value of Assets as of June 30, 1992:		\$3,605,993,231
2.	Five-Year Gains and Losses Not Yet Recognized:		
	80% of FY 92	\$ 92,259,618	
	60% of FY 91	(17,733,622)	
	40% of FY 90	65,197,431	
	20% of FY 89	<u>40,383,623</u>	
			180,107,050
3.	20% of (1)		721,198,646
4.	Actuarial Value of Assets as of June 30, 1992 (1)-(2), within (1) +/- (3)		3,425,886,181
	Rate of Return on Actuarial Value of Assets as of June 30, 1992		7.22%
	Rate of Return on Actuarial Value of Assets as of June 30, 1991		<u>7.43%</u>
	Change		Down 0.21%

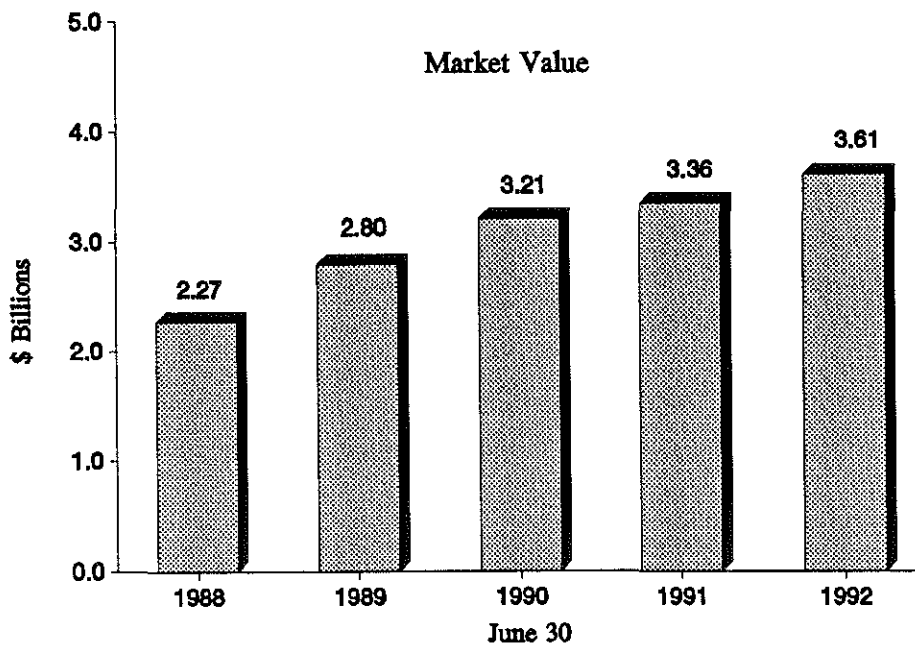
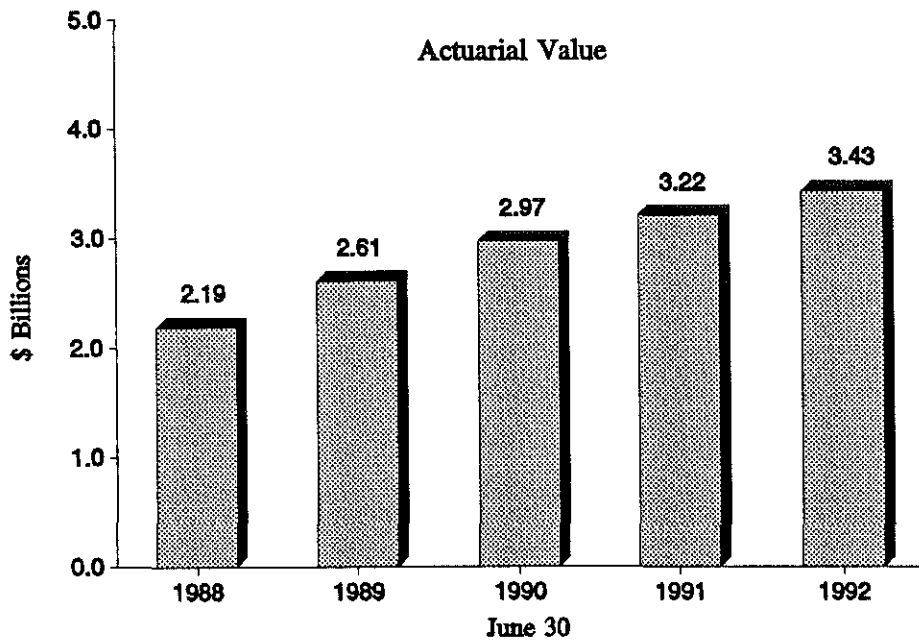
## DEVELOPMENT OF ASSET GAIN/LOSS

	<u>Market Value of Assets</u>	<u>Actuarial Value of Assets</u>
(1) Value of Assets as of July 1, 1991	\$3,361,617,471	\$3,217,894,417
(2) Contributions	283,494,091	283,494,091
(3) Benefit Payments and Expenses paid during 1991-92	307,010,677	307,010,677
(4) Expected Investment Income at 8½% on (1) through (3)	284,758,412	272,541,952
(5) Actual Investment Income	267,892,346	231,508,350
(6) Expected Value of Assets as of June 30, 1992: (1)+(2)-(3)+(4)	3,622,859,297	3,466,919,783
(7) Actual Value of Assets as of June 30, 1992: (1)+(2)-(3)+(5)	3,605,993,231	3,425,886,181
(8) Asset Gain/(Loss): (7)-(6)	(16,866,066)	(41,033,602)
(9) Approximate Effective Yield Represented by Actual Investment Income	8.00%	7.22%

**Note:** The rate shown here is a rough estimate of the return on plan assets used in the valuation. It assumes all transactions occur in the middle of the period. This rate may therefore not be the same as the yield earned on the plan's invested assets.



HISTORICAL SUMMARY OF SYSTEM ASSETS



**SECTION III**  
**SERS LIABILITIES**

**SECTION III**  
**SERS LIABILITIES**

In this section we present values assigned to the liabilities of SERS and then compare these liabilities to SERS assets.

The actuarial funding method used to determine SERS costs is based on the Projected Unit Credit method. This method is also used to determine the Projected Benefit Obligation (PBO) required by the Government Accounting Standards (GASB). A more detailed description of this method can be found in Appendix C.

The tables in this section present SERS liabilities as follows:

<b><u>Table</u></b>	<b><u>Contents</u></b>
III-1	SERS Liabilities
III-2	Active Liabilities by Tier and Plan
III-3	Historical Summary of SERS Liabilities

## SERS LIABILITIES

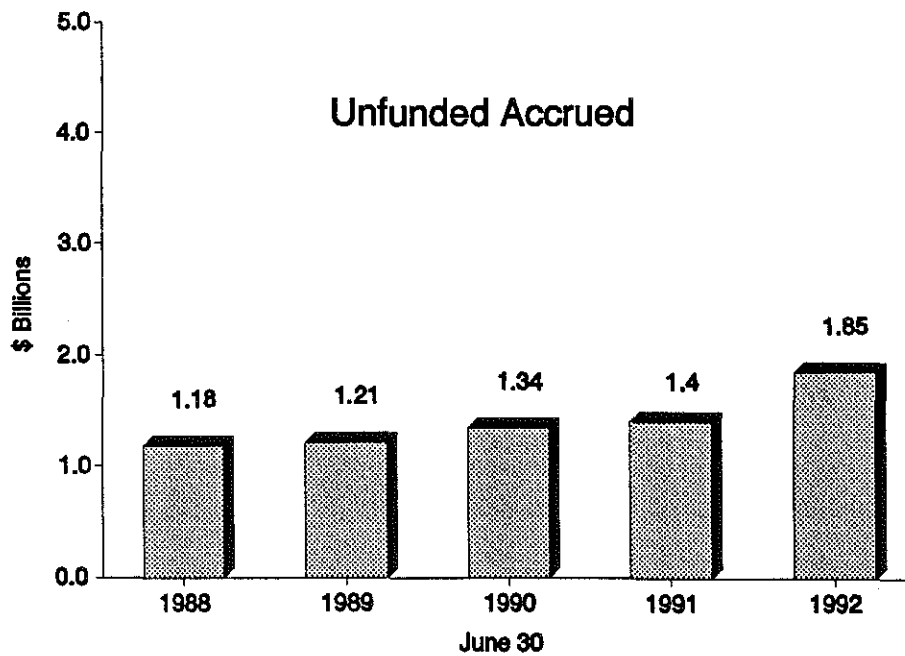
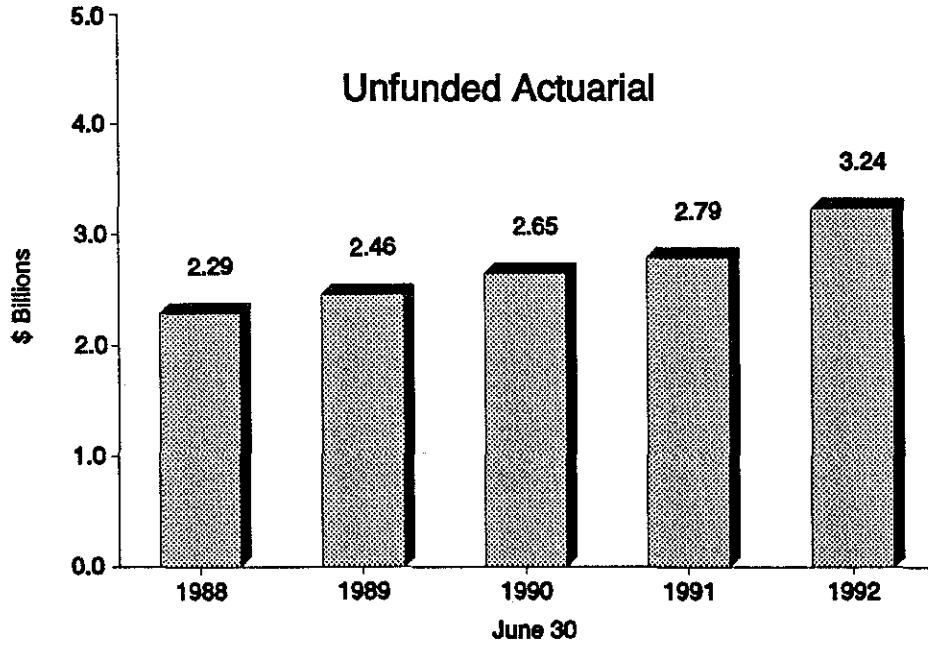
		JUNE 30, 1991	JUNE 30, 1992
1.	Liability for Retired Members	\$2,780,344,628*	\$3,586,975,212
2.	Liability for Deferred Vested Members	<u>15,545,866</u>	<u>35,857,508</u>
3.	Total Inactive Liability	2,795,890,494	3,622,832,720
4.	Active Members Actuarial Liability	<u>3,213,854,542</u>	<u>3,045,852,614</u>
5.	Total SERS Actuarial Liability	<u>6,009,745,036*</u>	<u>6,668,685,334</u>
6.	Actuarial Value of Assets	3,217,894,417	3,425,886,181
7.	Total SERS Unfunded Actuarial Liability	<u>2,791,850,619*</u>	<u>3,242,799,153</u>

\* Does not reflect liability for Retirement Incentive Bonuses. (These monthly payments of \$988,221 will be paid for a three year period with a total outlay of about \$35.6 million or \$11.9 million on an annual basis).

## ACTIVE LIABILITIES BY TIER AND PLAN

	ACTUARIAL LIABILITY	
	JUNE 30, 1991	JUNE 30, 1992
<b>TIER I</b>		
Hazardous Duty	\$ 426,005,739	\$ 404,751,942
Plan B	2,198,579,510	1,997,196,858
Plan C	217,122,029	165,376,786
<b>Total</b>	<b>2,841,707,278</b>	<b>2,567,325,586</b>
<b>TIER II</b>		
Hazardous Duty	92,991,120	129,958,577
All Others	279,156,144	348,568,451
<b>Total</b>	<b>372,147,264</b>	<b>478,527,028</b>
<b>GRAND TOTAL</b>	<b>372,147,264</b>	<b>3,045,852,614</b>

**HISTORICAL SUMMARY OF UNFUNDED PAST SERVICE LIABILITIES**



**SECTION IV**  
**SERS CONTRIBUTIONS**

**SECTION IV**  
**SERS CONTRIBUTIONS**

In this section we present the contributions required of the Employer in the upcoming fiscal year. Due to the timing of both the actuarial valuation process and the Employer's budget cycle, valuation results each June 30 must be projected to the following fiscal year in order to determine the Employer's required contribution.

In the following pages we present information on SERS contributions as follows:

<u>Table</u>	<u>Contents</u>
IV-1	Projected Unit Credit Normal Cost Projections to 7-1-93
IV-2	Projected Unit Credit Unfunded Liability to 7-1-93
IV-3	Projected Unit Credit Total Costs to 7-1-93
IV-4	Comparison of Normal Cost Rates



**PROJECTED UNIT CREDIT NORMAL COST PROJECTIONS  
TO JULY 1, 1993**

PLAN	7-1-92 NORMAL COST	7-1-92 EARNINGS	NORMAL COST %	7-1-93 PROJECTED EARNINGS	7-1-93 NORMAL COST
<b>TIER I</b>					
1. Hazardous Duty	\$ 20,573,620	\$ 112,078,222	18.3565%	\$ 115,888,882	\$ 21,273,143
2. Plan B	89,409,135	854,464,083	10.4638	883,515,862	92,449,333
3. Plan C	6,051,850	63,529,457	9.5261	65,689,459	6,257,644
<b>Total</b>	<b>116,034,605</b>	<b>1,030,071,762</b>		<b>1,065,094,203</b>	<b>119,980,120</b>
<b>TIER II</b>					
1. Hazardous Duty	18,084,391	165,315,055	10.9393%	187,394,433	20,499,639
2. All Others	41,684,393	735,994,437	5.6637	855,034,561	48,426,592
<b>Total</b>	<b>59,768,784</b>	<b>901,309,492</b>		<b>1,042,428,994</b>	<b>68,926,231</b>
SERS Normal Cost Projected to 7/1/93: \$188,906,351					
SERS Projected Earnings at 7/1/93: \$2,107,523,197					
SERS Projected Normal Cost % at 7/1/93: 8.9634%					

1931.4      9.1177%

**PROJECTED UNIT CREDIT UNFUNDED LIABILITY  
TO JULY 1, 1993**

1.	Unfunded Actuarial Liability 7-1-92	\$3,242,799,153
2.	One Year's Interest at 8½%	275,637,928
3.	Employer Normal Cost (FY 1992-93)	191,019,008*
4.	Employee Normal Cost (Expected Employee Contributions)	35,739,014
5.	Interest on Total Normal Cost [(3)+(4)]	8,704,107
6.	State Payments	(174,958,368)
7.	Federal Payments (expected)	(117,983,260)
8.	Expected Employee Contributions	(35,739,014)
9.	Interest on Total Contributions [(6)+(7)+(8)]	<u>(12,616,406)</u>
10.	Unfunded Actuarial Liability 7-1-93	<u>\$3,412,602,162</u>

\* Includes cost for active employees of Newington Children's Hospital.

**PROJECTED UNIT CREDIT TOTAL COSTS  
TO JULY 1, 1993**

1.	Unfunded Actuarial Liability 7-1-93	\$3,412,602,162
2.	Amortization Period	39 Years
3.	Amortization Payment	291,448,924
4.	Employer Normal Cost	188,906,351
5.	Total Employer Cost for Fiscal Year beginning 7-1-93: (3)+(4)	480,355,275
6.	Projected Payroll	2,107,523,197
7.	Total Employer Cost %: (5)/(6)	22.79%
8.	Amortization Payment to be paid per SEBAC Agreement	121,300,000
9.	Total Contribution per SEBAC Agreement: (4)+(8)	310,206,351
10.	Negotiated Employer Cost %: (9)/(6)	14.72%

## COMPARISON OF NORMAL COST RATES

	VALUATION DATE	
	JULY 1, 1991	JULY 1, 1992
<b>TIER I</b>		
Hazardous Duty	17.94%	18.36%
Plan B	10.43	10.46
Plan C	9.97	9.53
<b>Total</b>	<b>11.20%</b>	<b>11.26%</b>
<b>TIER II</b>		
Hazardous Duty	10.25%	10.94%
All Others	5.19	5.66
<b>Total</b>	<b>6.06%</b>	<b>6.63%</b>
<b>GRAND TOTAL</b>	<b>8.83%</b>	<b>8.96%</b>

**SECTION V**  
**GASB #5 INFORMATION**

## SECTION V

### GASB #5 INFORMATION

Government Accounting Standards Board Statement No. 5, "Disclosure of Pension Information by Public Employee Retirement Systems and State and Local Government Employers", requires that SERS disclose certain information on an annual basis regarding the funding of SERS. In this section we present this information. Additional information regarding SERS Assets, a Summary of Plan Provisions and the Actuarial Method and Assumptions can be found in Section II and Appendices B and C, respectively.

The following tables present the information required for compliance with GASB #5:

<u>Table</u>	<u>Contents</u>
V-1	Summary of Membership
V-2	Standardized Measures
V-3	Historical Contribution Information
V-4	Historical Analysis of Funding Progress

#### Background Information

The Connecticut State Employee Retirement System was created by the State of Connecticut to provide defined benefit pensions to its employees. SERS is described in Chapter 66, State Employees Retirement Act, in Sections 5-152 to 5-192 to Title 5 of the General Statutes of Connecticut.

The Employer's funding policy has been to contribute each year an amount equal to the normal cost plus an amount representing amortization of the unfunded actuarial accrued liability over thirty years (ending June 30, 2022), less amounts reimbursed by the Federal Government. Per SEBAC Agreement, as of June 30, 1992, the unfunded actuarial accrued liability will be amortized over forty years (ending June 30, 2032). The actuarial assumptions used to calculate the figures reported herein are the same as those used to calculate the contribution level.

Table V-1

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## SUMMARY OF MEMBERSHIP

	JUNE 30, 1991	JUNE 30, 1992
Current employees:		
Vested:		
Hazardous Duty	1,883	1,927
Plan B	18,309	16,686
Plan C	1,894	1,457
Tier II	624	1,020
Not yet vested:		
Hazardous Duty	6510 x 4,627	6490 4,563
Plan B	3,671	2,261
Plan C	293	152
Tier II	<u>24,513</u>	<u>23,067</u>
Total current employees	55,814	51,133
Retirees and beneficiaries currently receiving benefits:	23,779	26,572
Terminated employees entitled to benefits but not yet receiving them:	727	693
Total Members	<u>80,320</u>	<u>78,398</u>

## STANDARDIZED MEASURES

	JUNE 30, 1991*	JUNE 30, 1992
<u>Pension Benefit Obligation</u>		
Retired Members	\$2,780,344,628	\$3,586,975,212
Terminated Vested Members	15,545,866	35,857,508
Active Members		
- Accumulated employee contributions with interest	287,553,728	270,231,467
- Employer-financed vested portion	2,427,607,131	2,253,664,894
- Employer-financed non-vested portion	<u>498,693,683</u>	<u>521,956,253</u>
- Total	3,213,854,542	3,045,852,614
Total SERS Obligation	<u>6,009,745,036</u>	<u>6,668,685,334</u>
<u>Market Value of Assets</u>	<u>3,361,617,471</u>	<u>3,605,993,231</u>
<u>Unfunded Pension Benefit Obligation</u>	2,648,127,565	3,062,692,103

\* Does not reflect liability for Retirement Incentive Bonuses. (These monthly payments of \$988,221 will be paid for a three year period with a total outlay of about \$35.6 million or \$11.9 million on an annual basis.)



Table V-3

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## HISTORICAL CONTRIBUTION INFORMATION

	FISCAL YEAR 1988-1989 <sup>(a)</sup>	FISCAL YEAR 1989-1990	FISCAL YEAR 1990-1991	FISCAL YEAR 1991-1992	FISCAL YEAR 1992-1993	FISCAL YEAR 1993-1994
Employer Normal Cost	\$125,118,568	\$137,531,541	\$179,549,626	\$180,005,022	\$191,019,008	\$188,906,351
Past Service Cost	249,196,138	258,836,930	218,467,282	251,231,824 <sup>(c)</sup>	256,780,845 <sup>(c)</sup>	121,300,000 <sup>(d)</sup>
Total Employer Cost	374,314,706	396,368,471	398,016,908 <sup>(b)</sup>	431,236,846	447,799,853	310,206,351
Total Employer Cost as a percent of payroll	24.16%	23.07%	20.77%	21.95%	20.70%	14.72%
Employee Contributions	\$ 28,710,609	\$ 29,198,019	\$ 33,809,953	33,169,806	N/A	N/A
Employer Contributions	324,314,706	288,368,471	263,818,607	250,324,285	N/A	N/A
Total Contributions	\$353,025,315	\$317,566,490	\$297,628,560	283,494,091	N/A	N/A

- (a) The changes in assumptions made effective July 1, 1987 increased the cost for Fiscal Year 1988-1989 by approximately \$5 million.
- (b) Includes an additional contribution of \$10,241,000 (\$3,381,000 Normal Cost + \$6,860,000 Past Service Cost) needed to fund benefit improvements resulting from negotiations with the Employer Employees Bargaining Agent Coalition.
- (c) Includes \$11,858,652 payment of Retirement Incentive Bonus.
- (d) Per SEBAC Agreement

**HISTORICAL ANALYSIS OF FUNDING PROGRESS**  
(millions)

<b>FISCAL YEAR</b>	<b>(1) NET ASSETS AVAILABLE FOR BENEFITS*</b>	<b>(2) PENSION BENEFIT OBLIGATION</b>	<b>(3) PERCENTAGE FUNDED (1)/(2)</b>	<b>(4) UNFUNDED OBLIGATION (2) - (1)</b>	<b>(5) ANNUAL COVERED PAYROLL</b>	<b>(6) UNFUNDED OBLIGATION AS A % OF PAY (4)/(5)</b>
1987 - 1988**	\$2,006.9	\$4,089.3	49.1%	\$2,082.4	\$1,429.1	145.7%
1988 - 1989	2,273.2	4,550.7	50.0%	2,277.5	1,583.0	143.9%
1989 - 1990	2,798.9	5,071.5	55.2%	2,272.6	1,759.5	129.2%
1990 - 1991	3,212.8	5,624.7	57.1%	2,411.9	1,802.8	133.8%
1991 - 1992	3,361.6	6,009.7	55.9%	2,648.1	1,983.6	133.5%
1992 - 1993	3,606.0	6,668.7	54.1%	3,062.7	1,931.4	158.6%

\* Market Value

\*\* First period for which pension benefit obligations have been calculated in accordance with GASB Statement No. 5.

**APPENDIX A**  
**SUMMARY STATISTICS ON**  
**SERS MEMBERSHIP**

## APPENDIX A

### SUMMARY STATISTICS ON SERS MEMBERSHIP

#### TABLE OF CONTENTS

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A. Summary of Active Membership Data	A-1
B. Summary of Retired Membership Data	A-3
C. Analysis of Active Membership and Salary by Age and Service	A-4
D. Analysis of Retired Membership and Benefits by Age and Year of Retirement	A-9

### SUMMARY OF ACTIVE MEMBERSHIP DATA

We received data on a total of 51,365 members, including employees of State Aided Institutions. Of the active records submitted to us, 128 (.25%) were rejected due to missing or invalid dates of birth and/or hire. Cost calculations were not revised to reflect these records. An additional 104 were participants in the Early Retirement Incentive Program who retired effective July 1, 1992. The following analysis compares this data with the July 1, 1991 data (see Exhibit A-4 for distribution by age and service).

	7/1/91	7/1/92	CHANGE	PERCENT CHANGE
Total Employees	55,814	51,133	-4,681	-8.4%
Total Earnings (millions)	\$1,983.6	\$1,931.4	-\$52.2	-2.6%
Average Earnings	\$35,540	\$37,772	+\$2,232	+6.3%

Earnings figures as of July 1 are actual amounts paid during the previous July 1 to June 30 period, adjusted for negotiated increases and merit adjustments effective through and including July 1; new entrant earnings are annualized.

These figures are broken down by Plan in the following exhibit.

## SUMMARY OF ACTIVE MEMBERSHIP DATA

	7/1/91 (includes NCH)	7/1/92 Before ERIP	Percent Change	7/1/92 After ERIP	Percent Change
<b>Number of Members</b>					
Tier I Hazardous Duty	2,503	2,449	-2.2%	2,231	-8.9%
Tier I Plan B	21,980	21,110	-4.0	18,947	-10.2
Tier I Plan C	2,187	2,028	-7.3	1,609	-20.7
Tier II Hazardous Duty	4,007	4,260	+6.3	4,259	+0.0
Tier II Others	25,137	24,101	-4.1	24,087	-0.1
<b>Total</b>	<b>55,814</b>	<b>53,948</b>	<b>-3.3</b>	<b>51,133</b>	<b>-5.2</b>
<b>Total Annual Compensation (millions)</b>					
Tier I Hazardous Duty	\$ 119.4	\$ 124.3	+4.1%	\$ 112.1	-9.8%
Tier I Plan B	936.3	961.5	+2.7	854.5	-11.1
Tier I Plan C	80.9	79.4	-1.9	63.5	-20.0
Tier II Hazardous Duty	144.1	165.4	+14.8	165.3	-0.1
Tier II Others	702.9	736.4	+4.8	736.0	-0.1
<b>Total</b>	<b>1,983.6</b>	<b>2,067.0</b>	<b>+4.2</b>	<b>1,931.4</b>	<b>-6.6</b>
<b>Average Compensation</b>					
Tier I Hazardous Duty	\$47,687	\$50,753	+6.4%	\$50,237	-1.0%
Tier I Plan B	42,599	45,547	+6.9	45,098	-1.0
Tier I Plan C	37,003	39,141	+5.8	39,484	+0.9
Tier II Hazardous Duty	35,957	38,817	+8.0	38,815	0.0
Tier II Others	27,963	30,555	+9.3	30,556	0.0
<b>Total</b>	<b>35,540</b>	<b>38,314</b>	<b>+7.8</b>	<b>37,772</b>	<b>-1.4</b>
<b>Average Age</b>					
Tier I Hazardous Duty	42.2	42.9		42.2	
Tier I Plan B	45.9	46.9		45.6	
Tier I Plan C	53.1	53.8		51.6	
Tier II Hazardous Duty	32.8	33.6		33.6	
Tier II Others	37.4	38.4		38.4	
<b>Total</b>	<b>41.2</b>	<b>42.1</b>		<b>41.2</b>	
<b>Average Service</b>					
Tier I Hazardous Duty	14.5	15.7		14.6	
Tier I Plan B	15.8	17.3		16.2	
Tier I Plan C	16.2	17.8		16.3	
Tier II Hazardous Duty	3.3	3.9		3.9	
Tier II Others	4.1	4.9		4.9	
<b>Total</b>	<b>9.5</b>	<b>10.6</b>		<b>9.7</b>	

## SUMMARY OF INACTIVE MEMBERSHIP DATA

	7/1/91	7/1/92 Before ERIP	Percent Change	7/1/92 After ERIP	Percent Change
<b>Retirees</b>					
Number	23,779	23,757	-0.1%	26,572	+11.8%
Total Annual Benefit (000s)	\$262,971	\$275,189	+4.6%	\$334,033	+21.4%
Average Annual Benefit	11,059	11,583	+4.7%	12,571	+8.5%
<b>Terminated Vested</b>					
Number	727	693	-4.7%	693	0.0%

**ACTIVE MEMBERS  
YEARS OF SERVICE**

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0	0	0
25 TO 29	3	13	2	0	0	0	0	0	0	0	0	18
30 TO 34	3	106	142	4	0	0	0	0	0	0	0	255
35 TO 39	12	120	290	164	6	0	0	0	0	0	0	592
40 TO 44	10	59	151	279	120	4	0	0	0	0	0	623
45 TO 49	5	31	81	106	161	33	1	0	0	0	0	418
50 TO 54	1	22	38	54	37	27	8	1	0	0	0	188
55 TO 59	2	9	33	25	13	6	2	2	0	0	0	92
60 TO 64	1	4	10	14	6	1	0	0	0	0	0	36
65 & UP	0	1	5	3	0	0	0	0	0	0	0	9
<b>TOTALS</b>	<b>37</b>	<b>365</b>	<b>752</b>	<b>649</b>	<b>343</b>	<b>71</b>	<b>11</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,231</b>

**AVERAGE SALARIES**

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0	0	0
25 TO 29	39,902	41,502	33,769	0	0	0	0	0	0	0	0	40,376
30 TO 34	49,211	48,064	45,813	41,297	0	0	0	0	0	0	0	46,718
35 TO 39	43,685	45,299	48,322	51,391	50,732	0	0	0	0	0	0	48,490
40 TO 44	27,988	48,733	48,783	51,846	56,271	52,975	0	0	0	0	0	51,286
45 TO 49	50,045	44,733	51,441	51,728	54,261	60,401	38,938	0	0	0	0	52,763
50 TO 54	8,636	45,667	48,529	50,853	53,682	57,317	67,474	71,429	0	0	0	51,854
55 TO 59	38,642	43,730	47,927	51,368	56,460	55,392	58,594	49,233	0	0	0	50,203
60 TO 64	86,733	45,043	60,564	47,362	52,690	50,392	0	0	0	0	0	52,837
65 & UP	0	53,741	49,249	52,342	0	0	0	0	0	0	0	50,779
<b>TOTALS</b>	<b>40,387</b>	<b>46,477</b>	<b>48,400</b>	<b>51,451</b>	<b>54,896</b>	<b>58,245</b>	<b>63,265</b>	<b>56,631</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>50,237</b>



**ACTIVE MEMBERS  
YEARS OF SERVICE**

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0	0	0
25 TO 29	3	126	61	0	0	0	0	0	0	0	0	190
30 TO 34	25	430	1,041	93	0	0	0	0	0	0	0	1,589
35 TO 39	73	415	1,740	975	40	0	0	0	0	0	0	3,243
40 TO 44	64	350	1,305	1,591	591	80	0	0	0	0	0	3,981
45 TO 49	47	265	999	1,000	996	580	48	0	0	0	0	3,935
50 TO 54	23	196	718	634	590	607	261	16	0	0	0	3,045
55 TO 59	22	113	468	447	286	246	130	29	1	0	0	1,742
60 TO 64	5	78	282	221	153	108	67	26	3	1	0	944
65 & UP	0	30	80	45	45	44	14	12	7	1	0	278
<b>TOTALS</b>	262	2,003	6,694	5,006	2,701	1,665	520	83	11	2	0	18,947

**AVERAGE SALARIES**

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0	0	0
25 TO 29	20,248	29,768	30,133	0	0	0	0	0	0	0	0	29,735
30 TO 34	30,328	37,359	34,912	35,443	0	0	0	0	0	0	0	35,533
35 TO 39	34,693	39,554	40,268	40,908	39,220	0	0	0	0	0	0	40,231
40 TO 44	33,574	42,548	44,020	47,182	46,735	44,188	0	0	0	0	0	45,393
45 TO 49	41,545	41,597	43,506	48,604	54,357	48,715	48,458	0	0	0	0	48,224
50 TO 54	41,039	41,234	41,880	45,408	53,541	55,746	49,848	54,178	0	0	0	48,338
55 TO 59	30,901	41,822	41,399	44,509	51,501	60,880	63,645	57,423	52,249	0	0	48,435
60 TO 64	33,285	36,790	39,500	44,904	54,861	57,531	71,568	66,568	60,288	18,297	0	48,126
65 & UP	0	30,406	43,477	45,978	62,387	57,171	71,423	68,445	101,024	109,345	0	51,871
<b>TOTALS</b>	35,279	39,308	40,815	45,451	52,147	53,654	56,548	61,256	85,480	63,821	0	45,098

**ACTIVE MEMBERS  
YEARS OF SERVICE**

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0	0	0
25 TO 29	0	4	4	0	0	0	0	0	0	0	0	8
30 TO 34	3	11	37	3	0	0	0	0	0	0	0	54
35 TO 39	5	15	83	49	3	0	0	0	0	0	0	155
40 TO 44	2	15	70	73	38	2	0	0	0	0	0	200
45 TO 49	0	21	66	61	60	24	1	0	0	0	0	233
50 TO 54	2	20	87	77	65	19	13	0	0	0	0	283
55 TO 59	2	25	100	89	46	19	11	4	1	0	0	297
60 TO 64	1	15	87	71	52	17	3	6	5	0	0	257
65 & UP	1	13	31	29	32	7	3	1	1	4	0	122
<b>TOTALS</b>	<b>16</b>	<b>139</b>	<b>565</b>	<b>452</b>	<b>296</b>	<b>88</b>	<b>31</b>	<b>11</b>	<b>7</b>	<b>4</b>	<b>0</b>	<b>1,609</b>

**AVERAGE SALARIES**

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	0	0	0	0	0	0	0	0	0	0	0	0
25 TO 29	0	32,020	35,794	0	0	0	0	0	0	0	0	33,907
30 TO 34	22,485	30,465	35,325	33,830	0	0	0	0	0	0	0	33,539
35 TO 39	28,983	39,495	35,364	36,360	39,537	0	0	0	0	0	0	35,953
40 TO 44	33,439	35,061	41,327	42,405	37,904	34,885	0	0	0	0	0	40,457
45 TO 49	0	34,472	39,556	40,494	43,643	37,503	27,846	0	0	0	0	40,134
50 TO 54	24,149	30,885	36,702	43,150	43,061	42,846	31,196	0	0	0	0	39,577
55 TO 59	25,595	36,896	35,660	39,185	44,536	49,533	48,666	37,684	62,275	0	0	39,613
60 TO 64	91,465	32,402	36,224	38,044	48,992	48,977	54,209	53,912	31,047	0	0	40,668
65 & UP	33,119	35,924	43,132	40,350	41,740	45,947	43,716	25,530	29,757	40,887	0	41,104
<b>TOTALS</b>	<b>31,458</b>	<b>34,522</b>	<b>37,410</b>	<b>40,111</b>	<b>43,610</b>	<b>44,083</b>	<b>40,726</b>	<b>45,431</b>	<b>35,324</b>	<b>40,887</b>	<b>0</b>	<b>39,484</b>

**ACTIVE MEMBERS  
YEARS OF SERVICE**

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	271	13	0	0	0	0	0	0	0	0	0	284
25 TO 29	989	394	0	0	0	0	0	0	0	0	0	1,383
30 TO 34	585	483	16	0	0	0	0	0	0	0	0	1,084
35 TO 39	293	284	15	2	0	0	0	0	0	0	0	594
40 TO 44	197	165	21	3	1	0	0	0	0	0	0	387
45 TO 49	133	101	14	2	3	1	0	0	0	0	0	254
50 TO 54	80	54	5	4	1	0	1	0	0	0	0	145
55 TO 59	39	34	0	0	0	0	0	0	0	0	0	73
60 TO 64	14	23	6	0	0	0	0	0	0	0	0	43
65 & UP	6	6	0	0	0	0	0	0	0	0	0	12
<b>TOTALS</b>	<b>2,607</b>	<b>1,557</b>	<b>77</b>	<b>11</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,259</b>

**AVERAGE SALARIES**

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	0	0	0	0	0	0	0	0	0	0	0	0
20 TO 24	30,864	34,544	0	0	0	0	0	0	0	0	0	31,032
25 TO 29	35,522	41,074	0	0	0	0	0	0	0	0	0	37,104
30 TO 34	37,404	42,722	34,862	0	0	0	0	0	0	0	0	39,736
35 TO 39	38,120	43,422	42,121	46,050	0	0	0	0	0	0	0	40,783
40 TO 44	39,433	42,890	40,473	46,167	58,656	0	0	0	0	0	0	41,065
45 TO 49	37,148	44,755	46,015	50,870	48,991	47,199	0	0	0	0	0	40,949
50 TO 54	39,696	43,512	38,430	52,578	36,804	0	60,339	0	0	0	0	41,551
55 TO 59	43,476	44,371	0	0	0	0	0	0	0	0	0	43,893
60 TO 64	32,863	41,835	47,268	0	0	0	0	0	0	0	0	39,672
65 & UP	67,516	42,501	0	0	0	0	0	0	0	0	0	55,009
<b>TOTALS</b>	<b>36,437</b>	<b>42,564</b>	<b>41,033</b>	<b>49,332</b>	<b>48,486</b>	<b>47,199</b>	<b>60,339</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38,815</b>

**ACTIVE MEMBERS  
YEARS OF SERVICE**

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	70	0	0	0	0	0	0	0	0	0	0	70
20 TO 24	1,137	214	0	0	0	0	0	0	0	0	0	1,351
25 TO 29	2,390	1,926	14	0	0	0	0	0	0	0	0	4,330
30 TO 34	2,026	2,488	103	2	0	0	0	0	0	0	0	4,619
35 TO 39	1,622	2,065	114	17	0	0	0	0	0	0	0	3,818
40 TO 44	1,336	1,707	114	30	40	3	0	0	0	0	0	3,230
45 TO 49	1,099	1,361	104	25	49	2	2	0	0	0	0	2,642
50 TO 54	685	969	76	11	19	4	0	0	0	0	0	1,764
55 TO 59	401	646	55	9	17	1	0	0	0	0	0	1,129
60 TO 64	225	482	44	7	6	1	0	1	0	0	0	766
65 & UP	86	220	56	4	1	0	0	1	0	0	0	368
<b>TOTALS</b>	<b>11,077</b>	<b>12,078</b>	<b>680</b>	<b>105</b>	<b>132</b>	<b>11</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>24,087</b>

**AVERAGE SALARIES**

AGE	UNDER 5	5 TO 10	10 TO 15	15 TO 20	20 TO 25	25 TO 30	30 TO 35	35 TO 40	40 TO 45	45 TO 50	50 & UP	ALL YEARS
Under 20	3,104	0	0	0	0	0	0	0	0	0	0	3,104
20 TO 24	17,094	22,331	0	0	0	0	0	0	0	0	0	17,923
25 TO 29	26,630	30,459	29,535	0	0	0	0	0	0	0	0	28,343
30 TO 34	27,104	33,907	30,994	27,406	0	0	0	0	0	0	0	30,855
35 TO 39	28,567	34,907	38,114	36,684	0	0	0	0	0	0	0	32,317
40 TO 44	29,833	35,410	39,455	47,604	44,429	43,336	0	0	0	0	0	33,478
45 TO 49	29,447	34,623	40,482	45,506	47,592	54,551	28,446	0	0	0	0	33,055
50 TO 54	29,050	33,040	36,977	38,173	46,119	34,933	0	0	0	0	0	31,837
55 TO 59	28,515	33,432	33,391	56,368	49,789	58,877	0	0	0	0	0	32,135
60 TO 64	31,262	30,671	35,326	32,330	32,575	9,139	0	34,105	0	0	0	31,118
65 & UP	28,445	29,094	39,544	25,835	20,073	0	0	3,792	0	0	0	30,404
<b>TOTALS</b>	<b>26,865</b>	<b>33,304</b>	<b>36,874</b>	<b>42,867</b>	<b>45,813</b>	<b>40,623</b>	<b>28,446</b>	<b>18,949</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30,556</b>

Retirement Year	NUMBER OF RETIREES					AVERAGE BENEFIT				
	Service Retirement	Service Connected Disability	Non-Service Connected Disability	Hazardous Duty Retirement	Other Retirement	Service Retirement	Service Connected Disability	Non-Service Connected Disability	Hazardous Duty Retirement	Other Retirement
Pre-1961	151	18	35	13	88	6,997	5,102	4,922	8,404	6,463
1961	33	2	5	3	9	7,303	7,025	5,483	8,697	6,484
1962	56	3	1	0	24	7,725	5,498	5,000	0	5,428
1963	61	8	9	0	22	7,918	6,067	6,104	0	6,874
1964	67	8	6	2	16	7,129	6,408	5,944	9,595	5,420
1965	62	2	4	2	24	7,962	4,913	5,306	9,312	5,369
1966	91	7	15	0	17	7,496	5,949	5,869	0	6,647
1967	99	4	14	0	22	6,727	4,375	7,093	0	6,162
1968	144	10	12	1	22	7,836	6,785	6,313	7,094	6,051
1969	221	12	19	2	37	8,045	7,088	7,627	10,462	7,646
1970	233	10	42	3	39	9,371	6,911	7,798	10,103	7,879
1971	360	15	54	6	38	10,270	8,201	7,524	13,067	8,530
1972	431	22	54	21	82	10,178	8,824	8,538	13,630	8,421
1973	501	26	52	21	70	10,458	10,879	8,844	15,466	7,543
1974	422	21	35	21	104	9,643	10,207	9,234	17,756	7,999
1975	688	44	53	18	86	10,167	10,163	8,584	19,074	7,415
1976	743	13	41	23	83	9,333	8,733	8,703	16,622	7,119
1977	596	11	24	12	77	8,855	7,108	7,767	15,748	7,243
1978	674	9	38	25	62	8,582	7,945	6,208	17,624	6,086
1979	1,290	11	34	40	92	9,092	9,470	6,937	17,840	6,435
1980	830	18	32	30	82	8,030	6,540	6,067	16,494	6,104
1981	677	22	28	51	47	8,811	7,799	6,186	16,219	8,998
1982	592	14	24	34	45	9,179	9,553	7,858	17,420	7,593
1983	612	15	36	42	76	10,694	10,084	8,830	18,628	7,981
1984	772	32	36	60	100	11,055	9,958	9,075	19,371	8,467
1985	878	34	36	68	124	11,903	9,724	10,739	20,590	8,855
1986	965	46	39	54	162	13,483	9,228	11,917	23,850	7,486
1987	942	35	43	78	191	14,295	11,129	9,798	23,387	8,243
1988	1,106	51	38	95	165	15,049	11,976	10,085	25,568	9,061
1989	3,160	61	36	255	296	14,934	17,705	10,746	26,768	11,326
1990	255	12	13	90	166	13,373	13,574	12,436	25,340	9,206
1991	599	3	27	88	217	17,433	19,739	17,421	27,901	15,003
1992	2,584	1	11	213	75	19,970	17,400	23,333	30,741	8,460

Current Age	NUMBER OF RETIREES					AVERAGE BENEFIT				
	Service Retirement	Service Connected Disability	Non-Service Connected Disability	Hazardous Duty Retirement	Other Retirement	Service Retirement	Service Connected Disability	Non-Service Connected Disability	Hazardous Duty Retirement	Other Retirement
Less than 40	2	28	9	0	69	10,199	11,277	5,198	0	10,038
40 to 44	1	28	25	22	76	3,129	10,881	12,954	26,543	16,606
45 to 49	9	73	33	183	122	9,736	12,172	12,806	28,698	12,475
50 to 54	391	81	65	283	126	20,794	12,579	12,703	26,815	14,741
55 to 59	1,695	84	126	276	487	19,910	12,002	11,330	24,246	8,749
60 to 64	3,377	105	160	238	502	16,062	10,376	8,613	23,145	8,286
65 to 69	4,699	78	149	207	381	12,976	7,150	7,446	19,821	7,596
70 to 74	4,297	52	143	102	349	10,976	6,348	6,859	16,842	7,530
75 to 79	3,244	37	98	36	274	9,437	8,593	8,184	14,479	8,124
80 to 84	1,872	21	77	17	201	9,209	9,233	7,722	13,154	7,653
85 to 89	906	11	45	5	119	9,044	6,436	6,723	12,914	7,377
90 to 94	321	2	15	2	47	7,106	6,933	5,865	8,577	6,186
95 to 99	81	0	1	0	7	4,968	0	2,393	0	5,747
<b>Final Totals</b>	<b>20,895</b>	<b>600</b>	<b>946</b>	<b>1,371</b>	<b>2,760</b>	<b>12,591</b>	<b>10,183</b>	<b>8,778</b>	<b>23,539</b>	<b>8,786</b>

**APPENDIX B**  
**SUMMARY OF PLAN PROVISIONS**

**APPENDIX B**  
**SUMMARY OF PLAN PROVISIONS**

**CONNECTICUT STATE EMPLOYEES  
RETIREMENT SYSTEM**

**Established September 1, 1939**

**1. Membership**

*Tier I [Sec. 5-160]:* Each state employee appointed to classified service shall become a member on the first day of the pay period following permanent appointment.

Each officer elected by the people and each appointee of such officer exempt from classified service may elect to become a member, effective on the first day of the pay period following receipt of such election.

Each other state employee exempt from classified service shall become a member on the first day of the pay period following six months of employment.

Except as noted below employees hired prior to January 1, 1984 could elect (no later than January 2, 1984) to be covered under either Plan B or Plan C. Employees under contracts with Union Independent and CSEA unions hired prior to October 1, 1982 had until October 1, 1984 to make such election.

*Tier II [Sec. 5-192e]:* Tier II consists of employees first joining the retirement system on or after January 1, 1984 plus employees hired between July 1, 1982 and January 1, 1984 who elected Tier II. Each state employee becomes a member on the first day of employment.

**2. Normal Retirement Eligibility**

*Tier I - Hazardous Duty [Sec. 5-173]:* 20 years of service.

*Tier I - Plans B and C [Sec. 5-162]:* Age 55 and 25 years of service, age 60 and 10 years of service, or age 70.

*Tier II [Sec. 5-192i]:* Age 62 and 10 years of service (effective 7/1/92) or age 60 and 25 years of service or age 70 and 5 years of service, except hazardous duty members may retire after 20 years.



### 3. Normal Retirement Benefit

Tier I - Hazardous Duty [Sec. 5-173]: 50% of Final Average Earnings plus 2% for each year in excess of 20.

Tier I Plan B [Sec. 5-162]: Same as Plan C up to age 65; thereafter 1% of Final Average Earnings up to \$4,800 plus 2% of Final Average Earnings in excess of \$4,800 times years, reduced for retirement prior to age 65 with less than 25 years. Minimum benefit with 25 years, \$300 per month.

Tier I Plan C [Sec. 5-162]: 2% of Final Average Earnings times years of service, reduced for retirement prior to age 65 with less than 25 years. Minimum with 25 years, \$300 per month.

Tier II Hazardous Duty Members [Sec. 5-192n]: 2½% of Final Average Earnings times up to 20 years of service plus 2% of Final Average Earnings times years of service in excess of 20 years, if any. Minimum with 25 years, \$300 per month (or less if retirement before 7-1-87).

Tier II All Other [Sec. 5-192l]: 1 1/3% of Final Average Earnings plus ½% of Final Average Earnings in excess of the year's breakpoint\*, times up to 35 years of service from 10-1-82 plus 1 5/8% of Final Average Earnings times years of service in excess of 35 years, if any. Minimum with 25 years, \$300 per month (or less if retirement before 7-1-87).

\* \$10,700 increased by 6% each year after 1982, rounded to the nearest \$100, but not greater than Social Security Covered Compensation.

### 4. Early Retirement

Tier I - Hazardous Duty: None.

Tier I [Sec. 5-162]: Age 55 and 10 years of service; Normal Retirement Benefit reduced actuarially for retirement prior to age 60.

Tier II [Sec. 5-192m]: Age 55 and 10 years of service; Normal Retirement Benefit reduced ¼% (effective 7/1/91) for each month prior to age 65; Minimum benefit with 25 years, \$300 per month (or less if retirement prior to 7-1-87).

**5. Deferred Retirement**

Tier I [Sec. 5-162]: May be deferred but not beyond age 70.

Tier II [Sec. 5-192l]: May be deferred but not beyond age 70. Benefit is based on salary and service to actual retirement.

**6. Vesting**

Tier I [Sec. 5-166]: Ten years of service; actuarially reduced benefit payable at age 55; in addition employees are always fully vested in their own contributions (after 1-1-83, Tier I, contributions with 5% interest from 1-1-82).

Tier I - Hazardous Duty [Sec. 5-173(f)]: As above.

Tier II [Sec. 5-192o]: Ten years of service or age 70 and 5 years; benefit payable at Normal Retirement Age or early retirement benefit payable at age 55; minimum benefit with 25 years, payable after age 55, \$300 per month (or less if retirement before 7-1-87).

**7. Member Contributions**

Tier I - Hazardous Duty [Sec. 5-161]: 4% of earnings up to Social Security Taxable Wage Base plus 5% above that level.

Tier I - Plan B [Sec. 5-161]: 2% of earnings up to Social Security Taxable Wage Base plus 5% above that level.

Tier I - Plan C [Sec. 5-161]: 5% of earnings.

Tier II - All Other [Sec. 5-192u]: None.

Tier II - Hazardous Duty [Sec. 5-192u]: 4% of earnings

## 8. Cost of Living

[Sec. 5-162b, 5-162d]: Annual adjustment each July 1 of up to 5% for retirements prior to 7-1-80; 3% for retirements after 7-1-80. For members (or beneficiaries) not covered by Social Security and age 62 and over, the maximum increase is 6%. If an actuarial surplus (as defined in the law) exists, the Commission may further increase retired benefits.

## 9. Death Benefits

Tier I - State Police [Sec. 5-146]: Survivor benefits to spouse of \$670 per month plus \$300 to a surviving dependent child (or \$700 to surviving dependent children).

Tier I [Sec. 5-165a]: If eligible for early or normal retirement, spouse benefit equal to 50% of average of Life Benefit and 50% J&S benefit member would have received. If not eligible to retire but 25 years, same benefit calculated as though age 55 using service and earnings at death.

[Sec. 5-168]: If not eligible for retirement, return of contributions (after 10-1-82, Tier I, with interest from 1-1-82 at 5%).

Tier II [Sec. 5-192r]: If eligible for early or normal retirement, spouse benefit equal to 50% of member's benefit under a 50% J&S. If not eligible to retire but 25 years, same benefit calculated as though age 55 using service and earnings at death.

[Sec. 5-192t]: If death is due to employment, a spouse with dependent children under 18 will be paid \$7,500 in not less than 60 installments while living and not remarried; also \$20 per month per child under 18. If no children under 18, spouse [or dependent parent(s), if no spouse] will be paid \$4,000 in not less than 60 installments.

## 10. Disability Benefits

Tier I [Sec. 5-142, 5-169, 5-173]: For non-service disabilities occurring prior to age 60 and after 5 years of service, benefit equals 3% times base salary times years of service (Maximum 1 2/3% times service to 65). If disability occurs prior to age 60 and is due to service, benefit equals 1 2/3% of salary times service projected to 65 (maximum 30 years) and is payable regardless of length of service. Exception: State Police benefit is accrued benefit if more than 20 years of service. State Police receive an additional benefit of \$360 per month plus \$300 to spouse plus \$300 to a surviving dependent child (or \$700 to surviving dependent children).

Maximum disability benefit is lesser of: 100% of salary less Workers Compensation and Social Security and less non-rehabilitation earnings, or 80% of salary less Workers Compensation and Social Security. Social Security is primary plus family.

Tier II [5-192p]: Prior to age 65 and due to service or after 10 years of service, benefit is 1 1/3% of final average earnings, plus ½% of excess earnings times service projected to 65 (maximum 30 years of service to Date of Disability if greater than 30 years). Same maximum as Tier I.

Minimum disability benefit including Workers Compensation and Social Security is 60% of salary.

**11. Optional Forms of Payment**

Tier I [Sec. 5-165]: 50% Qualified Joint and Survivor (Normal Form if married at least 12 months).

Tier II [Sec. 5-192q]: 50% or 100% Joint and Survivor (Normal Form if married at least 12 months). Ten years certain and life. Twenty years certain and life. Life (Normal Form if not married at least 12 months).

**12. Part-Time Employment**

[Sec. 5-162g & Sec. 5-192k]: Service treated as if full-time for eligibility. If consistent part-time for all periods, treat as full-time. If varying schedule or some part-time, some full-time, service and salary proportionately adjusted.

**APPENDIX C**

**ACTUARIAL METHOD AND ASSUMPTIONS**

## APPENDIX C

### ACTUARIAL METHOD AND ASSUMPTIONS

#### A. Funding Method

1. The actuarial valuation method used is the Projected Unit Credit Cost Method. Recommended annual contributions until the accrued liability is completely funded will consist of two pieces: Normal Cost plus a payment towards the Unfunded Accrued Liability.
  - a. The Accrued Liability is determined directly as the present value of benefits accrued to date, where the accrued benefits for each Member is the pro-rata portion (based on service to date) of the projected benefit payable at death, disability, retirement or termination.
  - b. The Normal Cost is then similarly determined as the present value of the portion of the projected benefit attributable to the current year.
2. The Unfunded Accrued Liability is the Accrued Liability less Current Assets.
3. Since the valuation was done as of June 30, 1992, costs have been projected to July 1, 1993 in order to correspond to the fiscal year as follows:
  - a. Normal Costs were determined as a percentage of earnings, by Tier, as of July 1, 1992. Earnings were projected to July 1, 1993, separately for each Tier because of the shifting Tier populations, and the projected earnings were then multiplied by each Tier's normal cost factor.
  - b. The Unfunded Accrued Liability was determined as of June 30, 1992, and brought forward to June 30, 1993 by adding the Normal Cost plus interest and subtracting expected State and Federal contributions, also with interest. This amount was amortized over the 39 years specified in the SEBAC Agreement.
  - c. Normal Cost and Past Service Amortization payments were adjusted to reflect payment in twelve equal installments at the end of each month.

**B. Actuarial Assumptions**

**Mortality:** 1983 Group Annuity Mortality Table with ages set back 4 years for females.

Service connected deaths are assumed to comprise 20% of total Death for Hazardous Duty employees and 0% for all other employees.

**Investment Return:** 8½%. According to Memorandum of Understanding between the State of Connecticut and the State Employees Bargaining Agent Coalition (SEBAC). See Page C-5 of this Appendix.

<b>Salary Scale:</b>	<b>Age</b>	<b>Annual Rate of Increase</b>
	20	10.2%
	25	9.2
	30	8.1
	35	7.1
	40	6.5
	45	6.0
	50	6.0
	55	6.0
	60	6.0

<b>Disability:</b>	<b>Age</b>	<b>Annual Rate of Disability (Per 1000 lives)</b>
	20	0.75
	25	0.85
	30	0.97
	35	1.21
	40	1.70
	45	2.79
	50	5.09
	55	9.25
	60	14.42

Service connected disabilities are assumed to comprise 50% of total Disability for Hazardous Duty employees and 20% for all other employees.

**B. Actuarial Assumptions (cont'd)**

**Social Security Wage  
Base Increases:**

6½% compounded annually.

**Retirement Ages:**

**Hazardous Duty:**

<u>Age</u>	<u>First Year Eligible</u>	<u>There- after</u>
47-50	50%	10%
51	48	10
52	46	10
53	44	10
54	42	10
55	40	10
56	38	10
57	36	10
58	34	10
59	30	10
60	50	30
61	50	30
62-70	100	100

**All Others:**

55-60	20%	5%
61	40	5
62	40	30
63	40	30
64	60	30
65	80	60
66	80	60
67	80	60
68	80	60
69	80	60
70	100	100



**B. Actuarial Assumptions (cont'd)**

**Turnover:** Five year select and ultimate rates as shown in the Turnover Table below for non-hazardous duty males; the same table with rates increased 10% for females; the same table with rates reduced 50% for hazardous duty.

**Turnover Table**  
**Years of Participation**

Age	0	1	2	3	4	5 & Over
20	50%	45%	30%	25%	20%	15%
25	45	35	30	25	20	10
30	40	30	25	20	15	8
35	35	28	20	15	10	6
40	30	20	10	8	6	4
45	20	10	8	6	4	2
50	10	8	6	4	2	0
55	10	7	5	2	0	0
60	10	0	0	0	0	0

**Cost of Living  
Increases:**

3% per year for retirees on or after 1-1-80.  
4½% per year for retirees prior to 1-1-80.

**Asset Valuation:**

Adjusted market value: assets are written up (or down) by spreading recognition of gains and losses over five years, plus an additional write-up (or write-down) as necessary so that the final adjusted value is within 20% of market value.

**C. Memorandum of Understanding**

The Memorandum of Understanding sets forth the procedure to be used to determine the interest rate assumption for the June 30, 1990 through June 30, 1992 valuations:

	<u>9 Year Average of Actual Rates of Return</u>		<u>Rate of Return for FY ending on Valuation Date</u>		<u>Interest Rate Assumption</u>
If	at least 13.5%	and	at least 13.5%	then use	9.5%
If	between 13.0% and 13.5%	and	between 13.0% and 13.5%	then use	9.0%
If	less than 13.0%	and	less than 13.0%	then use	8.5%

For the June 30, 1992 valuation, this leads to the following result:

<u>9 Year Average of Actual Rates of Return</u>	<u>Rate of Return for FY ending on June 30, 1992</u>	<u>Interest Rate Assumption</u>
10.7%	8.0%	8.5%

**Supporting Data**

<u>Fiscal Year End</u>	<u>Rate of Return*</u>
1984	3.3
1985	21.6
1986	21.3
1987	10.8
1988	2.9
1989	14.7
1990	10.3
1991	3.2
1992	<u>8.0</u>
Average	10.7%

\* Provided by the Office of the Treasurer and used by us without audit.

**APPENDIX D**

**ACTUARIAL SURPLUS TEST  
AS OF JUNE 30, 1992**

## APPENDIX D

### ACTUARIAL SURPLUS TEST AS OF JUNE 30, 1992

Section 5-162h(b) of the General Statutes of Connecticut provides that the Retirement Commission may grant additional cost of living adjustments for retired employees if an actuarial surplus exists. An actuarial surplus is deemed to exist if three criteria are met:

- I. **Investment Income:** actual rate of return for the Fiscal Year ending June 30, 1992 must exceed the actuarial assumption of 8.5%.

A.	Market Value of Assets July 1, 1991	\$3,361,617,471
B.	Market Value of Assets June 30, 1992	3,605,993,231
I.	Investment Income for FY 91-92	267,892,346

$$\text{Actual Rate of Return for FY 91-92} = \frac{2I}{A+B-I} = 8.00\%$$

Actual Rate of Return of 8.00% is less than the assumption of 8.5%, so first criteria is not met and there is no actuarial surplus. We are showing criteria II and III for informational purposes.

- II. **Assets Versus Liabilities:** Market value of assets must exceed 50% of specified liabilities.

A.	Market Value of Assets June 30, 1992	\$3,605,993,231
B.	Specified Liabilities June 30, 1992	
	Liability for Retired Members	3,586,975,212
	Liability for Terminated Vested Members	35,857,508
	Active Member Contributions	234,760,222
	Interest on Active Member Contributions	<u>58,138,106</u>
	Total	3,915,731,048
C.	50% of Specified Liabilities	1,957,865,524

Market Value of Assets exceeds 50% of Specified Liabilities, so second criteria is met.

III. **Unfunded Liability:** actual unfunded liability must be less than the projected unfunded liability five years from determination date.

A.	Actual Unfunded Liability June 30, 1992	\$3,242,799,153
B.	Projected Unfunded Liability June 30, 1997	1,828,893,000

Actual Unfunded Liability exceeds Projected Unfunded Liability so third criteria is not met.

### Projection of Unfunded Liability

Section 5-162-h(b)(2) of the General Statutes of Connecticut specifies the means of calculating the Projected Unfunded Liability used in the third criteria of the Actuarial Surplus Test. The Projection reflects the actual unfunded liability as of December 31, 1983 adjusted for changes in actuarial assumptions and cost methods through the determination date. The following Projection reflects the following changes: data correction (June 30, 1987), change in actuarial assumptions (June 30, 1987), change in actuarial cost method (June 30, 1988), change in actuarial assumptions - interest rate only (June 30, 1989), change in actuarial cost method -amortization period only (June 30, 1992).

	(000)		(000)		(000)
	June 30		June 30		June 30
<u>Year</u>	<u>Liability</u>	<u>Year</u>	<u>Liability</u>	<u>Year</u>	<u>Liability</u>
1984	2,155,459	1999	1,780,421	2014	1,007,747
1985	2,201,605	2000	1,753,053	2015	914,701
1986	2,206,090	2001	1,723,359	2016	813,746
1987	2,524,556	2002	1,691,140	2017	704,209
1988	1,954,257	2003	1,656,182	2018	585,363
1989	1,432,333	2004	1,618,254	2019	456,415
1990	1,939,758	2005	1,577,101	2020	316,505
1991	1,930,524	2006	1,532,450	2021	164,704
1992	1,920,505	2007	1,484,003	2022	0
1993	1,905,044	2008	1,431,439		
1994	1,888,269	2009	1,374,407		
1995	1,870,068	2010	1,312,528		
1996	1,850,320	2011	1,245,388		
1997	1,828,893	2012	1,172,542		
1998	1,805,645	2013	1,093,503		

**APPENDIX E**

**ENTRY AGE NORMAL  
VALUATION RESULTS**

**APPENDIX E**

**ENTRY AGE NORMAL VALUATION RESULTS**

	JUNE 30, 1991	JUNE 30, 1992
<b>A. Current Results</b>		
1. Present Value of Future Benefits		
- Active Members	\$5,807,352,328	\$5,670,333,462
- Retired and Beneficiaries	2,780,344,628	3,586,975,212
- Deferred Vested Members	<u>15,545,866</u>	<u>35,857,508</u>
- Total Present Value	8,603,242,822	9,293,166,182
2. Present Value Future Normal Cost Contributions	1,852,220,822	1,841,767,847
3. Total Actuarial Liability: (1)-(2)	6,751,002,000	7,451,398,335
4. Actuarial Value of Assets	3,217,894,417	3,425,886,181
5. Unfunded Actuarial Liability: (3)-(4)	3,533,127,583	4,025,512,154
6. Total Normal Cost	181,775,757	175,402,031
7. Expected Employee Contributions	32,510,481	30,836,060
8. Employer Normal Cost: (6)-(7)	149,265,276	144,565,971
<b>B. Projections to Following Year</b>		
1. Employer Normal Cost	170,087,162	164,831,497
2. Unfunded Actuarial Liability	3,498,663,124	4,241,468,887
3. Past Service Cost	313,518,271	362,237,226
4. Total Cost: (1)+(3)	483,605,433*	527,068,723
5. Total Cost as a Percent of Pay	22.36%	25.01%
* Reflects the Arbitrator's Award, but does not reflect the Early Retirement Incentives		