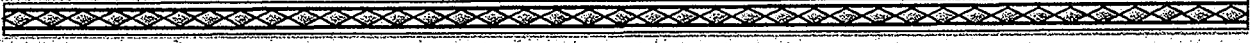**Connecticut State Teachers'**
Retirement System
Report on the Actuarial Valuation
as of June 30, 2004

Gabriel, Roeder, Smith & Company

November 29, 2004

Board of Trustees
Connecticut State Teachers' Retirement System
21 Grand Street
Hartford, Connecticut 06106

Dear Members of the Board:

Submitted in this report are the results of the June 30, 2004 actuarial valuation of the Connecticut State Teachers' Retirement System.

The necessary statistical data on which the valuation was based was furnished by your Administrator and her Staff. Their efforts and cooperation in furnishing the materials needed for this valuation are acknowledged with appreciation.

There have been no changes in actuarial assumptions or methods, or in plan provisions since the last actuarial valuation. The actuarial assumptions used in this actuarial valuation were adopted by the Board based on a study of Retirement System Experience for the period 1996-2001, and are summarized in Section F. Specifically, we have used only Board-adopted assumptions and methods to prepare this valuation.

We would like to offer some observations regarding the results of the June 30, 2004 actuarial valuation: The computed State Contribution Rate has increased significantly since the last valuation, primarily as a result of unfavorable investment performance. As you are aware, investment markets did not produce favorable results for the years 2001, 2002, and 2003.

Fiscal Year Ending	Rate of Return on TRS Assets (Market Value Basis)
June 30, 2001	(3.71)%
June 30, 2002	(6.58)%
June 30, 2003	2.13%

Even the asset-smoothing method the Board adopted in 1996 to limit the effect of market volatility on contribution rates could not overcome the effect of these results. As a consequence, the results of the June 30, 2004 actuarial valuation show a dramatic increase in the Unfunded Actuarial Accrued Liability from the June 30, 2002 valuation. This produced an increase in the computed State Contribution Rate from 9.27% to 12.50%.

The valuation was completed using generally accepted actuarial principles and in accordance with standards of practice prescribed by the Actuarial Standards Board. To the best of our knowledge, this report is complete and accurate, and the methods and assumptions produced results which are reasonable.

Respectfully submitted,

Brian F. Dunn, ASA, MAAA, EA

BFD/clb/lr

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INTRODUCTION

SUMMARY OF KEY VALUATION RESULTS

	As of June 30,2002	As of June 30,2004
System Members		
Retired Members and Beneficiaries		
Number	22,303	24,297
Annual Payments	$ 730,978,035	$ 843,682,492
Inactive Members		
Vested	1,508	1,250
Non-Vested	6,890	8,294
Active Members		
Number	48,902	49,946
Annual Payroll	$ 2,698,312,692	$ 2,930,833,308
Actuarial Accrued Liabilities		
CLARA Balance	$ 1,575,541,885	$ 1,460,197,593
Retired Members and Beneficiaries	6,803,186,025	7,688,819,834
Inactive Members	236,427,180	277,204,346
Active Members	6,640,240,318	7,104,456,375
Total	$ 15,255,395,408	$ 16,530,678,148
Actuarial Value of Assets	$ 11,961,346,260	$ 11,306,878,529
Unfunded Actuarial Accrued Liability	$ 3,294,049,148	$ 5,223,799,619
Funded Ratios		
Including CLARA Balance	78.41%	68.40%
Excluding CLARA Balance	75.92%	65.34%
Computed State Contribution Rate		
Normal Cost	3.00%	3.01%
Unfunded Accrued Liability	6.27%	9.49%
Total	9.27%	12.50%
State Contribution Amount		
For Fiscal Year Ending:		
June 30, 2004	$270,544,487	N/A
June 30, 2005	$281,366,266	N/A
June 30, 2006	N/A	$396,248,625
June 30, 2007	N/A	$412,098,570

EXPECTED DEVELOPMENT OF PRESENT ACTIVE POPULATION
JUNE 30, 2004

Closed Group Population Projection
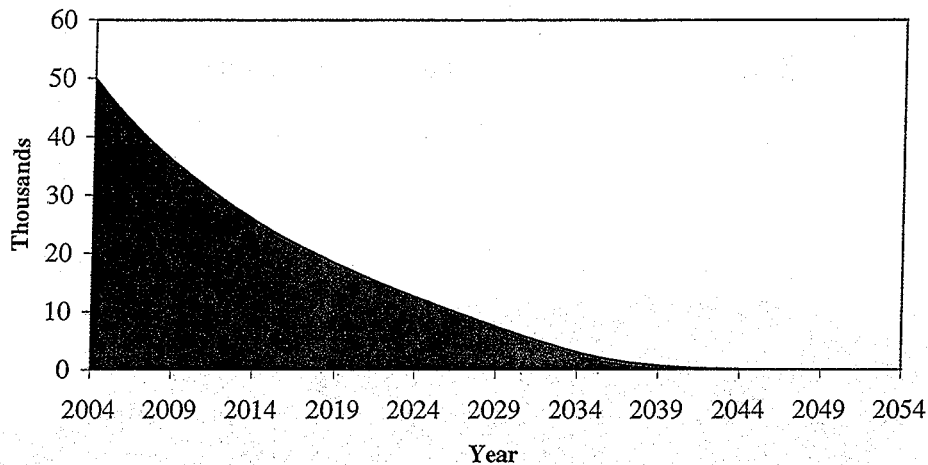
Expected Terminations from Active Employment for Current Active Members
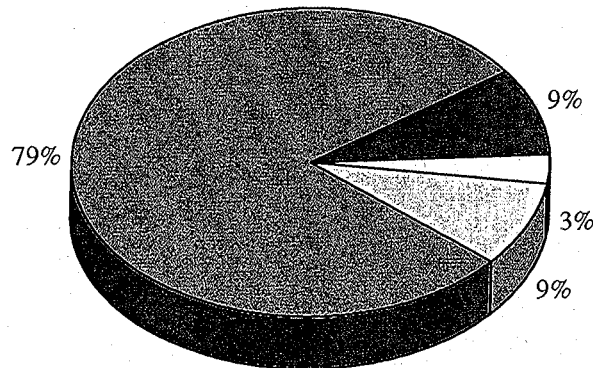
Retirements ▦ Non-Vested Separations ☐ Deaths and Disabilities ☐ Vested Separations

The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 49,946 active members. Eventually, 9% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer-provided benefit. Nearly 88% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by retiring from vested deferred status. 3% of the present population is expected to become eligible for death-in-service or disability benefits. Within 11 years, over half of the covered membership is expected to consist of new hires.

Retired Members Population Projection

Number

■ Current Retirees   ■ Future Retirees from Active Population
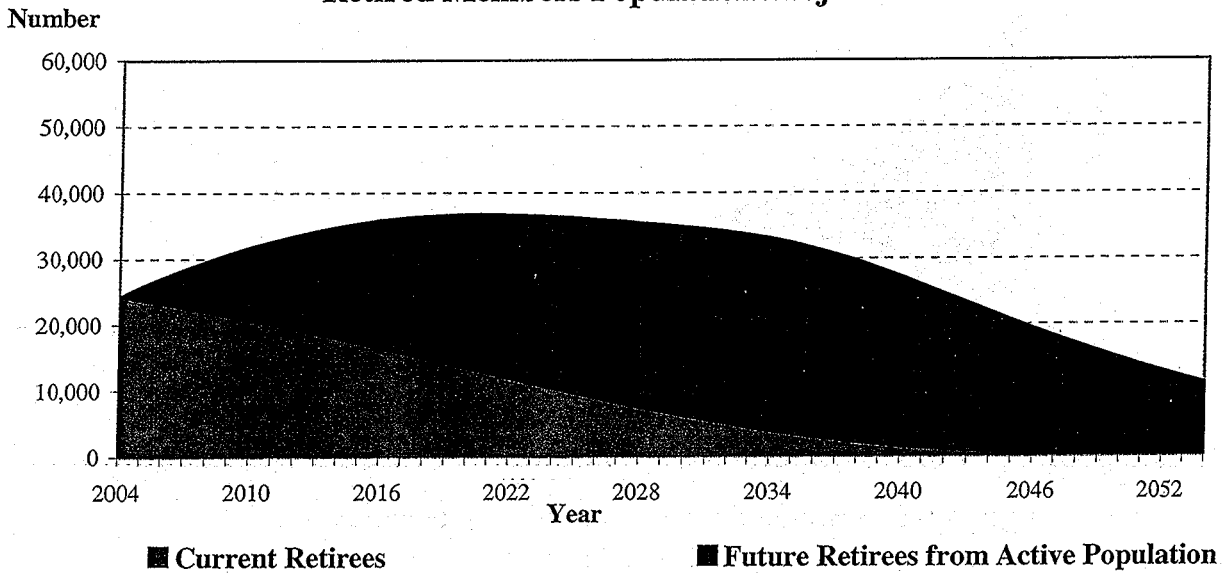
The projected retired population levels shown in the graph are developed from the current retired population, the addition of new retired members from the active population, and mortality assumptions. The projection indicates that around 2020 the retired population will peak. Note that this graph does not include future retirements of active members that will be hired in the future. If it did, the graph would not be a "hill", but would plateau around 2020.

SECTION A
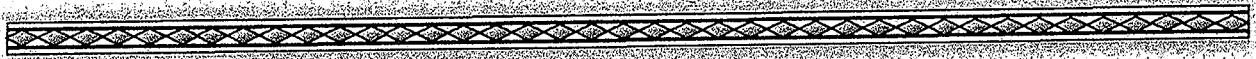
Financial Principles

Promises Made and To Be Paid For. As each year is completed, the System in essence hands an "IOU" to each member then acquiring a year of service credit. The "IOU" says: "The Connecticut State Teachers' Retirement System (CSTRS) owes you one year's worth of retirement benefits, payments in cash commencing when you qualify for retirement."

The related *key financial questions* are:

Which generation of taxpayers contributes the money to cover the IOU?

The present taxpayers, who receive the benefit of the member's present year of service?

Or the future taxpayers, who happen to be in Connecticut at the time the IOU becomes a cash demand?

A sound financial objective for the CSTRS is that this year's taxpayers contribute the money to cover the IOUs being handed out this year so that *the employer contribution rate will remain approximately level from generation to generation* -- our children and our grandchildren will not have to contribute greater percents of payroll than we contribute now.

(There are systems which have *a design for deferring contributions to future taxpayers,* lured by a lower contribution rate now and putting aside the fact that the contribution rate must then relentlessly grow much greater over decades of time -- consume now, and let your children face higher contribution rates after you retire.)

Translated to actuarial terminology, this level percent-of-payroll objective means that the contribution rate must be at least the following:

> *Normal Cost* (the current value of benefits likely to be paid as a result of members' service rendered in the current year)
>
> ... plus ...

Amortization of Unfunded Actuarial Accrued Liability (the difference between the actuarial accrued liability for service already rendered and current plan assets).

An inevitable byproduct of the level percent-of-payroll design is the accumulation of reserve assets for decades and the income produced when the assets are invested. *Investment income* becomes the *third and (often) the largest contributor* for benefits to employees, and is interlocked with the contribution amounts required from employees and employers.

Computing Contributions to Support System Benefits. From a given schedule of benefits and from the employee data and asset data furnished, the actuary determines the contribution rates to support the benefits, by means of *an actuarial valuation*.

An actuarial valuation has a number of components such as: the rate of investment return which plan assets will earn; the rates of withdrawal of active members who leave covered employment before qualifying for any monthly benefit; the rates of mortality; the rates of disability; the rates of pay increases; and the assumed age or ages at actual retirement.

In an actuarial valuation, assumptions must be made as to what the above rates will be, for the next year and for decades in the future. Only the subsequent actual experience of the System can indicate the degree of accuracy of the assumptions.

Reconciling Differences Between Assumed Experience and Actual Experience. Once actual experience has occurred and been observed, it will not coincide exactly with assumed experience, regardless of the accuracy of the various financial assumptions or the skill of the actuary and the precision of the calculations made. The System copes with these continually changing differences by having regular actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is continual adjustments in financial position.
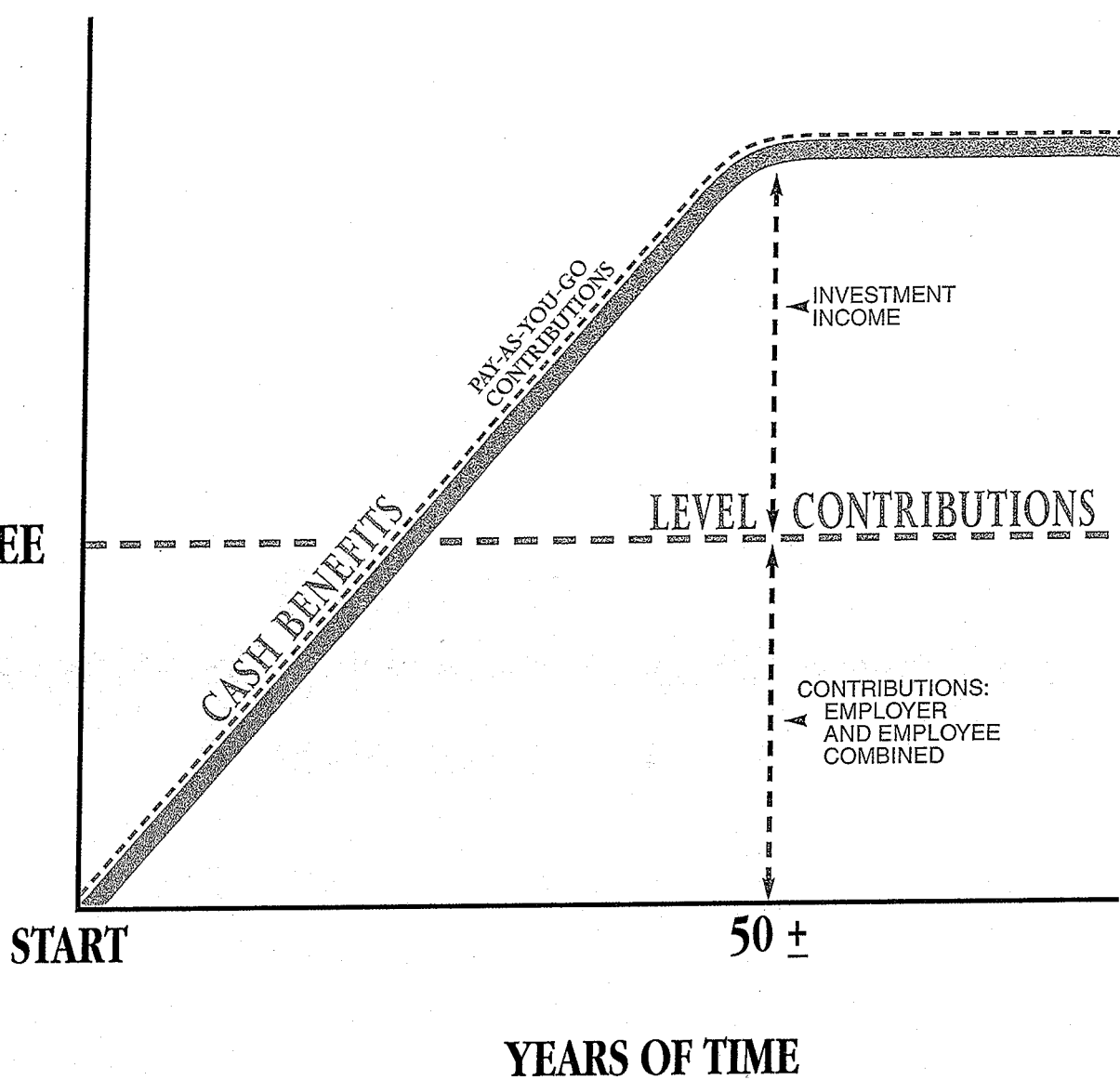
The financing diagram on the next page shows the relationship between the two fundamentally different philosophies of paying for retirement benefits: the method where contributions match cash benefit payments (or barely exceed cash benefit payments, as in the Federal Social Security program), and is thus an *increasing contribution method*; and the *level contribution method* which equalizes contributions between the generations.

The actuarial valuation is the mathematical process by which the level contribution rate is determined, and the flow of activity constituting the valuation may be summarized as follows:

A.   *Covered Person Data*, furnished by the plan administrator

       Retired members and beneficiaries now receiving benefits

       Former employees with vested benefits not yet payable

       Active employees

B. + *Asset data* (cash and investments), furnished by the plan administrator

C. + *Benefit provisions* that establish eligibility and amounts of payments to members

D. + *Estimates of future experience (actuarial assumptions)*, which are established by the Board of Trustees after consulting with the actuary.

E. + *The funding method* for employer contributions (the long-term planned pattern for employer contributions)

F. + *Mathematically combining the assumptions, the funding method, and the data*

G. = Determination of:

       Plan financial position, and/or

       New Employer Contribution Rate

% OF ACTIVE EMPLOYEE PAYS

PAY-AS-YOU-GO CONTRIBUTIONS

CASH BENEFITS

INVESTMENT INCOME

LEVEL CONTRIBUTIONS

CONTRIBUTIONS: EMPLOYER AND EMPLOYEE COMBINED

START

50 ±

YEARS OF TIME

CASH BENEFITS LINE. This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

LEVEL CONTRIBUTION LINE. Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

    Economic Risk Areas

        Rates of investment return

        Rates of pay increase

        Changes in active member group size

    Non-Economic Risk Areas

        Ages at actual retirement

        Rates of mortality

        Rates of withdrawal of active members (turnover)

        Rates of disability

SECTION B

Valuation Results

COMMENT A: The computed State Contribution Rate has increased significantly since the last valuation as of June 30, 2002 from 9.27% to 12.50%. As can be seen on page 1, the Normal Cost Rate essentially stayed the same, but the amortization payment on the Unfunded Actuarial Accrued Liability increased from 6.27% to 9.49%. This increase is primarily due to recognition of asset experience losses during 2001, 2002, and 2003. In this respect, the Connecticut State Teachers' Retirement System is not unique among public sector pension plans in this country: Numerous such plans have experienced similar asset performance during this period.

Portions of these asset experience losses will still be present in the asset smoothing calculations when the June 30, 2006 valuation is prepared, thereby continuing to exert upward pressure on the Computed State Contribution Rate for the 2007-2008 and 2008-2009 Fiscal Years.

COMMENT B: The actual State contribution for the past four years has continued to be lower than the calculated amount:

Fiscal Year Ending June 30	Calculated State Contribution	Actual State Contribution
2001	$252,547,880	$214,665,698
2002	210,701,421	204,511,460
2003	221,236,492	179,823,603
2004	270,544,487	185,348,144

Not only does this practice have a negative effect on the plan's non-investment cash flow, but for years in which investment return is high (for example, from 1995 through 2000, the rate of return on the fund was between 10.55% and 19.58%), lower contributions represent possible lost opportunities to build up the fund.

COMMENT C: The development of the actuarial gain or loss on page B-4 shows a relatively small non-investment gain of $166,228,204 together with an investment loss of $1,753,241,613, for a net loss of $1,587,013,409.

COMMENT D: GASB Statements No. 25 and No. 27 state that the net effective amortization period for the Unfunded Actuarial Accrued Liability (UAAL) should not exceed 40 years for plan years through June 30, 2006. Thereafter, the effective amortization period for the UAAL should not exceed 30 years. It appears that the computed State Contribution of $412,098,570 for the fiscal year July 1, 2006 through June 30, 2007 does not appear to be large enough to satisfy the GASB Standards.

STATE CONTRIBUTION RATE COMPUTED AS OF JUNE 30, 2004
FOR THE TWO-YEAR PERIOD BEGINNING JULY 1, 2005

Computed Contributions for	Percents of Active Member Payroll
Normal Cost	
Age and service annuities	7.36 %
Separation benefits	1.27 %
Disability annuities	0.25 %
Death-in-service annuities	0.13 %
Total	9.01 %
Member Contributions	6.00 %
State Normal Cost	3.01 %
Unfunded Actuarial Accrued Liabilities:	
Plan in effect 6/30/91 (27 years)	14.14 %
Public Act 82-91 (8 years)	0.14 %
Public Act 87-381 (13 years)	0.01 %
Public Act 92-205 (18 years)	(4.82)%
Public Act 98-251 (23 years)	0.02 %
Total	9.49 %
State Contribution Rate	**12.50 %**

Based on a projected member payroll of $3,169,989,000 for the 2005-2006 Fiscal Year, the computed State contribution dollar amount for that Fiscal Year is $396,248,625. Based on a projected member payroll of $3,296,788,560 for the 2006-2007 Fiscal Year, the computed State contribution dollar amount for that Fiscal Year is $412,098,570.

The length of an amortization period is a matter of judgment, not a matter of solving an algebraic equation. No one amortization period is "correct" – there is a range of reasonable judgment. As specified in Chapter 167a, Section 10-183z of the Connecticut General Statutes, the Unfunded Actuarial Accrued Liability (UAAL) resulting from the plan provisions in effect as of June 30, 1991 is to be amortized over a 40-year period, while subsequent changes in the UAAL are to be amortized over 30 years.

However, for fiscal years through June 30, 2006 the Governmental Accounting Standards Board (GASB) Statement No. 25 requires that the net effective amortization period not exceed 40 years. The contribution rate shown above is sufficient to meet this requirement. Effective July 1, 2006 the GASB requirement for the net effective amortization period decreases to 30 years. The computed State contribution amount for the Fiscal Year ending June 30, 2007 does not appear to be large enough to meet that requirement.

COMPUTED ACTUARIAL LIABILITIES
AS OF JUNE 30, 2004

Actuarial Present Value of	(1) Total Present Value	Entry Age Actuarial Cost Method	
		(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1) - (2)
Age and service allowances based on total service likely to be rendered by present active members	$ 8,867,798,779	$1,900,494,193	$ 6,967,304,586
Separation benefits (refunds of contributions, and deferred allowances) likely to be paid present active members	350,409,182	329,543,695	20,865,487
Disability benefits likely to be paid present active members	101,901,128	66,188,728	35,712,400
Death-in-service benefits likely to be paid on behalf of present active members	115,061,090	34,487,188	80,573,902
Contributions due to members not receiving a vested benefit	136,422,990	0	136,422,990
Benefits payable to present retirees and beneficiaries	7,688,819,834	0	7,688,819,834
Deferred benefits payable to members who terminated with vested rights	140,781,356	0	140,781,356
Future Cost-of-Living Adjustments to be paid from the Cost-of-Living Adjustment Reserve Account (CLARA)	1,460,197,593	0	1,460,197,593
Total	$18,861,391,952	$2,330,713,804	$16,530,678,148
Applicable assets including CLARA Balance			11,306,878,529
Unfunded Actuarial Accrued Liability			$ 5,223,799,619

Unfunded Actuarial Accrued Liability, July 1, 2002	$ 3,294,049,148
Normal Cost - 7/1/02 - 6/30/03	252,562,068
Normal Cost - 7/1/03 - 6/30/04	262,664,551
Contributions - 7/1/02 - 6/30/03	(359,379,343)
Contributions - 7/1/03 - 6/30/04	(400,528,356)
Interest	587,418,142
Expected UAL	3,636,786,210
Actual UAL at June 30, 2004	5,223,799,619
Gain/(Loss) for Two Year Period	$ (1,587,013,409)

Actuarial Value of Assets, July 1, 2002	$11,961,346,260
Benefits Paid - 7/1/02 - 6/30/03	(818,016,791)
Benefits Paid - 7/1/03 - 6/30/04	(883,170,774)
Contributions - 7/1/02 - 6/30/03	359,379,343
Contributions - 7/1/03 - 6/30/04	400,528,356
Interest	2,040,053,748
Expected Assets	13,060,120,142
Actual Assets at June 30, 2004	11,306,878,529
Asset Gain/(Loss) for Two Year Period	$ (1,753,241,613)

Actuarial Accrued Liability, July 1, 2002	$15,255,395,408
Normal Cost - 7/1/02 - 6/30/03	252,562,068
Normal Cost - 7/1/03 - 6/30/04	262,664,551
Benefits Paid - 7/1/02 - 6/30/03	(818,016,791)
Benefits Paid - 7/1/03 - 6/30/04	(883,170,774)
Interest	2,627,471,890
Expected AAL	16,696,906,352
Actual AAL at June 30, 2004	16,530,678,148
Non-Investment Gain/(Loss) for Two Year Period	$ 166,228,204

The next two pages show the development of the Funding, or Actuarial, Value of System Assets. Each year, the assumed investment return is fully recognized. Then, to dampen the effects of year-to-year changes in the market value returns, 25% of the difference between the assumed return and the market return is also recognized in a given year. This occurs regardless of whether that difference is positive (a gain) or negative (a loss). One-third of the remaining 75% of the gain or (loss) is recognized over the next three years until the full amount of the gain/(loss) has been recognized.

DEVELOPMENT OF FUNDING VALUE OF ASSETS
(4 YEAR SMOOTHING)

Valuation Date June 30	2004	2005	2006	2007
A. Funding Value Beginning of Year	$11,665,804,540			
B. Market Value End of Year	10,853,461,575			
C. Market Value Beginning of Year	9,853,283,134			
D. Non-Investment Net Cash Flow	(482,642,418)			
E. Investment Return				
E1. Market Total: B-C-D	1,482,820,859			
E2. Assumed Rate	8.50%			
E3. Amount for Immediate Recognition	971,081,083			
E4. Amount for Phased In Recognition: E1-E3	511,739,776			
F. Phased-In Recognition of Investment Return				
F1. Current Year: 0.25 x E4	127,934,944			
F2. First Prior Year	(202,801,341)	$ 127,934,944		
F3. Second Prior Year	(431,619,101)	(202,801,341)	$ 127,934,944	
F4. Third Prior Year	(340,879,178)	(431,619,101)	(202,801,341)	$ 127,934,944
F5. Total Recognized Investment Gain	(847,364,676)	(506,485,498)	(74,866,397)	127,934,944
G. Total Recognized Investment Return: E3+F5	123,716,407			
H. Funding Value End of Year: A+D+G	11,306,878,529			
I. Difference Between Market and Funding Values	(453,416,954)			
J. Recognized Rate of Return	1.08%			
K. Rate of Return (Market Value Basis)	15.34%			

The Funding Value of Assets recognizes assumed investment return (line E3) fully each year. Differences between actual and assumed investment return (Line E4) are phased in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for 3 consecutive years, funding value will become equal to market value.

Funding Value of Assets – Comparative Statement

Valuation Date June 30	2001	2002	2003	2004
A. Funding Value Beginning of Year	$11,169,434,208	$11,888,015,223	$11,961,346,260	$11,665,804,540
B. Market Value End of Year	11,220,376,670	10,125,903,606	9,853,283,134	10,853,461,575
C. Market Value Beginning of Year	11,949,456,155	11,220,376,670	10,125,903,606	9,853,283,134
D. Non-Investment Net Cash Flow	(302,124,394)	(363,048,399)	(458,637,448)	(482,642,418)
E. Investment Return				
E1. Market Total: B-C-D*	(426,955,091)	(731,424,665)	186,016,976	1,482,820,859
E2. Assumed Rate	8.50%	8.50%	8.50%	8.50%
E3. Amount for Immediate Recognition	936,561,621	995,051,737	997,222,341	971,081,083
E4. Amount for Phased In Recognition: E1-E3	(1,363,516,712)	(1,726,476,402)	(811,205,365)	511,739,776
F. Phased-In Recognition of Investment Return				
F1. Current Year: 0.25 x E4	(340,879,178)	(431,619,101)	(202,801,341)	127,934,944
F2. First Prior Year	141,173,007	(340,879,178)	(431,619,101)	(202,801,341)
F3. Second Prior Year	72,652,972	141,173,007	(340,879,178)	(431,619,101)
F4. Third Prior Year	211,196,987	72,652,971	141,173,007	(340,879,178)
F5. Total Recognized Investment Gain	84,143,788	(558,672,301)	(834,126,613)	(847,364,676)
G. Total Recognized Investment Return: E3+F5	1,020,705,409	436,379,436	163,095,728	123,716,407
H. Funding Value End of Year: A+D+G	11,888,015,223	11,961,346,260	11,665,804,540	11,306,878,529
I. Difference Between Market and Funding Values	(667,638,553)	(1,835,442,654)	(1,812,521,406)	(453,416,954)
J. Recognized Rate of Return	9.26%	3.73%	1.39%	1.08%
K. Rate of Return (Market Value Basis)	(3.71)%	(6.58)%	2.13%	15.34%

Connecticut State Teachers' Retirement System

The market value of the assets of the Retirement System, as of June 30, 2004, was $10,853,461,575.

Assets	June 30, 2004
Market value of plan assets	$10,853,461,575
Market value adjustment	453,416,954
Funding value of assets prior to adjustment for CLARA Balance	$11,306,878,529
CLARA Balance	(1,460,197,593)
Net funding value of plan assets	$ 9,846,680,936

In financing the Retirement System actuarial accrued liabilities, the applicable assets of $9,848,373,302 were applied as follows:

	Assets Applied to		
Account	Retiree and Beneficiary Liabilities	Active and Inactive Member Liabilities *	Totals *
Computed Actuarial Accrued Liabilities	$7,688,819,834	$7,381,660,721	$15,070,480,555
Valuation Assets	7,688,819,834	2,157,861,102	9,846,680,936
Unfunded Actuarial Accrued Liabilities	$ 0	$5,223,799,619	$ 5,223,799,619

* *Amounts do not include CLARA Balance of $1,460,197,593.*

SECTION C

Employee Census Data and Asset Information

TOTAL ACTIVE MEMBERS IN VALUATION JUNE 30, 2004
BY ATTAINED AGE AND YEARS OF SERVICE

| Attained Age | Years of Service to Valuation Date | | | | | | | Totals | |
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
20-24	646							646	$ 21,751,287
25-29	4,306	797	1					5,104	200,042,850
30-34	2,501	3,234	287	1				6,023	272,264,730
35-39	1,444	1,976	1,277	270	1			4,968	254,799,675
40-44	1,281	1,120	832	1,253	271			4,757	267,810,222
45-49	1,155	1,239	854	1,135	1,189	561	1	6,134	373,469,363
50-54	941	1,255	1,112	1,411	1,045	2,236	1,342	9,342	617,793,363
55-59	511	635	761	1,330	1,115	1,109	3,901	9,362	662,732,321
60	37	49	43	150	137	145	392	953	68,815,819
61	47	49	47	97	127	116	303	786	56,388,961
62	28	30	35	101	101	86	183	564	40,303,060
63	8	29	29	67	68	47	135	383	27,319,329
64	12	18	18	36	43	48	78	253	18,305,626
65	5	8	13	26	29	35	71	187	13,562,257
66	5	8	9	22	13	30	45	132	9,725,417
67	5	5	12	13	12	21	37	105	7,629,816
68	1		5	10	11	8	27	62	4,586,655
69			2	7	4	7	22	42	3,036,769
70 & Over	7	3	6	20	21	14	72	143	10,495,788
Totals	**12,940**	**10,455**	**5,343**	**5,949**	**4,187**	**4,463**	**6,609**	**49,946**	**$2,930,833,308**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age:	45.3	years
Service:	14.2	years
Annual Pay:	$58,680	

Male, Female, and Total Members in Valuation June 30, 2004
By Years of Service

Service Years	Active Member Count			Active Member Pays	
	Males	Females	Total	Total	Average
0	227	557	784	$ 17,479,898	$22,296
1	750	2,189	2,939	116,726,462	39,716
2	759	2,422	3,181	133,315,611	41,910
3	735	2,337	3,072	134,141,535	43,666
4	748	2,216	2,964	135,583,013	45,743
5	691	2,161	2,852	132,650,826	46,512
6	605	1,712	2,317	113,473,945	48,975
7	510	1,447	1,957	99,114,507	50,646
8	470	1,322	1,792	96,396,369	53,793
9	365	1,172	1,537	85,926,960	55,906
10	325	1,025	1,350	80,349,488	59,518
11	265	926	1,191	73,458,344	61,678
12	200	866	1,066	68,424,119	64,188
13	114	616	730	47,182,373	64,633
14	175	831	1,006	66,916,442	66,517
15 & Up	5,780	15,428	21,208	1,529,693,416	72,128
Totals	12,719	37,227	49,946	$2,930,833,308	$58,680

FORMER ACTIVE MEMBERS AND BENEFICIARIES
IN PAY STATUS BY PLAN CODE

Number in Each Plan Code

Plan	Retirees and Beneficiaries*	Disabled	Total
A (Life Annuity)	362	6	368
B (100% Cash Refund)	506	7	513
C (Period Certain and Life)	1,455	6	1,461
D (Joint and Survivor)	4,083	0	4,083
N (25% Cash Refund)	17,043	8	17,051
S (Survivor)	458	0	458
W (Disability)	1	362	363
Total	**23,908**	**389**	**24,297**

Monthly Benefits Paid in Each Plan Code

Plan	Retirees and Beneficiaries*	Disabled	Total
A (Life Annuity)	$ 616,473	$ 4,647	$ 621,120
B (100% Cash Refund)	937,031	7,087	944,118
C (Period Certain and Life)	3,415,038	6,680	3,421,718
D (Joint and Survivor)	13,025,610	0	13,025,610
N (25% Cash Refund)	51,325,687	12,227	51,337,914
S (Survivor)	188,616	0	188,616
W (Disability)	300	767,479	767,779
Total	**$69,508,755**	**$798,120**	**$70,306,875**

* *Beneficiaries category includes 458 Surviving Spouses and Dependents combined.*

RETIREES, BENEFICIARIES, SURVIVING SPOUSES AND DEPENDENTS BY FISCAL YEAR BENEFITS COMMENCED

Year Ending	Number	Monthly Annuity	Monthly Pension	Monthly Voluntary	Total	Average
1952	1	$ 452	$ 0	$ 0	$ 452	$ 452
1953	1	756	0	0	756	756
1958	1	759	0	0	759	759
1959	2	600	0	0	600	300
1960	3	1,075	0	0	1,075	358
1961	5	3,991	0	0	3,991	798
1962	6	7,510	0	2	7,512	1,252
1963	11	12,985	0	24	13,009	1,183
1964	4	6,455	0	5	6,460	1,615
1965	6	8,338	0	2	8,340	1,390
1966	15	15,153	0	8	15,161	1,011
1967	14	19,401	0	14	19,415	1,387
1968	26	28,441	0	77	28,518	1,097
1969	42	55,558	0	119	55,677	1,326
1970	40	52,860	0	114	52,974	1,324
1971	58	81,491	0	214	81,705	1,409
1972	75	115,897	0	307	116,204	1,549
1973	131	217,965	0	728	218,693	1,669
1974	120	202,520	0	529	203,049	1,692
1975	159	274,001	0	818	274,819	1,728
1976	162	294,581	0	932	295,513	1,824
1977	204	353,861	0	1,834	355,695	1,744
1978	232	406,230	0	1,379	407,609	1,757
1979	254	427,012	0	3,370	430,382	1,694
1980	301	512,247	0	3,561	515,808	1,714
1981	320	538,520	0	3,620	542,140	1,694
1982	404	712,374	0	5,785	718,159	1,778
1983	450	816,095	0	5,310	821,405	1,825
1984	445	863,521	0	9,654	873,175	1,962
1985	528	1,069,394	0	14,295	1,083,689	2,052
1986	608	1,314,840	0	26,846	1,341,686	2,207
1987	596	1,347,566	0	29,752	1,377,318	2,311
1988	555	1,274,917	0	26,957	1,301,874	2,346
1989	576	1,451,218	0	31,572	1,482,790	2,574
1990	842	2,367,834	0	56,654	2,424,488	2,879
1991	891	2,582,804	0	47,283	2,630,087	2,952
1992	937	2,975,179	0	51,975	3,027,154	3,231
1993	1,842	6,385,873	0	117,688	6,503,561	3,531
1994	609	1,661,765	0	28,252	1,690,017	2,775
1995	1,049	3,308,293	0	59,013	3,367,306	3,210
1996	1,011	3,124,900	0	52,585	3,177,485	3,143
1997	1,020	3,154,648	0	55,608	3,210,256	3,147
1998	1,100	3,392,049	0	52,908	3,444,957	3,132
1999	1,022	3,116,634	0	48,476	3,165,110	3,097
2000	1,575	5,172,542	0	54,391	5,226,933	3,319
2001	1,459	4,620,333	0	54,084	4,674,417	3,204
2002	1,422	4,519,321	0	54,072	4,573,393	3,216
2003	1,612	5,147,871	0	98,884	5,246,755	3,255
2004	1,551	5,188,681	0	99,863	5,288,544	3,410
TOTAL	24,297	$69,207,311	$ 0	$1,099,564	$70,306,875	$2,894

RECONCILIATION OF MARKET VALUE ASSETS

	Asset Reconciliation	
	2002-2003	2003-2004
Net Market Value as of July 1	$10,125,903,606	$ 9,853,283,134
Additions		
Employer Contributions*	184,475,531	186,843,498
Employee Contributions	174,903,812	213,684,858
Change in Net Appreciation	(278,808,630)	975,940,589
Interest and Dividends	453,131,285	440,088,046
Gain on Sale of Securities	11,694,321	66,792,223
Total Additions	$ 545,396,319	$ 1,883,349,214
Deductions		
Benefits (pensions, contribution refunds, reimbursements, and adjustments)	(818,016,791)	(883,170,773)
Net Increase	(272,620,472)	1,000,178,441
Net Market Value as of June 30	$ 9,853,283,134	$10,853,461,575

*   State contributions + ERIP contributions made by towns and cities.

COST-OF-LIVING ADJUSTMENT RESERVE ACCOUNT BALANCE
AS OF JUNE 30, 2004

Pursuant to PA 92-205, a special reserve account, originally known as the "Excess Earnings Account" was established within the assets for the Teachers' Retirement System. Beginning in 1992, the Account will be charged with the actuarial present value of cost-of-living adjustments to the pensions of any member whose date of retirement is on or after September 1, 1992. In any fiscal year that the rate of investment return exceeds 11.5%, the Account is credited with the dollar amount of investment return in excess of 11.5%. The Account is now referred to as the "Cost-of-Living Adjustment Reserve Account", or CLARA.

Following is a development of the Cost-of-Living Adjustment Reserve Account from June 30, 2001 to June 30, 2004:

		Eligible Pensioners	Rate of Return
1. CLARA Balance, June 30, 2001	$ 1,672,849,685		
Actuarial Liability for July 1, 2001 COLA = 3.5%	(93,464,799)	8,064	
Applicable Investment Return for FY 2001	0		(3.71)%
Actuarial Liability for January 1, 2002 COLA = 1.5%	(3,843,001)	952	
2. CLARA Balance, June 30, 2002	1,575,541,885		
Actuarial Liability for July 1, 2002 COLA = 1.5%	(50,959,515)	9,228	
Applicable Investment Return for FY 2002	0		(6.58)%
Actuarial Liability for January 1, 2003 COLA = 1.4%	(4,412,208)	1,112	
3. CLARA Balance, June 30, 2003	1,520,170,162		
Actuarial Liability for July 1, 2003 COLA = 1.4%	(54,150,876)	10,382	
Applicable Investment Return for FY 2003	0		2.13%
Actuarial Liability for January 1, 2004 COLA = 1.5%	(5,821,693)	1,335	
4. CLARA Balance, June 30, 2004	$ 1,460,197,593		

SECTION D
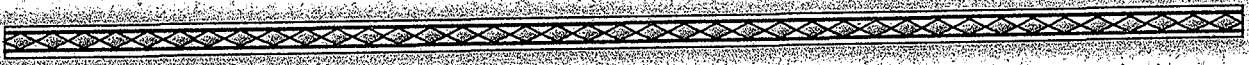
Benefit Summary

Outlined below are the principal provisions of the System which were reflected in the results shown in this report.

1. Covered Employees

Any teacher, principal, superintendent or supervisor engaged in service of public schools, plus professional employees at State schools of higher education if they choose to be covered.

2. Salary

Amount paid to a teacher as specified in a contract of employment excluding amounts paid for extra duty assignments, coaching, unused sick time, unused vacation or terminal pay.

3. Average Annual Salary

Average of annual salary received during three years of highest salary.

4. Credited Service

One month for each month of service as a teacher in Connecticut public schools, maximum 10 months for each school year. Ten months of credited service constitutes one year of Credited Service. Certain other types of teaching service, State employment, or war-time military service may be purchased at retirement, if the Member pays one-half of the cost.

5. Normal Retirement

Eligibility: Age 60 with 20 years of Credited Service in Connecticut or 35 years of Credited Service including at least 25 years of service in Connecticut.

Benefit: 2% times years of Credited Service times Average Annual Salary (maximum percent is 75%)

<div align="center">plus</div>

any additional amounts derived from the accumulation of 6th percent contributions made prior to July 1, 1989 and voluntary contributions by the teacher.

Minimum Benefit: Effective January 1, 1999, Public Act 98-251 provides a minimum monthly retirement benefit of $1,200 to teachers who retire under the Normal Retirement provisions and who complete at least 25 years of full time Connecticut service at retirement.

6. Early Retirement

Eligibility: At any age after the completion of 25 years of Credited Service including 20 years of Connecticut service or at or after age 55 and the completion of 20 years of Credited Service including 15 years of Connecticut service, with the last 5 years in Connecticut.

Benefit: Reduced normal retirement benefit. The early retirement factors currently in effect are 6% per year for the first five years by which early retirement precedes the minimum normal retirement age and 4% per year for the next five years by which early retirement precedes the minimum normal retirement age. The Teachers' Retirement Board has adopted new early retirement factors that will apply effective July 1, 1999 to any member who retires on or after that date with at least 30 years of service. The new factors are 3% per year by which early retirement precedes the minimum normal retirement age.

7. Proratable Retirement

Eligibility: Age 60 with 10 years of Credited Service, with the last 5 years in Connecticut.

Benefit: 2% less .1% for each year less than 20 years times years of Credited Service in Connecticut plus 1% times years of additional Credited Service times Average Annual Salary.

8. Disability Retirement

Eligibility: Disability after 5 years of Credited Service in Connecticut if not incurred in the performance of duty and without regard to service if incurred in the performance of duty.

Benefit: 2% times Credited Service to date of disability times Average Annual Salary, but not less than 15% times Average Annual Salary, nor more than 50% of Average Annual Salary. In addition, in no case will a disability benefit under this plan (without regard to any cost-of-living adjustments) plus any initial award of Social Security benefits and workers' compensation exceed the Average Annual Salary.

9. Termination of Employment

With less than 5 years of Credited Service: Return of 6% contributions with interest.

With 5 or more years of Credited Service: Return of 6% contributions with interest and 1% contributions made prior to July 1, 1989 without interest.

With 10 or more years of Credited Service: Member is 100% vested in the accrued benefit based on Credited Service and Average Annual Salary as of the date of termination of covered employment. Member may elect return of all contributions plus interest on 6% contributions in lieu of vested benefit.

10. Pre-Retirement Death Benefits

A lump sum plus one of the following: survivor's benefit, return of all contributions with interest, surviving spouse's benefit, or automatic surviving spouse's benefit.

- Lump Sum: $1,000 for the first 5 years of Connecticut service plus $200 per year thereafter. Maximum benefit: $2,000.

- Survivor's Benefit: For active teachers who die while in service the family maximum benefit payable to survivors has been increased from $600 to $1,500 per month. Each minor child is entitled to $300 per month. The surviving spouse's benefit will be $300 per month if the member has 12 or less years of service. For each additional year of service, the surviving spouse's monthly benefit is increased $25, up to a maximum of $600.

- Accumulated contributions with interest plus dependent children's benefits as described in the "Survivor's Benefit" paragraph.

- Surviving Spouse's Benefit: the 50% co-participant option plus dependent children's benefits as described in the "Survivor Benefit" paragraph.

- Automatic Surviving Spouse's Benefit: An active member who is eligible for immediate retirement and who has named his or her spouse as primary beneficiary will be automatically covered by a 100% Plan D co-participant option in the event of his or her death prior to retirement.

11. Form of Annuity

Normal: Partial Refund Option - 75% of total benefit is paid as a life annuity. If 25% of the benefits paid prior to death do not exceed the Member's 6% contributions plus interest frozen at the date of benefit commencement, the difference is paid to the Member's beneficiary.

Optional Forms: 5-, 10-, 20-, or 25-year certain and life. 33-1/3%, 50%, 66-2/3%, 75%, or 100% co-participant annuity (if co-participant dies first, benefit reverts to unreduced amount).

12. Cost-of-Living Allowance

For teachers who retired prior to September 1, 1992, pension benefit adjustments are made in accordance with increases in the Consumer Price Index, with a minimum of 3% and a maximum of 5% per annum. Benefit adjustments for teachers who retire on or after September 1, 1992, will be provided through the Cost-of-Living Adjustment Reserve Account. The amount of such adjustments will depend upon the adequacy of the Cost-of-Living Adjustment Reserve Account as well as the investment returns of the Teachers' Retirement Fund.

13. Teachers' Required Contribution

Effective July 1, 1992, each teacher is required to contribute 6% of annual salary for the pension benefit. An additional 1% of annual salary is contributed for health insurance of retired teachers, except for the first $500,000 of such total.

14. State Contribution

The State's contribution requirement to fund the balance of the liability for benefits with annual contributions (currently paid in installments at the beginning of each quarter) is determined in accordance with Section 10-183z (which reflects Public Act 79-436 as amended).

SAMPLE BENEFIT COMPUTATIONS FOR A MEMBER
RETIRING JUNE 30, 2004

The data for the sample member is shown below.

A.	$40,000	Average Annual Salary
B.	32	Total Credited Service (all in Connecticut for the purpose of this example)
C.	60	Age of Retiree
D.	55	Age of Spouse
E.	100%	Percentage of Retirement Allowance to Continue to Spouse after Retiree's Death (Retiree Chooses this Percentage)

The computations that would be made for this case are:

		Annual Amount
F.	Formula Benefit: 2% x A x B	$25,600
G.	Adjustment for Line E election (1 - .871) x $25,600	3,302
H.	Net Annual Benefit Payable	$22,298

Subject to the availability of funds in the Cost-of-Living Adjustment Reserve Account, this benefit could be increased by a Cost-of-Living adjustment (COLA). The amount of the COLA in a given year depends on the Teachers' Retirement Fund investment returns and the rate of increases in Social Security benefits.

SECTION E

Disclosures Required by
GASB Statement No. 25

INFORMATION FOR COMPLIANCE
WITH GASB STATEMENT NO. 25

The information in this section of the report is provided to assist the Connecticut Teachers' Retirement System (CTRS) with the requirements of Governmental Accounting Standards Board Statement No. 25 (GAS 25). The GAS 25 requirements include:

1. Schedule of Funding Progress – This provides a six-year history of the following:

    - The actuarial value of plan assets,
    - The actuarial accrued liability,
    - The relationship between the assets and the liability, and
    - The relationship between the unfunded actuarial accrued liability and member payroll.

2. Schedule of Employer Contributions – This provides a history of the State's Annual Required Contribution (ARC) and a comparison of the ARC with the actual contributions made each year by the State.

3. A reconciliation of the changes in the market value of plan assets since the last annual valuation. This appears on page C-5.

4. Summary of Actuarial Methods and Assumptions – This states the assumptions made with regard to rates of return, salary increases, amortization periods and the actuarial cost method used.

SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation date	June 30, 2004
Actuarial cost method	Entry age actuarial cost method using level percent of payroll funding
Amortization method	Level percent of payroll

Remaining amortization periods

Plan in effect 6/30/91	27 years
Public Act 82-91	8 years
Public Act 87-381	13 years
Public Act 92-205	18 years
Public Act 98-251	23 years

(All of these are closed periods.)

Asset valuation method	4-year smoothed market

Actuarial assumptions:

Investment rate of return*	8.5%
Projected salary increases*	4.0% - 8.0%
*Includes wage inflation at	4.0%
Cost-of-living adjustments for retirements prior to September 1, 1992	3.0%

Membership of the System consisted of the following at June 30, 2004, the date of the latest actuarial valuation:

	Totals
Retired Members and Beneficiaries Receiving Benefits	24,297
Inactive Members	
Vested	1,250
Non-Vested	8,294
Active Members	49,946
Totals	83,787

SCHEDULE OF FUNDING PROGRESS

(DOLLAR AMOUNTS IN MILLIONS)

Actuarial Valuation Date	Actuarial Value of Assets (a)*	Actuarial Accrued Liability (AAL) - Entry Age (b)*	Unfunded AAL (UAAL) (b)-(a)	Funded Ratio (a)/(b)	Covered Payroll (c)	UAAL as a Percent of Covered Payroll [(b)-(a)]/(c)
6/30/1994	$ 5,602.1	$ 8,222.6	$2,620.5	68.1%	$2,030.4	129.1%
6/30/1996	6,648.2	9,626.8	2,978.6	69.1%	2,151.6	138.4%
6/30/1998	7,721.1	10,970.1	3,249.0	70.4%	2,298.9	141.3%
6/30/2000	9,605.9	11,797.6	2,191.7	81.4%	2,501.5	87.6%
6/30/2002	10,387.3	13,679.9	3,292.6	75.9%	2,698.3	122.0%
6/30/2004	9,846.7	15,070.5	5,223.8	65.3%	2,930.8	178.2%

* *The Actuarial Value of Assets and Entry Age Actuarial Accrued Liabilities exclude the EEA Balance for valuation years 1994 through 2000; the CLARA Balance is excluded for valuation years 2002 and 2004.*

Note: Since the State adopted a biennial budgeting process, formal actuarial valuations have only been prepared as of June 30 of even-numbered years.

SCHEDULE OF STATE CONTRIBUTIONS

Fiscal Year Ended June 30	Annual Required Contribution	Actual Contributions	Percent Contributed
1999	$221,569,693	$188,334,000	85.0%
2000	240,524,050	204,445,443	85.0%
2001	252,547,880	214,665,698	85.0%
2002	210,701,421	204,511,460	97.1%
2003	221,236,492	179,823,603	81.3%
2004	270,544,487	185,348,144	68.5%

SECTION F

Actuarial Assumptions, Methods, and Definitions

SUMMARY OF THE NEW ASSUMPTIONS USED IN THIS ACTUARIAL VALUATION FOR
THE CONNECTICUT STATE TEACHERS' RETIREMENT SYSTEM ADOPTED BY BOARD OF TRUSTEES OCTOBER 17, 2002 AFTER CONSULTING WITH ACTUARY

Economic Assumptions

The investment return rate used in making the valuation was 8.5% per year, compounded annually (net after administrative expenses). This rate of return is not the assumed real rate of return. The real rate of return is the portion of investment return which is more than the inflation rate. Considering wage inflation recognition of 4.0%, the 8.5% rate translates to an assumed real rate of return of 4.5%. This rate was first used for the *June 30, 2002* valuation.

Pay increase assumptions for individual active members are shown on page F-8. Part of the assumption is for a merit and/or seniority increase related to the member's years of service, and the other 4.0% recognizes wage inflation. These rates were first used for the *June 30, 2002* valuation.

The Active Member Group size is assumed to remain constant at its present level.

Total active member payroll is assumed to increase 4.0% per year, which is the portion of the individual pay increase assumptions attributable to wage inflation. This rate was first used for the *June 30, 2002* valuation.

Members who retired prior to September 1, 1992, are assumed to receive an annual *Cost-of-Living Adjustment (COLA)* of 3.0%. Future COLAs for all other retirees will be paid from the CLARA --- at the appropriate time an amount will be transferred out of this Reserve Account to cover the cost of that COLA. Therefore, no assumption is made about annual COLAs for members who retire after August 31, 1992.

Non-Economic Assumptions

The mortality table used to measure non-disabled retired life mortality was the 1994 Group Annuity Mortality Tables (94 GAM) with a two-year age setback for males and a one-year age setback for females. Related values are shown on page F-3. Each of these modifications of the respective 94 GAM Tables was then given a 10-year age set-forward to be used for disabled retiree mortality. Rates

for active male members are the same as for non-disabled retired male members, while 75% of the 94 GAM rates for female members without any age setback are used for active female members. *Pre-retirement mortality rates* are shown on page F-6. These tables were first used for the *June 30, 2002* valuation.

The probabilities of retirement for members eligible to retire are shown on page F-4. These rates were first used in the *June 30, 2002* valuation.

The probabilities of withdrawal from service are shown for sample ages on page F-5. *Disability rates* are shown on page F-7. The withdrawal and disability rates were first used in the valuation as of June 30, 2002 and June 30, 1996 respectively, and do not apply to members who are eligible for retirement.

The entry age actuarial cost method with level percent of payroll funding was used in determining the normal cost and actuarial accrued liabilities for the System.

Differences in the past between assumed experience and actual experience ("actuarial gains and losses") become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities are amortized to produce contribution amounts (the total of principal and interest) which are level percent of payroll contributions.

Asset Valuation Method. A market value related asset method is used as described on page B-4. This method was first used in the June 30, 1996 valuation.

The data about persons now covered and about present assets was furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.).

Age	% Dying Next Year		Age	% Dying Next Year	
	Male	Female		Male	Female
50	0.2102%	0.1310%	81	5.5861%	3.9396%
51	0.2326%	0.1428%	82	6.2027%	4.3952%
52	0.2579%	0.1568%	83	6.8615%	4.9153%
53	0.2872%	0.1734%	84	7.5532%	5.4857%
54	0.3213%	0.1907%	85	8.2510%	6.0979%
55	0.3584%	0.2084%	86	8.9613%	6.7738%
56	0.3979%	0.2294%	87	9.7240%	7.5347%
57	0.4425%	0.2563%	88	10.5792%	8.4023%
58	0.4949%	0.2919%	89	11.5671%	9.3820%
59	0.5581%	0.3359%	90	12.6980%	10.4594%
60	0.6300%	0.3863%	91	13.9452%	11.6265%
61	0.7090%	0.4439%	92	15.2931%	12.8751%
62	0.7976%	0.5093%	93	16.7260%	14.1973%
63	0.8986%	0.5832%	94	18.2281%	15.5931%
64	1.0147%	0.6677%	95	19.8392%	17.0677%
65	1.1471%	0.7621%	96	21.5700%	18.6213%
66	1.2940%	0.8636%	97	23.3606%	20.2538%
67	1.4535%	0.9694%	98	25.1510%	21.9655%
68	1.6239%	1.0764%	99	26.8815%	23.7713%
69	1.8034%	1.1763%	100	28.5277%	25.6712%
70	1.9859%	1.2709%	101	30.1298%	27.6427%
71	2.1729%	1.3730%	102	31.7238%	29.6629%
72	2.3730%	1.4953%	103	33.3461%	31.7093%
73	2.5951%	1.6506%	104	35.0330%	33.8505%
74	2.8481%	1.8344%	105	36.8542%	36.1016%
75	3.1201%	2.0381%	106	38.7855%	38.3597%
76	3.4051%	2.2686%	107	40.7224%	40.5217%
77	3.7211%	2.5325%	108	42.5599%	42.4846%
78	4.0858%	2.8366%	109	44.1935%	44.4368%
79	4.5171%	3.1727%	110	100.0000%	100.0000%
80	5.0211%	3.5362%	Ref	261 1.00 2	262 1.00 1

PROBABILITIES OF AGE AND SERVICE RETIREMENT
FOR MEMBERS ELIGIBLE TO RETIRE

| | % of Active Participants Retiring | | | | | |
| | Unreduced | | Proratable | | Reduced | |
Age	Male	Female	Male	Female	Male	Female
50	25%	15%			2%	2%
51	25%	15%			2%	2%
52	25%	15%			2%	3%
53	25%	15%			3%	4%
54	25%	15%			3%	5%
55	35%	30%			4%	7%
56	35%	30%			7%	8%
57	35%	30%			10%	8%
58	35%	30%			10%	10%
59	35%	30%			10%	10%
60	20%	20%	6%	6%		
61	23%	22%	6%	8%		
62	23%	22%	15%	11%		
63	25%	22%	10%	8%		
64	25%	22%	10%	8%		
65	33%	30%	20%	15%		
66	25%	30%	20%	12%		
67	25%	30%	20%	15%		
68	25%	30%	20%	12%		
69	25%	30%	35%	12%		
70	100%	40%	35%	12%		
71	100%	40%	35%	12%		
72	100%	40%	35%	12%		
73	100%	40%	35%	12%		
74	100%	40%	35%	20%		
75	100%	40%	40%	20%		
76	100%	40%	40%	20%		
77	100%	40%	40%	20%		
78	100%	40%	40%	20%		
79	100%	40%	40%	20%		
80	100%	100%	40%	20%		
Tbl	804	805	806	807	808	809
Anch	50	50	60	60	45	45

% of Active Participants Withdrawing					
Service-Based Withdrawal			Age-Based Withdrawal		
Service	Male	Female	Age	Male	Female
0-1	0.0975	0.1000	25	0.0250	0.0300
1-2	0.0775	0.0750	26	0.0250	0.0300
2-3	0.0525	0.0550	27	0.0250	0.0300
3-4	0.0375	0.0500	28	0.0250	0.0300
4-5	0.0350	0.0500	29	0.0250	0.0300
5-6	0.0350	0.0450	30	0.0250	0.0300
6-7	0.0350	0.0450	31	0.0250	0.0300
7-8	0.0200	0.0400	32	0.0250	0.0300
8-9	0.0200	0.0300	33	0.0230	0.0290
9-10	0.0100	0.0300	34	0.0210	0.0280
			35	0.0190	0.0270
			36	0.0170	0.0260
			37	0.0150	0.0250
			38	0.0145	0.0230
			39	0.0140	0.0210
			40	0.0135	0.0190
			41	0.0130	0.0170
			42	0.0125	0.0150
			43	0.0125	0.0140
			44	0.0125	0.0130
			45	0.0125	0.0120
			46	0.0125	0.0110
			47	0.0125	0.0100
			48	0.0130	0.0105
			49	0.0135	0.0110
			50	0.0140	0.0115
			51	0.0145	0.0120
			52	0.0150	0.0125
			53	0.0170	0.0135
			54	0.0190	0.0145
			55	0.0210	0.0155
			56	0.0230	0.0165
			57	0.0250	0.0175
			58	0.0250	0.0175
			59	0.0250	0.0175
Sw	266	267	Wx	492	493

| | % Dying Next Year | |
Age	Male	Female
20	0.0460%	0.0213%
21	0.0484%	0.0214%
22	0.0507%	0.0217%
23	0.0530%	0.0219%
24	0.0556%	0.0218%
25	0.0589%	0.0218%
26	0.0624%	0.0220%
27	0.0661%	0.0227%
28	0.0696%	0.0236%
29	0.0727%	0.0248%
30	0.0754%	0.0263%
31	0.0779%	0.0280%
32	0.0801%	0.0298%
33	0.0821%	0.0317%
34	0.0839%	0.0337%
35	0.0848%	0.0359%
36	0.0849%	0.0384%
37	0.0851%	0.0413%
38	0.0862%	0.0449%
39	0.0891%	0.0489%
40	0.0939%	0.0532%
41	0.0999%	0.0576%
42	0.1072%	0.0619%
43	0.1156%	0.0658%
44	0.1252%	0.0692%
45	0.1352%	0.0730%
46	0.1458%	0.0775%
47	0.1578%	0.0834%
48	0.1722%	0.0904%
49	0.1899%	0.0982%
50	0.2102%	0.1071%
51	0.2326%	0.1176%
52	0.2579%	0.1301%
53	0.2872%	0.1430%
54	0.3213%	0.1563%
55	0.3584%	0.1721%
56	0.3979%	0.1922%
57	0.4425%	0.2189%
58	0.4949%	0.2519%
59	0.5581%	0.2897%
60	0.6300%	0.3329%
61	0.7090%	0.3820%
62	0.7976%	0.4374%
63	0.8986%	0.5008%
64	1.0147%	0.5716%
65	1.1471%	0.6477%
Ref	261 1.00 2	262 0.75 0

DISABILITY RATES
PRIOR TO ELIGIBILITY FOR RETIREMENT

Attained Age	% Becoming Disabled	
	Male	Female
20	0.05%	0.05%
21	0.05%	0.05%
22	0.05%	0.05%
23	0.05%	0.05%
24	0.05%	0.05%
25	0.05%	0.05%
26	0.05%	0.05%
27	0.05%	0.05%
28	0.05%	0.05%
29	0.04%	0.04%
30	0.04%	0.04%
31	0.04%	0.04% ·
32	0.03%	0.03%
33	0.04%	0.04%
34	0.04%	0.04%
35	0.04%	0.04%
36	0.05%	0.04%
37	0.05%	0.04%
38	0.05%	0.05%
39	0.05%	0.06%
40	0.05%	0.07%
41	0.05%	0.08%
42	0.05%	0.09%
43	0.08%	0.10%
44	0.11%	0.11%
45	0.14%	0.12%
46	0.17%	0.13%
47	0.20%	0.14%
48	0.29%	0.18%
49	0.38%	0.22%
50	0.47%	0.26%
51	0.56%	0.30%
52	0.65%	0.34%
53	0.72%	0.38%
54	0.79%	0.41%
55	0.86%	0.44%
56	0.93%	0.47%
57	1.00%	0.50%
58	1.00%	0.50%
59	1.00%	0.50%
60	1.00%	0.50%
Ref:	134 x 0.50	135 x 0.50

PAY INCREASE ASSUMPTIONS FOR AN INDIVIDUAL MEMBER

| Service | % Increases in Salaries Next Year | | |
	Merit & Seniority	Base	Total
0	4.00%	4.00%	8.00%
1	4.00%	4.00%	8.00%
2	4.00%	4.00%	8.00%
3	4.00%	4.00%	8.00%
4	4.00%	4.00%	8.00%
5	4.00%	4.00%	8.00%
6	4.00%	4.00%	8.00%
7	3.00%	4.00%	7.00%
8	3.00%	4.00%	7.00%
9	2.00%	4.00%	6.00%
10	2.00%	4.00%	6.00%
11	1.75%	4.00%	5.75%
12	1.50%	4.00%	5.50%
13	1.50%	4.00%	5.50%
14	1.25%	4.00%	5.25%
15	1.25%	4.00%	5.25%
16	0.25%	4.00%	4.25%
17	0.00%	4.00%	4.00%
18	0.00%	4.00%	4.00%
19	0.00%	4.00%	4.00%
20	0.00%	4.00%	4.00%
21	0.00%	4.00%	4.00%
22	0.00%	4.00%	4.00%
23	0.00%	4.00%	4.00%
24	0.00%	4.00%	4.00%
25	0.00%	4.00%	4.00%
26	0.00%	4.00%	4.00%
27	0.00%	4.00%	4.00%
28	0.00%	4.00%	4.00%
29	0.00%	4.00%	4.00%
30	0.00%	4.00%	4.00%
31	0.00%	4.00%	4.00%
32	0.00%	4.00%	4.00%
33	0.00%	4.00%	4.00%
34	1.00%	4.00%	5.00%
35	1.00%	4.00%	5.00%
36	0.00%	4.00%	4.00%
37	0.00%	4.00%	4.00%
38	1.00%	4.00%	5.00%
39	0.00%	4.00%	4.00%
40	0.00%	4.00%	4.00%
Ref	71		

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

Marriage Assumption: 85% of males and 75% of females are assumed to be married for purposes of valuing death-in-service benefits.

Pay Increase Timing: Beginning of (fiscal) year.

Eligibility Testing: Eligibility for benefits is determined based upon the age nearest birthday and exact service on the date the decrement is assumed to occur.

Benefit Service: Exact years of service is used to determine the amount of benefit payable.

Decrement Timing: Retirement decrements are assumed to occur at the beginning of the year, other decrements are assumed to occur mid-year.

Decrement Relativity: Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

Decrement Operation: Disability and turnover decrements do not operate after member reaches retirement eligibility.

Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.

Miscellaneous Loading Factors: None.

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Accumulated Benefit Obligation. The actuarial present value of vested and non-vested benefits based on service to date and past and current salary levels.

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent. A single amount or series of amounts of equal value to another single amount or series of amounts, computed on the basis of the rate(s) of interest and mortality tables used by the plan.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial Present Value of Credited Projected Benefits or Pension Benefit Obligation. The present value of future benefits based on service to date and the effect projected salary increases.

Actuary. A person who is trained in the applications of probability and compound interest to problems in business and finance that involve payment of money in the future, contingent upon the occurrence of future events. Most actuaries in the United States are Members of the American Academy of Actuaries. The Society of Actuaries is an international research, education and membership organization for actuaries in the life and health insurance, employee benefits, and pension fields. It administers a series of examinations leading initially to Associateship and the designation A.S.A. and ultimately to Fellowship with the designation F.S.A.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

Pension Benefit Obligation. A standardized disclosure measure of the present value of pension benefits, adjusted for the effects of projected salary increases, estimated to be payable in the future as a result of employee service to date. The measure is the actuarial present value of credited projected benefits and is intended to (i) help users assess the plan's funding status on a going-concern basis, (ii) assess progress being made in accumulating sufficient assets to pay benefits when due, and (iii) allow for comparisons among public employee retirement plans. The measure is independent of the actuarial funding method used to determine contributions to the plan.

Plan Termination Liability. The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a "going concern" basis and is not normally determined in a routine actuarial valuation.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."

Valuation Assets. The value of current plan assets recognized for valuation purposes. Generally based on book value plus a portion of unrealized appreciation or depreciation.