Connecticut State Teachers'
Retirement System
Report on the Actuarial Valuation
as of June 30, 2002

Gabriel, Roeder, Smith & Company

November 19, 2002

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, 2002 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 his Staff. Their efforts and cooperation in furnishing the materials needed for this valuation are acknowledged with appreciation.

We have attempted to make the key valuation results more accessible to the users of this report by including a new section, entitled "Introduction". This section includes the following:

- A summary of the key valuation results as of June 30, 2002, using both the prior actuarial assumptions and those adopted by the Board at its meeting on October 17, 2002.
- For comparison purposes, a summary of the same key valuation results as of June 30, 2000.
- Two graphs showing projections of the current active and retired members into the future on the basis of the new valuation assumptions.

We hope these additions will prove to be helpful. We welcome comments from the Board on the contents of this report as well as the latest additions.

The new actuarial assumptions, used for the first time in this actuarial valuation, are summarized in Section F. The Board adopted them based on a study of Retirement System Experience for the period 1996-2001.

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   Mark K. Johnson

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Introduction

SUMMARY OF KEY VALUATION RESULTS

	As of June 30, 2000	As of June 30, 2002 Old Assumptions	As of June 30, 2002 New Assumptions
System Members			
Retired Members and Beneficiaries			
Number	20,724	22,303	22,303
Annual Payments	$ 601,362,660	$ 730,978,035	$ 730,978,035
Inactive Members			
Vested	1,794	1,508	1,508
Non-Vested	6,746	6,890	6,890
Active Members			
Number	46,553	48,902	48,902
Annual Payroll	$2,501,471,018	$2,698,312,692	$2,698,312,692
Actuarial Accrued Liabilities			
Excess Earnings Account Balance	$ 1,563,496,139	$1,574,029,466	$1,574,029,466
Retired Members and Beneficiaries	5,343,601,053	6,397,525,128	6,803,186,025
Inactive Members	265,944,580	234,435,092	236,427,180
Active Members	6,188,020,552	6,620,662,898	6,640,240,318
Total	$13,361,062,324	$14,826,652,584	$15,253,882,989
Actuarial Value of Assets	$11,169,434,208	$11,961,346,260	$11,961,346,260
Unfunded Accrued Liability	$ 2,191,628,116	$ 2,865,306,324	$ 3,292,536,729
Funded Ratios			
Including Excess Earnings Account	83.60%	80.67%	78.42%
Excluding Excess Earnings Account	81.42%	78.38%	75.93%
Computed State Contribution Rate			
Normal Cost	3.80%	3.80%	3.00%
Unfunded Accrued Liability	3.84%*	5.40%*	6.27%
Total	7.64%	9.20%	9.27%
State Contribution Amount			
For Fiscal Year Ending:			
June 30, 2002	$210,701,421	N/A	N/A
June 30, 2003	$221,236,492	N/A	N/A
June 30, 2004	N/A	$273,689,880	$270,544,487
June 30, 2005	N/A	$287,374,374	$281,366,266

* *Includes adjustment for compliance with Governmental Accounting Standards Board Statements No. 25 and No. 27.*

EXPECTED DEVELOPMENT OF PRESENT ACTIVE POPULATION
JUNE 30, 2002

Closed Group Population Projection
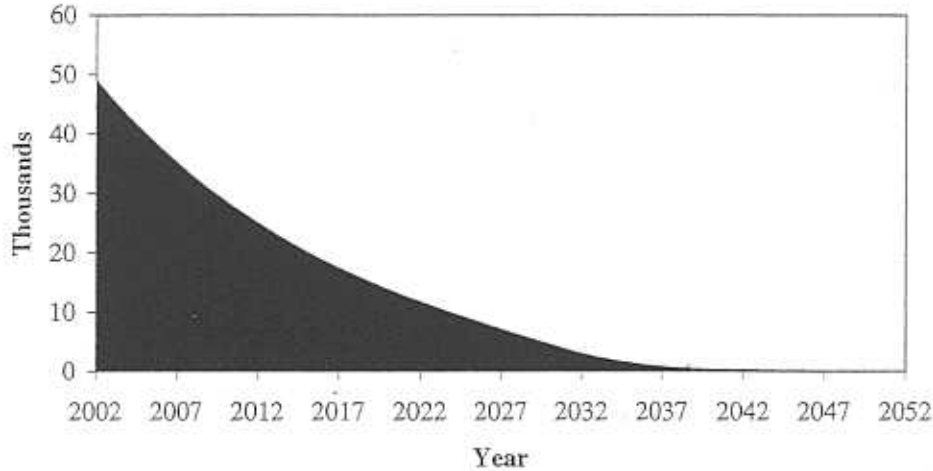
Expected Terminations from Active Employment for Current Active Members

■ Retirements ■ Non-Vested Separations □ Deaths and Disabilities □ Vested Separations
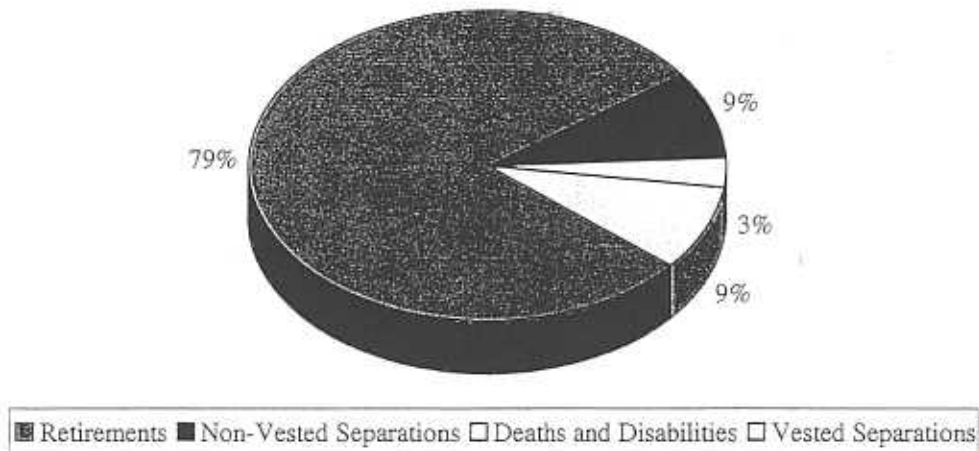
The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 48,902 active members. Eventually, 9% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer-provided 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
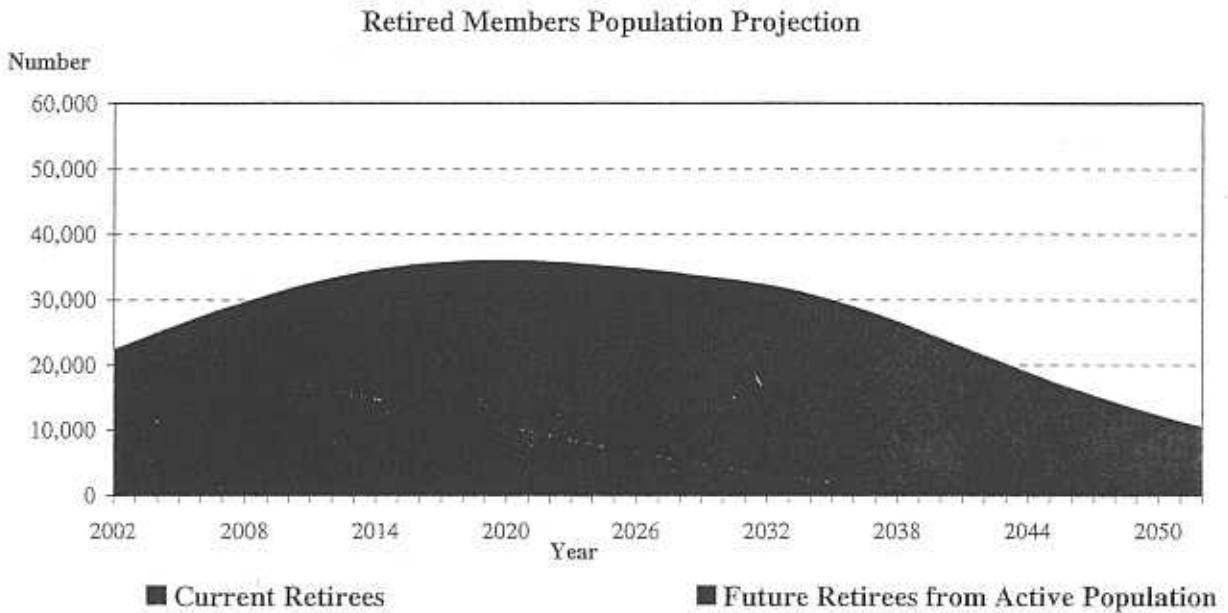
The projected retired population levels shown in the graph are developed from the current retired population, the addition of new retired members from the active population, and mortality assumptions. The projection indicates that around 2020 the retired population will peak. Note that this graph does 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

SECTION B

Valuation Results

To put this year's actuarial valuation results in perspective, we need to review some recent history. The June 30, 1996 valuation of the System produced a Computed State Contribution Rate of 9.13%, which increased to 9.49% in the next valuation (as of June 30, 1998). During the following two years, continued substantial asset gains were recognized gradually through the four-year asset smoothing process that the Board adopted in 1996. In addition, the system's actuarial accrued liabilities grew somewhat more slowly than anticipated by the assumptions. The combination of these two factors resulted in a Contribution Rate of 7.64% in the June 30, 2000 actuarial valuation. As is well known, those asset gains have slowed, and even turned to losses since that time.

During 2001 and 2002, the Board's actuary completed a Study of Retirement System Experience for the period 1996-2001, and recommended that the Board adopt certain changes in the actuarial assumptions to better reflect expected System experience in future years. The Computed State Contribution Rate of 9.27% that appears on page B-2 of this report is based on the newly adopted assumptions. Had no changes been made to the assumptions, that rate would have been 9.20%. The following table compares the dollar amount of the State's computed contribution using these two rates. To understand these results, it is important to be aware that under the old assumptions, member payroll was expected to grow 5.0% per year, while the payroll growth rate under the new assumptions is 4.0%. As a result, the higher contribution rate (9.27%) is being applied to a lower projected member payroll than is the lower contribution rate of 9.20%.

Computed State Contribution Amounts

For Fiscal Year Ending	9.20% Rate (Old Assumptions)	9.27% Rate (New Assumptions)
June 30, 2004	$273,689,880	$270,544,487
June 30, 2005	$287,374,374	$281,366,266

Finally, the value of the Excess Earnings Account Balance increased less than 1% between June 30, 2000 and June 30, 2002 from $1,563,496,139 to $1,574,029,466. This latter balance does not reflect approximately $66,000,000 needed to cover the Cost-of-Living Adjustments made effective July 1, 2002.

The funded status (that is, the ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability) of the System continues to exceed 75%.

Computed Contributions for	Percents of Active Member Payroll
Normal Cost	
Age and service annuities	7.34 %
Separation benefits	1.28 %
Disability annuities	0.25 %
Death-in-service annuities	0.13 %
Total	9.00 %
Member Contributions	6.00 %
State Normal Cost	3.00 %
Unfunded Actuarial Accrued Liabilities:	
Plan in effect 6/30/91 (29 years)	11.14 %
Public Act 82-91 (10 years)	0.14 %
Public Act 87-381 (15 years)	0.01 %
Public Act 92-205 (20 years)	(5.04)%
Public Act 98-251 (25 years)	0.02 %
Total	6.27 %
State Contribution Rate	**9.27 %**

Based on a projected member payroll of $2,918,495,000 for the 2003-2004 Fiscal Year, the computed State contribution dollar amount for that Fiscal Year is $270,544,487. Based on a projected member payroll of $3,035,234,800 for the 2004-2005 Fiscal Year, the computed State contribution dollar amount for that Fiscal Year is $281,366,266.

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. In addition, 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.

In preparing the Experience Study for the period 1996-2001, it was discovered that the amortization periods previously used for the various components of the Unfunded Actuarial Accrued Liability were off by one year in each case. The years shown above are now correct. This change resulted in an increase in the contribution rate of 0.04%.

COMPUTED ACTUARIAL LIABILITIES
AS OF JUNE 30, 2002

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	$8,259,973,956	$1,734,843,712	$6,525,130,244
Separation benefits (refunds of contributions, and deferred allowances) likely to be paid present active members	313,126,256	300,957,446	12,168,810
Disability benefits likely to be paid present active members	93,033,148	60,380,166	32,652,982
Death in service benefits likely to be paid on behalf of present active members	101,442,131	31,153,849	70,288,282
Contributions due to members not receiving a vested benefit	97,225,101	0	97,225,101
Benefits payable to present retirees and beneficiaries	6,803,186,025	0	6,803,186,025
Deferred benefits payable to members who terminated with vested rights	139,202,079	0	139,202,079
Future Cost of Living Adjustments to be paid from the Excess Earnings Account (EEA)	1,574,029,466	0	1,574,029,466
Total	$17,381,218,162	$2,127,335,173	$15,253,882,989
Applicable assets including EEA Balance			11,961,346,260
Unfunded actuarial accrued liability			$3,292,536,729

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	2002	2003	2004	2005
A. Funding Value Beginning of Year	$11,888,015,223			
B. Market Value End of Year	10,125,903,606			
C. Market Value Beginning of Year	11,220,376,670			
D. Non-Investment Net Cash Flow	(363,048,399)			
E. Investment Return				
E1. Market Total: B-C-D	(731,424,665)			
E2. Assumed Rate	8.50%			
E3. Amount for Immediate Recognition	995,051,737			
E4. Amount for Phased In Recognition: E1-E3	(1,726,476,402)			
F. Phased-In Recognition of Investment Return				
F1. Current Year: 0.25 x E4	(431,619,101)	0	0	0
F2. First Prior Year	(340,879,178)	(431,619,101)	0	0
F3. Second Prior Year	141,173,007	(340,879,178)	(431,619,101)	0
F4. Third Prior Year	72,652,971	141,173,007	(340,879,178)	(431,619,099)
F5. Total Recognized Investment Gain	(558,672,301)	(631,325,272)	(772,498,279)	(431,619,099)
G. Funding Value End of Year: A+D+E3+F5	11,961,346,260	0	0	0
H. Difference Between Market and Funding Values	(1,835,442,654)	0	0	0
I. Recognized Rate of Return	3.73%			

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	1999	2000	2001	2002
A. Funding Value Beginning of Year	$8,841,960,336	$9,959,514,254	$11,169,434,208	$11,888,015,223
B. Market Value End of Year	10,807,413,401	11,949,456,155	11,220,376,670	10,125,903,606
C. Market Value Beginning of Year	9,992,279,241	10,807,413,401	11,949,456,155	11,220,376,670
D. Non-Investment Net Cash Flow	(217,788,351)	(258,233,080)	(302,124,394)	(363,048,399)
E. Investment Return				
E1. Market Total: B-C-D	1,032,922,511	1,400,275,834	(426,955,091)	(731,424,665)
E2. Assumed Rate	8.50%	8.50%	8.50%	8.50%
E3. Amount for Immediate Recognition	742,310,624	835,583,806	936,561,621	995,051,737
E4. Amount for Phased In Recognition: E1-E3	290,611,887	564,692,028	(1,363,516,712)	(1,726,476,402)
F. Phased-In Recognition of Investment Return				
F1. Current Year: 0.25 x E4	72,652,972	141,173,007	(340,879,178)	(431,619,101)
F2. First Prior Year	211,196,987	72,652,972	141,173,007	(340,879,178)
F3. Second Prior Year	207,546,263	211,196,987	72,652,972	141,173,007
F4. Third Prior Year	101,635,423	207,546,262	211,196,987	72,652,971
F5. Total Recognized Investment Gain	593,031,645	632,569,228	84,143,788	(558,672,301)
G. Total Recognized Investment Return	1,335,342,269	1,468,153,034	1,020,705,409	436,379,436
H. Funding Value End of Year: A+D+G	9,959,514,254	11,169,434,208	11,888,015,223	11,961,346,260
I. Difference Between Market and Funding Values	847,899,147	780,021,947	(667,638,553)	(1,835,442,654)
J. Recognized Rate of Return	15.29%	14.93%	9.26%	3.73%

The market value of the assets of the Retirement System, as of June 30, 2002, was $10,125,903,606.

Assets	June 30, 2002
Market value of plan assets	$10,125,903,606
Market value adjustment	1,835,442,654
Funding value of assets prior to adjustment for Excess Earnings Account Balance	$11,961,346,260
Excess Earnings Account Balance	(1,574,029,466)
Net funding value of plan assets	$10,387,316,794

In financing the Retirement System actuarial accrued liabilities, the applicable assets of $10,387,316,794 were applied as follows:

	Assets Applied to		
Account	Retiree and Beneficiary Liabilities	Active and Inactive Member Liabilities	Totals
Computed Actuarial Accrued Liabilities	$6,803,186,025	$6,876,667,498	$13,679,853,523
Valuation Assets	6,803,186,025	3,584,130,769	10,387,316,794
Unfunded Actuarial Accrued Liabilities	$ 0	$3,292,536,729	$ 3,292,536,729

SECTION C

Employee Census Data and
Asset Information

TOTAL ACTIVE MEMBERS IN VALUATION JUNE 30, 2002
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	703	1						704	$ 22,230,737
25-29	4,215	529						4,744	171,871,796
30-34	2,894	2,635	258	3				5,790	239,364,974
35-39	1,492	1,402	1,098	330	1			4,323	205,639,894
40-44	1,321	936	801	1,339	292	3		4,692	246,450,389
45-49	1,357	1,201	989	1,088	1,703	617		6,955	399,800,861
50-54	1,018	1,079	1,235	1,410	1,294	2,847	1,605	10,488	660,507,492
55-59	466	429	646	1,123	1,007	1,085	3,559	8,315	555,740,804
60	39	32	61	147	142	142	349	912	61,946,046
61	21	24	50	93	97	70	201	556	37,437,859
62	21	23	30	49	66	64	128	381	25,689,194
63	11	12	21	41	46	41	103	275	19,099,971
64	14	11	13	32	29	46	73	218	15,040,429
65	6	10	9	29	20	33	52	159	10,795,382
66	2	4	10	18	18	16	36	104	7,138,346
67	2		9	9	14	18	26	78	5,202,227
68	1	3	2	10	9	7	32	64	4,389,125
69	4	1	2	5	5	6	20	43	3,006,221
70 & Over	3	2	8	16	10	16	46	101	6,960,945
Totals	13,590	8,334	5,242	5,742	4,753	5,011	6,230	48,902	$2,698,312,692

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:	14.3	years
Annual Pay:	$55,178	

MALE, FEMALE, AND TOTAL MEMBERS IN VALUATION JUNE 30, 2002
BY YEARS OF SERVICE

Service Years	Active Member Count			Active Member Pays	
	Males	Females	Total	Total	Average
0	287	798	1,085	$ 24,832,344	$22,887
1	864	2,788	3,652	136,333,385	37,331
2	839	2,491	3,330	131,614,509	39,524
3	716	2,271	2,987	120,745,490	40,424
4	641	1,895	2,536	107,217,670	42,278
5	538	1,592	2,130	92,133,356	43,255
6	472	1,441	1,913	87,765,825	45,879
7	393	1,263	1,656	79,099,743	47,766
8	332	1,067	1,399	71,066,791	50,798
9	277	959	1,236	65,781,910	53,222
10	204	920	1,124	62,368,164	55,488
11	116	655	771	43,813,350	56,827
12	179	841	1,020	60,766,873	59,575
13	206	846	1,052	63,849,925	60,694
14	206	1,069	1,275	79,442,133	62,308
15 & Up	6,449	15,287	21,736	1,471,481,225	67,698
Totals	12,719	36,183	48,902	$2,698,312,693	$55,178

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)	476	8	484
B (100% Cash Refund)	682	8	690
C (Period Certain and Life)	1,540	8	1,548
D (Joint and Survivor)	3,611	0	3,611
N (25% Cash Refund)	15,103	8	15,111
S (Survivor)	493	0	493
W (Disability)	0	366	366
Total	21,905	398	22,303

Monthly Benefits Paid in Each Plan Code

Plan	Retirees and Beneficiaries*	Disabled	Total
A (Life Annuity)	$ 784,851	$ 6,242	$ 791,093
B (100% Cash Refund)	1,226,736	8,145	1,234,881
C (Period Certain and Life)	3,474,652	8,344	3,482,996
D (Joint and Survivor)	11,086,793	0	11,086,793
N (25% Cash Refund)	43,369,246	11,800	43,381,046
S (Survivor)	182,775	0	182,775
W (Disability)	0	755,252	755,252
Total	$60,125,053	$789,783	$60,914,836

* Beneficiaries category includes 493 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	$ 439	$ 0	$ 0	$ 439	$ 439
1953	1	734	0	0	734	734
1958	2	2,019	0	0	2,019	1,009
1959	3	1,761	0	0	1,761	587
1960	4	2,484	0	0	2,484	621
1961	9	7,284	0	2	7,286	810
1962	10	13,029	0	7	13,036	1,304
1963	14	17,609	0	31	17,640	1,260
1964	10	15,140	0	9	15,148	1,515
1965	10	16,821	0	2	16,823	1,682
1966	24	26,749	0	30	26,779	1,116
1967	23	34,187	0	14	34,201	1,487
1968	37	44,538	0	80	44,618	1,206
1969	60	84,551	0	167	84,718	1,412
1970	62	86,050	0	194	86,244	1,391
1971	85	124,594	0	282	124,876	1,469
1972	100	155,360	0	385	155,745	1,557
1973	170	276,349	0	963	277,312	1,631
1974	154	258,567	0	774	259,341	1,684
1975	196	327,704	0	1,199	328,903	1,678
1976	191	336,040	0	1,170	337,210	1,765
1977	251	427,497	0	2,197	429,694	1,712
1978	290	495,667	0	1,963	497,631	1,716
1979	299	489,852	0	3,967	493,819	1,652
1980	355	600,294	0	4,368	604,662	1,703
1981	352	582,844	0	4,036	586,879	1,667
1982	438	745,580	0	6,222	751,802	1,716
1983	495	873,060	0	6,442	879,502	1,777
1984	489	925,362	0	10,733	936,094	1,914
1985	568	1,109,463	0	15,520	1,124,983	1,981
1986	636	1,328,033	0	28,033	1,356,066	2,132
1987	632	1,380,362	0	31,230	1,411,592	2,234
1988	593	1,314,423	0	29,011	1,343,434	2,265
1989	605	1,482,287	0	32,719	1,515,006	2,504
1990	880	2,386,297	0	58,582	2,444,879	2,778
1991	937	2,645,179	0	49,408	2,694,587	2,876
1992	974	2,991,415	0	53,537	3,044,951	3,126
1993	1,882	6,311,134	0	119,473	6,430,607	3,417
1994	634	1,688,174	0	28,242	1,716,416	2,707
1995	1,069	3,311,743	0	60,500	3,372,243	3,155
1996	1,038	3,156,658	0	52,109	3,208,767	3,091
1997	1,035	3,144,576	0	54,645	3,199,221	3,091
1998	1,128	3,419,436	0	52,426	3,471,862	3,078
1999	1,045	3,122,497	0	47,790	3,170,287	3,034
2000	1,593	5,145,061	0	54,345	5,199,405	3,264
2001	1,477	4,590,253	0	54,008	4,644,260	3,144
2002	1,442	4,493,867	0	55,006	4,548,873	3,155
TOTAL	22,303	$59,993,018	$ 0	$921,818	$60,914,836	$ 2,731

RECONCILIATION OF MARKET VALUE ASSETS

| | Asset Reconciliation | |
	2000-2001	2001-2002
Net Market Value as of July 1	$11,949,456,155	$11,220,376,670
Additions		
Employer Contributions*	221,727,770	207,835,668
Employee Contributions	166,822,365	183,771,410
Change in Net Appreciation	(828,892,327)	(1,120,545,600)
Interest and Dividends	405,272,395	387,536,503
Gain on Sale of Securities	(3,335,158)	1,584,432
Total Additions	$ (38,404,955)	$ (339,817,587)
Deductions		
Benefits	(683,083,919)	(747,349,673)
Refunds of Contributions	(7,590,611)	(7,305,804)
Total Deductions	$ (690,674,530)	$ (754,655,477)
Net Increase	(729,079,485)	(1,094,473,064)
Net Market Value as of June 30	$11,220,376,670	$10,125,903,606

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

Pursuant to PA 92-205, a special reserve account, 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. The Account is credited with investment earnings in any year that the rate of investment return exceeds 11.5%.

Following is a development of the Excess Earnings Account from June 30, 1999 to June 30, 2002:

		Eligible Pensioners	Rate of Return
1. Excess Earnings Account Balance, June 30, 1999	$ 1,589,628,903		
Actuarial Liability for July 1, 1999 COLA = 1.3%	(22,072,808)	5,370	
Excess Investment Earnings for FY 1999	0		10.55%
Actuarial Liability for January 1, 2000 COLA = 2.5%	(4,229,121)	701	
2. Excess Earnings Account Balance, June 30, 2000	1,563,326,974		
Actuarial Liability for July 1, 2000 COLA = 2.5%	(55,172,935)	6,812	
Excess Investment Earnings for FY 2000	171,963,674		13.11%
Actuarial Liability for January 1, 2001 COLA = 3.5%	(7,268,028)	816	
3. Excess Earnings Account Balance, June 30, 2001	1,672,849,685		
Actuarial Liability for July 1, 2001 COLA = 3.5%	(93,464,799)	8,064	
Excess Investment Earnings for FY 2001	0		(3.71%)
Actuarial Liability for January 1, 2002 COLA = 1.5%	(5,355,420)	952	
4. Excess Earnings Account Balance, June 30, 2002	$ 1,574,029,466		

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%)

plus

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: 100% vested. 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 Excess Earnings Account. The amount of such adjustments will depend upon the adequacy of the Excess Earnings 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, 2002

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 - .828*) x $25,600	4,403
H.	Net Annual Benefit Payable	$21,197

Subject to the availability of funds in the Excess Earnings 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.

This factor is based on the previous actuarial assumptions. At the time this report was written, the Teachers' Retirement Board had not adopted factors based on the new actuarial assumptions.

SECTION E

Disclosures Required by
GASB Statements No. 25 and No. 27

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 Statements No. 25 (GAS 25) and No. 27 (GAS 27). The statements provided are:

1. Schedule of Funding Progress (GAS 25) – 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. (GAS 25)

3. Development of Annual Pension Cost and Net Pension Obligation – This shows a development of the APC and NPO for CTRS beginning in the 1987-1988 fiscal year and ending with the 1999-2000 fiscal year. (GAS 27)

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. (GAS 27)

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, 2002
Actuarial cost method	Entry age actuarial cost method
Amortization method	Level percent of pay

Remaining amortization periods		
	Plan in effect 6/30/91	29 years
	Public Act 82-91	10 years
	Public Act 87-381	15 years
	Public Act 92-205	20 years
	Public Act 98-251	25 years

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, 2002, the date of the latest actuarial valuation:

	Totals
Retired Members and Beneficiaries Receiving Benefits	22,303
Inactive Members	
Vested	1,508
Non-Vested	6,890
Active Members	48,902
Totals	79,603

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)
6/30/1991	$4,692.0	$8,152.7	$3,460.7	57.6%	$1,792.5	193.1%
6/30/1992	4,848.0	7,278.2	2,430.2	66.6%	1,841.9	131.9%
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%

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
1997	$180,084,478	$147,884,700	82.1%
1998	211,018,755	179,365,000	85.0%
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%

DEVELOPMENT OF ANNUAL PENSION COST AND NET PENSION OBLIGATION

Fiscal Year Ending 6/30	Annual Required Contribution (ARC)	Interest on NPO	ARC Adjustment	Annual Pension Cost (APC)	Actual Contribution	Change in NPO	Net Pension Obligation Balance
1988	$ 241,563,000	$ 0	$ 0	$ 241,563,000	$ 241,563,000	$ 0	$ 0
1989	302,917,000	0	0	302,917,000	282,917,000	20,000,000	20,000,000
1990	348,639,000	1,600,000	845,768	349,393,232	321,639,000	27,754,232	47,754,232
1991	304,331,000	4,059,110	2,018,680	306,371,430	156,638,250	149,733,180	197,487,412
1992	308,724,000	16,786,430	8,348,240	317,162,190	133,057,000	184,105,190	381,592,602
1993	299,589,000	32,435,371	16,130,783	315,893,588	111,600,000	204,293,588	585,886,190
1994	145,786,000	49,800,326	25,111,757	170,474,569	124,253,932	46,220,637	632,106,827
1995	154,036,000	53,729,080	27,486,627	180,278,453	132,503,932	47,774,521	679,881,348
1996	164,650,000	57,789,915	30,012,706	192,427,209	139,953,000	52,474,209	732,355,557
1997*	180,084,478	62,250,222	32,841,687	209,493,013	147,884,700	61,608,313	793,963,870
1998	211,018,755	67,486,929	38,493,859	240,011,825	179,365,000	60,646,825	854,610,695
1999	221,569,693	72,641,909	42,055,657	252,155,945	188,334,000	63,821,945	918,432,640
2000	240,524,050	78,066,774	45,907,853	272,682,971	204,445,443	68,237,528	986,670,168
2001	252,547,880	83,866,964	50,134,245	286,280,599	214,665,698	71,614,901	1,058,285,069
2002	210,701,421	89,954,231	54,707,921	245,947,731	204,511,460	41,436,271	1,099,721,340

* The ARC for the fiscal year ending 6/30/1997 was developed as $173,982,000 + $6,102,478. This is the actuarially calculated contribution plus an additional amount that reduces the Effective Single Amortization Period to 40 years in accordance with GASB parameters.

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% a 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.

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 of valuation 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

Age	% of Active Participants Retiring					
	Unreduced		Proratable		Reduced	
	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

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

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.