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June, 2004

Retirement Board
California State Teachers' Retirement System

**Re: Defined Benefit Supplement Program
Actuarial Valuation as of June 30, 2003**

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Defined Benefit Supplement Program of the State Teachers' Retirement Plan as of June 30, 2003. Details about the actuarial valuation are contained in the following report.

I certify that the information included in this report is complete and accurate to the best of my knowledge and belief. All calculations have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the applicable Standards of Practice adopted by the American Academy of Actuaries.

Milliman has been engaged by CalSTRS as an independent actuary. The undersigned is a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, and an Enrolled Actuary, and is experienced in performing actuarial valuations for large public employee retirement systems.

Any distribution of this report must be in its entirety unless prior written consent is obtained from Milliman, Inc.

Respectfully submitted,

Mark O. Johnson, F.S.A., M.A.A.A., E.A.
Principal and Consulting Actuary

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California State Teachers' Retirement System

Defined Benefit Supplement Program - 2003 Actuarial Valuation

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California State Teachers' Retirement System

Defined Benefit Supplement Program - 2003 Actuarial Valuation

SECTION 1

SUMMARY OF THE FINDINGS

The Defined Benefit Supplement (DBS) Program was established on January 1, 2001. All contributing members of the Defined Benefit Program participate in the DBS Program.

Date of Valuation	Number of Members		Accumulated Account Balances
	Active	Total	
June 30, 2001	428,741	428,741	\$ 213,168,807
June 30, 2002	442,208	474,980	711,439,790
June 30, 2003	447,620	476,262	1,358,634,402

The actuarial value of assets for this valuation is the Fair Market Value as certified to us by CalSTRS. The actual return for the year, as measured using uniform cash flow throughout the year, was about 6.7%.

(\$Thousands)	Year Ended June 30, 2003	Year Ended June 30, 2002
Additions		
Contributions	\$ 604,853	\$ 487,185
Earnings	<u>63,950</u>	<u>(27,703)</u>
Total Additions	\$ 668,803	\$ 459,482
Deductions		
Benefits	\$ 17,102	\$ 4,982
Expenses	<u>580</u>	<u>255</u>
Total Deductions	\$ 17,682	\$ 5,237
Net Increase (Decrease)	\$ 651,121	\$ 454,245
Net Assets		
Beginning of Year	\$ 660,148	\$ 206,916
Accounting Adjustments	0	(1,013)
Net Increase (Decrease)	<u>651,121</u>	<u>454,245</u>
End of Year	\$1,311,269	\$ 660,148
Estimated Net Rate of Return	6.7%	-6.2%



California State Teachers' Retirement System Defined Benefit Supplement Program - 2003 Actuarial Valuation

As of June 30, 2003, the Actuarial Obligation of the DBS Program exceeded the Fair Market Value of Assets by \$47,366,000. If the experience had emerged as assumed, the Unfunded Actuarial Obligation was expected to grow from \$51,292,000 to \$55,395,000. The difference between the actual and expected Unfunded Actuarial Obligation is the actuarial gain or loss for the year.

- There was an actuarial loss of \$12,952,000 due to the actual investment return being less than the assumed long-term return of 8%, and
- There was an actuarial gain of \$20,981,000 due to the current year interest credits being less than 8% during the year.
- The net actuarial gain was \$8,029,000, a relatively small amount compared to the total Actuarial Obligation.

(\$Thousands)	June 30, 2003	June 30, 2002
Actuarial Balance Sheet		
Actuarial Obligation	\$ 1,358,635	\$ 711,440
Actuarial Value of Assets	<u>1,311,269</u>	<u>660,148</u>
Unfunded Actuarial Obligation	\$ 47,366	\$ 51,292
Additional Earnings Credit	0 *	0
Additional Annuity Credit	<u>0</u>	<u>0</u>
Final Unfunded Actuarial Obligation	\$ 47,366 *	\$ 51,292
Actuarial (Gain) or Loss		
Investment Return on Assets	\$ 12,952	\$ 64,812
Interest Credits on Accounts	<u>(20,981)</u>	<u>(20,273)</u>
Actuarial (Gain) or Loss	\$ (8,029)	\$ 44,539
Expected UAO at End of Year	<u>55,395</u>	<u>6,753</u>
Total Unfunded Actuarial Obligation	\$ 47,366	\$ 51,292
<i>* Determined by the Teachers' Retirement Board on June 3, 2004.</i>		

Because the DBS Program currently has an Unfunded Actuarial Obligation, we recommended that no Additional Earnings Credit be granted for the year ended June 30, 2003. The Teachers' Retirement Board did not adopt an Additional Earnings Credit, therefore, the ending balance in the Gain and Loss Reserve is a negative balance of \$47,366,000. This negative balance will need to be offset by investment earnings in excess of the Minimum Interest Rate before future Additional Earnings Credits will be recommended.



California State Teachers' Retirement System

Defined Benefit Supplement Program - 2003 Actuarial Valuation

SECTION 2

FINDINGS OF THE ACTUARIAL VALUATION

An actuarial valuation is performed as of June 30 of each year, the last day of the Program's plan year. The primary purpose of the valuation is to determine the financial condition of the DBS Program through the measurement of the Gain and Loss Reserve. We also describe recent changes in the Program's financial condition and provide certain disclosure information in accordance with the Governmental Accounting Standards Board Statement No. 25.

The findings have been determined according to actuarial assumptions that were adopted on the basis of recent experience and current expectations of future experience. In our opinion, the assumptions used in the valuation are reasonably related to the past experience of the DBS Program and represent our best estimate of future conditions affecting the Program. Nevertheless, the emerging costs of the Program will vary from those presented in this report to the extent that actual experience differs from that projected by the actuarial assumptions.

ACTUARIAL VALUE OF ASSETS

The actuarial value of assets for this valuation is the Fair Market Value as reported by CalSTRS. A Statement of Program Assets for the last two plan years is shown in **TABLE 1**, and the Statement of Change in Program Assets is shown in **TABLE 2**.

ACTUARIAL BALANCE SHEET

Under the Traditional Unit Credit Actuarial Cost Method, when the assumed investment return is equal to the assumed interest crediting rate, the Actuarial Obligation is equivalent to the current sum of the Members' Account Balances. **TABLE 3** shows the Actuarial Obligation for this and the prior valuation.

The excess of the Actuarial Obligation over the Actuarial Value of Assets is called the Unfunded Actuarial Obligation. If the Assets exceed the Actuarial Obligation, the difference is called the Actuarial Surplus.

Under normal conditions, the DBS Program should have an Actuarial Surplus. In order to retain an Actuarial Surplus, the investment returns over a long period of time must exceed the combination of the Minimum Interest Rates, the Additional Earnings Credits, and the Additional Annuity Credits. Although we expect this to be the case, the investment performance for the past several years has been below the long-term assumption.



California State Teachers' Retirement System Defined Benefit Supplement Program - 2003 Actuarial Valuation

ACTUARIAL GAINS AND LOSSES

The Minimum Interest Rate for the year ending on the valuation date was 5.5%. Since the assumed total earnings rate is 8% per year, the Actuarial Obligation was less than expected by about \$20,981,000.

The assumed earnings rate on the invested assets is 8% per year. The actual return for the year was about 6.7% (assuming uniform cash flow though the year), which produced an investment loss of \$12,952,000.

The net actuarial gain due to these causes was \$8,029,000 as shown in **TABLE 4**.

GAIN AND LOSS RESERVE

TABLE 5 shows the derivation of the Gain and Loss Reserve. After each actuarial valuation, the Teachers' Retirement Board decides on the adjustment to the prior year's Gain and Loss Reserve and the Additional Earnings Credit, if any.

- After the 2001 actuarial study, the Board did not adopt an Additional Earnings Credit. The entire unallocated loss of \$6,253,000 was distributed to the Gain and Loss Reserve, bringing the end of the year Gain and Loss Reserve to \$(6,253,000).
- After the 2002 actuarial valuation, the Board did not adopt an Additional Earnings Credit. The entire unallocated loss of \$45,039,000 was distributed to the Gain and Loss Reserve, bringing the end of the year Gain and Loss Reserve to \$(51,292,000).
- On June 3, 2004, The Teachers' Retirement Board decided not to adopt an Additional Earnings Credit for the year ended in 2003. Therefore, the end of the year Gain and Loss Reserve is equal to \$(47,366,000).

ACCOUNTING DISCLOSURES

The Governmental Accounting Standards Board (GASB) has issued Statement No. 25 that describes the information to be disclosed in the System's financial reports. The required actuarial disclosures are shown in **TABLES 6, 7, AND 8**.



California State Teachers' Retirement System
Defined Benefit Supplement Program - 2003 Actuarial Valuation

TABLE 1
STATEMENT OF PROGRAM ASSETS

<i>(\$Thousands)</i>	June 30, 2003	June 30, 2002
Invested Assets		
Short-term investments	\$ 36,955	\$ 8,716
Pooled Domestic Securities	373,279	191,299
Pooled Domestic Equity	<u>720,750</u>	<u>417,771</u>
Total Investments	\$1,130,984	\$ 617,786
Receivables	181,737	52,801
Liabilities	<u>(1,452)</u>	<u>(10,439)</u>
Fair Market Value of Net Assets	\$1,311,269	\$ 660,148



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Defined Benefit Supplement Program - 2003 Actuarial Valuation

TABLE 2
STATEMENT OF CHANGE IN PROGRAM ASSETS

<i>(\$Thousands)</i>	Year Ended June 30, 2003	Year Ended June 30, 2002
Additions		
Contributions		
Members	\$ 532,610	\$ 487,185
Employers	<u>72,243</u>	<u>0</u>
Total Contributions	604,853	487,185
Net Earnings	<u>63,950</u>	<u>(27,703)</u>
Total Additions	\$ 668,803	\$ 459,482
Deductions		
Benefit Payments		
Retirement, death, and survivor	\$ 518	\$ 36
Refunds of Member contributions	<u>16,584</u>	<u>4,946</u>
Total Benefits	17,102	4,982
Expenses	<u>580</u>	<u>255</u>
Total Deductions	\$ 17,682	\$ 5,237
Net Increase (Decrease)	\$ 651,121	\$ 454,245
Fair Market Value of Net Assets		
Beginning of Year	\$ 660,148	\$ 206,916
Accounting Adjustments	0	(1,013)
Net Increase (Decrease)	<u>651,121</u>	<u>454,245</u>
End of Year	\$1,311,269	\$ 660,148
Estimated Net Rate of Return (assuming uniform cash flow through the year)	6.7%	-6.2%



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TABLE 3
ACTUARIAL BALANCE SHEET

<i>(\$Thousands)</i>	June 30, 2003	June 30, 2002
Total Requirements		
Actuarial Obligation		
Retirees and Beneficiaries	\$ 0	\$ 0
Inactive Members	15,080	25,568
Active Members	<u>1,343,555</u>	<u>685,872</u>
Total Requirements	\$1,358,635	\$ 711,440
Total Resources		
Actuarial Value of Assets	\$1,311,269	\$ 660,148
Unfunded Actuarial Obligation	<u>47,366</u>	<u>51,292</u>
Total Resources	\$1,358,635	\$ 711,440
Funded Ratio	97%	93%



California State Teachers' Retirement System
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TABLE 4
ACTUARIAL GAINS AND LOSSES

<i>(\$Thousands)</i>	Actuarial Obligation	Actuarial Value of Assets	Unfunded Actuarial Obligation
Balance at June 30, 2002	\$ 711,440	\$ 660,148	\$ 51,292
Expected Changes			
Actual Contributions	604,853	604,853	0
Actual Benefits Paid	(17,102)	(17,102)	0
Expected Earnings / Credits	<u>80,425</u>	<u>76,322</u>	<u>4,103</u>
Expected Balance at June 30, 2003	\$1,379,616	\$1,324,221	\$ 55,395
Actuarial Gains or Losses			
(Gain) on Actuarial Obligation	(20,981)		
Loss on Assets	<u> </u>	<u>12,952</u>	
Net (Gain) or Loss	(20,981)	12,952	(8,029)
Actual Balance at June 30, 2003	\$1,358,635	\$1,311,269	\$ 47,366



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TABLE 5
GAIN AND LOSS RESERVE

<i>(\$Thousands)</i>	June 30, 2003	June 30, 2002
Unfunded Actuarial Obligation	\$ 47,366	\$ 51,292
Gain and Loss Reserve		
Beginning of Year	\$ (51,292)	\$ (6,253)
Additional Earnings Credit	0 ⁽¹⁾	0
Additional Annuity Credit	0	0
Allocated to Funding	<u>3,926 ⁽¹⁾</u>	<u>(45,039)</u>
End of Year Gain and Loss Reserve	\$ (47,366)	\$ (51,292)
Unallocated Gains and (Losses)	\$ 0	\$ 0

<i>(\$Thousands)</i>	Available Reserves and Unallocated Gains (Losses)	Additional Earnings Credit Adopted	Final Gain and Loss Reserve
Valuation Date			
June 30, 2001	\$ (6,253)	\$ 0	\$ (6,253)
June 30, 2002	(51,292)	0	(51,292)
June 30, 2003	(47,366)	0 ⁽¹⁾	(47,366)

Notes:

⁽¹⁾ Determined by the Teachers' Retirement Board on June 3, 2004.



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TABLE 6
HISTORY OF CASH FLOW

<i>(\$Thousands)</i>							
Year End	Contributions for the Year	Expenditures During the Year				External Cash Flow	Fair Market Value of Assets
		Benefit Payments	Contribution Refunds	Expenses	Total		
2001	\$ 210,205	\$ 0	\$ 0	\$ 113	\$ 113	\$ 210,092	\$ 206,916
2002	487,185	0	4,982	255	5,237	481,948	660,148
2003	604,853	0	17,102	580	17,682	587,171	1,311,269



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TABLE 7
SCHEDULE OF FUNDING PROGRESS

<i>(\$Thousands)</i>						
Year End	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio Assets/AAL	Estimated Covered Payroll	Coverage Ratio UAAL/Pay
2001	\$206,916	\$ 213,169	\$ 6,253	97%	\$ 20,494,152	0%
2002	660,148	711,440	51,292	93%	21,731,775	0%
2003	1,311,269	1,358,635	47,366	97%	23,865,497	0%



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TABLE 8
SCHEDULE OF EMPLOYER CONTRIBUTIONS

(\$Thousands)

Year End	Annual Required Contribution	Contributed by Employers	Contributed by the State	Total Contributed	Percentage Contributed
2001	\$ 0	\$ 0	\$ 0	\$ 0	100%
2002	0	0	0	0	100%
2003	72,243	72,243	0	72,243	100%



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SECTION 3

OUTLINE OF THE PROVISIONS OF GOVERNING LAW

All of the actuarial calculations contained in this report are based upon our understanding of the Defined Benefit Supplement (DBS) Program of the State Teachers' Retirement Plan as contained in Part 13 of the California Education Code. The provisions used in this valuation are summarized below for reference purposes.

MEMBERSHIP

- Eligibility Requirement: All members of the Defined Benefit Program who perform creditable service and earn creditable compensation after December 31, 2000, have a DBS Account.
- Member: An eligible employee with creditable service subject to coverage, who has contributions credited in the Program or is receiving an annuity from the Program.

ACCOUNT BALANCE

- Account Balance: Nominal accounts established for the purpose of determining benefits payable to the Member. Accounts are credited with Contributions, a Minimum Interest Rate, and Additional Earnings Credits.
- Contributions: One-quarter (2% of compensation) of the DB Program Member contributions on creditable compensation is allocated to the Member's DBS Account through December 31, 2010.
- In addition, member and employer contributions will be credited to the Member's DBS Account for service greater than one year (ESC) and compensation for limited term enhancements and retirement incentives (LTE).
- Minimum Interest Rate: Annual rate determined for the plan year by the Retirement Board in accordance with federal laws and regulations. The Minimum Interest Rate is equal to the average of the yields on 30-year Treasuries for the twelve months ending in



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February preceding the beginning of the plan year, rounded to the next highest 0.25%.

Additional Earnings Credit: Annual rate determined for the plan year by the Retirement Board based on the actual earnings during the plan year, but only to the extent the earnings are sufficient to credit the Minimum Interest Rate and provide any additions to the Gain and Loss Reserve deemed warranted by the Board.

Additional Annuity Credit: Annual rate determined for the plan year by the Retirement Board based on the actual earnings during the plan year, but only to the extent the earnings are sufficient to credit the Minimum Interest Rate and provide any additions to the Gain and Loss Reserve deemed warranted by the Board.

NORMAL RETIREMENT

Eligibility Requirement: Receipt of a corresponding benefit under the DB Program.

Benefit: The DBS Account Balance at the benefit effective date subject to limits imposed under Internal Revenue Code Section 415.

Form of Payment: The normal form of payment is a lump sum distribution. Annuity options are available if the DBS Account equals or exceeds \$3,500.

EARLY RETIREMENT

Eligibility Requirement: Same as Normal Retirement.

Benefit and Form: Same as Normal Retirement.

LATE RETIREMENT

Benefit and Form: Same as Normal Retirement.

Contributions and earnings continue to be credited to the Account Balances until distributed.



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DEFERRED RETIREMENT

Benefit: A Member must receive a DBS benefit when the corresponding benefit is received under the DB Program.

DISABILITY BENEFIT

Eligibility Requirement: Receipt of a corresponding benefit under the DB Program.

Benefit: The DBS Account Balance at the date the disability benefit becomes payable. An annuity benefit is discontinued upon the termination of the corresponding DB Program benefit.

Form of Payment: Same as Normal Retirement.

DEATH BEFORE RETIREMENT

Eligibility Requirement: Deceased Member has a DBS Account Balance.

Benefit: The DBS Account Balance at the date of death payable to the designated beneficiary.

Form of Payment: Same as Normal Retirement.

DEATH AFTER RETIREMENT

Eligibility Requirement: The deceased Member was receiving an annuity.

Benefit: According to the terms of the annuity elected by the Member.

TERMINATION FROM THE PROGRAM

Eligibility Requirement: Termination of all CalSTRS-covered employment.

Benefit: Lump sum distribution of the DBS Account Balance as of the date of distribution. The benefit is payable one year from the termination of creditable service.



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SECTION 4

ACTUARIAL METHODS AND ASSUMPTIONS

This section of the report discloses the actuarial methods and assumptions used in this Actuarial Valuation. These methods and assumptions have been chosen on the basis of recent experience of the Defined Benefit Program and on current expectations as to future economic conditions.

The assumptions are intended to estimate the future experience of the members of the DBS Program and of the DBS Program itself in areas that affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in estimated costs of the DBS Program's benefits.

TABLE 9 includes a list of all of the major methods and assumptions used in this actuarial valuation. The demographic assumptions are illustrated at selected ages and duration combinations in **TABLES 10 – 14**.

Please refer to the 2003 Actuarial Experience Analysis for further information on the revisions made to the actuarial assumptions. The following method and assumptions were revised since the last valuation:

Actuarial Methods

- ◆ None

Economic Assumptions

- ◆ Annual inflation rate from 3.50% to 3.25% per year
- ◆ Real wage growth rate from 0.75% to 1.00% per year

Demographic Assumptions

- ◆ Rates of service retirement by age, gender, and service
- ◆ Rates of disablement
- ◆ Rates of withdrawal



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Actuarial Cost Method

The accruing costs of all benefits are measured by the Traditional Unit Credit Actuarial Cost Method. Under this method, the projected benefits of each individual member are allocated by a consistent formula to valuation years. The actuarial present value of future projected benefits allocated to the current year is called the Normal Cost. The actuarial present value of future projected benefits allocated to periods prior to the valuation year is called the Actuarial Obligation.

The Actuarial Obligation is equal to the accumulated account balances and the Normal Cost is equal to the total annual contribution.

Asset Valuation Method

The assets are valued at Fair Market Value.

Actuarial Assumptions

The Actuarial Standards Board has adopted Actuarial Standard of Practice No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*. This Standard provides guidance on selecting economic assumptions under defined benefit retirement programs such as the System. In our opinion, the economic assumptions have been developed in accordance with the Standard.

The Actuarial Standards Board has adopted Actuarial Standard of Practice No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*. This Standard provides guidance on selecting demographic assumptions under defined benefit retirement programs such as the System. In our opinion, the demographic assumptions have been developed in accordance with the Standard.

The assumptions are intended to estimate the future experience of the members of the DBS Program and of the DBS Program itself in areas that affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in estimated costs of the Program's benefits.



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TABLE 9
LIST OF MAJOR VALUATION ASSUMPTIONS

I. Economic Assumptions			
A.	Investment Return (net of investment and administrative expenses)	8.00%	
B.	Interest on Member Accounts	8.00%	
C.	Wage Growth	4.25%	
D.	Inflation	3.25%	
II. Demographic Assumptions			
A.	Mortality		
	(1) Active		
	- Male	1999 CalSTRS Retired – M (-2 years)	Table 10
	- Female	1999 CalSTRS Retired – F (-2 years)	Table 10
	(2) Retired *		
	- Male	1999 CalSTRS Retired – M	Table 10
	- Female	1999 CalSTRS Retired – F	Table 10
	(3) Beneficiary *		
	- Male	1999 CalSTRS Beneficiary – M	Table 10
	- Female	1999 CalSTRS Beneficiary – F	Table 10
	(4) Disabled *		
	- Male	1994 GAM-M (minimum 2.5% with select rates in first three years)	Table 10
	- Female	1994 GAM-F (minimum 2.2% with select rates in first three years)	Table 10
	<i>* Future retirees and beneficiaries are valued with a 2-year age setback</i>		
B.	Service Retirement	Experience Tables	Table 11
C.	Disability Retirement	Experience Tables	Table 12
D.	Withdrawal	Experience Tables	Table 13
E.	Merit Salary Increases	Experience Tables	Table 14



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TABLE 10
MORTALITY

<u>Active Members</u>		
<u>Age</u>	<u>Male</u>	<u>Female</u>
25	0.051%	0.029%
30	0.066	0.029
35	0.080	0.037
40	0.085	0.051
45	0.107	0.077
50	0.158	0.103
55	0.258	0.157
60	0.443	0.256
65	0.798	0.509

<u>Age</u>	<u>Retired Members *</u>		<u>Beneficiaries *</u>		<u>Disabled (After Year 3) *</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
50	0.190%	0.121%	0.233%	0.121%	2.500%	2.200%
55	0.321	0.191	0.398	0.191	2.500	2.200
60	0.558	0.336	0.709	0.336	2.500	2.200
65	1.015	0.668	1.294	0.668	2.500	2.200
70	1.803	1.176	2.173	1.176	2.848	2.200
75	2.848	1.834	3.405	1.834	4.517	2.533
80	5.021	3.778	5.586	3.778	7.553	4.395
85	9.419	6.503	8.961	6.503	11.567	7.535
90	14.754	11.627	14.754	11.627	18.228	12.875
95	23.361	18.621	23.361	18.621	26.882	20.254
Select rates for disability:						
First year of disablement					11.4%	6.0%
Second year of disablement					7.7	3.8
Third year of disablement					6.2	3.0

* Future retirees and beneficiaries are valued with a 2-year age setback



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TABLE 11
SERVICE RETIREMENT

Age	<u>Under 30 Years</u>		<u>30 or More Years</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
50	0.0%	0.0%	1.5%	1.5%
51	0.0	0.0	1.5	1.5
52	0.0	0.0	1.5	1.5
53	0.0	0.0	2.0	1.5
54	0.0	0.0	2.0	2.0
55	3.0	5.0	6.0	8.0
56	2.0	3.5	6.0	8.0
57	2.0	3.5	8.0	10.0
58	3.0	4.5	12.0	15.0
59	5.0	6.0	16.0	18.0
60	7.0	10.0	25.0	30.0
61	7.0	10.0	40.0	35.0
62	9.0	12.0	35.0	32.0
63	13.0	18.0	27.0	30.0
64	12.0	15.0	27.0	27.0
65	14.0	16.0	27.0	27.0
66	10.0	15.0	27.0	27.0
67	10.0	15.0	27.0	27.0
68	10.0	15.0	27.0	27.0
69	10.0	15.0	27.0	27.0
70	100.0	100.0	100.0	100.0



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TABLE 12
DISABILITY RETIREMENT

<u>Age</u>	<u>Entry Ages - Male</u>		<u>Entry Ages - Female</u>	
	<u>Under 40</u>	<u>40 and Up</u>	<u>Under 40</u>	<u>40 and Up</u>
25	0.021%		0.030%	
30	0.030		0.030	
35	0.051		0.051	
40	0.120		0.090	
45	0.150	0.118%	0.141	0.139%
50	0.195	0.202	0.231	0.252
55	0.270	0.312	0.318	0.367
60	0.329	0.477	0.390	0.530
65	0.370	0.853	0.458	0.916



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TABLE 13
WITHDRAWAL

<u>Year</u>	<u>Entry Ages - Male</u>					
	<u>Under 25</u>	<u>25 - 29</u>	<u>30 - 34</u>	<u>35 - 39</u>	<u>40 - 44</u>	<u>45 & Up</u>
1	12.5%	12.5%	12.5%	12.5%	12.5%	12.5%
2	7.7	7.7	7.7	7.7	7.7	8.6
3	6.3	5.4	5.4	5.4	5.4	6.3
4	4.4	4.4	4.4	4.4	4.4	4.4
5	3.9	3.0	3.0	3.0	3.0	3.6
10	2.0	2.0	2.0	2.0	2.4	
15	1.1	1.1	1.1	1.2		
20	0.6	0.6	0.6			
25	0.5	0.5				
30	0.0					
<u>Year</u>	<u>Entry Ages - Female</u>					
	<u>Under 25</u>	<u>25 - 29</u>	<u>30 - 34</u>	<u>35 - 39</u>	<u>40 - 44</u>	<u>45 & Up</u>
1	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%
2	8.3	7.2	7.2	7.2	7.2	7.2
3	7.7	6.3	5.8	5.3	4.9	4.9
4	7.1	5.8	5.4	4.9	3.9	3.9
5	5.5	5.8	4.2	2.9	2.5	2.5
10	2.3	2.0	1.7	1.4	1.6	
15	1.1	0.9	1.0	0.9		
20	0.6	0.7	0.9			
25	0.6	0.6				
30	0.0					



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TABLE 14
MERIT SALARY INCREASES

Yr.	Entry Age - Annual Increase in Salaries Due to Merit					
	<u>Under 25</u>	<u>25 - 29</u>	<u>30 - 34</u>	<u>35 - 39</u>	<u>40 - 44</u>	<u>45 & up</u>
1	5.7%	5.3%	5.1%	4.9%	4.9%	3.5%
2	5.6	5.2	4.9	4.7	4.7	3.3
3	5.6	5.0	4.8	4.6	4.6	3.0
4	5.5	4.9	4.6	4.4	4.4	2.9
5	5.5	4.8	4.5	3.8	3.8	2.6
10	3.2	3.0	2.7	2.3	2.2	1.6
15	1.5	1.5	1.4	1.1	1.1	0.8
20	1.3	1.2	1.1	0.8	0.8	0.6
25	1.1	1.0	0.9	0.6	0.6	
30	0.9	0.7	0.6	0.5		
35	0.8	0.7	0.6			
40	0.8	0.7				
45	0.8					



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SECTION 5

VALUATION DATA

The membership data for this actuarial valuation was supplied by CalSTRS and accepted without audit. We have examined the data for reasonableness and consistency with prior valuations and periodic reports from the CalSTRS staff to the Teachers' Retirement Board.

We believe the membership data to be sufficient for the purposes of this valuation.

TABLES 15 AND 16 summarize the census data used in this valuation.



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TABLE 15
SUMMARY OF STATISTICAL INFORMATION

	June 30, 2003	June 30, 2002
Number of Members		
Active Members	447,620	442,208
Inactive Members	28,642	32,772
Retirees and Beneficiaries	<u>0</u>	<u>0</u>
Total Number of Members	476,262	474,980
Accumulated Account Balances		
DBS Contributions – Regular 2%	\$ 1,188,557,310	\$ 711,439,790
ESC – Members	72,560,266	0
ESC – Employers	96,905,243	0
LTE – Members	305,515	0
LTE – Employers	<u>306,068</u>	<u>0</u>
Total Account Balances	\$ 1,358,634,402	\$ 711,439,790
Active Member Statistics		
Annualized Salaries	\$23.9 billion	\$21.7 billion
Average Salary	\$ 53,316	\$ 49,144
Average Age	44.4 years	44.3 years
Average Service in DB Program	10.5 years	10.5 years



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TABLE 16
ACTIVE MEMBERS BY AGE GROUP AND YEARS OF SERVICE

Age Group	Service in the DB Program								Total
	0-1	1-5	6-10	11-15	16-20	21-25	26-30	Over 30	
Under 25	2,067	4,024	2	-	-	-	-	-	6,093
25 – 29	4,507	40,767	2,267	-	-	-	-	-	47,541
30 – 34	2,777	34,145	23,869	548	-	-	-	-	61,339
35 – 39	2,223	19,066	18,327	9,972	416	-	-	-	50,004
40 – 44	2,282	16,348	12,530	11,886	7,500	286	-	-	50,832
45 – 49	2,125	15,960	12,095	10,574	9,618	6,887	526	-	57,785
50 – 54	1,841	14,267	12,180	11,897	10,297	9,745	11,109	979	72,315
55 – 59	1,382	9,665	7,844	8,873	8,702	6,921	10,064	12,641	66,092
60 – 64	566	4,065	2,983	3,202	3,525	2,918	3,135	5,963	26,357
65 – 69	210	1,354	782	755	771	725	656	1,140	6,393
70 & Over	134	756	320	243	230	190	196	416	2,485
Unknown	9	232	143	-	-	-	-	-	384
Total	20,123	160,649	93,342	57,950	41,059	27,672	25,686	21,139	447,620



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SECTION 6

GLOSSARY OF ACTUARIAL TERMINOLOGY

Account Balance:	The nominal account amount of an individual's benefit as of a specific date, determined in accordance with the terms of the plan. The Account Balance is accumulated with contributions and interest.
Actuarial Assumptions:	Assumptions as to the occurrence of future events affecting pension costs, such as mortality, withdrawal, disablement, and retirement, changes in compensation, rates of investment earnings and asset appreciation or depreciation, procedures used to determine the Actuarial Value of Assets, and other relevant items.
Actuarial Cost Method:	A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Obligation.
Actuarial Gain or 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, as determined in accordance with a particular Actuarial Cost Method.
Actuarial Obligation:	That portion, as determined by a particular Actuarial Cost method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.
Actuarial Present Value:	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.
Actuarial Surplus:	The excess, if any, of the Actuarial Value of Assets over the Actuarial Obligation.



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Actuarial Valuation:	The determination, as of a Valuation Date, of the Normal Cost, Actuarial Obligation, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.
Actuarial Value of Assets:	The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.
Actuarial Equivalent:	Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.
Normal Cost:	The actuarial present value of benefits expected to accrue in the plan year subsequent to the valuation date. The Normal Cost is equivalent to the expected Member and Employer contributions for the next year.
Traditional Unit Credit Actuarial Cost Method:	A method under which the Actuarial Obligation is equal to the actuarial present value of benefits for service accrued to the valuation date.
Unfunded Actuarial Obligation:	The excess, if any, of the Actuarial Obligation over the Actuarial Value of Assets.
Valuation Date:	June 30, 2003.