



Milliman

Consultants and Actuaries

111 SW Fifth Avenue, Suite 3700
Portland, OR 97204-3690
Tel +1 503 227.0634
Fax +1 503 227.7956
www.milliman.com

May 21, 2007

Teachers' Retirement Board
California State Teachers' Retirement System

**Re: Defined Benefit Program
Actuarial Valuation as of June 30, 2006**

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Defined Benefit Program of the State Teachers' Retirement Plan as of June 30, 2006. 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 Actuarial Standards Board.

Milliman's work product was prepared exclusively for CalSTRS for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning CalSTRS operations, and uses CalSTRS data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

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 provided in its entirety including this cover letter, unless prior written consent is obtained from Milliman.

Respectfully submitted,

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



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

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This valuation was prepared solely for CalSTRS for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work.



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Section 1 Summary of the Findings

The primary purpose of the actuarial valuation is to analyze the sufficiency of future contributions from members, employers, and the State to meet the current and future obligations of the Defined Benefit (DB) Program. By using the actuarial methods and assumptions adopted by the Teachers' Retirement Board, this actuarial valuation provides the best estimate of the long-term financing of the DB Program.

The key findings of this Actuarial Valuation are:

- ◆ **Funding Sufficiency** Our findings indicate that, as of June 30, 2006, the future revenue from contributions and appropriations for the DB Program is **not** expected to be sufficient to finance its obligations. This is consistent with our projections in the 2003, 2004 and 2005 Actuarial Valuations.

The projected revenue shortfall is due primarily to investment return experience for the fiscal years ending in 2001, 2002, and 2003 that was significantly less than the long-term actuarial assumption of 8% per year. Based on the current Actuarial Value of Assets and all future experience emerging as assumed, the Unfunded Actuarial Obligation will not be amortized over any future period.

<i>(Percent of Earned Salaries)</i>	2006 Valuation	2005 Valuation
Amortization Period based on Current Revenues		
Total Level Rate over the Amortization Period	17.656%	17.567%
Normal Cost Rate	<u>16.820</u>	<u>16.829</u>
Amortization Rate	0.836%	0.738%
<i>Amortization Period (Based on current revenue projections)</i>	<i>Does not amortize</i>	<i>Does not amortize</i>
Calculated Contribution Rate for 30-Year Funding Period		
Normal Cost Rate	16.820%	16.829%
Amortization Rate	<u>4.168</u>	<u>4.491</u>
Total Level Rate over the Amortization Period	20.988%	21.320%
Estimated Additional Revenue Needed <i>(Based on current valuation assumptions)</i>	3.332%	3.753%



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Based on the current valuation results, the actuarial value of assets and assumptions about future experience, we find that a level contribution rate of 20.988% will amortize the Unfunded Actuarial Obligation over a thirty-year period. This is equivalent to an **increase of 3.332% of Earned Salaries** for a period of thirty years from the valuation date.

◆ **Supplemental Contributions**

The Legislature has established a test for the funded status of the benefit structure in effect in 1990. Under State law EC §22955(b), additional funds are required to be contributed by the State if at least one of the following two separate conditions is met:

1. Additional funding is required if the sum of the 8% contribution from the members and the 8% contribution from the employers is not sufficient to pay the Normal Cost of the benefits in effect as of July 1, 1990.
2. Additional funding is required if the Actuarial Value of Assets associated with the benefit provisions in effect as of July 1, 1990 is less than the Actuarial Obligation for those benefits.

We found that revenue is sufficient to finance the Normal Costs associated with the 1990 Benefit Structure and there was an Actuarial Surplus as of June 30, 2006 related only to the 1990 Benefit Structure. Therefore, **no additional supplemental contributions are called for at this time.**

◆ **Funding Progress**

The Funded Status of a retirement plan is equal to the difference between its Actuarial Value of Assets and its Actuarial Obligation. The Funded Ratio is equal to the Actuarial Value of Assets divided by the Actuarial Obligation.

(\$Millions)	2006 Valuation	2005 Valuation
Actuarial Obligation	\$ 150,872	\$ 142,193
Actuarial Value of Assets	<u>131,237</u>	<u>121,882</u>
Unfunded Actuarial Obligation	\$ 19,635	\$ 20,311
Funded Ratio	87%	86%



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Overall, the DB Program is in a better financial condition than one year ago as measured by the Funded Ratio as of June 30, 2006.

Based on the 2005 Actuarial Valuation, the Unfunded Actuarial Obligation was expected to grow from \$20.3 billion to \$22.1 billion by June 30, 2006. The actual Unfunded Actuarial Obligation of \$19.6 billion was determined including the impact of a net actuarial gain of \$2.5 billion from the expected level. A brief summary of the actuarial gains and losses for the year is shown below and described more fully in Section 6 of this report.

(\$Millions)	2006 Valuation
Unfunded Actuarial Obligation	
Amount on July 1, 2005	\$ 20,311
Increase due to interest and under-funding	<u>1,807</u>
Expected Amount on July 1, 2006	\$ 22,118
Actuarial (Gains) and Losses by Source	
Investment return on the Actuarial Value of Assets, including recognition of prior deferred investment losses	\$ (2,857)
Salary increases less than assumed	(690)
Change in SBMA and THBF Reserves	812
All other sources combined	<u>252</u>
Net Actuarial (Gains) and Losses	\$ (2,483)
Unfunded Actuarial Obligation July 1, 2006	\$ 19,635

◆ **Changes since the 2005 Valuation**

There were no legislative changes since the prior report that had an impact on this valuation.

The actuarial assumptions and methods used in this valuation are the same as used in the prior valuation.

◆ **Further Information**

Details of our findings are included in later sections of this report. The Appendices include supporting documentation on the benefit and eligibility provisions used to project future benefits, the actuarial methods and assumptions used to value the projected benefits, and the underlying census data provided by CalSTRS for this valuation.



California State Teachers' Retirement System

Defined Benefit Program - 2006 Actuarial Valuation

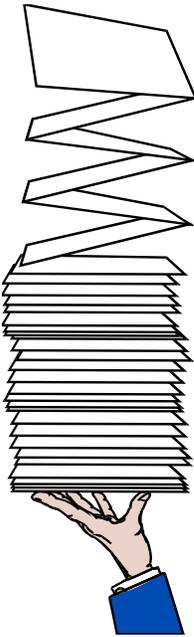
Summary of Key Valuation Results

	2006 Valuation	2005 Valuation	Percentage Change
1. Total Membership			
A. Active Members	453,365	450,282	0.7%
B. Inactive Members	133,601	124,394	7.4%
C. Retired Members and Beneficiaries	<u>207,846</u>	<u>201,241</u>	3.3%
D. Total Membership	794,812	775,917	2.4%
2. Earned Salaries as of Valuation Date (All Members)			
A. Annual Total (\$Millions)	\$ 24,240	\$ 23,257	4.2%
B. Annual Average per Active Member	\$ 53,466	\$ 51,649	3.5%
3. Average Annual Allowance Payable			
A. Service Retirement	\$ 32,892	\$ 31,404	4.7%
4. Actuarial Obligation (\$Millions)			
A. Active Members	\$ 79,120	\$ 75,667	4.6%
B. Inactive Members	2,978	2,764	7.7%
C. Retired Members and Beneficiaries	<u>68,774</u>	<u>63,762</u>	7.9%
D. Total	\$ 150,872	\$ 142,193	6.1%
5. Value of System Assets (\$Millions)			
A. Fair Value	\$ 140,192	\$ 126,447	10.9%
B. Smoothing Reserve	<u>(4,360)</u>	<u>(782)</u>	457.5%
C. Actuarial Value	\$ 135,832	\$ 125,665	8.1%
D. Ratio of Actuarial Value to Fair Value	97%	99%	
E. Less SBMA Reserve	(2,908)	(2,265)	28.4%
F. Less THBF Allocation	<u>(1,687)</u>	<u>(1,518)</u>	11.1%
G. Net Actuarial Value	\$ 131,237	\$ 121,882	7.7%
6. Funded Status			
A. Unfunded Actuarial Obligation (\$Millions)	\$ 19,635	\$ 20,311	(3.3)%
B. Funded Ratio (5G ÷ 4D)	87%	86%	
7. Contribution Rates (percent of salaries)			
A. 30-Year Projected Revenue	17.656%	17.567%	0.5%
B. Normal Cost Rate	<u>16.820</u>	<u>16.829</u>	(0.1)%
C. Available for Amortization of UAO (7A – 7B)	0.836%	0.738%	13.3%
D. Period to Amortize	Does not amortize	Does not amortize	
E. Projected 30-Year Level Funding Rate	20.988%	21.320%	(1.6)%
F. Projected Shortfall (Surplus) (7E – 7A)	3.332%	3.753%	(11.2)%



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Section 2 Scope of the Report



This report presents the actuarial valuation of the Defined Benefit Program of the State Teachers' Retirement Plan as of June 30, 2006.

In reading our Actuarial Certification in Section 3, please pay particular attention to the guidelines employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings depend. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

A summary of the key results of this valuation was presented in the previous section. The remainder of this report is arranged as follows.

Section 4 describes the benefit obligations of CalSTRS including the development of the Normal Cost and the Actuarial Obligation.

Section 5 outlines the Fair Value of Assets of the DB Program and the determination of the Actuarial Value of Assets as of June 30, 2006. All of the assets of the Program are available to finance future benefits and expenses, except those allocated for the Supplemental Benefit Maintenance Account (SBMA) and the Teachers' Health Benefits Fund (THBF).

Section 6 shows the relationship between the Actuarial Value of Assets and the Actuarial Obligation, also called the Funded Status.

Section 7 discusses the calculations used to determine if a supplemental contribution is required from the State in accordance with EC §22955(b). The key elements of this calculation pertain to an evaluation of the assets and obligations associated with the benefits in effect in 1990.

The funding sufficiency of the current projected revenue stream for the DB Program is tested in Section 8.



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

This report includes several appendices:

Appendix A A summary of the current benefit structure, as determined by the provisions of governing law on June 30, 2006.

Appendix B A summary of the actuarial methods and assumptions used to estimate actuarial obligations and the funding sufficiency.

In our opinion, the assumptions used in the valuation are reasonably related to the past experience of the DB Program, are internally consistent, 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.

Appendix C Schedules of valuation data classified by various categories of plan members. We relied upon the membership and beneficiary data supplied by CalSTRS. We compared the data for this and the prior valuation and tested for reasonableness. Based on these tests, we believe the data to be sufficient for the purposes of our calculations.

Appendix D A glossary of actuarial terms used in this report.



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Section 3 Actuarial Certification

The major findings of the 2006 Actuarial Valuation are contained in this report. This report reflects the benefit provisions and contribution rates in effect as of the valuation date. To the best of our knowledge and belief, this report is complete and accurate and contains sufficient information to fully and fairly disclose the funded condition of the Defined Benefit Program as of June 30, 2006.

In preparing the valuation, we relied without audit upon the financial and membership data furnished by CalSTRS. Although we did not audit this data, we compared the data for this and the prior valuation and tested for reasonableness. Based on these tests, we believe the data to be sufficiently accurate for the purposes of our calculations. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

The findings have been determined according to actuarial assumptions and methods that were chosen on the basis of recent experience of the DB Program and of current expectations concerning future economic conditions. In our opinion, the assumptions used in the actuarial valuation are appropriate for purposes of the valuation, are internally consistent, and reflect reasonable expectations. The assumptions represent our best estimate of future conditions affecting the DB Program. Nevertheless, the emerging costs of the DB Program will vary from those presented in this report to the extent that actual experience differs from that projected by the assumptions.

The Teachers' Retirement Board has sole authority to determine the actuarial assumptions and methods used for the valuation of the DB Program. The Board adopted all of the actuarial methods and assumptions used in the 2006 valuation.

On the basis of the foregoing, I hereby certify that, to the best of my knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with principles prescribed by the Actuarial Standards Board and the code of Professional conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries. In addition, the assumptions and methods used meet the parameters set by Governmental Accounting Standards Board Statement No. 25 for financial statement disclosures.

This report was prepared exclusively for CalSTRS for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning CalSTRS operations. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Milliman's work product who desires professional guidance should not rely on this report, but should engage qualified professionals for advice appropriate to its own specific needs.

The undersigned is an independent actuary, a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, an Enrolled Actuary, and experienced in performing valuations for large public employee retirement systems.


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



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Section 4 Actuarial Obligation



In this section, the discussion will focus on the commitments of CalSTRS for retirement benefits, which are referred to as its actuarial obligation.

In an active system with new entrants, the actuarial obligation, or liabilities, will generally exceed the actuarial value of assets. This deficiency has to be provided by future contributions, net actuarial gains due to experience more favorable than assumed or, to some extent, net growth in the number of active members. An actuarial valuation method sets out a schedule of future contributions and determines if they will amortize any deficiency in an orderly fashion.

Normal Cost

The **Normal Cost** represents the cost assigned to an average member for a given year such that it would meet the continuing costs of a particular benefit if contributed each year starting with the date of membership. The Entry Age Actuarial Cost Method is designed to produce a Normal Cost that remains a level percentage of Earned Salaries, so it is best expressed as a rate.

The following chart shows the Normal Cost Rate has decreased from 16.829% to 16.820% since the last valuation. This decrease of only 0.009% of salaries is due to demographic changes in the membership. **Table 1** provides more details on the calculation of the Normal Cost and Normal Cost Rates.

	(\$Millions)		
	Earned Salaries	Normal Cost	Normal Cost Rate
June 30, 2005	\$ 23,293	\$ 3,920	16.829%
June 30, 2006	\$ 24,263	\$ 4,081	16.820%

The Normal Cost Rate is expected to remain fairly stable as a percentage of Earned Salaries as long as the benefit provisions are not amended, membership experience emerges as assumed, and the demographic characteristics



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

of the membership remain reasonably consistent. The change in the Normal Cost Rate reported in this valuation is well within expected levels of fluctuation.

Actuarial Obligation

The next step in the actuarial valuation process is to project all future DB Program benefit payments for current members and retirees. The level of benefits currently being paid is known, but assumptions are needed to estimate how long they will be paid, and the amount and timing of the payment of future benefits for active and inactive members who are not currently receiving payments. The summation of the discounted values of all of the projected benefit payments for all current members at the assumed rate of return is called the **Actuarial Present Value of Projected Benefits**.

Details are shown in **Table 2** and summarized below.

(\$Millions)	2006 Valuation	2005 Valuation
Benefits Being Paid	\$ 68,774	\$ 63,762
Inactive Deferred Benefits	2,978	2,764
Active Members' Benefits	<u>128,080</u>	<u>122,806</u>
Present Value of Projected Benefits	\$ 199,832	\$ 189,332
Present Value of Future Normal Costs	<u>48,960</u>	<u>47,139</u>
Actuarial Obligation	\$ 150,872	\$ 142,193

The **Actuarial Present Value of Future Normal Costs** is the value of all remaining Normal Costs expected to be received over the future working lifetime of current active members. The **Actuarial Obligation** is the difference between the Actuarial Present Value of Projected Benefits and the Actuarial Present Value of Future Normal Costs. The Actuarial Obligation is equal to the assets that would exist if the current Normal Cost Rate had been paid for all members since entry into the Program, and if all experience had emerged as assumed.



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Table 1 Normal Cost

<i>(\$Millions)</i>	2006	2005
Estimated Annual Earned Salaries ⁽¹⁾	\$ 24,263	\$ 23,293
Present Value of Future Normal Costs for Current Active Members	\$ 48,960	\$ 47,139
Present Value of Future Earned Salaries for Current Active Members	\$291,080	\$280,107
Normal Cost		
Retirement	\$ 3,731	\$ 3,582
Disability	139	133
Death	64	62
Withdrawal	<u>147</u>	<u>143</u>
Total Normal Cost	\$ 4,081	\$ 3,920
Normal Cost Rate Percent of Earned Salaries		
Retirement	15.377%	15.378%
Disability	0.573	0.571
Death	0.264	0.266
Withdrawal	<u>0.606</u>	<u>0.614</u>
Total Normal Cost	16.820%	16.829%

Note:

- ⁽¹⁾ Annual rate of Earned Salaries for active members on the valuation date, excluding active members over age 70 on the valuation date that are assumed to retire immediately and, therefore, do not generate a Normal Cost.



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Table 2 Actuarial Obligation

<i>(\$Millions)</i>	2006	2005
Present Value of Projected Benefits to All Current Members		
Benefits Currently Being Paid		
Service Retirement	\$ 63,360	\$ 58,634
Disability	1,981	1,898
Survivors	<u>3,433</u>	<u>3,230</u>
Total	68,774	63,762
Benefits to Inactive Members	2,978	2,764
Benefits to Active Members		
Retirement	123,353	118,253
Disability	2,586	2,478
Death	1,476	1,425
Withdrawal	<u>665</u>	<u>650</u>
Total	128,080	122,806
Total Present Value of Benefits	\$199,832	\$189,332
Present Value of Future Normal Costs	<u>48,960</u>	<u>47,139</u>
Actuarial Obligation	\$150,872	\$142,193



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

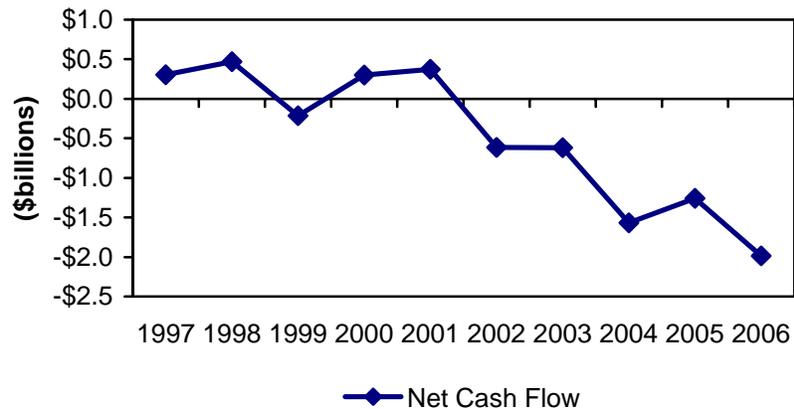
Section 5 Valuation Assets



In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is June 30, 2006. On that date, the assets available for the payment of retirement benefits are appraised.

The next step in the valuation process is to calculate the **Actuarial Value of Assets** that will be used to determine the funding status of the Program. As shown in **Table 3**, the Fair Market Value of assets was reported as \$140,192 million as of June 30, 2006, up from \$126,447 million as of June 30, 2005. **Table 4** shows the asset changes for the period.

As shown in Table 4, the net cash flow (contributions less benefits and expenses) continues to be negative. You can see in the following graph that 2004 was inconsistent with the trend over the last few years, which was due to a \$500 million reduction in the State's contribution to the SBMA.



Because the underlying calculations in the actuarial valuation are long-term in nature, it is advantageous to use an asset smoothing method to lessen the impact of short-term fluctuations in the value of assets. The asset smoothing method projects an expected Actuarial Value of Assets from the Actuarial Value of Assets as of the previous year. The projection uses the assumed rate of



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

investment return, then recognizes only one-third of the difference between the expected value and the Fair Market Value to arrive at the Actuarial Value of Assets. The calculation of the Actuarial Value of Assets is shown in **Table 5** and the result is shown below.

(\$Millions)	June 30, 2006	June 30, 2005
Fair Market Value	\$ 140,192	\$ 126,447
Actuarial Value of Assets	\$ 135,832	\$ 125,665
Unrecognized Investment Gains or (Losses)	\$ 4,360	\$ 782
Ratio of AVA to FMV	97%	99%

Due to the asset smoothing method, there are investment gains of \$4,360 million that have not yet been recognized (the difference between the Actuarial and Fair Market Value of Assets). This means the heavy investment losses incurred over the fiscal years ending in 2001, 2002, and 2003 have been recognized as of this time, and a portion of recent investment gains is set aside for the contingency of future investment losses. Absent investment returns less than the assumed rate in future years to offset the unrecognized investment gains, the current gains will gradually be reflected in the Actuarial Value of Assets.

If the future returns on the Fair Market Value of Assets are 8% each year, then as the current unrecognized gains flow through the smoothing method and are recognized, future valuations will show an actuarial gain. The result will be a slow increase in the DB Program's funded status, ultimately decreasing the Unfunded Actuarial Obligation by the \$4,360 million of currently unrecognized investment gains.

Table 6 shows a history of the Actuarial Value of Assets compared to the Fair Market Value of Assets.



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Table 3 Statement of Program Assets

<i>(\$Millions)</i>	June, 2006	June, 2005
Invested Assets		
Short-term	\$ 1,496	\$ 1,367
Debt Securities	31,300	32,227
Equity	88,247	78,887
Alternative	8,610	6,922
Real Estate	<u>11,792</u>	<u>8,548</u>
Total Investments ⁽¹⁾	\$ 141,445	\$ 127,951
Cash and Cash Equivalents	309	176
Receivables	3,227	7,090
Liabilities ⁽¹⁾	<u>(4,789)</u>	<u>(8,770)</u>
Fair Market Value of Net Assets	\$ 140,192	\$ 126,447

Note:

⁽¹⁾ Excludes offsetting entries from Securities Lending Collateral and Obligation



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Table 4 Statement of Changes in Program Assets

<i>(\$Millions)</i>	June, 2006	June, 2005
Contributions		
Members	\$ 1,626	\$ 1,748
Employers	2,094	2,005
State of California	<u>1,019</u>	<u>1,219</u>
Total Contributions	4,739	4,972
Benefits and Expenses		
Retirement, Death, and Survivors	(6,334)	(5,836)
Refunds of Member Contributions	(83)	(79)
Purchasing Power Benefits	(215)	(221)
Administrative Expenses	<u>(94)</u>	<u>(93)</u>
Total Benefits and Expenses	(6,726)	(6,229)
Net Cash Flow	\$ (1,987)	\$ (1,257)
Investment Income		
Realized Income	\$ 3,911	\$ 3,813
Net Appreciation	11,867	10,119
Net Securities Lending Income	67	66
Investment Expenses	(113)	(100)
Other (Expense) Income	<u>(0)</u>	<u>(9)</u>
Net Investment Return	15,732	13,889
Net Increase	\$ 13,745	\$ 12,632
Fair Market Value of Net Assets		
Beginning of Year	<u>126,447</u>	<u>113,815</u>
End of Year	\$ 140,192	\$ 126,447
Estimated Net Rate of Return ⁽¹⁾	12.5%	12.3%

Note:

⁽¹⁾ Estimated return on Fair Market Value basis, net of all investment expenses and assuming uniform cash flow throughout the year



California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Table 5 Actuarial Value of Assets

<i>(\$Millions)</i>	June, 2006	June, 2005
Actuarial Value at Beginning of Year	\$ 125,665	\$ 117,206
Contributions	4,739	4,972
Benefits and Expenses	(6,726)	(6,229)
Expected Return at 8%	<u>9,974</u>	<u>9,326</u>
Expected Actuarial Value End of Year	\$ 133,652	\$ 125,275
Fair Market Value	<u>140,192</u>	<u>126,447</u>
Difference between Fair Market Value and Expected Actuarial Value	\$ 6,540	\$ 1,172
Recognition Factor	One-third	One-third
Recognized Gain or Loss	\$ 2,180	\$ 390
Actuarial Value at End of Year	\$ 135,832	\$ 125,665
Unrecognized Investment Gains or (Losses)	\$ 4,360	\$ 782
<i>Ratio of Actuarial Value of Assets to Fair Market Value of Assets</i>	97%	99%
Estimated Net Rate of Return ⁽¹⁾	9.7%	8.3%

Note:

⁽¹⁾ Estimated return on Actuarial Value basis, net of all investment expenses and assuming uniform cash flow throughout the year



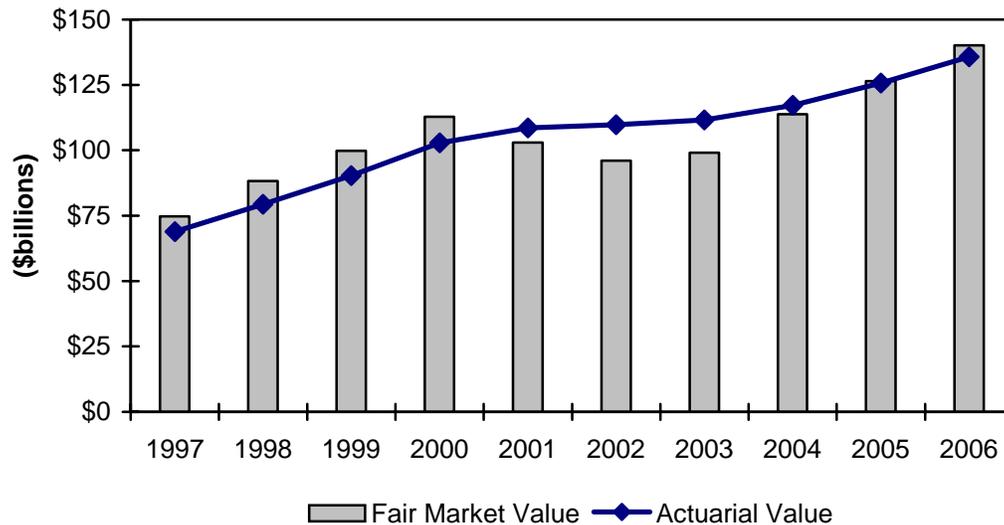
California State Teachers' Retirement System Defined Benefit Program - 2006 Actuarial Valuation

Table 6 History of Actuarial Value of Assets

(\$Millions) June 30 ⁽¹⁾	Fair Market Value	Estimated Return ⁽²⁾	Actuarial Value	Ratio of Actuarial to Market
1997	\$ 74,778	17.3%	\$ 68,966	92%
1998	88,198	17.3	79,381	90
1999	99,780	13.4	90,265	90
2000	112,771	12.7	102,790	91
2001	102,915	(9.1)	108,571	105
2002	96,028	(6.1)	109,755	114
2003	99,031	3.8	111,604	113
2004	113,815	16.6	117,206	103
2005	126,447	12.3	125,665	99
2006	140,192	12.5	135,832	97

Note:

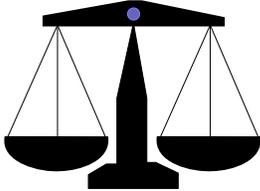
- (1) Asset Method adopted for 1999 valuation with retroactive calculation to July 1, 1993
- (2) Estimated return on Fair Market Value basis, net of all investment expenses and assuming uniform cash flow throughout the year





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Section 6 Funded Status



The **Unfunded Actuarial Obligation** is the excess of the Actuarial Obligation over the Actuarial Value of Assets, which represents a liability that must be funded over time. Contributions in excess of the Normal Cost are used to amortize the Unfunded Actuarial Obligation. An **Actuarial Surplus** exists if the Actuarial Value of Assets exceeds the Actuarial Obligation.

The **Funded Ratio** is equal to the Actuarial Value of Assets divided by the Actuarial Obligation. A Funded Ratio of 100% means the Value of Assets equals the Actuarial Obligation, and the DB Program could be financed by contributions equal to the Normal Cost, if all future experience emerges as assumed.

The Funded Status is shown below and in **Table 7**.

<i>(\$Millions)</i>	2006 Valuation	2005 Valuation
Actuarial Obligation	\$ 150,872	\$ 142,193
Actuarial Value of Assets		
From Table 5	135,832	125,665
Less SBMA Reserve	(2,908)	(2,265)
Less THBF Allocation	<u>(1,687)</u>	<u>(1,518)</u>
Net for Funding	131,237	121,882
Unfunded Actuarial Obligation	\$ 19,635	\$ 20,311
Funded Ratio (on A.V.A.)	87%	86%
<i>Alternate Funded Ratio (based on Fair Market Value)</i>	<i>90%</i>	<i>86%</i>

Overall, the DB Program is in a slightly better financial condition than one year ago as measured by the Funded Ratio as of June 30, 2006.

Future benefits provided through the Supplemental Benefits Maintenance Account (SBMA) are not part of the projected benefits included in this valuation. Therefore, the SBMA Reserve is subtracted from the DB Program assets



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to arrive at the value available to support the benefits included in this valuation.

In addition, the Teachers' Retirement Board has established a policy of allocating funds for future costs associated with the Teachers' Health Benefits Fund (THBF). By subtracting the current value of the set aside, as maintained on an accumulation basis by CalSTRS staff, the remaining DB Program assets are available to support the benefits included in this valuation.

The following table shows a history of the Funded Status of the DB Program.

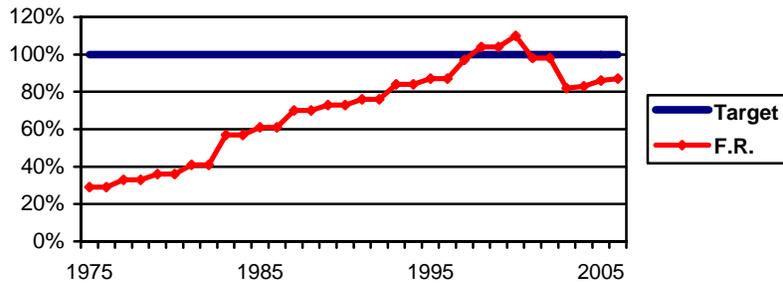
<i>\$(Millions)</i>				
YE	Actuarial Obligation	Actuarial Value of Assets	Unfunded Actuarial Obligation	Funded Ratio
1975	\$ 12,834	\$ 3,775	\$ 9,059	29%
1977	15,203	5,019	10,184	33%
1979	17,971	6,488	11,483	36%
1981	22,545	9,345	13,200	41%
1983	26,553	15,023	11,530	57%
1985	28,401	17,457	10,944	61%
1987	34,637	24,401	10,236	70%
1989	40,266	29,327	10,939	73%
1991	47,100	36,001	11,099	76%
1993	53,581	45,212	8,369	84%
1995	63,391	55,207	8,184	87%
1997	69,852	67,980	1,872	97%
1998	74,234	77,290	(3,056)	104%
1999	86,349	90,001	(3,652)	104%
2000	93,124	102,225	(9,101)	110%
2001	109,881	107,654	2,227	98%
2003	131,777	108,667	23,110	82%
2004	138,254	114,094	24,160	83%
2005	142,193	121,882	20,311	86%
2006	150,872	131,237	19,635	87%

The historical Funded Ratios are plotted in the following graph. In years in which a valuation was not performed, the Funded Ratio from the previous year is used.



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Historical Funded Ratio



Actuarial Gains and Losses

Comparing the Unfunded Actuarial Obligation as of two valuation dates does not provide enough information to determine if there were actuarial gains or losses. The correct comparison is between the Unfunded Actuarial Obligation on the valuation date and the Expected Unfunded Actuarial Obligation projected from the prior valuation date using the actuarial assumptions in effect since the previous valuation.

The actuarial gains and losses since the last report are summarized in the following table and shown in **Table 8**.

(\$Millions)	Expected Results	Actual Results	(Gain) or Loss
Actuarial Obligation	\$ 151,267	\$ 150,872	\$ (395)
Act. Value of Assets	<u>129,149</u>	<u>131,237</u>	<u>(2,088)</u>
Unfunded Act. Oblig.	\$ 22,118	\$ 19,635	\$ (2,483)
Actuarial (Gains) or Losses by Source			
Salaries increased less than assumed			(690)
All other non-investment sources			<u>295</u>
(Gain) or Loss on the Actuarial Obligation			(395)
Investment Return on Actuarial Value of Assets			(2,857)
Contributions in excess of assumed			(43)
Change in the SBMA Reserve			643
Change in the Health Benefit Fund Allocation			<u>169</u>
(Gain) or Loss on the Actuarial Value of Assets			(2,088)
Total Actuarial (Gain) or Loss			\$ (2,483)



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<i>(\$Millions)</i>	(Gain) or Loss	Percent of Act. Oblig.
Actuarial (Gains) or Losses on the Actuarial Obligation		
Salaries increased less than assumed	(690)	(0.5)
All other non-investment sources	<u>295</u>	<u>0.2</u>
(Gain) or Loss on the Actuarial Obligation	\$ (395)	(0.3)%
Actuarial (Gains) or Losses on the Actuarial Value of Assets		
Return on Actuarial Value of Assets	\$ (2,857)	(2.2)%
Contributions in excess of assumed	(43)	(0.0)
Change in the SBMA Reserve	643	0.5
Change in the THBF Allocation	<u>169</u>	<u>0.1</u>
(Gain) or Loss on the Actuarial Value of Assets	\$ (2,088)	(1.6)%

These gains and losses are within a reasonable range for variances in a single year.

Based on the 2005 Actuarial Valuation, the Unfunded Actuarial Obligation was expected to increase to \$22,118 million (See Table 14, 2005 report). The actual Unfunded Actuarial Obligation of \$19,635 million represents a net actuarial gain of \$2,483 million.

- All non-investment experience represents only a relatively small portion of the expected Actuarial Obligation. These relatively minor net gains and losses indicate that the census is consistent from the prior period, and the actual experience tracked closely with the actuarial assumptions.
- On the asset side, there are a number of sources of the actuarial gain or loss. First, we identified an investment return on the Actuarial Value of Assets greater than the 8% assumption. Although the return on Fair Market Value was estimated at 12.5%, the return on the Actuarial Value of Assets was estimated at only 9.7% due to the recognition of prior deferred



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investment losses.

- We do not predict future changes in the SBMA Reserve and the THBF allocation in the DB Program valuation. The amount allocated to the SBMA Reserve increased by \$643 million over the year. The Board's allocation of funds for future costs associated with the THBF increased by \$169 million due to investment credits greater than the sum of all payments in the year. Any increase in these values results in an actuarial loss in the subsequent DB Program valuation.



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Table 7 Funded Status

<i>(\$Millions)</i>	2006	2005
Actuarial Obligation <i>(Table 2)</i>	\$150,872	\$142,193
Actuarial Value of Assets		
Calculated <i>(Table 5)</i>	135,832	125,665
Less SBMA Reserve	(2,908)	(2,265)
Less THBF Allocation	<u>(1,687)</u>	<u>(1,518)</u>
Program Assets	131,237	121,882
Unfunded Actuarial Obligation	\$ 19,635	\$ 20,311
Funded Ratio	87%	86%



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Table 8 Actuarial Gains and Losses

<i>(\$Millions)</i>	Expected	Actual	(Gain) Loss
Actuarial Obligation			
Actuarial Obligation June 30, 2005	\$142,193		
Normal Cost for 2005-06	4,202		
Benefits Paid (Excludes Purchasing Power)	(6,417)		
Expected Interest at 8%	<u>11,289</u>		
Actuarial Obligation June 30, 2006	\$151,267	\$150,872	\$ (395)
<i>By Source:</i>			
<i>New Entrants</i>			\$ 170
<i>Rehired Members</i>			103
<i>Retiree Mortality</i>			(85)
<i>Active Member Mortality</i>			(7)
<i>Service Retirements</i>			66
<i>Terminations</i>			18
<i>Disablement</i>			60
<i>Salaries Increased Less than Assumed</i>			(690)
<i>All Other Non-investment Sources</i>			<u>(30)</u>
<i>Total (Gain) Loss on the Actuarial Obligation</i>			\$ (395)
Actuarial Value of Assets			
Actuarial Value of Assets June 30, 2005	\$121,882		
Expected Contributions for 2005-06	4,027		
Benefits Paid (Excludes Purchasing Power)	(6,417)		
Expected Interest at 8% on A.V.A.	<u>9,657</u>		
Actuarial Value of Assets June 30, 2006	\$129,149	\$131,237	\$ (2,088)
<i>By Source:</i>			
<i>Investment Return on Actuarial Value of Assets (including the recognition of prior deferred investment losses)</i>			\$ (2,857)
<i>Contributions in excess of assumed</i>			(43)
<i>Change in SBMA Reserve</i>			643
<i>Change in Allocation for future THBF costs</i>			<u>169</u>
<i>Total (Gain) Loss on the Actuarial Value of Assets</i>			\$ (2,088)
Unfunded Actuarial Obligation	\$ 22,118	\$ 19,635	\$ (2,483)



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Section 7 Supplemental Contributions



Under State law EC §22955(b), additional funds are required to be contributed by the State if at least one of the following two separate conditions is met.

1. Additional funding is required if the sum of the 8% contribution from the members and the 8% contribution from the employers is not sufficient to pay the Normal Cost of the benefits in effect as of July 1, 1990.
2. Additional funding is required if the Actuarial Value of Assets associated with the benefit provisions in effect as of July 1, 1990 is less than the Actuarial Obligation for those benefits.

Normal Cost Deficit: Since the Normal Cost Rate for the 1990 Benefit Structure is less than the 16% rate cited in the statute, there is no Normal Cost Deficit.

	2006 Valuation	2005 Valuation
Normal Cost Deficit – 1990 Benefit Structure		
Normal Cost Rate	14.273%	14.279%
Revenue for 1990 Benefits	<u>16.000</u>	<u>16.000</u>
Normal Cost Deficit	0.000%	0.000%

1990 Unfunded Actuarial Obligation: The Actuarial Obligation for the DB Program is recalculated using the benefit provisions in place during 1990. CalSTRS provides us with separate census data for this determination. The process has limitations since we don't know, for example, if members who retired would have done so if the post-1990 benefit enhancements had not been enacted. However, we believe we are using a reasonable process to estimate what the Actuarial Obligation would be if only the 1990 benefits were currently in place.

There were no benefit improvements enacted between 1990 and 1998 that had a material cost. All benefit enhancements enacted with effective dates from July 1, 1990 to December 31, 1998 have been presumed to be



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cost-neutral. Due to the enhanced retirement benefits enacted since 1990, we are using a separate set of retirement probabilities to evaluate the 1990 Benefit Structure.

The Actuarial Obligation related to the 1990 Benefit Structure is \$125.8 billion. This compares to the Actuarial Obligation for the DB Program of \$150.9 billion.

<i>(\$Millions)</i>	2006 Valuation	2005 Valuation
Actuarial Obligation – 1990 Benefit Structure		
Value of Projected Benefits	\$ 167,084	\$ 158,613
Value of Future Normal Costs	<u>41,288</u>	<u>39,742</u>
Actuarial Obligation	\$ 125,796	\$ 118,871

The Actuarial Value of Assets needs to be adjusted to reflect the contributions started on October 1, 1998, and an estimate of the additional benefits paid out due to the post-1990 benefit increases up to June 30, 2006. This task also has some limitations since we do not have precise data regarding the portion of, or the timing of, benefit payments that would be attributable to only the 1990 benefits.

The most significant adjustments to the assets are:

- ◆ Eliminate contributions in excess of 16.00%,
- ◆ Add back the member contributions that were directed to the DBS Program,
- ◆ Add back the benefit enhancements that have been paid, and
- ◆ Adjust for interest.

See **Table 9** for the details of the asset adjustment.

<i>(\$Millions)</i>	June, 2006	June, 2005
Asset Adjustment – 1990 Benefit Structure		
Actuarial Value for DB Program	\$ 131,237	\$ 121,882
Adjustments per Table 9	2,163	1,322
Board's THBF allocation	<u>1,687</u>	<u>1,518</u>
Actuarial Value of Assets	\$ 135,087	\$ 124,722



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For purposes of testing the funding sufficiency of the 1990 Benefit Structure, note we did not reserve the Board's allocation of assets for future THBF costs because it was established subsequent to 1990.

The following table summarizes the Funded Status of the 1990 Benefit Structure as detailed in **Table 10**. The 1990 Benefit Structure has an Actuarial Surplus.

<i>(\$Millions)</i>	2006 Valuation	2005 Valuation
Funded Status – 1990 Benefit Structure		
Actuarial Obligation	\$ 125,796	\$ 118,871
Actuarial Value of Assets	<u>135,087</u>	<u>124,722</u>
Unfunded Actuarial Obligation	\$ (9,291)	\$ (5,851)
Funded Ratio	107%	105%

Supplemental State Contributions: The statute calls for a supplemental State contribution if one of the two conditions described above is met. Since neither triggering condition is met in the 2006 Actuarial Valuation, additional funding from the State under this statutory provision is not required at this time.

The funded status of the 1990 Benefit Structure in future years is difficult to predict with certainty because the Actuarial Value of Assets for the 1990 Benefit Structure includes adjustments for contributions and benefits paid in excess of those in place in 1990. The benefits paid may vary considerably depending on demographic experience. In addition, the Actuarial Obligation can only be assessed accurately when current census data is evaluated. Based on information available at this time, and if experience is consistent with the actuarial assumptions, we believe the 1990 Benefit Structure will continue to have an Actuarial Surplus.



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Table 9 Asset Adjustment for 1990 Benefit Structure

<i>(\$Millions)</i>	2006	2005
Assets Allocated to Post-1990 Benefit Increases		
Allocated Market Value at Beginning of Year	\$ 1,330	\$ 721
Contributions During the Year		
EC §22951 at 0.250% of Earned Salaries	(62)	(59)
EC §22955 at 2.017% of second preceding fiscal year Earned Salaries ⁽¹⁾	(348)	(472)
2% DBS redirection reallocated to DB Program	521	502
THBF costs reallocated to DB Program	<u>30</u>	<u>28</u>
Total Adjustment to Contributions	141	(1)
Benefits Paid During the Year		
Post-1990 Benefits Paid During the Year	677	582
2% DBS redirection reallocated to DB Program	<u>(112)</u>	<u>(84)</u>
Total Adjustment to Benefits Paid	565	498
Estimated Investment Earnings for the Year ⁽²⁾	<u>196</u>	<u>112</u>
Total Allocated Market Value at End of Year	\$ 2,232	\$ 1,330
Ratio of Actuarial Value to Market Value ⁽³⁾	96.890%	99.382%
Actuarial Value of Assets for Post-1990 Benefit Increases	\$ 2,163	\$ 1,322

Note:

⁽¹⁾ Includes an adjustment for an overpayment of \$121 million due to a recalculation of creditable earnings for prior years.

⁽²⁾ Based on Fair Market Value and uniform cash flow for contributions, benefits, and expenses. The rates of return used in these calculations were 12.27% for 2004-05 and 12.54% for 2005-06.

⁽³⁾ Developed from Table 5



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Table 10 Funding Sufficiency for 1990 Benefit Structure

<i>(\$Millions)</i>	2006	2005
Actuarial Obligation		
Present Value of Projected Benefits		
Benefits Currently Being Paid	\$ 61,208	\$ 57,226
Benefits to Inactive Members	2,838	2,634
Benefits to Active Members	<u>103,038</u>	<u>98,753</u>
Total	\$167,084	\$158,613
Present Value of Future Normal Costs	<u>41,288</u>	<u>39,742</u>
Actuarial Obligation	\$125,796	\$118,871
Actuarial Value of Assets		
Actuarial Value of Assets <i>(Table 7)</i>	\$131,237	\$121,882
Plus, Asset Adjustment <i>(Table 9)</i>	2,163	1,322
Plus, Allocation to Health Benefits	<u>1,687</u>	<u>1,518</u>
Net Assets Available	\$135,087	\$124,722
Funded Status		
Actuarial Obligation	\$125,796	\$118,871
Actuarial Value of Assets	<u>135,087</u>	<u>124,722</u>
Unfunded Actuarial Obligation (Surplus)	\$ (9,291)	\$ (5,851)
Funded Ratio	107%	105%
Amortization Period		
Revenue for 1990 Benefits	16.000%	16.000%
Normal Cost Rate for 1990 Benefits	(14.273)	(14.279)
EC 22955(b)	<u>0.000</u>	<u>0.000</u>
Revenue Available for Amortization	1.727%	1.721%
Amortization Period	<i>Amortization Not Required</i>	<i>Amortization Not Required</i>



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Table 11 **Amortization of 1990 Unfunded Actuarial Obligation**

<i>\$(Millions)</i>		Beginning Unfunded Act. Oblig.	Amortization Payment			Interest Charge at 8%	Ending Unfunded Act. Oblig.
Year	FYE		16% Contrib.	Normal Cost	Available Amtzn.		
1	2007	\$ (9,291)	\$ 4,161	\$ 3,712	\$ 449	\$ (761)	\$(10,501)
2	2008	(10,501)					



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Section 8 Funding Sufficiency



The contributions to fund the DB Program include those listed below and described in **Table 12**. Since each contribution is not paid uniformly over time as a percentage of Earned Salaries, we have calculated an equivalent rate over a 30-year period, the period used to test the sufficiency of the statutory revenue stream.

Source of Revenue	Current Rate	Equivalent Rate
Members	8.000%	8.000%
Directed to DBS Accounts	(2.000)	(0.449)
Employers	8.000	8.000
Employers	0.250	0.250
State	2.017	1.855
State – 1990 Benefit Structure	0.000	<u>0.000</u>
Equivalent Level Contribution Rate over 30 Years		17.656%

Twenty-five percent of the members' contributions are temporarily directed to the Defined Benefit Supplement Program (DBS) through December of 2010. When converted to a level percentage over a thirty-year period, this is equal to a reduction in the value of contributions of only 0.449% of future salaries.

The State contribution rate will be 2.017% of the second preceding fiscal year Earned Salaries which is equivalent to a lesser percentage of current Earned Salaries. For example, the State contribution for the 2006-07 will be equal to 2.017% of the 2004-05 Earned Salaries. Based on two years of known future contributions and projections for the rest, the equivalent rate for the thirty-year period is 1.855% of current Earned Salaries.

As demonstrated in Tables 10 and 11, the supplemental contribution from the State is not needed at this time.

Note that the future costs associated with the Teachers' Health Benefit Fund have been set aside through a reduction to the Actuarial Value of Assets. Therefore, it is not appropriate to deduct the expected annual costs from the revenue intended to fund the DB Program benefits.



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The calculation of the equivalent rates in **Table 13** results in 17.656% of Earned Salaries over a thirty-year period.

Table 14 shows the amortization of the Unfunded Actuarial Obligation on a year-by-year basis. Based on the current Actuarial Value of Assets and all future experience emerging as assumed, the Unfunded Actuarial Obligation will not be amortized over the next 30 years. This is consistent with our projections from 2003, 2004, and 2005 as well. **Table 15** summarizes these findings.

	2006 Valuation	2005 Valuation
Normal Cost Rate	16.820%	16.829%
Amortization Rate	<u>4.168</u>	<u>4.491</u>
Total Level Rate over a 30-Year Period	20.988%	21.320
Projected Revenue	17.656%	17.567%
Estimated Additional Revenue Needed	3.332%	3.753%

The DB Program is in a slightly better funded position than one year ago and the future thirty-year funding requirement is somewhat lower as a percentage of future salaries. However, it is clear that based on the current data, method, and assumptions, the projected revenue for the DB Program is not sufficient.

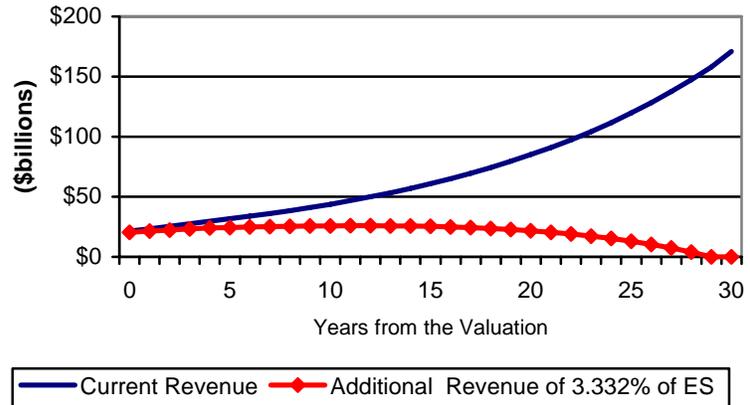
Table 16 (in the same format as Table 14) shows the amortization of the Unfunded Actuarial Obligation over a thirty-year period **IF contribution revenue is increased by 3.332% of current year Earned Salaries.** We did not address the source of the additional revenue as it is not relevant to the amortization schedule.

The following graph illustrates the expected amortization of the Unfunded Actuarial Obligation with and without the additional revenue stream.



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Projected Unfunded Actuarial Obligation



One of the future contingencies that may lessen the impact of the funding shortage is the potential growth of the active DB Program membership. An increase in the number of active members will improve the financial condition of the DB Program because the additional revenue should exceed the expected Normal Cost Rate (the Normal Cost Rate is the expected total cost for a new member). The excess of revenue over the Normal Cost Rate for additional members will provide added resources to finance the current Unfunded Actuarial Obligation.



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Table 12 Contributions

		Current Rate	Equivalent Rate ⁽¹⁾
EC 22901	Members	8.000%	8.000%
EC 22901.5	Directed to DBS Accounts ⁽²⁾	(2.000)	(0.449)
EC 22950	Employers	8.000	8.000
EC 22950 (c)	Employers for THBF ⁽³⁾	<i>as needed</i>	0.000
EC 22951	Employers	0.250	0.250
EC 22955 (a)	State ⁽⁴⁾	2.017	1.855
EC 22955 (b)	State ⁽⁵⁾	0.000	<u>0.000</u>
Equivalent Level Contribution Rate over 30-Year Period			17.656%

Note:

- (1) Equivalent level contribution rate payable over the next 30 years. See Table 13 for details.
- (2) 25% of Member Contributions will be directed to Defined Benefit Supplement Accounts through December 31, 2010.
- (3) The Teachers' Health Benefit Fund is financed by a redirection of employer contributions. The Teachers' Retirement Board has set aside DB Program assets to finance these future costs. See Table 7.
- (4) The State's contribution of 2.017% is paid quarterly based on second prior fiscal year salaries.
- (5) Additional funding is provided only if the Normal Cost Rate is greater than 16.000% of salaries for benefits in effect on July 1, 1990 or there is an Unfunded Actuarial Obligation (related to the 1990 Benefit Structure). The 1990 Benefit Structure was adequately funded as of June 30, 2006.



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Table 13 30-Year Projection of Contributions

(\$Millions)							
FYE	Projected Salaries	Member 22901	Member DBS 22901.5	Employer 22950 & 22951	State 22955(a)	State 22955(b)	Total Contrib.
2007	\$ 26,009	\$ 2,081	\$ (520)	\$ 2,146	\$ 481	\$ 0	\$ 4,188
2008	27,114	2,169	(542)	2,237	501	0	4,365
2009	28,267	2,261	(565)	2,332	525	0	4,553
2010	29,468	2,357	(589)	2,431	547	0	4,746
2011	30,720	2,458	(307)	2,534	570	0	5,255
2012	32,026	2,562	0	2,643	594	0	5,799
2013	33,387	2,671	0	2,754	620	0	6,045
2014	34,806	2,784	0	2,872	646	0	6,302
2015	36,285	2,903	0	2,994	673	0	6,570
2016	37,827	3,026	0	3,121	702	0	6,849
2017	39,435	3,155	0	3,253	732	0	7,140
2018	41,111	3,289	0	3,392	763	0	7,444
2019	42,858	3,429	0	3,536	795	0	7,760
2020	44,680	3,574	0	3,687	829	0	8,090
2021	46,579	3,726	0	3,843	864	0	8,433
2022	48,558	3,885	0	4,006	901	0	8,792
2023	50,622	4,050	0	4,177	939	0	9,166
2024	52,773	4,222	0	4,354	979	0	9,555
2025	55,016	4,401	0	4,539	1,021	0	9,961
2026	57,355	4,588	0	4,733	1,064	0	10,385
2027	59,792	4,783	0	4,933	1,110	0	10,826
2028	62,333	4,987	0	5,142	1,157	0	11,286
2029	64,982	5,199	0	5,361	1,206	0	11,766
2030	67,744	5,420	0	5,589	1,257	0	12,266
2031	70,623	5,650	0	5,826	1,311	0	12,787
2032	73,625	5,890	0	6,074	1,366	0	13,330
2033	76,754	6,140	0	6,333	1,424	0	13,897
2034	80,016	6,401	0	6,602	1,485	0	14,488
2035	83,417	6,673	0	6,882	1,548	0	15,103
2036	86,962	6,957	0	7,174	1,614	0	15,745
PV ⁽¹⁾	\$471,107	\$ 37,689	\$ (2,117)	\$ 38,866	\$ 8,740	\$ 0	\$ 83,178
Level Rate ⁽²⁾		8.000%	(0.449)%	8.250%	1.855%	0.000%	17.656%

Note:

(1) Present Value, as of the valuation date, of 30-year series of contributions and appropriations.

(2) Equivalent level rate payable over the 30-year period.



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Table 14 Amortization of Unfunded Actuarial Obligation ⁽¹⁾

\$(Millions)		Beginning Unfunded Act. Oblig.	Amortization Payment			Interest Charge at 8%	Ending Unfunded Act. Oblig.
Year	FYE		Total Contrib.	Normal Cost	Available Amtzn.		
1	2007	\$ 19,635	\$ 4,188	\$ 4,375	\$ (187)	\$ 1,578	\$ 21,400
2	2008	21,400	4,365	4,561	(196)	1,719	23,315
3	2009	23,315	4,553	4,754	(201)	1,874	25,390
4	2010	25,390	4,746	4,957	(211)	2,039	27,640
5	2011	27,640	5,255	5,167	88	2,208	29,760
6	2012	29,760	5,799	5,387	412	2,365	31,713
7	2013	31,713	6,045	5,616	429	2,520	33,804
8	2014	33,804	6,302	5,854	448	2,687	36,043
9	2015	36,043	6,570	6,103	467	2,866	38,442
10	2016	38,442	6,849	6,363	486	3,055	41,011
11	2017	41,011	7,140	6,633	507	3,261	43,765
12	2018	43,765	7,444	6,915	529	3,481	46,717
13	2019	46,717	7,760	7,209	551	3,716	49,882
14	2020	49,882	8,090	7,515	575	3,968	53,275
15	2021	53,275	8,433	7,835	598	4,238	56,915
16	2022	56,915	8,792	8,168	624	4,528	60,819
17	2023	60,819	9,166	8,515	651	4,840	65,008
18	2024	65,008	9,555	8,877	678	5,173	69,503
19	2025	69,503	9,961	9,254	707	5,533	74,329
20	2026	74,329	10,385	9,647	738	5,917	79,508
21	2027	79,508	10,826	10,057	769	6,331	85,070
22	2028	85,070	11,286	10,484	802	6,775	91,043
23	2029	91,043	11,766	10,930	836	7,251	97,458
24	2030	97,458	12,266	11,395	871	7,762	104,349
25	2031	104,349	12,787	11,879	908	8,312	111,753
26	2032	111,753	13,330	12,384	946	8,902	119,709
27	2033	119,709	13,897	12,910	987	9,539	128,261
28	2034	128,261	14,488	13,459	1,029	10,220	137,452
29	2035	137,452	15,103	14,031	1,072	10,954	147,334
30	2036	147,334	15,745	14,627	1,118	11,742	157,958

Note:

⁽¹⁾ Based on the actuarial value of assets.



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Table 15 Funding Sufficiency

<i>(\$Millions)</i>	June, 2006	June, 2005
Funded Status (Table 7)		
Actuarial Obligation	\$ 150,872	\$ 142,193
Actuarial Value of Assets	<u>131,237</u>	<u>121,882</u>
Unfunded Actuarial Obligation	\$ 19,635	\$ 20,311
Funded Ratio	87%	86%
Level Contributions over 30 Years (Table 12)	17.656%	17.567%
Amortization Period based on Current Revenues		
Total Level Rate over the Amortization Period	17.656%	17.567%
Normal Cost Rate	<u>16.820</u>	<u>16.829</u>
Amortization Rate	0.836%	0.738%
<i>Amortization Period (Based on current revenue projections)</i>	<i>Does not amortize</i>	<i>Does not amortize</i>
Calculated Contribution Rate for 30-Year Funding Period		
Normal Cost Rate	16.820%	16.829%
Amortization Rate	<u>4.168</u>	<u>4.491</u>
Total Level Rate over the Amortization Period	20.988%	21.320%
Estimated Additional Revenue Needed <i>(Based on current valuation assumptions)</i>	3.332%	3.753%



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Table 16 **Amortization of Unfunded Actuarial Obligation ⁽¹⁾**
Including Sufficient Additional Contributions ⁽²⁾

<i>\$(Millions)</i>		Beginning Unfunded Act. Oblig.	Amortization Payment			Interest Charge at 8%	Ending Unfunded Act. Oblig.
Year	FYE		Total ⁽²⁾ Contrib.	Normal Cost	Available Amtzn.		
1	2007	\$ 19,635	\$ 5,054	\$ 4,375	\$ 679	\$ 1,544	\$ 20,500
2	2008	20,500	5,269	4,561	708	1,612	21,404
3	2009	21,404	5,494	4,754	740	1,683	22,347
4	2010	22,347	5,728	4,957	771	1,757	23,333
5	2011	23,333	6,279	5,167	1,112	1,824	24,045
6	2012	24,045	6,866	5,387	1,479	1,865	24,431
7	2013	24,431	7,158	5,616	1,542	1,894	24,783
8	2014	24,783	7,462	5,854	1,608	1,921	25,096
9	2015	25,096	7,779	6,103	1,676	1,942	25,362
10	2016	25,362	8,109	6,363	1,746	1,960	25,576
11	2017	25,576	8,454	6,633	1,821	1,974	25,729
12	2018	25,729	8,813	6,915	1,898	1,983	25,814
13	2019	25,814	9,188	7,209	1,979	1,988	25,823
14	2020	25,823	9,578	7,515	2,063	1,984	25,744
15	2021	25,744	9,986	7,835	2,151	1,976	25,569
16	2022	25,569	10,410	8,168	2,242	1,957	25,284
17	2023	25,284	10,852	8,515	2,337	1,930	24,877
18	2024	24,877	11,314	8,877	2,437	1,895	24,335
19	2025	24,335	11,794	9,254	2,540	1,846	23,641
20	2026	23,641	12,296	9,647	2,649	1,788	22,780
21	2027	22,780	12,818	10,057	2,761	1,714	21,733
22	2028	21,733	13,363	10,484	2,879	1,626	20,480
23	2029	20,480	13,931	10,930	3,001	1,521	19,000
24	2030	19,000	14,523	11,395	3,128	1,397	17,269
25	2031	17,269	15,140	11,879	3,261	1,253	15,261
26	2032	15,261	15,784	12,384	3,400	1,087	12,948
27	2033	12,948	16,454	12,910	3,544	897	10,301
28	2034	10,301	17,154	13,459	3,695	679	7,285
29	2035	7,285	17,883	14,031	3,852	431	3,864
30	2036	3,864	18,643	14,627	4,016	152	0

Note:

⁽¹⁾ Based on the actuarial value of assets.

⁽²⁾ An additional contribution of 3.332% of Earned Salaries is included for each of the thirty years. This schedule is for illustrative purposes only since any legislated increase in contributions would likely be effective after the valuation date.



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Appendix A Provisions of Governing Law

All of the actuarial calculations contained in this report are based upon our understanding of the CalSTRS DB Program as contained in Part 13 of the California Education Code. The provisions used in this valuation are summarized below for reference purposes.

Normal Retirement

Eligibility Requirement:	Age 60 with five years of credited service.
Allowance:	Two percent of final compensation for each year of credited service.
Final Compensation:	Average salary earnable for the highest three consecutive years of credited service for one position. For members with 25 years of service, the calculation is based on the highest average compensation earnable in a consecutive 12-month period.
Credited Service:	For each year of membership, credited service is granted based on the ratio of salary earned to full-time salary earnable for one position.
Sick Leave Service Credit:	Credited service is granted for unused sick leave at the time of retirement. Sick Leave Service Credit up to 0.2 years of Credited Service may be used for eligibility for One-Year Final Compensation or to attain the Career Factor or the Longevity Bonus.
Career Factor:	If a member has thirty years of credited service, the age factor is increased by 0.2%. However, the maximum age factor is 2.4%.
Longevity Bonus:	For members attaining 30 years of service by January 1, 2011, a longevity bonus of \$200 per month is added to the unmodified allowance. The bonus is increased to \$300 per month with 31 years of service, and \$400 per month with 32 or more years of service.
IRC Section 415:	Benefits are subject to limits imposed under Internal Revenue Code (IRC) Section 415. However, no limits are imposed in the valuation of the DB Program in order to address the potential pay-as-you-go funding needs of the Teachers' Replacement Benefits Program Fund.



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IRC Section 401(a)(17): Compensation is limited under IRC Section 401(a)(17) and assumed to increase at the rate of inflation.

Early Retirement

Eligibility Requirement: Age 55 with five years of credited service, or age 50 with 30 years of credited service.

Benefit Reduction: A 1/2% reduction in the normal retirement allowance for each full month or partial month the member is younger than age 60, plus a reduction of 1/4% for each full month or partial month the member is younger than age 55.

Late Retirement

Allowance: Members continue to earn additional service credit after age 60. The 2% age factor increases by 0.033% for each quarter year of age that the member is over age 60, up to a maximum of 2.4%.

Deferred Retirement

Allowance: Any time after satisfying the minimum service requirement, a member may cease active service, leave the accumulated contributions on deposit, and later retire upon attaining the minimum age requirement.

Post-Retirement Benefit Adjustment

Benefit Improvement: Two percent simple increase on September 1 following the first anniversary of the effective date of the allowance, applied to all continuing allowances.

Disability Allowance - Coverage A

Eligibility Requirement: Member has five years of credited California service and has not attained age 60.

Allowance: Fifty percent of final compensation

or

5% of final compensation for each year of service credit if over age 45 with less than 10 years of service credit.

Children's Benefit: 10% for each eligible dependent child, up to a maximum of 40% of final compensation. The increment for each eligible child continues until the child marries or attains age 22.



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Offsets: Allowance, including children's increment, is reduced by disability benefits payable under Social Security, Workers' Compensation and district-paid income protection plan.

Disability Allowance - Coverage B

Eligibility Requirement: Member has five years of credited California service.

Allowance: Fifty percent of final compensation, regardless of age and service credit.

Children's Benefit: 10% for each eligible child up to four children, for a maximum of 40% of final compensation. The increment for each child continues until the child attains age 21, regardless of student, marital, or employment status.

Offsets: The member's allowance is reduced by disability benefits payable under Workers' Compensation.

Death Before Retirement - Coverage A

Eligibility Requirement: One or more years of service credit for active members or members receiving a disability allowance.

Lump Sum Payment: \$6,163 lump sum to the designated beneficiary. If there is no surviving spouse, domestic partner or eligible children, the contributions and interest are paid to the designated beneficiary.

Allowance: The surviving spouse or domestic partner with eligible children will receive a family benefit of 40% of final compensation for as long as there is at least one eligible child. An additional 10% of final compensation is payable for each eligible child up to a maximum benefit of 90%.

If there is no surviving spouse or domestic partner, an allowance of 10% of final compensation is payable to eligible children up to a maximum benefit of 50%.

When there are no eligible children, the spouse or domestic partner may elect to receive one half of a 50% joint and survivor allowance projected to age 60, or take a lump sum payment of the remaining contributions and interest.



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Death Before Retirement - Coverage B

Eligibility:	One or more years of service credit for active members.
Lump Sum Payment:	\$24,652 lump sum to the designated beneficiary. If there is no surviving spouse or domestic partner, the contributions and interest are paid to the designated beneficiary.
Allowance:	A lump sum payment of the contributions and interest. or One half of a 50% joint and survivor allowance, beginning on the member's 60th birthday, or immediately with a reduction based on the member and spouse's (or domestic partner's) age at the time the benefit begins. If the surviving spouse or domestic partner elects a monthly allowance, each eligible child would receive 10% of the member's final compensation, with a maximum benefit of 50%.

Death After Retirement

Lump Sum Payment:	\$6,163 lump sum to the designated beneficiary.
Annuity Form:	If the retirant had elected one of the joint and survivor options, the retirement allowance would be modified in accordance with the option selected. If no option had been elected, payment of the unpaid contributions and interest, if any, remaining in the retirant's account.

Termination from the Program

Refund:	Refund of contributions with interest as credited to the member's account to date of withdrawal. A refund terminates membership and all rights to future benefits from the System.
Re-entry After Refund:	Former members who re-enter the System, may redeposit all amounts previously refunded plus regular interest. The member must earn one year of credited service after re-entry before becoming eligible for System benefits.



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Appendix B 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 DB Program and on current expectations as to future economic conditions.

The assumptions are intended to estimate the future experience of the members of the DB Program and of the DB 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 DB Program's benefits.

Please refer to the 2003 Actuarial Experience Analysis for further information on the revisions made to the actuarial assumptions in 2003. There were no changes in assumptions or methods in this actuarial valuation.

Actuarial Cost Method

The accruing costs of all benefits are measured by the Entry Age Actuarial Cost Method. The projected revenue in excess of the Normal Cost is tested for sufficiency to amortize the Unfunded Actuarial Obligation created by this method. Amortization is calculated on a level percentage of salary including general wage inflation but no increase or decrease in the number of active members.

Method: The actuarial present value of projected benefits for each individual member included in the valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Normal Cost. The Normal Cost is based on the benefit structure available to new entrants on the valuation date. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future Normal Costs is called the Actuarial Obligation. The excess of the Actuarial Obligation over the Actuarial Value of Assets is called the Unfunded Actuarial Obligation. If the Actuarial Value of Assets exceeds the Actuarial Obligation, the difference is called the Actuarial Surplus.

Entry Age: The ages at entry of future active members are assumed to average the same as the entry ages of the present active members they replace. If the number of active members should increase (or decrease), it is further assumed that the average entry age of the larger (or smaller) group will be the same, from an actuarial standpoint, as that of the present active group. Under these assumptions, the Normal Cost Rate will



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not vary with the termination of the present active membership, or with an expansion or contraction of the active membership.

Asset Valuation Method

The assets are valued using a method that delays recognition of investment gains or losses. The expected actuarial value is the prior year's actuarial value increased with net cash flow of funds, and all increased with interest during the past year at the expected investment return assumption. One-third of the difference between the expected actuarial value of assets and the Fair Market Value of assets is added to the expected actuarial value of assets to arrive at the Actuarial Value of Assets.

The asset smoothing method was adopted for the 1999 actuarial valuation and is effective for the investment experience beginning in July of 1993.

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 DB Program and of the System 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.

The demographic assumptions are listed in **Table B.1** and illustrated at selected ages and duration combinations in **Tables B.2 – B.7**.



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Table B.1 List of Major Valuation Assumptions

I. Economic Assumptions

A.	Investment Return (net of investment and administrative expenses)	8.00%
B.	Interest on Member Accounts	6.00%
C.	Wage Growth	4.25%
D.	Inflation	3.25%

II. Demographic Assumptions

A.	Mortality			
	(1) Active	- Male	1999 CalSTRS Retired – M (-2 years)	Table B.2
		- Female	1999 CalSTRS Retired – F (-2 years)	Table B.2
	(2) Retired *	- Male	1999 CalSTRS Retired – M	Table B.2
		- Female	1999 CalSTRS Retired – F	Table B.2
	(3) Beneficiary *	- Male	1999 CalSTRS Beneficiary – M	Table B.2
		- Female	1999 CalSTRS Beneficiary – F	Table B.2
	(4) Disabled *	- Male	1994 GAM-M (minimum 2.5% with select rates in first three years)	Table B.2
		- Female	1994 GAM-F (minimum 2.2% with select rates in first three years)	Table B.2

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

B.	Service Retirement	Experience Tables	Table B.3
C.	Disability Retirement	Experience Tables	Table B.4
D.	Withdrawal	Experience Tables	Table B.5
	Probability of Refund	Experience Tables	Table B.6
E.	Merit Salary Increases	Experience Tables	Table B.7
F.	Supplemental Assumptions		Table B.8



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Table B.2 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>Retired Members *</u>		<u>Beneficiaries *</u>		<u>Disabled (After Year 3) *</u>	
<u>Age</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	2.500	2.200
75	2.848	1.834	3.405	1.834	3.721	2.269
80	5.021	3.778	5.586	3.778	6.203	3.940
85	9.419	6.503	8.961	6.503	9.724	6.774
90	14.754	11.627	14.754	11.627	15.293	11.627
95	23.361	18.621	23.361	18.621	23.361	18.621
	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 B.3 Service Retirement

<u>Age</u>	<u>Only for the 1990 Benefit Structure</u>		<u>For the DB Program</u>			
	<u>Male</u>	<u>Female</u>	<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%	0.0%	0.0%	1.5%	1.5%
51	0.0	0.0	0.0	0.0	1.5	1.5
52	0.0	0.0	0.0	0.0	1.5	1.5
53	0.0	0.0	0.0	0.0	2.0	1.5
54	1.5	1.5	0.0	0.0	2.0	2.0
55	5.8	7.0	3.0	5.0	6.0	8.0
56	3.9	4.5	2.0	3.5	6.0	8.0
57	4.9	4.5	2.0	3.5	8.0	10.0
58	6.8	7.0	3.0	4.5	12.0	15.0
59	17.5	14.0	5.0	6.0	16.0	18.0
60	25.0	22.0	7.0	10.0	25.0	30.0
61	16.5	15.0	7.0	10.0	40.0	35.0
62	16.5	15.0	9.0	12.0	35.0	32.0
63	15.0	15.0	13.0	18.0	27.0	30.0
64	17.5	18.0	12.0	15.0	27.0	27.0
65	20.0	18.0	14.0	16.0	27.0	27.0
66	16.0	18.0	10.0	15.0	27.0	27.0
67	16.0	18.0	10.0	15.0	27.0	27.0
68	16.0	16.0	10.0	15.0	27.0	27.0
69	16.0	16.0	10.0	15.0	27.0	27.0
70	100.0	100.0	100.0	100.0	100.0	100.0



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Table B.4 Disability Retirement

Coverage A

<u>Age</u>	<u>Male</u>	<u>Female</u>
25	0.021%	0.021%
30	0.030	0.030
35	0.051	0.060
40	0.081	0.090
45	0.111	0.110
50	0.159	0.220
55	0.210	0.280

Coverage B

<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	0.195	0.477	0.243	0.530
65	0.120	0.853	0.168	0.916



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Table B.5 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>
0	15.3%	15.3%	15.3%	15.3%	15.3%	15.3%
1	12.5	12.5	12.5	12.5	12.5	13.5
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>
0	15.3%	15.3%	15.3%	15.3%	15.3%	15.3%
1	10.0	10.0	10.0	10.0	10.0	10.0
2	7.2	7.2	7.2	7.2	7.2	7.2
3	6.3	6.3	5.8	5.3	4.9	4.9
4	5.8	5.8	5.4	4.9	3.9	3.0
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 B.6 Probability of Refund

Entry Ages - Male					
<u>Year</u>	<u>Under 25</u>	<u>25 - 29</u>	<u>30 - 34</u>	<u>35 - 39</u>	<u>40 and Up</u>
Under 5	100%	100%	100%	100%	100%
10	50	50	42	45	45
15	42	42	36	30	
20	34	36	27		
25	24	27			
30	0				
Entry Ages - Female					
<u>Year</u>	<u>Under 25</u>	<u>25 - 29</u>	<u>30 - 34</u>	<u>35 - 39</u>	<u>40 and Up</u>
Under 5	100%	100%	100%	100%	100%
10	40	35	36	36	35
15	30	30	30	30	
20	25	20	20		
25	15	10			
30	0				



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Table B.7 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	5.6%	5.3%	5.1%	4.8%	4.8%	3.5%
2	5.6	5.1	4.9	4.7	4.7	3.3
3	5.6	5.0	4.8	4.6	4.6	3.0
4	5.5	4.8	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	1.1	1.1	0.8	0.8	0.6
25	1.1	0.9	0.8	0.5	0.5	
30	0.9	0.7	0.6	0.5		
35	0.8	0.7	0.6			
40	0.8	0.6				
45	0.8					



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Table B.8 Supplemental Assumptions

Unused Sick Leave	Add 0.67 years of Credited Service at retirement; pro-rated for part-time members.				
Optional Forms:	Option 1:	Valued as single life annuity			
	Option 8:	Valued as 65% joint and survivor annuity			
Probability of Marriage	Male:	90%			
	Female:	70%			
	Male spouses are assumed to be three years older than female spouses.				
Number of Children	Male:	0.53			
	Female:	0.23			
	Only married members are assumed to have children.				
Assumed Offsets	The following offsets, expressed as a percentage of Final Compensation, are assumed for life.				
		Coverage A		Coverage B	
		<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
	Death	9.1%	5.8%	0.0%	0.0%
	Disability	5.3%	2.3%	2.7%	2.9%



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Appendix C 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.

In preparing this report, we relied upon the membership data furnished by CalSTRS. Although we did not audit this data, we compared the data for this and the prior valuation and tested for reasonableness. Based on these tests, we believe the data to be sufficiently accurate for the purposes of this valuation. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

Tables C.1 – C.6 summarize the census data used in this valuation.



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Table C.1 Summary of Statistical Information

	June 30, 2006	June 30, 2005
Number of Members		
Active Members ⁽¹⁾	453,365	450,282
Inactive Members ⁽¹⁾	133,601	124,394
Retirees and Beneficiaries		
Service Retirants	181,833	176,008
Disabilitants	7,683	7,571
Survivors	<u>18,330</u>	<u>17,662</u>
Total	207,846	201,241
Total Membership in Valuation	794,812	775,917
Active Member Statistics		
Earned Salaries	\$24,240 million	\$23,257 million
Average Salary	\$ 53,466	\$ 51,649
Average Age	44.6 years	44.5 years
Average Service	10.8 years	10.7 years

Note:

- ⁽¹⁾ Some active members were reported with no Earnable Salaries, in which case their liabilities, if any, were included with inactive members



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**Table C.2 Age and Service Distribution
Active Male Members**

<u>Age</u>	<u>Service</u>					
	<u>Under 1</u>	<u>1 - 5</u>	<u>6 - 10</u>	<u>11 - 15</u>	<u>16 - 20</u>	<u>21 - 25</u>
Under 25	410	577	1			
25 to 30	1,303	7,829	395	1		
30 to 35	879	8,392	6,735	152		
35 to 40	704	6,015	8,349	3,638	112	
40 to 45	565	4,105	4,793	3,912	2,389	92
45 to 50	576	3,673	3,531	2,721	3,465	1,853
50 to 55	548	3,464	3,169	2,395	3,025	2,698
55 to 60	468	3,168	2,927	2,245	2,482	2,080
60 to 65	259	1,930	1,454	1,083	1,238	862
65 to 70	111	714	471	281	291	182
70 & Up	63	441	197	91	85	58
Unknown		5				
Total	5,886	40,313	32,022	16,519	13,087	7,825

<u>Age</u>	<u>Service</u>					<u>Total</u>
	<u>26 - 30</u>	<u>31 - 35</u>	<u>36 - 40</u>	<u>41 - 45</u>	<u>Over 45</u>	
Under 25						988
25 to 30						9,528
30 to 35						16,158
35 to 40						18,818
40 to 45						15,856
45 to 50	95					15,914
50 to 55	2,736	217				18,252
55 to 60	3,650	4,357	325	1		21,703
60 to 65	1,116	1,734	1,104	24		10,804
65 to 70	161	180	166	91	3	2,651
70 & Up	48	54	54	40	30	1,161
Unknown						5
Total	7,806	6,542	1,649	156	33	131,838



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**Table C.3 Age and Service Distribution
Active Female Members**

<u>Age</u>	<u>Service</u>					
	<u>Under 1</u>	<u>1 - 5</u>	<u>6 - 10</u>	<u>11 - 15</u>	<u>16 - 20</u>	<u>21 - 25</u>
Under 25	1,832	3,042		1		
25 to 30	3,555	29,016	2,081			
30 to 35	1,820	20,645	21,285	569		1
35 to 40	1,446	12,103	18,494	8,897	409	1
40 to 45	1,344	9,430	10,413	8,052	6,282	328
45 to 50	1,191	9,325	9,655	6,759	7,292	4,503
50 to 55	1,017	8,085	9,781	7,423	7,870	5,932
55 to 60	642	5,784	7,259	6,476	8,312	5,598
60 to 65	337	2,452	3,007	2,622	3,705	2,927
65 to 70	111	815	674	535	686	582
70 & Up	43	408	250	153	165	134
Unknown	2	17	1			
Total	13,340	101,122	82,900	41,487	34,721	20,006

<u>Age</u>	<u>Service</u>					<u>Total</u>
	<u>26 - 30</u>	<u>31 - 35</u>	<u>36 - 40</u>	<u>41 - 45</u>	<u>Over 45</u>	
Under 25						4,875
25 to 30						34,652
30 to 35						44,320
35 to 40						41,350
40 to 45						35,849
45 to 50	295	1				39,021
50 to 55	5,848	444				46,400
55 to 60	6,368	6,298	754	1		47,492
60 to 65	2,605	2,042	1,743	70	1	21,511
65 to 70	516	254	168	124	8	4,473
70 & Up	150	118	78	33	32	1,564
Unknown						20
Total	15,782	9,157	2,743	228	41	321,527



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**Table C.4 Age and Service Distribution
All Active Members**

<u>Age</u>	<u>Service</u>					
	<u>Under 1</u>	<u>1 - 5</u>	<u>6 - 10</u>	<u>11 - 15</u>	<u>16 - 20</u>	<u>21 - 25</u>
Under 25	2,242	3,619	1	1		
25 to 30	4,858	36,845	2,476	1		
30 to 35	2,699	29,037	28,020	721		1
35 to 40	2,150	18,118	26,843	12,535	521	1
40 to 45	1,909	13,535	15,206	11,964	8,671	420
45 to 50	1,767	12,998	13,186	9,480	10,757	6,356
50 to 55	1,565	11,549	12,950	9,818	10,895	8,630
55 to 60	1,110	8,952	10,186	8,721	10,794	7,678
60 to 65	596	4,382	4,461	3,705	4,943	3,789
65 to 70	222	1,529	1,145	816	977	764
70 & Up	106	849	447	244	250	192
Unknown	2	22	1			
Total	19,226	141,435	114,922	58,006	47,808	27,831

<u>Age</u>	<u>Service</u>					<u>Total</u>
	<u>26 - 30</u>	<u>31 - 35</u>	<u>36 - 40</u>	<u>41 - 45</u>	<u>Over 45</u>	
Under 25						5,863
25 to 30						44,180
30 to 35						60,478
35 to 40						60,168
40 to 45						51,705
45 to 50	390	1				54,935
50 to 55	8,584	661				64,652
55 to 60	10,018	10,655	1,079	2		69,195
60 to 65	3,721	3,776	2,847	94	1	32,315
65 to 70	677	434	334	215	11	7,124
70 & Up	198	172	132	73	62	2,725
Unknown						25
Total	23,588	15,699	4,392	384	74	453,365



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Table C.5 Inactive Members

<u>Fiscal Year Ending June 30</u>	<u>Number Vested</u>	<u>Total Number</u>	<u>Male % of Total</u>	<u>Female % of Total</u>
1997	13,925	59,385	27.2%	72.8%
1998	14,038	61,848	27.4	72.6
1999	15,421	69,112	27.7	72.3
2000	16,211	75,580	27.8	72.2
2001	18,469	87,146	28.1	71.9
2002	19,703	96,159	28.0	72.0
2003	20,627	104,617	28.3	71.7
2004	22,511	116,128	28.7	71.3
2005	24,113	124,394	28.8	71.2
2006	26,733	133,601	28.8	71.2

<u>Fiscal Year Ending June 30</u>	<u>Average Account on Deposit</u>	<u>Average Age</u>	<u>Average Service Credit</u>	<u>Average Years Inactive</u>
1997	\$ 11,431	47.3	3.5	8.2
1998	11,731	47.5	3.4	8.3
1999	12,105	47.1	3.3	8.0
2000	12,325	46.8	3.2	7.8
2001	12,889	50.7	3.2	8.2
2002	12,997	46.0	3.1	7.3
2003	12,691	46.0	3.0	7.4
2004	12,418	45.8	2.9	7.3
2005	12,177	45.9	2.9	7.4
2006	12,282	45.9	2.9	7.5



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Table C.6 Service Retirants

Fiscal Year Ending June 30	<u>Total</u>	<u>Male % of Total</u>	<u>Female % of Total</u>
1997	135,809	38.3%	61.7%
1998	139,193	38.3	61.7
1999	142,309	38.3	61.7
2000	145,415	38.1	61.9
2001	149,727	38.0	62.0
2002	154,884	37.8	62.2
2003	159,172	37.6	62.4
2004	169,022	37.2	62.8
2005	176,008	36.9	63.1
2006	181,833	36.5	63.5

<u>Fiscal Year Ending June 30</u>	<u>Average Age at Retirement</u>	<u>Average Years of Service Credit</u>	<u>Final Average Compensation</u>	<u>Average Current Allowance Payable</u>
1997	60.8	24.8	\$ 2,837	\$ 1,566
1998	60.8	24.7	2,945	1,638
1999	60.7	24.8	3,057	1,729
2000	60.7	25.0	3,175	1,824
2001	60.7	25.4	3,356	2,033
2002	60.7	25.7	3,539	2,183
2003	60.7	25.9	3,735	2,339
2004	60.7	26.0	3,931	2,488
2005	60.8	26.1	4,103	2,617
2006	60.8	26.2	4,264	2,741



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Appendix D Glossary

The following definitions are largely excerpts from a list adopted in 1981 by the major actuarial organizations in the United States. In some cases, the definitions have been modified for specific applicability to the CalSTRS DB Program. Defined terms are capitalized throughout this Appendix.

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, and procedures used to determine 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.
Actuarial Valuation:	The determination, as of a Valuation Date, of the Normal Cost, Actuarial Obligation, Actuarial Value



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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.
Entry Age Cost Method:	An actuarial cost method under which the Actuarial Present Value of Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Obligation.
Normal Cost:	The portion of the Actuarial Present Value of Projected Benefits which is allocated to a valuation year by the Actuarial Cost Method.
Unfunded Actuarial Obligation:	The excess, if any, of the Actuarial Obligation over the Actuarial Value of Assets.
Valuation Date:	June 30, 2006.