



A MILLIMAN GLOBAL FIRM

**Milliman**

Consultants and Actuaries

1301 Fifth Avenue, Suite 3800  
Seattle, WA 98101-2605  
Tel +1 206 624.7940  
Fax +1 206 623.3485  
www.milliman.com

March 20, 2007

Teachers' Retirement Board  
California State Teachers' Retirement System  
P.O. Box 15275  
Sacramento, CA 95851

**Re: Medicare Premium Payment Program  
Actuarial Valuation as of June 30, 2006**

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Medicare Premium Payment Program (MPPP) of the California State Teachers' Retirement System as of June 30, 2006. Details about the actuarial valuation are contained in the following report.

Respectfully submitted,

Nick J. Collier, ASA, EA, MAAA  
Principal and Consulting Actuary

Enclosures

cc: Mr. Ed Derman  
Mr. Ed Jhu  
Mr. Mark Johnson  
Mr. Rick Reed  
Ms. Karen Steffen



# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2006 Actuarial Valuation

---

### Table of Contents

	<b>Page</b>
<b>Letter of Transmittal</b>	
<b>Section 1 Summary of the Findings</b>	<b>1</b>
Exhibit Summary of Key Valuation Results	
<b>Section 2 Actuarial Certification</b>	<b>5</b>
<b>Section 3 Actuarial Obligation</b>	<b>6</b>
<b>Section 4 Funding</b>	<b>9</b>
Table 1 Projection of MPP Program Costs	
<b>Section 5 Accounting Information</b>	<b>11</b>
Table 2 Statement of Program Assets	
Table 3 Statement of Changes in Program Assets	
Table 4 Schedule of Funding Progress	
Table 5 Schedule of Employer Contributions	
Table 6 Determination of Annual Required Contribution	
<b>Appendices</b>	
Appendix A Provisions of Governing Law	17
Appendix B Actuarial Methods and Assumptions	18
Appendix C Valuation Data	27
Appendix D Glossary	30



# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2006 Actuarial Valuation

### Section 1 Summary of the Findings

The primary purpose of the actuarial valuation is to analyze the sufficiency of the current allocated assets to meet the current and future obligations of the Medicare Premium Payment (MPP) Program (or MPPP). 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 MPP Program.

The key findings of this Actuarial Valuation are:

- ◆ **Funding Sufficiency** We find that, as of June 30, 2006, the current MPP Program assets are sufficient to finance the future MPPP obligations of \$528 million for both Part A premiums and Part B penalties. Currently, the Teachers' Health Benefit Fund (THBF) has less than \$3 million in assets; however, additional DB Program assets have been allocated to fund the MPPP obligations for a total value of \$1,687 million. Our valuation assumes that the allocated assets are available to fund the MPP Program benefits.

If these allocated assets were not included, the THBF by itself would not be sufficient to fund the expected MPPP obligation. These results are consistent with our prior study of the MPP Program.

The Funded Status of a benefit plan is equal to the difference between its Actuarial Value of Assets and its Actuarial Obligation.

<i>(\$Millions)</i>	<b>2006 Valuation</b>	<b>2005 Study</b>
<b>Actuarial Obligation</b>		
<b>Part A Premiums</b>	\$ 519.6	\$ 508.0
<b>Part B Penalties</b>	<u>8.0</u>	<u>8.5</u>
<b>MPPP Actuarial Obligation</b>	527.6	516.5
<b>Actuarial Value of Assets*</b>	<u>1,687.3</u>	<u>1,518.0</u>
<b>Unfunded Actuarial Obligation / (Surplus Funding)</b>	\$ (1,159.7)	\$ (1,001.5)

*\* Includes MPPP-allocated assets currently included with the DB Program assets.*



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

◆ **Changes since the 2005 Study**

There have been several changes since the 2005 study. None of these changes had a significant impact on the overall funding of the MPP Program. The changes are as follows:

- Eligibility for Part A premium payments was extended an additional year to include members retired on or before June 30, 2007. This increased the actuarial obligation by about \$18 million.
- The actual 2007 Medicare Part A monthly premium amount is \$410, slightly less than last year's estimated amount of \$413. This resulted in a small reduction in the actuarial obligation.
- Effective in 2007, the Medicare Part B premium increased for higher income members. We have estimated the impact based on the available information. This change resulted in a very small increase in the actuarial obligation.
- The assumption for future increases in the Part B premium due to inflation was changed from an 8% flat increase to a 9% increase grading down to 6% over four years. This resulted in a small reduction in the actuarial obligation.

All other actuarial assumptions and methods used in this valuation are the same as used in the prior study.

◆ **Impact of Alternative Assumptions**

The ultimate cost of the MPP Program is highly dependent on actual experience in the future. To provide information regarding the sensitivity of the results to the assumptions, we have varied the interest rate assumption and the assumed participation levels in the MPP Program. The valuation results are based on the "Best Estimate" set of assumptions. The following results show a comparison with a more conservative (i.e, Higher Cost) set of assumptions (lower interest rate and higher member participation):

<i>(\$Millions)</i>	<b>2006 Valuation</b>	<b>2005 Study</b>
<b>Actuarial Obligation</b>		
<b>Best Estimate</b>	\$ 527.6	\$ 516.5
<b>Higher Cost Assumptions</b>	\$ 704.5	\$ 696.0



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial 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.

A summary of the key results of this actuarial valuation is shown on the next page.



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

### Summary of Key Valuation Results

	2006 Valuation	2005 Study	Relative Change
1. Current MPP Program Membership			
A. Retirees with Part A Premium	6,034	5,804	4.0 %
B. Retirees with Part B Penalty	1,347	1,438	(6.3)%
2. Monthly Medicare Premium Amount (for following calendar year)			
A. Part A	\$ 410.00	\$ 393.00	4.3%
B. Part B	93.50	88.50	5.6%
3. Average CalSTRS Payment for Participating Members (for following calendar year)			
A. Retirees with Part A Premium	\$ 425.02	\$ 405.33	4.9%
B. Retirees with Part B Penalty	60.14	58.50	2.8%
4. Actuarial Accrued Liability (\$millions)			
A. Retirees with Part A Premium	\$ 519.6	\$ 508.0	2.3%
B. Retirees with Part B Penalty	8.0	8.5	(5.9)%
C. Total	\$ 527.6	\$ 516.5	2.1%
5. Actuarial Accrued Liability (\$millions) - Alternate Measurement			
Total under Higher Cost Assumptions	\$ 704.5	\$ 696.0	1.2%
6. MPP Program Assets			
A. Market Value of THBF (\$millions)	\$ 2.7	\$ 2.7	-
B. Total Allocated MPPP Assets (\$millions)	\$ 1,687.3	\$ 1,518.0	11.2%
7. Unfunded Actuarial Accrued Liability (4C - 6B) or (Surplus Funding) - \$millions	\$ (1,159.7)	\$ (1,001.5)	15.8%
8. Funding Sufficiency			
Are current allocated assets greater than the value of all expected payments?	Yes	Yes	



# California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

## Section 2 Actuarial Certification

The major findings of the 2006 Actuarial Valuation on the Medicare Premium Payment (MPP) Program are contained in this report. This report reflects the benefit provisions as of the valuation date and Medicare premium amounts effective for the 2007 calendar year. 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 Medicare Premium Payment 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 study 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 both the DB and MPP 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 MPP Program. Nevertheless, the emerging costs of the MPP 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 MPP 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. 43 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, an Associate 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.

A handwritten signature in black ink that reads "Nick Collier".

---

Nick J. Collier, ASA, MAAA, EA  
Principal and Consulting Actuary



# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2006 Actuarial Valuation

---

### Section 3 Actuarial Obligation



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

Unlike the DB Program where new members join the plan, members eligible for the MPP Program are a closed group, as only those hired prior to April 1, 1986 who retire on or before June 30, 2007 are eligible. Another difference is that in the DB Program active members earn additional benefits based on service; whereas, active members who may join the MPP Program have a fixed benefit equal to the Part A premium that is not based on service.

Accordingly, the actuarial obligation for the MPP Program is equal to the value of all benefits expected to be paid in the future. This differs from the DB Program where a certain portion of the obligation is allocated to past service and the remainder is allocated to future service in the form of Normal Cost.

#### Actuarial Obligation

We first project all future MPP Program benefit payments for current members and retirees, including those who are not currently enrolled in the MPP Program but may join later. The level of premiums currently being paid is known, but assumptions are needed to estimate how long they will be paid and the probability that current active, inactive and retired members who are not currently receiving payments, will enroll in the MPP Program. 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**. As discussed above, the actuarial obligation is equal to this value.



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

Details are shown below.

<i>(\$Millions)</i>	<b>2006 Valuation</b>	<b>2005 Study</b>
Current Retirees	\$ 478.0	\$ 469.0
Inactive Deferred	3.1	3.0
Active Members	<u>38.5</u>	<u>36.0</u>
Present Value of Part A Premiums	\$ 519.6	\$ 508.0
Present Value of Part B Penalties	<u>8.0</u>	<u>8.5</u>
Total Present Value of MPPP Benefits	\$ 527.6	\$ 516.5

### Actuarial Gains and Losses

Comparing the 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 Actuarial Obligation on the valuation date and the Expected Actuarial Obligation projected from the prior valuation date using the actuarial assumptions in effect since the previous study.

The actuarial gains and losses since the last report are summarized in the following table.

<i>(\$Millions)</i>	<b>Actuarial (Gains) or Losses</b>
<b>Expected Actuarial Obligation</b>	
Actuarial Obligation as of June 30, 2005	\$ 516.5
Increase due to Eligibility Extended to June 30, 2007	18.0
Expected Increase due to Interest	41.6
Expected Decrease due to Payments	<u>(29.3)</u>
Expected Actuarial Obligation	\$ 546.8
<b>Actuarial (Gains) or Losses by Source</b>	
Change in Medical Trend Assumption	\$ (0.5)
Change in Premium/Penalty Different than Expected	(3.5)
Change in Part B Premium for Higher Earners	0.2
All other sources	<u>(15.4)</u>
(Gain) or Loss on the Actuarial Obligation	\$ (19.2)



## **California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation**

---

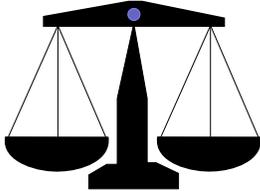
Based on the 2005 study, the Actuarial Obligation was expected to increase to \$546.8 million. The actual Actuarial Obligation of \$527.6 million represents a net actuarial gain of \$19.2 million.



# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2006 Actuarial Valuation

### Section 4 Funding



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. The MPP Program is essentially funded on a pay-as-you-go basis with a portion of contributions to the DB Program diverted to the THBF to make MPPP payments. Note that \$1,687 million of the DB Program assets has been allocated to pay the MPP Program benefits, and is included in the determination of funding sufficiency.

The Funded Status is shown below.

<i>(\$Millions)</i>	<b>2006 Valuation</b>	<b>2005 Study</b>
<b>Actuarial Obligation</b>		
<b>Part A Premiums</b>	\$ 519.6	\$ 508.0
<b>Part B Penalties</b>	<u>8.0</u>	<u>8.5</u>
<b>MPPP Actuarial Obligation</b>	527.6	516.5
<b>Actuarial Value of Assets*</b>	<u>1,687.3</u>	<u>1,518.0</u>
<b>Unfunded Actuarial Obligation / (Surplus Funding)</b>	\$ (1,159.7)	\$ (1,001.5)

*\* Includes MPPP-allocated assets currently included with the DB Program assets.*

### Annual Cost

As noted above, the MPP Program is essentially funded on a pay-as-you-go basis. Therefore, the annual cost for a funding perspective is equal to the MPPP payments. For the 2005-2006 fiscal year, the actual cost was \$29.3 million. For the 2006-2007 fiscal year, the expected cost is \$34.7 million.

A 40-year projection of the MPP Program costs is shown in **Table 1**. Note that the projection is shown under two scenarios. The first is the "Best Estimate" scenario which is based on the valuation assumption for participation in the MPP Program. The second is the "Higher Cost Assumptions" scenario which reflects higher MPP Program participation rates. Details of these participation assumptions can be found in Appendix B.



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

**Table 1      Projected MPP Program Costs**

Plan Year Ending June 30	Payouts (in \$Thousands)					
	Best Estimate Assumptions			Higher Cost Assumptions		
	Part A	Part B	Total	Part A	Part B	Total
2007	\$ 33,798	\$ 919	\$ 34,717	\$ 37,380	\$ 919	\$ 38,299
2008	36,345	920	37,265	40,958	920	41,878
2009	39,004	927	39,931	44,688	927	45,615
2010	41,378	921	42,299	48,018	921	48,939
2011	43,395	902	44,297	50,863	902	51,765
2012	45,449	874	46,323	53,793	874	54,667
2013	47,390	841	48,231	56,631	841	57,472
2014	48,896	804	49,700	58,836	804	59,640
2015	49,975	763	50,738	60,459	763	61,222
2016	50,709	719	51,428	61,657	719	62,376
2017	51,140	671	51,811	62,469	671	63,140
2018	51,264	620	51,884	62,874	620	63,494
2019	51,153	568	51,721	62,959	568	63,527
2020	50,824	514	51,338	62,833	514	63,347
2021	50,299	460	50,759	62,485	460	62,945
2022	49,594	407	50,001	61,901	407	62,308
2023	48,684	356	49,040	61,082	356	61,438
2024	47,575	306	47,881	60,018	306	60,324
2025	46,287	260	46,547	58,717	260	58,977
2026	44,803	217	45,020	57,192	217	57,409
2027	43,108	179	43,287	55,434	179	55,613
2028	41,279	145	41,424	53,429	145	53,574
2029	39,279	115	39,394	51,230	115	51,345
2030	37,156	90	37,246	48,798	90	48,888
2031	34,911	69	34,980	46,208	69	46,277
2032	32,567	52	32,619	43,473	52	43,525
2033	30,176	38	30,214	40,591	38	40,629
2034	27,731	27	27,758	37,625	27	37,652
2035	25,283	19	25,302	34,584	19	34,603
2036	22,873	13	22,886	31,533	13	31,546
2037	20,505	9	20,514	28,492	9	28,501
2038	18,216	5	18,221	25,504	5	25,509
2039	16,026	3	16,029	22,600	3	22,603
2040	13,963	2	13,965	19,823	2	19,825
2041	12,045	1	12,046	17,211	1	17,212
2042	10,269	1	10,270	14,770	1	14,771
2043	8,670	-	8,670	12,531	-	12,531
2044	7,223	-	7,223	10,500	-	10,500
2045	5,959	-	5,959	8,697	-	8,697
2046	4,855	-	4,855	7,102	-	7,102



# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2006 Actuarial Valuation

---

### Section 5

#### Accounting Information



Actuarial computations under Governmental Accounting Standards Board (GASB) Statements No. 43 and 45 are for purposes of fulfilling financial accounting requirements. GASB 43 applies to retirement systems, such as CalSTRS. GASB 45 applies to individual participating employers. The calculations in the enclosed report have been made on a basis consistent with our understanding of GASB Statements No. 43 and 45.

GASB 43 and 45 require that the interest rate used to discount future benefit payments back to the present be based on the expected rate of return on any investments set aside to pay for these benefits. It is our understanding that currently CalSTRS is not pre-funding the MPPP premiums (except for one month's worth of payments held in the THBF). Note that although CalSTRS has allocated approximately \$1.7 billion in DB Program assets for MPPP benefits, since these are not held in a separate trust, it does not meet GASB's definition of pre-funding.

The expected investment return on the DB Program assets is 8.0%, as that fund is invested in a diversified portfolio of both equities and bonds. However, the contributions for the MPPP premiums are coming from the general funds of CalSTRS's participating employers. Therefore, we believe a much lower rate of 4.00% is appropriate for discounting the MPPP obligations. The 4.00% discount rate is based upon the expected return for short term fixed income securities. This will result in much higher obligations than reported for funding purposes.

For GASB purposes, the Annual Required Contribution (ARC) must be calculated based on certain parameters required for disclosure purposes. We have used the Entry Age Normal Cost Method, one of the acceptable actuarial funding methods under these parameters. Under this method the projected benefits are allocated on a level basis as a percentage of salary over the earnings of each individual between entry age and assumed exit age. The amount allocated to each year is called the Normal Cost and the portion of the Actuarial Present Value of all



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

benefits not provided for by future Normal Cost payments is called the Actuarial Accrued Liability. Since nearly all current and future MPPP members have already retired, the amount of the Normal Cost is small. The UAAL is the Actuarial Accrued Liability minus the THBF assets.

For GASB reporting purposes, Table 6 presents the annual Normal Cost and the ARC as of the valuation date, assuming the UAAL is amortized as a level dollar amount over a 30-year period beginning June 30, 2006.

For disclosure purposes, we have assumed this is a closed 30 year period.

The following tables show the required information for reporting under GASB 43.



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

**Table 2 Statement of Program Assets**

---

<i>(\$Thousands)</i>	<b>June, 2006</b>	<b>June, 2005</b>
<b>Invested Assets</b>		
Short-term	\$ 1,604	\$ 1,626
Debt Securities	0	0
Equity	0	0
Alternative	0	0
Real Estate	<u>0</u>	<u>0</u>
Total Investments	\$ 1,604	\$ 1,626
<b>Cash and Cash Equivalents</b>	0	1
<b>Receivables</b>	1,339	1,077
<b>Liabilities</b>	<u>(217)</u>	<u>(51)</u>
<b>Fair Market Value of Net Assets</b>	\$ 2,726	\$ 2,653



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

**Table 3 Statement of Changes in Program Assets**

<i>(\$Thousands)</i>	<b>June, 2006</b>	<b>June, 2005</b>
<b>Contributions</b>		
Members	\$ 0	\$ 0
Employers	29,602	28,483
State of California	<u>0</u>	<u>0</u>
Total Contributions	29,602	28,483
<b>Benefits and Expenses</b>		
Retirement, Death, and Survivors	\$ (29,313)	\$ (27,416)
Refunds of Member Contributions	(0)	(0)
Administrative Expenses	<u>(359)</u>	<u>(429)</u>
Total Benefits and Expenses	(29,672)	(27,845)
<b>Net Cash Flow</b>	<b>\$ (70)</b>	<b>\$ 638</b>
<b>Investment Income</b>		
Realized Income	\$ 143	\$ 87
Net Appreciation	0	0
Investment Expenses	(0)	(0)
Other (Expense) Income	<u>(0)</u>	<u>(158)</u>
Net Investment Return	143	(71)
<b>Net Increase</b>	<b>\$ 73</b>	<b>\$ 567</b>
<b>Fair Market Value of Net Assets</b>		
Beginning of Year	\$ <u>2,653</u>	\$ <u>2,086</u>
End of Year	<b>\$ 2,726</b>	<b>\$ 2,653</b>



**California State Teachers' Retirement System**  
**Medicare Premium Payment Program - 2006 Actuarial Valuation**

**Table 4      Schedule of Funding Progress (in \$millions)**

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ([b - a] / c)
06/30/2005	\$ 2.7	\$ 775.0	\$ 772.3	0.3%	\$ 7,748.1	10.0%
06/30/2006	\$ 2.7	\$ 796.5	\$ 793.8	0.3%	\$ 7,451.9	10.7%



**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2006 Actuarial Valuation**

---

**Table 5      Schedule of Employer Contributions (in \$millions)**

---

<u>Year Ended 6/30</u>	<u>Annual Required Contribution*</u>	<u>Actual Contribution</u>	<u>Percentage Contributed</u>
2005	Not Calculated	\$ 28.5	N/A
2006	\$ 47.3	\$ 29.6	62.6%

\* The UAAL is amortized over a closed 30-year period on a level-dollar basis. 30 years is the maximum amortization period permitted for GASB disclosure purposes.

**Table 6      Determination of Annual Required Contribution (in \$millions)**

---

Annual Required Contribution (ARC)*	June 30, 2006
(1) Normal Cost	\$ 1.4
(2) Amortization Payment of UAAL	<u>45.9</u>
	\$ 47.3

\* The normal cost is determined on the entry age normal cost method to meet the GASB parameters. The UAAL amount of \$793.8 million is assumed to be amortized over a closed 30 year period.



# California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

## Appendix A Provisions of Governing Law

All of the actuarial calculations contained in this report are based upon our understanding of the CALSTRS MPP Program as contained in Part 13.5 of the California Education Code. The provisions used in this valuation are summarized below for reference purposes.

### Eligibility (Part A)

Member Eligibility Requirement: Satisfies either:

- 1) Retired or disabled prior to January 1, 2001;  
Hired prior to April 1, 1986;  
Age 65 or above;  
Enrolled in Medicare Part A and Part B; and,  
Not eligible for Part A without premium payment.

- - - OR - - -

- 2) Meet all of the above requirements, except retired or disabled before July 1, 2007;  
District completed a Medicare Division election prior to retirement; and,  
Active member less than 58 years of age at the time of the election.

Spouse Eligibility: Spouses of members are not eligible to participate in the program.

### Eligibility (Part B)

Member Eligibility Requirement: Only those currently enrolled are eligible

### Benefits Paid

Part A: Part A premium (\$410 per month in 2007).

Part B: Part B premium (\$93.50 per month in 2007).  
(Small group of high earners will have higher premiums, up to \$161.40 in 2007)



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

### 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 MPP Program and on current expectations as to future economic conditions.

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

MPPP assumptions were adopted by the Board at the February 9, 2007 meeting based on Milliman's January 16, 2007 letter. Please refer to the 2003 Actuarial Experience Analysis for further information on the DB Program assumptions.

#### Actuarial Cost Method

The MPPP obligations are funded on a pay-as-you-go basis.

For GASB reporting purposes, MPPP obligations are shown under the entry age normal cost method.

#### Asset Valuation Method

For funding purposes, the assets are valued as the allocated value of DB Program Assets. This figure is derived by taking the prior year value and increasing with interest and decreasing by benefit payments during the year.

For GASB purposes, the assets are equal to the fair value of THBF.

#### 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.



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

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



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

**Table B.1 List of Major Valuation Assumptions**

**I. Economic Assumptions**

A.	Investment Return (net of investment and administrative expenses)	Best Estimate = 8.0% Higher Cost = 7.0% GASB Reporting = 4.0%
B.	Medical Inflation Part A Premiums Part B Premiums	5.0% 9.0% grading down to 6.0% in 2011
C.	Price Inflation	3.25%

**II. Demographic Assumptions**

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

\* *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 Probability of Refund	Experience Tables Experience Tables	Table B.5 Table B.6
E.	MPPP Enrollment Rates	Experience Tables	Table B.7
F.	Adjustment to Part B Premium to Account from Higher Premiums if Above the Compensation Limit	4.0% of current Part B enrollees are assumed to be affected by the compensation limit. All are assumed to pay the maximum premium.	
G.	Adjustment to MPPP Eligibility in Last Year	Eligibility for current active employees is limited to those who retire before July 1, 2007. We have added an extra year to this period to reflect the fact that some members may choose to retire earlier than they otherwise would have, in order to take advantage of the MPPP benefits.	



**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2006 Actuarial Valuation**

**Table B.2      Mortality**

<b><u>Active Members</u></b>						
	<b><u>Age</u></b>	<b><u>Male</u></b>	<b><u>Female</u></b>			
	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			
	<b><u>Retired Members *</u></b>		<b><u>Beneficiaries *</u></b>		<b><u>Disabled (After Year 3) *</u></b>	
<b><u>Age</u></b>	<b><u>Male</u></b>	<b><u>Female</u></b>	<b><u>Male</u></b>	<b><u>Female</u></b>	<b><u>Male</u></b>	<b><u>Female</u></b>
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
	<b>Select rates for disability:</b>					
	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.



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

**Table B.3 Service Retirement**

---

<u>Age</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%	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



**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2006 Actuarial Valuation**

---

**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



**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2006 Actuarial Valuation**

**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 &amp; 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 &amp; 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					



**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2006 Actuarial Valuation**

**Table B.6 Probability of Refund**

<b>Entry Ages - Male</b>					
<b><u>Year</u></b>	<b><u>Under 25</u></b>	<b><u>25 - 29</u></b>	<b><u>30 - 34</u></b>	<b><u>35 - 39</u></b>	<b><u>40 and Up</u></b>
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				

<b>Entry Ages - Female</b>					
<b><u>Year</u></b>	<b><u>Under 25</u></b>	<b><u>25 - 29</u></b>	<b><u>30 - 34</u></b>	<b><u>35 - 39</u></b>	<b><u>40 and Up</u></b>
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				



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

**Table B.7 Part A Enrollment Rates\***

Assumption	<u>Best Estimate</u>		<u>Higher Cost</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
% of Actives and Under 65 Retirees Enrolling (Retired on or After 2001)	3.5%	4.0%	5.0%	6.0%
% of Under 65 Retirees Enrolling (Retired Before 2001)	5.7%	7.3%	8.6%	10.5%
% of Over 65 Retirees Enrolling (for those not Currently Enrolled) at Age:				
65	3.0%	3.0%	3.5%	3.5%
66	2.0	2.0	2.5	2.5
67	1.5	1.5	2.0	2.0
68	1.0	1.0	1.5	1.5
69	0.5	0.5	1.0	1.0
70-74	0.3	0.3	0.8	0.8
75 & Above	0.1	0.1	0.6	0.6
% of Over 65 Retirees Enrolling (for those Already Enrolled)	100.0%	100.0%	100.0%	100.0%

\* Only current enrollees are assumed to receive Part B payments.



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

### 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 study 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.2** summarizes the census data used in this valuation.



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

**Table C.1 Summary of Statistical Information**

---

	June 30, 2006		June 30, 2005
<b>Number of Enrolled Members</b>			
Retirees with Part A Premium	6,034		5,804
Retirees with Part B Penalty	1,347		1,438
<b>Average CalSTRS Payment for Enrolled Members (for current calendar year)</b>			
Retirees with Part A Premium	\$ 425.02		\$ 405.33
Retirees with Part B Penalty	60.14		58.50



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

**Table C.2 Projected MPPP Membership**

Plan Yr Ending 6/30	Projected Participants					
	Part A			Part B		
	Current Status			Current Status		
	Active	Retired	Total	Active	Retired	Total
2007	65	6,737	6,802	-	1,320	1,320
2008	111	6,907	7,018	-	1,259	1,259
2009	163	7,024	7,187	-	1,197	1,197
2010	210	7,068	7,278	-	1,132	1,132
2011	250	7,037	7,287	-	1,066	1,066
2012	313	6,964	7,277	-	999	999
2013	390	6,848	7,238	-	931	931
2014	450	6,663	7,113	-	862	862
2015	483	6,431	6,914	-	793	793
2016	508	6,186	6,693	-	725	725
2017	524	5,904	6,428	-	657	657
2018	525	5,618	6,143	-	591	591
2019	521	5,316	5,836	-	526	526
2020	511	5,018	5,529	-	464	464
2021	505	4,710	5,215	-	406	406
2022	493	4,408	4,902	-	350	350
2023	479	4,104	4,583	-	299	299
2024	464	3,794	4,258	-	252	252
2025	450	3,491	3,941	-	209	209
2026	431	3,205	3,636	-	171	171
2027	420	2,919	3,339	-	138	138
2028	407	2,639	3,045	-	110	110
2029	392	2,373	2,766	-	85	85
2030	372	2,112	2,483	-	65	65
2031	346	1,869	2,214	-	49	49
2032	333	1,645	1,977	-	36	36
2033	312	1,426	1,738	-	26	26
2034	292	1,231	1,523	-	18	18
2035	266	1,044	1,310	-	13	13
2036	242	883	1,125	-	8	8
2037	224	745	968	-	6	6
2038	204	616	820	-	4	4
2039	186	501	687	-	2	2
2040	154	405	560	-	1	1
2041	132	325	457	-	1	1
2042	121	255	375	-	-	-
2043	96	191	286	-	-	-
2044	80	145	226	-	-	-
2045	69	109	178	-	-	-
2046	61	82	143	-	-	-



# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2006 Actuarial Valuation

---

### 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 MPP Program. Defined terms are capitalized throughout this Appendix.

<b>Actuarial Assumptions:</b>	Assumptions as to the occurrence of future events affecting pension and medical costs, such as mortality, withdrawal, disablement, and retirement, changes in medical costs, participation in the MPP Program, rates of investment earnings and asset appreciation or depreciation, and procedures used to determine other relevant items.
<b>Actuarial Cost Method:</b>	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.
<b>Actuarial Gain or Loss:</b>	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.
<b>Actuarial Obligation:</b>	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.
<b>Actuarial Present Value:</b>	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.
<b>Actuarial Surplus:</b>	The excess, if any, of the Actuarial Value of Assets over the Actuarial Obligation.



## California State Teachers' Retirement System Medicare Premium Payment Program - 2006 Actuarial Valuation

---

<b>Actuarial Valuation:</b>	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.
<b>Actuarial Value of Assets:</b>	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.
<b>Actuarial Equivalent:</b>	Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.
<b>Normal Cost:</b>	The portion of the Actuarial Present Value of Projected Benefits which is allocated to a valuation year by the Actuarial Cost Method.
<b>Unfunded Actuarial Obligation:</b>	The excess, if any, of the Actuarial Obligation over the Actuarial Value of Assets.
<b>Valuation Date:</b>	June 30, 2006.