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August 12, 2009

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, 2008**

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, 2008. Details about the actuarial valuation are contained in the following report.

We certify that the information included in this report is complete and accurate to the best of our knowledge and belief. Please refer to Section 2 of this report for our full actuarial certification statement.

Actuarial computations presented in this report are for purposes of assessing the funding of the CalSTRS Medicare Premium Payment Program. The calculations in the enclosed report have been made on a basis consistent with our understanding of CalSTRS's funding. Determinations for other purposes may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

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

We would like express our appreciation to the CalSTRS staff who gave substantial assistance in supplying the data on which this report is based.

Respectfully submitted,

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

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

Enclosures

cc: Mr. Ed Derman
Mr. Rick Reed
Mr. Mark Olleman

California State Teachers' Retirement System
Medicare Premium Payment Program - 2008 Actuarial Valuation

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California State Teachers' Retirement System

Medicare Premium Payment Program - 2008 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, 2008 the current MPP Program assets, along with MPPP-allocated assets residing with the DB Program, are sufficient to finance the future MPPP obligations of \$629.7 million for both Part A premiums and Part B penalties. Currently, the Teachers' Health Benefit Fund (THBF) has just over \$4 million in assets; however, additional DB Program assets have been allocated to fund the MPPP obligations for a total value of \$629.7 million. Our valuation assumes that the assets currently held in the DB Program are available to fund the MPP Program benefits.

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

Under recently adopted Board policy, the assets set aside from the DB Program to fund the MPPP are equal to its actuarial obligation less the value of any assets already in the THBF. Previously a fixed asset amount, with year-to-year adjustments, was used.

The Funded Status of a benefit plan is equal to the difference between its Actuarial Value of Assets and its Actuarial Obligation. Since the Actuarial Value of Assets is being set to match the Actuarial Obligation, the Funded Status of the MPP Program is 100.0%.

California State Teachers' Retirement System Medicare Premium Payment Program - 2008 Actuarial Valuation

(\$Millions)	2008 Valuation	2006 Valuation
Actuarial Obligation		
Part A Premiums	\$ 623.2	\$ 519.6
Part B Penalties	<u>6.5</u>	<u>8.0</u>
MPPP Actuarial Obligation	629.7	527.6
THBF Assets*	<u>4.2</u>	<u>1,687.3</u>
Existing Unfunded Actuarial Obligation / (Surplus Funding)	\$ 625.5	\$ (1,159.7)
Guaranteed Funding from DB Program	<u>625.5</u>	<u>0.0</u>
Effective Unfunded Actuarial Obligation / (Surplus Funding)	\$ 0.0	\$ (1,159.7)

** The 2006 assets are the amount allocated from the DB Program. The 2008 value reflects only the actual amount in the THBF.*

◆ **Changes since the 2006 Valuation**

There have been several changes since the 2006 valuation, as follows:

- Eligibility for Part A premium payments was extended an additional five years to include members retired on or before June 30, 2012. This increased the actuarial obligation by about \$85 million.
- As discussed earlier, the value of DB Program assets allocated to fund the MPPP was changed to be equal to the value of the MPPP obligations (less the value of any assets already in the THBF). Previously it was a fixed value adjusted year-to-year for actual investment returns and benefit payments. This resulted in a significant decrease in the allocated assets for funding purposes.
- New assumptions were used in the valuation. New mortality assumptions, which reflect increased life expectancies, resulted in an increase in the actuarial obligation. This was somewhat offset by new Part A enrollment assumptions which reflect decreased

California State Teachers' Retirement System Medicare Premium Payment Program - 2008 Actuarial Valuation

participation and resulted in a decrease in the actuarial obligation.

- The actual 2009 Medicare Part A monthly premium amount is \$443, slightly less than the estimated amount of \$452. This resulted in a small reduction in the actuarial obligation.

◆ **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>	2008 Valuation	2006 Valuation
Actuarial Obligation		
Best Estimate	\$ 629.7	\$ 527.6
Higher Cost Assumptions	\$ 798.0	\$ 704.5

◆ **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 - 2008 Actuarial Valuation

Summary of Key Valuation Results

	2008 Valuation	2006 Valuation	Relative Change
1. Current MPP Program Membership			
A. Retirees with Part A Premium	6,238	6,034	3.4 %
B. Retirees with Part B Penalty	1,217	1,347	(9.7)%
2. Monthly Medicare Premium Amount (for following calendar year)			
A. Part A	\$ 443.00	\$ 410.00	8.0%
B. Part B	96.40	93.50	3.1%
3. Average CalSTRS Payment for Participating Members (for following calendar year)			
A. Retirees with Part A Premium	\$ 449.42	\$ 425.02	5.7%
B. Retirees with Part B Penalty	59.30	60.14	(1.4)%
4. Actuarial Accrued Liability (\$millions)			
A. Retirees with Part A Premium	\$ 623.2	\$ 519.6	19.9%
B. Retirees with Part B Penalty	<u>6.5</u>	<u>8.0</u>	(18.8)%
C. Total	\$ 629.7	\$ 527.6	19.4%
5. Actuarial Accrued Liability (\$millions) - Alternate Measurement			
Total under Higher Cost Assumptions	\$ 798.0	\$ 704.5	13.3%
6. MPP Program Assets			
A. Market Value of THBF (\$millions)	\$ 4.2	\$ 2.7	55.6%
B. Total Allocated MPPP Assets (\$millions)	\$ 629.7	\$ 1,687.3	(62.7)%
7. Unfunded Actuarial Accrued Liability (4C - 6B) or (Surplus Funding) - \$millions	\$ -	\$ (1,159.7)	(100.0)%

California State Teachers' Retirement System

Medicare Premium Payment Program - 2008 Actuarial Valuation

Section 2

Actuarial Certification

The major findings of the 2008 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 2009 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, 2008.

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 2008 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.



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

California State Teachers' Retirement System

Medicare Premium Payment Program - 2008 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. Only those hired prior to April 1, 1986 who retire on or before June 30, 2012 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, for the MPP Program the actuarial obligation is equal to this value.

California State Teachers' Retirement System Medicare Premium Payment Program - 2008 Actuarial Valuation

Details are shown below.

<i>(\$Millions)</i>	2008 Valuation	2006 Valuation
Current Retirees	\$ 522.2	\$ 478.0
Inactive Deferred	7.5	3.1
Active Members	<u>93.5</u>	<u>38.5</u>
Present Value of Part A Premiums	\$ 623.2	\$ 519.6
Present Value of Part B Penalties	<u>6.5</u>	<u>8.0</u>
Total Present Value of MPPP Benefits	\$ 629.7	\$ 527.6

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>	Actuarial (Gains) or Losses
Expected Actuarial Obligation	
Actuarial Obligation as of June 30, 2006	\$ 527.6
Inter-valuation 5 yr benefit extension	85.0
Expected Increase due to Interest	96.8
Expected Decrease due to Payments	<u>(64.0)</u>
Expected Actuarial Obligation	\$ 645.4
Actuarial (Gains) or Losses by Source	
Change in Medical Trend Assumption	\$ (0.2)
Change in Premium/Penalty Different than Expected	(12.1)
Changes due to DB Program Experience Study	24.6
Change in Coverage A rates	(11.7)
All other sources	<u>(16.3)</u>
(Gain) or Loss on the Actuarial Obligation	\$ (15.7)

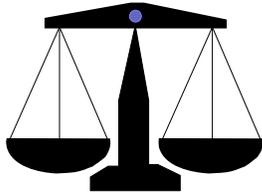
California State Teachers' Retirement System Medicare Premium Payment Program - 2008 Actuarial Valuation

Based on the 2006 valuation, (including the value of adopting the five-year benefit extension as of June 30, 2006), the Actuarial Obligation was expected to increase to \$645.4 million. The actual Actuarial Obligation of \$629.7 million represents a net actuarial gain of \$15.7 million.

California State Teachers' Retirement System

Medicare Premium Payment Program - 2008 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 has been 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. As of June 30, 2006, \$1,687 million of the DB Program assets has been allocated to pay the MPP Program benefits, and were included in the determination of funding sufficiency. Beginning in 2008, DB Program assets in the amount of the MPPP Actuarial Obligation (less any assets already in the THBF) are allocated for the purposes of paying the MPPP benefits. This results in an Unfunded Actuarial Obligation of \$0 in 2008.

The Funded Status is shown below.

<i>(\$Millions)</i>	2008 Valuation	2006 Valuation
Actuarial Obligation		
Part A Premiums	\$ 623.2	\$ 519.6
Part B Penalties	<u>6.5</u>	<u>8.0</u>
MPPP Actuarial Obligation	629.7	527.6
THBF Assets*	<u>4.2</u>	<u>1,687.3</u>
Existing Unfunded Actuarial Obligation / (Surplus Funding)	\$ 625.5	\$ (1,159.7)
Guaranteed Funding from DB Program	<u>625.5</u>	<u>0.0</u>
Effective Unfunded Actuarial Obligation / (Surplus Funding)	\$ 0.0	\$ (1,159.7)

** The 2006 assets are the amount allocated from the DB Program. The 2008 value reflects only the actual amount in the THBF.*

Annual Cost

As noted above, the MPP Program has essentially been funded on a pay-as-you-go basis. Therefore, the annual cost for a funding perspective is equal to the MPPP payments. For the 2007-2008 fiscal year, the actual cost was \$32.7 million. For the 2008-2009 fiscal year, the expected cost is \$35.9 million.

California State Teachers' Retirement System Medicare Premium Payment Program - 2008 Actuarial Valuation

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 - 2008 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
2009	\$ 35,099	\$ 839	\$ 35,938	\$ 36,129	\$ 839	\$ 36,968
2010	38,403	806	39,209	40,699	806	41,505
2011	41,507	794	42,301	44,555	794	45,349
2012	44,896	769	45,665	48,809	769	49,578
2013	48,496	737	49,233	53,366	737	54,103
2014	51,676	702	52,378	57,409	702	58,111
2015	54,422	663	55,085	60,949	663	61,612
2016	56,900	621	57,521	64,160	621	64,781
2017	59,002	577	59,579	66,959	577	67,536
2018	60,695	531	61,226	69,247	531	69,778
2019	61,962	483	62,445	71,035	483	71,518
2020	62,833	436	63,269	72,372	436	72,808
2021	63,358	388	63,746	73,305	388	73,693
2022	63,594	341	63,935	73,896	341	74,237
2023	63,533	297	63,830	74,165	297	74,462
2024	63,183	255	63,438	74,104	255	74,359
2025	62,585	216	62,801	73,754	216	73,970
2026	61,725	181	61,906	73,099	181	73,280
2027	60,638	150	60,788	72,133	150	72,283
2028	59,263	122	59,385	70,884	122	71,006
2029	57,643	99	57,742	69,318	99	69,417
2030	55,794	79	55,873	67,434	79	67,513
2031	53,711	62	53,773	65,265	62	65,327
2032	51,416	48	51,464	62,787	48	62,835
2033	48,937	37	48,974	60,045	37	60,082
2034	46,283	29	46,312	57,056	29	57,085
2035	43,495	22	43,517	53,858	22	53,880
2036	40,601	16	40,617	50,504	16	50,520
2037	37,645	12	37,657	46,981	12	46,993
2038	34,640	9	34,649	43,412	9	43,421
2039	31,677	6	31,683	39,808	6	39,814
2040	28,737	5	28,742	36,222	5	36,227
2041	25,886	3	25,889	32,706	3	32,709
2042	23,131	2	23,133	29,303	2	29,305
2043	20,508	1	20,509	26,024	1	26,025
2044	18,039	1	18,040	22,929	1	22,930
2045	15,741	1	15,742	20,042	1	20,043
2046	13,651	-	13,651	17,378	-	17,378
2047	11,715	-	11,715	14,953	-	14,953
2048	9,995	-	9,995	12,785	-	12,785

California State Teachers' Retirement System

Medicare Premium Payment Program - 2008 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), although it is the intent to pre-fund under the revised MPPP funding policy. Note that although CalSTRS has allocated DB Program assets for MPPP benefits in the amount of the MPPP Actuarial Obligation, 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 recommended a much lower rate of 4.00% for discounting the MPPP obligations. The Board adopted the 4.00% discount rate, which 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 dollar basis for 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

California State Teachers' Retirement System Medicare Premium Payment Program - 2008 Actuarial Valuation

Present Value of all 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 - 2008 Actuarial Valuation

Table 2 Statement of Program Assets

<i>(\$Thousands)</i>	June, 2008	June, 2006
Invested Assets		
Short-term	\$ 2,381	\$ 1,604
Debt Securities	0	0
Equity	0	0
Alternative	0	0
Real Estate	<u>0</u>	<u>0</u>
Total Investments	\$ 2,381	\$ 1,604
Cash and Cash Equivalents	1	0
Receivables	1,852	1,339
Liabilities	<u>(50)</u>	<u>(217)</u>
Fair Market Value of Net Assets	\$ 4,184	\$ 2,726

California State Teachers' Retirement System
Medicare Premium Payment Program - 2008 Actuarial Valuation

Table 3 Statement of Changes in Program Assets

<i>(\$Thousands)</i>	June, 2008	June, 2007
Contributions		
Members	\$ 0	\$ 0
Employers	33,239	32,257
State of California	<u> 0</u>	<u> 0</u>
Total Contributions	33,239	32,257
Benefits and Expenses		
Retirement, Death, and Survivors	\$ (32,689)	\$ (31,270)
Refunds of Member Contributions	(0)	(0)
Administrative Expenses	<u>(334)</u>	<u>(190)</u>
Total Benefits and Expenses	(33,023)	(31,460)
Net Cash Flow	\$ 216	\$ 797
Investment Income		
Realized Income	\$ 205	\$ 240
Net Appreciation	0	0
Investment Expenses	(0)	(0)
Other (Expense) Income	<u>(0)</u>	<u>(0)</u>
Net Investment Return	205	240
Net Increase	\$ 421	\$ 1,037
Fair Market Value of Net Assets		
Beginning of Year	\$ <u> 3,763</u>	\$ <u> 2,726</u>
End of Year	\$ 4,184	\$ 3,763

California State Teachers' Retirement System
Medicare Premium Payment Program - 2008 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)
6/30/2005	\$ 2.7	\$ 775.0	\$ 772.3	0.3%	\$ 7,748.1	10.0%
6/30/2006	\$ 2.7	\$ 796.5	\$ 793.8	0.3%	\$ 7,451.9	10.7%
6/30/2008	\$ 4.2	\$ 976.3	\$ 972.1	0.4%	\$ 6,604.3	14.7%

**California State Teachers' Retirement System
Medicare Premium Payment Program - 2008 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%
2007	\$ 47.3	\$ 32.3	68.3%
2008	\$ 47.3	\$ 33.2	70.2%

* The UAAL is amortized over a closed 30-year period starting June 30, 2006 on a level-dollar basis. The remaining period is 28 years as of June 30, 2008.

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

Annual Required Contribution (ARC)*	Year Ended June 30, 2009
(1) Normal Cost	\$ 4.1
(2) Amortization Payment of UAAL	<u>58.3</u>
	<u>\$ 62.4</u>

* The normal cost is determined on the entry age normal cost method to meet the GASB parameters. The UAAL amount of \$972.1 million is assumed to be amortized over a closed 30-year period from June 30, 2006.

California State Teachers' Retirement System

Medicare Premium Payment Program - 2008 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
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Benefits Paid

Part A:	Part A premium (\$443 per month in 2009).
Part B:	Part B premium (\$96.40 per month in 2009). (Small group of high earners will have higher premiums, up to \$238.40 in 2009)

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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 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 June 5, 2009 meeting based on Milliman's May 19, 2009 letter. Please refer to the 2007 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 equal to the actuarial obligation of the MPPP benefits.

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.

The Actuarial Standards Board has adopted Actuarial Standard of Practice No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension*

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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**.

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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% 7.0% grading down to 5.0% in 2011
C.	Price Inflation	3.25%

II. Demographic Assumptions

A.	Mortality		
	(1) Active	- Male - Female	2007 CalSTRS Retired – M (- two years) 2007 CalSTRS Retired – F (- two years)
	(2) Retired & Beneficiary *	- Male - Female	2007 CalSTRS Retired – M 2007 CalSTRS Retired – F
	(3) Disabled *	- Male - Female	RP 2000-M (minimum 2.5% with select rates in first three years) RP 2000-F (minimum 2.0% 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, 2012. 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.	

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Table B.2 Mortality

<u>Active Members</u>				
<u>Age</u>	<u>Male</u>	<u>Female</u>		
25	0.032%	0.019%		
30	0.037	0.020		
35	0.039	0.024		
40	0.063	0.039		
45	0.096	0.060		
50	0.130	0.094		
55	0.186	0.143		
60	0.292	0.221		
65	0.527	0.392		
<u>Age</u>	<u>Retired Members and Beneficiaries *</u>		<u>Disabled Members (After Year 3) *</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
50	0.151%	0.112%	2.500%	2.000%
55	0.214	0.168	2.500	2.000
60	0.362	0.272	2.500	2.000
65	0.675	0.506	2.500	2.000
70	1.274	0.971	2.728	2.067
75	2.384	1.674	4.691	3.411
80	4.355	3.257	8.049	5.629
85	7.958	6.164	13.604	9.634
90	14.262	11.915	21.661	15.762
95	23.366	18.280	29.985	21.524
	Select rates for disability:			
			6.0%	3.5%
			4.8	3.0
			3.5	2.5

* *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%	2.5%
51	0.0	0.0	0.0	0.0	1.5	2.5
52	0.0	0.0	0.0	0.0	1.5	2.5
53	0.0	0.0	0.0	0.0	2.0	2.5
54	1.5	1.5	0.0	0.0	2.0	3.0
55	5.8	7.0	2.7	4.5	8.0	9.0
56	3.9	4.5	1.8	3.2	8.0	9.0
57	4.9	4.5	1.8	3.2	10.0	11.0
58	6.8	7.0	2.7	4.1	14.0	16.0
59	17.5	14.0	4.5	5.4	18.0	19.0
60	25.0	22.0	6.3	9.0	27.0	31.0
61	16.5	15.0	6.3	9.0	43.0	40.0
62	16.5	15.0	10.8	10.8	38.0	37.0
63	15.0	15.0	11.7	16.2	30.0	35.0
64	17.5	18.0	10.8	13.5	30.0	32.0
65	20.0	18.0	13.5	14.4	30.0	32.0
66	16.0	18.0	10.8	13.5	30.0	32.0
67	16.0	18.0	10.8	13.5	30.0	32.0
68	16.0	16.0	10.8	13.5	30.0	32.0
69	16.0	16.0	10.8	13.5	30.0	32.0
70	100.0	100.0	100.0	100.0	100.0	100.0

* If service is equal to or greater than 25 but less than 28 years, the assumed retirement rates shown above for members with less than 30 years of service are increased by 50%. For members with 28 but less than 30 years, the assumed retirement rates shown above for members with less than 30 years of service are increased by 11%.

The assumptions shown above are for retirement from active status. We assume that all vested terminated members retire at age 60.

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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	0.012%		0.021%	
30	0.018		0.021	
35	0.036		0.042	
40	0.090		0.078	
45	0.123	0.118%	0.126	0.139%
50	0.171	0.202	0.219	0.252
55	0.252	0.312	0.318	0.367
60	0.204	0.477	0.243	0.530
65	0.144	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%	18.0%
1	13.0	12.5	13.0	13.0	13.0	14.0
2	9.0	7.7	9.0	9.0	9.0	10.0
3	6.0	6.0	6.5	6.5	6.5	7.0
4	4.4	4.8	5.0	5.0	5.0	4.0
5	3.9	3.6	3.0	3.0	3.0	3.0
10	2.0	2.0	2.0	2.0	2.0	
15	1.1	1.1	1.1	1.1		
20	0.6	0.6	0.6			
25	0.4	0.5				
30	0.3					

<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	11.0	11.0	11.0	10.5	10.5
2	7.2	8.5	8.5	7.5	7.0	7.0
3	6.3	7.0	6.5	6.0	5.5	5.5
4	5.8	6.0	5.5	4.5	4.0	3.0
5	5.5	5.3	4.5	3.8	3.3	2.5
10	2.3	1.8	1.6	1.3	1.3	
15	1.1	0.9	0.9	0.9		
20	0.5	0.5	0.5			
25	0.3	0.4				
30	0.3					

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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	46	46	38	36	36
15	38	38	31	21	
20	28	31	15		
25	15	15			
30	10				
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	34	32	32	29	29
15	27	24	24	24	
20	19	14	14		
25	10	10			
30	10				

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Table B.7 Part A Enrollment Rates*

Assumption	Best Estimate		Higher Cost	
	Male	Female	Male	Female
% of Actives and Under 65 Retirees Enrolling (Retired on or After 2001)**	3.50%	3.50%	4.50%	4.50%
% of Under 65 Retirees Enrolling (Retired Before 2001)**	4.50%	4.50%	5.50%	5.50%
% of Over 65 Retirees Enrolling (for those not Currently Enrolled) at Age:***				
65	2.50%	2.50%	3.00%	3.00%
66	1.00	1.00	2.20	2.20
67	0.25	0.25	0.30	0.30
68	0.15	0.15	0.18	0.18
69	0.10	0.10	0.12	0.12
70-74	0.05	0.05	0.06	0.06
75 & Above	0.05	0.05	0.06	0.06
% 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.

** For actives and under 65 retirees, the enrollment percent applies upon reaching age 65 (or retirement age if later). No enrollment is assumed after age 65 (or retirement age if later).

*** For over 65 retirees, the enrollment percent applies in each future year.

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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 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.

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Table C.1 Summary of Statistical Information

	June 30, 2008	June 30, 2006
Number of Enrolled Members		
Retirees with Part A Premium	6,238	6,034
Retirees with Part B Penalty	1,217	1,347
Average CalSTRS Payment for Enrolled Members (for current calendar year)		
Retirees with Part A Premium	\$ 449.42	\$ 425.02
Retirees with Part B Penalty	59.30	60.14

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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
2009	66	6,539	6,605	-	1,190	1,190
2010	117	6,862	6,979	-	1,131	1,131
2011	190	6,977	7,167	-	1,070	1,070
2012	302	7,127	7,429	-	1,007	1,007
2013	478	7,160	7,639	-	943	943
2014	637	7,124	7,761	-	878	878
2015	783	7,026	7,809	-	812	812
2016	912	6,858	7,770	-	746	746
2017	1,017	6,658	7,675	-	679	679
2018	1,091	6,441	7,532	-	614	614
2019	1,144	6,181	7,325	-	549	549
2020	1,169	5,904	7,073	-	487	487
2021	1,177	5,623	6,801	-	427	427
2022	1,177	5,330	6,508	-	370	370
2023	1,171	5,023	6,194	-	316	316
2024	1,154	4,713	5,867	-	267	267
2025	1,131	4,398	5,529	-	223	223
2026	1,111	4,090	5,201	-	183	183
2027	1,086	3,774	4,860	-	148	148
2028	1,060	3,468	4,528	-	119	119
2029	1,030	3,153	4,183	-	93	93
2030	999	2,869	3,868	-	73	73
2031	961	2,567	3,528	-	56	56
2032	925	2,297	3,222	-	43	43
2033	884	2,027	2,910	-	32	32
2034	836	1,772	2,608	-	24	24
2035	793	1,541	2,334	-	17	17
2036	740	1,330	2,070	-	13	13
2037	693	1,133	1,826	-	9	9
2038	641	957	1,598	-	7	7
2039	592	799	1,391	-	4	4
2040	539	656	1,195	-	3	3
2041	480	529	1,009	-	2	2
2042	434	427	860	-	1	1
2043	375	347	722	-	1	1
2044	327	264	591	-	-	-
2045	282	211	492	-	-	-
2046	237	163	400	-	-	-
2047	198	123	321	-	-	-
2048	162	89	251	-	-	-
2049	136	71	207	-	-	-

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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 MPP Program. Defined terms are capitalized throughout this Appendix.

Actuarial Assumptions:	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.
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. Note that for purposes of the MPPP valuation, the value of future Normal Costs is \$0.
Actuarial Present Value:	The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.
Actuarial Surplus:	The excess, if any, of the Actuarial Value of Assets over the Actuarial Obligation.

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Actuarial Valuation:	The determination, as of a Valuation Date, of the Normal Cost, Actuarial Obligation, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.
Actuarial Value of Assets:	The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation. For the MPPP valuation, the Actuarial Value of Assets is equal to the value of future MPPP payments.
Actuarial Equivalent:	Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.
Normal Cost:	The portion of the Actuarial Present Value of Projected Benefits which is allocated to a valuation year by the Actuarial Cost Method. Note that for purposes of the MPPP valuation, the Normal Cost is \$0.
Unfunded Actuarial Obligation:	The excess, if any, of the Actuarial Obligation over the Actuarial Value of Assets.
Valuation Date:	June 30, 2008.