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March 26, 2013

Teachers' Retirement Board  
California State Teachers' Retirement System

**Re: Medicare Premium Payment Program  
Actuarial Valuation as of June 30, 2012**

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Medicare Premium Payment (MPP) Program of the California State Teachers' Retirement System as of June 30, 2012. 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' 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.

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The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

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

Enclosure

NJC/MCO/nlo

A handwritten signature in black ink that reads 'Mark C. Olleman'.

Mark C. Olleman, FSA, EA, MAAA  
Principal and Consulting Actuary

# California State Teachers' Retirement System Medicare Premium Payment Program - 2012 Actuarial Valuation

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# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2012 Actuarial Valuation

### Section 1 Summary of the Findings

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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. 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, 2012 the current MPP Program assets, along with MPP-allocated funding from future employer contributions that would otherwise have been credited to the Defined Benefit (DB) Program, are sufficient to finance the future MPP Program obligations of \$424.2 million for both Part A premiums and Part B penalties. Currently, the Teachers' Health Benefit Fund (THBF) has approximately \$0.4 million in assets; however, additional employer contributions have been allocated to fully fund the MPP Program obligations for a total value of \$424.2 million. Our valuation assumes that the value of these contributions is 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 MPP Program obligation. These results are consistent with our prior valuation of the MPP Program.

Under current Board policy, the obligation for funding the MPP Program, which is included as a liability for the DB Program, is equal to the MPP Program actuarial obligation less the value of any assets already in the THBF. Prior to the June 30, 2008 actuarial valuation, 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%.

**Funding Sufficiency  
(continued)**

(\$ Millions)	2012 Valuation	2010 Valuation
<b>Actuarial Obligation</b>		
<b>Part A Premiums</b>	\$ 420.2	\$ 595.8
<b>Part B Penalties</b>	<u>4.0</u>	<u>6.0</u>
<b>Actuarial Obligation</b>	424.2	601.8
<b>THBF Assets</b>	<u>0.4</u>	<u>0.6</u>
<b>Existing Unfunded Actuarial     Obligation / (Surplus Funding)</b>	\$ 423.8	\$ 601.2
<b>Guaranteed Funding from     future Employer Contributions</b>	<u>423.8</u>	<u>601.2</u>
<b>Effective Unfunded Actuarial     Obligation / (Surplus Funding)</b>	\$ 0.0	\$ 0.0

**Assumptions**

We recommend the Board adopt the assumptions discussed in Section 6 and specified in Appendix B as part of this valuation. These assumptions include a lower expected increase for future Medicare premiums and the same enrollment assumptions that were used in the June 30, 2010 study of the cost of extending the MPP Program eligibility. All other assumptions are the same as those used in the DB Program.

**Changes Since the  
2010 Valuation**

Changes since the 2010 valuation of the MPP Program are as follows:

- As of the 2011 Defined Benefit Program actuarial valuation, the investment return assumption was lowered from 7.75% to 7.50%. Additionally, other demographic assumptions (such as improved mortality) were adopted. See the 2011 Experience Analysis report for details. The adoption of the new assumptions increased the actuarial obligation of the MPP Program by about \$22 million.
- The actual 2013 Medicare Part A monthly premium amount is \$441, significantly less than the estimated 2013 amount of \$496 based on the prior valuation. This resulted in a reduction in the actuarial obligation of approximately \$58 million.
- The medical trend assumption was revised for the current valuation, from a 5.0% assumption for both Part A premiums and Part B penalties in the last valuation, to 3.50% for Part A premiums and 4.50% for Part B penalties in the current valuation. The change in trend assumption reduced the actuarial obligation by approximately \$53 million.

**Changes Since the 2010 Valuation (continued)**

- The Medicare Part A enrollment rates were revised for the 2010 study to extend MPP Program eligibility. As noted in that study letter, the assumptions adopted for that analysis did not impact the 2010 MPP Program valuation (since the analysis was performed after that valuation), but do affect future valuations, including the July 1, 2012 valuation. The change in enrollment rates resulted in a reduction in the actuarial obligation of approximately \$82 million.
- The MPP Program was closed to members retiring on or after July 1, 2012. Therefore, as of the date of the current valuation, active and deferred members are no longer eligible for future coverage under the MPP Program.

**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 (investment return assumption reduced by 1.0% and higher member participation):

<i>(\$ Millions)</i>	<b>2012 Valuation</b>	<b>2010 Valuation</b>
<b>Actuarial Obligation</b>		
<b>Best Estimate</b>	\$ 424.2	\$ 601.8
<b>Higher Cost Assumptions</b>	\$ 495.3	\$ 755.1

**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 - 2012 Actuarial Valuation

### Summary of Key Valuation Results

	2012 Valuation	2010 Valuation	Relative Change
1. Current MPP Program Membership			
A. Retirees with Part A Premium	6,727	6,452	4.3 %
B. Retirees with Part B Penalty	942	1,089	(13.5)%
2. Monthly Medicare Premium Amount (for following calendar year)			
A. Part A	\$ 441.00	\$ 450.00	(2.0)%
B. Part B	104.90	115.40	(9.1)%
3. Average CalSTRS Payment for Participating Members (for following calendar year)			
A. Retirees with Part A Premium	\$ 418.45	\$ 436.13	(4.1)%
B. Retirees with Part B Penalty	59.01	66.35	(11.1)%
4. Actuarial Accrued Liability (\$millions)			
A. Retirees with Part A Premium	\$ 420.2	\$ 595.8	(29.5)%
B. Retirees with Part B Penalty	4.0	6.0	(33.3)%
C. Total	\$ 424.2	\$ 601.8	(29.5)%
5. Actuarial Accrued Liability (\$millions) - Alternate Measurement			
Total under Higher Cost Assumptions	\$ 495.3	\$ 755.1	(34.4)%
6. MPP Program Assets			
A. Market Value of THBF (\$millions)	\$ 0.4	\$ 0.6	(33.3)%
B. Total Allocated MPPP Assets (\$millions)	\$ 424.2	\$ 601.8	(29.5)%
7. Unfunded Actuarial Accrued Liability (4C - 6B) or (Surplus Funding) - \$millions	\$ -	\$ -	-

# California State Teachers' Retirement System Medicare Premium Payment Program - 2012 Actuarial Valuation

## Section 2 Actuarial Certification

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The major findings of the 2012 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 2013 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, 2012.

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.

All costs, liabilities, rates of interest, and other factors for CalSTRS have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of CalSTRS and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the CalSTRS MPP Program. Further, in our opinion, each actuarial assumption used is reasonably related to the experience of CalSTRS and to reasonable expectations which, in combination, represent a reasonable estimate of anticipated experience. The Teachers' Retirement Board has sole authority to determine the actuarial assumptions and methods used for the valuation of the MPP Program. The actuarial methods and assumptions used in the 2012 valuation are shown in Appendix B.

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.

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.



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



Mark C. Olleman, FSA, EA, MAAA  
Principal and Consulting Actuary



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# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2012 Actuarial Valuation

### Section 3 Actuarial Obligation

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In this section, the discussion will focus on the commitments of CalSTRS for MPP Program 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 retired 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 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. Since there are no active members potentially eligible for this benefit, there is consequently no Normal Cost.

We first project all future MPP Program benefit payments for current 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 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.

Note that as of the June 30, 2012 valuation, active and deferred members are no longer eligible to enroll in the MPP Program in the future. Only members who are retired as of the valuation may be eligible to enroll if they have not done so already.

**Actuarial Obligation  
(continued)**

Details are shown below.

<b>(\$ Millions)</b>	<b>2012 Valuation</b>	<b>2010 Valuation</b>
Current Retirees	\$ 420.2	\$ 537.7
Inactive Deferred	N/A	4.3
Active Members	<u>N/A</u>	<u>53.8</u>
Present Value of Part A Premiums	\$ 420.2	\$ 595.8
Present Value of Part B Penalties	<u>4.0</u>	<u>6.0</u>
Total Present Value of MPP Program Benefits	\$ 424.2	\$ 601.8

**Actuarial Gains  
and Losses**

Comparing the Actuarial Obligation as of two valuation dates does not provide enough information to determine whether 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:

<b>(\$ Millions)</b>	<b>Actuarial (Gains) or Losses</b>
<b>Expected Actuarial Obligation</b>	
Actuarial Obligation as of June 30, 2010	\$ 601.8
Expected Increase due to Interest	78.2
Expected Decrease due to Payments	<u>(70.2)</u>
Expected Actuarial Obligation	\$ 609.8
<b>Actuarial (Gains) or Losses by Source</b>	
Change in Investment Return and Demographic Assumptions	\$ 22.2
Change in Premium/Penalty Different than Expected	(57.7)
Change in Medical Trend Assumption	(52.8)
Change in Part A Enrollment Assumptions	(82.1)
All other sources	<u>(15.2)</u>
(Gain) or Loss on the Actuarial Obligation	\$ (185.6)

**Actuarial Gains  
and Losses  
(continued)**

Based on the 2010 valuation, the Actuarial Obligation was expected to increase to \$609.8 million. The actual Actuarial Obligation of \$424.2 million represents a net actuarial gain of \$185.6 million. This gain was mostly caused by a much smaller than expected increase in Part A Premiums over the last two years, the reduced medical trend assumption, and the reduced Part A enrollment rates.

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# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2012 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 that would have otherwise been credited to the DB Program being diverted to the THBF to make MPP Program payments. Beginning in 2008, DB Program assets in the amount of the MPP Program Actuarial Obligation (less any assets already in the THBF) are allocated for the purposes of paying the MPP Program benefits. This results in an ongoing Unfunded Actuarial Obligation of \$0.

The Funded Status is shown below.

(\$ Millions)	2012 Valuation	2010 Valuation
<b>Actuarial Obligation</b>		
Part A Premiums	\$ 420.2	\$ 595.8
Part B Penalties	<u>4.0</u>	<u>6.0</u>
<b>Total Actuarial Obligation</b>	424.2	601.8
<b>THBF Assets</b>	<u>0.4</u>	<u>0.6</u>
<b>Existing Unfunded Actuarial Obligation / (Surplus Funding)</b>	\$ 423.8	\$ 601.2
<b>Guaranteed Funding from Future Employer Contributions</b>	<u>423.8</u>	<u>601.2</u>
<b>Effective Unfunded Actuarial Obligation / (Surplus Funding)</b>	\$ 0.0	\$ 0.0

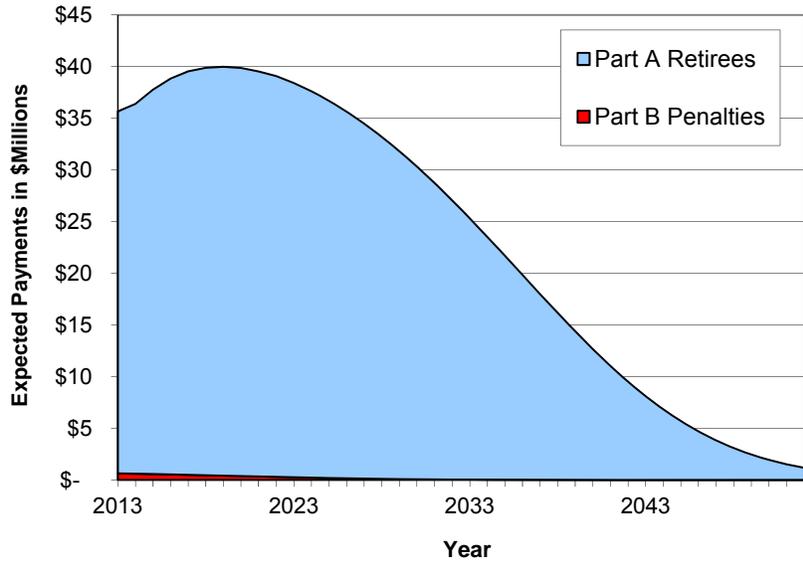
### Annual Cost

As noted above, the MPP Program has essentially been funded on a pay-as-you-go basis. Therefore, the annual cost from a funding perspective is equal to the MPP Program payments. For the 2011-2012 fiscal year, the actual cost was \$34.4 million. For the 2012-2013 fiscal year, the expected cost is \$35.7 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 and lower discount rates. Details of these participation assumptions can be found in Appendix B.

**Annual Cost  
(continued)**

This graph represents the Best Estimate payouts shown in Table 1.



**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 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
2013	\$ 35,033	\$ 624	\$ 35,657	\$ 35,480	\$ 624	\$ 36,104
2014	35,794	596	36,390	36,646	596	37,242
2015	37,201	563	37,764	38,506	563	39,069
2016	38,311	528	38,839	40,006	528	40,534
2017	39,046	490	39,536	40,994	490	41,484
2018	39,432	450	39,882	41,612	450	42,062
2019	39,567	409	39,976	41,958	409	42,367
2020	39,492	368	39,860	42,053	368	42,421
2021	39,201	327	39,528	41,922	327	42,249
2022	38,785	286	39,071	41,604	286	41,890
2023	38,158	248	38,406	41,127	248	41,375
2024	37,396	212	37,608	40,454	212	40,666
2025	36,507	179	36,686	39,662	179	39,841
2026	35,492	149	35,641	38,716	149	38,865
2027	34,349	123	34,472	37,631	123	37,754
2028	33,087	100	33,187	36,425	100	36,525
2029	31,731	80	31,811	35,079	80	35,159
2030	30,237	63	30,300	33,620	63	33,683
2031	28,669	49	28,718	32,032	49	32,081
2032	27,017	38	27,055	30,350	38	30,388
2033	25,279	29	25,308	28,536	29	28,565
2034	23,502	22	23,524	26,684	22	26,706
2035	21,678	16	21,694	24,755	16	24,771
2036	19,821	12	19,833	22,763	12	22,775
2037	17,957	9	17,966	20,767	9	20,776
2038	16,155	6	16,161	18,756	6	18,762
2039	14,373	4	14,377	16,781	4	16,785
2040	12,651	3	12,654	14,839	3	14,842
2041	11,020	2	11,022	13,009	2	13,011
2042	9,489	1	9,490	11,270	1	11,271
2043	8,100	1	8,101	9,642	1	9,643
2044	6,825	1	6,826	8,184	1	8,185
2045	5,696	-	5,696	6,851	-	6,851
2046	4,684	-	4,684	5,666	-	5,666
2047	3,832	-	3,832	4,628	-	4,628
2048	3,089	-	3,089	3,745	-	3,745
2049	2,461	-	2,461	2,997	-	2,997
2050	1,939	-	1,939	2,377	-	2,377

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# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2012 Actuarial Valuation

### Section 5 Accounting Information

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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 MPP Program premiums (except for approximately one month's worth of payments held in the THBF), although it is the intent to pre-fund under the revised MPP Program funding policy. Note that although CalSTRS has allocated a portion of future DB Program contributions to fund the MPP Program Actuarial Obligation, we do not believe this meets GASB's definition of pre-funding.

The expected investment return on the DB Program assets is 7.50%, as that fund is invested in a diversified portfolio of both equities and bonds. However, the contributions for the MPP Program premiums are coming from the general funds of CalSTRS' participating employers. Therefore, a much lower rate of 4.00% is appropriate for discounting the MPP Program obligations for GASB purposes. 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 Present Value of all benefits not provided for by future Normal Cost payments is called the Actuarial Accrued Liability. Since all current and future MPP Program members are already retired, the amount of the Normal Cost is \$0. The UAAL is the Actuarial Accrued Liability minus the THBF assets.

**Accounting  
Information  
(continued)**

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 (24 years remaining as of the valuation date).

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

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

**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 Actuarial Valuation**

**Table 2  
Statement of Program Assets**

<i>(\$ Thousands)</i>	<b>June, 2012</b>	<b>June, 2010</b>
<b>Invested Assets</b>		
Short-term	\$ 541	\$ 646
Debt Securities	0	0
Equity	0	0
Alternative	0	0
Real Estate	<u>0</u>	<u>0</u>
Total Investments	\$ 541	\$ 646
<b>Cash and Cash Equivalents</b>	1	0
<b>Receivables</b>	2	6
<b>Liabilities</b>	<u>(106)</u>	<u>(79)</u>
<b>Fair Market Value of Net Assets</b>	<b>\$ 438</b>	<b>\$ 573</b>

**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 Actuarial Valuation**

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

(\$ Thousands)	June, 2012	June, 2010
<b>Contributions</b>		
Members	\$ 0	\$ 0
Employers	34,614	31,749
State of California	<u>0</u>	<u>0</u>
Total Contributions	34,614	31,749
<b>Benefits and Expenses</b>		
Retirement, Death, and Survivors	\$ (34,412)	\$ (35,421)
Refunds of Member Contributions	(0)	(0)
Administrative Expenses	<u>(370)</u>	<u>(309)</u>
Total Benefits and Expenses	(34,782)	(35,730)
<b>Net Cash Flow</b>	<b>\$ (168)</b>	<b>\$ (3,981)</b>
<b>Investment Income</b>		
Realized Income	\$ 8	\$ 33
Net Appreciation	0	0
Investment Expenses	(0)	(0)
Other (Expense) Income	<u>(0)</u>	<u>(0)</u>
Net Investment Return	8	33
<b>Net Increase</b>	<b>\$ (160)</b>	<b>\$ (3,948)</b>
<b>Fair Market Value of Net Assets</b>		
Beginning of Year	\$ <u>598</u>	\$ <u>4,521</u>
End of Year	<b>\$ 438</b>	<b>\$ 573</b>

**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 Actuarial Valuation**

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

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) (b)</b>	<b>Unfunded AAL (UAAL) (b - a)</b>	<b>Funded Ratio (a / b)</b>	<b>Covered Payroll* (c)</b>	<b>UAAL as a % of Covered Payroll ((b - a) / c)</b>
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%
6/30/2010	\$ 0.6	\$ 905.0	\$ 904.4	0.1%	\$ 5,010.7	18.0%
6/30/2012	\$ 0.4	\$ 582.1	\$ 581.7	0.1%	\$ -	N/A

*\*As of June 30, 2012, active members are no longer eligible for future enrollment in the MPP Program. Therefore, the covered payroll is \$0 for years 2012 and later.*



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**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 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%
2009	\$ 62.4	\$ 30.0	48.1%
2010	\$ 62.4	\$ 31.7	50.8%
2011	\$ 57.3	\$ 36.1	63.0%
2012	\$ 57.3	\$ 34.6	60.4%

\* The UAAL is amortized over a closed 30-year period starting June 30, 2006 on a level-dollar basis. The remaining period is 24 years as of June 30, 2012.

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

Annual Required Contribution (ARC)*	Year Ended June 30, 2013
(1) Normal Cost	\$ 0.0
(2) Amortization Payment of UAAL	<u>38.1</u>
	\$ 38.1

\* The normal cost is determined on the entry age normal cost method (level dollar) to meet the GASB parameters. Since no active members are eligible for future enrollment as of the June 30, 2012 actuarial valuation, the normal cost is \$0. The UAAL amount of \$581.7 million is assumed to be amortized over a closed 30-year period from June 30, 2006 on a level-dollar basis.

# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2012 Actuarial Valuation

### Section 6 Assumptions Used in MPP Program Valuation

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The calculations presented in this report are based on the assumptions shown in Appendix B. The economic and mortality assumptions have changed since the prior (June 30, 2010) MPP Program valuation, to reflect the results of the 2011 DB Program Experience Analysis. Additionally, this valuation reflects lower current and future expected Medicare premiums in line with current expectations. We recommend the Board adopt the assumptions as shown in Appendix B of this report for this (June 30, 2012) MPP Program valuation.

#### Economic

**Table 7** contains a summary of our proposed economic and demographic assumptions for the June 30, 2012 MPP Program valuation and a comparison against the June 30, 2010 MPP Program extension study assumptions.

We are recommending using the 2013 Medicare Part A and Part B premiums as the basis for the calculations. Future premiums are assumed to increase with the medical trend of 3.5% for Part A and 4.5% Part B, which are reductions from the prior assumption of 5.0% for both.

#### Enrollment

**Table 8** presents the participation (enrollment) assumptions for both the best estimate and conservative (high cost) estimate scenarios recommended for this valuation. Note that these assumptions were adopted by the Board as part of the June 30, 2010 extension study.

Based on a review of the actual enrollment experience over the last two years, we have made no changes in these rates. **Table 9** shows the results of our experience analysis. Overall, the participation rates were slightly higher than the assumptions would have predicted; however, we believe this is reasonable given the ending of the eligibility period for active members, and these temporarily increased rates are not expected to persist. We are therefore recommending no changes at this time.

#### Other Assumptions

We will utilize the mortality assumptions from the CalSTRS June 30, 2012 DB Program valuation. We have estimated the present value of the MPP program, as of June 30, 2012, assuming an interest rate of 7.50% (4.00% for GASB). This 7.50% rate is the same rate that was used to discount the pension liabilities for the June 30, 2012 DB Program valuation.

**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 Actuarial Valuation**

**Table 7  
June 30, 2012 Economic Assumptions**

	<i>June 30, 2012 Valuation</i>	<i>June 30, 2010 Extension Study</i>
Mortality*	Same as DB Program valuation	Same as DB Program valuation
Enrollment Rates	See Tables 8 & 9 (no change recommended)	See Table 8
Interest Rate		
- For Funding	7.50%	7.75%
- For GASB Reporting	4.00%	4.00%
Part A Premiums		
- Initial Premium	\$441 (CY 2013)	\$450 (CY 2011)
- Inflation	3.5%	5%
Part B Premiums		
- Initial Premium	\$104.90 (CY 2013)	\$115.40 (CY 2011)
- Inflation	4.5%	5%

\* Pension plan demographic assumptions were updated effective June 30, 2011. Note that, since active members are no longer eligible for enrollment in the MPP Program beginning June 30, 2012, no demographic assumptions other than mortality are applied in the 2012 MPP Program valuation.

**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 Actuarial Valuation**

**Table 8  
Summary of Part A Enrollment Rates\***

<b>Assumption</b>	<b><u>Best Estimate</u></b>	<b><u>Higher Cost</u></b>
% of Actives and Under 65 Retirees Enrolling (Retired on or After 2001)**	2.80%	3.50%
% of Under 65 Retirees Enrolling (Retired Before 2001)**	4.50%	5.50%
% of Over 65 Retirees Enrolling (for those not Currently Enrolled) at Age***		
65	1.20%	1.50%
66	0.12	0.15
67	0.10	0.12
68	0.08	0.10
69	0.06	0.08
70-84	0.02	0.03
85 & Above	0.00	0.00
% of Over 65 Retirees Enrolling (for those Already Enrolled)	100.0%	100.0%

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

\*\* For under age 65 retirees, the enrollment percent applies upon reaching age 65. No enrollment is assumed after age 65 for retirees currently under age 65.

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

**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 Actuarial Valuation**

**Table 9  
Results of June 30, 2012 Enrollment Study**

(for period July 1, 2010 through June 30, 2012)

	Enrollees	Total Retirees*	Enrollment Percent		Proposed
			Actual	Expected	
Active and Under 65 Retirees (Retired on or After 2001)	481	18,858	2.55%	2.80%	2.80%
Active and Under 65 Retirees (Retired Before 2001)	19	396	4.80%	4.50%	4.50%
Over 65 Retirees (non Currently Enrolled) at Age:					
65	56	7,706	0.73%	1.20%	1.20%
66	48	17,716	0.27%	0.12%	0.12%
67	63	18,883	0.33%	0.10%	0.10%
68	44	16,626	0.26%	0.08%	0.08%
69	27	9,995	0.27%	0.06%	0.06%
70-74	56	60,306	0.09%	0.02%	0.02%
75-84 **	24	102,726	0.02%	0.02%	0.02%
All Ages	818	253,212	0.32%	0.29%	0.29%

\* Includes only those retirees hire prior to April of 1986 and attained age 65 during study period.

\*\* Ages 85 and above are assumed to have 0.00% enrollment.

# California State Teachers' Retirement System Medicare Premium Payment Program - 2012 Actuarial Valuation

## Appendix A Provisions of Governing Law

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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, 2012;  
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 (\$441 per month in 2013). Reduced amount if less than 40 quarters of covered employment.

Part B: Part B premium (\$104.90 per month in 2013). Only the penalty is paid by CalSTRS.  
(Small group of high earners will have higher premiums)

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# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2012 Actuarial Valuation

### Appendix B Actuarial Methods and Assumptions

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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.

Please refer to the 2011 Actuarial Experience Analysis for further information on the DB Program assumptions.

#### Actuarial Cost Method

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

For GASB reporting purposes, MPP Program obligations are shown under the entry age normal cost method (level dollar).

#### 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 MPP Program 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 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 - 2012 Actuarial Valuation

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

### I. Economic Assumptions

A.	Investment Return (net of investment and administrative expenses)	Best Estimate = 7.50% Higher Cost = 6.50% GASB Reporting = 4.0%
B.	Medical Inflation	
	Part A Premiums	3.5%
	Part B Premiums	4.5%
C.	Price Inflation	3.00%

### II. Demographic Assumptions

A.	Mortality*		
	(1) Active	- Male	N/A
		- Female	N/A
	(2) Retired & Beneficiary	- Male	2011 CalSTRS Retired – M
		- Female	2011 CalSTRS Retired – F
	(3) Disabled	- Male	2011 CalSTRS Disabled – M
		- Female	2011 CalSTRS Disabled – F
			(select rates in first three years for both Males and Females)
			Table B.2
* <i>The mortality assumptions specified contain a margin for expected future mortality improvement. Refer to the 2011 Experience Analysis of the DB Program for details. See Table B.4 of this report for a key to the custom mortality tables used for CalSTRS.</i>			
B.	Service Retirement		N/A
C.	Disability Retirement		N/A
D.	Withdrawal Probability of Refund		N/A N/A
E.	MPP Program Enrollment Rates	Experience Tables	Table B.3
F.	Adjustment to Part B Premium to Account for Higher Premiums if Above the Compensation Limit	The medical inflation assumption of 4.50% for Part B premiums takes into account the projected higher premiums above the compensation limit.	

**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 Actuarial Valuation**

**Table B.2  
Mortality**

Age	Retired Members and Beneficiaries		Disabled Members (After Year 3)	
	Male	Female	Male	Female
50	0.114%	0.073%	2.400%	1.750%
55	0.164	0.118	2.600	1.875
60	0.300	0.254	2.800	2.000
65	0.596	0.468	3.000	2.125
70	1.095	0.864	3.054	2.331
75	1.886	1.451	4.972	3.334
80	3.772	2.759	7.285	4.477
85	7.619	5.596	9.797	8.367
90	14.212	11.702	17.639	14.007
95	22.860	17.780	27.005	20.992
<b>Select rates for disability:</b>				
	First year of disablement		6.0%	3.5%
	Second year of disablement		4.8	3.0
	Third year of disablement		3.5	2.5

**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 Actuarial Valuation**

**Table B.3  
Part A Enrollment Rates\***

<b>Assumption</b>	<b><u>Best Estimate</u></b>	<b><u>Higher Cost</u></b>
% of Actives and Under 65 Retirees Enrolling (Retired on or After 2001)**	2.80%	3.50%
% of Under 65 Retirees Enrolling (Retired Before 2001) **	4.50%	5.50%
% of Over 65 Retirees Enrolling (for those not Currently Enrolled) at Age***		
65	1.20%	1.50%
66	0.12	0.15
67	0.10	0.12
68	0.08	0.10
69	0.06	0.08
70-84	0.02	0.03
85 & Above	0.00	0.00
% of Over 65 Retirees Enrolling (for those Already Enrolled)	100.0%	100.0%

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

\*\* For under age 65 retirees, the enrollment percent applies upon reaching age 65. No enrollment is assumed after age 65 for retirees currently under age 65.

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

# California State Teachers' Retirement System Medicare Premium Payment Program - 2012 Actuarial Valuation

## Appendix C Valuation Data

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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 - 2012 Actuarial Valuation**

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

	<b>June 30, 2012</b>		<b>June 30, 2010</b>
<b>Number of Enrolled Members</b>			
Retirees with Part A Premium	6,727		6,452
Retirees with Part B Penalty	942		1,089
<b>Average CalSTRS Payment for Enrolled Members (for current calendar year)</b>			
Retirees with Part A Premium	\$ 418.45	\$	436.13
Retirees with Part B Penalty	59.01		66.35

**California State Teachers' Retirement System  
Medicare Premium Payment Program - 2012 Actuarial Valuation**

**Table C.2  
Projected MPP Program Membership**

Plan Yr Ending 6/30	Projected Participants					
	Part A			Part B		
	Current Status			Current Status		
	Active	Retired	Total	Active	Retired	Total
2013	-	6,875	6,875	-	913	913
2014	-	6,942	6,942	-	854	854
2015	-	7,051	7,051	-	794	794
2016	-	7,019	7,019	-	733	733
2017	-	6,884	6,884	-	670	670
2018	-	6,709	6,709	-	608	608
2019	-	6,501	6,501	-	547	547
2020	-	6,256	6,256	-	486	486
2021	-	6,025	6,025	-	427	427
2022	-	5,764	5,764	-	371	371
2023	-	5,498	5,498	-	318	318
2024	-	5,207	5,207	-	270	270
2025	-	4,906	4,906	-	225	225
2026	-	4,620	4,620	-	185	185
2027	-	4,310	4,310	-	150	150
2028	-	4,018	4,018	-	120	120
2029	-	3,711	3,711	-	95	95
2030	-	3,415	3,415	-	74	74
2031	-	3,135	3,135	-	56	56
2032	-	2,848	2,848	-	43	43
2033	-	2,573	2,573	-	32	32
2034	-	2,312	2,312	-	23	23
2035	-	2,050	2,050	-	17	17
2036	-	1,810	1,810	-	12	12
2037	-	1,583	1,583	-	9	9
2038	-	1,365	1,365	-	6	6
2039	-	1,181	1,181	-	4	4
2040	-	997	997	-	3	3
2041	-	831	831	-	2	2
2042	-	694	694	-	1	1
2043	-	567	567	-	1	1
2044	-	455	455	-	-	-
2045	-	364	364	-	-	-
2046	-	295	295	-	-	-
2047	-	230	230	-	-	-
2048	-	172	172	-	-	-
2049	-	134	134	-	-	-
2050	-	98	98	-	-	-
2051	-	75	75	-	-	-
2052	-	56	56	-	-	-
2053	-	45	45	-	-	-

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# California State Teachers' Retirement System

## Medicare Premium Payment Program - 2012 Actuarial Valuation

### Appendix D Glossary

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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 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>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. Note that for purposes of the MPP Program valuation, the value of future Normal Costs is \$0.
<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.
<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. For the MPP Program valuation, the Actuarial Value of Assets is equal to the value of future MPP Program payments.
<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. Note that for purposes of the MPP Program valuation, the Normal Cost is \$0.
<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, 2012.