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March 18, 2015

Teachers' Retirement Board
California State Teachers' Retirement System

**Re: Medicare Premium Payment Program
Actuarial Valuation as of June 30, 2014**

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, 2014. Details about the actuarial valuation are contained in the following report. This report reflects the benefit provisions as of the valuation date and Medicare premium amounts effective for the 2015 calendar year.

Actuarial Certification

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, 2014.

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 2014 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

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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.

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.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our 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.

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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,

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Enclosure

NJC/MCO/JDS/DRW/nlo

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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. 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, 2014 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 \$341.7 million for both Part A premiums and Part B penalties. Currently, the Teachers' Health Benefit Fund (THBF) has approximately \$0.9 million in assets; however, additional employer contributions have been allocated to fully fund the MPP Program obligations for a total value of \$341.7 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)	2014 Valuation	2012 Valuation
Actuarial Obligation		
Part A Premiums	\$ 338.5	\$ 420.2
Part B Penalties	3.2	4.0
Actuarial Obligation	\$ 341.7	\$ 424.2
THBF Assets	0.9	0.4
Existing Unfunded Actuarial Obligation / (Surplus Funding)	\$ 340.8	\$ 423.8
Guaranteed Funding from future Employer Contributions	340.8	423.8
Effective Unfunded Actuarial Obligation / (Surplus Funding)	\$ 0.0	\$ 0.0

Assumptions

The Board adopted the assumptions discussed in Section 5 and specified in Appendix B as part of this valuation at its February 2015 meeting. These assumptions include a higher expected increase for future Medicare premiums and slightly lower enrollment assumptions than were used in the June 30, 2012 MPP Program valuation. See Section 5 of this report for details and analysis. All assumptions not specifically listed in Section 5 or Appendix B of this report are the same as those used in the DB Program.

**Changes Since the
 2012 Valuation**

Changes since the 2012 valuation of the MPP Program are as follows:

- The actual 2015 Medicare Part A monthly premium amount is \$407, significantly less than the projected 2015 amount of \$472 based on the prior valuation. This resulted in a reduction in the actuarial obligation of approximately \$59 million.
- The medical trend assumption was revised for the current valuation, from a 3.5% assumption for Part A premiums and 4.5% assumption for Part B penalties in the last valuation, to 3.7% for Part A premiums and 5.7% for Part B penalties in the current valuation. The change in trend assumption increased the actuarial obligation by approximately \$6 million.
- The Medicare Part A enrollment rates were revised for the 2014 valuation to reflect recent experience. The change in enrollment rates resulted in a reduction in the actuarial obligation of approximately \$8 million. See Section 5 of this report for details of the enrollment rate 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 (investment return assumption reduced by 1.0% and higher member participation):

(\$ Millions)	2014 Valuation	2012 Valuation
Actuarial Obligation		
Best Estimate	\$ 341.7	\$ 424.2
Higher Cost Assumptions	387.8	495.3

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.

Summary of Key Valuation Results

	2014 Valuation	2012 Valuation	Relative Change
1. Current MPP Program Membership			
A. Retirees with Part A Premium	6,676	6,727	(0.8)%
B. Retirees with Part B Penalty	827	942	(12.2)%
2. Monthly Medicare Premium Amount (for following calendar year)			
A. Part A	\$ 407.00	\$ 441.00	(7.7)%
B. Part B	104.90	104.90	-
3. Average CalSTRS Payment for Participating Members (for following calendar year)			
A. Retirees with Part A Premium	\$ 380.33	\$ 418.45	(9.1)%
B. Retirees with Part B Penalty	56.12	59.01	(4.9)%
4. Actuarial Accrued Liability (\$ millions)			
A. Retirees with Part A Premium	\$ 338.5	\$ 420.2	(19.4)%
B. Retirees with Part B Penalty	3.2	4.0	(20.0)%
C. Total	\$ 341.7	\$ 424.2	(19.4)%
5. Actuarial Accrued Liability (\$ millions) - Alternate Measurement			
Total under Higher Cost Assumptions	\$ 387.8	\$ 495.3	(21.7)%
6. MPP Program Assets			
A. Market Value of THBF (\$millions)	\$ 0.9	\$ 0.4	125.0%
B. Total Allocated MPPP Assets (\$ millions)	\$ 341.7	\$ 424.2	(19.4)%
7. Unfunded Actuarial Accrued Liability (4C - 6B) or (Surplus Funding) - \$ millions	\$ -	\$ -	-

Section 2 Actuarial Obligation



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

**Actuarial Obligation
 (continued)**

Details are shown below.

(\$ Millions)	2014 Valuation	2012 Valuation
Current Retirees	\$ 338.5	\$ 420.2
Inactive Deferred	N/A	N/A
Active Members	N/A	N/A
Present Value of Part A Premiums	\$ 338.5	\$ 420.2
Present Value of Part B Penalties	3.2	4.0
Total Present Value of MPP Program Benefits	\$ 341.7	\$ 424.2

**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:

(\$ Millions)	Actuarial (Gains) or Losses
Expected Actuarial Obligation	
Actuarial Obligation as of June 30, 2012	\$ 424.2
Expected Increase due to Interest	60.9
Expected Decrease due to Payments	(67.3)
Expected Actuarial Obligation	\$ 417.8
Actuarial (Gains) or Losses by Source	
Change in Investment Return and Demographic Assumptions	\$ 0.0
Change in Premium/Penalty Different than Expected	(65.7)
Change in Medical Trend Assumption	5.5
Change in Part A Enrollment Assumptions	(7.5)
All other sources	(8.4)
(Gain) or Loss on the Actuarial Obligation	\$ (76.1)
Actual Actuarial Obligation	
Actuarial Obligation as of June 30, 2014	\$ 341.7

**Actuarial Gains
and Losses
(continued)**

Based on the 2012 valuation, the Actuarial Obligation was expected to increase to \$417.8 million. The actual Actuarial Obligation of \$341.7 million represents a net actuarial gain of \$76.1 million. This gain was mostly caused by smaller than expected increases in Part A Premiums over the last two years.

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Section 3 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 for the MPP Program of \$0.

The Funded Status is shown below.

(\$ Millions)	2014 Valuation	2012 Valuation
Actuarial Obligation		
Part A Premiums	\$ 338.5	\$ 420.2
Part B Penalties	3.2	4.0
Actuarial Obligation	\$ 341.7	\$ 424.2
THBF Assets	0.9	0.4
Existing Unfunded Actuarial Obligation / (Surplus Funding)	\$ 340.8	\$ 423.8
Guaranteed Funding from future Employer Contributions	340.8	423.8
Effective Unfunded Actuarial Obligation / (Surplus Funding)	\$ 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 2013-2014 fiscal year, the actual cost was \$32.6 million. For the 2014-2015 fiscal year, the expected cost is \$32.1 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.

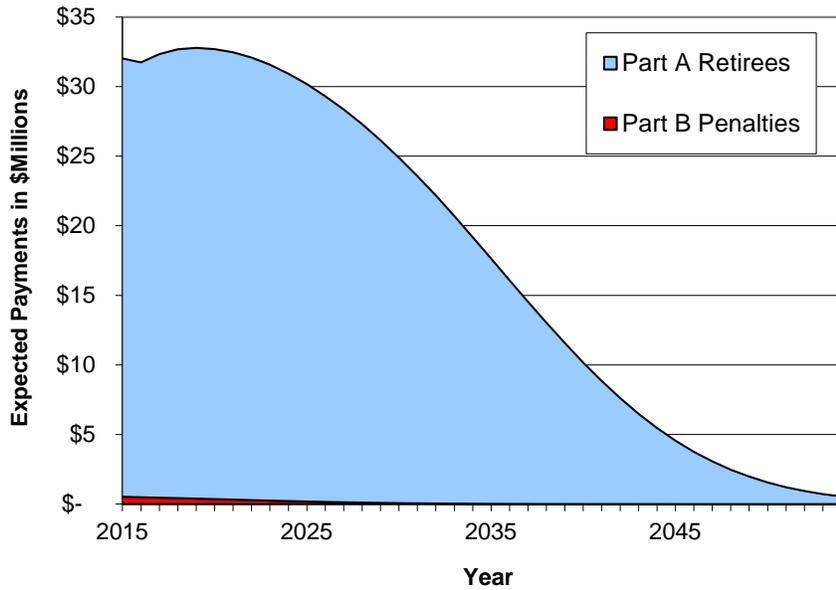


Table 1
Projected MPP Program Costs

Plan Year Ending June 30	Payouts (in \$Thousands)					
	Best Estimate Assumptions			Higher Cost Assumptions		
	Part A	Part B	Total	Part A	Part B	Total
2015	\$ 31,493	\$ 529	\$ 32,022	\$ 31,688	\$ 529	\$ 32,217
2016	31,248	489	31,737	31,798	489	32,287
2017	31,877	459	32,336	32,664	459	33,123
2018	32,253	427	32,680	33,219	427	33,646
2019	32,389	393	32,782	33,534	393	33,927
2020	32,332	357	32,689	33,611	357	33,968
2021	32,143	321	32,464	33,516	321	33,837
2022	31,801	285	32,086	33,281	285	33,566
2023	31,322	249	31,571	32,888	249	33,137
2024	30,709	216	30,925	32,351	216	32,567
2025	29,997	184	30,181	31,701	184	31,885
2026	29,150	155	29,305	30,957	155	31,112
2027	28,228	129	28,357	30,070	129	30,199
2028	27,197	106	27,303	29,094	106	29,200
2029	26,052	85	26,137	27,972	85	28,057
2030	24,819	68	24,887	26,774	68	26,842
2031	23,509	54	23,563	25,456	54	25,510
2032	22,135	42	22,177	24,060	42	24,102
2033	20,667	32	20,699	22,561	32	22,593
2034	19,152	24	19,176	21,018	24	21,042
2035	17,621	18	17,639	19,401	18	19,419
2036	16,062	14	16,076	17,794	14	17,808
2037	14,530	10	14,540	16,169	10	16,179
2038	13,025	7	13,032	14,569	7	14,576
2039	11,569	5	11,574	13,006	5	13,011
2040	10,156	4	10,160	11,489	4	11,493
2041	8,842	2	8,844	10,060	2	10,062
2042	7,619	2	7,621	8,708	2	8,710
2043	6,483	1	6,484	7,457	1	7,458
2044	5,469	1	5,470	6,322	1	6,323
2045	4,557	-	4,557	5,292	-	5,292
2046	3,752	-	3,752	4,385	-	4,385
2047	3,071	-	3,071	3,595	-	3,595
2048	2,469	-	2,469	2,911	-	2,911
2049	1,980	-	1,980	2,339	-	2,339
2050	1,555	-	1,555	1,849	-	1,849
2051	1,209	-	1,209	1,448	-	1,448
2052	941	-	941	1,133	-	1,133
2053	716	-	716	867	-	867
2054	552	-	552	655	-	655
2055	408	-	408	503	-	503
2056	302	-	302	375	-	375
2057	229	-	229	275	-	275
2058	163	-	163	210	-	210
2059	123	-	123	149	-	149
2060	91	-	91	107	-	107
2061	64	-	64	76	-	76
2062	49	-	49	57	-	57
2063	31	-	31	43	-	43
2064	22	-	22	30	-	30
2065	18	-	18	22	-	22



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Section 4 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 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 3.50% is appropriate for discounting the MPP Program obligations for GASB purposes. The Board adopted the 3.50% discount rate, which is based upon the expected return for short-term fixed income securities, at its February 2015 meeting. This results in much higher GASB 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 (22 years remaining as of the valuation date June 30, 2014).

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.

Table 2
Statement of Program Assets

<i>(\$ Thousands)</i>	June, 2014	June, 2012
Invested Assets		
Short-term	\$ 1,007	\$ 541
Debt Securities	0	0
Equity	0	0
Alternative	0	0
Real Estate	<u>0</u>	<u>0</u>
Total Investments	\$ 1,007	\$ 541
Cash and Cash Equivalents	1	1
Receivables	6	2
Liabilities	<u>(144)</u>	<u>(106)</u>
Fair Market Value of Net Assets	\$ 870	\$ 438

Table 3
Statement of Changes in Program Assets

<i>(\$ Thousands)</i>	June, 2014	June, 2012
Contributions		
Members	\$ 0	\$ 0
Employers	33,395	34,614
State of California	<u>0</u>	<u>0</u>
Total Contributions	33,395	34,614
Benefits and Expenses		
Retirement, Death, and Survivors	\$ (32,632)	\$ (34,412)
Refunds of Member Contributions	(0)	(0)
Administrative Expenses	<u>(327)</u>	<u>(370)</u>
Total Benefits and Expenses	(32,959)	(34,782)
Net Cash Flow	\$ 436	\$ (168)
Investment Income		
Realized Income	\$ 10	\$ 8
Net Appreciation	0	0
Investment Expenses	(0)	(0)
Other (Expense) Income	<u>(0)</u>	<u>(0)</u>
Net Investment Return	10	8
Net Increase	\$ 446	\$ (160)
Fair Market Value of Net Assets		
Beginning of Year	\$ <u>424</u>	\$ <u>598</u>
End of Year	\$ 870	\$ 438

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%
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
6/30/2014	\$ 0.9	\$ 482.0	\$ 481.1	0.2%	\$ -	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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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%
2013	\$ 38.1	\$ 35.0	91.9%
2014	\$ 38.1	\$ 33.4	87.7%

**The UAAL is amortized over a closed 30-year period starting June 30, 2006 on a level-dollar basis. The remaining period is 22 years as of June 30, 2014.*

Table 6
Determination of Annual Required Contribution
 (in millions)

<u>Annual Required Contribution (ARC)*</u>	<u>Year Ended June 30, 2015</u>
(1) Normal Cost	\$ 0.0
(2) Amortization Payment of UAAL	<u>31.7</u>
	\$ 31.7

**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 beginning with the June 30, 2012 actuarial valuation, the normal cost is \$0. The UAAL amount of \$481.1 million is assumed to be amortized over a closed 30-year period from June 30, 2006 on a level-dollar basis.*

Section 5 Assumptions Used in MPP Program Valuation



The calculations presented in this report are based on the assumptions shown in Appendix B. This valuation reflects higher future increases in expected Medicare premiums, in line with current expectations. Additionally, this valuation reflects slightly lower Medicare Part A enrollment assumptions, based on an experience study over the previous two years. The Board adopted the assumptions as shown in Appendix B of this report for this (June 30, 2014) MPP Program valuation at its February 2015 meeting.

Economic

Table 7 contains a summary of economic and demographic assumptions for the June 30, 2014 MPP Program valuation and a comparison against the June 30, 2012 MPP Program valuation assumptions.

Note that the current valuation uses the 2015 Medicare Part A and Part B premiums as the basis for future premium calculations. Future premiums are assumed to increase with the medical trend of 3.7% for Part A and 4.7% for Part B, which are increases from the prior assumption of 3.5% for Part A and 4.5% for Part B.

Enrollment

Table 8 presents the participation (enrollment) assumptions for the best estimate scenario and **Table 9** presents the participation assumption for the conservative (high cost) estimate scenario included in this valuation.

Based on a review of the actual enrollment experience over the last two years, we have slightly reduced these rates since the June 30, 2012 valuation. **Table 10** shows the results of our experience analysis.

Other Assumptions

We have applied the mortality assumptions from the CalSTRS June 30, 2014 DB Program valuation. We have estimated the present value of the actuarial obligation for the MPP Program as of June 30, 2014, assuming an interest rate of 7.50% (3.50% for GASB). This 7.50% rate is the same rate that was used to discount the pension liabilities for the June 30, 2014 DB Program valuation.

Table 7
June 30, 2014 Economic Assumptions

	June 30, 2014 Valuation	June 30, 2012 Valuation
Retirement/Termination/Disability/Mortality*	Same as pension valuation	Same as pension valuation
Enrollment Rates	Lower rates recommended (See Tables 8 & 9)	See Tables 8 & 9
Interest Rate		
- For Funding	7.50%	7.50%
- For GASB Reporting	3.50%	4.00%
Part A Premiums		
- Initial Premium	\$407 (CY 2015)	\$441 (CY 2013)
- Inflation	3.7%	3.5%
Part B Premiums		
- Initial Premium	\$104.90 (CY 2015)	\$104.90 (CY 2013)
- Inflation	5.7%	4.5%

**Pension plan demographic assumptions were updated by the Board at its February 2012 meeting.*

Table 8
Summary of Part A Enrollment Rates – Best Estimate (Valuation Assumptions)*

Assumption	Current Assumptions	Prior Assumptions
	June 30, 2014	June 30, 2012
% of Under 65 Retirees Enrolling (Retired on or After 2001)**	2.50%	2.80%
% of Under 65 Retirees Enrolling (Retired Before 2001)	3.50%	4.50%
% of Over 65 Retirees Enrolling (for those not Currently Enrolled) at Age:***		
65	0.75%	1.20%
66	0.12	0.12
67	0.10	0.10
68	0.08	0.08
69	0.06	0.06
70-84	0.02	0.02
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.*

Table 9
Summary of Part A Enrollment Rates – Higher Cost*

Assumption	Current Assumptions	Prior Assumptions
	June 30, 2014	June 30, 2012
% of Under 65 Retirees Enrolling (Retired on or After 2001)**	3.15%	3.50%
% of Under 65 Retirees Enrolling (Retired Before 2001)	4.25%	5.50%
% of Over 65 Retirees Enrolling (for those not Currently Enrolled) at Age:***		
65	1.00%	1.50%
66	0.15	0.15
67	0.12	0.12
68	0.10	0.10
69	0.08	0.08
70-84	0.03	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.

Table 10
Results of June 30, 2014 Enrollment Study

(For Period July 1, 2012 through June 30, 2014)

	Enrollees	Total Retirees*	Enrollment Percent		Proposed
			Actual	Expected	
Under 65 Retirees (Retired on or After 2001)	393	18,219	2.16%	2.80%	2.50%
Under 65 Retirees (Retired Before 2001)	2	105	1.90%	4.50%	3.50%
Over 65 Retirees (non Currently Enrolled) at Age:					
65	65	11,203	0.58%	1.20%	0.75%
66	8	18,268	0.04%	0.12%	0.12%
67	5	18,051	0.03%	0.10%	0.10%
68	4	18,338	0.02%	0.08%	0.08%
69	5	12,657	0.04%	0.06%	0.06%
70-74	15	66,723	0.02%	0.02%	0.02%
75-84 **	8	106,194	0.01%	0.02%	0.02%
All Ages	505	269,758	0.19%	0.28%	0.24%

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

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

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Appendix A Provisions of Governing Law



All of the actuarial calculations contained in this report are based upon our understanding of the CalSTRS 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 (\$407 per month in 2015). Reduced amount if less than 40 quarters of covered employment.

Part B:

Part B premium (\$104.90 per month in 2015). Only the penalty is paid by CalSTRS. (Small group of high earners will have higher premiums.)

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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.

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**.

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 = 3.50%
B.	Medical Inflation	
	Part A Premiums	3.70%
	Part B Premiums	5.70%
C.	Price Inflation	3.00%

II. Demographic Assumptions

A.	Mortality*		
	(1) Active	- Male - Female	N/A N/A
	(2) Retired & Beneficiary	- Male - Female	2011 CalSTRS Retired – M 2011 CalSTRS Retired – F Table B.2 Table B.2
	(3) Disabled	- Male - Female	2011 CalSTRS Disabled – M 2011 CalSTRS Disabled – F Table B.2 Table B.2 (select rates in first three years for both Males and Females)

**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.*

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 5.7% for Part B premiums takes into account the projected higher premiums above the compensation limit.

**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
Select rates for disability:				
	First year of disablement		6.0%	3.5%
	Second year of disablement		4.8	3.0
	Third year of disablement		3.5	2.5

Table B.3
Part A Enrollment Rates*

<u>Assumption</u>	<u>Best Estimate</u>	<u>Higher Cost</u>
% of Actives and Under 65 Retirees Enrolling (Retired on or After 2001)**	2.50%	3.15%
% of Under 65 Retirees Enrolling (Retired Before 2001)**	3.50%	4.25%
% of Over 65 Retirees Enrolling (for those not Currently Enrolled) at Age***		
65	0.75%	1.00%
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.*

Appendix C Valuation Data



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

Tables C.1 through **C.2** summarize the census data used in this valuation.

Table C.1
Summary of Statistical Information

	June 30, 2014	June 30, 2012
Number of Enrolled Members		
Retirees with Part A Premium	6,676	6,727
Retirees with Part B Penalty	827	942
Average CalSTRS Payment for Enrolled Members		
(for current calendar year)		
Retirees with Part A Premium	\$ 380.33	\$ 418.45
Retirees with Part B Penalty	56.12	59.01

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
2015	-	6,721	6,721	-	797	797
2016	-	6,671	6,671	-	735	735
2017	-	6,646	6,646	-	673	673
2018	-	6,473	6,473	-	610	610
2019	-	6,255	6,255	-	548	548
2020	-	6,017	6,017	-	487	487
2021	-	5,763	5,763	-	428	428
2022	-	5,490	5,490	-	372	372
2023	-	5,245	5,245	-	318	318
2024	-	4,966	4,966	-	269	269
2025	-	4,690	4,690	-	225	225
2026	-	4,398	4,398	-	185	185
2027	-	4,105	4,105	-	150	150
2028	-	3,817	3,817	-	120	120
2029	-	3,531	3,531	-	94	94
2030	-	3,241	3,241	-	73	73
2031	-	2,955	2,955	-	56	56
2032	-	2,687	2,687	-	42	42
2033	-	2,415	2,415	-	31	31
2034	-	2,160	2,160	-	23	23
2035	-	1,909	1,909	-	17	17
2036	-	1,689	1,689	-	12	12
2037	-	1,464	1,464	-	9	9
2038	-	1,267	1,267	-	6	6
2039	-	1,075	1,075	-	4	4
2040	-	913	913	-	3	3
2041	-	760	760	-	2	2
2042	-	627	627	-	1	1
2043	-	514	514	-	1	1
2044	-	413	413	-	-	-
2045	-	333	333	-	-	-
2046	-	264	264	-	-	-
2047	-	204	204	-	-	-
2048	-	159	159	-	-	-
2049	-	114	114	-	-	-
2050	-	90	90	-	-	-
2051	-	66	66	-	-	-
2052	-	46	46	-	-	-
2053	-	35	35	-	-	-
2054	-	27	27	-	-	-
2055	-	16	16	-	-	-



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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 Equivalent	Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.
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 MPP Program 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.
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 MPP Program valuation, the Actuarial Value of Assets is equal to the value of future MPP Program payments.

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 MPP Program 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, 2014.