Milliman Actuarial Valuation

Medicare Premium Payment Program of the California State Teachers' Retirement System

June 30, 2022 Actuarial Valuation

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Teachers' Retirement Board
California State Teachers' Retirement System

Re: **Medicare Premium Payment Program Actuarial Valuation as of June 30, 2022**

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, 2022. 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 2023 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, 2022.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by CalSTRS staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and 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 valuation results were developed using models employing standard actuarial techniques. We have reviewed the models, including their inputs, calculations, and outputs for consistency, reasonableness, and appropriateness to the intended purpose and in compliance with generally accepted actuarial practice and relevant actuarial standards of practice. The intent of the models is to estimate Medicare Part A and Part B annual trends and costs.

This valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

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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. 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 the actuarial methods and assumptions used in the 2022 valuation.

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, such as financial reporting in accordance with GASB standards, may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of CalSTRS. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exceptions:

(a) CalSTRS may provide a copy of Milliman's work, in its entirety, to CalSTRS professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit CalSTRS.

(b) CalSTRS may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are public plan 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 the principles prescribed by the Actuarial Standards Board and the *Code of Professional Conduct* and *Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States* promulgated by the American Academy of Actuaries. We are members of the American Academy of Actuaries and meet its Qualification Standards to render the actuarial opinion contained herein. The report uses the expertise of Milliman healthcare and retirement actuaries. Assumptions related to the healthcare trend (cost inflation) rates for the retiree Medicare premium payment program discussed in this report were determined by Milliman actuaries qualified in such matters.

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We would like to express our appreciation to the CalSTRS staff who gave substantial assistance in supplying the data on which this report is based. We respectfully submit the following report and we look forward to discussing it with you.

Sincerely,

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Consulting Actuary

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1. Summary of the Findings

The primary purpose of the actuarial valuation is to analyze the sufficiency of the current assets and allocated contributions 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.

It should be noted that this valuation only analyzes the funding of the MPP Program. A separate report has been previously provided that addresses the financial reporting of the CalSTRS MPP Program under GASB 74 and 75.

The key findings of this actuarial funding valuation are as follows:

Funding Sufficiency

We find that as of June 30, 2022 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 $243.3 million for both Part A premiums (and surcharges if applicable) and Part B penalties. The Teachers' Health Benefit Fund (THBF) does not have sufficient assets to fund this obligation; however, a portion of future employer contributions has been allocated to fully fund the MPP Program obligations for total resources of $243.3 million. Our valuation assumes that the value of these contributions is available to fund the MPP Program benefits.

If these allocated contributions 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 the 2021 funding valuation for 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.

The Funded Status of a benefit plan is based on a comparison 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%.

($ Millions)	2022 Valuation	2021 Valuation
Actuarial Obligation		
Part A Premiums	$ 242.3	$ 257.7
Part B Penalties	1.0	1.2
Actuarial Obligation	$ 243.3	$ 258.9
THBF Assets	0.2	0.2
Existing Unfunded Actuarial Obligation / (Surplus Funding)	$ 243.1	$ 258.7
Guaranteed Funding from Future Employer Contributions	243.1	258.7
Effective Unfunded Actuarial Obligation / (Surplus Funding)	$ 0.0	$ 0.0

Assumptions

The assumptions and methods were adopted at the January 2020 Teachers' Retirement Board meeting and there have been no changes to them since the last valuation. See Appendix B of this report for details.

Changes since the 2021 Valuation

Changes since the 2021 valuation of the MPP Program are as follows:

- The actual 2023 Medicare Part A monthly premium amount is $506, which is less than the projected 2023 amount of $520 based on the prior valuation. This resulted in a decrease in the Actuarial Obligation of approximately $3.3 million.
- The actual 2023 Medicare Part B monthly premium amount is $164.90, which is less than the projected 2023 amount of $179 based on the prior valuation. This resulted in a decrease in the Actuarial Obligation of approximately $0.1 million.

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)	2022 Valuation	2021 Valuation
Actuarial Obligation		
Best Estimate	$ 243.3	$ 258.9
Higher Cost Assumptions	266.8	284.9

Participation Summary

A reconciliation of retirees receiving MPP Program Part A benefits as of June 30, 2021 and June 30, 2022 is shown below.

Members with a Part A Premium	Retired Members
As of June 30, 2021	**5,042**
New Enrollees	12
Deaths/Departures	(328)
As of June 30, 2022	**4,726**

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

		2022 Valuation	2021 Valuation	Relative Change
1.	Current MPP Program Membership			
	A. Retirees with Part A Premium	4,726	5,042	(6.3)%
	B. Retirees with Part B Penalty	299	354	(15.5)%
2.	Monthly Medicare Premium Amount (for following calendar year)			
	A. Part A	$ 506.00	$ 499.00	1.4%
	B. Part B	164.90	170.10	(3.1)%
3.	Average CalSTRS Payment for Participating Members (for following calendar year)			
	A. Retirees with Part A Premium	$ 456.33	$ 451.61	1.0%
	B. Retirees with Part B Penalty	66.62	73.60	(9.5)%
4.	Actuarial Obligation ($ millions)			
	A. Retirees with Part A Premium	$ 242.3	$ 257.7	(6.0)%
	B. Retirees with Part B Penalty	1.0	1.2	(16.7)%
	C. Total	$ 243.3	$ 258.9	(6.0)%
5.	Actuarial Obligation ($ millions) - Alternate Measurement			
	Total under Higher Cost Assumptions	$ 266.8	$ 284.9	(6.4)%
6.	MPP Program Assets			
	A. Market Value of THBF ($millions)	$ 0.18	$ 0.21	(14.3)%
	B. Total Allocated MPPP Assets ($ millions)	$ 243.3	$ 258.9	(6.0)%
7.	Unfunded Actuarial Obligation (4C - 6B) or (Surplus Funding) - $ millions	$ 0.00	$ 0.00	-
8.	Funding Sufficiency			
	Are current allocated assets greater than or equal to the value of all expected payments?	Yes	Yes	

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 potentially 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 increases in the premium levels in future years, 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.

Details are shown below.

($ Millions)	2022 Valuation	2021 Valuation
Current Retirees	$ 242.3	$ 257.7
Inactive Deferred	N/A	N/A
Active Members	N/A	N/A
Present Value of Part A Premiums	$ 242.3	$ 257.7
Present Value of Part B Penalties	1.0	1.2
Total Present Value of MPP Program Benefits	$ 243.3	$ 258.9

Actuarial Gains and Losses

To determine the extent of actuarial gains or losses that occurred during the year, a comparison is made 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 when the previous valuation is performed.

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, 2021	$ 258.9
Expected increase due to interest	17.2
Expected decrease due to payments	(25.8)
Expected Actuarial Obligation as of June 30, 2022	250.3
Actuarial (Gains) or Losses by Source	
Changes in Investment Return and Demographic Assumptions	-
Change in Premium/Penalty greater (less) than expected	(3.4)
Part A Enrollment greater (less) than expected	(4.5)
Change in Medical Trend Assumption	-
Change in Part A Enrollment Assumptions	-
All other sources	0.9
(Gain) or loss on the Actuarial Obligation	(7.0)
Actual Actuarial Obligation	
Actuarial Obligation as of June 30, 2022	$ 243.3

Based on the 2021 valuation, the Actuarial Obligation was expected to decrease to $250.3 million as of June 30, 2022. The actual Actuarial Obligation of $243.3 million represents a net actuarial gain of $7.0 million. This gain was caused by premiums less than expected and lower than assumed enrollment in the program.

3. Funding

The **Unfunded Actuarial Obligation** (UAO) 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 (technically the value of future contributions) 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. The result is that the MPP Program does not have a UAO.

The Funded Status is shown below.

($ Millions)	2022 Valuation	2021 Valuation
Actuarial Obligation		
Part A Premiums	$ 242.3	$ 257.7
Part B Penalties	1.0	1.2
Actuarial Obligation	$ 243.3	$ 258.9
THBF Assets	0.2	0.2
Existing Unfunded Actuarial Obligation / (Surplus Funding)	$ 243.1	$ 258.7
Guaranteed Funding from Future Employer Contributions	243.1	258.7
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 contributions to the MPP Program. For the 2021-22 fiscal year, the actual cost was $25.8 million. For the 2022-23 fiscal year, the expected cost is $25.4 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.

The graph below represents the Best Estimate payouts shown in Table 1.

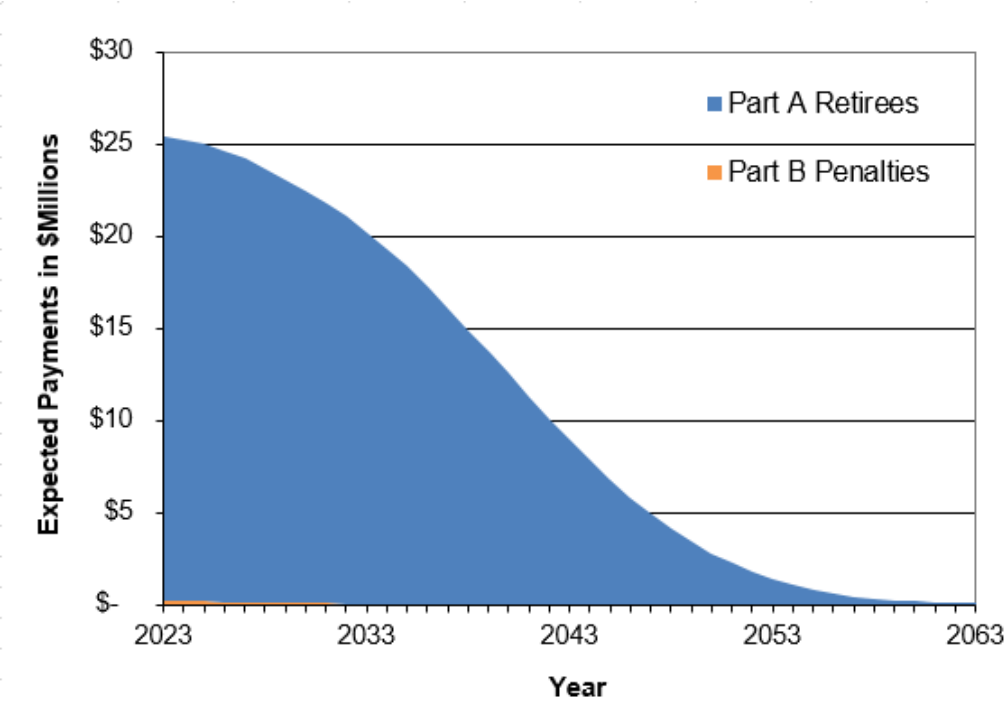

Table 1
Projected MPP Program Costs

Plan Year Ending June 30	Payouts (in $Thousands)					
	Best Estimate Assumptions			Higher Cost Assumptions		
	Part A	Part B	Total	Part A	Part B	Total
2023	$ 25,179	$ 227	$ 25,406	$ 25,247	$ 227	$ 25,474
2024	25,027	199	25,226	25,160	199	25,359
2025	24,790	173	24,963	24,987	173	25,160
2026	24,467	147	24,614	24,725	147	24,872
2027	24,055	124	24,179	24,371	124	24,495
2028	23,554	103	23,657	23,925	103	24,028
2029	22,962	83	23,045	23,382	83	23,465
2030	22,355	67	22,422	22,820	67	22,887
2031	21,728	52	21,780	22,235	52	22,287
2032	21,004	40	21,044	21,544	40	21,584
2033	20,183	30	20,213	20,747	30	20,777
2034	19,272	22	19,294	19,853	22	19,875
2035	18,279	16	18,295	18,868	16	18,884
2036	17,215	11	17,226	17,804	11	17,815
2037	16,092	8	16,100	16,673	8	16,681
2038	14,925	5	14,930	15,493	5	15,498
2039	13,729	3	13,732	14,278	3	14,281
2040	12,514	2	12,516	13,039	2	13,041
2041	11,298	1	11,299	11,795	1	11,796
2042	10,104	1	10,105	10,569	1	10,570
2043	8,947	-	8,947	9,378	-	9,378
2044	7,841	-	7,841	8,236	-	8,236
2045	6,797	-	6,797	7,154	-	7,154
2046	5,826	-	5,826	6,146	-	6,146
2047	4,936	-	4,936	5,218	-	5,218
2048	4,131	-	4,131	4,377	-	4,377
2049	3,414	-	3,414	3,626	-	3,626
2050	2,777	-	2,777	2,957	-	2,957
2051	2,222	-	2,222	2,373	-	2,373
2052	1,754	-	1,754	1,879	-	1,879
2053	1,366	-	1,366	1,468	-	1,468
2054	1,049	-	1,049	1,131	-	1,131
2055	794	-	794	860	-	860
2056	594	-	594	646	-	646
2057	438	-	438	480	-	480
2058	320	-	320	353	-	353
2059	232	-	232	258	-	258
2060	168	-	168	188	-	188
2061	121	-	121	137	-	137
2062	88	-	88	101	-	101
2063	65	-	65	76	-	76

4. Accounting Information

GASB 74 applies to financial reporting for public OPEB plans, GASB 75 governs the specifics of accounting for public OPEB plan obligations for participating employers. These statements apply to the MPP Program. A separate report is prepared showing these results under these two statements. Therefore, no financial disclosure information is shown in this report.

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:

- If less than 30 quarters of covered employment: Part A premium is $506 per month in 2023
- If 30-39 quarters of covered employment: Part A premium is $278 per month in 2023.

  10% surcharge for late enrollment may be paid in some cases for pre-2001 retirements

Part B: Monthly Part B premium ($164.90 per month in 2023). Only the penalty is paid by CalSTRS.

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 based on recent experience of the MPP Program and on current expectations as to future economic conditions. The assumptions were reviewed and changed for the June 30, 2019 actuarial valuation as a result of the 2020 Actuarial Experience Analysis. Please refer to that Experience Analysis report dated January 14, 2020 for the data and rationale used in the recommendation of each assumption and for further information on the DB Program assumptions.

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.

Actuarial Cost Method

The cost method used for the MPP Program valuation is the Entry Age Normal Cost Method. Since there are no active members eligible to receive future MPP Program benefits, the Normal Cost is $0, and the Actuarial Obligation for the MPP Program is equal to the value of all benefits expected to be paid in the future. This obligation, less any assets currently residing in the Teachers' Health Benefit Fund (THBF), is included with the obligation of the DB Program. The assets in the THBF are valued at Fair Market Value but exclude line items for "Net Pension and OPEB Obligation" for funding purposes.

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.

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.2** and illustrated at selected ages in **Table B.3.**

Economic Assumptions

Table B.1 contains a summary of economic and demographic assumptions for the June 30, 2022 MPP Program valuation and a comparison against the June 30, 2021 MPP Program valuation assumptions.

Note that the current valuation uses the 2023 Medicare Part A and Part B premiums as the basis for future premium calculations. Future premiums are assumed to increase with a medical trend that varies by year, as shown in the Medical Inflation section of **Table B.2**.

The Part A trend is approximately equivalent to assuming a fixed 4.5% increase each year. The Part B trend is approximately equivalent to assuming a fixed 5.4% increase each year.

Enrollment Assumption

Table B.4 presents the participation (enrollment) assumptions for the best estimate scenario and the conservative (higher cost) estimate scenario included in this valuation. The enrollment rates are based on actual enrollments divided by all pre-April 1, 1986 hires. For valuation purposes, it is assumed that all pre-April 1, 1986 hires are potentially eligible for the MPP Program.

Note the participation rates include a small margin for members who were not retired on June 30, 2012 but may elect in the future to backdate their retirement date under Education Code Section 24204 and potentially become eligible for benefits under the MPP Program.

Other Assumptions

Other assumptions include a 7.00% investment return assumption and the 2019 CalSTRS mortality assumptions, which are the same as the assumptions used in the June 30, 2022 DB Program funding valuation.

Financial reporting for the year ended June 30, 2023, GASB 74 and 75 apply to the MPP Program. Separate calculations will be done in the second half of 2023. It is our understanding that CalSTRS will use a discount rate based on the Bond Buyer 20-Bond GO Index.

Table B.1
June 30, 2022 Actuarial Assumptions

	June 30, 2022 Valuation	June 30, 2021 Valuation
Retirement/Termination/Disability/Mortality	Same as DB Program valuation	Same as DB Program valuation
Enrollment Rates	See Table B.4	See 2021 MPPP Valuation Table B.4
Interest Rate		
- For funding	7.00%, same as DB Program Valuation	7.00%, same as DB Program Valuation
- For GASB reporting (for following year)	To be determined (Based on Bond Buyer 20-Bond GO Index)	3.54% (Based on Bond Buyer 20-Bond GO Index)
Part A Premiums		
- Initial premium[1]	$506 (CY 2023)	$499 (CY 2022)
- Inflation (trend)	Varies by year equivalent to fixed 4.5%	Varies by year equivalent to fixed 4.5%
Part B Premiums		
- Initial premium[2]	$164.90 (CY 2023)	$170.10 (CY 2022)
- Inflation (trend)	Varies by year equivalent to fixed 5.4%	Varies by year equivalent to fixed 5.4%
Retirement/Termination/Disability/Mortality	Same as pension valuation	Same as pension valuation

1. CalSTRS pays the applicable Part A premium. For some pre-2001 retirees, CalSTRS also pays a late enrollment surcharge.

2. CalSTRS pays the Part B penalty, which is a percentage of the Part B premium amount. Part B penalties used in the valuation are those supplied by CalSTRS after adjusting for the applicable trend rate.

Table B.2
List of Major Valuation Assumptions

Economic Assumptions

A. Investment Return (net of investment and administrative expenses) — Best Estimate = 7.00%; Higher Cost = 6.00%

B. Medical Inflation

Trend Assumption		
	Assumed Annual Increase	
Years[1]	Part A	Part B
2019 - 2028	4.3%	5.5%
2029 - 2038	5.0%	5.1%
2039 - 2048	4.9%	4.5%
2049 & Later	4.3%	4.4%

1. Trend rates indicate medical inflation in the specific valuation year and therefore affect the premiums for the following valuation year. For example, the projected 2023-2024 premium is the 2022-2023 premium increased by the assumed 2022-2023 trend rate.

C. Price Inflation — 2.75%

Demographic Assumptions

A. Mortality[2]

Active	- Male	N/A	
	- Female	N/A	
Retired & Beneficiary	- Male	2019 CalSTRS Retired Male	Table B.3
	- Female	2019 CalSTRS Retired Female	Table B.3
Disabled	- Male	2019 CalSTRS Disabled Retiree Male	Table B.3
	- Female	2019 CalSTRS Disabled Retiree Female (select rates in first 3 years for both Males and Females)	Table B.3

2. The mortality assumption uses a generational mortality approach with a base year of 2019. Projected improvement is based on 110% of the MP-2019 Ultimate Projection Scale. The combined base tables and projection scale specified contain a margin for expected future mortality improvement.

B. Service Retirement — N/A

C. Disability Retirement — N/A

D. Withdrawal — N/A

E. Probability of Refund — N/A

F. MPP Program Enrollment Rates — Experience Tables — Table B.4

Table B.3
Mortality as of June 30, 2022

	Retired Members and Beneficiaries[1]		Disabled Members (After Year 3)[1]	
Age	Male	Female	Male	Female
50	0.227%	0.126%	1.748%	0.987%
55	0.335	0.199	2.033	1.235
60	0.449	0.265	2.306	1.458
65	0.638	0.400	2.683	1.742
70	1.021	0.659	3.327	2.261
75	1.832	1.211	4.388	3.217
80	3.362	2.322	6.074	4.765
85	6.464	4.632	8.824	7.081
90	12.501	9.450	13.419	10.491
95	21.425	17.761	20.122	15.574

Select minimum rates for disability:

First year of disability	4.0%	3.0%
Second year of disability	3.5	2.5
Third year of disability	3.0	2.0

1. The mortality assumption uses a generational mortality approach with a base year of 2019. Projected improvement is based on 110% of the MP-2019 Ultimate Projection Scale. The rates shown reflect mortality improvement through June 30, 2022. The projection scale does not apply to the select minimum rates.

Table B.4
Part A[1] Enrollment Rates

Assumption	Best Estimate	Higher Cost
Percent of under age 65 retirees enrolling (retired on or after 2001)[2]	2.00%	2.50%
Percent of under age 65 retirees enrolling (retired before 2001) [2]	2.00%	2.50%
Percent of over age 65 retirees enrolling (for those not currently enrolled) at Age:[3]		
65	0.20%	0.40%
66	0.02	0.04
67	0.02	0.04
68	0.02	0.04
69	0.02	0.04
70-84	0.02	0.03
85 & Above	0.00	0.00
Percent of over age 65 retirees enrolling (for those already enrolled)	100.0%	100.0%

1. Only current enrollees are assumed to receive Part B payments.

2. 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.

3. For over age 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 and **C.2** summarize the census data used in this valuation.

Table C.1
Summary of Statistical Information

	June 30, 2022	June 30, 2021
Number of Enrolled Members[1]		
Retirees with Part A Premium	4,726	5,042
Retirees with Part B Penalty	299	354
Average CalSTRS Payment for Enrolled Members (for current calendar year)		
Retirees with Part A Premium	$ 456.33	$ 451.61
Retirees with Part B Penalty	66.62	73.60

1. Most retirees in the Part B penalty group are also in the Part A premium group, so the total retirees participating in the MPP Program is less than the sum of the two groups.

Table C.2
Projected MPP Program Membership

Plan Yr Ending 6/30	Part A			Part B		
	Current Status			Current Status		
	Active	Retired	Total	Active	Retired	Total
2023	-	4,498	4,498	-	259	259
2024	-	4,268	4,268	-	222	222
2025	-	4,032	4,032	-	188	188
2026	-	3,796	3,796	-	156	156
2027	-	3,560	3,560	-	128	128
2028	-	3,325	3,325	-	103	103
2029	-	3,092	3,092	-	82	82
2030	-	2,862	2,862	-	64	64
2031	-	2,636	2,636	-	49	49
2032	-	2,414	2,414	-	36	36
2033	-	2,199	2,199	-	27	27
2034	-	1,990	1,990	-	19	19
2035	-	1,790	1,790	-	13	13
2036	-	1,598	1,598	-	9	9
2037	-	1,416	1,416	-	6	6
2038	-	1,244	1,244	-	4	4
2039	-	1,085	1,085	-	3	3
2040	-	937	937	-	2	2
2041	-	802	802	-	1	1
2042	-	679	679	-	1	1
2043	-	569	569	-	-	-
2044	-	472	472	-	-	-
2045	-	387	387	-	-	-
2046	-	314	314	-	-	-
2047	-	251	251	-	-	-
2048	-	198	198	-	-	-
2049	-	155	155	-	-	-
2050	-	119	119	-	-	-
2051	-	90	90	-	-	-
2052	-	67	67	-	-	-
2053	-	50	50	-	-	-
2054	-	36	36	-	-	-
2055	-	26	26	-	-	-
2056	-	18	18	-	-	-
2057	-	13	13	-	-	-
2058	-	9	9	-	-	-
2059	-	6	6	-	-	-
2060	-	4	4	-	-	-
2061	-	3	3	-	-	-

Appendix D Glossary

The following definitions are largely excerpts from a list adopted 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 compensation, rates of investment earnings and asset appreciation or depreciation, and procedures used to determine other relevant items.

Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension and medical 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 medical 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 Cost 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 or medical plan.

Actuarial Value of Assets

The value of cash, investments and other property belonging to a pension or medical 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 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 value of future 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, 2022.