California State Teachers' Retirement Plan

GASB 67/68 Reporting

Reporting Date: June 30, 2024

Measurement Date: June 30, 2024

Actuarial Valuation Date: June 30, 2023

Prepared by:

Nick Collier
ASA, EA, MAAA

Scott Preppernau
FSA, EA, MAAA

Julie Smith
FSA, EA, MAAA

Milliman, Inc.
1301 Fifth Avenue, Suite 3800
Seattle WA 98101-2605
Tel +1 206 624 7940
milliman.com

Issued September 12, 2024

Table of Contents

Certification

Actuarial computations presented in this report under Statements No. 67 and 68 of the Governmental Accounting Standards Board are for purposes of assisting the California State Teachers' Retirement System (CalSTRS) and its employers in fulfilling their financial accounting requirements. No attempt is being made to offer any accounting opinion or advice. This report is for fiscal year July 1, 2023 to June 30, 2024. The measurement date for determining plan assets and obligations is June 30, 2024. The calculations enclosed in this report have been made on a basis consistent with our understanding of the plan provisions. Determinations for purposes other than meeting financial reporting requirements may be significantly different than the results contained in this report. Accordingly, additional determinations may be needed for other purposes, such as judging benefit security or meeting employer funding requirements.

This report includes contribution rates that are based on the June 30, 2023 CalSTRS funding valuations. CalSTRS funding is based on complex legislation. The funding valuations contain calculations based on our understanding of the relevant law based on our experience working with CalSTRS and other large public retirement systems and has been augmented by consultation with CalSTRS staff.

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, member census 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. Please see Milliman's June 30, 2023 funding valuation reports dated April 11, 2024 for more information on the data used in the valuation, as well as a summary of the plan provisions and actuarial methods and assumptions.

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 CalSTRS experience and are expected to have no significant bias. 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. We have incorporated other sources of economic data in assessing the reasonableness of the assumptions. Reliance on other experts is reflected in Milliman's capital market assumptions, and in Milliman's expected return model maintained by Milliman investment consultants. We have also considered CalSTRS investment policy, capital market assumptions, and expected return model in our assessment of the investment return assumption.

This 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 (except for the alternate discount rates shown in this report) is outside the scope of our engagement.

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 the actuarial assignment, we did not perform an analysis of the potential range of such future measurements. The Teachers' Retirement Board adopted the actuarial methods and assumptions used in the financial reporting valuation.

Milliman's work is prepared solely for the use and benefit 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 specific needs.

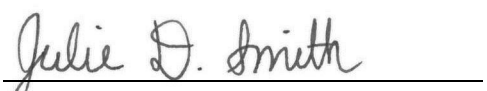
The consultants who worked on this assignment are actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of CalSTRS and the plan sponsors. 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 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 the Qualification Standards to render the actuarial opinion contained herein.

Nick Collier, ASA, EA, MAAA
Consulting Actuary

Scott Preppernau, FSA, EA, MAAA
Consulting Actuary



Julie Smith, FSA, EA, MAAA
Consulting Actuary

Overview of GASB 67 and GASB 68

GASB 67 applies to financial reporting for public pension plans, and GASB 68 governs the specifics of accounting for public pension plan obligations for participating employers. Note that a plan's fiscal year might not be the same as the employer's fiscal year, and an employer's GASB 68 reporting date might be different than the plan's GASB 67 reporting date. GASB 68 requires a liability for pension obligations, known as the Net Pension Liability, to be recognized on the balance sheets of participating employers. Changes in the Net Pension Liability will be immediately recognized as Pension Expense on the income statement or reported as deferred inflows/outflows of resources depending on the nature of the change.

The following GASB Statements provide additional information for, amend, or clarify GASB 67 and 68:

1. GASB 73 provides information about accounting and reporting for pensions and related assets that are not within the scope of GASB 68, and amendments to certain provisions of GASB 67 and 68.
2. GASB 82 addresses certain issues with respect to GASB 67, GASB 68 and GASB 73.

Summary of Analysis Performed

We have calculated certain requested actuarial figures for the California State Teachers' Retirement Plan (the STRP) per the Governmental Accounting Standards Board (GASB) Statements No. 67 and 68. These statements pertain to accounting and financial reporting for pension plans and employers.

The calculations contained in this analysis have been performed using the results of the June 30, 2023 Defined Benefit (DB) Program, Defined Benefit Supplement (DBS) Program, and Cash Balance Benefit (CBB) Program actuarial valuations, with certain revisions to assumptions and methodology as required by GASB 67 and 68 and described later in this report. The liabilities have been projected to June 30, 2024 and combined with the actual assets of June 30, 2024.

Additionally, GASB 67/68 liabilities for the Supplemental Benefit Maintenance Account (SBMA) Program have been included in the STRP calculations contained in this report. Per discussions with CalSTRS staff, we have treated future SBMA benefits as substantively automatic at the 85% replacement level under the GASB 67/68 definition.

Our final deliverable product for these GASB 67/68 calculations is a formatted .CSV file with data format specifications provided by CalSTRS accounting staff. We have provided an electronic copy of this file to CalSTRS staff, in addition to this report. Please note that all certifications and limitations contained or referenced in this report also apply to this electronic deliverable file. Staff should verify consistency of numbers in the .CSV file with numbers contained in this report prior to use.

Per discussions with CalSTRS, we have performed the following analysis for the GASB Reporting Date of June 30, 2024:

1. We have performed an analysis to determine whether the amount of the STRP Fiduciary Net Position is projected to be greater than or equal to the projected STRP benefit payments in every corresponding future year. We have found that the STRP Fiduciary Net Position is projected to be sufficient to pay all projected STRP benefit payments in all future years. Under GASB 67/68 provisions, this results in a discount rate of 7.10% for reporting date June 30, 2024 calculations. The 7.10% discount rate reflects the long-term rate of investment return on total STRP assets, gross of administrative expenses. See the section of this report entitled "Discount Rate" for details.
2. The Total Pension Liability as of June 30, 2024 for the STRP represents the sum of the Total Pension Liability determined for the DB Program, DBS and CBB Programs, and the SBMA program. These values are determined as of the valuation date of June 30, 2023 and projected to June 30, 2024 using standard actuarial techniques. These calculations are based on the following:
    a. The DB Program Total Pension Liability (TPL) and Service Cost for GASB 67/68 purposes is based on the indicated discount rate, the Individual Entry Age actuarial cost method, and all other assumptions the same as those used in the DB Program actuarial valuation as of June 30, 2023.
    b. The DBS and CBB Program Total Pension Liability and Service Cost for GASB 67/68 purposes is based on the indicated discount rate, the Individual Entry Age actuarial cost method, assumed crediting rates of 7.00%, assumed lump sum form of payment for all members, and all other assumptions the same as those used in the DB Program actuarial valuation as of June 30, 2023. The TPL reflects Additional Earnings Credits granted on or before June 30, 2024.

c. The SBMA Program Total Pension Liability and Service Cost for GASB 67/68 purposes is based on the indicated discount rate, the Individual Entry Age actuarial cost method, actual California inflation through June 30, 2023, an assumption for form of payment election consistent with the June 30, 2023 SBMA projection, and all other assumptions the same as those used in the DB Program actuarial valuation as of June 30, 2023.

d. The Total Pension Liability for benefits being paid, or to be paid in the future, from the Replacement Benefit Program (RBP) is included with the TPL for the DB Program, consistent with the funding valuation. Note that it is our understanding that the in-payment data provided to us for DB Program valuation purposes includes benefits payable from the RBP.

3. We have used the projected STRP Total Pension Liability as of June 30, 2024, and the Fiduciary Net Position of the STRP as of June 30, 2024 (as provided to us by CalSTRS staff on August 19, 2024) to calculate the STRP Net Pension Liability as of June 30, 2024.

4. We have performed a discount-rate sensitivity analysis on the STRP Net Pension Liability for +1% (an 8.10% discount rate) and -1% (a 6.10% discount rate) scenarios on the GASB discount rate. In addition to the +/-1% values required under GASB, we have also provided values under +/-2% and +/-3% discount rates as requested by CalSTRS.

5. We have calculated a total average remaining service life for all STRP plan members, rounded to the nearest year. This calculation uses an average remaining service life of 0 years for all inactive members and annuitants. The total average remaining service life for all STRP plan members is 7 years.

6. We have provided the sources of change in the Net Pension Liability between June 30, 2023 and June 30, 2024. These sources of change consist of changes in benefit terms, differences between actual and expected experience, changes of assumptions, and differences between projected and actual earnings on plan investments. The effect of plan changes line reflects the impact of the 2.75% increase in the lump sum death benefit level for deaths occurring after June 30, 2024 that was adopted by the Teachers' Retirement Board at their May 2024 meeting.

Statement of Fiduciary Net Position

$ Millions

	June 30, 2024	June 30, 2023
Assets		
Investments at fair value:		
Debt securities	$ 62,931	$ 54,349
Equity securities	138,429	124,435
Alternative investments	144,180	139,292
Derivative instruments	321	586
Securities lending collateral	32,564	27,277
Bond Proceeds Investment	14	58
Total investments at fair value	378,439	345,997
Cash	281	206
Receivables:		
Investments sold	3,854	4,890
Interest and dividends	1,008	852
Member, employer, and state	1,128	1,044
Loans receivable	6,256	5,641
Other	362	396
Total receivables	12,608	12,823
Other assets:		
Capital assets, net of accumulated depreciation	814	732
Total other assets	814	732
Total assets	$ 392,142	$ 359,758
Deferred outflows of resources	165	175
Total assets and deferred outflow of resources	**$ 392,307**	**$ 359,933**
Liabilities		
Derivative instruments	348	455
Investments purchased payable	6,234	6,653
Obligation under reverse repurchase agreement	1,727	-
Loans and bonds payable	6,126	6,018
Benefits in process of payment	2,099	427
Net pension and OPEB liabilities	642	774
Securities lending obligation	32,573	27,385
Securities sold short	487	379
Other	729	652
Total liabilities	**$ 50,965**	**$ 42,743**
Deferred inflows of resources	324	271
Total liabilities and deferred inflow of resources	**$ 51,289**	**$ 43,014**
Net position restricted for pensions	**$ 341,018**	**$ 316,919**

Statement of Changes in Fiduciary Net Position

$ Millions

	2024	2023
Additions		
Contributions:		
Member contributions	$ 4,735	$ 4,305
Employer contributions	8,585	7,746
State of California	3,946	3,720
Total contributions	17,266	15,771
Investment income (loss):		
Net appreciation (depreciation) in fair value of investments	19,749	13,564
Interest, dividends and other	6,988	6,539
Securities lending income	1,550	1,033
Less investment expenses:		
Cost of lending securities	(1,652)	(1,051)
Reverse repurchase agreement	(26)	-
Other investment expenses	(436)	(410)
Net investment income	26,173	19,675
Other income	391	304
Total Additions	**$ 43,830**	**$ 35,750**
Deductions		
Retirement, disability, and death benefits	18,410	17,764
Purchasing power benefits	636	481
Refunds of member contributions	142	139
Administrative expenses	203	222
Borrowing costs	333	272
Other expenses	7	9
Total Deductions	**$ 19,731**	**$ 18,887**
Net increase (decrease)	**$ 24,099**	**$ 16,863**
Net assets held in trust for pension and other post employment benefits		
Beginning of the year	316,919	300,056
End of the year	**$ 341,018**	**$ 316,919**

Net Pension Liability

$ Millions

Net Pension Liability	June 30, 2024	June 30, 2023
Total pension liability	$ 408,181	$ 393,080
Fiduciary net position	341,018	316,919
Net pension liability	$ 67,163	$ 76,161
Fiduciary net position as a % of total pension liability	83.55%	80.62%
Covered payroll	$ 46,652	$ 42,552
Net pension liability as a % of covered payroll	143.97%	178.98%

The total pension liability was determined by an actuarial valuation as of the valuation date, calculated based on the discount rate shown below and actuarial assumptions and methods as outlined in this report for GASB purposes.

Discount Rate

Discount rate	7.10%	7.10%
Long-term expected rate of return		
Gross of administrative expenses	7.10%	7.10%
Net of all expenses	7.00%	7.00%
Municipal bond rate	N/A	N/A

The plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active, inactive, and in-payment members and beneficiaries. Therefore, the discount rate for calculating the total pension liability is equal to the long-term expected rate of return, gross of administrative expenses. See details of discount rate determination in this report.

Other Key Actuarial Assumptions

The actuarial assumptions that determined the total pension liability as of June 30, 2023 were based on the results of an actuarial experience study for the period July 1, 2007 - June 30, 2022.

Valuation date	June 30, 2023	June 30, 2022
Measurement date	June 30, 2024	June 30, 2023
Other assumptions and methods	See the 'Actuarial Methods and Assumptions for GASB Valuation' section of this report.	

Long-Term Expected Rate of Return

The long-term expected rate of return on CalSTRS assets is determined by combining expected inflation with expected long-term real returns and reflecting expected volatility and correlation. The capital market assumptions and information shown below are provided by CalSTRS. The numbers shown are based on the asset allocation adopted January 2024 and the Capital Market Assumptions for a 20- to 30-year time horizon adopted January 2023.

Note that the valuation assumption for long-term expected return is reviewed annually and re-assessed in detail approximately every four years and is set based on a 20- to 30-year time horizon; the most recent detailed analysis was performed in 2024. See Milliman's 2024 Experience Analysis report for more details. The assumption for the long-term expected return is reviewed annually for continued compliance with the relevant actuarial standards of practice.

Asset Class	Target Allocation	Long-Term Geometric Expected Real Rate of Return[1]
Public Equity	38.0%	5.25%
Private Equity	14.0%	6.75%
Real Estate	15.0%	4.05%
Inflation Sensitive	7.0%	3.65%
Fixed Income	14.0%	2.45%
Risk Mitigating Strategies	10.0%	2.25%
Cash / Liquidity	2.0%	0.05%

1. Real return is net of assumed 2.75% inflation.

Discount Rate

The discount rate is the single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:

1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension plan's fiduciary net position is projected to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term rate of return, calculated using the long-term expected rate of return on pension plan investments.
2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.

Therefore, if plan investments in a given future year are greater than projected benefit payments in that year and are invested such that they are expected to earn the long-term rate of return, the discount rate applied to projected benefit payments in that year should be the long-term expected rate of return on plan investments. If future years exist where this is not the case, then an index rate reflecting the yield on a 20-year, tax-exempt municipal bond should be used to discount the projected benefit payments for those years.

The determination of a future date when plan investments are not sufficient to pay projected benefit payments is often referred to as a depletion date projection. A depletion date projection compares projections of the pension plan's fiduciary net position to projected benefit payments and aims to determine a future date, if one exists, when the fiduciary net position is projected to be less than projected benefit payments. If an evaluation of the sufficiency of the projected fiduciary net position compared to projected benefit payments can be made with sufficient reliability without performing a depletion date projection, alternative methods to determine sufficiency may be applied.

In order to determine the GASB 67/68 discount rate for the STRP, we have made two separate assessments of projected sufficiency of the Fiduciary Net Position, as follows:

1. For the DB and SBMA Programs, a depletion date projection was performed. This projection shows that the Fiduciary Net Position of the DB and SBMA Programs is not expected to be depleted in any future year; that is, the projected Fiduciary Net Position is always expected to be sufficient to pay projected benefit payments under the assumptions applied in this projection for accounting purposes.

    - A projection of Fiduciary Net Position (plan net assets) was performed. This projection includes all district contributions, as well as all state contributions to the DB and SBMA Programs, intended to fund the benefits of current plan members. Additionally, all projected contributions from, and expected future benefit payments to, current plan members are included. The projection does not include any contributions expected to be made by (or future benefit payments expected to be made to) future DB Program members, nor does it include any district or state contributions expected to be made to fund the cost of benefits for future DB or SBMA Program members. Mid-year timing of cash flows was assumed.
    - We have reflected the projected statutory contribution rates to the DB Program by members, districts, and the state under the law (to the extent allowed under GASB 67/68; see preceding point). These contribution rates are designed to fully fund the DB Program by 2046 as shown in the June 30, 2023 valuation of the DB Program.

- For purposes of this depletion date projection, we have treated future SBMA benefits at the 85% purchasing power level as substantively automatic under the GASB 67/68 definition. Note that the DB Program 2% Annual Benefit Adjustment is considered an automatic benefit adjustment and is included in valuation calculations.
- We have reduced future contributions to the DB Program by the projected amounts expected to be diverted to pay benefits of the Medicare Premium Payment Program in future years.

2. For the DBS and CBB Programs, we have used an alternative method as allowed under GASB 67/68 to determine the sufficiency of Fiduciary Net Position in all future years. These Programs are account balance programs, where a crediting rate to member accounts is defined, and additional earnings credits may be granted to member accounts if investment earnings meet certain thresholds.

   The investments for these plans are assumed to earn more than the statutory crediting rate for each plan (i.e., investment income is always assumed to exceed crediting to member accounts). Moreover, as of the June 30, 2023 actuarial valuations for these Programs, each Program was more than 100% funded on an actuarial valuation basis.

   Due to the nature of the plan design and the strong funding status of these plans, by definition the Fiduciary Net Position of these plans will always be projected to be sufficient to pay projected benefit payments for both the DBS and CBB Programs under the parameters GASB specifies for the depletion date projection.

Based on the results of the depletion date projection performed for the DB and SBMA Programs, and the alternative method used to determine ongoing sufficiency of projected Fiduciary Net Position (FNP) for the DBS and CBB Programs, we have concluded that the Fiduciary Net Position of the STRP, when projected in accordance with GASB 67/68 standards and using the assumptions and methods outlined above, is projected to be sufficient to pay projected benefit payments in all future years. The following exhibits show that the DB Program (including the SBMA Program) is projected to never be depleted.

Since the projected Fiduciary Net Position of the STRP is projected to be sufficient to pay projected benefit payments in all future years, the GASB 67/68 discount rate for purposes of calculating the STRP liabilities is set equal to the long-term assumed rate of return on STRP investments. This long-term assumed rate of return should be net of investment expenses, but gross of administrative expenses, for GASB 67/68 purposes. Therefore, we have used a discount rate of 7.10% for all calculations for the STRP under GASB 67/68. This rate reflects the long-term assumed rate of return on assets for funding purposes of 7.00% net of all expenses, increased by 0.10% to be gross of administrative expenses. If future years exist in which the Fiduciary Net Position is projected to be insufficient to pay projected benefit payments, an index rate reflecting the yield on a 20-year, tax-exempt municipal bond must be used to discount the payments for years that the FNP is insufficient; however, this does not apply to CalSTRS for this reporting period.

Projection of Fiduciary Net Position (Includes DB & SBMA)

$ Millions

Fiscal Year Ending	Projected Beginning Fiduciary Net Position (DB + SBMA)	Projected Total Contributions[1]	Projected Benefit Payments for Current Members	Projected Admin Expenses Allocated to Current Members[2]	Projected Investment Earnings	Projected Ending Fiduciary Net Position (DB + SBMA)
2025	$ 321,030	$ 16,068	$ 19,236	$ 321	$ 22,671	$ 340,212
2026	340,212	16,394	20,081	330	24,015	360,210
2027	360,210	16,745	20,974	338	25,416	381,059
2028	381,059	17,092	21,930	347	26,874	402,748
2029	402,748	14,588	22,945	357	28,291	422,325
2030	422,325	14,819	24,050	366	29,650	442,378
2031	442,378	15,030	25,245	376	31,039	462,826
2032	462,826	15,217	26,513	386	32,453	483,597
2033	483,597	15,383	27,832	396	33,887	504,639
2034	504,639	15,532	29,226	407	35,338	525,876
:						
2044	733,880	19,449	43,722	530	51,240	760,317
:						
2054	930,509	7,810	55,892	640	64,366	946,153
:						
2064	1,062,851	4,640	63,400	685	73,388	1,076,794
:						
2074	1,314,923	5,444	50,669	525	91,763	1,360,936
:						
2084	2,081,403	6,887	28,811	290	147,005	2,206,194
:						
2094	3,952,933	8,653	7,917	86	280,681	4,234,264

Note: Projection assumes the board continues its prior practice and maintains current contribution levels until the associated Unfunded Actuarial Obligation is paid off. Only select years of projection have been shown for formatting purposes.

1. Net of projected contributions for service cost attributable to future members.

2. Administrative expenses allocated to current employees based on proportion of benefit payments

Supplemental Information for Projection of Fiduciary Net Position (Includes DB & SBMA)

$ Millions

Fiscal Year Ending	Projected Payroll Current Employees	Projected Payroll Future Employees	Member Contribs. for Current Employees	ER + State Contribs. for Current Employees	Member Contribs. for Future Employees	ER + State Contribs. for Future Employees	Normal Cost for Current Employees	Normal Cost for Future Employees	Net Contribs. For FNP Projection[1]	Benefit Payments for Current Employees	Projected TPL on Depletion Basis[2]	Projected FNP on Depletion Basis[3]
2025	$ 39,407	$ 2,814	$ 4,034	$ 11,743	$ 287	$ 537	$ 8,171	$ 533	$ 16,068	$ 19,236	$ 409,894	$ 340,212
2026	39,764	3,828	4,070	11,737	391	921	8,235	725	16,394	20,081	426,452	360,210
2027	40,090	4,919	4,103	11,834	502	1,239	8,292	933	16,745	20,974	443,325	381,059
2028	40,341	6,131	4,129	11,922	626	1,579	8,331	1,164	17,092	21,930	460,464	402,748
2029	40,491	7,491	4,144	9,458	764	1,645	8,348	1,424	14,588	22,945	477,809	422,325
2030	40,525	9,016	4,147	9,478	920	1,990	8,340	1,716	14,819	24,050	495,259	442,378
2031	40,414	10,738	4,136	9,466	1,096	2,378	8,301	2,046	15,030	25,245	512,703	462,826
2032	40,146	12,668	4,108	9,419	1,293	2,814	8,228	2,416	15,217	26,513	530,034	483,597
2033	39,727	14,804	4,065	9,337	1,511	3,297	8,122	2,827	15,383	27,832	547,156	504,639
2034	39,183	17,120	4,009	9,224	1,747	3,825	7,990	3,272	15,532	29,226	563,945	525,876
:												
2044	28,949	48,575	2,958	8,172	4,957	12,749	5,679	9,387	19,449	43,722	697,505	760,317
:												
2054	15,406	91,336	1,572	2,370	9,321	12,394	2,922	17,846	7,810	55,892	733,210	946,153
:												
2064	2,006	144,965	205	324	14,794	17,957	379	28,639	4,640	63,400	603,625	1,076,794
:												
2074	78	202,286	8	14	20,643	25,184	15	40,404	5,444	50,669	361,706	1,360,936
:												
2084	0	278,634	0	0	28,435	34,721	0	56,269	6,887	28,811	140,036	2,206,194
:												
2094	0	383,650	0	0	39,151	47,835	0	78,333	8,653	7,917	23,216	4,234,264

Note: Projection assumes the board continues its prior practice and maintains current contribution levels until the associated Unfunded Actuarial Obligation is paid off. Only select years of projection have been shown for formatting purposes.

1. Contributions from future employees that are above service cost and, therefore, can be allocated to payment of benefits of current employees under GASB rules.

2. Projected TPL excludes service cost for future employees for consistency with FNP projection.

3. Projected FNP excludes contributions on service cost for future employees for consistency with FNP projection.

Total Pension Liability and Net Pension Liability

After determining the STRP GASB discount rate as of June 30, 2024, the June 30, 2023 actuarial valuations were recalculated using the 7.10% discount rate. These recalculations are sometimes referred to as "financial reporting actuarial valuations" to indicate differences in methodology from regular (funding) actuarial valuation calculations. All Programs were valued using the Individual Entry Age actuarial cost method as specified under GASB 67/68. Note that for purposes of GASB 67/68 calculations, future SBMA Program benefits are considered to be substantively automatic and have been included at the current 85% purchasing power level for future years in all liability calculations.

The resulting liabilities were allocated to past and future service using the Individual Entry Age actuarial cost method. The Total Pension Liability is the amount of GASB valuation liability allocated to past service; therefore, it is somewhat analogous to the Actuarial Obligation figures shown in the June 30, 2023 actuarial valuation reports. However, it will differ from those figures due to discount rate, cost method changes for the DBS and CBB Programs, inclusion of the SBMA liabilities, and exclusion of the MPP Program obligation (which is included in DB Program liabilities for funding purposes).

The June 30, 2023 Total Pension Liability (TPL) was then projected forward to the June 30, 2024 reporting date. The June 30, 2024 Net Pension Liability is equal to the Total Pension Liability as of that date, less the Fiduciary Net Position for the STRP as of that date. The following exhibit shows the changes in the Total Pension Liability, Fiduciary Net Position, and Net Pension Liability between June 30, 2023 and June 30, 2024. We highlight the following changes:

- Effect of economic/demographic gains or losses: There was an approximate $3 billion loss on the Total Pension Liability. This was primarily caused by salary increases more than projected than the current actual assumptions.
- Effect of plan changes: There was an approximate $33 million increase in the Total Pension Liability due to the 2.75% increase in the lump sum death benefit amount adopted by the Teachers' Retirement Board.
- Effect of assumption changes: There was an approximate $5 billion decrease in the Total Pension Liability due to the change in actuarial valuation assumptions based on the most recent Experience Analysis.

In accordance with the requirements of GASB 67/68, we have performed a sensitivity analysis of the STRP Net Pension Liability to changes in the GASB discount rate. The two scenarios specified in the GASB statements are +1% and -1% adjustments to the calculated GASB discount rate. Additionally, per CalSTRS request, we have shown +/-2% and +/-3% scenarios.

The results of the sensitivity analysis are shown in the following exhibit.

Schedule of Changes in Net Pension Liability

$ Millions

Net Pension Liability	Increase (Decrease) Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances as of June 30, 2023	$ 393,080	$ 316,919	$ 76,161
Changes for the year:			
Service cost	8,706		8,706
Interest on total pension liability	27,856		27,856
Effect of plan changes[1]	33		33
Effect of economic/demographic gains or losses	3,045		3,045
Effect of assumptions changes	(5,351)		(5,351)
Benefit payments	(19,046)	(19,046)	0
Refunds of contributions	(142)	(142)	0
Administrative expenses		(203)	203
Borrowing costs		(333)	333
Member contributions		4,735	(4,735)
Employer contributions (District)		8,585	(8,585)
Nonemployer contributions (State)		3,946	(3,946)
Net investment income		26,173	(26,173)
Other income		391	(391)
Other changes		(7)	7
Balances as of June 30, 2024	$ 408,181	$ 341,018	$ 67,163 [2]

Sensitivity Analysis

The following presents the Net Pension Liability (NPL) of the STRP, calculated using the discount rate of 7.10%, as well as what the STRP's NPL would be if it were calculated using a discount rate that is 1, 2, or 3 percentage points lower (6.10%, 5.10%, 4.10%) or 1, 2, or 3 percentage points higher (8.10%, 9.10%, 10.10%) than the current rate.

	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
3% Decrease (4.10%)	$600,287	$341,018	$259,269
2% Decrease (5.10%)	523,637	341,018	182,619
1% Decrease (6.10%)	460,479	341,018	119,461
Current Discount Rate	408,181	341,018	67,163
1% Increase (8.10%)	364,510	341,018	23,492
2% Increase (9.10%)	327,753	341,018	(13,265)
3% Increase (10.10%)	296,694	341,018	(44,324)

1. The Effect of plan changes line shows the impact of the increase in the lump sum death benefit amount.

2. Numbers may not add due to rounding.

Schedule of Changes in Net Pension Liability and Related Ratios

$ Millions

	Fiscal Year Ending June 30									
	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
Total Pension Liability										
Service cost	$ 8,706	$ 8,175	$ 7,675	$ 7,612	$ 7,340	$ 7,055	$7,141	$6,064	$5,874	$5,556
Interest on total pension liability	27,856	26,177	25,196	24,373	23,334	22,459	21,497	20,227	19,332	18,556
Effect of plan changes	33	587	70	0	0	32	0	0	0	0
Effect of assumption changes	(5,351)	0	0	0	1,029	0	0	19,988	0	0
Effect of economic/demographic (gains) or losses	3,045	6,983	(1,673)	(3,369)	(963)	(1,847)	(94)	399	(1,209)	(1,312)
Benefit payments and refund of contributions	(19,188)	(18,384)	(17,527)	(16,708)	(16,025)	(15,297)	(14,537)	(13,903)	(13,149)	(12,565)
Net change in total pension liability	15,101	23,538	13,741	11,908	14,715	12,402	14,007	32,775	10,848	10,235
Total pension liability, beginning	393,080	369,542	355,801	343,893	329,178	316,776	302,769	269,994	259,146	248,911
Total pension liability, ending (a)	$ 408,181	$ 393,080	$ 369,542	$ 355,801	$ 343,893	$ 329,178	$ 316,776	$ 302,769	$ 269,994	$ 259,146
Fiduciary Net Position										
Employer contributions (District)	$ 8,585	$ 7,746	$ 6,521	$ 5,758	$6,080	$5,644	$4,867	$4,173	$3,391	$2,678
Nonemployer contributions (State)	3,946	3,720	4,280	3,731	4,447	5,335	2,797	2,478	1,940	1,426
Member contributions	4,735	4,305	4,068	3,743	3,735	3,648	3,496	3,441	2,957	2,510
Investment income net of investment expenses	26,173	19,675	(7,390)	67,039	10,103	14,898	18,674	25,166	2,347	7,615
Benefit payments and refund of contributions	(19,188)	(18,384)	(17,527)	(16,708)	(16,025)	(15,297)	(14,537)	(13,903)	(13,149)	(12,565)
Administrative (and other non-investment) expenses	(152)	(199)	(189)	(254)	(218)	(235)	(207)	(178)	(195)	(154)
Adjustments	0	0	0	0	0	0	(511)	0	0	(162)
Net change in plan fiduciary net position	24,099	16,863	(10,237)	63,309	8,122	13,993	14,579	21,177	(2,709)	1,348
Fiduciary net position, beginning	316,919	300,056	310,293	246,984	238,862	224,869	210,290	189,113	191,822	190,474
Fiduciary net position, ending (b)	341,018	316,919	300,056	310,293	246,984	238,862	224,869	210,290	189,113	191,822
Net pension liability, ending = (a) - (b)	$ 67,163	$ 76,161	$ 69,486	$ 45,508	$ 96,909	$ 90,316	$ 91,907	$ 92,479	$ 80,881	$ 67,324
Fiduciary net position as a % of total pension liability	83.55%	80.62%	81.20%	87.21%	71.82%	72.56%	70.99%	69.46%	70.04%	74.02%
Covered payroll	$ 46,652	$ 42,552	$ 40,103	$36,737	$36,668	$35,805	$34,753	$34,126	$31,910	$32,026
Net pension liability as a % of covered payroll	143.97%	178.98%	173.27%	123.88%	264.29%	252.24%	264.46%	270.99%	253.47%	210.22%

Note: Numbers may not add due to rounding.

Schedule of Employer Contributions

$ Millions

Fiscal Year Ending June 30	Actuarially Determined Contribution[1]	Actual Employer Contribution[2]	Contribution Deficiency (Excess)	Covered Payroll	As a % of Covered Payroll: Actuarially Determined Contribution	As a % of Covered Payroll: Actual Employer Contribution
2015	$ 7,707	$ 4,093	$ 3,614	$ 32,026	24.06%	12.78%
2016	7,748	5,318	2,430	31,910	24.28%	16.67%
2017	7,959	6,638	1,321	34,126	23.32%	19.45%
2018	9,577	7,653	1,924	34,753	27.56%	22.02%
2019	10,790	10,969	(179)	35,805	30.14%	30.64%
2020	10,849	10,512	337	36,668	29.59%	28.67%
2021	10,245	9,475	770	36,737	27.89%	25.79%
2022	11,059	10,793	266	40,103	27.58%	26.91%
2023	10,634	11,458	(824)	42,552	24.99%	26.93%
2024	11,399 [3]	12,523	(1,124)	46,652	24.43%	26.84%

1. For the DB Program, the ADC for the year ending June 30, 2024 is the calculated contribution rate as of the June 30, 2022 actuarial valuation (the rate to fully fund the DB Program over a closed period ending June 30, 2046), applied to actual DB Program payroll for the fiscal year ended June 30, 2024 as provided to us by CalSTRS. For the DBS, CBB, and SBMA Programs, the ADC reflects the actual dollar amounts contributed for these plans in the fiscal year ended June 30, 2024.

2. Actual Employer Contribution includes contributions from non-employer contributing entities (which for CalSTRS is the state) and excludes contributions for separately financed liabilities of individual employers.

3. Unrounded FYE2024 ADC is as follows:
Actuarially Determined Contribution = $11,399,079,802

Notes to Schedule of Employer Contributions

Valuation Date	Actuarially determined contributions are calculated each June 30, two years prior to the end of the fiscal year in which contributions are reported for DB Program.

Methods and assumptions used for actuarially determined contribution (June 30, 2022 valuation for FYE2024 ADC)[1]:

Actuarial Cost Method	Individual Entry Age
Amortization Method	Level percentage of payroll, closed
Amortization Period	Ending June 30, 2046
Asset Valuation Method	The actuarial value of assets is equal to the expected actuarial value of assets plus one-third of the difference between the expected actuarial value of assets and the Fair Market Value of assets
Limitation of Contribution Rate Changes[2]	State: maximum change of 0.5% of pay per year. Districts: maximum change of 1.0% of pay per year, not to exceed 20.25% of pay in total.
Annual Inflation	2.75%
Annual Payroll Growth	3.50%
Salary Increases	Varies by age and service. Approximately 6% average over career including inflation.
Investment Rate of Return	7.00%, net of investment and administrative expenses, including inflation
Retirement Age	Members who are eligible for service retirement are assumed to commence receiving benefit payments based on age, service, and gender. The average age at service retirement for recent retirees is approximately 63.
Mortality	Custom CalSTRS rates. See June 30, 2022 DB Program funding valuation for details.
Changes in Plan Provisions Reflected in the Schedule	There have been no changes in the plan provisions that significantly affected the actuarially determined contribution.
Changes in Assumptions and Methods Reflected in the Schedule	The FYE2018 actuarially determined contribution reflects a reduction in the investment return assumption (7.50% to 7.25%), an increase in life expectancies, and other assumption changes. The FYE2019 actuarially determined contribution reflects a reduction in the investment return assumption (7.25% to 7.00%).

1. Assumptions and methods are for the Actuarially Determined Contribution for the DB Program. For the DBS, CBB and SBMA programs, actual contributions are used. The sum of the values for the individual programs is reported.

2. Contribution limitations apply to the Actual Employer Contribution, but not the Actuarially Determined Contribution.

Allocable Pension Expense

$ Millions

Pension Expense	July 1, 2023 to June 30, 2024	July 1, 2022 to June 30, 2023
Service cost	$ 8,706	$ 8,175
Interest on total pension liability	27,856	26,177
Effect of plan changes[1]	33	587
Administrative (and other non-investment) expenses	152	199
Member contributions	(4,735)	(4,305)
Expected investment return net of investment expenses	(22,429)	(21,206)
Recognition of Deferred Inflows/Outflows of Resources		
Recognition of economic/demographic (gains) or losses	295	(80)
Recognition of assumption changes or inputs	(617)	3,005
Recognition of investment (gains) or losses	(3,147)	(2,192)
Pension Expense	6,114	10,360

The discount rate and long-term expected rate of return assumptions used in the calculation of pension expense are the same as used to calculate total pension liability as of the end of the prior period.

As of June 30, 2024, the deferred inflows and outflows of resources are as follows:

Deferred Inflows / Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources
Differences between expected and actual experience	$ 2,937	$ 7,597
Changes of assumptions	4,587	294
Net difference between projected and actual earnings	271	0
Contributions made subsequent to measurement date	Employer Determined	Employer Determined
Total	$ 7,795	$ 7,891

Other amounts currently reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows (additional detail on following page):

Year ended June 30:[2]	
2025	($ 4,809)
2026	5,384
2027	(495)
2028	(318)
2029	666
Thereafter[3]	(332)

1. The Effect of plan changes line for FYE 2024 shows the increase in the lump sum death benefit amount and for FYE 2023 shows the impact of the increase in purchasing power benefits for those first retired prior to 1999.
2. Note that additional future deferred inflows/outflows may impact these numbers.
3. Reflects remaining balance of total deferred (inflows)/outflows, if any.

Schedule of Deferred Inflows and Outflows of Resources

$ Millions

	Original Amount	Date Established	Original Recognition Period[1]	Amount Recognized in 06/30/2024 Expense	Balance of Deferred Inflows 06/30/2024	Balance of Deferred Outflows 06/30/2024
Investment (gains) or losses	($ 3,744)	6/30/2024	5	($ 749)	$ 2,995	$ 0
	1,531	6/30/2023	5	306	0	919
	29,322	6/30/2022	5	5,864	0	11,730
	(49,633)	6/30/2021	5	(9,927)	9,925	0
	6,787	6/30/2020	5	1,359	0	0
		Total		(3,147)	12,920	12,649
Economic/demographic (gains) or losses	$ 3,045	6/30/2024	7	$ 435	$ 0	$ 2,610
	6,983	6/30/2023	7	998	0	4,987
	(1,673)	6/30/2022	7	(239)	956	0
	(3,369)	6/30/2021	7	(481)	1,445	0
	(963)	6/30/2020	7	(138)	273	0
	(1,847)	6/30/2019	7	(264)	263	0
	(94)	6/30/2018	7	(16)	0	0
		Total		295	2,937	7,597
Assumption changes	($ 5,351)	6/30/2024	7	($ 764)	$ 4,587	$ 0
	0	6/30/2023	7	0	0	0
	0	6/30/2022	7	0	0	0
	0	6/30/2021	7	0	0	0
	1,029	6/30/2020	7	147	0	294
	0	6/30/2019	7	0	0	0
	0	6/30/2018	7	0	0	0
		Total		(617)	4,587	294

Future Deferred Inflow/Outflow Recognition

Year ended June 30:[2]	Investment (Gains) or Losses	Economic/ Demographic (Gains) or Losses	Assumption Changes
2025	($ 4,504)	$ 312	($ 617)
2026	5,423	578	(617)
2027	(442)	711	(764)
2028	(748)	1,194	(764)
2029	0	1,430	(764)
Thereafter[3]	0	435	(767)

1. Investment (gains)/losses are recognized in pension expense over a period of five years; economic/demographic (gains)/losses and assumption changes or inputs are recognized over the average remaining service life for all active and inactive members. The total average remaining service life for STRP members based on the June 30, 2023 GASB actuarial valuations is 7 years (as rounded to the nearest whole number of years). This calculation assumes a remaining service life of 0 years for retired, disabled, beneficiary, and inactive members.

2. Note that additional future deferred inflows/outflows may impact these numbers.

3. Reflects remaining balance of total deferred (inflows)/outflows, if any.

Actuarial Methods and Assumptions for GASB Valuation

All actuarial methods and assumptions used for this GASB analysis were the same as those used in the June 30, 2023 funding valuations, except as noted below and throughout this report. Please see the valuation reports for further details.

Following are the key assumptions and methods used in this GASB analysis.

Actuarial Cost Method	Individual Entry Age
Amortization Method	
Recognition of investment gains or losses	Straight-Line amortization over 5 years
Recognition of economic/demographic gains or losses	Straight-Line amortization over Expected Service Lives
Recognition of assumptions changes or inputs	Straight-Line amortization over Expected Service Lives
Asset Valuation Method	
Fair Value	
Annual Investment Rate of Return	7.10%[1]
Annual Inflation	2.75% (same as funding valuation)
Salary Increases	Same as funding valuation
Interest Credits	Same as funding valuation (7.0% for DBS & CBB). To the extent actual interest credits (including Additional Earnings Credits) are more or less than the assumption, the difference is included as an economic/demographic gain or loss.
Cost of Living Adjustments (same as funding valuations)	DB Program (annuity): 2% simple annual benefit adjustment DB Program (lump sum death benefit): No future increases in the lump sum death benefit amount are assumed. SBMA Program: 85% purchasing power level DBS & CBB Programs: 0% post-retirement
Retirement Age	Same as funding valuation
Turnover	Same as funding valuation
Mortality	Custom CalSTRS rates (same as funding valuation). See June 30, 2023 DB Program funding valuation for details.

1. Differs from funding valuation due to addition of administrative expense load of 0.10%.

Glossary

Actuarially Determined Contribution	A target or recommended contribution to a defined benefit pension plan for the reporting period, determined based on the funding policy and most recent measurement available when the contribution for the reporting period was adopted.
Deferred Inflows/Outflows of Resources	Portion of changes in net pension liability that is not immediately recognized in Pension Expense. These changes include differences between expected and actual experience, changes in assumptions, and differences between expected and actual earnings on plan investments.
Discount Rate	Single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the sum of: 1) The actuarial present value of benefit payments projected to be made in future periods where the plan assets are projected to be sufficient to meet benefit payments, calculated using the Long-Term Expected Rate of Return. 2) The actuarial present value of projected benefit payments not included in (1), calculated using the Municipal Bond Rate.
Fiduciary Net Position	Equal to market value of assets.
Long-Term Expected Rate of Return	Long-term expected rate of return on pension plan investments expected to be used to finance the payment of benefits, net of investment expenses.
Money-Weighted Rate of Return	The internal rate of return on pension plan investments, net of investment expenses.
Municipal Bond Rate	Yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher.
Net Pension Liability	Total Pension Liability minus the Plan's Fiduciary Net Position.
Projected Benefit Payments	All benefits estimated to be payable through the pension plan to current active and inactive employees as a result of their past service and expected future service.
Service Cost	The portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
Total Pension Liability	The portion of actuarial present value of projected benefit payments that is attributable to past periods of member service using the Entry Age actuarial cost method based on the requirements of GASB 67 and 68.