GLOBAL STEWARDSHIP AT WORK

CALSTRS

Annual Comprehensive Financial Report

For the fiscal year ended June 30, 2022

California State Teachers' Retirement System
A component unit of the State of California

CALSTRS®

CALIFORNIA STATE TEACHERS' RETIREMENT SYSTEM

A component unit of the State of California
Annual Comprehensive Financial Report
for the fiscal year ended June 30, 2022

Prepared by CalSTRS staff

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Introductory section

MISSION

Securing the financial future and sustaining the trust of California's educators

STRATEGIC GOALS

Trusted stewards

Ensure a well-governed, financially sound trust fund.

Leading innovation and managing change

Innovate to grow resiliency and efficiency in service of our members.

Sustainable organization

Fully integrate a unified environmental, social and governance ethos in all we do.

Letter of transmittal

CALSTRS

California State Teachers'
Retirement System
100 Waterfront Place
West Sacramento, CA 95605

December 1, 2022

To our members, the Teachers' Retirement Board and other interested parties:

The 2022 *Annual Comprehensive Financial Report* issued by the California State Teachers' Retirement System details the system's performance for the fiscal year beginning July 1, 2021, and ended June 30, 2022.

CalSTRS was established in 1913 as the pension plan for California's public school educators. We began by serving 120 retired members and 15,000 active members. Over a century later, we serve more than one million members and their beneficiaries. As of June 30, 2022, we employed more than 1,260 staff located throughout California.

With approximately $301.8 billion in net assets as of June 30, 2022, CalSTRS is the largest educator-only pension fund in the world and the second largest pension fund in the United States. We administer a hybrid retirement system that consists of traditional defined benefit, cash balance and defined contribution plans, and provide disability and survivor benefits for California public school educators from prekindergarten through community college. We also administer a postemployment health benefit program. Our members include educators employed by approximately 1,800 school districts, community college districts, county offices of education and other public education employers.

Since closing our offices in March 2020 due to the global COVID-19 pandemic, we reopened our offices with limited services in October 2021. By April 2022, we offered full in-person services, including providing retirement estimates and hosting individual and benefit planning sessions. Also in April, CalSTRS staff transitioned to a hybrid environment, working at CalSTRS offices and remotely. While facing some challenges, we ensured uninterrupted services and maintained our high standards of customer service.

As fiduciaries, we're responsible for making informed decisions to ensure a sustainable organization solely in the interest of our members and their beneficiaries. Our commitment to stewardship ensures we are here for our members long after they dedicate their careers to education as we continue to deliver on our mission: *securing the financial future and sustaining the trust of California's educators.*

Helping members reach a secure retirement

Our relationship with our members begins when they first enter the profession and extends through their retirement years. Several factors make our members' financial planning considerations unique. Our members:

- Are predominantly female—over 70%.
- Dedicate more than 25 years to education and retire at age 62 on average.
- Live longer than the general United States population.
- Do not receive Social Security benefits for their service in education and may have their Social Security benefits from other employment reduced due to two federal laws: the Government Pension Offset and the Windfall Elimination Provision.
- May not have employer-funded health insurance after age 65.

CalSTRS members who retired in fiscal year 2021–22 received, on average, 54% of their highest salary. This, taken together with the factors above, means supplemental saving is essential. Through publications, webinars, videos and calculators, we inform our members of the importance of saving early and provide retirement planning tools throughout their careers.

To help ensure they have access to high-quality supplemental savings plans, we offer the CalSTRS Pension2® voluntary low-cost 403(b), 457(b), Roth 403(b) and Roth 457(b) plans. We also administer the 403bCompare.com website, a comprehensive resource that provides fee and cost comparisons for 403(b) supplemental savings plans.

As a complement to our financial education programs, we provide educational toolkits to our members' employers during onboarding of new educators to promote awareness of their CalSTRS benefits.

Recognizing that accurate and complete reporting of member data is essential to a secure retirement, we also partner with employers to continually improve and tailor our training offerings to suit their needs.

Commitment to global stewardship at work

We demonstrate our commitment to sustainability by being leaders in corporate governance, integrating a robust risk management program, hiring and developing top-tier staff to meet the needs of the changing business environment and dedicating resources to increase our members' financial awareness.

Long-term value creation drives our "Global Stewardship at Work" commitment, which is reinforced in several of our annual reports. We have a fiduciary duty to administer the system with care, skill, prudence and diligence, and we believe a corporate environment that values sustainability is key.

Major initiatives

Net zero investment portfolio pledge

We continue our commitment to achieving net zero greenhouse gas emissions across the CalSTRS Investment Portfolio by 2050 or sooner, in alignment with the goals of the Paris Climate Agreement and the United Nations' Race to Zero Campaign. We will achieve this goal by allocating capital to climate solutions, engaging corporations in our portfolio, influencing changes in public policies, and advancing sustainable business and investment practices.

Headquarters expansion

Our West Sacramento Headquarters campus is being expanded by a new 10-story tower designed to support employee wellness and sustainable green building practices, including sustainable construction, energy conservation and whole-building integrated energy efficiency measures. Scheduled to be completed in spring 2023, the project is financed through tax-exempt lease-revenue green bonds issued through a conduit issuer, the California Infrastructure and Economic Development Bank.

Sustainable investment and stewardship

The CalSTRS Sustainable Investment and Stewardship Strategies unit uses our influence as a significant global investor to promote long-term sustainable business practices and public policies. We engage publicly traded companies to support long-term value creation as well as mitigate risk to our portfolio and the financial market as a whole.

Collaborative Model

The CalSTRS Collaborative Model is an investment strategy to manage more assets internally—to reduce costs, control risks and increase expected returns—and leverage our external partnerships to achieve similar benefits. The main strategy is to search for long-term cost savings and hybrid opportunities through investment management and by leveraging existing relationships. These efforts are projected to reduce costs and generate higher returns to support a strong portfolio that aligns with our mission.

Areas of current focus include determining the appropriate balance between managing assets internally and collaborating with external industry leaders to identify higher-return, lower-cost strategies. Additionally, we continue to focus on increasing operational flexibility by recruiting and retaining world-class talent, leveraging technology, and maintaining robust policies and guidelines for prudent decision-making.

Pension Solution project

This multiyear project's goals are to increase our ability to respond to customer and business needs; enhance services to members and their beneficiaries, staff and employers; gain long-term operational efficiencies; and improve internal controls.

Our contract with the system integrator (CGI) is set to expire in June 2023, and both CalSTRS and CGI have mutually agreed that the remaining portion of the project work will be transitioned to another system integrator. CalSTRS will develop a procurement for a new system integrator, which is expected for release in spring 2023. CalSTRS is committed to releasing a quality pension administration system that meets our goals and the needs of our stakeholders.

Enterprise risk management

We regularly review enterprise-level risks related to the accomplishment of our mission and attaining our strategic goals and objectives while considering internal and external factors that could be catalysts for emerging risks. The COVID-19 pandemic illustrated how our strong risk management program allowed us to effectively execute our existing emergency business continuity plans to ensure core business functions—paying benefits, collecting contributions and managing investments—were maintained while shifting most staff to working remotely. We continue to focus on business resiliency and technological enhancements to further support business continuity and disaster recovery.

Information security is another area of risk that can threaten any organization. We are vigilant in detecting threats, proactively mitigating identified risks and adapting to the rapidly evolving cybersecurity landscape.

Defined Benefit Program funding progress

Our primary goal is to ensure a financially sound retirement system for our members and their beneficiaries. We remain focused on achieving full funding of the CalSTRS Defined Benefit Program according to the plan established in June 2014.

Set in motion via Chapter 47, Statutes of 2014 (California Assembly Bill 1469–Bonta), the plan established a schedule of contribution rate increases shared between members, employers and the State of California to bring CalSTRS toward full funding by 2046. The funding plan is a model of shared responsibility and works with investment portfolio performance to advance us along the path of long-term sustainability.

While a gap remains between our current assets and the obligations facing the Defined Benefit Program—known as the unfunded actuarial obligation, or unfunded liability—we continue to make progress toward reducing the funding shortfall.

A snapshot of the Defined Benefit Program's assets and liabilities as reported in the June 30, 2021, actuarial valuation (released in May 2022) reflects steady improvement in our funded status. The funded ratio—the amount of assets on hand to pay for obligations—improved from 67.1% to 73.0%, while the unfunded actuarial obligation decreased from $105.9 billion at the June 30, 2020, valuation to $89.7 billion as of the June 30, 2021, report. Note that these actuarial valuation numbers are computed differently than the net pension liability amounts as defined by Governmental Accounting Standards Board pronouncements, which are reported in the basic financial statements (Note 3 - Net pension liability of employers and nonemployer contributing entity) of this report.

The June 30, 2021, valuation did not reflect CalSTRS' -1.3% time-weighted investment loss in fiscal year 2021–22. Despite the investment loss, we remain slightly ahead of schedule in our goal of having the Defined Benefit Program reach full funding by 2046. This is due to the exceptional investment return earned by CalSTRS in fiscal year 2020–21 of 27.2%, which was more than 20% higher than the assumed investment return of 7%. Even with the investment loss in fiscal year 2021–22, we remain in a favorable position to withstand future challenges while keeping the funding plan on track.

Management responsibility

The basic financial statements were prepared in accordance with accounting principles generally accepted in the United States. CalSTRS management is responsible for the contents of this report, and the integrity and fairness of the information presented in the basic financial statements, including data that, out of necessity, is based on estimates and judgments.

Management is also responsible for establishing and maintaining an effective internal control structure. A system of internal controls provides reasonable, but not absolute, assurance that assets are properly safeguarded and that financial statements are reliable. The concept of reasonable assurance recognizes that first, the cost of a control should not exceed the benefits likely to be derived; and second, the valuation of the cost and benefits requires estimates and judgments by management. We believe that the internal controls currently in place support this purpose and that the basic financial statements, accompanying schedules and statistical tables are fairly presented in all material respects.

Financial statements

The basic financial statements and the accompanying notes, along with management's discussion and analysis, in this report present and analyze the changes in CalSTRS' fiduciary net position for the fiscal year ended June 30, 2022. The markets are dynamic and fluid: Any judgment of the financial statements should also consider current market conditions. Crowe LLP, CalSTRS' independent financial statement auditor, conducted an independent audit of the financial statements in accordance with auditing standards generally accepted in the United States and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States.

Crowe LLP issued an unmodified opinion on CalSTRS' financial statements, which can be found in the independent auditor's report in the Financial section.

Investment overview

The CalSTRS Investment Portfolio is broadly diversified, holding investments ranging from publicly traded short-term bonds to privately held partnerships. The scale and breadth of investments make the management and oversight of these assets highly complex. Over the 2021–22 fiscal year, the portfolio generated a -1.3% net loss calculated on a time-weighted performance basis. Growth was driven by strong performance across all markets, despite the global pandemic. More detailed information on the portfolio's performance is included in the Investment section of this report.

Actuarial reports

A summary of demographic and economic assumptions adopted from experience studies that we generally conduct every four years is highlighted in the Actuarial section of this report. These assumptions are applied to the actuarial valuation that is performed on an annual basis. The actuarial valuation provides a picture of the overall funding health of our programs, including the Defined Benefit, Defined Benefit Supplement, Cash Balance Benefit and Medicare Premium Payment programs. Refer to the Actuarial section of this report for detailed information.

Statistical reports

The Statistical section of this report includes tables that reflect financial trends of the State Teachers' Retirement Plan and demographic characteristics of the Defined Benefit, Defined Benefit Supplement, Cash Balance Benefit, CalSTRS Pension2 and Medicare Premium Payment programs. Also captured in the tables, when applicable, is a 10-year comparison including the previous fiscal year. This historical view reveals overall trends in our programs and membership demographics that help us forecast our future ability to meet our members' retirement needs.

Awards and recognition

Certificate of Achievement for Excellence in Financial Reporting

The Government Finance Officers Association of the United States and Canada awarded a Certificate of Achievement for Excellence in Financial Reporting to CalSTRS for our annual comprehensive financial report for the year ended June 30, 2021. This is the 27th consecutive year we have received this prestigious award. To be awarded a certificate, a government entity must publish an easily readable and efficiently organized annual comprehensive financial report that satisfies both generally accepted accounting principles and applicable legal requirements. The certificate is valid for one year. We believe this report for fiscal year 2021–22 continues to meet the requirements of the Certificate of Achievement program and are submitting it to the Governance Finance Officers Association to determine its eligibility.

Public Pension Standards Award for Funding and Administration

The Public Pension Coordinating Council presented us with its Public Pension Standards Award for Funding and Administration for the fiscal year ended June 30, 2022, for meeting professional standards for plan funding and administration as set forth in the Public Pension Standards. The PPCC is a coalition of three national associations that represent public retirement systems and administrators: the National Association of State Retirement Administrators, the National Council on Teacher Retirement and the National Conference on Public Employee Retirement Systems. Together, these associations represent more than 500 of the largest pension plans in the United States. This award is valid for one year.

Acknowledgments

This 2022 *Annual Comprehensive Financial Report* demonstrates our commitment to the financial security of California's educators. The accuracy of the financial data reflects CalSTRS' executive leadership and is a duty performed with prudence in perpetuity. Thank you to the staff, advisers and stakeholder organizations dedicated to securing the financial future of our members.

For a complete understanding of CalSTRS' performance and sustainability milestones, this report should be reviewed in conjunction with our annual sustainability report based on Global Reporting Initiative standards. View the report at CalSTRS.com/sustainability-reports.

Respectfully submitted,

Cassandra Lichnock
Chief Executive Officer
CalSTRS

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

California State Teachers' Retirement System

For its Annual Comprehensive Financial Report For the Fiscal Year Ended

June 30, 2021

Christopher P. Morrill

Executive Director/CEO

Public Pension Coordinating Council

Public Pension Standards Award
For Funding and Administration
2022

Presented to

California State Teachers' Retirement System

In recognition of meeting professional standards for
plan funding and administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle

Program Administrator

Teachers' Retirement Board

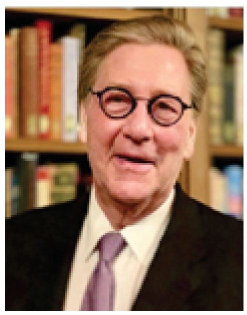
HARRY M. KEILEY
Board Chair
K–12 Classroom Teacher
Term: January 1, 2020 –
December 31, 2023

SHARON HENDRICKS
Board Vice Chair
Community College Instructor
Term: January 1, 2020 –
December 31, 2023

DENISE BRADFORD
K–12 Classroom Teacher
Term: January 1, 2020 –
December 31, 2023

MICHAEL GUNNING
Public Representative
Term: April 26, 2022 –
December 31, 2025

FIONA MA
State Treasurer
Ex Officio Member



WILLIAM PREZANT
Public Representative
Term: March 26, 2019 –
December 31, 2022

JOE STEPHENSHAW
Director of Finance
Ex Officio Member

KEN TANG
School Board Representative
Term: November 4, 2021 –
December 31, 2023

TONY THURMOND
State Superintendent of Public Instruction
Ex Officio Member

JENNIFER URDAN
Public Representative
Term: August 12, 2020 –
December 31, 2023

KAREN YAMAMOTO
Retiree Representative
Term: February 13, 2020 –
December 31, 2023

BETTY YEE
State Controller
Ex Officio Member

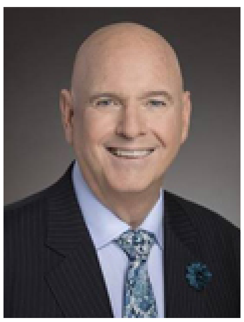
Note: Board members are listed as of the date this report is issued.

Executive staff

Executive

CASSANDRA LICHNOCK
Chief Executive Officer

Investments



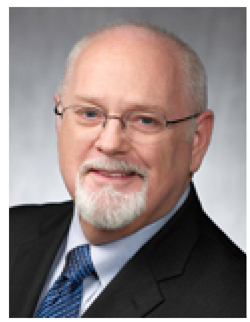
CHRISTOPHER J. AILMAN
Chief Investment Officer

LISA BLATNIK
Chief Operating Officer

Financial Services

JULIE UNDERWOOD
Chief Financial Officer

General Counsel



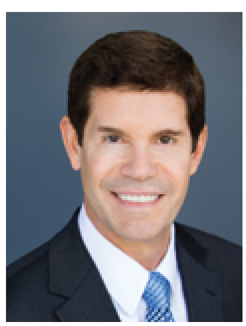
BRIAN J. BARTOW
General Counsel

SCOTT CHAN
Deputy Chief Investment Officer

Administrative Services

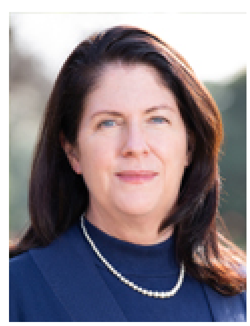
MELISSA NORCIA
Chief Administrative Officer

Benefits and Services



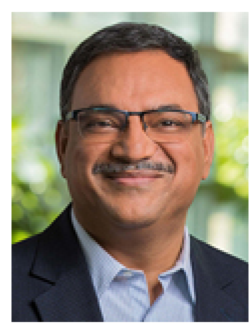
WILLIAM PEREZ
Chief Benefits Officer

Public Affairs



TERESA SCHILLING
Chief Public Affairs Officer

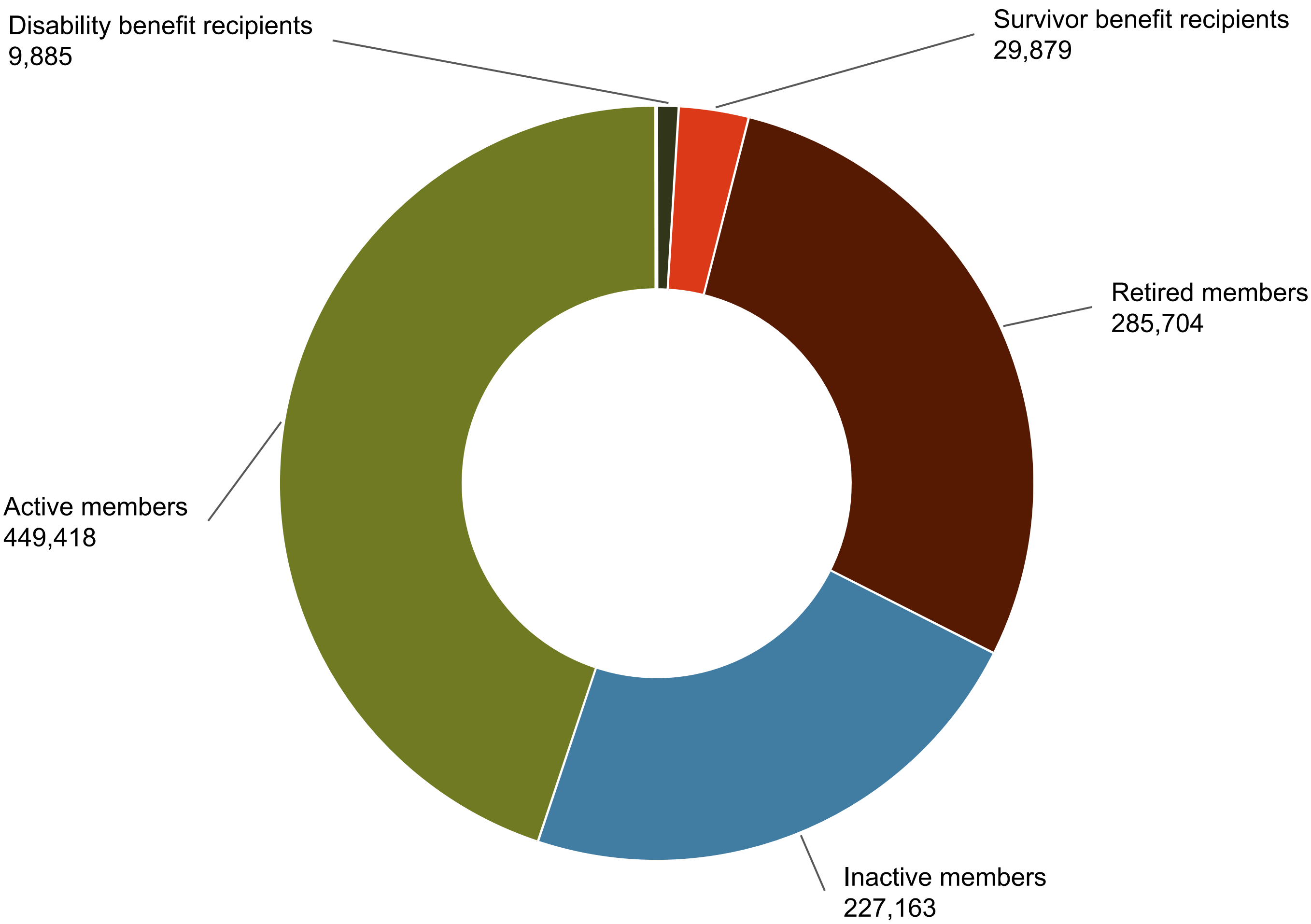
Technology Services



ASHISH JAIN
Chief Technology Officer

Note: Executive staff are listed as of the date this report is issued.

MEMBERS BY THE NUMBERS



Total membership
1,002,049

Membership

Membership in the CalSTRS Defined Benefit Program includes California public school employees, prekindergarten through community college, who are involved in activities that support public education, including teaching, mentoring, selecting and preparing instructional materials, providing vocational or guidance counseling or supervising people engaged in those activities. Membership is in effect as long as contributions remain on deposit with CalSTRS.

Members are employed in approximately 1,800 public school districts, community college districts, county offices of education, charter schools, state agencies and regional occupational programs. The CalSTRS Defined Benefit Program includes retirement, disability and survivor benefits. Members can elect an option to provide a monthly lifetime income for their beneficiaries upon the member's death.

Year in review

Benefits to members and their beneficiaries

Service retirement

CalSTRS is committed to providing exceptional service to its retired members. Our staff establishes and maintains timely and accurate benefits.

11,754	Members who retired in fiscal year 2021–22
(8.1%)	Decrease from fiscal year 2020–21

Disability benefits

78%	Applications processed within 150 days
504	Applications received in 2021–22
343	Applications approved in 2021–22
18.0%	Increase in number of disability applications received from fiscal year 2020–21

Survivor benefits

90%	Payments processed within 30 days of receiving all necessary information
10,991	Notifications of death received in 2021–22
(0.6%)	Decrease in number of notifications from fiscal year 2020–21

Communicating with our members and their beneficiaries

Customer service

Members may reach a CalSTRS Contact Center agent by phone, secure online message or written correspondence.

280,949	Member inquiries answered
86%	Member calls answered within 30 seconds
27 seconds	Average wait time to talk with a Contact Center agent
Less than 1	Average number of business days to respond to online messages

CalSTRS places great emphasis on customer satisfaction and regularly surveys members to ensure they receive accurate, timely and thorough answers to their questions. Last year, approximately 95% of members were "highly satisfied" with their Contact Center experience.

Member communications

CalSTRS communicates with our active and retired members through a variety of channels.

<u>Newsletters</u>

One way CalSTRS communicates with our members and their beneficiaries is through the CalSTRS Connections: Reaching Your Retirement, CalSTRS Connections: Your Money Matters and Retired Educator newsletters.

CalSTRS Connections: Reaching Your Retirement is sent in the spring and fall to active and inactive members age 50 and older. It provides information about retirement planning and decisions, webinars and benefits planning, legislative news and more.

CalSTRS Connections: Your Money Matters is sent in the spring and fall to active and inactive members age 49 and younger. It provides updates on CalSTRS programs and services, articles on retirement benefits, supplemental savings options, financial planning, legislative news and more.

Retired Educator is sent to retired members and their beneficiaries in the summer and winter. It provides information on benefits and services, legislation, investments and board updates.

<u>Retirement Progress Report</u>

Every year Defined Benefit Program members and Cash Balance Benefit Program participants who are not yet receiving a benefit receive a personalized *Retirement Progress Report* that contains retirement planning information and detailed account information as of June 30 for the prior fiscal year. For Defined Benefit Program members age 45 and older with at least five years of service credit, the report includes retirement benefit estimates. The reports are available online in September in the member's *my*CalSTRS account and are mailed in October if requested.

Member publications

CalSTRS offers a number of informational publications to members at various stages in their careers.

The CalSTRS *Member Handbook* is a comprehensive resource on CalSTRS programs and benefits, including eligibility requirements and worksheets. The handbook is updated annually.

Your Retirement Guide provides information members need to plan, research and make retirement decisions regarding their Defined Benefit pension and Defined Benefit Supplement funds. It includes step-by-step instructions for applying for service retirement and what to expect after submitting the retirement application.

Our *Learn and Discover* publications contain targeted retirement information and are sent to four groups of CalSTRS members when they reach a career milestone. The first three career milestones—early career, midcareer and near retirement—are based on the member's age and years of service credit. The last member kit is sent when the member reaches the fourth milestone—retirement.

In addition, CalSTRS produces publications that cover specific topics including, but not limited to:

- *Cash Balance Benefit Program*
- *Community Property Guide*
- *Concurrent Retirement*
- *Join CalSTRS? Join CalPERS?*
- *myCalSTRS*
- *Pension2 eBook*
- *Purchase Additional Service Credit*
- *Refund: Consider the Consequences*
- *Social Security, CalSTRS and You*
- *Tax Considerations for Rollovers*
- *Understanding the Formula*
- *Uniformed Services Employment and Reemployment Rights Act*
- *Your Disability Benefits Guide*
- *Welcome to CalSTRS*
- *Working After Retirement*

CalSTRS online

CalSTRS has four websites for members: CalSTRS.com, *my*CalSTRS, Pension2.com and 403bCompare.com

CalSTRS.com is the main site for information about membership and benefits, investments, board meetings, our newsroom and business partner opportunities, and also includes links to information for employers, including the Secure Employer Website. Features include online calculators to estimate retirement benefits and the cost to purchase service credit or redeposit funds; CalSTRS publications and forms; investment portfolio information; and self-scheduling for webinars and benefits planning sessions.

The Pension Sense blog at CalSTRS.com/pension-sense offers CalSTRS.com visitors and email subscribers the latest information on member benefits, our investment portfolio, corporate engagement activities and more.

***my*CalSTRS**, our secure self-service site, provides members convenient access to their account. After registering for *my*CalSTRS, members can view their account balances, complete and submit forms online, keep their contact information current, view their *Retirement Progress Reports*, manage their beneficiary selections, and exchange secure messages with CalSTRS representatives.

Pension2.com is the website for Pension2, the CalSTRS defined contribution plan that offers 403(b), Roth 403(b), 457(b) and Roth 457(b) plans. It features online enrollment, financial planning tools and webinars.

At **403bCompare.com**, members can easily compare investment fees, performance and services of their employer's 403(b) plans to find the best one for their savings goals. Members can learn about the advantages of a 403(b) account, find their employer's list of approved vendors, compare up to three plans side by side, and get information on how to enroll and start contributions. 403bCompare was created by CalSTRS pursuant to state statute.

Members can also stay connected to CalSTRS through social media on Facebook, Twitter, Instagram, LinkedIn, YouTube and Pinterest.

Benefits planning services

CalSTRS has seven member service centers: West Sacramento (headquarters), Glendale, Santa Clara, Irvine, Riverside, San Diego and Fresno.

Member service centers offer educational and benefits planning services, including individual and group benefits planning sessions and financial savings webinars. Existing member service centers serve the greater Sacramento, Los Angeles, Bay Area, Orange County, Inland Empire, San Diego and Central Valley regions.

At each center, members have an opportunity to meet with CalSTRS benefits specialists by appointment or seek assistance with general information questions on a walk-in basis. Member service center staff also review and receive forms, transmit them to headquarters for processing, and provide CalSTRS forms and publications.

In addition to the member service centers, CalSTRS has one leased office space serving southern California. This office typically provides workshops, group and individual benefits planning sessions and assistance by appointment, in addition to reviewing and receiving completed forms.

During fiscal year 2021–22, following guidance from local public health agencies and the State of California due to the COVID-19 pandemic, CalSTRS member service centers reopened for select services in October 2021. A total of 3,101 members took advantage of the opportunity to walk in and receive immediate assistance.

This year, 61,651 members attended individual or group benefits planning sessions or webinars. An additional 3,314 members received services at outreach events and job fairs.

Another convenient service for members is the estimate-only service, which during fiscal year 2021–22, provided 6,624 members with updated retirement benefit estimates. CalSTRS continues to focus on providing services that increase accessibility for members, reflect individual member needs and increase member self-education.

Services to employers, member and client organizations

CalSTRS staff supports our employer reporting partners by providing dedicated service, training, outreach and technical guidance. CalSTRS has enhanced the delivery of contribution reporting education by making it available electronically and on demand for the employer while supplementing this information with in-person training and timely responses to their inquiries. The Secure Employer Website, a secure channel for employers to submit their monthly reporting data, includes rules and feedback to ensure contribution reporting data is timely and accurate.

CalSTRS is committed to preventing pension abuse by dedicating staff to reviewing reported compensation and other inputs to our members' retirement benefits. The CalSTRS Compensation Review Unit has increased reviews of potential abuse cases through collaboration with partner business areas responsible for establishing benefit payments, historical data mining to review prior benefits and the CalSTRS Compliance and Ethics Hotline.

Professional services

CalSTRS contracts for the services of various independent consultants essential to the effective and professional operation of the system. Milliman, Inc. provides actuarial services; Crowe LLP is the independent financial statement auditor; and Meketa Investment Group provides investment consulting services. Lists of investment professionals for investment services and other consultants are provided on Schedules VIII and IX, respectively, in the Financial section of this report. Table 9 in the Investment section also lists entities to whom CalSTRS paid broker commissions during the fiscal year.

Financial section

CalSTRS is the largest educator-only pension fund in the world, with $301.8 billion in net position as of June 30, 2022.

Crowe LLP
Independent Member Crowe Global

INDEPENDENT AUDITOR'S REPORT

Teachers' Retirement Board of the California
State Teachers' Retirement System
West Sacramento, California

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of the California State Teachers' Retirement System ("System" or "CalSTRS"), a component unit of the State of California, as of and for the year ended June 30, 2022, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the fiduciary net position of the California State Teachers' Retirement System, as of June 30, 2022, and the changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards (Government Auditing Standards)*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the System, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Emphasis of Matters

Net Pension Liability of Employers and Nonemployer Contributing Entity

As described in Note 3, based on the most recent actuarial valuation as of June 30, 2021, the System's independent actuaries determined that, at June 30, 2022, the value of the State Teachers' Retirement Plan (STRP) total pension liability exceeded the STRP fiduciary net position by $69.5 billion. The actuarial valuation is sensitive to the underlying actuarial assumptions, including investment rate of return of 7.10%, consumer price inflation of 2.75%, wage growth of 3.50% and custom mortality tables based on CalSTRS most recent Experience Analysis. Our opinion is not modified with respect to this matter.

Fair Value of Investments

As described in Notes 5 and 6, the financial statements include investments valued at approximately $133.3 billion as of June 30, 2022, for which fair value has been estimated by general partners and investment advisors, and reviewed and approved by the System's management, in the absence of readily ascertainable market values. Because of the inherent uncertainty of valuation, the estimate of values may differ from the values that would have been used had a ready market existed for the investment securities, and the differences could be material. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and *Government Auditing Standards*, we

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's discussion and analysis on pages 24 - 40 and the Schedule of changes in net pension liability of employers and nonemployer contributing entity, Schedule of net pension liability of employers and nonemployer contribution entity, Schedule of pension contributions from employers and nonemployer contributing entity, Schedule of money-weighted rate of return for State Teachers' Retirement Plan and Medicare Premium Payment Program, Schedule of changes in net OPEB liability of employers and Schedule of net OPEB liability of employers on pages 78 - 84 be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The Schedule of administrative expenses, Schedule of investment expenses and Schedule of consultant and professional services expenses are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedule of administrative expenses, Schedule of investment expenses and Schedule of consultant and professional services expenses are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the Introductory section, Investment section, Actuarial section, and Statistical section, but does not include the basic financial statements and our auditor's report thereon. Our opinion on the basic financial statements does not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards,* we have also issued our report dated October 6, 2022 on our consideration of the California State Teachers' Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering California State Teachers' Retirement System's internal control over financial reporting and compliance.

Crowe LLP

Crowe LLP

Sacramento, California
October 6, 2022, except for the Other Information, as to which the date is December 21, 2022.

Management’s discussion and analysis (unaudited)

Introduction

Management’s discussion and analysis of the California State Teachers’ Retirement System’s (CalSTRS or system) financial performance is intended to fairly and transparently provide an overview of activities for the fiscal year ended June 30, 2022. The discussion and analysis focus on business events and resulting changes for the fiscal year to date. This discussion is more meaningful when read in conjunction with CalSTRS’ basic financial statements and accompanying notes.

CalSTRS’ actual results, performance and achievements expressed or implied in these statements may differ from expectations and are subject to changes in interest rates, securities markets, general economic conditions, legislation, regulations and other factors.

Mission

Over the past 109 years, CalSTRS’ mission has remained the same—*securing the financial future and sustaining the trust of California’s educators*. Since CalSTRS was founded in 1913, we have grown from no assets and about 15,000 members to net assets of approximately $301.8 billion serving approximately 1,002,000 members and their beneficiaries as of June 30, 2022. In 1913, the annual benefit was $500; today, the average annual member-only benefit is approximately $52,888. CalSTRS is the largest educator-only pension fund in the world.

Year in review

Significant events and changes impacting CalSTRS for the fiscal year ended June 30, 2022, are described in the paragraphs that follow.

Executive staff changes

Cassandra Lichnock was appointed chief executive officer (CEO) of CalSTRS effective July 1, 2021. Lichnock joined CalSTRS in August 2008 as the human resources executive officer and previously served as chief operating officer since March 2013. She serves as the first female CEO of CalSTRS and took over the role of CEO from Jack Ehnes who retired on June 30, 2021, after serving as CalSTRS’ CEO since 2002. As CEO, Lichnock will continue her leadership in modernizing CalSTRS systems and processes, build on our commitments to sustainability and diversity, and focus on evolving CalSTRS culture as the organization plans for a post-pandemic future.

On August 16, 2021, Lisa Blatnick assumed the chief operating officer (COO) post, succeeding Chief Executive Officer Cassandra Lichnock. As COO, Blatnick oversees Enterprise Strategy Management, Administrative Services, Benefits and Services, Public Affairs, Technology Services and the Office of the Ombuds. She also oversees Audit Services from an administrative perspective though this division ultimately reports directly to the Teachers’ Retirement Board (the board). Blatnick serves as a key advisor to the CEO and the Audits and Risk Management committee of the board, and ensures the most complex and critical operational issues and policy matters impacting CalSTRS are developed and implemented in a manner consistent with our mission, vision and core values. She joined CalSTRS in September 2003 and served as chief of administrative services since August 2015 prior to becoming COO.

Cheryl Cervantes-Dietz was appointed chief auditor effective June 15, 2022. As chief auditor, she will direct internal audits of CalSTRS’ operations and external risk assessments as well as audits of CalSTRS’ employers. She replaces Larry Jensen who retired in July 2022 after serving as CalSTRS’ chief auditor since 2014. Cervantes-Dietz joined CalSTRS as assistant director of internal audits in November 2016 and was promoted to director of enterprise compliance services in January 2020. She will report to the Teachers’ Retirement Board’s Audits and Risk Management Committee and administratively to CalSTRS’ chief operating officer.

Teachers' Retirement Board updates

The board reelected Harry M. Keiley as chair and Sharon Hendricks as vice chair for the fiscal year 2022–23 term. This is the third consecutive year Keiley and Hendricks are serving as chair and vice chair, respectively. In the fiscal year 2019–20 term, Hendricks was chair, and Keiley was vice chair.

Ken T. Tang was appointed to the board by Governor Gavin Newsom in November 2021 for a term lasting through December 31, 2023. He has been a teacher for the Garvey School District since 1997 and president of the Alhambra Unified School District Board of Education since 2020. Tang is the school board representative, and his appointment was confirmed by the Senate in June 2022.

Additionally, Joy Higa's term ended on December 31, 2021. In April 2022, Michael Gunning was appointed to this board seat by Governor Newsom for a term through December 31, 2025, and is pending confirmation by the Senate. Gunning is the Senior Vice President of Legislative Affairs for the California Building Industry Association and served on the California Housing Finance Agency Board of Directors from 2009 to 2022.

Joe Stephenshaw was appointed as director of the California Department of Finance by Governor Newsom in July 2022. He becomes an Ex Officio Member of the board with this appointment, and his term began July 1, 2022. Stephenshaw replaces Keely Bosler, whose term ended June 30, 2022. Prior to this appointment, Stephenshaw served as a senior counselor on Infrastructure and Fiscal Affairs and was staff director for the California State Senate Budget and Fiscal Review Committee from 2017 to 2022.

Headquarters Expansion Project

In November 2018, the board approved the expansion of CalSTRS' West Sacramento headquarters to meet long-term space needs of the organization resulting from the increase in size and complexity of the system.

In December 2019, CalSTRS issued tax-exempt lease-revenue green bonds (Series 2019 Bonds) to finance the construction of the headquarters expansion. These bonds were issued through a conduit issuer, the California Infrastructure and Economic Development Bank (IBank), a public instrumentality of the state, which provides financing for business development and public improvements. Additional detail and discussion of Series 2019 Bonds can be found in Note 7 of the basic financial statements.

Due to the impacts of the COVID-19 pandemic and certain delays in obtaining architectural permits, the project schedule has been extended and the substantial completion date has been moved to the early part of calendar year 2023.

As a result of the extended schedule, the project requires additional funding to ensure that the expansion facility meets all sustainability goals, adheres to code required changes, and maintains the functionality necessary to support CalSTRS' operations.

In January 2022, the board approved additional funding not-to-exceed $18.5 million utilizing tax-exempt lease revenue green bonds. The additional funding brings the total not-to-exceed project budget to $318.5 million. CalSTRS expects to issue the new bonds in early 2023.

Pension Solution Project

The Pension Solution Project is an ongoing effort by CalSTRS to modernize the legacy pension administration system. The project is the largest technology effort in CalSTRS' history and encompasses the implementation of a new benefits program management system to support program and policy changes, incorporates automated internal controls and improves processing times. It will interface with multiple systems, including our financial and electronic content management systems, and will provide upgraded secure portals for members and employers.

The project continues to experience delays and both CalSTRS and the system integrator (CGI) have been working together on a solution to successfully finish the project. The contract with CGI is set to expire in June 2023, and both parties have mutually agreed that the remaining portion of the project work will transition to another system integrator. To ensure that there is no pause in essential project tasks during the transition, CGI will provide knowledge transfer to an interim system integrator, Sagitec Solutions (who was the subcontractor for CGI), and continue to provide some essential services to CalSTRS through the end of the contract term.

To complete the remaining tasks and maintenance and operations of the project, CalSTRS will develop a future procurement for a new system integrator which is expected for release in spring 2023.

CalSTRS Collaborative Model

The CalSTRS Collaborative Model is an investment strategy to manage more assets internally—to reduce costs, control risks and increase expected returns—and leverage our external partnerships to achieve similar benefits, which will have long-term benefits for the system and our members.

This approach embraces partnerships and collaboration by expanding direct investment opportunities through various investment structures, including peer partnerships, joint ventures, co-investments, and passive and controlling stakes in investment companies, while building additional direct investing capabilities. Continued implementation efforts of the CalSTRS Collaborative Model will require assistance from resources across four enterprise-wide pillars: Human Resources, Procurement, Travel and Other (includes Legal, Technology, Financial Services and Communications).

In fiscal year 2021–22, CalSTRS progressively moved more investment strategies into phase 2.0 of the Collaborative Model Continuum. Collaborative Model 2.0 builds on the first phase of the Collaborative Model but does not eliminate or replace it. CalSTRS will continue to execute and capitalize on the cost savings of internal management in public and private markets while increasing the number and types of strategies in the Collaborative Model 2.0. According to the Collaborative Model Savings report, CalSTRS has achieved an estimated average annual savings of $195 million over the past four years. The Collaborative Model Savings report is available online at CalSTRS.com.

CalSTRS Strategic Plan

In March 2022, the board approved the 2022–25 CalSTRS Strategic Plan, which serves as the blueprint for CalSTRS' continued evolution into this decade and beyond. The 2022–25 Strategic Plan reaffirms our commitment to sustaining the trust of California's educators and has three overarching goals:

- *Trusted stewards*: Ensure a well-governed, financially sound trust fund.
- *Leading innovation and managing change*: Innovate to grow resiliency and efficiency in service of our members.
- *Sustainable organization*: Fully integrate a unified environmental, social and governance ethos in all we do.

The full 2022–25 Strategic Plan, including a retrospective look at the 2019–22 plan and a more in-depth discussion of the three current goals, is available at CalSTRS.com.

Blended work environment

As restrictions from the COVID-19 pandemic continue to ease in the United States, CalSTRS has transitioned our workforce to a blended work environment wherein staff work on-site and remotely. We continue to maintain all business operations, including the timely payment of benefits and the management of the CalSTRS Investment Portfolio. We are proactively monitoring risks and evaluating impacts to our members to ensure we continue meeting our mission.

Response to invasion of Ukraine

The United States issued a series of unprecedented economic sanctions on Russia in response to its invasion of Ukraine. In line with these actions, Governor Newsom issued a letter to leaders of CalSTRS, the California Public Employees' Retirement System, and the University of California retirement system in February 2022, calling for the State of California to leverage its sizeable global investment portfolio to sanction the Russian government. In response to this and our environmental, social and governance (ESG) risk factors, CalSTRS' Chief Investment Officer Christopher Ailman moved to cease all new purchases of Russian and Belarusian securities and bonds (stopping the flow of CalSTRS' capital into any new investment in those countries). Additionally, CalSTRS is coordinating with all our external managers to assess the financial situation on an ongoing basis to protect our assets and we are following all regulatory requirements from the U.S. Treasury's Office of Foreign Assets Control and required sanctions.

As of June 30, 2022, CalSTRS holdings in Russian assets were effectively frozen and represent less than 0.02% of our total investment portfolio.

Financial highlights

This section discusses major changes in account balances for the State Teachers' Retirement Plan (STRP), CalSTRS Pension2 Personal Wealth Plan (Pension2®), the Medicare Premium Payment (MPP) Program and the Teachers' Deferred Compensation Fund (TDCF). Comparative financial statement information is presented for the STRP through condensed versions of the statement of fiduciary net position and statement of changes in fiduciary net position as of and for the fiscal years ended June 30, 2022, and June 30, 2021.

State Teachers' Retirement Plan

The STRP is a multiple-employer, cost-sharing defined benefit plan composed of four programs: the Defined Benefit (DB) Program, Defined Benefit Supplement (DBS) Program, Cash Balance Benefit (CBB) Program and Replacement Benefits Program. The STRP holds assets for the exclusive purpose of providing benefits to members of these programs and their beneficiaries.

Fiduciary net position — STRP

(dollars in thousands)

Assets and deferred outflows of resources	2022	2021	% change
Investment assets[1]	$329,926,317	$339,539,096	(2.8%)
Cash	253,397	130,768	93.8%
Investment receivables	10,633,857	6,350,337	67.5%
Member, employer, state and other receivables	7,317,803	4,790,924	52.7%
Capital and other assets	615,194	474,571	29.6%
Total assets	**348,746,568**	**351,285,696**	**(0.7%)**
Deferred outflows of resources	**87,781**	**43,445**	**102.1%**
Total assets and deferred outflows of resources	**348,834,349**	**351,329,141**	**(0.7%)**
Liabilities and deferred inflows of resources			
Investment liabilities	931,721	266,489	249.6%
Investments purchased payable	13,014,265	9,373,616	38.8%
Loans and bonds payable	5,845,531	4,039,759	44.7%
Benefits in process of payment	1,802,164	1,707,677	5.5%
Net pension and OPEB liabilities	612,234	706,259	(13.3%)
Securities lending obligation	25,288,492	23,782,637	6.3%
Securities sold short	354,821	376,402	(5.7%)
Other	559,490	486,176	15.1%
Total liabilities	**48,408,718**	**40,739,015**	**18.8%**
Deferred inflows of resources	**369,346**	**296,673**	**24.5%**
Total liabilities and deferred inflows of resources	**48,778,064**	**41,035,688**	**18.9%**
NET POSITION RESTRICTED FOR PENSIONS	**$300,056,285**	**$310,293,453**	**(3.3%)**

1 Includes securities lending collateral of $25.3 billion and $23.9 billion as of June 30, 2022, and June 30, 2021, respectively.

Changes in fiduciary net position — STRP

(dollars in thousands)

Additions	2022	2021	% change
Member contributions	$4,067,526	$3,742,508	8.7%
Employer contributions	6,521,356	5,758,216	13.3%
State of California contributions	4,279,964	3,730,902	14.7%
Net investment income (loss)	(7,390,290)	67,038,620	(111.0%)
Other income	130,195	90,454	43.9%
Total additions	**7,608,751**	**80,360,700**	**(90.5%)**
Deductions			
Benefit payments	17,414,245	16,606,579	4.9%
Refunds of member contributions	112,424	101,549	10.7%
Administrative expenses	191,116	251,556	(24.0%)
Borrowing costs	122,794	89,604	37.0%
Other expenses	5,340	1,703	213.6%
Total deductions	**17,845,919**	**17,050,991**	**4.7%**
Increase (decrease) in net position	**(10,237,168)**	**63,309,709**	**(116.2%)**
Net position restricted for pensions			
Beginning of the year	310,293,453	246,983,744	25.6%
END OF THE YEAR	**$300,056,285**	**$310,293,453**	**(3.3%)**

Net position for the STRP decreased approximately $10.2 billion, or 3.3%, from $310.3 billion as of June 30, 2021, to $300.1 billion as of June 30, 2022, primarily due to negative investment returns.

The STRP's time-weighted investment return for fiscal year 2021–22 was -1.3% (net of fees), which resulted in a net investment loss of $7.4 billion for the same period. Net investment income decreased $74.4 billion compared to the prior fiscal year, which had an investment return of 27.2% (net of fees) and net investment income of $67.0 billion. Investment assets decreased $9.6 billion, or 2.8%, from $339.5 billion as of June 30, 2021, to $329.9 billion as of June 30, 2022, primarily due to negative returns. Additional discussion of the STRP's investment returns is in the investment management section of this analysis.

Total member, employer and State of California contributions increased $1.6 billion, or 12.4%, primarily due to an increase in active members and creditable compensation. Member contribution rates remained unchanged from their fiscal year 2020–21 levels, while the total employer contribution rate increased from 16.15% in fiscal year 2020–21 to 16.92% in fiscal year 2021–22, and the total State contribution rate increased from 10.328% in fiscal year 2020–21 to 10.828% in fiscal year 2021–22.

Member, employer, state and other receivables increased $2.5 billion, or 52.7%, primarily due to an increase in lending activity in CalSTRS' Master Credit Facility Portfolio (MCFP). This increased lending activity is also the primary cause of the increase in loans and bonds payable of $1.8 billion. The MCFP consists of unsecured revolving lines of credit and unsecured term loans which provide the source of funds for managing capital flows of certain investment strategies. Liabilities pertaining to the MCFP within loans and bonds payable reflect CalSTRS' debt obligations to lenders. Accordingly, the increased draws on these credit facilities by CalSTRS is reflected in the increased liabilities while the corresponding increase in receivables represents the amount lent out by CalSTRS to fund certain investment strategies. Additional information on the MCFP is in Note 7 of the notes to the basic financial statements.

Changes in net pension and other postemployment benefits (OPEB) liabilities, deferred outflows of resources and deferred inflows of resources are primarily driven by the STRP's annual recognition of changes to its proportionate share of the state's net pension liability (NPL), net OPEB liability and related deferrals.

Capital and other assets increased $140.6 million, or 29.6%, primarily due to capitalized costs for the

Headquarters Expansion Project and the Pension Solution Project.

Benefit payments increased $0.8 billion, or 4.9%, due to an increase in the STRP's retirees and their beneficiaries and the annual benefit adjustment added to benefit allowances.

Investment receivables increased $4.3 billion, and investments purchased payable increased $3.6 billion due to the timing of settlement of investment purchases and sales.

Other programs and funds

In addition to the STRP, CalSTRS administers two defined contribution plans within the Pension2 Program, a postemployment benefit plan known as the MPP Program and the TDCF that accounts for ancillary activities associated with deferred compensation plans and programs. The following discussion provides noteworthy changes for each of these programs and funds.

Pension2 403(b) Plan

CalSTRS Pension2 403(b) Plan is a voluntary defined contribution program that offers low-cost and tax-deferred 403(b) and Roth 403(b) plans for additional retirement savings.

Net position for the Pension2 403(b) Plan decreased $4.0 million, or 0.2%, to approximately $1.7 billion as of June 30, 2022, primarily due to negative investment returns on program participants' investment assets, which also decreased due to net investment losses.

Pension2 457(b) Plan

CalSTRS Pension2 457(b) Plan is a voluntary defined contribution program that offers low-cost and tax-deferred 457(b) and Roth 457(b) plans for additional retirement savings.

Despite a net investment loss on participants' investment assets, net position for the Pension2 457(b) Plan increased $6.1 million, or 6.3%, to approximately $102.1 million as of June 30, 2022, primarily due to member contributions to the program significantly outweighing deductions. Member and employer contributions to the 457(b) Plan are voluntary.

Medicare Premium Payment Program

CalSTRS administers the MPP Program through the Teachers' Health Benefits Fund. The MPP Program pays Medicare Part A premiums and Medicare Parts A and B late enrollment surcharges for retired members of the DB Program who meet certain eligibility criteria. Members who retire on or after July 1, 2012, are not currently eligible for coverage under the MPP Program.

The MPP Program has reflected a net deficit for the past five years primarily resulting from the implementation of Governmental Accounting Standards Board (GASB) Statement No. 68, *Accounting and Financial Reporting for Pensions—an amendment of GASB Statement No. 27*, in fiscal year 2014–15 and GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, in fiscal year 2017–18. The implementation of these standards resulted in the program incurring increased administrative expenses from the recognition of its share of the state's NPL and net OPEB liability. The amounts recognized represent long-term liabilities reported on an accrual basis and do not adversely impact the viability of the fund or its ability to meet current obligations.

Operationally, the MPP Program is funded on a pay-as-you-go basis, with contributions generally being made at the same time and in the same amount as benefit payments and expenses coming due. The net deficit decreased by approximately $0.1 million as of June 30, 2022, with no significant change in activity compared to fiscal year 2020–21.

Teachers' Deferred Compensation Fund

The TDCF is a trust fund established to account for ancillary activities associated with deferred compensation plans and programs offered by CalSTRS, such as the Pension2 403(b) and 457(b) plans.

The TDCF has reflected a net deficit for the past eight years primarily resulting from the implementation of GASB Statement No. 68 and GASB Statement No. 75. The implementation of these standards resulted in the TDCF incurring increased administrative expenses from the recognition of its share of the state's NPL and net OPEB liability. The amounts recognized represent long-term liabilities reported on an accrual basis and do not adversely impact the viability of the fund or its ability to meet current obligations.

The current net deficit of the TDCF decreased by $0.9 million to approximately $3.1 million as of June 30, 2022. The decrease in the net deficit is primarily due to a decrease in administrative expenses resulting from reductions in the TDCF's proportionate share of the state's NPL and net OPEB liability.

Management's discussion and analysis (unaudited)

Overview of financial statements

Management's discussion and analysis is also an introduction to CalSTRS' basic financial statements. CalSTRS' financial statements include the following components:

- Basic financial statements
  - Statement of fiduciary net position
  - Statement of changes in fiduciary net position
  - Notes to the basic financial statements
- Required supplementary information (unaudited)
- Other supplementary information

Statement of fiduciary net position

The statement of fiduciary net position presents information on all of CalSTRS' assets and liabilities, with the difference between the two reported as net position. Over time, the increase or decrease in net position serves as an indicator of CalSTRS' financial condition and our ability to fund future benefit payments.

Statement of changes in fiduciary net position

The statement of changes in fiduciary net position reflects how CalSTRS' net position changed during the fiscal year and presents contributions earned, benefit payments made, investment returns and the costs of plan administration.

Notes to the basic financial statements

The notes to the basic financial statements provide information essential to a full understanding of the basic financial statements. The type of information provided in each note is as follows:

- Note 1 provides a summary of information on the significant provisions of CalSTRS' plans and programs.
- Note 2 provides a summary of significant accounting policies, including the basis of accounting for CalSTRS, management's use of estimates, cash and investment accounting policies and other significant accounting policies.
- Note 3 provides information regarding the NPL of employers and nonemployer contributing entity for the STRP, including the actuarial assumptions and methods used to determine the total pension liability.
- Note 4 provides information regarding the net OPEB liability of employers for the MPP Program, including the actuarial assumptions and methods used to determine the total OPEB liability.
- Note 5 provides information related to deposits, investments and risks (credit, interest rate and foreign currency) in addition to a schedule of investments that discloses the types of investments within each broad investment category.
- Note 6 provides information related to the fair value measurement of investments.
- Note 7 provides information on the various outstanding debt obligations for CalSTRS.
- Note 8 provides information on the potential contingencies of CalSTRS.
- Note 9 provides a summary of CalSTRS' significant commitments.

Required supplementary information

The required supplementary information section consists of six unaudited schedules intended to assist readers in understanding the NPL of the STRP and the net OPEB liability of the MPP Program. The information available in this section includes:

- Schedule I – Schedule of changes in net pension liability of employers and nonemployer contributing entity
- Schedule II – Schedule of net pension liability of employers and nonemployer contributing entity
- Schedule III – Schedule of pension contributions from employers and nonemployer contributing entity
- Schedule IV – Schedule of money-weighted rate of return for the State Teachers' Retirement Plan and Medicare Premium Payment Program
- Schedule V – Schedule of changes in net OPEB liability of employers
- Schedule VI – Schedule of net OPEB liability of employers

Other supplementary information

Other supplementary information includes details on administrative expenses, investment expenses, and consultant and professional services expenses. The schedules available in this section include:

- Schedule VII – Schedule of administrative expenses
- Schedule VIII – Schedule of investment expenses
- Schedule IX – Schedule of consultant and professional services expenses

Major business components

The sections that follow describe the activities and results of CalSTRS' major business components (investment management and pension administration) for the fiscal year ended June 30, 2022.

Investment management

CalSTRS' primary goal is to maintain a financially sound retirement system. Our investment philosophy is "long-term patient capital"—investing for long-term net cash flows and capital gain potential at a reasonable price. The chief investment officer has authority to oversee and manage the investments and assets of the system in compliance with policy guidelines adopted by the board or its Investment Committee.

Investment beliefs

CalSTRS' investment beliefs provide a foundational framework for all of CalSTRS' investment decision-makers to invest in a manner that reflects CalSTRS' unique view of the global investment markets and its vision for participating in these markets to accomplish its fiduciary goal. In this respect, these investment beliefs should help guide CalSTRS' policy leaders and other decision makers to develop appropriate policies, procedures, and investment plans for CalSTRS' assets. The nine investment beliefs are:

1. Diversification strengthens the fund.
2. The global public investment markets are largely, but not completely, efficient.
3. Managing investment costs yields long-term benefits.
4. Internal management is a critical capability.
5. CalSTRS can potentially capture an illiquidity risk premium.
6. Managing short-term drawdown risk can positively impact CalSTRS' ability to meet its long-term financial obligations.
7. Responsible corporate governance, including the management of environmental, social and governance (ESG) factors, can benefit long-term investors like CalSTRS.
8. Alignment of financial interests between CalSTRS and its advisors is critical.
9. Investment risks associated with climate change and the related economic transition—physical, policy and technology driven—materially impact the value of CalSTRS' investment portfolio.

Environmental, social and corporate governance

CalSTRS recognizes that ESG risks affect the performance of the investment portfolio to varying degrees across companies, sectors, regions and asset classes. We continuously look to improve ESG disclosures and integration that support long-term value creation and provide leadership in the global marketplace as long-term investors.

We publish several reports to convey our progress: *Green Initiative Task Force Report*, *Sustainability Report* and *Diversity in the Management of Investments Report*, all of which are available at CalSTRS.com.

Time-weighted returns

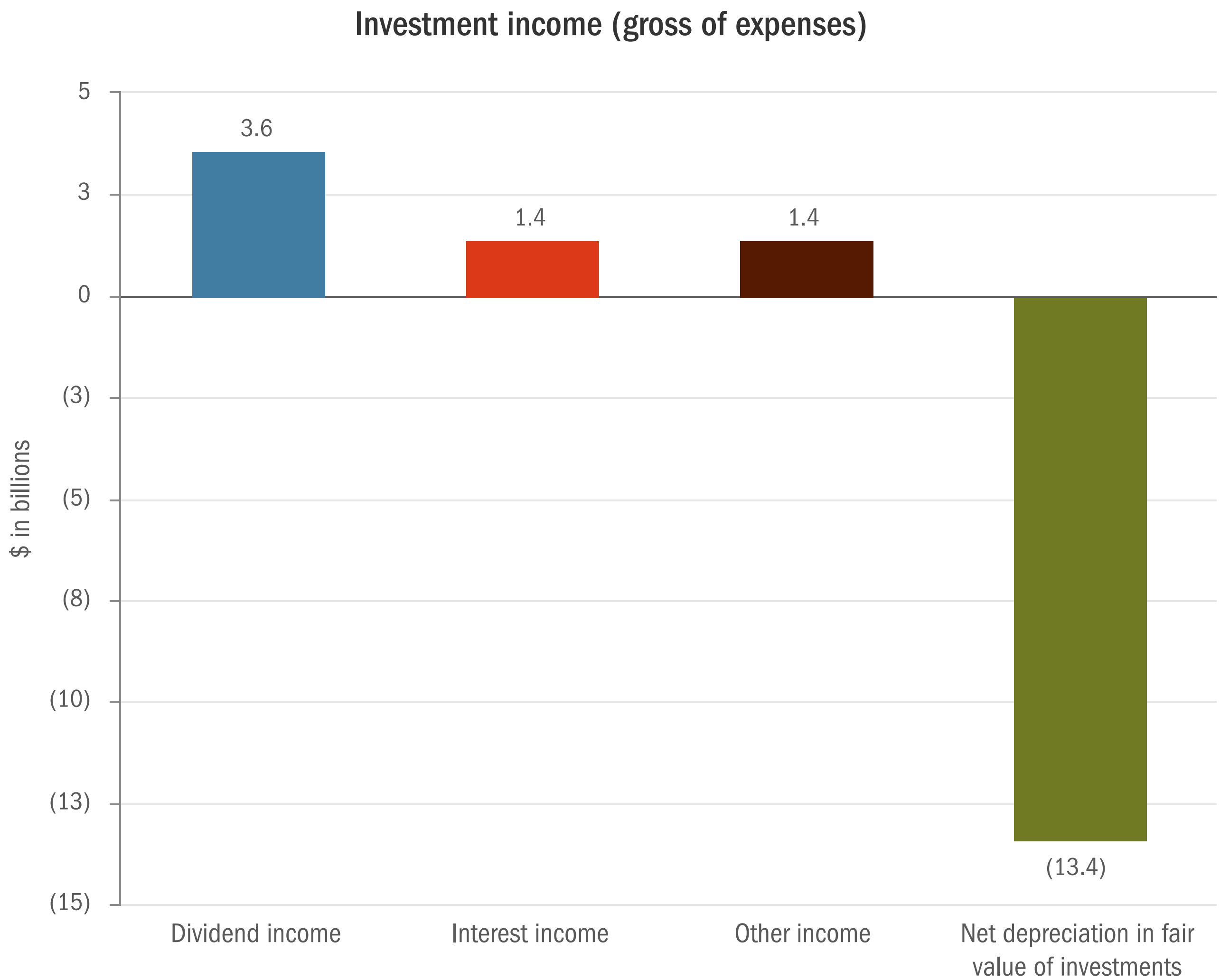
CalSTRS uses a time-weighted return to evaluate returns for portfolio performance purposes, and the discussion of investment performance that follows is based on the time-weighted methodology. CalSTRS also prepares and discloses a money-weighted return for financial reporting purposes in accordance with GASB Statement No. 67, *Financial Reporting for Pension Plans—an amendment of GASB Statement No. 25*, and GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*. The money-weighted rate of return for the STRP was -2.4% for the fiscal year ended June 30, 2022. Additional detail and discussion of money-weighted returns can be found in Note 5 of the notes to the basic financial statements.

For the fiscal year ended June 30, 2022, our time-weighted return calculated on a net-of-fees basis was -1.3%. CalSTRS is a long-term investor with a goal of achieving an average return of 7.0% over a multiyear horizon to meet pension obligations. Our returns (net of fees) reflect the following long-term performance:

- 9.3% over 3 years
- 8.7% over 5 years
- 9.4% over 10 years
- 7.8% over 20 years
- 8.0% over 30 years

Sources of investment income

The graph below displays a detailed view of the sources of investment income for the STRP (excluding securities lending income), based on the statement of changes in fiduciary net position as of June 30, 2022.



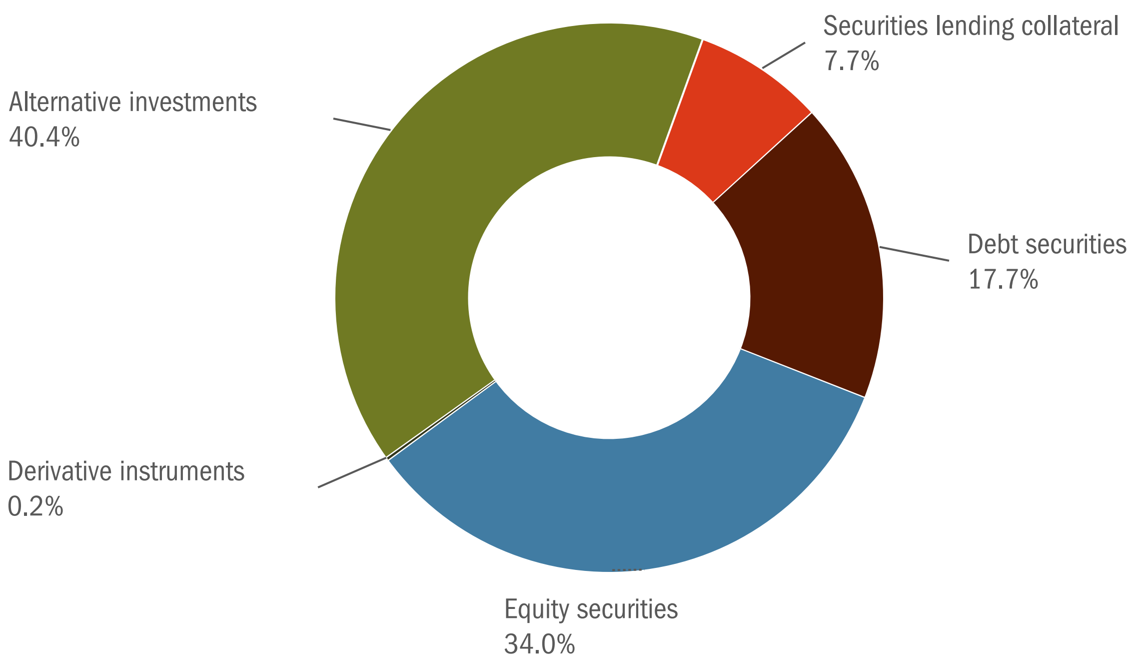
CalSTRS’ investments earn income in the form of interest and dividends from holding fixed income securities and various types of equity interests in public companies and limited partnerships.

Other income consists primarily of distributed income from alternative investments (such as rent), term loans and securities litigation. Net appreciation consists of realized gains (losses) and unrealized appreciation (depreciation). Realized gains and losses are generally a result of investment sales, write-offs and reorganizations. Unrealized appreciation and depreciation are generated by period-over-period valuation fluctuations in all types of investments.

Asset allocation and performance

The chart below presents STRP investments (excluding bond proceeds investment) based on their classification under investment assets on the statement of fiduciary net position as of June 30, 2022.

Allocation of investments based on the statement of fiduciary net position[1]



[1] This chart only represents investment assets of the STRP as these assets are managed by CalSTRS. While CalSTRS offers investment strategies for the Pension2 program, investment assets of the 403(b) and 457(b) plans are not actively managed by CalSTRS. Additionally, investment assets in the MPP Program and the TDCF are invested in the Surplus Money Investment Fund, which is a pooled investment program administered by the California State Treasurer.

The following table displays the distribution of investments in the STRP (excluding bond proceeds investment and securities lending collateral and obligations) based on the portfolio allocation compared to the classification within the statement of fiduciary net position as of June 30, 2022.

Portfolio allocation versus financial statement classification

Portfolio allocation		Financial statement classification	
Asset class/Strategy	**Asset allocation**	**Investments**	**% of asset class**
Public Equity[2]	38.4%	Equity securities	96.6%
		Debt securities	1.7%
		Alternative investments	1.4%
		Other[1]	0.3%
Real Estate	16.3%	Alternative investments	99.6%
		Equity securities	0.4%
Private Equity[2]	15.7%	Alternative investments	99.9%
		Other[1]	0.1%
Fixed Income	10.5%	Debt securities	105.3%
		Alternative investments	0.3%
		Other[1]	(5.6%)
Risk Mitigating Strategies	10.3%	Alternative investments	71.1%
		Debt securities	28.7%
		Other[1]	0.2%
Inflation Sensitive	5.4%	Alternative investments	60.6%
		Debt securities	41.1%
		Derivative instruments	(0.9%)
		Other[1]	(0.8%)
Cash/Liquidity	2.1%	Debt securities	96.1%
		Other[1]	3.9%
Innovative Strategies	1.1%	Alternative investments	100.0%
Strategic Overlay	0.2%	Debt securities	117.6%
		Derivative instruments	(8.1%)
		Other[1]	(9.5%)
Total Fund	**100.0%**		

1 Other consists of cash, payables and receivables that are reflected as such on the statement of fiduciary net position and any investment categories less than 0.1%.

2 Includes Sustainable Investments and Stewardship Strategies public and private investments totaling $8.8 billion.

Equity securities

As of June 30, 2022, the STRP held $112.2 billion in equity securities across all portfolios, a decrease of 24.5% compared to June 30, 2021. Equity securities are primarily composed of publicly traded domestic and international securities within the Public Equity Portfolio. The Public Equity Portfolio consists of two main strategies, Global Equity and Sustainable Investment and Stewardship Strategies (SISS). The SISS Portfolio has two components: the SISS Public Portfolio and the SISS Private Portfolio. SISS funds are included within the Public Equity, Private Equity and Innovative Strategies Portfolio allocations but are classified primarily as equity securities and alternative investments on the financial statements, as reflected in the table above.

Equity securities generated solid gains during the first half of the fiscal year, with both U.S. and non-U.S. stocks producing positive returns. Several key market indexes hit record highs despite the fear of rising inflation, higher interest rates and spread of coronavirus variants. However, during the second half of the fiscal year, the news of Russia's invasion of Ukraine sent global equity markets falling, suffering their biggest declines since the start of the pandemic. International sanctions placed on Russia also raised concerns about inflationary pressures and supply chains that were already stressed by the pandemic. The S&P 500 Index ended June down more than 21% from its January peak, erasing the gains generated during the first half of the year as fears of a potential recession weighed on global markets.

Debt securities

As of June 30, 2022, the STRP held $58.3 billion in debt securities across all portfolios, a slight decrease of 0.2% compared to June 30, 2021. The Fixed Income Portfolio holds majority of debt securities comprising of U.S. and non-U.S. dollar-based investment grade and non-investment grade securities.

Fixed income securities generated negative returns for the fiscal year ended June 30, 2022. The bond market declined as inflation rose and hit its highest levels in 40 years. The ongoing global supply chain disruptions and strong consumer demand also contributed to the significant growth of inflation as Consumer Price Index increased 9.1% before seasonal adjustment over the 12 months ended June 30, 2022. During the second half of the fiscal year, the U.S. Treasury market experienced one of its worst selloffs in history. Bond yields continued to increase, lowering bond prices. The 10–year U.S. Treasury note reached 3.49% in June, which was its highest level in over a decade. To keep price pressures under control, the Federal Reserve hiked interest rates in March by 0.25% for the first time since 2018. The Federal Reserve further increased rates in May by 0.50%, and again in June by 0.75%, which was the largest increase since 1994.

Alternative investments

As of June 30, 2022, the STRP held $133.2 billion in alternative investments, an increase of 23.3% compared to June 30, 2021. Alternative investments include investments in private equity, real estate, inflation sensitive, SISS, innovative strategies and risk mitigating strategies (RMS).

The Private Equity asset class is comprised primarily of limited partnership and co-investment structures invested in equity-based and debt-based opportunities. Types of investment strategies include leveraged buyouts, venture capital, expansion capital, distressed debt and mezzanine investments. As part of the Collaborative Model, a system-wide initiative to bring more investment capacity in-house, the Private Equity asset class continues to grow with an increased focus on co-investment opportunities.

Despite the pressure of rising interest rates and Russia's invasion of Ukraine during the second half of the fiscal year, Private Equity investments generated strong positive returns for the fiscal year ended June 30, 2022. For the industry, strong returns in 2021 allowed for performance to remain positive for the fiscal year, with the fundraising and the number of private equity funds beginning to decrease in the second half of the year.

The Real Estate asset class is comprised of investments in directly held real estate, such as wholly owned properties and joint venture investments, and non-directly held real estate, which consist primarily of commingled funds and co-investments. The Real Estate asset class is focused on investing in direct, discretionary investments to provide CalSTRS with control and better alignment of interests with partners.

Overall, the Real Estate Portfolio net asset value continued to grow while generating the largest positive gains within the CalSTRS portfolio for the fiscal year ended June 30, 2022. Real Estate performance was largely driven by industrial and multifamily property types.

Asset allocation targets

CalSTRS conducts an Asset Liability Management (ALM) study every four years to direct how the Investment staff allocates assets among different opportunities. This study weighs the system's pension liabilities versus assets needed to fund these pensions over the long term and is a critical process that drives the performance of the investment portfolio.

Current long-term asset allocation targets were adopted by the board's Investment Committee in November 2019 based on the most recent ALM study. These targets balance the tradeoff between achieving full funding, the risk of low funding, and the risk of higher contribution rates based on the CalSTRS Funding Plan.

CalSTRS staff are making gradual shifts in allocations through a series of steps to reach the long-term targets. CalSTRS has learned from experience that setting a rigid timeline is inefficient as investment opportunities ebb and flow and do not follow a calendar time frame. As such, the number of steps taken and the effective date of each step may vary during the transition toward the long-term allocation targets.

The table that follows shows approved allocations for Step 1 (effective July 1, 2020), Step 2 (effective July 1, 2021), and modifications for Step 3, which were approved by the board in January 2022 and are effective January 1, 2022:

Asset class/ investment strategy	Step 1	Step 2	Step 3	Long-term target
Public Equity	49.0%	47.0%	45.0%	42.0%
Real Estate	14.0%	14.0%	14.0%	15.0%
Private Equity	10.0%	11.0%	13.0%	13.0%
Fixed Income	13.0%	12.0%	12.0%	12.0%
Risk Mitigating Strategies	9.0%	10.0%	10.0%	10.0%
Inflation Sensitive	3.0%	4.0%	4.0%	6.0%
Cash/Liquidity	2.0%	2.0%	2.0%	2.0%

Investment Cost Report

The 2020 calendar year Investment Cost Report was presented to the board in November 2021. This report provides cost trend data over a six-year period for each asset class and investment strategy, a peer comparison of investment cost data, and a capture ratio analysis to show cost effectiveness of the total fund, asset classes and strategies over time.

Total portfolio investment cost (excluding carried interest) increased from $1.4 billion in calendar year 2019 to $1.5 billion in calendar year 2020. These costs include management fees and internal operating costs that are highly correlated to the total fund's net asset value, which increased from $242.2 billion in 2019 to $262.0 billion in 2020. Total portfolio costs (including carried interest) rose 23% primarily due to a 60% increase in carried interest paid in 2020, which is reflective of realized gains from private asset investments in recent years.

CalSTRS categorizes investment costs in the Investment Cost Report as either externally or internally managed and distinguishes assets as either public or private. Per the 2020 Investment Cost Report, internally managed public and private investment assets accounted for 64% of the total portfolio net asset value, yet represented only 29% of total portfolio costs. Conversely, externally managed public and private investment assets represented 36% of the total portfolio net asset value and 71% of total portfolio costs. Although some investment strategies require significant infrastructure or specialized expertise that economically justify external management, it generally costs more to manage investments externally than internally.

A third-party cost measurement service provider used various customized methodologies to compare CalSTRS' investment costs to 14 global peers whose assets under management ranged from $95.6 billion to $681.9 billion. CalSTRS' investment strategies, including those from the Collaborative Model, saved approximately $300 million in calendar year 2020 compared to our peers (adjusting for asset mix). CalSTRS continues to partner with other institutional investors and organizations to advocate best practices across asset classes to enhance transparency and improve benchmarking of cost information.

Pension administration

As a provider of pension and other postemployment benefits, CalSTRS must ensure that the contributions we receive and investment income we earn will fund current and future benefits owed to our members and their beneficiaries. Actuarial valuation reports are prepared on an annual basis to help assess the funded status of our programs and are integral to our administration of benefits. As a result of requirements set forth by GASB standards, CalSTRS engages with our consulting actuary (Milliman) to produce two types of actuarial valuation reports for both the STRP and MPP Program: one for financial reporting purposes and one for funding purposes.

Pension system actuarial valuation reports

The actuarial valuation for financial reporting is performed to determine the NPL and other required financial disclosures in accordance with GASB standards. The NPL is calculated for the STRP as a whole and reflects benefits earned by plan members as of a certain date net of pension plan assets. The total pension liability for the STRP was determined by applying update procedures to the financial reporting actuarial valuation as of June 30, 2021, and rolling forward the total pension liability to June 30, 2022. CalSTRS does not project a depletion of assets with the provision of additional member, employer and state contributions resulting from the enactment of the CalSTRS Funding Plan. CalSTRS discounted all future obligations for the STRP using the long-term assumed rate of return on plan assets gross of administrative costs (currently 7.10%). Based on that assumption, the STRP has an NPL of $69.5 billion as of June 30, 2022.

The actuarial valuation for funding assesses the sufficiency of existing assets and future contributions to fund promised benefits and guides decisions regarding the long-term viability of the programs. Separate funding actuarial valuations are performed for the DB Program, DBS Program and CBB Program. An actuarial projection is also performed for the Supplemental Benefit Maintenance Account (SBMA), which is a special account in the STRP that provides inflation protection (after revenue received from the School Land Bank Fund administered by the State Lands Commission is exhausted) to CalSTRS members whose current purchasing power has fallen below 85% of the purchasing power of their initial benefit.

Assumptions used in the financial reporting actuarial valuation report and the funding actuarial valuation reports are the same except for the long-term rate of return, which is gross of administrative costs (7.10%) for financial reporting purposes and net of administrative costs (7.00%) for funding purposes. Investment return assumptions are developed by CalSTRS' investment and actuarial consultants and are adopted by the board.

The most recent actuarial funding valuation indicates that the DB Program had 73.0% of the funds needed to pay the actuarial cost of the benefits accrued as of June 30, 2021, which increased by 5.9% from the June 30, 2020, valuation. This increase is primarily attributable to positive investment returns for the fiscal year ended June 30, 2021, and increased contributions to the DB Program resulting from the enactment of the CalSTRS Funding Plan.

Additionally, the funding actuarial valuation for the DBS Program indicates that as of June 30, 2021, the DBS Program had a funded ratio of 150.6% compared to the June 30, 2020, funded ratio of 125.8% before consideration of additional earnings credits (AEC). The funded ratio per the funding actuarial valuation for the CBB Program increased to 146.0% as of June 30, 2021, compared to 121.7% as of June 30, 2020, before the consideration of AECs.

The board granted AECs for the DBS and CBB programs totaling $1.3 billion and $37.1 million, respectively. Awarding credits reduced the funded ratios cited above to 135.7% and 131.2% for the DBS and CBB programs, respectively. Refer to Note 1 of the notes to the basic financial statements for additional information.

Other postemployment benefits actuarial valuation reports

The actuarial valuation for financial reporting is performed to determine the net OPEB liability (NOL) of the MPP Program and other required financial disclosures in accordance with GASB standards. The NOL reflects the present value of projected benefits to program participants as of a certain date, net of plan assets. The total OPEB liability for the MPP Program was determined by applying update procedures to the financial reporting actuarial valuation as of June 30, 2021, and rolling forward the total OPEB liability to June 30, 2022. As of June 30, 2022, the NOL for the MPP Program was $329.4 million.

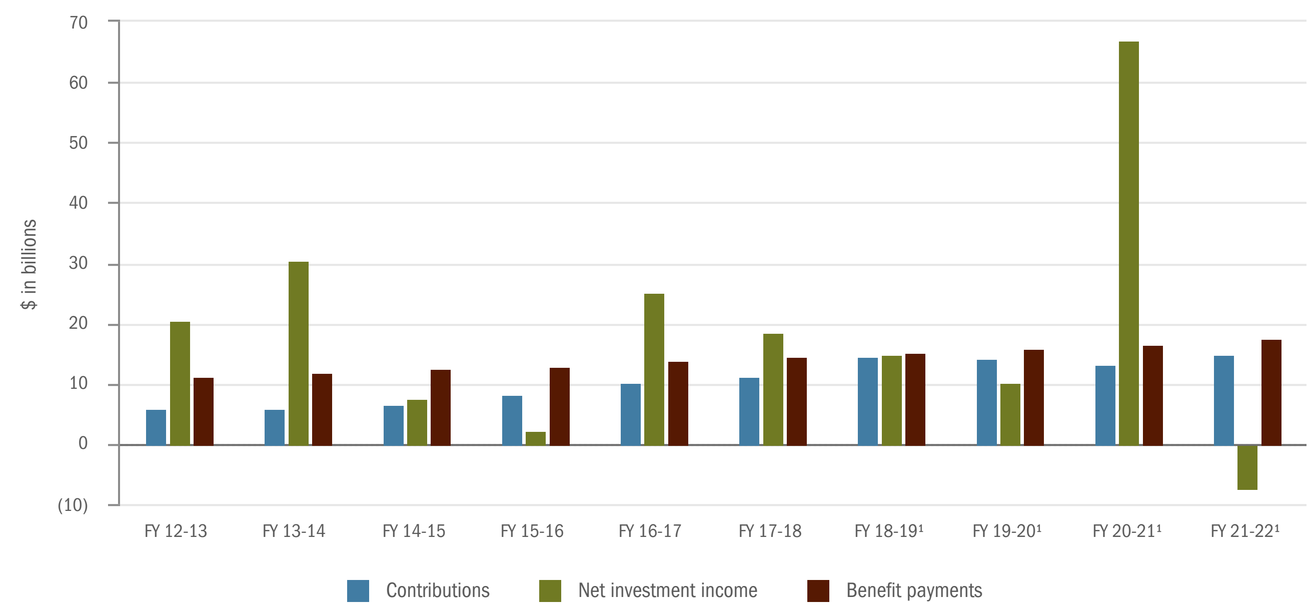
For financial reporting purposes, the plan is essentially unfunded as the fiduciary net position of the plan will not be sufficient to make the projected future benefit payments. Therefore, in accordance with GASB Statement No. 74, in instances such as this, the rate used to discount the total OPEB liability represents the yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher. The discount rate as of June 30, 2022, for the MPP Program OPEB liability is 3.54% as measured by the Bond Buyer's 20-Bond GO Index as of June 30, 2022.

The MPP Program is funded on a pay-as-you-go basis by contributions that are redirected from the DB Program. As such, the actuarial valuation for funding measures the sufficiency of DB Program employer contributions that will be available to fund the MPP Program benefits in future periods. This differs from the actuarial valuation for financial reporting purposes, which focuses on the obligation an employer incurs on behalf of employees through the employment-exchange process.

The MPP Program funding actuarial valuation as of June 30, 2021, found that the MPP Program assets, along with MPP Program allocated funding from future DB Program employer contributions, are sufficient to finance the future MPP Program obligations of $258.9 million for both Part A premiums and Part A and Part B surcharges.

STRP investment income, benefit payments and contributions

The following chart is a 10-year comparison of contributions, net investment income and benefit payments.



Note: Each data set shown by fiscal year in the chart above is presented in the order of contributions on the left, net investment income in the middle and benefit payments on the right

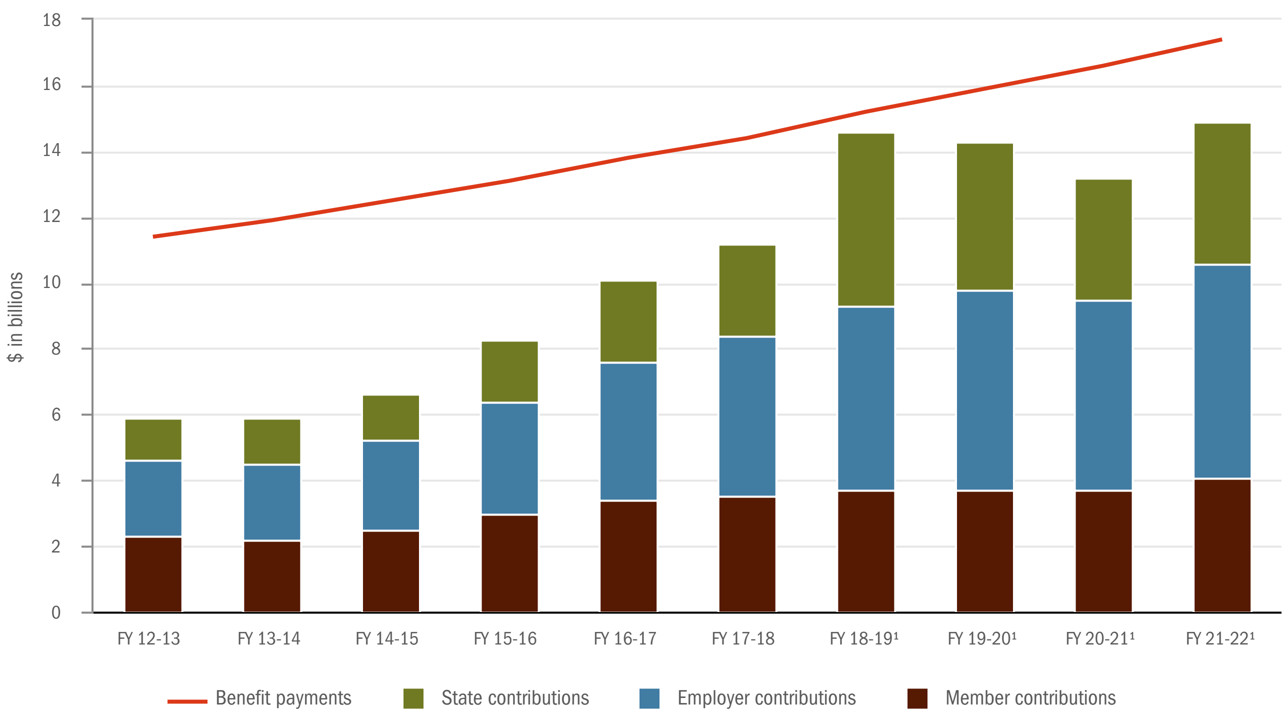
[1] CalSTRS recognized one-time, supplemental contribution payments from the state of approximately $583.7 million, $297.0 million, $1.1 billion and $2.2 billion in fiscal years 2021–22, 2020–21, 2019–20 and 2018–19, respectively.

STRP contributions and benefit payments

The chart below compares STRP contributions to benefit payments for the last decade. As shown below, prior to the enactment of the CalSTRS Funding Plan in June 2014, there had been a growing gap between contributions and benefit payments. The gap decreased as contribution rates for members, employers and the state increased as per the funding plan.

The gap was further reduced when the state made supplemental contribution payments of approximately $2.2 billion and $1.1 billion in fiscal years 2018–19 and 2019–20, respectively. The $1.1 billion was paid to CalSTRS to help reduce the state's share of CalSTRS' unfunded actuarial obligation, while the $2.2 billion was a payment made by the state, on behalf of employers, to provide short-term rate relief to employers. The short-term rate relief was provided through temporary reductions to the employer supplemental contribution rate pursuant to special legislation. These reductions led to employer contributions in fiscal year 2021–22 being lower than expected. Employer contributions are expected to increase in fiscal year 2022–23 as the employer rate reduction provided by special legislation will no longer apply.

Going forward, the gap between contributions and benefit payments is expected to increase in perpetuity. As a pension plan matures, having negative cash flows is expected but is not an indication that a system is not fully funded. When pre-funding a pension plan, the objective is to accumulate assets to pay benefits or, ultimately, to create negative cash flows.



Note: Each data set shown by fiscal year in the chart above is presented in the order of state contributions on top, employer contributions in the middle and member contributions on the bottom.

[1] CalSTRS recognized one-time, supplemental contribution payments from the state of approximately $583.7 million, $297.0 million, $1.1 billion and $2.2 billion in fiscal years 2021–22, 2020–21, 2019–20 and 2018–19, respectively.

Closing remarks

Net position for CalSTRS as of June 30, 2022, was $301.8 billion, which is a decrease of approximately $10.2 billion, or 3.3%, from the previous fiscal year. Although net investment losses in fiscal year 2021–22 are the primary cause of this decrease, CalSTRS beat its total fund benchmark by 0.9% and remains on track to achieve full funding. Financial markets experienced severe volatility in the second half of fiscal year 2021–22 as widespread economic and geopolitical issues led to global uncertainty. In times like these, it’s important to remember CalSTRS is a broadly diversified, long-term investor in order to respond to periods of market volatility and uncertainty. Overall diversification minimizes the risk of loss and maximizes the rate of return.

Our investment and enterprise risk management programs and strategic and funding plans all position CalSTRS to remain in a sound financial position to meet our obligations to our members and their beneficiaries. We remain committed to securing the financial future and sustaining the trust of California’s educators.

Requests for information

This financial report is designed to provide a general overview of CalSTRS’ finances. For questions concerning the information in this report or for additional information, contact:

CalSTRS
P.O. Box 15275
Sacramento, CA 95851–0275

Respectfully submitted,

Julie Underwood

Julie Underwood

Chief Financial Officer

Statement of fiduciary net position

As of June 30, 2022

(dollars in thousands)

	State Teachers' Retirement Plan	Pension2 403(b) Plan	Pension2 457(b) Plan	Medicare Premium Payment Program	Teachers' Deferred Compensation Fund	Total
Assets						
Investments						
Debt securities	$58,275,989	$750,998	$36,556	$274	$3,187	$59,067,004
Equity securities	112,226,576	892,152	63,864	–	–	113,182,592
Alternative investments	133,252,291	–	–	–	–	133,252,291
Derivative instruments	747,112	–	–	–	–	747,112
Securities lending collateral	25,301,600	–	–	–	–	25,301,600
Bond proceeds investment	122,749	–	–	–	–	122,749
Total investment assets	**329,926,317**	**1,643,150**	**100,420**	**274**	**3,187**	**331,673,348**
Cash	**253,397**	**–**	**–**	**1**	**1**	**253,399**
Receivables						
Investments sold	10,044,617	–	–	–	–	10,044,617
Interest and dividends	589,240	–	–	3	6	589,249
Member, employer and state	925,765	20,051	1,415	–	–	947,231
Loans receivable	5,497,519	5,937	256	–	–	5,503,712
Other	894,519	–	–	1	65	894,585
Total receivables	**17,951,660**	**25,988**	**1,671**	**4**	**71**	**17,979,394**
Other assets						
Capital assets, net of accumulated depreciation	614,948	–	–	–	–	614,948
Other	246	–	–	–	–	246
Total other assets	**615,194**	**–**	**–**	**–**	**–**	**615,194**
Total assets	**348,746,568**	**1,669,138**	**102,091**	**279**	**3,259**	**350,521,335**
Deferred outflows of resources	**87,781**	**–**	**–**	**162**	**417**	**88,360**
Total assets and deferred outflows of resources	**348,834,349**	**1,669,138**	**102,091**	**441**	**3,676**	**350,609,695**
Liabilities						
Investments						
Derivative instruments	931,721	–	–	–	–	931,721
Total investment liabilities	**931,721**	**–**	**–**	**–**	**–**	**931,721**
Investments purchased payable	13,014,265	–	–	–	–	13,014,265
Loans and bonds payable	5,845,531	–	–	–	–	5,845,531
Benefits in process of payment	1,802,164	–	–	–	–	1,802,164
Net pension and OPEB liabilities	612,234	–	–	2,293	3,708	618,235
Securities lending obligation	25,288,492	–	–	–	–	25,288,492
Securities sold short	354,821	–	–	–	–	354,821
Other	559,490	3,327	33	101	846	563,797
Total liabilities	**48,408,718**	**3,327**	**33**	**2,394**	**4,554**	**48,419,026**
Deferred inflows of resources	**369,346**	**–**	**–**	**1,113**	**2,194**	**372,653**
Total liabilities and deferred inflows of resources	**48,778,064**	**3,327**	**33**	**3,507**	**6,748**	**48,791,679**
NET POSITION RESTRICTED FOR PENSIONS/OPEB	**$300,056,285**	**$1,665,811**	**$102,058**	**($3,066)**	**($3,072)**	**$301,818,016**

The accompanying notes are an integral part of these statements.

Basic financial statements

Statement of changes in fiduciary net position

For the fiscal year ended June 30, 2022

(dollars in thousands)

	State Teachers' Retirement Plan	Pension2 403(b) Plan	Pension2 457(b) Plan	Medicare Premium Payment Program	Teachers' Deferred Compensation Fund	Total
Additions						
Contributions						
Member	$4,067,526	$226,996	$21,312	$–	$–	$4,315,834
Employer	6,521,356	1,955	169	26,352	–	6,549,832
State of California	4,279,964	–	–	–	–	4,279,964
Total contributions	**14,868,846**	**228,951**	**21,481**	**26,352**	**–**	**15,145,630**
Investment income (loss)						
Net appreciation/(depreciation) in fair value of investments	(13,431,817)	(183,555)	(13,684)	(4)	(42)	(13,629,102)
Interest, dividends and other	6,418,554	41,912	2,589	5	11	6,463,071
Securities lending income	116,791	–	–	–	–	116,791
Investment expenses						
Cost of lending securities	(59,251)	–	–	–	–	(59,251)
Other investment expenses	(434,567)	–	–	–	–	(434,567)
Net investment income (loss)	**(7,390,290)**	**(141,643)**	**(11,095)**	**1**	**(31)**	**(7,543,058)**
Other income	**130,195**	**288**	**10**	**–**	**1,964**	**132,457**
Total additions	**7,608,751**	**87,596**	**10,396**	**26,353**	**1,933**	**7,735,029**
Deductions						
Retirement, disability, death and survivor benefits	17,172,543	–	–	–	–	17,172,543
Premiums paid	–	–	–	25,776	–	25,776
Distributions and withdrawals	–	82,197	2,757	–	–	84,954
Purchasing power benefits	241,702	–	–	–	–	241,702
Refunds of member contributions	112,424	4,625	1,302	–	–	118,351
Administrative expenses	191,116	4,765	278	468	1,001	197,628
Borrowing costs	122,794	–	–	–	–	122,794
Other expenses	5,340	–	–	1	2	5,343
Total deductions	**17,845,919**	**91,587**	**4,337**	**26,245**	**1,003**	**17,969,091**
Increase (decrease) in net position	**(10,237,168)**	**(3,991)**	**6,059**	**108**	**930**	**(10,234,062)**
Net position restricted for pensions/OPEB						
Beginning of the year	310,293,453	1,669,802	95,999	(3,174)	(4,002)	312,052,078
END OF THE YEAR	**$300,056,285**	**$1,665,811**	**$102,058**	**($3,066)**	**($3,072)**	**$301,818,016**

The accompanying notes are an integral part of these statements.

1. Significant provisions of CalSTRS plans and programs

The California State Teachers' Retirement System (CalSTRS, our or we) administers a hybrid retirement system consisting of a defined benefit plan, two defined contribution plans, a postemployment benefit plan and a fund used to account for ancillary activities associated with the deferred compensation plans and programs:

- State Teachers' Retirement Plan (STRP)
- CalSTRS Pension2 403(b) Plan
- CalSTRS Pension2 457(b) Plan
- Medicare Premium Payment (MPP) Program
- Teachers' Deferred Compensation Fund (TDCF)

CalSTRS provides pension benefits, including disability and survivor benefits, to California full-time and part-time public school teachers from pre-kindergarten through community college and certain other employees of the public school system. The Teachers' Retirement Law (Education Code section 22000 et seq.), as enacted and amended by the California Legislature and the Governor, established these plans and CalSTRS as the administrator. The terms of the plans may be amended through legislation.

CalSTRS is a component unit of the State of California (the state). These financial statements include only the accounts of CalSTRS. The state includes CalSTRS' various plans and programs as fiduciary funds in its financial statements.

Under California Constitution, Article 16, Section 17, the Teachers' Retirement Board (the board) has plenary authority and fiduciary responsibility for investment of moneys and administration of the system. The board is composed of 12 members:

- Five members appointed by the Governor and confirmed by the Senate for a term of four years: one school board representative, one retired CalSTRS member and three public representatives.
- Four ex officio members who serve for the duration of their term in office: the California Director of Finance (who is appointed by the Governor and confirmed by the Senate), the California State Controller, the California State Treasurer and the State Superintendent of Public Instruction.
- Three member-elected positions representing current educators who serve for a term of four years.

Section 22209 of the Education Code gives the board authority to appoint a chief executive officer (CEO), while Section 20520 of the California Code of Regulations gives the board authority to delegate any acts within its power to the CEO. Pursuant to Section 22301 of the Education Code, the CEO may delegate any act or duty to subordinates unless required by the board to act personally.

State Teachers' Retirement Plan

The STRP is a multiple-employer, cost-sharing defined benefit plan composed of four programs: Defined Benefit (DB) Program, Defined Benefit Supplement (DBS) Program, Cash Balance Benefit (CBB) Program and Replacement Benefits (RB) Program. A Supplemental Benefit Maintenance Account (SBMA) exists within the STRP and provides purchasing power protection for DB Program benefits. The STRP holds assets for the exclusive purpose of providing benefits to members of these programs and their beneficiaries. CalSTRS also uses plan assets to defray reasonable expenses of administering the STRP. Although CalSTRS is the administrator of the STRP, the state is the sponsor and obligor of the trust. In addition, the state is both an employer and nonemployer contributing entity to the STRP.

STRP Defined Benefit Program

As of June 30, 2022, there were approximately 1,800 contributing employers (school districts, community college districts, county offices of education, charter schools, state agencies and regional occupational programs). Membership is mandatory for all employees meeting certain statutory requirements and optional for all other employees performing creditable service activities. The DB Program provides retirement benefits based on members' final compensation, age and years of service credit. In addition, the program provides benefits to members upon disability and to their survivors or beneficiaries upon the death of eligible members.

As of June 30, 2022, membership consisted of:

Active members	
Vested	324,000
Nonvested	125,000
Total active members	**449,000**
Inactive members	
Vested	47,000
Nonvested	180,000
Total inactive members	**227,000**
Retirees and beneficiaries	**326,000**
TOTAL MEMBERS, RETIREES AND BENEFICIARIES	**1,002,000**

The DB Program has two benefit structures:

- CalSTRS 2% at 60: Members first hired on or before December 31, 2012, to perform service that could be creditable to CalSTRS.
- CalSTRS 2% at 62: Members first hired on or after January 1, 2013, to perform service that could be creditable to CalSTRS.

There are several differences between the two benefit structures, which are noted below.

CalSTRS 2% at 60

- CalSTRS 2% at 60 members are eligible for normal retirement at age 60, with a minimum of five years of credited service. The normal retirement benefit is equal to a factor of 2.0% of final compensation multiplied by the number of years of credited service. Early retirement options are available at age 55 with five years of credited service or as early as age 50 with 30 years of credited service. The age factor for retirements after age 60 increases with each quarter year of age to a maximum of 2.4% at age 63 or older. Members who have 30 years or more of credited service receive an additional increase of 0.2% to the age factor, up to the 2.4% maximum.
- CalSTRS calculates retirement benefits based on one-year final compensation for members with 25 or more years of credited service, or for classroom teachers with fewer than 25 years of credited service if the employer entered into, extended, renewed or amended an agreement prior to January 1, 2014, to elect to pay the additional benefit cost for all of its classroom teachers. One-year final compensation is a member's highest average annual compensation earnable for 12 consecutive months based on the creditable compensation that the member could earn in a school year while employed on a full-time basis. For most members with fewer than 25 years of credited service, final compensation is the highest average annual compensation earnable for any 36 consecutive months based on the creditable compensation that the member could earn in a school year while employed on a full-time basis.
- For fiscal year 2021–22, the limit on compensation that can be counted toward a member's benefit is $290,000, if hired on or after July 1, 1996, pursuant to Internal Revenue Code (IRC) section 401(a)(17). No contributions are paid by the member, employer or the state on compensation in excess of the limit, and any compensation beyond the limit is excluded from determining final compensation.
- Final compensation is based on salary and certain other types of remuneration. Other types of compensation, such as allowances, cash in lieu of fringe benefits and compensation for unused accumulated leave are not creditable compensation and do not count toward any CalSTRS benefit program. Contributions on compensation paid a limited number of times and compensation determined to have been paid to enhance a benefit are creditable to the DBS Program.
- Members who accumulated at least 30 years of credited service by December 31, 2010, receive a longevity bonus of $200, $300 or $400 per month for 30, 31 or 32 or more years of credited service, respectively.
- Specified members retired under the DB Program, their option beneficiaries and surviving spouses receiving a benefit as of January 1, 2000, are guaranteed a minimum benefit based on the member's years of service credit. The total annual amount payable to the member with 20 years of service credit generally will not be less than $15,000, increasing incrementally to $20,000 with 30 or more years of service credit.

CalSTRS 2% at 62

- CalSTRS 2% at 62 members are eligible for normal retirement at age 62, with a minimum of five years of credited service. The normal retirement benefit is equal to 2.0% of final compensation multiplied by the number of years of credited service. An early retirement option is available at age 55. The age factor for retirement after age 62 increases with each quarter year of age to 2.4% at age 65 or older.
- All CalSTRS 2% at 62 members have their final compensation based on their highest average annual compensation earnable for 36 consecutive months based on the creditable compensation that the member could earn in a school year while employed on a full-time basis.
- The limit on creditable compensation that can be counted toward a member's benefit is adjusted each fiscal year based on changes in the Consumer Price Index for All Urban Consumers: U.S. City Average. In fiscal year 2021–22, the limit was $154,418.
- Compensation paid in cash by an employer, pursuant to a publicly available written contractual agreement, for each pay period in which creditable service is performed is creditable to CalSTRS benefit programs for CalSTRS 2% at 62 members. Other compensation, such as allowances, cash in lieu of fringe benefits, compensation paid a limited number of times and compensation determined to have been paid to enhance a benefit, is not creditable to any CalSTRS benefit program.

The following provisions apply to both CalSTRS 2% at 60 and CalSTRS 2% at 62 members:

- After earning five years of credited service, members become vested to receive service retirement benefits.
- After five years of credited service, a member (younger than age 60 if under disability Coverage A or no age limit if under disability Coverage B) is eligible for disability benefits of 50% of final compensation plus 10% of final compensation for each eligible child, up to a maximum addition of 40%. Final compensation for these disability benefits is based on the creditable compensation that the member actually earned. The member must have a disability that can be expected to last continuously for at least 12 months to qualify for a benefit.
- Contributions on compensation for service in excess of one year due to overtime or working additional assignments are credited to the DBS Program at the lowest annualized pay rates up to the creditable compensation limit.
- A family benefit is available if an active member dies and has at least one year of credited service.
- Members' accumulated contributions are refundable with interest upon separation from CalSTRS. The board determines the credited interest rate for each fiscal year. For the fiscal year ended June 30, 2022, the rate of interest credited to members' accounts was 0.19%.
- There is a postretirement annual benefit increase of 2% per year on a simple (rather than compound) basis. This benefit is vested for members who retired in 2014 or pay the higher contribution rates resulting from the CalSTRS Funding Plan, which was enacted in June 2014 with the passage of California Assembly Bill (AB) 1469.
- The member's benefit is reduced dollar for dollar, regardless of age, for the first 180 calendar days after retirement if the member performs activities in the public schools that could be creditable to CalSTRS, unless the governing body of the school district takes certain actions specified in Education Code section 24214.5 with respect to a member who is above normal retirement age.
- There is an annual limitation on earnings from activities that could be creditable to CalSTRS for retired members. The member's benefit is reduced dollar for dollar by the amount of any earnings in excess of $48,428 in fiscal year 2021–22.
- Any benefit enhancements to the DB Program made on or after January 1, 2013, apply only to service performed on or after the effective date of the enhancement.
- A CalSTRS member who is convicted of committing a felony in the course of their official duties, including specifically, a felony involving a child with whom the member had contact as part of the member's official duties, forfeits their right to any benefits accrued commencing with the commission of the felony.

Purchasing power protection

Purchasing power protection payments are provided to retired and disabled members of the DB Program and their beneficiaries through annual distributions (in quarterly payments) to restore purchasing power up to 85% of the initial monthly benefit. These payments are funded by revenue generated from the State School Lands Bank Fund (school lands) with the remaining balance covered by the SBMA. Purchasing power protection payments are not a vested benefit and are paid only to the extent funds are available.

School lands revenue is generated from land granted to California by the federal government to support schools and in lieu lands, which are properties purchased with the proceeds from the sale of school lands. California Public Resources Code section 6217.5 allocates school lands revenue to the system for purchasing power protection. The SBMA is funded through a continuous appropriation from the state's General Fund in an amount equal to 2.5% of the total creditable compensation of the fiscal year ended in the immediately preceding calendar year, reduced by $72.0 million, pursuant to Education Code section 22954.

For the fiscal year ended June 30, 2022, the amount of school lands revenues credited towards purchasing power protection was $7.4 million while the amount contributed to the SBMA from the General Fund was $796.3 million.

Benefit enhancements

A school employer may provide, at the employer's cost, an additional two years of service credit to increase the amount of the member's monthly retirement benefit. This may be paid for by the employer in installments not to exceed eight years. If the employer chooses to pay in installments, the employer is charged interest on the unpaid balance at the actuarially assumed rate of return on investments for the DB Program (currently 7.00%). As of June 30, 2022, the outstanding balance of receivables for benefit enhancements was $10.8 million.

Contributions

The parameters for member, employer and state contribution rates are set by the California Legislature and the Governor and detailed in the Teachers' Retirement Law. Current contribution rates were established by California Assembly Bill 1469 (CalSTRS Funding Plan), which was passed into law in June 2014, and various subsequent legislation.

The CalSTRS Funding Plan established a schedule of contribution rate increases shared among members, employers and the state to bring CalSTRS toward full funding by 2046. California Senate Bill 90 (Chapter 33, Statutes of 2019) and California Assembly Bill 84 (Chapter 16, Statutes of 2020) (collectively, special legislation)—signed into law in June 2019 and June 2020, respectively—provided supplemental contributions to the DB Program along with supplemental contribution rate relief to employers through fiscal year 2021–22.

Members

The member contribution rate for CalSTRS 2% at 60 members is set in statute at 10.25%, while CalSTRS 2% at 62 members are required to pay at least one-half of the normal cost of their DB Program benefit (rounded to the nearest quarter of 1%).

For fiscal year 2021–22, CalSTRS 2% at 62 members pay 9% toward the normal cost and an additional 1.205% as per the CalSTRS Funding Plan for a total member contribution rate of 10.205%. The contribution rate for CalSTRS 2% at 62 members is adjusted if the normal cost increases or decreases by more than 1% since the last time the member contribution rate was set. Based on the June 30, 2021, valuation adopted by the board in May 2022, the increase in normal cost was less than 1%. Therefore, the contribution rate for CalSTRS 2% at 62 members will not change effective July 1, 2022.

Member contribution rates effective for fiscal years 2021–22 and 2022–23 are summarized below:

Effective date	CalSTRS 2% at 60 members	CalSTRS 2% at 62 members
July 1, 2021	10.250%	10.205%
July 1, 2022	10.250%	10.205%

Employers

Employers are required to contribute a base contribution rate set in statute at 8.25%. Pursuant to the CalSTRS Funding Plan, employers also have a supplemental contribution rate to eliminate their share of the CalSTRS unfunded actuarial obligation by 2046.

Beginning in fiscal year 2021–22, the CalSTRS Funding Plan authorizes the board to adjust the employer supplemental contribution rate up or down by a maximum of 1% for a total rate of no higher than 20.25% and no lower than 8.25%. In May 2022, the board voted to keep the employer supplemental contribution rate at 10.85% for fiscal year 2022–23 for a total employer contribution rate of 19.10%.

Through the special legislation approved in June 2019 and June 2020, the state made supplemental contributions of approximately $2.2 billion to CalSTRS on behalf of employers to supplant the amounts submitted by employers for fiscal years 2019–20 through 2021–22. Specifically, employers remitted 1.03%, 2.95% and 2.18% less than is required by the CalSTRS Funding Plan for fiscal years 2019–20, 2020–21 and 2021–22, respectively.

Employer contribution rates as described above and effective for fiscal year 2021–22 and beyond are summarized below:

Effective date	Base rate	Supplemental rate per CalSTRS Funding Plan	Rate adjustment per special legislation	Total rate
July 1, 2021	8.250%	10.850%	(2.180%)	16.920%
July 1, 2022	8.250%	10.850%	N/A	19.100%
July 1, 2023 – June 30, 2046	8.250%	[1]	N/A	[1]
July 1, 2046	8.250%	Increase from AB 1469 not applicable in 2046–47 and beyond		

[1] The CalSTRS Funding Plan authorizes the board to adjust the employer contribution rate up or down by up to 1% each year, but no higher than 20.25% and no lower than 8.25%.

State

The state is required to contribute a base contribution rate set in statute at 2.017%. Pursuant to the CalSTRS Funding Plan, the state also has a supplemental contribution rate, which the board can increase by up to 0.5% each fiscal year to help eliminate the state's share of the CalSTRS unfunded actuarial obligation by 2046. In May 2022, the board voted to keep the state supplemental contribution rate at 6.311% for fiscal year 2022–23 for a total contribution rate of 10.828%.

Special legislation appropriated supplemental state contributions to reduce the state's portion of the unfunded actuarial obligation of the DB Program in fiscal years 2019–20 through 2021–22. These contributions are funded from future excess General Fund revenues, pursuant to the requirements of California Proposition 2, Rainy-Day Budget Stabilization Fund Act, which passed in 2014. Accordingly, the contribution amounts are subject to change each year based on the availability of funding. For fiscal year 2021–22, CalSTRS received $410.0 million in supplemental state contributions from Proposition 2 funds. Additionally, CalSTRS received a one-time supplemental payment of $173.7 million from the General Fund in fiscal year 2021–22 to offset forgone contributions from the suspension of the 0.5% increase to the state supplemental contribution rate in fiscal year 2020–21.

State contribution rates as described above and effective for fiscal year 2021–22 and beyond are summarized below:

Effective date	Base rate	Supplemental rate per CalSTRS Funding Plan	SBMA funding[1]	Total
July 1, 2021	2.017%	6.311%	2.500%	10.828%
July 1, 2022	2.017%	6.311%	2.500%	10.828%
July 1, 2023 – June 30, 2046	2.017%	[2]	2.500%	[2]
July 1, 2046	2.017%	[3]	2.500%	[3]

[1] The SBMA contribution rate excludes the $72 million that is reduced from the required contribution in accordance with Education Code section 22954. Refer to Note 1, Purchasing Power Protection, for further discussion.

[2] The board has limited authority to adjust the state contribution rate annually through June 2046 in order to eliminate the remaining unfunded actuarial obligation. The board cannot increase the supplemental rate by more than 0.5% in a fiscal year, and if there is no unfunded actuarial obligation, the supplemental contribution rate imposed would be reduced to 0%.

[3] From July 1, 2046, and thereafter, the rates in effect prior to July 1, 2014, are reinstated, if necessary, to address any remaining unfunded actuarial obligation.

STRP Defined Benefit Supplement Program

The DBS Program, established pursuant to Education Code section 25000, is a cash balance defined benefit pension program that operates within the STRP. All members of the DB Program who make contributions to CalSTRS on creditable compensation earned on or after January 1, 2001, have an account under the DBS Program and are eligible to receive a DBS benefit based on the amount of funds contributed to the DBS account. Membership in the DBS Program is mandatory.

Interest is credited to the nominal DBS Program accounts at the minimum guaranteed annual rate established by the board prior to each plan year, which was 1.53% for the fiscal year ended June 30, 2022. The board may credit additional earnings to members' nominal accounts if actual investment earnings exceed the minimum guaranteed annual rate and meet criteria set out in the board policy.

In May 2022, the board elected to award an additional earnings credit (AEC) of 13.21% of DBS members' June 30, 2021, nominal account balances. The total value of the AEC awarded was approximately $1.3 billion.

Contributions

For creditable service performed by DB Program members in excess of one year of service credit within one fiscal year, member contributions of either 8% (CalSTRS 2% at 60 members) or 9% (CalSTRS 2% at 62 members) and employer contributions of 8% are credited to the members' nominal DBS Program accounts (up to any applicable compensation cap). For CalSTRS 2% at 60 members only, member contributions of 8% and employer contributions of 8% for compensation as a result of limited-term payments or compensation determined to have been paid to enhance their DB Program benefits are also credited to DBS Program accounts.

STRP Cash Balance Benefit Program

The CBB Program, established and subsequently merged into the STRP pursuant to Education Code section 26000, is a cash balance defined benefit pension program. The CBB Program is designed for employees of California's public schools who are hired to perform creditable service for less than 50% of the full-time equivalent for a position in a school district or county office of education or on a part-time or temporary basis in a community college district.

Participation in the CBB Program is optional; a school district, community college district, county office of education, charter school or regional occupational program may elect to offer the CBB Program. Under such election, the program will automatically cover each eligible employee, unless the employee elects to participate in the DB Program or an alternative plan provided by the employer within 60 days of hire or the election period determined by the employer. As of June 30, 2022, there were 29 contributing employers and 41,419 contributing participants.

Interest is credited to nominal CBB Program accounts at the minimum guaranteed annual rate established by the board prior to each plan year, which was 1.53% for the fiscal year ended June 30, 2022. The board may credit additional earnings to members' nominal accounts if actual investment earnings exceed the minimum guaranteed annual rate and meet criteria pursuant to the board policy. In May 2022, the board elected to award an AEC of 11.65% of CBB members' June 30, 2021, nominal account balances. The total value of the AEC awarded was approximately $37.1 million.

Contributions

A summary of statutory contribution rates for the CBB Program is as follows:

Participants – 4.0% of applicable participant salaries

Employers – 4.0% of applicable participant salaries

Employers may enter into a collective bargaining agreement to pay different rates if certain minimum conditions are met.

STRP Replacement Benefits Program

The RB Program is an excess benefits arrangement for DB Program members that is administered as a qualified excess benefit arrangement through a separate pension program apart from the other three STRP programs. It was created pursuant to Education Code section 24260 and is established in accordance with IRC section 415(m). IRC section 415(b) imposes a dollar limit on the annual retirement benefits an individual may receive from a qualified defined benefit pension plan. The limit for individual CalSTRS 2% at 60 members varies based on the age at which they retire. For calendar year 2022, the federal dollar limit applicable to a CalSTRS member retiring at exactly age 65 and receiving only a single-life benefit from the DB Program is $208,346. The federal dollar limit for other ages at retirement and other benefit types will differ.

Employer contributions that would otherwise be credited to the DB Program each month are instead credited to the RB Program to fund monthly program costs. Monthly employer contributions are received and paid to members in amounts equivalent to the benefits not paid as a result of IRC section 415(b), subject to withholding for any applicable income or employment taxes. As of June 30, 2022, there were 316 retirees, beneficiaries and nonmember spouses receiving benefits from the RB Program.

CalSTRS Pension2 Personal Wealth Plan

The CalSTRS Pension2 Personal Wealth Plan (Pension2) includes two tax-deferred defined contribution plans pursuant to IRC sections 403(b) and 457(b), which were established by Education Code sections 24950 and 24975, respectively. Voya Institutional Plan Services (Voya) and the Teachers Insurance and Annuity Association (TIAA) are responsible for administrative services, including custody and record-keeping, while CalSTRS determines the investment options that are offered to plan participants.

The 403(b) plan and the 457(b) plan had 25,953 and 1,935 plan participants and 1,086 and 160 participating employers, respectively, with account balances as of June 30, 2022. Pension2 is only available to all full-time California prekindergarten through community college district and county office of education employees. Part-time employees' eligibility is determined by their employers. Enrollment in the 457(b) plan is by employer adoption only.

Employee contributions to the plans are voluntary and require no minimum limitations; however, the IRC imposes an annual maximum amount that can be contributed to the plans. Pension2 is not directly affected by the California Public Employees' Pension Reform Act of 2013 (PEPRA). However, according to PEPRA, employers may provide a contribution to a defined contribution plan, such as Pension2, for CalSTRS 2% at 62 member compensation in excess of the compensation limit.

Pension2 investments are composed of a selection of mutual funds with underlying investments that include stocks, bonds, real estate investments and guaranteed annuity contracts, which are participant directed. The Pension2 benefits are the accumulation of contributions and investment earnings credited to the members' accounts.

Medicare Premium Payment Program

The MPP Program is a cost-sharing multiple-employer other postemployment benefit (OPEB) plan administered by CalSTRS through the Teachers' Health Benefits Fund, which was established pursuant to Education Code section 25930. The MPP Program pays Medicare Part A premiums and Medicare Parts A and B late enrollment surcharges for eligible members of the DB Program who were retired or began receiving a disability allowance prior to July 1, 2012, and were not eligible for premium-free Medicare Part A. Members who enrolled in Medicare after July 1, 2012, are not eligible for CalSTRS' payment of late enrollment surcharges. Also, members who retire on or after July 1, 2012, are not eligible for coverage under the MPP Program.

As of June 30, 2022, 4,770 retirees participated in the MPP Program; however, the number of retired members who will participate in the program in the future is unknown as eligibility cannot be predetermined.

The MPP Program is funded on a pay-as-you-go basis from a portion of monthly employer contributions. In accordance with Education Code section 22950, contributions that would otherwise be credited to the DB Program each month are instead credited to the MPP Program to fund monthly program and administrative costs. Total redirections to the MPP Program are monitored to ensure that total incurred costs do not exceed the amount initially identified as the cost of the program.

Teachers' Deferred Compensation Fund

The TDCF was established pursuant to Education Code section 24976 and is used to account for ancillary activities associated with deferred compensation plans and programs offered by CalSTRS to enhance the tax-deferred financial options for the members and their beneficiaries.

The TDCF is funded by the fee revenues received by CalSTRS from deferred compensation plans and a vendor registration program.

2. Summary of significant accounting policies

Basis of accounting

CalSTRS maintains accounting records using the accrual basis of accounting. We recognize member, employer and state contributions in the period in which the contributions are due pursuant to legal requirements. Also, CalSTRS recognizes benefits when due and payable in accordance with our retirement and benefits plans and programs.

Purchases and sales of investments are recorded on the trade date. Interest income is recorded when earned. Dividends are recorded on the ex-dividend date.

Use of estimates in the preparation of financial statements

CalSTRS' financial statements are prepared in conformity with accounting principles generally accepted in the U.S. as promulgated by the Governmental Accounting Standards Board (GASB). Management makes estimates and assumptions that affect certain amounts and disclosures in the accompanying financial statements, the most significant of which include estimates related to contribution revenues, total pension liability, total OPEB liability and the fair value of certain alternative investments.

New accounting standards

CalSTRS reviews the requirements of all new GASB pronouncements and their impact on our financial statements. For the fiscal year ended June 30, 2022, there was no material impact to CalSTRS' financial statements resulting from the implementation of GASB standards.

Cash

Cash held by CalSTRS includes foreign currency, deposits with the California State Treasurer, master custodian and cash held at commercial banks for operational purposes. CalSTRS maintains a targeted balance within the Pooled Money Investment Account (PMIA) held with the California State Treasurer to meet daily obligations. Cash balances in excess of needs are swept nightly into PMIA and invested in short-term assets by the State Treasurer's Office (STO). In addition to the PMIA account, CalSTRS also operates checking accounts and zero balance accounts with various banking institutions authorized to provide services to state agencies. While zero balance accounts do not require collateralization, other non-zero balance accounts have a collateralization requirement set forth by the California Government Code section 16521 and are monitored by the STO.

Investments

Under the California Constitution, the board has the sole and exclusive fiduciary responsibility over the assets of the system. The constitution also requires the diversification of investments to minimize the risk of loss and maximize the rate of return, unless, under the circumstances, it is clearly not prudent to do so.

As an administrator of public pension funds, CalSTRS is not subject to the Employee Retirement Income Security Act (ERISA), which governs corporate pension plans. However, our investment decision-making criteria are based on the “prudent investor” standard, for which the ERISA standards serve as a basis.

To manage growth of assets in a prudent manner, the CalSTRS Investment Policy and Management Plan (IPMP) provides a framework for the operation of the investment portfolio and may be amended by a majority vote of the board. It allows for investments consisting of debt and equity securities, alternative investments and derivative instruments. See Note 5 for disclosures on deposits and investments.

In the statement of changes in fiduciary net position, we present the net appreciation (depreciation) in the fair value of our investments, which consists of the realized gains and losses on securities sold and the unrealized appreciation (depreciation) on those investments still held in the portfolio.

The value and performance of CalSTRS’ investments are subject to various risks, including credit risk, interest rate risk, concentration of credit risk, custodial credit risk and foreign currency risk, which are in turn affected by economic and market factors affecting certain industries, sectors or geographies. See Note 5 for disclosures related to these risks.

Most investments are reported at fair value. The diversity of the investment types held by CalSTRS requires a wide range of valuation techniques to determine fair value. See Note 6 for disclosures related to fair value.

Expenses directly associated with investment management, operations and servicing, as well as foreign taxes, have been included as other investment expenses in the statement of changes in fiduciary net position. The schedule of investment expenses in the other supplementary information section of this report provides a listing of investment expenses by type. Certain costs such as carried interest, private asset manager fees and broker commissions for securities trades are included in the cost basis of the investment, with the exception of certain equity securities and derivative instruments for which they are expensed.

Investment risk management

To protect the value of non-U.S. investments against foreign currency fluctuation, CalSTRS enters into currency forwards and option contracts. CalSTRS could be exposed to risk if the counterparties to the forward and option contracts are unable to meet the terms of their contracts. CalSTRS also enters into futures contracts, swaps and options to reduce portfolio risks and volatility. CalSTRS seeks to minimize risk from counterparties by establishing minimum credit quality standards and through the use of master trading agreements, which require a daily exchange of collateral that is marked to market as required to help offset counterparty risk. See Note 5 for disclosures related to these risks.

Capital assets

Capital assets held by CalSTRS, which consist of land, building, equipment and intangible assets, are recorded at cost and reflected on the statement of fiduciary net position, net of accumulated depreciation/amortization. The capitalization threshold is $1.0 million. Depreciation/amortization is charged to operations using the straight-line method on the estimated useful life of the related asset and is included in administrative expenses on the statement of changes in fiduciary net position. Generally, estimated useful lives range from a minimum of one year to 40 years. As of June 30, 2022, accumulated depreciation/amortization was $107.0 million and depreciation/amortization expense was $6.5 million for the fiscal year ended June 30, 2022.

CalSTRS reviews our capital assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. As of June 30, 2022, there has been no impairment of capital assets.

Interest cost incurred before the end of the construction period of an asset will be recognized as an expense in the period in which the cost is incurred.

Bonds payable

Bonds payable are carried at their outstanding principal balances plus unamortized bond premiums. The bond premium received in the issuance of the bonds is amortized as a reduction to interest expense over the term of the bonds using the straight-line method.

Administrative expenses

The cost of administering CalSTRS is financed through contributions and investment earnings. The schedule of administrative expenses in the other supplementary information section of this report provides a listing of administrative expenses by type.

Income taxes

The STRP and MPP Program are organized as tax-exempt retirement plans under the IRC. Pension2 (which includes IRC 403(b) and 457(b) plans) and the TDCF are organized as tax-deferred supplemental programs under the IRC. CalSTRS management believes that it has operated these funds and programs within the constraints imposed by federal tax law.

Securities sold short

Securities sold short represent obligations to deliver borrowed securities from the lenders of equity securities. These obligations are valued at the last quoted price or official closing prices taken from the primary markets and exchanges in which each security trades. The gains and losses from the changes in fair valuation are reported within net appreciation (depreciation) on the statement of changes in fiduciary net position.

Securities lending transactions

CalSTRS reports securities lent, reinvested cash collateral and the related liabilities resulting from securities lending transactions on the statement of fiduciary net position. CalSTRS also reports the income earned and costs of lending securities as investment income and expenses on the statement of changes in fiduciary net position.

Reserves

CalSTRS maintains accounts within the net position restricted for pensions/OPEB as reserve accounts for various operating purposes. These include four reserve accounts for the DBS Program, four reserve accounts for the CBB Program, one reserve account for the SBMA and other reserves not legally required for disclosure.

Defined Benefit Supplement Contribution, Accumulated Interest and Annuitant Reserves

Section 25002 of the Education Code formed the DBS Annuitant Reserve to establish and maintain a segregated account for expenditures on annuities payable under the DBS Program. The DBS Program is a cash balance defined benefit pension program that provides a supplemental benefit in addition to the regular DB Program benefit. During a member's career, credits and interest accumulate in the DBS Program's Contribution and Accumulated Interest reserves, respectively. When a member retires, the reserve funds are either paid out as a lump sum or transferred to the DBS Annuitant Reserve if the participant elects to receive their benefit as an annuity.

Defined Benefit Supplement Gain and Loss Reserve

Section 25001 of the Education Code establishes the DBS Gain and Loss Reserve, which represents a segregated account that may be used to: 1) credit interest to member DBS accounts at the minimum interest rate for plan years in which the obligation cannot be met from the plan's investment earnings, 2) make additional earnings credits to DBS accounts upon a decision by the board to allocate excess investment earnings, or 3) provide additions to the DBS Annuitant Reserve for annuities payable under the DBS Program.

Cash Balance Benefit Active Contribution, Accumulated Interest and Annuitant Reserves

Section 26204 of the Education Code establishes the CBB Annuitant Reserve for the payment of monthly annuities with respect to the CBB Program. The CBB Program is an optional cash balance pension plan for part-time certificated educators available to CalSTRS employers as an alternative to the DB Program, Social Security and other retirement plans. During a participant's career, credits and interest accumulate in the Cash Balance Benefit Active Contribution and Accumulated Interest reserves. When a participant retires, the reserve funds are either paid out as a lump sum or transferred to the Cash Balance Benefit Annuitant Reserve if the participant elects to receive their benefit as an annuity.

Cash Balance Benefit Gain and Loss Reserve

Section 26202 of the Education Code establishes the CBB Gain and Loss Reserve, which may be used to: 1) credit interest to participants' accounts at the minimum interest rate during years in which CalSTRS' investment earnings with respect to the CBB Program are not sufficient for that purpose, 2) make additional earnings credits to participants' accounts upon a decision by the board to allocate excess investment earnings, or 3) provide additions to the CBB Annuitant Reserve for monthly annuity payments.

Supplemental Benefit Maintenance Account Reserve

Section 22400 of the Education Code establishes the SBMA to separately maintain and manage the annual supplemental payments disbursed in quarterly installments to all benefit recipients whose purchasing power has fallen below 85% of the purchasing power of the initial benefit, as long as funds are available. The SBMA is primarily funded by contributions from the state and the interest earned on the SBMA reserve balance credited at the actuarially assumed interest rate.

Other reserves not legally required for disclosure

These represent accumulated changes in operations reflecting contributions earned, benefit payments made, investment returns and the costs of plan administration for the STRP, Pension2, MPP Program and TDCF.

The reserve balances as of June 30, 2022, are summarized in the table below:

Reserve type	Reserve balance (dollars in thousands)
Defined Benefit Supplement Contribution Reserve	$8,507,516
Defined Benefit Supplement Accumulated Interest Reserve	2,758,573
Defined Benefit Supplement Annuitant Reserve	675,714
Defined Benefit Supplement Gain and (Loss) Reserve	5,169,310
Cash Balance Benefit Active Contribution Reserve	288,868
Cash Balance Benefit Accumulated Interest Reserve	80,839
Cash Balance Benefit Annuitant Reserve	8,051
Cash Balance Benefit Gain and (Loss) Reserve	58,983
Supplemental Benefit Maintenance Account Reserve	23,054,239
Other reserves not legally required for disclosure	261,215,923
TOTAL	**$301,818,016**

3. Net pension liability of employers and nonemployer contributing entity

The components of the net pension liability (NPL) of the STRP for participating employers and the state (nonemployer contributing entity) as of June 30, 2022, are as follows:

Components of the NPL — STRP

(dollars in millions)

Total pension liability	$369,542
Less: STRP fiduciary net position	300,056
NPL of employers and the State of California	**$69,486**
STRP fiduciary net position as a % of the total pension liability	81.2%

Actuarial methods and assumptions

The total pension liability for the STRP was determined by applying update procedures to the financial reporting actuarial valuation as of June 30, 2021, and rolling forward the total pension liability to June 30, 2022. Significant actuarial methods and assumptions used in the financial reporting actuarial valuation to determine the total pension liability as of June 30, 2022 include:

Valuation date	June 30, 2021
Experience study	July 1, 2015–June 30, 2018
Actuarial cost method	Entry age normal
Investment rate of return[1]	7.10%
Consumer price inflation	2.75%
Wage growth	3.50%
Postretirement benefit increases	2% simple for DB (annually) Maintain 85% purchasing power level for DB, not applicable for DBS/CBB

1 Net of investment expenses but gross of administrative expenses.

The sections that follow provide additional discussion on key assumptions and methods for the valuation of the STRP.

Discount rate

The discount rate used to measure the total pension liability was 7.10%, which was unchanged from prior fiscal year. The projection of cash flows used to determine the discount rate assumed that contributions from plan members and employers are made at statutory contribution rates in accordance with the rate increases as disclosed in Note 1. Projected inflows from investment earnings were calculated using the long-term assumed investment rate of return of 7.10% and assume that contributions, benefit payments and administrative expenses occur midyear. Based on those assumptions, the STRP's fiduciary net position was projected to be available to make all projected future benefit payments to current plan members. Therefore, the long-term assumed investment rate of return was applied to all periods of projected benefit payments to determine the total pension liability.

The long-term investment rate of return assumption was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. The best-estimate ranges were developed using capital market assumptions from CalSTRS investment staff and investment consultants as inputs to the process.

The actuarial investment rate of return assumption was adopted by the board in January 2020 in conjunction with the most recent experience study. For each current and future valuation, CalSTRS' independent consulting actuary (Milliman) reviews the return assumption for reasonableness based on the most current capital market assumptions. Best estimates of expected 20-year geometrically linked real rates of return and the assumed asset allocation for each major asset class as of June 30, 2022, are summarized in the following table:

Asset class	Assumed asset allocation	Long-term expected real rate of return[1]
Public Equity	42.0%	4.8%
Real Estate	15.0%	3.6%
Private Equity	13.0%	6.3%
Fixed Income	12.0%	1.3%
Risk Mitigating Strategies	10.0%	1.8%
Inflation Sensitive	6.0%	3.3%
Cash/Liquidity	2.0%	(0.4%)

1 20-year average.

Sensitivity of NPL to changes in the discount rate

Presented below is the NPL of employers and the state using the current discount rate as well as what the NPL would be if it were calculated using a discount rate that is 1% to 3% lower or 1% to 3% higher than the current rate:

Discount rate	NPL of employers and nonemployer contributing entity (dollars in millions)
3% decrease (4.10%)	$249,119
2% decrease (5.10%)	177,007
1% decrease (6.10%)	118,013
Current rate (7.10%)	69,486
1% increase (8.10%)	29,194
2% increase (9.10%)	(4,551)
3% increase (10.10%)	(32,935)

Mortality

CalSTRS uses a generational mortality assumption, which involves the use of a base mortality table and projection scales to reflect expected annual reductions in mortality rates at each age, resulting in increases in life expectancies each year into the future. The base mortality tables are CalSTRS custom tables derived to best fit the patterns of mortality among our members. The projection scale was set equal to 110% of the ultimate improvement factor from the Mortality Improvement Scale (MP–2019) table issued by the Society of Actuaries.

4. Net other postemployment benefit (OPEB) liability of employers

The components of the net OPEB liability of the MPP Program for participating employers as of June 30, 2022, are as follows:

Components of the net OPEB liability — MPP Program

(dollars in thousands)

Total OPEB liability	$326,345
Less: MPP Program fiduciary net position	(3,066)
Net OPEB liability of employers	**$329,411**
MPP Program fiduciary net position as a % of the total OPEB liability	(0.94%)

Actuarial methods and assumptions

The total OPEB liability for the MPP Program as of June 30, 2022, was determined by applying update procedures to the financial reporting actuarial valuation as of June 30, 2021, and rolling forward the total OPEB liability to June 30, 2022. Significant actuarial methods and assumptions used in the financial reporting actuarial valuation to determine the total OPEB liability as of June 30, 2022 include:

Valuation date	June 30, 2021
Experience study	July 1, 2015–June 30, 2018
Actuarial cost method	Entry age normal
Investment rate of return	3.54%
Medicare Part A premium costs trend rate[1]	4.5%
Medicare Part B premium costs trend rate[1]	5.4%

1 The assumed increases in the Medicare Part A and Part B cost trend rates vary by year; however, the increases are approximately equivalent to a 4.5% and 5.4% increase each year for Medicare Part A and Part B, respectively.

The sections that follow provide additional discussion on specific assumptions and methods for the valuation of the MPP Program.

Discount rate

The MPP Program is funded on a pay-as-you-go basis with contributions generally being made at the same time and in the same amount as benefit payments and expenses coming due. Any funds within the MPP Program as of June 30, 2022, were to manage differences between estimated and actual amounts to be paid and were invested in the Surplus Money Investment Fund (SMIF), which is a pooled investment program administered by the California State Treasurer.

As the MPP Program is funded on a pay-as-you-go basis, the OPEB plan's fiduciary net position was not projected to be sufficient to make projected future benefit payments. Therefore, the MPP Program used the Bond Buyer's 20-Bond GO Index from Bondbuyer.com as of June 30, 2022, as the discount rate, which was applied to all periods of projected benefit payments to measure the total OPEB liability. The discount rate as of June 30, 2022, was 3.54%, which is an increase of 1.38% from 2.16% as of June 30, 2021.

Sensitivity of the net OPEB liability to changes in the discount rate

Presented below is the net OPEB liability of employers using the current discount rate as well as what the net OPEB liability would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current rate:

Discount rate	Net OPEB liability of employers (dollars in thousands)
1% decrease (2.54%)	$359,121
Current discount rate (3.54%)	329,411
1% increase (4.54%)	303,686

Future enrollment

Assumptions were made about future participation (enrollment) into the MPP Program as CalSTRS is unable to determine which members not currently participating meet all eligibility criteria for enrollment in the future. Assumed enrollment rates were derived based on past experience and are stratified by age with the probability of enrollment diminishing as the members' ages increase. This estimated enrollment rate was then applied to the population of members who may meet criteria necessary for eligibility but are not currently enrolled in the MPP Program. Based on this, the estimated number of future enrollments used in the financial reporting valuation was 209 or an average of 0.14% of the potentially eligible population of 145,282.

Mortality

CalSTRS uses a generational mortality assumption, which involves the use of a base mortality table and projection scales to reflect expected annual reductions in mortality rates at each age, resulting in increases in life expectancies each year into the future. The base mortality tables are CalSTRS custom tables derived to best fit the patterns of mortality among our members. The projection scale was set equal to 110% of the ultimate improvement factor from the Mortality Improvement Scale (MP–2019) table issued by the Society of Actuaries.

Medicare costs trend rate

The June 30, 2021, valuation uses the 2022 Medicare Part A and Part B premiums as the basis for future premium calculations. Future premiums are assumed to increase with a medical trend rate that varies by year, as shown in the following table:

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 year and, therefore, affect the premiums for the following years. For example, the projected 2021 premium is the 2020 premium increased by the assumed 2020 trend rate.

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.

Presented below is the net OPEB liability of employers using the current Medicare costs trend rates, as well as what the net OPEB liability would be if it were calculated using Medicare costs trend rates that are 1% lower and 1% higher than the current rate:

Medicare costs trend rate	Net OPEB liability of employers (dollars in thousands)
1% decrease (3.5% Part A and 4.4% Part B)	$302,247
Current rates (4.5% Part A and 5.4% Part B)	329,411
1% increase (5.5% Part A and 6.4% Part B)	360,203

Use of assumptions and methods

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts (such as Medicare premiums) and assumptions about the probability of the occurrence of events far into the future (such as mortality, disabilities and retirees eligible for the program). Actuarially determined amounts are subject to continual review and potential modifications, as actual results are compared with past expectations and new estimates are made about the future.

Projections of benefits for financial reporting purposes are based on the substantive plan and include the types of benefits provided at the time of each valuation and the historical pattern of benefit costs. The projection of benefits for financial reporting purposes does not explicitly incorporate the potential effects of legal or contractual funding limitations.

Actuarial calculations reflect a long-term perspective and take into account the premiums and surcharges paid after termination of employment until the death of the employee. In many cases, actuarial calculations reflect several decades of payments after termination of employment.

5. Deposits and investments

Money-weighted rate of return

For the fiscal year ended June 30, 2022, the money-weighted rate of return on STRP investments, net of pension plan investment expenses, was -2.4%. While the MPP Program is funded on a pay-as-you-go basis, any excess funds are held in the Surplus Money Investment Fund. The money-weighted rate of return on MPP Program investments, net of OPEB plan investment expenses, was 0.1%. The money-weighted rate of return expresses investment performance, taking into account the impact of cash infusion into and disbursements from the pension or OPEB plan.

Schedule of investments

CalSTRS is authorized to invest and reinvest the monies of the system to meet the objectives of the IPMP as established by the board.

The table that follows represents the investments by type as presented in the statement of fiduciary net position, including detailed investments within debt securities, equity securities, alternative investments and derivative instruments.

Schedule of investments

As of June 30, 2022

(dollars in thousands)

	State Teachers' Retirement Plan	Pension2 403(b) Plan	Pension2 457(b) Plan	Medicare Premium Payment Program	Teachers' Deferred Compensation	Total
Assets						
Debt securities						
Asset-backed securities	$331,483	$–	$–	$–	$–	$331,483
Corporate bonds	10,551,692	–	–	–	–	10,551,692
Foreign government issues	482,029	–	–	–	–	482,029
Mortgage-backed securities	9,368,628	–	–	–	–	9,368,628
Municipal securities	141,514	–	–	–	–	141,514
U.S. government and agency obligations	23,385,601	–	–	–	–	23,385,601
Short-term securities	14,015,042	16,147	1,920	274	3,187	14,036,570
Mutual funds-bond funds	–	114,156	8,313	–	–	122,469
Guaranteed annuity contracts	–	620,695	26,323	–	–	647,018
Total debt securities	**58,275,989**	**750,998**	**36,556**	**274**	**3,187**	**59,067,004**
Equity securities						
Common stocks	106,529,788	–	–	–	–	106,529,788
Depository receipts	1,424,271	–	–	–	–	1,424,271
Mutual funds-stock funds	905,662	892,152	63,864	–	–	1,861,678
Preferred stocks	326,152	–	–	–	–	326,152
Real estate investment trusts	3,040,703	–	–	–	–	3,040,703
Total equity securities	**112,226,576**	**892,152**	**63,864**	**–**	**–**	**113,182,592**
Alternative investments						
Debt-privately held	3,028,383	–	–	–	–	3,028,383
Equity-privately held	78,834,814	–	–	–	–	78,834,814
Real estate-directly held	36,118,809	–	–	–	–	36,118,809
Real estate-non-directly held	15,270,285	–	–	–	–	15,270,285
Total alternative investments	**133,252,291**	**–**	**–**	**–**	**–**	**133,252,291**
Derivative instruments						
Forwards	506,188	–	–	–	–	506,188
Futures	61,218	–	–	–	–	61,218
Options	3,258	–	–	–	–	3,258
Rights and warrants	33,077	–	–	–	–	33,077
Swaps	143,371	–	–	–	–	143,371
Total derivative instruments	**747,112**	**–**	**–**	**–**	**–**	**747,112**
Securities lending collateral	**25,301,600**	**–**	**–**	**–**	**–**	**25,301,600**
Bond proceeds investment	**122,749**	**–**	**–**	**–**	**–**	**122,749**
Total investment assets	**329,926,317**	**1,643,150**	**100,420**	**274**	**3,187**	**331,673,348**
Liabilities						
Derivative instruments						
Forwards	448,015	–	–	–	–	448,015
Futures	256,029	–	–	–	–	256,029
Options	8,845	–	–	–	–	8,845
Swaps	218,832	–	–	–	–	218,832
Total derivative instruments	**931,721**	**–**	**–**	**–**	**–**	**931,721**
Total investment liabilities	**931,721**	**–**	**–**	**–**	**–**	**931,721**
TOTAL NET INVESTMENTS	**$328,994,596**	**$1,643,150**	**$100,420**	**$274**	**$3,187**	**$330,741,627**

Debt securities

Debt securities consist primarily of long-term investments issued by the U.S. government and U.S. government-sponsored agencies, municipal securities, foreign governments, corporations, securitized offerings backed by residential and commercial mortgages, and inflation-indexed bonds (also known as inflation-linked bonds). Debt securities also consist of short-term securities that by definition typically have maturities of less than one year. Debt securities in Pension2 include securities such as bond mutual funds and guaranteed annuity contracts. The annuity contracts offer a guaranteed minimum interest rate for the life of the contract.

Short-term investments consist of money market funds, certificates of deposits and similar instruments with maturities and/or holding periods generally of less than one year. Deposits in the Pooled Money Investment Account (classified under short-term securities), administered by the California State Treasurer, represent various investments with approximately 311 average days to maturity. The California State Treasurer pools these monies with those of other state agencies for investing in short-term securities. The monies are available for withdrawal at any time. Deposits in the Short-Term Investment Fund, administered by State Street Bank and Trust Company (State Street Bank), represent various investments with approximately 11 average days to maturity.

Equity securities

Equity securities consist primarily of domestic and international common stocks, preferred stocks, depository receipts, real estate investment trusts (REITs), exchange-traded funds (ETFs) and stock mutual funds.

Alternative investments

Alternative investments consist primarily of limited partnership structures invested in privately held debt or privately held equity, including venture capital, leveraged buyouts and co-investments, as well as investments in real estate, infrastructure, agriculture and timberland. They include investments held within Private Equity, Real Estate, Public Equity, Risk Mitigating Strategies, Inflation Sensitive, Innovative Strategies and Sustainable Investment and Stewardship Strategies (SISS).

Alternative investments are generally long-term and illiquid in nature. As a result, investors are subject to redemption restrictions, which generally limit distributions and restrict the ability of limited partners to exit a partnership investment prior to its dissolution.

Investments in real estate directly held assets are in separate accounts and joint ventures, which are primarily composed of retail, office, industrial and multifamily properties. Certain real estate investments are leveraged through partnerships using a combination of equity contributions from CalSTRS and other investors and through the use of debt. CalSTRS engages real estate advisors and operating partners who are responsible for managing a portfolio's day-to-day activities, performance and reporting. Real estate non-directly held investments primarily include commingled limited partnership investments in which CalSTRS does not have a controlling interest.

While SISS activist manager funds are included in the Public Equity and Private Equity asset classes, they are classified primarily as equity securities and alternative investments on the financial statements due to their structure. These funds employ specific investment strategies and co-investments, including, but not limited to, publicly traded equity securities of companies on U.S., Asian, Canadian and European exchanges.

Derivative instruments

CalSTRS holds investments in derivative instruments, such as futures, foreign currencies, forward contracts, options, swaps, rights and warrants.

A futures contract is an exchange-traded contract whereby the purchaser agrees to buy an asset at a stated price on a specific future date. A foreign currency forward contract is a customized, bilateral agreement to exchange a specified currency at a specified future settlement date at a forward price agreed to on the trade date.

CalSTRS invests in exchange-traded options and over-the-counter options. An option is a contract that entitles the holder to purchase or sell a specific amount of contracts or notional amount at a specified price (strike price). The underlying asset, quantity of the underlying or notional amount, expiration date and strike price are standardized for exchange-traded options and are customized for over-the-counter options.

Swaps are derivative instruments in which two parties agree to exchange one stream of cash flows against another stream or a guarantee. These streams are called the legs of the swap, and usually at least one leg has a rate that is variable. The variable leg can depend on a reference rate, the total return of an asset or an economic statistic. Cash flows are calculated based on a notional amount, which are usually not exchanged between counterparties.

Rights and warrants held by CalSTRS are typically acquired through corporate actions. A right is a privilege granted to shareholders of a corporation to subscribe to shares of a new issue of common stock before it is offered to the public. A warrant gives the holder the right, but not the obligation, to buy an underlying equity security at a given price and quantity during a specified period.

Securities lending

California statutes and board policies permit CalSTRS to make short-term, collateralized loans of its securities to broker-dealers and other entities in order to earn incremental income. CalSTRS has contracted with our master custodian (State Street Bank), third-party securities lending agents and their respective custodians to lend equity and debt securities. The majority of the security loans can be terminated on demand by either CalSTRS or the borrower. The underlying securities on loan are reported as assets on the statement of fiduciary net position.

Collateral in the form of cash or other securities is required for 102% and 105% of the fair value of domestic and international securities loaned, respectively. For non-U.S. debt securities loaned, CalSTRS follows market practice, which requires collateral of 102% of the fair value of the loaned securities. Since the majority of loans are terminable at will, their duration does not generally match the duration of the investments made with the cash collateral. As of June 30, 2022, the weighted duration difference between the investments and these loans was 6 days.

As of June 30, 2022, the fair value of the securities on loan was $32.4 billion. The securities lending obligations were $25.3 billion. The fair value of the reinvested cash collateral was $25.3 billion, the non-cash collateral was $8.1 billion, and the calculated mark (collateral adjustment requested for the next business day) was ($12.1) million. The invested collateral and corresponding obligation are reflected in the statement of fiduciary net position as assets and liabilities, respectively. The reinvested cash collateral securities in this program are typically held to maturity and are expected to mature at par.

In accordance with GASB Statement No. 28, *Accounting and Financial Reporting for Securities Lending Transactions*, the non-cash collateral of $8.1 billion is not reported in the statement of fiduciary net position as CalSTRS is not permitted to pledge or sell these collateral securities received unless the borrower defaults. The contracts with the securities lending agents require them to indemnify CalSTRS if the borrowers fail to return the securities (or if the collateral is not sufficient to replace the securities lent) or if the borrowers fail to pay CalSTRS for income distributions by the securities' issuers while the securities are on loan.

Bond proceeds investment

Bond proceeds investment represents the investment of the proceeds of the CalSTRS Series 2019 Bonds issued in December 2019 through the California Infrastructure and Economic Development Bank for the construction of CalSTRS' headquarters expansion, issuance costs and payment of interest during the construction period. Until the bond proceeds are needed, they are invested at the direction of CalSTRS. The investment of the proceeds is restricted to certain types of investment securities by the terms of the governing bond trust agreement.

The primary objectives of bond proceeds investment are the preservation of capital, liquidity and return on investment. Investment decisions are undertaken in a manner to preserve capital by mitigating credit and interest rate risk. Additionally, the bond proceeds investment portfolio is structured to have security maturities align with scheduled construction and interest payments.

Investment risk schedules

In accordance with GASB Statement No. 40, *Deposit and Investment Risk Disclosures–an amendment of GASB Statement No. 3*, the following investment risk schedules disclose CalSTRS' investments that are subject to certain types of risks, including credit risk, interest rate risk, concentration of credit risk, custodial credit risk and foreign currency risk. The policies addressing each risk, discussed in more detail below, are contained within the IPMP reviewed and approved annually by the board.

Credit risk

Credit risk is the risk that an issuer or other counterparty to a debt instrument will not fulfill its obligations. This is measured by the assignment of ratings by nationally recognized statistical rating organizations.

CalSTRS Investment Guidelines require that, at the time of purchase, at least 95% of the fair value of the corporate securities comprising the credit portion of the core fixed income portfolio be rated investment grade.

The ratings used to determine the quality of the individual securities in the table below are the ratings provided by Standard & Poor's (S&P) Global Inc. Obligations issued or guaranteed by the U.S. government or government-sponsored agencies are eligible without limit. Furthermore, the total position of the outstanding debt of any non-agency mortgage-backed, asset-backed and commercial mortgage-backed securities issuer shall be limited to 10% of the fair value of the portfolio, on the basis of each separate trust (pool of assets), at the time of purchase. Obligations of other issuers are not to exceed 5% per issuer, at the time of purchase, of the fair value of any individual portfolio.

CalSTRS' investment policies and guidelines also include an allocation for opportunistic strategies, which allows for the purchase of bonds rated below investment grade. The amount of these investments that each investment manager may hold is negotiated on a manager-by-manager basis.

CalSTRS may invest in an unrated security if the security is comparable in quality to other rated securities that are eligible for purchase. The notation N/R represents those securities that are not rated, and N/A represents those securities for which the rating disclosure requirements are not applicable, such as obligations of the U.S. government and obligations explicitly guaranteed by the U.S. government.

As of June 30, 2022, the credit ratings of all debt securities are as follows:

Debt securities

(dollars in thousands)

Ratings	Asset-backed securities	Corporate bonds	Foreign government issues	Mortgage-backed securities	Municipal securities	U.S. government and agency obligations	Short-term securities	Mutual funds - bond funds	Guaranteed annuity contracts	Total
Long-term ratings										
AAA	$125,722	$251,683	$9,265	$296,941	$17,368	$–	$–	$–	$–	$700,979
AA	5,654	531,188	82,440	74,050	83,450	917,627	–	52,042	–	1,746,451
A	4,750	2,901,470	88,117	18,957	31,675	–	–	–	–	3,044,969
BBB	11,341	4,484,831	225,514	5,974	3,635	–	–	–	–	4,731,295
BB	9,694	845,115	32,854	4,650	–	–	–	–	–	892,313
B	3,774	1,047,440	12,076	451	–	–	–	–	–	1,063,741
CCC	1,660	151,371	2,727	1,215	–	–	–	–	–	156,973
CC	2,357	2,703	–	–	–	–	–	–	–	5,060
D	–	405	–	–	–	–	–	–	–	405
N/R	166,531	335,486	29,036	7,119,859	5,386	61,207	–	–	647,018	8,364,523
N/A	–	–	–	1,846,531	–	22,406,767	–	70,427	–	24,323,725
Short-term ratings										
A-1	–	–	–	–	–	–	1,648,643	–	–	1,648,643
N/R	–	–	–	–	–	–	9,389,702	–	–	9,389,702
N/A	–	–	–	–	–	–	2,998,225	–	–	2,998,225
TOTAL	**$331,483**	**$10,551,692**	**$482,029**	**$9,368,628**	**$141,514**	**$23,385,601**	**$14,036,570**	**$122,469**	**$647,018**	**$59,067,004**

As of June 30, 2022, the credit ratings of all securities lending collateral are as follows:

Securities lending collateral

(dollars in thousands)

Ratings	Asset-backed securities	Corporate bonds	Foreign government issues	Mortgage-backed securities	U.S. government and agency obligations	Short-term securities	Total
Long-term ratings							
AAA	$96,191	$–	$34,606	$–	$–	$–	$130,797
AA	–	875,384	–	–	156,513	–	1,031,897
A	–	2,134,992	–	913	–	–	2,135,905
BBB	–	177,650	–	–	–	–	177,650
N/R	268,979	318,226	–	654	–	–	587,859
Short-term ratings							
A-1	–	–	–	–	–	5,340,956	5,340,956
A-2	–	–	–	–	–	49,862	49,862
N/A	–	–	–	–	–	49,941	49,941
N/R	–	–	–	–	–	15,796,733	15,796,733
TOTAL	**$365,170**	**$3,506,252**	**$34,606**	**$1,567**	**$156,513**	**$21,237,492**	**$25,301,600**

Interest rate risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment.

Investments may contain terms that increase the sensitivity of their fair values to increasing and decreasing interest rates. Although CalSTRS has investments that have an inherent prepayment risk as well as caps, floors and step-up features, these are mitigated through the diversification of asset classes, security selection, maturity and credit quality.

CalSTRS' investment policies and guidelines allow the core long-term investment grade portfolios the discretion to deviate the average duration of the portfolio within a range of +/– 20% (80% to 120%) of the weighted average effective duration of the performance benchmark.

As of June 30, 2022, the overall weighted effective duration and benchmark of the long-term Fixed Income portfolios were 6.19 years and 6.38 years, respectively. The following table presents the net asset values, durations and associated benchmarks by investment type held in the long-term Fixed Income portfolios.

Long-term fixed income duration

(dollars in thousands)

Investment type (by portfolio)	Portfolio net asset value	Effective duration	Benchmark duration	Difference
Core portfolio				
Commercial mortgage-backed securities	$701,565	4.87	4.76	0.11
Credit obligations	7,402,445	7.29	7.29	0.00
Mortgage-backed securities	7,450,162	5.93	6.27	(0.34)
U.S. government and agency obligations	10,484,895	6.28	6.19	0.09
Debt opportunistic				
Corporate high yield	938,505	4.19	4.48	(0.29)
Debt core plus	3,550,475	6.64	6.26	0.38
Leveraged loans	1,038,373	0.38	0.25	0.13
Special situations	–	0.07	6.38	(6.31)
TOTAL	**$31,566,420**			

The U.S. Treasury Inflation Protected Securities (TIPS), CalSTRS Home Loan Program, long-duration U.S. Treasury securities and other debt securities in non-Fixed Income portfolios are not included in the previous table. The duration or weighted average to maturity for these investments are as follows:

- The U.S. TIPS had a net asset value of $2.7 billion with an effective duration of 6.88 years compared to the benchmark duration of 6.92 years.
- The CalSTRS Home Loan Program had a net asset value of $23.1 million with a weighted average to maturity of 17.08 years.
- The long-duration U.S. Treasury securities had a net asset value of $8.9 billion with an effective duration of 18.16 years and benchmark duration of 18.15 years.
- Other debt securities in non-Fixed Income portfolios had a fair value of $631.7 million with a weighted average to maturity of 13.80 years.
- Cash and accruals totaling ($247.7) million and swaps and other collateral totaling ($16.3) million are included in the net asset value within the Fixed Income portfolios but are not included in debt securities on the statement of fiduciary net position.

As of June 30, 2022, the segmented time distribution for the short-term securities based upon the expected maturity or first reset dates is as follows:

Short-term fixed income segmented time distribution

(dollars in thousands)

Investment type	0–30 days	31–90 days	91–120 days	121–180 days	181–365 days	366+ days	Total
Asset-backed securities	$–	$7,234	$–	$–	$–	$–	$7,234
Corporate bonds	273,660	–	–	–	–	–	273,660
Money-market securities	6,428,033	1,686,313	124,200	–	–	–	8,238,546
Pooled money investment account	51,080	–	–	–	–	–	51,080
Short-term investment fund	1,339,513	–	–	–	–	–	1,339,513
U.S. government and agency obligations	1,373,386	2,733,589	149,302	297,254	–	–	4,553,531
TOTAL	**$9,465,672**	**$4,427,136**	**$273,502**	**$297,254**	**$–**	**$–**	**$14,463,564**
WEIGHTINGS	**65.44%**	**30.61%**	**1.89%**	**2.06%**	**0.00%**	**0.00%**	**100.00%**

The primary investment objective for short-term investments is to seek the preservation of capital and liquidity and to generate the highest possible current income consistent with a prudent level of risk. The above table includes $445.1 million debt securities that are managed within the short-term fixed income portfolio. The investment guidelines of the short-term portfolio state that the average maturity of the investments shall be managed that it will not exceed 180 days.

As of June 30, 2022, the segmented time distribution based upon the expected maturity or first reset date for the invested securities lending collateral is as follows:

Securities lending collateral segmented time distribution

(dollars in thousands)

Investment type	0–1 day	2–6 days	7–29 days	30–59 days	60–89 days	90+ days	Total
Asset-backed securities	$225,000	$–	$56,653	$3,943	$17,923	$61,651	$365,170
Corporate bonds	1,794,268	133,414	752,919	69,385	350,642	405,624	3,506,252
Foreign government issues	–	25,071	–	–	–	9,535	34,606
Mortgage-backed securities	–	–	654	–	913	–	1,567
U.S. government and agency obligations	–	75,201	23,679	33,433	–	24,200	156,513
Short-term securities	14,524,708	466,724	2,792,999	1,497,714	476,060	1,479,287	21,237,492
TOTAL	**$16,543,976**	**$700,410**	**$3,626,904**	**$1,604,475**	**$845,538**	**$1,980,297**	**$25,301,600**
WEIGHTINGS	**65.39%**	**2.77%**	**14.33%**	**6.34%**	**3.34%**	**7.83%**	**100.00%**

The invested securities lending cash collateral is diversified among different investment types with the maximum remaining effective maturity of any instrument being three years at the time of purchase. The fund must remain liquid to meet collateral returns.

Pension2

The primary objectives of Voya Fixed Plus III and TIAA Traditional Annuities are the guarantee of principal and a guaranteed minimum interest rate of 1.0% for the life of the contract. The interest rate guarantees under the contracts are subject to the claim-paying abilities of Voya Retirement Insurance and Annuity Company and TIAA.

As of June 30, 2022, the weighted average maturity of investments with underlying debt holdings for the Pension2 403(b) and 457(b) plans on the statement of fiduciary net position are as follows:

Pension2 weighted average maturity

(dollars in thousands)

Investment	Maturity	Fair value
CREF money market account	44 days	$8
Federated U.S. treasury cash reserves	46 days	18,059
Vanguard inflation-protected securities fund	7.2 years	70,427
Vanguard short-term bond index fund	2.9 years	17,755
Vanguard total bond market index fund	8.9 years	34,287
TOTAL		**$140,536**

Concentration of credit risk

Concentration of credit risk is the risk of loss attributed to the magnitude of CalSTRS' investment in a single issuer. The CalSTRS IPMP states that no more than 3% of the total fund shall be invested in or exposed to any one security or corporation, with the exception of U.S. treasury or agency obligations. As of June 30, 2022, this condition from the IPMP was met. As such, no single issuer, excluding investments issued or explicitly guaranteed by the U.S. government and investments in mutual funds, external investment pools and other pooled investments, exceeded 5% of total investments.

Custodial credit risk

Custodial credit risk is the risk that if a depository institution or counterparty fails, CalSTRS would not be able to recover the value of our deposits, investments or collateral securities. As of June 30, 2022, all of CalSTRS non-cash investments are not exposed to custodial credit risk because they are held in CalSTRS' name. Demand and time deposits held by the various financial institutions and the state banks are insured up to $250,000 by the Federal Deposit Insurance Corporation or by collateral held by the California State Treasurer's Office or an agency of that office in the state's name. CalSTRS does not have a general policy relating to custodial credit risk.

Notes to the basic financial statements

Foreign currency risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. As of June 30, 2022, CalSTRS' investment exposure in foreign currency risk is as follows:

Foreign currency risk

(dollars in thousands; in U.S. dollar equivalents)

Currency name	Debt securities	Alternative investments	Equity securities	Derivative instruments	Cash[1]	Total exposure
Argentine peso	$–	$–	$–	$–	$20	$20
Australian dollar	–	–	2,017,408	(17,478)	2,978	2,002,908
Brazilian real	–	–	569,211	(22,141)	1,965	549,035
Canadian dollar	–	417,120	3,563,299	(25,115)	18,005	3,973,309
Chilean peso	–	–	51,487	(5,450)	1,670	47,707
Colombian peso	–	–	3,922	(8,687)	80	(4,685)
Czech koruna	–	–	6,385	2,836	62	9,283
Danish krone	–	–	790,976	8,684	1,393	801,053
Egyptian pound	–	–	1,419	(3,175)	23	(1,733)
Euro	22,854	6,850,931	8,922,856	20,639	79,752	15,897,032
Hong Kong dollar	–	–	4,004,494	(234)	13,135	4,017,395
Hungarian forint	–	–	30,573	(8,624)	249	22,198
Indian rupee	–	–	1,322,676	(3,309)	22,977	1,342,344
Indonesian rupiah	–	–	318,897	(100)	1,702	320,499
Israeli new shekel	1,765	–	203,281	13,072	(613)	217,505
Japanese yen	–	–	6,825,474	47,309	38,336	6,911,119
Kenyan shilling	–	–	4,277	–	35	4,312
Kuwaiti dinar	–	–	–	(1)	–	(1)
Malaysian ringgit	–	–	120,315	(188)	1,051	121,178
Mexican peso	51,627	–	257,241	(2,843)	2,784	308,809
New Taiwan dollar	–	–	1,699,889	3,698	10,123	1,713,710
New Zealand dollar	–	–	65,307	(4,006)	1,537	62,838
Norwegian krone	–	–	292,073	(2,273)	1,017	290,817
Pakistan rupee	–	–	–	–	5	5
Peruvian sol	–	–	70	(1,077)	60	(947)
Philippine peso	–	–	28,969	(2,810)	522	26,681
Polish zloty	–	–	119,342	(8,457)	851	111,736
Pound sterling	50,219	1,840,850	4,319,170	6,621	4,916	6,221,776
Qatari riyal	–	–	56,091	(15)	2,488	58,564
Russian ruble	3,561	–	–	22,043	319	25,923
Saudi riyal	–	–	17,543	(11)	411	17,943
Singapore dollar	–	–	478,799	3,054	1,937	483,790
South African rand	–	–	441,771	(7,439)	1,649	435,981
South Korean won	–	57	1,565,557	5,485	635	1,571,734
Swedish krona	–	–	859,618	5,447	1,095	866,160
Swiss franc	–	–	2,510,254	3,099	1,708	2,515,061
Thailand baht	–	–	219,044	1,872	1,744	222,660
Turkish lira	–	–	29,001	(967)	373	28,407
UAE dirham	–	–	67,690	2	93	67,785
Yuan renminbi	3,503	–	787,896	(1,195)	3,080	793,284
TOTAL	**$133,529**	**$9,108,958**	**$42,572,275**	**$18,266**	**$220,167**	**$52,053,195**

[1] Spot contracts of $51 are included in the cash total above.

CalSTRS' investments denominated in foreign currencies are reported within assets and liabilities on the statement of fiduciary net position.

Foreign currency is composed of international investment proceeds and income to be repatriated into U.S. dollars and funds available to purchase international securities. Foreign currency is held temporarily in foreign accounts until it is able to be repatriated or expended.

In accordance with the IPMP, CalSTRS has established a strategic allocation to non-U.S. dollar public and private equity assets (i.e., private equity investments and real estate). Considering this commitment to non-U.S. dollar assets and the impact currency fluctuations can have on the total return of dollar-based investors, CalSTRS has recognized the need to implement strategies designed to address the management of currency risk.

CalSTRS believes that our Currency Management Program should emphasize the protection of the value of its non-U.S. dollar public and private equity assets against a strengthening U.S. dollar first, yet recognizes that opportunities also exist for alpha generation (the ability to derive a return in excess of a market return) within the currency markets.

CalSTRS Fixed Income staff has management and oversight responsibilities for the Currency Management Program. The position range has been designed to allow for some degree of symmetry around the underlying exposure to the foreign-denominated assets within CalSTRS in order to both protect the translation value of the assets against a strengthening U.S. dollar and to enhance returns in a declining U.S. dollar environment.

As of June 30, 2022, the Pension2 403(b) and 457(b) plans do not expose CalSTRS to foreign currency risk.

Bond proceeds investment risk schedules

Bond proceeds were invested primarily in U.S. government and agency obligations and money market funds. As of June 30, 2022, the bond proceeds investment does not expose CalSTRS to foreign currency and concentration of credit risk. Additionally, as of June 30, 2022, all of CalSTRS' non-cash bond proceeds investment is not exposed to custodial risk as they are held in CalSTRS' name.

As of June 30, 2022, the segmented time distribution for the bond proceeds investment based upon the expected maturity or first reset dates is as follows:

Bond proceeds investment segmented time distribution

(dollars in thousands)

Investment type	0–30 days	31–90 days	91–120 days	121–180 days	181–365 days	366+ days	Total
Short-term securities	$96,406	$–	$–	$–	$–	$–	$96,406
U.S. government and agency obligations	19,773	–	–	–	6,570	–	26,343
TOTAL	**$116,179**	**$–**	**$–**	**$–**	**$6,570**	**$–**	**$122,749**
WEIGHTINGS	**94.65%**	**0.00%**	**0.00%**	**0.00%**	**5.35%**	**0.00%**	**100.00%**

As of June 30, 2022, the credit ratings of all bond proceeds investment are as follows:

Bond proceeds investment credit risk

(dollars in thousands)

Ratings	U.S. government and agency obligations	Short-term securities	Total
Long-term ratings			
AA	$13,095	$–	$13,095
N/A	13,248	–	13,248
Short-term ratings			
N/A	–	96,406	96,406
TOTAL	**$26,343**	**$96,406**	**$122,749**

Derivative instruments

As of June 30, 2022, the derivative instruments held by CalSTRS are considered investments and not hedges for accounting purposes. The term hedging, as it is used elsewhere in the notes to these financial statements, denotes an economic activity and not an accounting method. The gains and losses arising from this activity are recognized as incurred in the statement of changes in fiduciary net position.

All investment derivative instruments discussed below are included within the investment risk schedules. Investments in derivative instruments are disclosed separately to provide a comprehensive view of this activity and its impact on the overall investment portfolio.

Derivative instrument fair values are reported as investments in the statement of fiduciary net position with changes in fair values reported as investment income (loss) in the statement of changes in fiduciary net position.

The table below presents the related net change in fair value, fair value and notional amount of derivative instruments outstanding as of June 30, 2022.

Derivative instruments disclosure

(dollars in thousands)

Derivative instruments	Net change in fair value for the fiscal year ended June 30, 2022	Fair value	Notional amount[1]	
Forwards				
Foreign currency forward contracts	$103,896	$58,173	21,080,210	
Total forwards	**103,896**	**58,173**		
Futures				
Commodity futures long	99,997	(11,086)	21,677	
Commodity futures short	(189,389)	(67,857)	(44,098)	
Fixed income futures long	(240,561)	(21,939)	2,229,988	
Fixed income futures short	37,348	100	(394,562)	
Index futures long	(1,273,893)	(96,160)	7,271	
Index futures short	181,243	2,131	(275)	
Total futures	**(1,385,255)**	**(194,811)**		
Options				
Commodity futures options bought	57	241	15	
Commodity futures options written	1,454	(4,248)	(2,712)	
Credit default swap options bought	(113)	65	511	
Credit default swap options written	(12)	–	(511)	
Fixed income futures options bought	(12,116)	804	867	
Fixed income futures options written	11,708	(2,504)	(7,635)	
Foreign currency options bought	(27,976)	2,148	782,809	
Foreign currency options written	1,817	–	–	
Index options written	(1,456)	(2,093)	(433)	
Total options	**(26,637)**	**(5,587)**		
Rights and warrants				
Rights	(3,293)	111	191	units
Warrants	(1,654)	32,966	8,212	units
Total rights and warrants	**(4,947)**	**33,077**		
Swaps				
Commodity forward swaps	461,069	(82,397)	(1,940,742)	units
Credit default swaps bought	(1,659)	–	–	
Credit default swaps written	(26,939)	(8,049)	429,921	
Pay-fixed interest rate swaps	38,432	31,788	303,198	
Receive-fixed interest rate swaps	(10,088)	(8,211)	247,851	
Total return swaps	233,987	(8,612)	2,726,885	
Variance swaps	69	20	968	
Total swaps	**694,871**	**(75,461)**		
TOTAL DERIVATIVE INSTRUMENTS	**($618,072)**	**($184,609)**		

[1] In U.S. dollars unless otherwise indicated.

Counterparty credit risk

The table below depicts the counterparty credit ratings of CalSTRS non-exchange traded investment derivative instruments outstanding and subject to loss as of June 30, 2022.

Counterparty credit rating

(dollars in thousands)

S&P rating	Commodity forward swaps	Credit default swap options bought	Foreign currency forwards	Total return swaps	Variance swaps	Total
AA	$–	$–	$35,579	$–	$–	$35,579
A	105,520	26	469,778	4,476	20	579,820
BBB	1,445	39	–	–	–	1,484
TOTAL INVESTMENTS IN ASSETS	**$106,965**	**$65**	**$505,357**	**$4,476**	**$20**	**$616,883**

The ratings used to determine the quality of the individual counterparty are S&P ratings. The aggregate fair value of investment derivative instruments in an asset position subject to counterparty credit risk as of June 30, 2022, was $616.9 million. This represents the maximum loss that would be recognized at the reporting date if all counterparties failed to perform as contracted. However, master agreements exist that call for daily exchange of collateral for the mark-to-market to minimize this risk.

CalSTRS may enter into a master netting arrangement with a counterparty. In the event of default or early termination, the master agreement permits the non-defaulting party the right to close-out all transactions in a single net settlement to one net amount payable by one counterparty to the other. As of June 30, 2022, there were assets of $358.5 million, including collateral pledged by CalSTRS, and liabilities of $655.2 million from non-exchange traded derivative instruments subject to master netting agreements. As of June 30, 2022, CalSTRS did not have any significant exposure to counterparty credit risk with any single party.

Custodial credit risk

The custodial credit risk disclosure for exchange-traded derivative instruments is made in accordance with the custodial credit risk disclosure requirements of GASB Statement No. 40. As of June 30, 2022, all of CalSTRS' investments in derivative instruments are held in CalSTRS' name or CalSTRS' nominee's name and are not exposed to custodial credit risk.

Interest rate risk

As of June 30, 2022, CalSTRS is exposed to interest rate risk on its derivative instruments described below by maturity period.

Investment maturities

(dollars in thousands)

			Investment maturities (in years)		
Investment type	Fair value	Less than 1	1–5	6–10	More than 10
Fixed income futures long	($21,939)	($20,855)	($1,084)	$–	$–
Fixed income futures short	100	100	–	–	–
Fixed income futures options bought	804	804	–	–	–
Fixed income futures options written	(2,504)	(2,504)	–	–	–
Pay-fixed interest rate swaps	31,788	–	3,939	10,915	16,934
Receive-fixed interest rate swaps	(8,211)	–	(5,486)	(2,725)	–
Total return swaps	(8,612)	(8,612)	–	–	–
TOTAL	**($8,574)**	**($31,067)**	**($2,631)**	**$8,190**	**$16,934**

The table below shows swaps that are highly sensitive to changes in interest rates. The table below details the reference rate, fair value and notional amount of these derivative instruments as of June 30, 2022.

Derivative instruments highly sensitive to interest rate changes

(dollars in thousands)

Investment type	Reference rate/Asset	Fair value	Notional amount
Interest rate swap	Receive Fixed 0.82%, Pay Variable 3-month London Interbank Offered Rate	($3,369)	$144,519
Interest rate swap	Receive Fixed 1.3%, Pay Variable 3-month London Interbank Offered Rate	(746)	21,640
Interest rate swap	Receive Fixed 1.55%, Pay Variable Secured Overnight Financing Rate	(1,112)	21,286
Interest rate swap	Receive Fixed 2.77%, Pay Variable 12-month U.S. CPI for all urban consumers NSA	(511)	19,670
Interest rate swap	Receive Fixed 3.37%, Pay Variable U.S. CPI for all urban consumers NSA	(259)	17,160
Interest rate swap	Receive Fixed 3.48%, Pay Variable 1-month United Kingdom Retail Price Index	(736)	4,615
Interest rate swap	Receive Fixed 7.44%, Pay Variable 1-month Mexico Interbank Equilibrium Interest Rate	(756)	9,670
Interest rate swap	Receive Fixed 7.45%, Pay Variable 1-month Mexico Interbank Equilibrium Interest Rate	(722)	9,291
Interest rate swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 1.63%	3,414	14,142
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 0.56%	6,411	17,190
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 0.71%	2,103	22,625
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 0.74%	2,342	6,830
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 1.13%	7,558	82,939
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 1.22%	1,941	22,550
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 1.52%	3,169	31,571
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 1.63%	696	3,580
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 1.65%	157	821
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 1.73%	1,974	26,115
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 2%	698	10,767
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 2.5%	199	8,750
Interest rate swap	Receive Variable Secured Overnight Financing Rate, Pay Fixed 2.85%	(121)	18,488
Interest rate swap	Receive Variable 12-month U.S. CPI for all urban consumers NSA, Pay Fixed 2.95%	731	19,670
Interest rate swap	Receive Variable U.S. CPI for all urban consumers NSA, Pay Fixed 3.97%	516	17,160
Interest rate swaps total		**$23,577**	**$551,049**
Commodity forward swap	Receive BCOMF1TC Index, Pay 3-month U.S. Treasury Bill plus 0.14%	($26,787)	($277,915)
Commodity forward swap	Receive BCOMTR Index, Pay 3-month U.S. Treasury Bill plus 0.11%	(2,637)	(27,723)
Commodity forward swap	Receive BCOMTR Index, Pay 3-month U.S. Treasury Bill plus 0.12%	(15,559)	(163,556)
Commodity forward swap	Receive BCOMTR Index, Pay 3-month U.S. Treasury Bill plus 0.13%	(66,784)	(702,025)
Commodity forward swap	Receive BCOMTR1 Index, Pay 3-month U.S. Treasury Bill plus 0.14%	(26,199)	(275,398)
Commodity forward swap	Receive BCOMTR2 Index, Pay 3-month U.S. Treasury Bill plus 0.14%	(29,287)	(307,988)
Commodity forward swap	Receive RBCAECTO Index, Pay 3-month U.S. Treasury Bill plus 0.1%	(14,560)	(153,028)
Commodity forward swaps total		**($181,813)**	**($1,907,633)**
Total return swap	Receive 1-month Singapore Interbank Offered Rate, Pay MSCI Singapore Net Return Index	$556	$10,606
Total return swap	Receive 1-month U.S. Overnight Bank Rate minus 0.25%, Pay MSCI Daily TR Net Emerging Markets Thailand USD Index	3,457	54,915
Total return swap	Receive 1-month Warsaw Interbank Offered Rate minus 0.45%, Pay MSCI Poland Net Return Index	56	1,401
Total return swap	Receive Mexico Interbank TIIE 28 Day Rate minus 0.05%, Pay MSCI Mexico Net Return Index	300	11,908
Total return swap	Receive MSCI Daily TR Net Emerging Markets Korea USD Index, Pay 1-month U.S. Overnight Bank Rate minus 0.10%	(1,128)	(8,224)
Total return swap	Receive MSCI Daily TR Net Emerging Markets Taiwan USD Index, Pay 1-month U.S. Overnight Bank Rate minus 0.45%	(235)	(2,109)
Total return swaps total		**$3,006**	**$68,497**

Investment allocation policy

In accordance with GASB Statement No. 67, *Financial Reporting for Pension Plans—an amendment of GASB Statement No. 25*, and GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, CalSTRS discloses investment policies pertaining to asset allocation and changes to any significant investment policies. The board approves the allocation of investment assets as described in the board policy manual. The key goal of the asset allocation process is to develop an asset allocation policy that maximizes the likelihood that the investment portfolio's assets will, over the planning horizon, fund plan benefits. CalSTRS conducts an asset allocation study every four years, or more frequently if there is a significant change in the liabilities or assets.

The asset allocation study involves a comprehensive review of the financial condition of the plan, including the actuarial requirements of the plan, such as future benefit payments and expected cash flow of contributions. The board adopted the current long-term asset allocation targets in November 2019. The long-term allocation plan is implemented in stages and includes a current target allocation for each asset class with ranges to keep the actual allocation close to the target while minimizing the transaction costs that result from rebalancing.

The following table displays the previous and current board-approved target allocation, the policy range and the actual allocation for the STRP per the portfolio allocation and management structure as of June 30, 2022.

Asset class/strategy	Previous target allocation as of June 30, 2021	Current target allocation as of June 30, 2022	Policy range	Actual allocation as of June 30, 2022
Public Equity[1,2]	49.0%	45.0%	+/- 6.0%	38.4%
Real Estate	14.0%	14.0%	+/- 3.0%	16.3%
Private Equity[1]	10.0%	13.0%	+/- 3.0%	15.7%
Fixed Income	13.0%	12.0%	+/- 3.0%	10.5%
Risk Mitigating Strategies	9.0%	10.0%	+/- 3.0%	10.3%
Inflation Sensitive	3.0%	4.0%	+/- 3.0%	5.4%
Cash/Liquidity	2.0%	2.0%	+/- 3.0%	2.1%
Innovative Strategies[1]	0.0%	0.0%	+/- 2.5%	1.1%
Strategic Overlay	0.0%	0.0%		0.2%
TOTAL ASSET ALLOCATION	**100.0%**	**100.0%**		**100.0%**

1 Includes Sustainable Investments and Stewardship Strategies public and private investments totaling $8.8 billion.

2 Derivative instruments are not included which provide additional exposure to Public Equity bringing the asset allocation range within policy limits.

Bond proceeds investment are excluded from the asset allocation table and asset allocation process that is approved by the board. All excess monies from the MPP Program and TDCF are invested into the SMIF.

6. Fair value measurements

The fair value of a financial instrument is the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (the exit price). Fair value is a market-based measurement, not a CalSTRS-specific measurement; hence, valuation assumptions reflect those that market participants would use to price assets and liabilities at the measurement date.

U.S. Generally Accepted Accounting Principles (GAAP) as promulgated by GASB establish a hierarchy that prioritizes and ranks the inputs to valuation techniques used to measure fair value based on observability. Market price observability may be affected by a number of factors, including the investment type, investment-specific characteristics, state of the marketplace, and existence and transparency of transactions between market participants.

CalSTRS follows the fair value measurement and disclosure guidance under U.S. GAAP, which establishes a hierarchical disclosure framework. This framework prioritizes and ranks the level of market price observability used in measuring investments at fair value. U.S. GAAP also allows investments to be valued at cost or net asset value (NAV). The Fair Value Leveling Hierarchy table that follows presents CalSTRS' investments at their fair value level but also includes certain investments at cost or NAV.

Investments with readily available active quoted prices or for which fair value can be measured from actively quoted prices in an orderly market generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. In all cases, an instrument's level within the hierarchy is based upon the market pricing transparency of the instrument and does not necessarily correspond to CalSTRS' perceived risk or the liquidity of the instrument.

Assets and liabilities measured at fair value are classified into one of the following categories:

Level 1 – Fair value is determined using unadjusted quoted prices in active markets for identical assets or liabilities accessible on the measurement date.

Level 2 – Fair value is determined using quoted prices in inactive markets or significant observable inputs (including, but not limited to, quoted prices for similar investments, interest rates, foreign exchange rates, volatility and credit spreads), either directly or indirectly. These inputs may be derived principally from, or corroborated by, observable market data through correlation or by other means.

Level 3 – Fair value is determined using unobservable inputs, including situations where there is little market activity, if any, for the asset or liability.

The fair value hierarchy level within which a fair value measurement falls is determined based on the lowest level input that is significant to the fair value measurement. The availability of valuation techniques and observable inputs may vary and is affected by factors such as the type of security, whether the security is established in the marketplace and market liquidity. Inputs used to measure fair value may require significant judgment or estimation, and CalSTRS may use models or other valuation methodologies to estimate fair value. Accordingly, the degree of judgment exercised by CalSTRS in estimating fair value is greatest for assets and liabilities categorized in Level 3.

Fair value leveling hierarchy

(dollars in thousands)

	June 30, 2022	Fair value measurements using: Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Assets				
Investments by fair value level				
Debt securities				
Asset-backed securities	$331,483	$–	$329,509	$1,974
Corporate bonds	10,551,692	–	10,550,667	1,025
Foreign government issues	482,029	–	482,029	–
Mortgage-backed securities	9,368,628	–	9,351,494	17,134
Municipal securities	141,514	–	141,514	–
U.S. government and agency obligations	23,385,601	–	23,385,601	–
Short-term securities	12,126,570	1,350,373	10,736,202	39,995
Mutual funds-bond funds	122,469	122,469	–	–
Guaranteed annuity contracts	647,018	–	–	647,018
Total debt securities	**57,157,004**	**1,472,842**	**54,977,016**	**707,146**
Equity securities				
Common stocks	106,529,788	106,464,957	4,570	60,261
Depository receipts	1,424,271	1,399,286	–	24,985
Mutual funds-stock funds	1,861,678	1,861,678	–	–
Preferred stocks	326,152	326,152	–	–
Real estate investment trusts	3,040,703	3,040,639	–	64
Total equity securities	**113,182,592**	**113,092,712**	**4,570**	**85,310**
Alternative investments				
Equity-privately held	565,053	–	–	565,053
Real estate-directly held	36,118,809	–	–	36,118,809
Total alternative investments	**36,683,862**	**–**	**–**	**36,683,862**
Derivative instruments				
Forwards	506,188	–	506,188	–
Futures	61,218	61,218	–	–
Options	3,258	–	3,258	–
Rights and warrants	33,077	27,377	–	5,700
Swaps	143,371	–	143,371	–
Total derivative instruments	**747,112**	**88,595**	**652,817**	**5,700**
Securities lending collateral	**20,000,903**	**1,499,095**	**18,501,808**	**–**
Bond proceeds investment	**122,749**	**96,406**	**26,343**	**–**
Total investment assets recorded at fair value	**227,894,222**	**116,249,650**	**74,162,554**	**37,482,018**
Investments measured at cost				
Short-term securities	1,910,000			
Securities lending collateral	5,300,697			
Total investments measured at cost	**7,210,697**			
Investments measured at NAV				
Debt-privately held	3,028,383			
Equity-privately held	78,269,761			
Real estate—non-directly held	15,270,285			
Total investments measured at NAV	**96,568,429**			
Total investment assets	**$331,673,348**			
Liabilities				
Investments by fair value level				
Derivative instruments				
Forwards	$448,015	$–	$448,015	$–
Futures	256,029	256,029	–	–
Options	8,845	–	8,845	–
Swaps	218,832	–	218,832	–
Total derivative instruments	**931,721**	**256,029**	**675,692**	**–**
Total investment liabilities recorded at fair value	**$931,721**	**$256,029**	**$675,692**	**$–**
TOTAL NET INVESTMENTS	**$330,741,627**			

The $354.8 million in securities sold short are not represented in the fair value leveling hierarchy table because they represent obligations to deliver borrowed securities to a lender. The obligations were valued using Level 1 measurements in the fair value hierarchy as of June 30, 2022.

Level 1 measurements are generally valued at the official closing price (usually the last trade price) or the last bid price on the security's primary exchange. Such investments generally include common stocks, REITs, depository receipts and mutual funds.

Level 2 measurements are generally valued using indicative prices from vendors, brokers or ask prices. These indicative measurements often use matrix pricing, the Black-Scholes-Merton model or a lattice model and incorporate observable inputs such as yield, prepayment speeds, credit spreads, volatility curves or currency curves. Such investments generally include debt securities, bonds and over-the-counter derivative instruments. Other factors such as infrequent trading, inactive market or adjusted quoted prices may also result in Level 2 measurements.

Level 3 measurements are generally valued using significant inputs that are unobservable to the marketplace. This may occur if an investment is illiquid or is internally estimated. For CalSTRS, such investments primarily include directly held real estate. Properties are appraised using discounted cash flows, income capitalization, adjusted comparable sales and replacement cost (if recent) methods. The method chosen is the one most relevant to how an investor would assess a property as a potential buyer. Additionally, debt associated with real estate properties is valued using income approach methods such as cash equivalency (gross method) or leveraged equity (net method).

CalSTRS measures certain investments that do not have a readily determinable fair value using NAV as a practical expedient. These investments are generally structured as limited partnerships with an investment manager and are created by raising pools of capital from investors that will be invested according to one or more specific investment strategies. Investors commit capital to the fund, and as the investment manager identifies investment opportunities, the committed capital is called to purchase the investments.

NAV is calculated using measurement principles similar to investment companies. CalSTRS updates the NAV for cash contributions, cash distributions and changes in the fair value of the underlying investments using capital account statements and estimates if the NAV is not updated as of the reporting date. CalSTRS does not currently have any plans to sell any of these investments before their stated term.

Notes to the basic financial statements

The following table displays information regarding investments that use NAV per share (or equivalent) as their fair value measurement:

NAV practical expedient

(dollars in thousands)

	Fair value June 30, 2022	Total unfunded commitments	Redemption frequency (if currently eligible)	Redemption notice period
Debt–privately held[1]	$3,028,383	$3,506,976	N/A	N/A
Equity–privately held				
Private Equity funds[2]	52,592,691	18,407,233	N/A	N/A
Risk Mitigating Strategies funds[3]	21,984,123	–	Monthly, Quarterly	2-60 days
Sustainable Investment and Stewardship Strategies funds[4]	1,600,688	36,473	N/A, Monthly, Annually	45-120 days
Other[5]	2,092,259	260,715	Daily, Quarterly	3-90 days
Real Estate–non-directly held				
Real Estate funds[6]	10,192,957	7,600,307	N/A	N/A
Other[7]	5,077,328	80,550	Quarterly	30-90 days
TOTAL INVESTMENTS MEASURED AT NAV	**$96,568,429**	**$29,892,254**		

1 This category includes private equity funds that invest in privately held debt. CalSTRS investment in each fund is generally not subject to redemption and is normally returned through distributions as a result of the liquidation of the underlying assets over a weighted-average period of approximately 10 years as of June 30, 2022.

2 This category includes private equity funds that invest in nonmarketable securities of private companies, which ultimately may become public in the future and whose strategies include leveraged buyouts and venture capital. Generally, CalSTRS investment in each fund in this category may not be subject to redemption and is normally returned through distributions as a result of the liquidation of the underlying assets over a weighted-average period of approximately 10 years as of June 30, 2022.

3 This category includes funds that include investment strategies with structural aspects that provide improved diversification and potential protection in negative equity markets. Investments representing 76.0% and 3.6% in this category can redeem monthly and quarterly, respectively, upon written notice. The remaining 20.4% of the value of the investments in this category is subject to a lockup period before a one-time full redemption is permissible.

4 This category includes funds that invest strategically in publicly traded equities of companies on U.S. and non-U.S. exchanges to achieve capital appreciation and income. The funds in this category are generally subject to a lockup period before redemption is permissible. Investments representing 21.7%, 6.3% and 60.8% of the value of the investments in this category can be redeemed monthly, annually and at the end of a three-year or rolling three-year period, respectively. The remaining 11.2% of the value of the investments in this category is not subject to redemption and is normally returned through distributions as a result of the liquidation of the underlying assets.

5 This category includes funds that invest primarily in equities, fixed income securities, opportunistic, and other funds. Investments representing 54.3% and 33.4% in this category can be redeemed daily and quarterly, respectively, upon written notice. The remaining 12.3% of the value of the investments in this category is subject to a lockup period before a one-time full redemption is permissible.

6 This category includes funds that invest directly in real estate and real estate related assets, including retail, industrial, office, residential and hotels. Generally, CalSTRS investment in each fund in this category may not be subject to redemption and is normally returned through distributions as a result of the liquidation of the underlying assets over a weighted-average period of approximately five years as of June 30, 2022.

7 This category includes open-ended funds that invest directly in real estate and real estate related assets, including retail, industrial, office, residential and hotels. Investments in this category can be redeemed quarterly upon written notice.

Debt securities

Certain debt securities have an active market for identical securities and are valued using the close or last traded price on a specific date. Debt securities that are not as actively traded are valued by pricing vendors using modeling techniques that include market observable inputs as well as unobservable inputs required to develop a fair value. Typical inputs include recent trades, yields, price quotes, cash flows, maturity, credit ratings and other assumptions based upon the specifics of the investment type.

Short-term investments are reported at fair value or at cost or amortized cost. For those investments that are reported at fair value, the investments are valued using similar methodologies as debt securities traded in active markets.

Bond mutual funds offered by Voya and TIAA are open-ended funds that are priced daily at NAV based generally upon the exchange-traded official closing price of the securities held by the funds. CalSTRS' allocation in the Voya annuity contracts is carried at contract value, which approximates fair value.

Equity securities

The majority of equity securities held by CalSTRS are actively traded on major stock exchanges. These exchanges make information on trades of securities available daily on a last trade or official close basis. If such information is not available, other preestablished means are used to determine a price. Short sales of common stocks are valued at the last quoted sales price or exchange-traded official closing price. Stock mutual funds, held in the STRP and Pension2, are open-ended funds that are priced daily at NAV by the fund sponsor based generally upon the exchange-traded official closing price of the securities held by the fund.

Alternative investments

Partnership interests are valued using their respective NAV calculated in accordance with the general partner's valuation policy as of the measurement date and are audited annually. The most significant input into the NAV of such an entity is the fair value of its investment holdings, which is typically valued on a quarterly or semiannual basis by the general partners. The valuation assumptions are based upon the nature of the investment and the underlying business. The valuation techniques vary by investment type and involve a certain degree of expert judgment.

SISS funds structured as limited partnerships have been valued using the NAV of the entity, with the most significant input into the NAV being the value of its investment holdings. The general partners obtain prices for their holdings in a manner similar to that described above for equity securities.

Investments in directly held real estate assets are subject to independent third-party appraisals performed annually in accordance with the Uniform Standards of Professional Appraisal Practice. On a quarterly basis, fair values are estimated by the third-party advisor or operating partner using general market and property-specific assumptions, which are reviewed by CalSTRS' valuation consultant. Leverage may be used to enhance investment returns as set forth in the CalSTRS Real Estate Investment Policy.

Real estate investments in non-directly held limited partnership interests in commingled funds are valued by CalSTRS using the NAV of the partnership provided by the general partner. The most significant input into the NAV of such an entity is the fair value of its investment holdings. These holdings are valued using the general partners' valuation policy on a continuous basis, audited annually and periodically appraised by an independent third party as directed by the governing document for each commingled fund investment. The valuation assumptions use both market and property-specific inputs.

Derivative instruments

The fair value of exchange-traded derivative instruments such as futures, options, rights and warrants are determined based on the quoted market prices or mean prices. The fair value of derivative instruments that are not exchange-traded, such as swaps, is determined by external pricing services.

Futures contracts are exchange-traded financial instruments that derive their value from underlying securities, indices or reference rates and are marked-to-market at the end of each day. The fair value of futures are accounted for as unrealized appreciation or depreciation until the contract is closed.

The fair value of the foreign currency forward contracts is the unrealized gain or loss calculated based on the difference between the specified exchange rate and the closing forward rate as of the reporting period.

7. Loans and bonds payable

As of June 30, 2022, CalSTRS' outstanding debt obligations consist of amounts under the Master Credit Facility Portfolio and the Series 2019 Bonds.

Master Credit Facility Portfolio

CalSTRS Master Credit Facility Portfolio consists of unsecured revolving lines of credit and unsecured term loans. The proceeds from the Master Credit Facility Portfolio provide the source of funds for managing capital flows of investment strategies.

As of June 30, 2022, the total lender commitments available under the credit facilities was $7.9 billion. The principal amount of draws and repayments for the fiscal year ended June 30, 2022, were $3.8 billion and $1.4 billion, respectively. As of June 30, 2022, there was approximately $5.5 billion of principal outstanding under the credit facilities, while approximately $2.4 billion remained available. These credit facilities will mature between October 2022 and December 2026, although certain instruments may have the option to extend.

Pursuant to the terms and conditions of the loan agreements, upon an event of default, all outstanding amounts shall become immediately due, and any commitments of the lenders to fund additional borrowings shall automatically terminate if CalSTRS is unable to make the required payments. The loan agreements may also contain a subjective acceleration clause that allows the lender to accelerate payment of the principal amount to become immediately due if the lender determines, with reasonable judgment, that a material, adverse change occurs.

Bonds payable

On December 5, 2019, CalSTRS issued $340.6 million ($272.6 million par and $68.0 million original issue premium) in tax-exempt lease-revenue green bonds (Series 2019 Bonds). The Series 2019 Bonds, officially titled "California Infrastructure and Economic Development Bank Lease Revenue Bonds (California State Teachers' Retirement System Headquarter Expansion), Series 2019 (Green Bonds – Climate Bond Certified)", were issued through a conduit issuer, the California Infrastructure and Economic Development Bank (IBank), a public instrumentality of the State of California, which provides financing for business development and public improvements.

The proceeds from the Series 2019 Bonds are being used to construct, furnish and equip the expansion to CalSTRS' existing headquarters and pay capitalized interest with respect to the Series 2019 Bonds during the period of construction of the headquarters expansion. The proceeds from the bonds were also used to pay costs of issuance.

The financing transaction is structured as a lease-leaseback transaction, whereby CalSTRS leased the project site to IBank pursuant to a Site Lease, dated as of December 1, 2019, and then contemporaneously leaseback the project site and the newly constructed building from the IBank pursuant to a facility lease dated December 1, 2019, in exchange for annual base rental payments.

The annual base rental payments are in an amount sufficient to pay, when due, the annual principal and interest payments of the Series 2019 Bonds. The obligation of CalSTRS to make Base Rental Payments does not commence until the date construction of the expansion to CalSTRS' existing headquarters is substantially complete.

As of June 30, 2022, the Series 2019 Bonds consist of serial bonds amounting to $129.0 million with interest rates ranging from 4.00% to 5.00%, with various maturity dates from 2023 to 2039, and two term bonds amounting to $63.1 million and $80.5 million with interest rates at 5.00% and maturing in 2044 and 2049, respectively. The effective interest rates range from 1.02% to 2.21%.

Generally, CalSTRS is considered to be in default if it fails to pay the principal of and interest on the outstanding Series 2019 Bonds when due and payable. If an event of default has occurred and is continuing, the principal of the Series 2019 Bonds, together with the accrued interest, may be declared due and payable immediately.

Bond activity for Series 2019 Bonds for the fiscal year ended June 30, 2022, is summarized as follows (dollars in thousands):

	Balance as of June 30, 2021	Increases	Decreases	Balance as of June 30, 2022	Due within one year
Series 2019 Lease Revenue Bonds	$272,605	$–	$–	$272,605	$–
Original issue premium	64,458	–	(2,295)	62,163	2,295
Bonds payable, net	**$337,063**	**$–**	**($2,295)**	**$334,768**	**$2,295**

Future debt service payments for the Series 2019 Bonds for each of the five fiscal years subsequent to June 30, 2022, and thereafter are presented below (dollars in thousands):

Fiscal year ending June 30	Principal	Interest	Total debt service
2023	$–	$13,470	$13,470
2024	5,125	13,368	18,493
2025	5,330	13,159	18,489
2026	5,545	12,941	18,486
2027	5,765	12,686	18,451
2028 – 2032	33,455	58,691	92,146
2033 – 2037	42,700	49,217	91,917
2038 – 2042	54,495	37,125	91,620
2043 – 2047	69,545	21,694	91,239
2048 – 2050	50,645	3,881	54,526
TOTAL	**$272,605**	**$236,232**	**$508,837**

8. Contingencies

CalSTRS is involved in litigation relating to various matters. In the opinion of management, after consultation with legal counsel, the outcome of these matters is not expected to have a material adverse effect on CalSTRS' basic financial statements.

9. Commitments

In connection with the purchase of partnership interests under various investment portfolios, CalSTRS has remaining unfunded commitments of approximately $34.9 billion as of June 30, 2022.

The following table depicts the unfunded commitments by asset strategy:

Asset class/Strategy	Unfunded commitments (dollars in thousands)
Public Equity (Sustainable Investment and Stewardship Strategies funds)	$36,473
Inflation Sensitive	1,695,751
Innovative Strategies	1,695,046
Private Equity	22,604,707
Real Estate	8,905,856
TOTAL	**$34,937,833**

These unfunded commitments include agreements for acquisitions not yet initiated, which are not included in the NAV practical expedient table in Note 6.

Medicare Premium Payment Program

Under current board policy, assets are set aside from the future employer contributions to the DB Program to fund the MPP Program. Based on the funding actuarial valuation for the DB Program, as of June 30, 2021, the assets set aside are equal to the actuarial obligation of the MPP Program, less the value of any assets already in the program. As of the June 30, 2021, valuation, future employer contributions committed to funding the MPP Program totaled $258.7 million, which equals the projected cost of the program.

This amount is a funding measure that assumes the value of these contributions will be available to fund the MPP Program benefits in future periods, as the assets currently in the program are not sufficient to fund the projected future benefits. This differs from the net OPEB liability as of June 30, 2022, of $329.4 million, which was measured in accordance with GASB Statement No. 74 and represents the actuarial present value of projected benefit payments that is attributable to the MPP Program participants.

Required supplementary information (unaudited)

Schedule of changes in net pension liability of employers and nonemployer contributing entity

Schedule I[1]

(dollars in millions)

State Teachers' Retirement Plan

Year ended June 30[2]	2022	2021	2020	2019
Total pension liability				
Service cost	$7,675	$7,612	$7,340	$7,055
Interest	25,196	24,373	23,334	22,458
Changes in benefit terms	70	–	–	32
Differences between expected and actual experience	(1,673)	(3,369)	(963)	(1,847)
Changes of assumptions[3]	–	–	1,029	–
Benefit payments, including refunds of member contributions	(17,527)	(16,708)	(16,025)	(15,296)
Net change in total pension liability	**13,741**	**11,908**	**14,715**	**12,402**
Beginning total pension liability	**355,801**	**343,893**	**329,178**	**316,776**
Ending total pension liability (a)	**369,542**	**355,801**	**343,893**	**329,178**
Plan fiduciary net position				
Member contributions	4,068	3,743	3,735	3,648
Employer contributions	6,521	5,758	6,080	5,644
State of California contributions	4,280	3,731	4,447	5,335
Net investment income (loss)	(7,390)	67,039	10,103	14,898
Other income	130	90	101	127
Benefit payments, including refunds of member contributions	(17,527)	(16,708)	(16,025)	(15,296)
Administrative expenses	(191)	(252)	(219)	(254)
Borrowing costs	(123)	(90)	(95)	(105)
Other expenses	(5)	(2)	(5)	(4)
Net change in plan fiduciary net position	**(10,237)**	**63,309**	**8,122**	**13,993**
Beginning plan fiduciary net position-as previously reported	**310,293**	**246,984**	**238,862**	**224,869**
Adjustment for application of new GASB statements	–	–	–	–
Beginning plan fiduciary net position-as adjusted	**310,293**	**246,984**	**238,862**	**224,869**
Ending plan fiduciary net position (b)	**300,056**	**310,293**	**246,984**	**238,862**
ENDING NET PENSION LIABILITY OF EMPLOYERS AND THE STATE (a) – (b)	**$69,486**	**$45,508**	**$96,909**	**$90,316**

1 Some numbers in this schedule are rounded for presentation purposes and may differ slightly from those presented in the statement of changes in fiduciary net position.

2 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2013–14. Years will be added to this schedule in future fiscal years until 10 years of information is available.

3 Assumptions used in determining the total pension liability (TPL) of the State Teachers' Retirement Plan (STRP) changed due to actuarial experience studies. Changes in assumptions effective in fiscal year 2019–20 were to termination rates and service retirement rates based on the experience study for the period July 1, 2015, through June 30, 2018.

Schedule of changes in net pension liability of employers and nonemployer contributing entity (continued)

Schedule I[1]

(dollars in millions)

State Teachers' Retirement Plan

Year ended June 30[2]	2018	2017	2016	2015	2014
Total pension liability					
Service cost	$7,142	$6,064	$5,874	$5,556	$5,338
Interest	21,496	20,227	19,332	18,556	17,822
Changes in benefit terms	–	–	–	–	–
Differences between expected and actual experience	(94)	399	(1,209)	(1,312)	–
Changes of assumptions[3]	–	19,988	–	–	–
Benefit payments, including refunds of member contributions	(14,537)	(13,903)	(13,149)	(12,565)	(12,035)
Net change in total pension liability	**14,007**	**32,775**	**10,848**	**10,235**	**11,125**
Beginning total pension liability	**302,769**	**269,994**	**259,146**	**248,911**	**237,786**
Ending total pension liability (a)	**316,776**	**302,769**	**269,994**	**259,146**	**248,911**
Plan fiduciary net position					
Member contributions	3,496	3,441	2,957	2,510	2,264
Employer contributions	4,867	4,173	3,391	2,678	2,272
State of California contributions	2,797	2,478	1,940	1,426	1,383
Net investment income	18,674	25,165	2,305	7,612	30,402
Other income	106	72	42	4	2
Benefit payments, including refunds of member contributions	(14,537)	(13,903)	(13,149)	(12,565)	(12,035)
Administrative expenses	(216)	(182)	(180)	(145)	(154)
Borrowing costs[4]	(94)	(58)	–	–	–
Other expenses	(2)	(10)	(15)	(10)	(9)
Net change in plan fiduciary net position	**15,091**	**21,176**	**(2,709)**	**1,510**	**24,125**
Beginning plan fiduciary net position-as previously reported	**210,289**	**189,113**	**191,822**	**190,474**	**166,349**
Adjustment for application of new GASB statements[5]	(511)	–	–	(162)	–
Beginning plan fiduciary net position-as adjusted	**209,778**	**189,113**	**191,822**	**190,312**	**166,349**
Ending plan fiduciary net position (b)	**224,869**	**210,289**	**189,113**	**191,822**	**190,474**
ENDING NET PENSION LIABILITY OF EMPLOYERS AND THE STATE[6] (a) – (b)	**$91,907**	**$92,480**	**$80,881**	**$67,324**	**$58,437**

1 Some numbers in this schedule are rounded for presentation purposes and may differ slightly from those presented in the statement of changes in fiduciary net position.

2 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2013–14. Years will be added to this schedule in future fiscal years until 10 years of information is available.

3 Assumptions used in determining the TPL of the STRP changed due to actuarial experience studies. Changes in assumptions effective in fiscal year 2016–17 were to price inflation, wage growth, discount rate and mortality tables based on the experience study for the period July 1, 2010, through June 30, 2015.

4 Borrowing costs of $58 million associated with the master credit facility portfolio, which were previously recorded within net investment income, have been reclassified for the year ended June 30, 2017.

5 Adjustments were made to the STRP's beginning net position in fiscal year 2014–15 due to the implementation of requirements from GASB Statement No. 68.

6 The net pension liability (NPL) for fiscal year 2016–17 and 2013–14 exclude the $511 million and $162 million reduction to net position as a result of CalSTRS implementation of GASB Statement No. 75 and GASB Statement No. 68, respectively.

Required supplementary information (unaudited)

Schedule of net pension liability of employers and nonemployer contributing entity

Schedule II[1]

(dollars in millions)

State Teachers' Retirement Plan

Year ended June 30[2]	(a) Total pension liability	(b) Plan fiduciary net position	(a – b) NPL of employers and the state	(b / a) Plan fiduciary net position as a % of total pension liability	(c) Covered payroll	(a – b) / c NPL of employers and the state as a % of covered payroll
2022	$369,542	$300,056	$69,486	81.2%	$40,103	173.3%
2021	355,801	310,293	45,508	87.2%	36,737	123.9%
2020	343,893[3]	246,984	96,909	71.8%	36,668	264.3%
2019	329,178	238,862	90,316	72.6%	35,805	252.2%
2018	316,776	224,869	91,907	71.0%	34,753	264.5%
2017	302,769[3]	210,289	92,480[4]	69.5%	34,126	271.0%
2016	269,994	189,113	80,881	70.0%	31,910	253.5%
2015	259,146	191,822	67,324	74.0%	32,026[5]	210.2%
2014	248,911	190,474	58,437[4]	76.5%	27,486	212.6%

1 Some numbers in this schedule are rounded for presentation purposes and may differ slightly from those presented in the statement of fiduciary net position.

2 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2013–14. Years will be added to this schedule in future fiscal years until 10 years of information is available.

3 Assumptions used in determining the TPL of the STRP changed due to actuarial experience studies. Changes in assumptions effective in fiscal year 2019–20 were to termination rates and service retirement rates based on the experience study for the period July 1, 2015, through June 30, 2018. Changes in assumptions effective in fiscal year 2016–17 were to price inflation, wage growth, discount rate and mortality tables based on the experience study for the period July 1, 2010, through June 30, 2015.

4 The NPL for fiscal year 2016–17 and 2013–14 exclude the $511 and $162 reduction to net position as a result of CalSTRS implementation of GASB Statement No. 75 and GASB Statement No. 68, respectively.

5 In fiscal year 2013–14, CalSTRS reported pensionable compensation as part of GASB Statement No. 67 implementation. In fiscal year 2014–15, GASB clarified the requirement to be covered-employee payroll, which includes both pensionable and non-pensionable compensation. In fiscal year 2015–16, GASB Statement No. 82 was issued, which amended GASB Statements No. 67 and 68, to instead require the presentation of covered payroll, which is pensionable compensation. The amount reported in the schedule above for fiscal year 2014–15 includes pensionable and non-pensionable compensation; however, the covered payroll amount for fiscal year 2014–15 is $30.5 billion.

Schedule of pension contributions from employers and nonemployer contributing entity

Schedule III

(dollars in millions)

State Teachers' Retirement Plan

Year ended June 30[1]	(a) Actuarially determined contributions	Legally required contributions for employers and the state	(b) Employer contributions[2,3]	(c) State contributions[4]	(b + c) Total contributions	a – (b + c) Contribution deficiency (excess)	(d) Covered payroll	(b + c) / d Contributions as a % of covered payroll
2022	$11,059	$10,793	$6,513	$4,280	$10,793	$266	$40,103	26.9%
2021	10,245	9,475	5,744	3,731	9,475	770	36,737	25.8%
2020	10,849	10,512	6,065	4,447	10,512	337	36,668	28.7%
2019	10,790	10,968	5,633	5,335	10,968	(178)	35,805	30.6%
2018	9,577	7,654	4,857	2,797	7,654	1,923	34,753	22.0%
2017	7,959	6,638	4,160	2,478	6,638	1,321	34,126	19.5%
2016	7,748	5,318	3,378	1,940	5,318	2,430	31,910	16.7%
2015	7,707	4,093	2,667	1,426	4,093	3,614	32,026[5]	12.8%
2014	7,158	3,641	2,258	1,383	3,641	3,517	27,486	13.2%

1 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2013–14. Years will be added to this schedule in future fiscal years until 10 years of information is available.

2 Excludes $8.1 million, $13.7 million, $14.7 million, $10.7 million, $10.3 million, $13.3 million, $13.5 million, $11.2 million and $14.5 million for fiscal years 2021–22, 2020–21, 2019–20, 2018–19, 2017–18, 2016–17, 2015–16, 2014–15 and 2013–14, respectively, in contributions to separately finance specific liabilities, such as benefit enhancements, of an individual employer.

3 Includes employer contributions under Education Code sections 22711, 22713, 22905, 22950, 22950.5, 22951, 24260, 26503 and 26504.

4 Includes state contributions under Education Code sections 22954, 22955, and 22955.1, as well as Public Resources Code Section 6217. State contributions for fiscal years 2021–22, 2020–21, 2019–20 and 2018–19 include supplemental contribution payments from the state of $583.7 million, $297.0 million, $1.1 billion and $2.2 billion, respectively.

5 In fiscal year 2013–14, CalSTRS reported pensionable compensation as part of GASB Statement No. 67 implementation. In fiscal year 2014–15, GASB clarified the requirement to be covered-employee payroll, which includes both pensionable and non-pensionable compensation. In fiscal year 2015–16, GASB Statement No. 82 was issued, which amended GASB Statements No. 67 and 68, to instead require the presentation of covered payroll, which is pensionable compensation. The covered payroll amount for fiscal year 2014–15 is $30.5 billion.

Methods and assumptions used in calculations of actuarially determined contributions

The actuarially determined contribution (ADC) for the STRP for 2022 presented in this schedule of pension contributions from employers and nonemployer contributing entity was determined based on the assumptions used in the June 30, 2020, actuarial valuation. The following actuarial methods and assumptions were used to determine the ADC:

Actuarial methods for the STRP

Actuarial cost method	Entry age normal
Amortization method	Level percentage of payroll, closed
Amortization period	Ending June 30, 2046
Asset valuation method	Adjustment to fair value

Actuarial assumptions for the STRP[1]

Investment rate of return	7.00%[2]
Interest on accounts	3.00%
Wage growth	3.50%
Consumer price inflation	2.75%
Postretirement benefit increases	2.00%

1 The assumptions shown above are for the ADC of the Defined Benefit (DB) Program. The ADC for the year ended June 30, 2022, is the statutory contribution rate as of the June 30, 2020, actuarial valuation applied to actual DB Program payroll for the fiscal year ended June 30, 2022. For the Defined Benefit Supplement (DBS), Cash Balance Benefit (CBB) and Supplemental Benefit Maintenance Account programs, the ADC reflects the contributions recognized on an accrual basis for the fiscal year ended June 30, 2022.

2 The actuarially determined contribution for the fiscal year ended June 30, 2022, was calculated based on the economic and demographic assumptions in place for the funding actuarial valuation as of June 30, 2020. This valuation was performed using a 7.00% assumed investment rate of return, net of investment and administrative expenses. For financial reporting purposes, the NPL (shown in Note 3 of the basic financial statements) was calculated using actuarial assumptions adopted in 2019, which included an assumed rate of return of 7.10%, net of investment expenses but gross of administrative expenses.

Required supplementary information (unaudited)

Schedule of money–weighted rate of return for the State Teachers' Retirement Plan and Medicare Premium Payment Program

Schedule IV

State Teachers' Retirement Plan

Year ended June 30[1]	Money–weighted rate of return, net of investment expenses
2022	(2.4%)
2021	27.2%
2020	4.2%
2019	6.6%
2018	8.9%
2017	13.4%
2016	1.2%
2015	4.1%
2014	18.7%

1 This is a 10–year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2013–14. Years will be added to this schedule in future fiscal years until 10 years of information is available.

Medicare Premium Payment Program[1]

Year ended June 30[2]	Money–weighted rate of return, net of investment expenses
2022	0.1%
2021	0.4%
2020	1.9%
2019	2.3%
2018	1.3%
2017	0.9%

1 Any funds within the Medicare Premium Payment (MPP) Program as of June 30, 2022, were to manage differences between estimated and actual amounts to be paid and were invested in the Surplus Money Investment Fund, which is a pooled investment program administered by the California State Treasurer.

2 This is a 10–year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2016–17. Years will be added to this schedule in future fiscal years until 10 years of information is available.

Schedule of changes in net OPEB liability of employers

Schedule V

(dollars in thousands)

Medicare Premium Payment Program

Year ended June 30[1]	2022	2021	2020	2019	2018	2017
Total OPEB liability						
Interest	$8,270	$9,009	$12,457	$14,225	$14,567	$12,928
Differences between expected and actual experience	(9,627)	(9,598)	(4,288)	(10,605)	(15,759)	(41)
Changes of assumptions[2]	(42,212)	1,874	70,417	12,111	(10,293)	(31,240)
Premiums paid	(25,776)	(26,377)	(27,217)	(27,546)	(28,036)	(28,929)
Net change in total OPEB liability	**(69,345)**	**(25,092)**	**51,369**	**(11,815)**	**(39,521)**	**(47,282)**
Beginning total OPEB liability	**395,690**	**420,782**	**369,413**	**381,228**	**420,749**	**468,031**
Ending total OPEB liability (a)	**326,345**	**395,690**	**420,782**	**369,413**	**381,228**	**420,749**
Program fiduciary net position						
Employer contributions	26,352	26,988	27,685	27,977	28,218	29,117
Net investment income	1	6	25	29	18	11
Premiums paid	(25,776)	(26,377)	(27,217)	(27,546)	(28,036)	(28,929)
Administrative expenses	(468)	(788)	(510)	(1,901)	(578)	(168)
Other expenses	(1)	–	(2)	(1)	–	–
Net change in program fiduciary net position	**108**	**(171)**	**(19)**	**(1,442)**	**(378)**	**31**
Beginning program fiduciary net position-as previously reported	**(3,174)**	**(3,003)**	**(2,984)**	**(1,542)**	**41**	**10**
Adjustment for application of new GASB statements[3]	–	–	–	–	(1,205)	–
Beginning program fiduciary net position-as adjusted	**(3,174)**	**(3,003)**	**(2,984)**	**(1,542)**	**(1,164)**	**10**
Ending program fiduciary net position (b)	**(3,066)**	**(3,174)**	**(3,003)**	**(2,984)**	**(1,542)**	**41**
ENDING NET OPEB LIABILITY OF EMPLOYERS[4] (a) – (b)	**$329,411**	**$398,864**	**$423,785**	**$372,397**	**$382,770**	**$420,708**

1 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2016–17. Years will be added to this schedule in future fiscal years until 10 years of information is available.

2 Changes of assumptions include changes to the discount rate, Medicare costs trend rate, mortality and future enrollment to the MPP Program.

3 An adjustment was made to the MPP Program's beginning net position in fiscal year 2017–18 due to the implementation of requirements from GASB Statement No. 75.

4 The net OPEB liability for fiscal year 2016–17 excludes the $1.2 million reduction to the net position as a result of CalSTRS' implementation of GASB Statement No. 75.

Required supplementary information (unaudited)

Schedule of net OPEB liability of employers

Schedule VI[1]

(dollars in thousands)

Medicare Premium Payment Program

Year ended June 30[2]	(a) Total OPEB liability	(b) Program fiduciary net position	(a – b) Net OPEB liability of employers	(b / a) Program fiduciary net position as a % of total OPEB liability
2022	$326,345	($3,066)	$329,411	(0.94%)
2021	395,690	(3,174)	398,864	(0.80%)
2020	420,782	(3,003)	423,785	(0.71%)
2019	369,413	(2,984)	372,397	(0.81%)
2018	381,228	(1,542)	382,770	(0.40%)
2017	420,749	41	420,708	0.01%

1 Contributions to the MPP Program are not based on a measure of pay; as such, covered payroll and net OPEB liability as a percentage of covered payroll are not applicable for this schedule.

2 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2016–17. Years will be added to this schedule in future fiscal years until 10 years of information is available.

Other supplementary information

Schedule of administrative expenses

Schedule VII

(dollars in thousands)

	State Teachers' Retirement Plan	Pension2 403(b) Plan	Pension2 457(b) Plan	Medicare Premium Payment Program	Teachers' Deferred Compensation Fund	Totals
Personnel services						
Salaries and wages	$91,678	$–	$–	$289	$681	$92,648
Staff benefits	17,323	–	–	93	212	17,628
Accrued pension and OPEB expense[1]	(14,300)	–	–	(71)	(122)	(14,493)
Total personnel services	**94,701**	**–**	**–**	**311**	**771**	**95,783**
Operating expenses and equipment						
General	1,154	–	–	129	96	1,379
Depreciation/amortization	6,488	–	–	–	–	6,488
Printing	349	–	–	–	3	352
Communications	1,521	–	–	–	–	1,521
Postage	835	–	–	–	–	835
Insurance	589	–	–	–	–	589
Travel	181	–	–	–	4	185
Training	686	–	–	–	–	686
Facilities operations	8,740	–	–	–	–	8,740
Consultants and professional services	44,288	4,765	278	–	66	49,397
Information technology	14,009	–	–	–	–	14,009
Indirect state central services	12,492	–	–	28	61	12,581
Equipment	5,036	–	–	–	–	5,036
Other	47	–	–	–	–	47
Total operating expenses and equipment	**96,415**	**4,765**	**278**	**157**	**230**	**101,845**
TOTAL ADMINISTRATIVE EXPENSES	**$191,116**	**$4,765**	**$278**	**$468**	**$1,001**	**$197,628**

1 Negative amounts in accrued pension and OPEB expense due to changes in CalSTRS' proportionate share of the state's net pension liability and net OPEB liability.

Schedule of investment expenses

Schedule VIII

(dollars in thousands)

	Contract start	Amount
Investment management fees		
Acadian Asset Management, LLC	2/1/18	$1,748
AGF Investments America, Inc.	3/19/07	2,121
AQR Capital Management Holdings, LLC	12/1/14	17,956
Ares Capital Management III, LLC	5/1/22	77
Arrowstreet Capital, Ltd.	8/1/15	6,785
Baillie Gifford Overseas, Ltd.	1/15/06	10,571
Bivium Capital Partners, LLC	2/15/08	3,235
BlackRock Financial Management, Inc.	3/12/07	1,650
BlackRock Institutional Trust, N.A.	10/27/98	38
CIBC Asset Management, Inc.	11/21/19	1,350
Credit Suisse Asset Management, LLC	9/1/11	2,008
Fidelity Institutional Asset Management Co.	2/1/00	3,168
FIS Group, Inc.	2/27/04	4,334
Generation Investment Management	3/19/07	7,049
Hermes Investment Managers, Ltd.	2/1/19	2,416
Hotchkis and Wiley Capital Management, LLC	10/1/18	228
Impax Asset Management Limited	2/1/19	1,632
Jacobs Levy Equity Management, Inc.	3/1/19	2,795
JP Morgan Investment Management, Inc.	1/1/14	13,426
Lazard Asset Management, LLC	5/18/99	7,696
Leading Edge Investment Advisors, LLC	2/15/08	3,369
Lee Overlay Partners, Ltd.	10/15/09	2,675
LM Capital Group, LLC	10/30/06	726
Lyxor Asset Management, Inc.	8/1/16	7,850
Millennium Global Investments, Ltd.	7/1/10	975
Mondrian Investment Partners, Ltd.	5/13/99	17,275
PanAgora Asset Management, Inc.	11/1/18	2,348
PIMCO	2/28/17	5,621
Principal Global Investors, LLC	11/1/17	2,286
Principal Real Estate Investors, LLC	1/1/14	754
Pyrford International Limited	8/15/18	3,040
Pzena Investment Management, LLC	7/1/15	4,792
RBC Global Asset Management US, Inc.	2/1/22	582
Schroder Investment Management	9/1/14	14,135
Silvercrest Asset Management	7/1/11	1,740
State Street Bank & Trust Co.	8/27/07	269
State Street Global Advisors Trust Company	12/1/00	5,548
T. Rowe Price Associates, Inc.	1/15/06	1,716
Templeton Asset Management, Ltd.	5/18/99	3,848
Western Asset Management Co.	10/30/06	2,576
Total investment management fees		**172,408**

Schedule of investment expenses (continued)

Schedule VIII

(dollars in thousands)

	Contract start	Amount
Advisors and consultants		
Aksia, LLC	6/1/19	$84
Albert Risk Management Consultants	12/1/16	135
Albourne America, LLC	11/1/19	1,082
Bard Consulting, LLC	9/20/07	1,208
Callan Associates	9/20/07	175
Cambridge Associates, LLC	7/1/16	3,139
Colmore, Inc.	2/1/19	298
Ernst & Young U.S. LLP	1/1/16	431
Meketa Investment Group, Inc.	10/1/15	2,848
Mercer Investments, LLC	3/1/18	642
RCLCO Fund Advisors, LLC	1/15/18	895
SitusAMC	9/20/07	7,425
Secor Asset Management	5/1/19	120
StepStone Group Real Estate, LP	9/20/07	27
Stout Risius Ross, LLC	3/1/18	100
Valuation Research Corporation	8/1/01	1,090
Total advisors and consultants		**19,699**
External services-legal and attorney fees		
BLA Schwartz, PC	11/1/13	540
Cohen Milstein Sellers & Toll PLLC	7/1/20	30
Cox, Castle & Nicholson, LLP	11/30/09	4,468
DLA Piper, LLP (US)	3/1/18	1,339
Morgan, Lewis & Bockius, LLP	12/9/10	695
Olson, Hagel & Fishburn, LLP	7/1/20	25
Proskauer, LLP	3/9/11	629
Reinhart Boerner Van Deuren SC	7/1/20	60
Seyfarth at WorkWorkright Training, LLC	9/1/21	28
Sheppard Mullin Richter & Hampton LLP	4/1/19	243
Steptoe & Johnson, LLP	3/1/17	19
Total external services-legal and attorney fees		**8,076**
Master custodian		
State Street Bank & Trust Co.	7/1/01	4,670
Total master custodian		**4,670**

Other supplementary information

Schedule of investment expenses (continued)

Schedule VIII

(dollars in thousands)

	Contract start	Amount
Research and rating services		
Abel Noser Holdings, LLC	10/1/20	$36
AcadiaSoft, Inc.	11/1/21	27
CEM Benchmarking, Inc.	4/20/21	75
Cornerstone Macro, LP	1/1/22	70
CPR & CDR Alpha, LLC	3/1/22	60
Equilar, Inc.	7/1/21	45
eVestment Alliance, LLC	8/1/21	64
FactSet Research System, Inc.	7/1/21	964
Fitch Ratings, Inc.	12/30/21	108
Glass Lewis & Co., LLC	6/1/21	613
ICE Benchmark Administration	1/1/22	41
Insightia Limited	9/1/21	20
Institutional Shareholder Services	1/1/22	66
KDP Investment Advisors, Inc.	10/1/21	39
London Stock Exchange PLC	1/1/22	48
Markit N. America Inc. / Markit Group	10/14/21	37
Mergermarket Limited US	1/28/22	20
Moody's Investors Service	12/29/21	472
MSCI, Inc.	1/1/21	1,518
Nomura Research Institute	1/1/22	18
PEI Media, Ltd.	3/28/21	104
Preqin Limited	6/1/21	79
Refinitiv US, LLC	7/1/20	97
Russell Investment Group	7/1/20	133
Standard & Poor's	1/1/21	578
StarCompliance Operating, LLC	3/28/21	64
State Street Global Advisors Trust Company	8/1/20	159
Strategas Securities, LLC	7/1/21	75
Sustainalytics U.S., Inc.	1/1/22	11
Technical Analysis Group, LLC	2/3/22	35
The Spaulding Group	7/1/21	64
TradeWeb, LLC	2/1/21	20
Trahan Macro Research, LLC	12/1/21	18
Workiva, Inc.	6/1/22	80
Total research and rating services		**5,858**
Risk management systems		
BlackRock Financial Management, Inc.	7/1/06	5,670
MSCI, Inc. d/b/a Barra, LLC	4/1/22	166
Total risk management systems		**5,836**

Schedule of investment expenses (continued)

Schedule VIII

(dollars in thousands)

	Contract start	Amount
Trading systems		
Bloomberg, LP	7/1/20	$1,699
Fixed Income Clearing Corp	7/1/20	12
Intex Solutions, Inc.	9/1/21	168
Market Axess Corporation	10/1/20	20
Omgeo, LLC	7/1/20	92
Society for Worldwide Interbank Financial Telecommunication	11/8/21	24
TSX, Inc.	1/1/22	11
Miscellaneous	Various	6
Total trading systems		**2,032**
Operating expenses		
Administrative costs		56,517
Aon Risk Insurance		3,184
Council of Institutional Investors		30
Total operating expenses		**59,731**
Subtotal		**278,310**
Other investment expenses		
Foreign tax withheld		89,949
Capital gains tax		33,295
Real estate		24
Broker commissions		22,834
Miscellaneous		10,155
Total other investment expenses		**156,257**
TOTAL INVESTMENT EXPENSES		**$434,567**

Other supplementary information

Schedule of consultant and professional services expenses

Schedule IX

(dollars in thousands)

Individual or firm	Commission/Fee
State Teachers' Retirement Plan	
Actuarial services	
Milliman, Inc.	$541
Total actuarial services	**541**
Auditing services	
Clifton Larson Allen, LLP	158
Crowe LLP	2,244
Grant Thornton, LLP	407
KPMG, LLP	25
Macias, Gini & O'Connell, LLP	52
State Personnel Board	20
Weaver and Tidwell, LLP	250
Total auditing services	**3,156**
Consultant and other professional services	
22nd Century Technologies, Inc.	143
Abacus Data Systems, Inc.	27
Accuity, Inc.	108
Acuity Technical Solutions	483
Agile Global Solution, Inc.	369
AgreeYa Solutions, Inc.	277
Alpha Executive Coaching, LLC	20
American Unit, Inc.	181
Antha A. Ward	12
Aptakrit Technology Solutions, LLC	191
Astute Solutions, LLC	61
Aspire HR, Inc.	106
Avante Solutions, Inc.	134
Bank of America Merrill Lynch, N.A.	11
Business Advantage Consulting, Inc.	484
California Public Employees Retirement System	57
Capio Group	357
Carahsoft Technology Corporation	45
Celer Systems, Inc.	214
CEM Benchmarking, Inc.	50
CGI Technologies and Solutions, Inc.	46,576
Deloitte Consulting, LLP	7,944
Department of Forestry and Fire Protection	354
Department of General Services	114
Department of Human Resources	42
Digital Deployment, Inc.	285
Diligent Corporation	50
DirectApps, Inc.	175
Eide Bailly, LLP	31
Employers Choice Online, Inc.	21
Entisys Solutions, Inc.	341

Schedule of consultant and professional services expenses (continued)

Schedule IX

(dollars in thousands)

Individual or firm	Commission/Fee
Estrada Consulting, Inc.	$418
Forrester Research, Inc.	119
Fortuna Business Management	209
Gartner, Inc.	455
Global Governance Advisors, LLC	62
GoldLink Pacific, Inc.	1,197
Government Operations Agency	216
Grant Thornton Public Sector, LLC	946
HHS Technology Group, LLC	213
Hogan Lovells US, LLP	240
Info-Tech Research Group, Inc.	80
InMoment Research, LLC	27
Integrated Consulting and Management	149
IntelliSurvey	17
International Network Consulting	597
International Projects Consultancy	34
InterVision Systems, LLC	220
ISOS Group, Inc.	46
Jayson Carpenter Photography	14
Kanini Infotech Consultants	187
Legato Solutions	226
Linea Solutions, Inc.	949
Lucas Public Affairs	191
Mactum, Inc.	216
Maximus Human Services, Inc.	1,678
Mentis, LLC	522
Metro Mailing Service, Inc.	14
MG Systems and Software, LLC	385
Miles Treaster & Associates	387
Montague DeRose and Associates, LLC	15
Mosaic Governance Advisors, LLC	231
Natix, Inc.	128
Oak Technical Services, LLC	254
O.C. Tanner Recognition Company	45
OnCore Consulting, LLC	375
Ope Technology, LLC	122
Pacific Storage Company	22
Pension Benefit Information, LLC	204
Peraton State & Local, Inc.	9,355
Performance Technology Partners	59
Pinnacle Consulting	244
Pitney Bowes, Inc.	136
Providence Technology Group	763
QualApps, Inc.	181
Radian Solutions, LLC	171
RELX, Inc.	23

Schedule of consultant and professional services expenses (continued)

Schedule IX

(dollars in thousands)

Individual or firm	Commission/Fee
Resiliensoft	$265
Ridge Capital, Inc.	73,159
Robert J. Yetman	107
R Systems, Inc.	653
Sierra Metrics, Inc.	167
Signal Perfection, LTD.	78
Silicon Valley Consulting Group	200
State Controller's Office	1,965
Strategic Energy Innovations	11
SupportFocus, Inc.	598
Taborda Solutions, Inc.	384
TEKsystems, Inc.	244
The Centre for Organization	17
The Highlands Consulting Group, LLC	305
Thomas/Ferrous, Inc.	72
University Enterprises, Inc.	1,237
Vector Consulting, Inc.	142
Veteran Enhanced, Inc.	176
Visionary Integration Professionals	1,384
West Advanced Technologies, Inc.	153
Workiva, Inc.	61
xFusion Technologies, Inc.	32
Total consultant and other professional services	**163,015**
Legal services	
California Department of Justice	84
Cuyler & Tufts, LLP	452
Department of General Services	54
Federal Arbitration, Inc.	22
Granicus, LLC	11
Klinedinst, PC	259
Noonan Lance Boyer & Banach, LLP	112
Nossaman, LLP	170
Pillsbury Winthrop Shaw Pittman, LLP	371
Shaw Law Group, PC	127
Sheppard Mullin Richter & Hampton	320
State Personnel Board	31
Total legal services	**2,013**
Regional counseling services	
Santa Barbara County Office of Education	165
Total regional counseling services	**165**

Other supplementary information

Schedule of consultant and professional services expenses (continued)

Schedule IX

(dollars in thousands)

Individual or firm	Commission/Fee
Various services under $10K	
Others	$93
Total various services under $10K	**93**
Gross consultant and professional services	**168,983**
Less: amounts capitalized[1]	124,695
Total State Teachers' Retirement Plan — consultant and professional services net of amounts capitalized	**$44,288**
Pension2 – IRC 403(b) Plan	
Administrative services	
Voya Institutional Plan	$4,765
Total administrative services	**4,765**
Total Pension2–IRC 403(b) Plan — consultant and professional services	**$4,765**
Pension2 – IRC 457(b) Plan	
Administrative services	
Voya Institutional Plan	$278
Total administrative services	**278**
Total Pension2–IRC 457(b) Plan — consultant and professional services	**$278**
Teachers' Deferred Compensation Fund	
Consultant services	
Morningstar, Inc.	$66
Total consultant services	**66**
Total Teachers' Deferred Compensation Fund — consultant and professional services	**$66**
TOTAL CONSULTANT AND PROFESSIONAL SERVICES	**$49,397**

1 Vendor costs that meet the CalSTRS capitalization criteria are deducted from gross consultant and professional services expenses and reported as capital assets on the statement of fiduciary net position. Refer to Note 2 of the notes to the basic financial statements for discussion of CalSTRS' treatment of capital assets.

Investment section

The CalSTRS Investment Portfolio generated -1.3% time-weighted return net of fees on its investments for the fiscal year ended June 30, 2022.

MEKETA
INVESTMENT GROUP

5796 Armada Drive
Suite 110
Carlsbad, CA 92008

760.795.3450
Meketa.com

The CalSTRS Investment Portfolio produced a -1.3% net-of-fees return over the latest fiscal year, ahead of its benchmark return and roughly in line with the median fund return in the State Street Master Trust Universe. The portfolio decreased by $7.0 billion over the past 12 months, ending with a value of $301.6 billion on June 30, 2022. As highlighted below, the portfolio continues to be broadly diversified, holding investments ranging from publicly traded short-term bonds to privately held partnerships.

Investment Allocation

The Teachers' Retirement Board adopts long-term strategic allocation targets to be implemented over several years. The fiscal year-end report reflects strategic allocation guidelines for the 2021-22 fiscal year as adopted by the board. As of year-end, the portfolio's actual allocation was slightly different from policy (see table below). As of June 30, 2022, Public Equity was underweight its 45.0% target, at 38.4% of assets[1]. Fixed Income was also underweight its 12.0% target, at 10.5% of assets. Private Equity was overweight, with 15.7% of assets, relative to a target of 13.0%. The Real Estate asset class was also overweight its 14.0% target, with 16.3% of assets. Inflation Sensitive was overweight, with 5.4% of assets, relative to a target of 4.0%. The Risk Mitigating Strategies asset class was slightly overweight its 10.0% target by 30 basis points. Cash was at 2.1% as of June 30, 2022, roughly in line with its 2.0% target. All of these asset classes were, however, within policy ranges.

Asset allocation as of June 30, 2022[2]

	Cash (%)	Public Equity (%)	Private Equity (%)	Real Estate (%)	Fixed Income (%)	Inflation Sensitive (%)	Risk Mitigating Strategies (%)
CalSTRS policy	2.0	45.0	13.0	14.0	12.0	4.0	10.0
CalSTRS actual[3]	2.1	38.4	15.7	16.3	10.5	5.4	10.3

Fiscal year in review

We entered fiscal year 2022 in an environment of improvements related to COVID-19, supportive monetary policy, relatively low interest rates, and the belief that inflation would be transitory. As the year progressed it became clear that as supply chain issues lingered inflation was going to remain high. The inflation picture was further complicated by the war in Ukraine and China's strict policies related to the virus, as well as relatively strong demand here in the US driven by policy support. With inflation levels at multi-decade highs the US central bank, and others, were forced to aggressively start increasing interest rates. This led to one of the worst starts to a calendar year on record and weighed heavily on the overall fiscal year results.

Related to COVID-19, there was a global push for vaccine development and distribution, as well as advances in therapeutics. This led to increased optimism that there was a path to normal life and a return to typical economic patterns that we had not seen since early 2020. Despite these improvements there were pockets of disruption related to the virus during the fiscal year with various outbreaks reintroducing restrictions. Here in the US the Omicron variant led to a massive spike in cases toward the end of 2021 and into 2022.

1 Actual allocation for Public Equity does not reflect notional overlay exposures ($11 billion in equity futures as of June 30, 2022).
2 Allocations may not sum to 100% due to rounding.
3 Additional assets are held in the Innovative Strategies (1.1%) and Strategic Overlay (0.3%) classes.

BOSTON CHICAGO LONDON MIAMI NEW YORK PORTLAND SAN DIEGO

September 16, 2022

While COVID-19 was still present worldwide, it evolved into a less virulent form and much of the world has learned to live with it. Many restrictions on travel were removed, and spending patterns among individuals and businesses adjusted to reflect that. Early in the pandemic, much of consumer spending in the US was on real estate, home renovation, and other goods to make living and for some working solely at home more comfortable. As the global economy reopened, spending patterns shifted to reflect preferences for travel and leisure.

One exception to the reopening of the global economy has been China. The Chinese government has continued the "COVID Zero" policy instituted early in the pandemic that includes mass testing, restrictions on mobility, and the closure of commercial and manufacturing centers. The policy also weighs on the resolution of supply chain issues and contributes to inflation globally.

At the beginning of fiscal year 2022 (July 2021), CPI stood at 5.4%[1]. At the time, many market commentators and the Federal Reserve were labeling increases in inflation as "transitory," a result of pandemic-induced supply chain issues and accumulated savings over a year of stay-at-home orders. The Federal Reserve declined to act at the time, citing elevated unemployment levels and an incomplete recovery. Capital markets started to digest the high inflation numbers, with the Bloomberg Commodity index increasing 6.6%[1] and the Bloomberg TIPS index returning 1.8%[1] in the third calendar year quarter of 2021. Ultimately for the July-September period, US equity markets were slightly positive. Developed equity markets outside the US were slightly negative (in US dollar terms), while the MSCI Emerging Markets index declined 8.1%[1] for the period driven by concerns in China related to the property market and the government's crackdown on the technology sector. Rates stayed largely unchanged through September in the US as investors waited for clarity on the path of the economy and monetary policy.

It was also late in 2021 that news of a new COVID-19 variant of concern, Omicron, were beginning to come out of South Africa. Early reports were that it was significantly more transmissible, and possibly less virulent. Depending on the region of the world, restrictions were reintroduced, exacerbating supply chain issues. Additionally, high natural gas prices were threatening the economic recovery in Europe and troubles related to China's overleveraged property sector and crackdown on the technology sector continued to rattle markets.

By December of 2021, CPI had increased to 7.0%, well above trend and at risk of becoming entrenched in consumer expectations. It was at this time that the Federal Reserve acknowledged that increases in inflation may not be "transitory" and gave indications that price increases were broadening out to goods and services not directly related to pandemic dislocations. The change in tone from the Federal Reserve did not significantly affect capital markets in the fourth quarter of 2021, as many asset classes were still positive. The S&P 500 returned 11.0%[1] for the September to December quarter, with developed market equities registering lower (+2.7%) but positive returns, and emerging market equities declining (-1.3%).[1] The broad US bond market was flat, while TIPS (+2.4%) benefited from increasing inflation concerns.[1]

In early 2022, market participants in the US started to digest the hawkish pivot of the Federal Reserve in December given inflation pressures were not easing. US and non-US equity markets posted negative returns January, with non-US equities generally outperforming US equities. Rates began to increase across the US yield curve, but the curve also began to flatten, given policy expectations. Bond markets also posted negative returns on concerns of higher interest rates in the inflationary environment, marking an unusual positive correlation between the two asset classes.

Russia invaded the Ukraine the last week of February and the West responded with sweeping sanctions that exceeded market expectations. Restricting access to foreign reserves was key, leading to Russia's central bank dramatically increasing policy rates (9.5% to 20%) to try to protect the currency. Food and energy prices added to inflation pressures in Europe and the US, pushing interest rates higher. During the first quarter of 2022, all major asset classes declined except for commodities. Value stocks in the US significantly outperformed growth stocks, given higher rates and a preference by many investors for companies presumably better able to weather the tightening financial conditions. An increase in inflation expectations, and the pricing in of higher policy rates, proved to be a challenging headwind for nearly all bond indices. The broad US bond market experienced one of its worst quarters on record, down 5.9%.[1]

1 Source: Bloomberg and InvestMetrics.

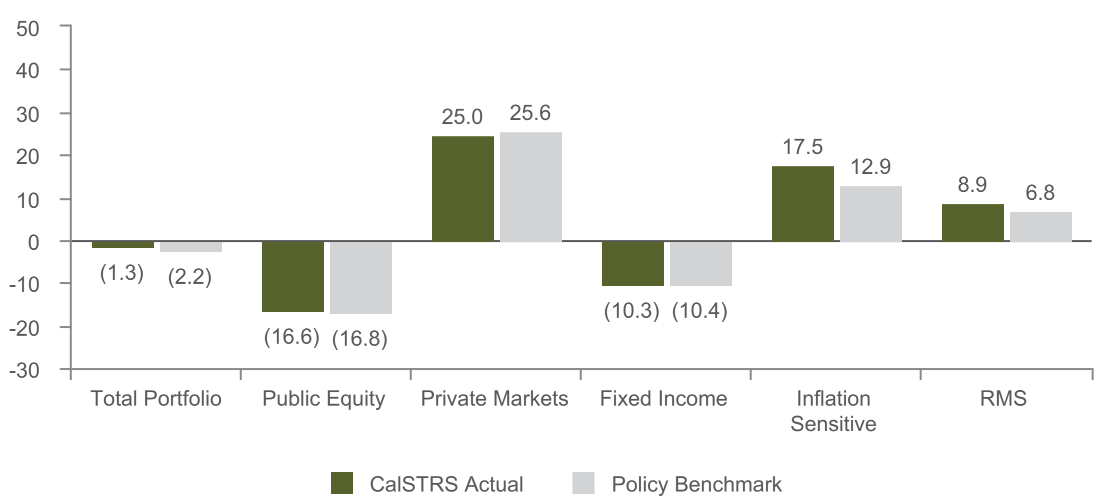
Investment consultant's report

September 16, 2022

The Federal Reserve began lifting interest rates in the last quarter of the fiscal year. It started with a 25 basis point hike in April and followed that with a 50 basis point increase in early May. In June, reacting to a CPI reading of 8.6%[4], the Federal Reserve hiked rates by 75 basis points, which was the largest one-time increase since 1994. A similar increase took place in July 2022 with further increases expected into 2023. All major equity indices suffered steep declines in June weighing on overall second quarter 2022 results, with the S&P hitting bear market territory by the end of the second calendar quarter. Emerging markets proved slightly more resilient than developed markets on a partial re-opening in China from pandemic-related lockdowns. The global bond selloff continued, as inflation fears, and policy expectations weighed on all major global bond markets.

Over the full fiscal year, US stocks outperformed other regions, with the S&P 500 returning -10.6%[1] for the year, compared to the MSCI EAFE at -17.8%,[2] and a decline of 25.3% for the MSCI Emerging Market index. Despite positive performance in June, the MSCI China index declined the most among major regions with a full fiscal year return of -31.8%.[2] Within fixed income, higher inflation and higher rates led the Bloomberg TIPS index to decrease 5.1% over the full fiscal year, while the Bloomberg Aggregate index declined by 10.3%.[2] Economic growth in the US fell in the first and second quarters of 2022, at -1.6% and -0.9%, respectively.[3] Europe's economic output moderated but was still positive in the first two quarters of 2022. Japan's economic growth was slightly negative to begin 2022, while China's GDP remained positive but below the prior trend. Inflation remained stubbornly high, with CPI increasing 8.6%[4] in the US over the fiscal year, the highest reading since 1981. The Eurozone matched the US with an 8.6%[5] inflation print for the fiscal year ending in June.

Last 12 months ended June 30 (net of manager fees)

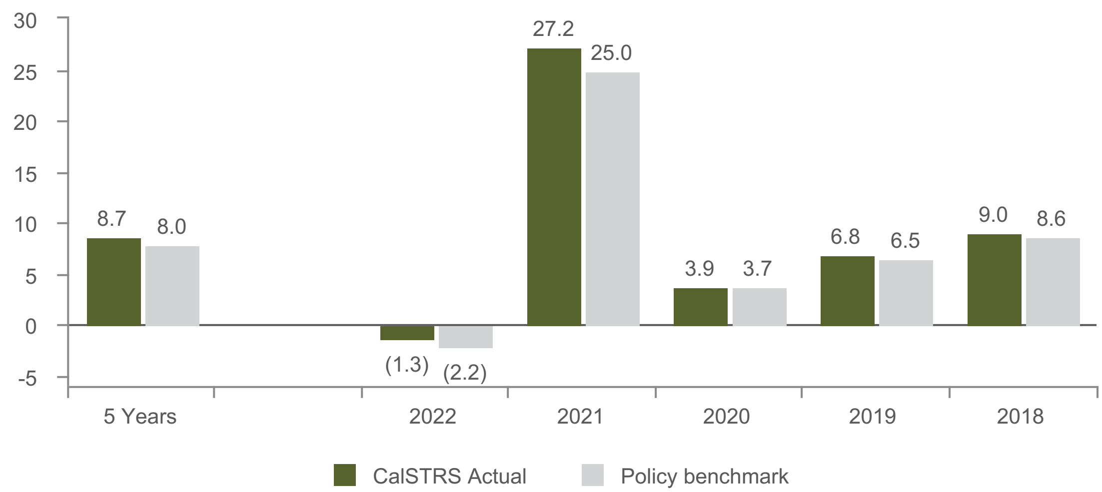


Note: Private Markets consists of the Private Equity and Real Estate sub-asset classes.

1 Source: Bloomberg.
2 Source: Bloomberg and InvestMetrics.
3 Source: Bureau of Economic Analysis.
4 Source: US Bureau of Labor Statistics.
5 Source: Eurostat.

September 16, 2022

Periods ended June 30 (net of manager fees)



The Charts above show performance by asset class as well as for the full portfolio, for various time periods.

Investment results (net of manager fees)

Over the last year, the CalSTRS Investment Portfolio produced an absolute return of -1.3% (net of manager fees)—outpacing the median return of its large public pension fund peers, which returned -2.9% according to the State Street Master Trust Universe of Funds over $10 billion. During this period, the portfolio outperformed the policy benchmark[1] return by 91 basis points (see the chart on the previous page). Relative outperformance was assisted by asset classes outperforming their benchmarks in many areas, primarily driven by the Global Equity and Inflation Sensitive asset classes.

During the last three years, CalSTRS generated a 9.3% annualized investment return, net of manager fees, ahead of its benchmark and median return of its peer group by 102 basis points each. Three-year returns were dominated by private market performance (+17.6%), as well as the returns of Public Equity and Inflation Sensitive asset classes as they produced notable returns (+6.2% and +12.0%, respectively). Longer-term performance has also been strong, with CalSTRS posting a 8.7% return over the last five years, and 9.4% over the last ten years. Five-year performance of 8.7% was ahead of the policy benchmark by 75 basis points, and materially exceeded the long-term actuarial assumption for the portfolio.[2]

Sincerely,

Stephen P. McCourt, CFA
Managing Principal

1 The policy benchmark consists of passively managed strategic class portfolios weighted by CalSTRS policy allocations. The difference between actual results and the benchmark are due to two factors: deviations from policy, and active decisions on the part of CalSTRS and our investment managers.

2 CalSTRS investment performance is calculated using a daily time-weighted return geometrically linked to calculate a monthly return. Periods longer than one month are geometrically linked to calculate annualized "time-weighted" rates of return.

Investment objectives

CalSTRS' main goal is to maintain a financially sound retirement system. The following general investment objectives, adopted as part of the Investment Policy and Management Plan, establish a framework for the operation of the CalSTRS Investment Portfolio.

1. **Provide for Present and Future Benefit Payments**—The CalSTRS Investment Program shall: provide liquidity to pay benefits to its participants and their beneficiaries in the amounts and at the times called for through the investment of contributions and other fund assets, strive to meet the assumptions built into the actuarial model and strive to maintain a fully funded pension system.

2. **Diversify the Assets**—Seek to diversify the assets to achieve the desired rate of return at a prudent level of risk. The asset structure must provide for diversification of risk between asset classes in order to manage the risk/return relationship through strategic asset allocation.

3. **The Reduction of CalSTRS' Funding Costs**—Within prudent levels of risk, the reduction of CalSTRS' funding costs shall be a consideration in the organization and structure of the investment portfolio.

4. **Maintain the Trust of the Participants and Public**—Manage the investment program in such a manner that will enhance the member and public's confidence in the CalSTRS Investment Program.

5. **Establish Policy and Objective Review Process**—A formal review of the CalSTRS Investment Policy and Management Plan will be conducted annually, with an updated financial projection developed every two years.

6. **Create Reasonable Pension Investments Relative to Other Pension Funds**—The selection of investment vehicles and policies will be judged against other private and public pension funds. Investment performance, asset management costs, staffing and overall expenses will be compared to other public and corporate pension plans, with special emphasis on comparisons with other large public funds.

7. **Minimize Costs**—Management fees, trading costs and other expenses will be aggressively monitored and controlled.

8. **Compliance with State and Federal Laws**—The investment program must operate in compliance with all applicable state and federal laws and regulations concerning the investment of pension assets.

Basis of presentation

Investment values and related returns for the CalSTRS Investment Portfolio (Total Fund) are presented differently within the Investment and Financial sections of this publication for various reasons. Therefore, it is important to understand the methodology presented in each section. In the Investments section, our news releases and online, investment values and related returns are presented using common investment industry practices that reflect the way we manage our portfolio. This method of presentation provides timely information that is easily compared to benchmarks and peer results.

In the Financial section, the same information is reported in accordance with U.S. Generally Accepted Accounting Principles. The primary difference between the presentations is the categorization of the investments. In this section, amortization from securities lending is included in earned net income. In the Financial section, amortization from securities lending is reported within net appreciation/(depreciation) in fair value of investments. Additional differences result from the timing of recognition of performance for certain investments in the portfolio. In accordance with investment industry practices, private asset performance is reported with a quarter lag; for financial reporting purposes, adjustments are made to bring results current. Both sets of numbers are relevant but reflect different methodologies and serve different purposes.

Performance information in this section is reported net of fees and is calculated using a time-weighted return methodology. The investment information on the CalSTRS website is consistent with investment industry standards and is comparable to the global financial markets, other pension plans and institutional investors. For more information, visit CalSTRS.com.

Investment overview and results

The CalSTRS Investment Portfolio's assets under management ended fiscal year 2021–22 at $301.6 billion.

During the fiscal year, most developed nations, including the U.S., experienced significant increases in inflation, in part caused by the unprecedented fiscal and monetary stimulus enacted more than a year earlier due to the COVID-19 pandemic. Inflationary effects were exacerbated by geopolitical instability as Russia waged war against Ukraine, raising prices and creating challenges in the supply of energy and other key commodities. During the first quarter of calendar year 2022, the Federal Reserve began aggressively raising interest rates to combat inflation, increasing fears of a recession. The combination of these macroeconomic pressures created a uniquely turbulent market environment where both global equities and fixed income were down double digits.

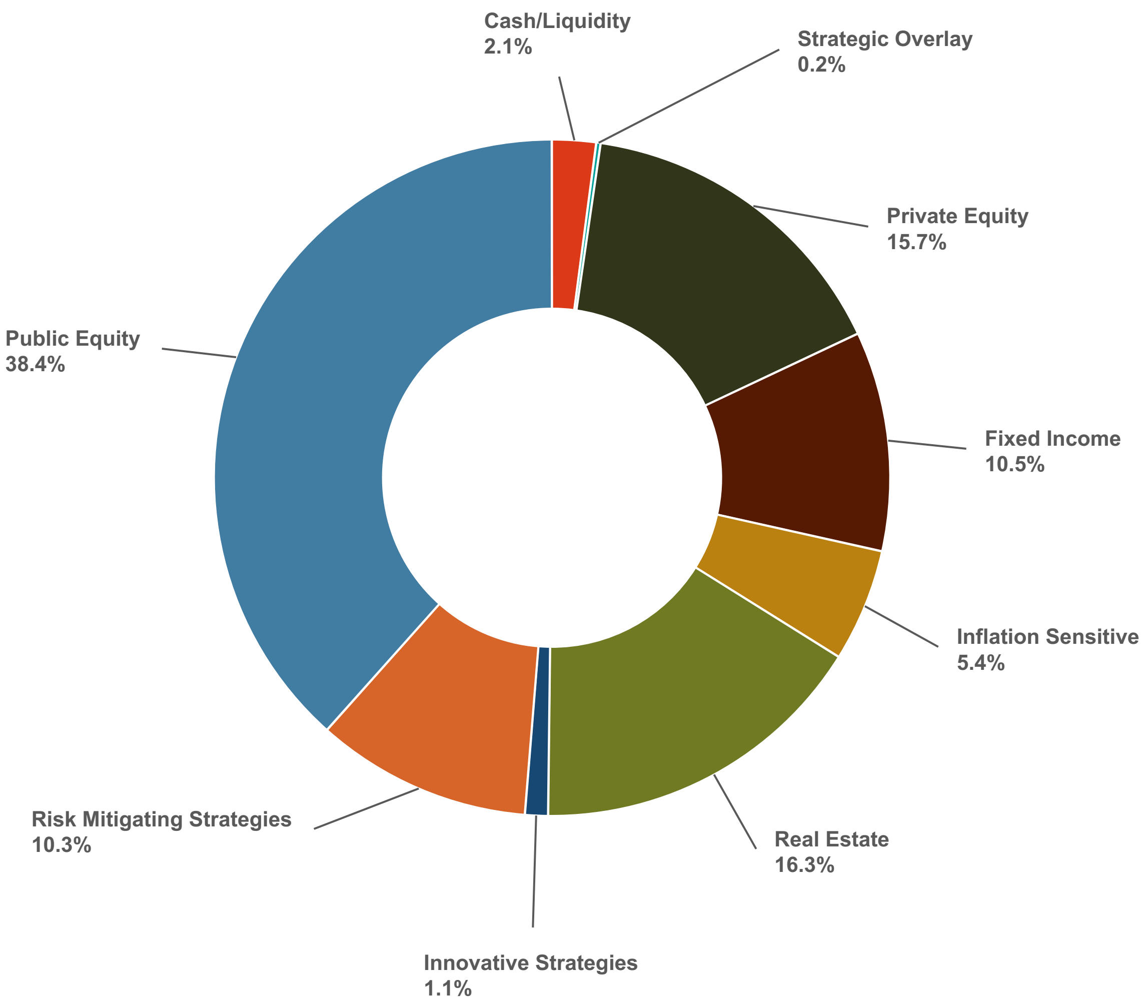
Despite the difficult environment, CalSTRS' diversified portfolio was able to mitigate significant losses with the Total Fund generating a one-year -1.3% return net of fees. While this result is less than the required 7.0% actuarial rate of return for funding purposes, it was above CalSTRS' policy benchmark of -2.2%. This year demonstrated the value of CalSTRS intentionally building and maintaining a highly diversified portfolio consisting of multiple types of assets that provide resilience across the spectrum of different economic regimes. While the Global Equity and Fixed Income asset classes were both down significantly, CalSTRS benefited from solid performance in the Risk Mitigating Strategies, Inflation Sensitive, Real Estate and Private Equity asset classes.

CalSTRS' one-year return ranked in the top quartile of all public pension plans in the U.S.; however, one year is a short time period within a 30-year investment horizon. As a long-term investor, it is more meaningful to review CalSTRS' investment performance over longer time periods. At June 30, 2022, the Total Fund generated 9.3% return net of fees over the past three years, 8.7% over the last five years and 8.0% over the past 30 years—exceeding the 7.0% actuarial rate of return. CalSTRS' investment returns are consistently ranked in the top quartile compared to other U.S. pension funds, over three and five years ended June 30, 2022.

While this annual report provides a significant amount of information regarding the CalSTRS Investment Portfolio, only one point in time is represented: June 30, 2022. It is difficult to compare this time measurement to the movement and complexity of the portfolio in this highly dynamic global financial market. For more current investment information, including additional information about specific asset classes and strategies, as well as videos detailing key aspects of the CalSTRS Investment Portfolio, visit CalSTRS.com.

Asset allocation as of June 30, 2022

Total Investment Portfolio of $301.6 billion[1,2]



[1] Public Equity, Private Equity and Innovative Strategies include Sustainable Investment and Stewardship Strategies public and private investments of $8.8 billion.

[2] Public Equity does not include derivatives, which provide additional exposure to Public Equity bringing the Asset Allocation range within policy limits.

Investment

Table 1

Market value of investments

(fiscal years ended June 30)

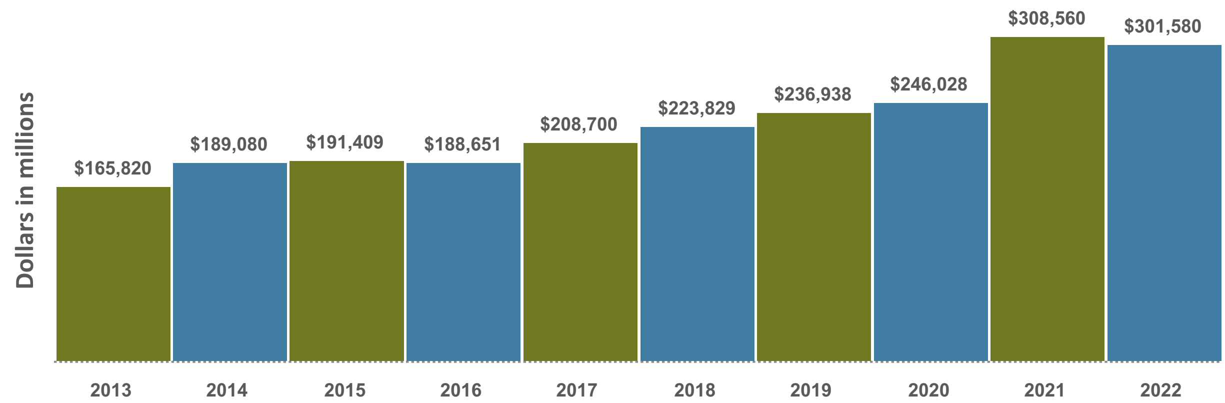


Table 2

10 years of time-weighted annual returns

(fiscal years ended June 30)

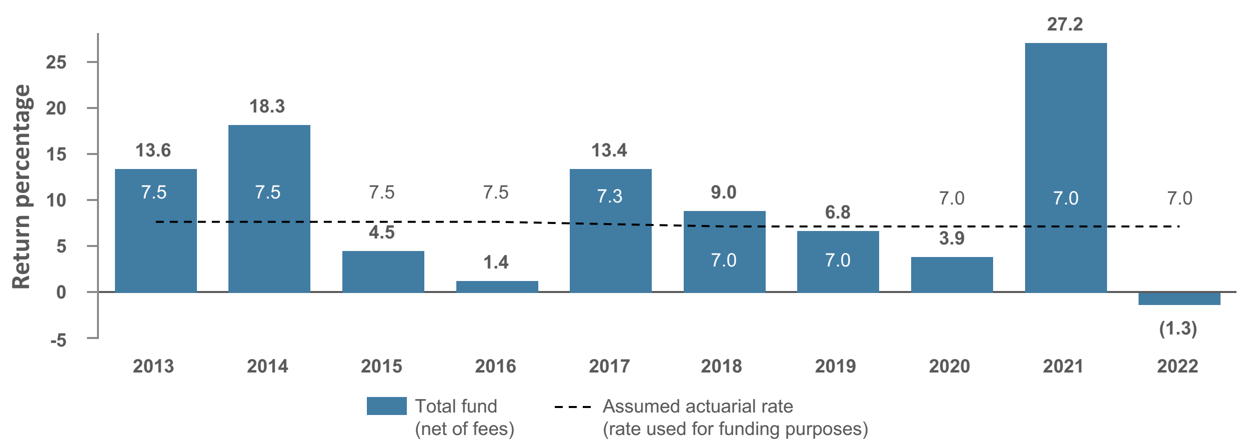


Table 3

Time-weighted returns

(as of June 30, 2022)

Table 4

Time-weighted returns net of fees by portfolio types

(as of June 30, 2022)

CalSTRS' investment performance is calculated using a daily time-weighted return geometrically linked to calculate a monthly return. Periods longer than one month are geometrically linked to calculate annualized "time-weighted" rates of return.

Portfolio type/Associated index[1]	1 year	3 years	5 years	10 years
Public Equity	**(16.6%)**	**6.2%**	**7.1%**	**9.6%**
Public Equity Custom Index	(16.8%)	6.0%	7.0%	9.6%
Fixed Income	**(10.3%)**	**(0.4%)**	**1.4%**	**2.2%**
U.S. Debt Custom Index	(10.4%)	(0.9%)	1.0%	1.7%
Real Estate	**26.2%**	**13.0%**	**11.5%**	**11.4%**
Real Estate Custom Index	27.3%	10.3%	8.9%	10.0%
Private Equity	**23.8%**	**23.4%**	**18.8%**	**15.5%**
Private Equity Custom Index	23.0%	20.4%	17.0%	15.3%
Risk Mitigating Strategies[2]	**8.9%**	**7.7%**	**6.6%**	**3.9%**
Risk Mitigating Strategies Custom Index	6.8%	7.6%	6.3%	2.4%
Inflation Sensitive	**17.5%**	**12.0%**	**10.1%**	**7.0%**
Inflation Sensitive Custom Index	12.9%	8.8%	6.6%	5.5%
Innovative Strategies[3]	**13.0%**	**7.1%**	**8.4%**	**5.0%**
Innovative Strategies Custom Index	0.5%	1.5%	3.2%	3.2%
Cash/Liquidity[4]	**0.3%**	**0.8%**	**1.3%**	**1.2%**
Bloomberg Barclays Capital 3-Month Treasury Bill	0.2%	0.6%	1.1%	0.7%

1 Index benchmarks are as of June 30, 2022, and contain history based on changes within asset class/strategy policies over the prior 10 years. Custom public indices are updated quarterly in accordance with CalSTRS' restricted securities list, Committee on Responsible Investment mandates and Divestment Policy. For additional information on benchmarks, please refer to the respective investment policies on CalSTRS website.

2 Asset class approved by the board in November 2015 and established in July 2016. Prior to July 2016, the assets in this program were part of Absolute Return.

3 Returns prior to July 2016 reflect the Absolute Return composite, which included multiple strategies (including Innovation). The composite was restructured and renamed to Innovative Strategies July 2016.

4 Includes the Securities Lending Program loss incurred in FY 2008-09 and subsequent income earned through December 2013.

Public Equity

For the fiscal year ended June 30, 2022, the Public Equity Portfolio had total assets of $115.7 billion, representing 38.4% of the Total Fund. As shown in Table 4, the Public Equity Portfolio generated a -16.6% one-year return net of fees. The Public Equity Portfolio consists of two main strategies, Global Equity and the Sustainable Investment and Stewardship Strategies (SISS), which are discussed in the next two sections.

Table 5 lists the largest public equity holdings as of June 30, 2022, which represents 13.7% of the Public Equity Portfolio.

Global Equity

For the fiscal year ended June 30, 2022, the $106.8 billion Global Equity Portfolio represented 35.4% of the Total Fund. Approximately 76.8% of the portfolio's assets are internally managed in passively implemented index strategies in the U.S., developed and emerging markets. The remaining assets are managed by external investment managers in active strategies. As of June 30, 2022, this portfolio had 59.5% of its assets in U.S. equity and 40.5% in non-U.S. equity.

The Global Equity Portfolio generated a -16.5% one-year return net of fees, outperforming its policy benchmark by 36 basis points.

Sustainable Investment and Stewardship Strategies

The Sustainable Investment and Stewardship Strategies (SISS) unit leads CalSTRS' activities to transform the financial markets to focus on long-term value creation that fully integrates sustainability—or environmental, social and governance (ESG)—considerations. The SISS unit has three core pillars of activity: the SISS Investment Portfolio, Stewardship and Strategic Relations.

Within the SISS Investment Portfolio, the team currently oversees approximately $8.8 billion of assets under management in three public equity strategies: activist managers, sustainability-focused managers and risk controlled low-carbon strategies. The activist strategies seek to enhance long-term shareholder value by engaging management to transform governance practices, strategy and operations. The sustainability-focused strategies integrate ESG factors into their investment philosophy and process as a means of identifying and driving market outperformance. The risk-controlled, low-carbon strategies (which include an internally managed low-carbon index) seek to mirror the characteristics of the broad market but with significantly lower exposure to carbon emissions.

For the fiscal year ended June 30, 2022, the overall SISS Investment Portfolio generated a -18.7% one-year return net of fees, underperforming its benchmark by 195 basis points.

Table 5

Largest Public Equity holdings

(as of June 30, 2022)

Security name	Shares	Market value
Apple, Inc	27,615,951	$3,775,652,821
Microsoft Corp	12,710,078	3,264,329,333
Alphabet, Inc	1,036,804	2,263,654,605
Amazon.com, Inc	16,037,814	1,703,376,225
Tesla, Inc	1,479,247	996,154,515
UnitedHealth Group, Inc	1,711,238	878,943,174
Taiwan Semiconductor	42,322,181	812,895,779
Johnson & Johnson	4,535,679	805,128,379
Berkshire Hathaway, Inc	2,440,621	666,338,345
NVIDIA Corp	4,261,364	645,980,169

Note: CalSTRS maintains a complete list of portfolio holdings.

During the fiscal year ended June 30, 2021, the SISS team obtained board approval to expand the SISS Portfolio to include private asset investment opportunities that are additive to the Total Fund but intentionally accelerate the transition to a more sustainable global economy. As of the end of this fiscal year, SISS made two private portfolio investments, one in real estate focused on affordable housing and the other in a diverse and emerging manager investing in companies that provide decarbonizing solutions.

The team's stewardship priorities seek to influence and promote sustainable business practices and public policies through corporate and market accountability, board effectiveness, our pledge to a net zero transition by 2050 or sooner, and responsible firearm engagement. Proxy voting is an important component of the SISS unit's stewardship activities. CalSTRS proxy votes can affect necessary changes designed to enhance a company's long-term value. Over the last fiscal year, CalSTRS voted at almost 10,000 global companies, which included over 97,000 individual ballot items. Each year, these voting activities cover a variety of proposals integral to the successful management of companies, including the election of board directors and executive compensation. This year CalSTRS implemented enhanced voting tactics against companies that have moved too slowly to achieve greater board diversity or significantly address climate change.

Strategic Relations activities provide expert and consistent messaging that advances Investments Branch priority initiatives including the collaborative model, diversity and inclusion, and the transition to a low-carbon economy. Additionally, activities seek to build relationships with both internal and external stakeholders, the media and other financial market participants with the intent of preserving CalSTRS' global reputation as a respected leader in the investment management industry.

Fixed Income

For the fiscal year ended June 30, 2022, the Fixed Income Portfolio had total assets of $31.7 billion, representing 10.5% of the Total Fund. The Fixed Income unit operates a hybrid model portfolio that takes advantage of the benefits and efficiencies of both internal and external asset management. Internal staff manages 88.5% of the portfolio's assets using enhanced indexing for core and high-yield strategies with a moderate level of risk as well as a core plus portfolio with a higher level of active risk and return. The remaining 11.5% is managed by external managers using broader opportunistic strategies that assume a higher level of risk and, therefore, a higher level of expected return.

As shown in Table 4, the Fixed Income Portfolio generated a -10.3% one-year return net of fees, outperforming its benchmark by eight basis points. An underweight to duration at the Fixed Income aggregate level combined with a consistent underweight to mortgage-backed securities was the main source of the outperformance. The three-, five- and 10-year net returns have outperformed the benchmark by 42, 40 and 53 basis points, respectively. The portfolio's overweight to credit, investment grade and high yield accounted for much of the longer-term outperformance.

Table 6 lists the largest fixed income holdings as of June 30, 2022, which represent 9.0% of the Fixed Income Portfolio.

Table 6

Largest Fixed Income holdings

(as of June 30, 2022)

Security name	Maturity date	Interest rate	Par value	Market value
U.S. Treasury N/B	5/15/2024	0.250%	$335,000,000	$318,367,773
U.S. Treasury N/B	8/15/2024	0.375%	310,000,000	293,240,625
U.S. Treasury N/B	1/31/2024	0.875%	300,000,000	290,273,439
U.S. Treasury N/B	3/15/2025	1.750%	300,000,000	290,039,064
U.S. Treasury N/B	6/30/2028	1.250%	319,930,000	287,787,033
U.S. Treasury N/B	5/15/2044	3.375%	285,000,000	281,214,844
U.S. Treasury N/B	2/29/2024	2.125%	280,000,000	276,171,876
U.S. Treasury N/B	1/31/2028	0.750%	313,360,000	276,001,613
U.S. Treasury N/B	12/31/2023	2.250%	270,000,000	267,089,063
U.S. Treasury N/B	10/15/2023	0.125%	275,000,000	265,149,415

Note: CalSTRS maintains a complete list of portfolio holdings.

The Fixed Income unit manages two additional programs: Securities Lending and Currency Management, discussed in the following sections.

Securities Lending Program

The Securities Lending Program is a low-risk strategy that allows the fund to use its existing asset base and lending expertise to generate additional income. For the fiscal year ended June 30, 2022, the Securities Lending Program earned approximately $67.4 million in additional net income for the fund, which was a decrease of $5.6 million compared to the previous year. The decrease in earnings is attributed to several factors: lower overall intrinsic revenue opportunities and smaller return spreads from investing end-of-day cash.

Currency Management Program

The Currency Management Program is designed to address the global nature of all the fund's assets and attempts to add value on a fund-wide basis. The currency markets are some of the most liquid and volatile markets CalSTRS operates within.

The internally managed core strategy underperformed its benchmark by two basis points for the year ended June 30, 2022, while the opportunistic external strategy underperformed its benchmark by 85 basis points for the same period. For the internally managed portion, a new flow-based strategy was implemented (and later divested), which had a negative impact on overall returns.

For the externally managed program, the negative performance can be attributed to heightened economic and geopolitical risks. Since inception, the Currency Management Program has outperformed its benchmark by 40 basis points on an annualized basis.

Home Loan Program

The CalSTRS Home Loan Program was established by legislation in 1984 and provided home ownership to qualified participants, which attributed to CalSTRS' investment mortgage asset objectives. New home loan origination activity was suspended by the Teachers' Retirement Board on October 1, 2011. Staff continued to manage the existing assets of $23.1 million for the fiscal year ended June 30, 2022.

Real Estate

The Real Estate Portfolio ended fiscal year 2021–22 with a market value of approximately $49.2 billion, or 16.3% of the Total Fund. Over the last several years, staff has embraced a collaborative model approach with an increase in strategies that provide CalSTRS more discretion with the direction and management of investments. This model allows for an increase in control and provides a better alignment of interests between CalSTRS and our partners. As of June 30, 2022, the implementation of the CalSTRS Collaborative Model has increased CalSTRS direct control to approximately 75% of the Real Estate Portfolio.

Real estate is a long-term asset with performance results influenced by various factors. As shown in Table 4, the Real Estate Portfolio generated a 26.2% one-year return net of fees, underperforming its policy benchmark by 109 basis points. For the second fiscal year in a row, the 10-year return is outperforming the policy benchmark by 137 basis points since the financial crisis in 2008 as it continues to liquidate pre-crisis, higher risk strategies from the portfolio. Staff is focused on using the CalSTRS Collaborative Model by investing in direct, discretionary investments that provide us control and align our interests with our partners. Additionally, staff continues to increase investments in higher control vehicles with low to moderate leverage and risk. Investments that staff has recommended since the global financial crisis of 2008 have outperformed the benchmark in all time periods.

Private Equity

The Private Equity Portfolio ended fiscal year 2021–22 with a market value of $47.2 billion, or 15.7% of the Total Fund. The portfolio consists primarily of investments in limited partnerships, which account for 81% of the allocation, with the remaining assets consisting of co-investments. Over the last several years, CalSTRS has increased the percentage of overall new commitments going to co-investments from under 5% to over 20%.

As shown in Table 4, the Private Equity Portfolio generated net returns of 23.8%, 23.4%, 18.8% and 15.5% for the one-year, three-year, five-year and ten-year time periods, respectively. Performance exceeded the policy benchmark by 75, 297, 181 and 25 basis points, respectively. The one, three and five-year benchmark is a peer-based benchmark. The long-term benchmark is a public market index plus a spread.

Risk Mitigating Strategies

For the fiscal year ended June 30, 2022, the Risk Mitigating Strategies Portfolio had total assets of $30.9 billion, representing 10.3% of the Total Fund. The RMS Portfolio was established on July 1, 2016, with a long-term target allocation of 9.0% of the Total Fund. In November 2019, the Teachers' Retirement Board Investment Committee approved an increase to the long-term strategic allocation to RMS from 9% to 10%. The RMS Portfolio invests in strategies that further diversify CalSTRS' overall investment portfolio, primarily its significant equity exposure. These strategies include trend following, long-duration U.S. Treasuries, global macro and systematic risk premia. Rather than focusing on achieving a specific return objective, the RMS Portfolio is expected to help the Total Fund achieve its return objective by protecting capital during equity downturns or volatile periods.

The RMS Portfolio generated an 8.9% one-year return net of fees for the fiscal year ended June 30, 2022, outperforming its policy benchmark by 217 basis points.

The outperformance was driven by positive relative performance from global macro trend following and long-duration U.S Treasuries. This was partially offset by negative relative performance from systematic risk premia. The long-term returns for the RMS Portfolio are expected to be positive and exhibit low correlation to equity markets.

Inflation Sensitive

For the fiscal year ended June 30, 2022, the $16.4 billion Inflation Sensitive Portfolio represented 5.4% of the Total Fund. The Inflation Sensitive Portfolio invests in strategies that include infrastructure, commodities, U.S. Treasury inflation protected securities, timberland and agriculture.

For the fiscal year ended June 30, 2022, the Inflation Sensitive Portfolio generated a 17.5% one-year return net of fees, outperforming its policy benchmark return of 12.9% by 462 basis points. The outperformance can be attributed to the continued execution of the infrastructure strategy, which includes investments across a variety of risk characteristics that provide essential services in businesses with high barriers to entry.

The infrastructure strategy returned a net 22.2%, beating its benchmark by 933 basis points. The commodities strategy returned a net 22.6%, lagging its benchmark by 122 basis points. The U.S. Treasury inflation protected securities strategy had a net return of -5.1%, beating its benchmark by 9 basis points. The timberland strategy returned 7.6%, lagging its benchmark by 188 basis points. The agriculture strategy returned 5.7%, lagging its benchmark by 613 basis points. Both the timberland and agriculture strategies are much smaller allocations, continue to develop, and are expected in the long term to be positive and less correlated with CalSTRS' overall portfolio. Over the previous three years, the Inflation Sensitive Portfolio outperformed its benchmark by 320 basis points.

Innovative Strategies

For the fiscal year ended June 30, 2022, the $3.2 billion Innovative Strategies Portfolio represented 1.1% of the Total Fund. The objective of the portfolio is to provide a structure for incubating new ideas and investing in strategies seeking to improve the diversification of the Total Fund, enhance its risk-adjusted total return, capture capital appreciation, provide new sources of current income and explore innovative investment structures with better alignment of economic interests. Over the long term, the portfolio seeks to produce a positive real return greater than the CalSTRS assumed actuarial rate of return while testing out new investment strategies and groups of assets for potential growth within the Total Fund.

As shown in Table 4, for the fiscal year ended June 30, 2022, the Innovative Strategies Portfolio generated a one-year return net of fees of 13.0%, outperforming its policy benchmark of 0.5%. With the graduation of RMS into its own asset class in July 2016, returns longer than four years reflect the historical Absolute Return Portfolio performance.

Cash/Liquidity

For the fiscal year ended June 30, 2022, the $6.4 billion Cash/Liquidity Portfolio represented 2.1% of the Total Fund. The portfolio invests in short-term highly liquid securities used to manage cash available for benefit payments and cash flows for the asset class. As shown in Table 4, for the fiscal year ended June 30, 2022, the Cash/Liquidity Portfolio generated a 0.3% one-year return net of fees, outperforming its policy benchmark of 0.2%.

Other investment tables

The following tables summarize investment activity. Table 7 represents the investment summary by portfolio type compared to the prior fiscal year. Table 8 reflects the investment expenses by portfolio type as of June 30, 2022. Investment expenses reflected in Table 8 generally represent direct costs associated with investing. Certain expenses, such as carried interest and management fees related to private assets, are not included; however, these expenses may be reflected within the net asset value. The total investment expenses shown also excludes certain items such as foreign tax withheld and broker commissions. Table 9 displays the broker commissions for the fiscal year ended June 30, 2022.

Table 7

Investment summary for the current and previous fiscal year

(dollars in millions)

	June 30, 2021		June 30, 2022			
Portfolio type	**Book value**	**Net asset value**	**Book value**	**Net asset value**	**% of net asset value**	**Net value change**
Public Equity	$98,087	$153,285	$118,385	$115,650	38.4%	($37,635)
Fixed Income	33,975	32,230	36,373	31,701	10.5%	(529)
Real Estate	35,479	37,860	39,645	49,221	16.3%	11,361
Private Equity	33,653	36,991	40,107	47,249	15.7%	10,258
Risk Mitigating Strategies	24,007	26,659	25,941	30,903	10.3%	4,244
Inflation Sensitive	10,117	11,526	15,648	16,412	5.4%	4,886
Innovative Strategies	1,477	1,559	3,006	3,219	1.1%	1,660
Cash/Liquidity	8,141	8,142	6,411	6,417	2.1%	(1,725)
Strategic Overlay	207	308	956	808	0.2%	500
PORTFOLIO TOTAL	**$245,143**	**$308,560**	**$286,472**	**$301,580**	**100.0%**	**($6,980)**
Adjustments:						
Securities lending collateral		23,905		25,302		
Bond proceeds investment		209		123		
Accruals		6,730		2,243		
Cash		(131)		(253)		
STRP NET INVESTMENTS		**$339,273**		**$328,995**		

Table 8

Schedule of investment expenses

July 1, 2021, through June 30, 2022 (dollars in thousands)

Portfolio type	Net asset value	Investment expenses	Basis points
Public Equity	$115,649,833	$180,155	15.6
Fixed Income	31,701,481	18,745	5.9
Real Estate	49,220,964	28,402	5.8
Private Equity	47,248,732	17,636	3.7
Risk Mitigating Strategies	30,903,507	16,445	5.3
Inflation Sensitive	16,412,524	10,259	6.3
Innovative Strategies	3,218,831	1,020	3.2
Cash/Liquidity	6,416,811	1,764	2.7
Strategic Overlay	807,646	3,884	[1]
TOTAL INVESTMENT ASSETS AND EXPENSES	**$301,580,329**	**$278,310**	**9.2**

[1] Strategic Overlay calculates basis points using notional values instead of net asset values.

Table 9

Broker commissions

July 1, 2021, through June 30, 2022

Broker name	Commission	Shares	Average commission per share
JP Morgan	$2,548,896	518,466,749	$0.005
Goldman Sachs	2,494,955	1,222,610,638	0.002
Merrill Lynch	2,173,831	1,180,948,848	0.002
Morgan Stanley	1,814,266	748,943,927	0.002
Instinet	1,501,578	772,332,732	0.002
UBS	1,368,202	601,438,189	0.002
Citigroup	1,247,247	389,601,281	0.003
Credit Suisse	953,228	1,343,421,607	0.001
Jefferies Financial Group	857,312	423,955,720	0.002
Macquarie Bank Limited	784,921	677,559,858	0.001
All other brokers	7,089,696	1,837,166,332	0.004
TOTAL COMMISSIONS	**$22,834,132**	**9,716,445,881**	**$0.002**

Actuarial section

The actuarial valuation report for the Defined Benefit Program as of June 30, 2021, reported a funded ratio of 73%.

1301 Fifth Avenue
Suite 3800
Seattle, WA 98101-2605
USA

Tel +1 206 624 7940

milliman.com

November 15, 2022

Teachers' Retirement Board
California State Teachers' Retirement System

Re: Valuation of the DB, DBS, CBB, and MPP Programs

Dear Members of the Board:

Annual valuations are performed for four benefit programs administered by the California State Teachers' Retirement System (CalSTRS).

Defined Benefit Program

The basic financial goal of the CalSTRS Defined Benefit Program is to establish contributions which fully fund the obligations and which, as a percent of payroll, remain level for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

CalSTRS measures its funding status as the Funded Ratio of the actuarial value of assets over the actuarial obligation. The funding status based on the past three actuarial valuations is shown below:

Valuation Date	Funded Ratio
June 30, 2019	66.0%
June 30, 2020	67.1%
June 30, 2021	73.0%

Based on the June 30, 2021 actuarial valuation, the scheduled income from member, employer, and state contributions is projected to finance the DB Program on an actuarially sound basis. The DB Program is projected to reach approximately a 100% Funded Ratio by 2041.

Defined Benefit Supplement and Cash Balance Benefit Program

The basic financial goal of the Defined Benefit Supplement (DBS) Program and the Cash Balance Benefit (CBB) Program is to maintain sufficient resources to fully fund the obligations. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

CalSTRS measures its funding status as the Funded Ratio of the actuarial value of assets over the actuarial obligation. The funding status based on the past three actuarial valuations is shown below:

Valuation Date	DBS Funded Ratio	CBB Funded Ratio
June 30, 2019	125.0%	121.6%
June 30, 2020	121.8%	117.9%
June 30, 2021	135.7%	131.2%

As of June 30, 2021, the fair value of assets for the DBS and CBB Programs exceeded the respective program's actuarial obligation. Additional interest credits were granted based on the respective programs' funded levels and are reflected in the Funded Ratio shown above. For both programs, the actual return was greater than the assumed return for the fiscal year ended in 2021 which caused an increase in the Funded Ratio.

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Medicare Premium Payment Program

The basic financial goal of the Medicare Premium Payment (MPP) Program is to maintain sufficient resources to fully fund the obligations. Actuarial valuations are performed every year (every two years prior to 2017) and measure the progress toward this goal, as well as test the adequacy of the contribution rates. The most recent valuation was as of June 30, 2021.

The MPP Program is essentially funded on a pay-as-you-go basis with a portion of contributions to the DB Program diverted to the Teachers' Health Benefit Fund to make MPP Program payments. As of June 30, 2021, $259 million of future employer contributions to the DB Program have been allocated to pay the MPP Program benefits; however, this amount is not included as an asset for GASB 74 reporting. This gives the appearance that the MPP Program is significantly underfunded in the GASB 74 results. However, based on the commitment to transfer a portion of future contributions from the DB Program to fund the MPP Program, it is our opinion that the MPP Program continues in sound financial condition as of June 30, 2021.

Data, Assumptions and Methods Applicable to All Programs

The June 30, 2021 valuation results are based on the membership data and the asset information provided by CalSTRS. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes, although we have not audited the data at the source. 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 found to be materially inaccurate or incomplete, our calculations will need to be revised. The valuation results were developed using models intended for valuations that use standard actuarial techniques.

Milliman did not prepare the summaries or schedules shown in the Financial and Actuarial Sections. However, the actuarial information contained in the Financial Section and in this Actuarial Section was derived from our June 30, 2021 actuarial valuation reports for funding and our 2022 GASB 67/68 and GASB 74/75 reports that communicated the actuarial results for financial reporting for June 30, 2022.

The actuarial computations presented in the valuation reports are for purposes of determining the recommended funding amounts for CalSTRS consistent with our understanding of their funding requirements and goals. For the DB and MPP Programs, the Actuarial Obligation is determined by using the entry age normal funding method; the traditional unit credit method is used for the DBS and CBB Programs. For the DB Program, the actuarial assets are determined by using a one-third smoothed recognition method of the difference between the actual fair value to the expected actuarial value. For the other programs the fair value was used with no smoothing applied.

The valuations are based on our understanding of the current benefit provisions for the respective programs and the actuarial assumptions adopted by the Board. The assumptions are reviewed annually for reasonableness, with a detailed experience analysis completed every four years as per Board policy. Note that experience studies could be completed off cycle if deemed necessary. The last detailed experience analysis was completed in January of 2020 when the Board adopted the current assumptions. The assumptions are scheduled to be reviewed in detail again for use in the June 30, 2023 funding valuation and the GASB valuations for reporting date June 30, 2024. The assumptions and methods used for financial reporting under GASB 67/68 and GASB 74/75 are the same as the funding valuation assumptions with the following exceptions:

1. The discount rate of 7.10% (gross of administrative expenses) is used for the DB, DBS & CBB Programs;
2. The discount rate of 3.54% is used for the MPP Program based on the rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher;
3. The fair value of assets is used for the Fiduciary Net Position (i.e., there is no smoothing of the DB Program assets for GASB 67/68), and;
4. The individual entry age normal cost method, as specified by GASB, is used for all programs.

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For financial reporting purposes, all programs within the State Teachers' Retirement Plan are reported in aggregate. This includes the obligation, and associated assets, for purchasing power benefits financed through the Supplemental Benefit Maintenance Account.

We believe the actuarial assumptions and methods are internally consistent, reasonable and meet the parameters of Governmental Accounting Standards Board Statement Numbers 67, 68, 74, 75 and 82 for fulfilling financial reporting requirements and meet the parameters set forth in the relevant Actuarial Standards of Practice (ASOPs). Nevertheless, the emerging costs will vary from those presented in our report to the extent that actual experience differs from that projected by the actuarial assumptions. Future actuarial measurements may differ significantly from the current measurements as presented in the valuation report due to many factors. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

Our valuation report and this letter have been prepared exclusively for CalSTRS for a specific and limited purpose. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. It is a complex, technical analysis that assumes a high level of knowledge concerning CalSTRS operations, and uses CalSTRS data, which Milliman has not audited. 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 these assignments are retirement and OPEB (Other Postemployment Benefit) 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.

We certify that the June 30, 2021 valuations were performed in accordance with the Actuarial Standards Board (ASB) standards of practice and by qualified actuaries. We are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems.

Respectfully submitted,

Nick Collier

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

Scott Preppernau

Scott D. Preppernau, FSA, EA, MAAA
Principal and Consulting Actuary

Julie D. Smith

Julie Smith, FSA, EA, MAAA
Consulting Actuary

Daniel Wade

Daniel Wade, FSA, EA, MAAA
Principal and Consulting Actuary

Actuarial methods

CalSTRS administers the Defined Benefit (DB), Defined Benefit Supplement (DBS), Cash Balance Benefit (CBB) and Medicare Premium Payment (MPP) programs. The DB Program and the MPP Program are cost-sharing multiple employer programs. The DBS and CBB programs are cash balance plans. CalSTRS has adopted actuarial methods with the objective of funding these programs in a manner that minimizes year-to-year variation in cost while ensuring sufficient assets are accumulated over each member's working career. The following is a summary of the various methods used for each program.

Actuarial cost method

For funding purposes, the entry age normal cost method was selected for both the DB and MPP programs since it provides for a cost allocation that remains fairly level over time as a percentage of payroll, which can be beneficial for budget planning purposes. The traditional unit credit actuarial cost method was selected for the DBS and the CBB programs since the projected benefits of each individual member are allocated by a consistent formula to valuation years. As a result, the actuarial obligation is equal to the accumulated account balances, and the normal cost is equal to the total annual contribution. Neither the DBS Program nor the CBB Program provide a cost-of-living adjustment for benefit recipients.

Asset valuation method

The DB Program uses an asset smoothing method, as adopted by the Teachers' Retirement Board, which projects an Expected Actuarial Value of Assets using the assumed rate of investment return, then one-third of the difference between the Expected Value and the Fair Value is recognized in the Actuarial Value of Assets. The DBS Program and the CBB Program use the fair value of assets for actuarial valuation purposes, and asset smoothing is not used for these two programs. Because the MPP Program was created using surplus assets of the DB Program, the MPP Program is considered fully funded for funding purposes. Assets are equal to the actuarial obligation of the MPP Program, and asset smoothing is not used for this program.

Funding method

Defined Benefit Program

The DB Program is funded through contributions from members, employers and the State of California under the rules established in 2014 when the California Legislature and the Governor enacted the CalSTRS Funding Plan, a joint commitment set forth in statute with the goal of achieving full funding of the DB Program by 2046. The funding plan provided additional contributions to amortize actuarial gains and losses and the unfunded actuarial obligation over a closed period ending June 30, 2046.

Member DB contributions: For members covered by the CalSTRS 2% at 60 benefit formula, the contribution rate is 10.250% of creditable compensation. For members covered by the CalSTRS 2% at 62 benefit formula, the contribution rate is equal to one-half of the normal cost rate determined in the valuation rounded to the nearest quarter percent, plus a supplemental amount. The contribution rate for CalSTRS 2% at 62 members only changes when the normal cost rate changes by more than 1% of creditable compensation as compared to the normal cost rate at the time of the last adjustment. For the fiscal year ended June 30, 2022, the contribution rate for CalSTRS 2% at 62 members was equal to 10.205% of creditable compensation.

Employer DB contributions: Employers pay a base contribution rate of 8.25% of creditable compensation. Additionally, employers contribute a supplemental contribution rate pursuant to the CalSTRS Funding Plan for the purpose of amortizing the employers' share of the unfunded actuarial obligation by the fixed date of June 30, 2046. In addition, effective with the 2021–22 fiscal year, the board has limited authority to adjust the contribution rate by no more than 1% a year to a maximum of 20.25% to amortize the remaining unfunded actuarial obligation by the 2046 deadline. For the past three years, the employers were provided rate relief from the state that resulted in an effective contribution rate less than the total indicated by the funding plan and adopted by the board. Thus, for fiscal year 2021–22, although the board adopted a total rate of 19.1% of creditable compensation, the effective contribution rate for employers was 16.92% of creditable compensation after the rate relief. For fiscal year 2022-23, the board elected to maintain the total employer contribution rate at 19.1% of creditable compensation, which will also be the effective contribution rate for employers for fiscal year 2022–23.

State DB contributions: The state's base and supplemental contribution to the DB Program is calculated based on creditable compensation from two fiscal years prior. The state contributes at a base contribution rate of 2.017% of creditable compensation. Additionally, the state contributes a supplemental contribution pursuant to the CalSTRS Funding Plan for the purpose of amortizing the state's share of the unfunded actuarial obligation by the fixed date of June 30, 2046. The board currently has limited authority to adjust the state contribution rate by no more than 0.5% a year to amortize the unfunded actuarial obligation by the 2046 deadline. For fiscal year 2022–23, the board elected to maintain the state contribution rate at 8.328% of creditable compensation. The state also contributes an additional 2.5% of members' creditable compensation, minus $72 million, to protect retirees' purchasing power.

Other programs

For the DBS Program, member and employer contributions are credited to the member's account for service credit that exceeds one year during a single school year. For CalSTRS 2% at 60 members, compensation for limited-term payments and compensation determined to have been paid to enhance their DB Program benefits are also credited to the member's account. CalSTRS 2% at 60 members and employers each contribute 8% for a total of 16% of salary for service creditable to DBS. For members under CalSTRS 2% at 62, members contribute 9% and employers contribute an additional 8% for a total of 17% of salary for service creditable to DBS. Generally, for the CBB Program, participants and employers each contribute 4% of salary. Rules for contribution rates may differ for participants covered by a collective bargaining agreement, but the sum of participant and employer contributions must equal or exceed 8% of salary. The employer contribution rate cannot be less than 4% of salary, and the participant rate cannot be less than the employer rate. The board may adjust employer contributions for a fixed number of years, but the adjustment cannot exceed 0.25% of salaries in any plan year.

For both the DBS and CBB programs, there is currently no provision in the Education Code to increase contributions to make up for any future shortfalls (if they were to occur). However, the assumed return on investments currently exceeds the minimum interest rate. To the extent that the assets earn more than the accounts are credited in the future, this may be sufficient to make up any potential shortfall.

The MPP Program is funded on a pay-as-you go basis from a portion of monthly employer contributions of the DB Program. In accordance with Education Code section 25930 and board policy, contributions of the DB Program that would otherwise be credited to the DB Program each month are instead credited to the MPP Program to fund monthly program and administrative costs. For funding purposes, the MPP Program is assumed to be 100% funded by including the value of future employer contributions that have been allocated to fully fund the MPP Program obligations. As a result, the funding method does not require an amortization method for any unfunded actuarial obligation or surplus. Actuarial gains and losses are funded as they occur through the pay-as-you-go method described above. There are no retiree contributions, per capita claims costs or pay increase assumptions.

Financial reporting method

Under Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans—an amendment of GASB Statement No. 25*, financial reporting for the State Teachers' Retirement Plan (STRP) includes the DB (including the Purchasing Power Protection), DBS, CBB and Replacement Benefits programs. For financial reporting, the aggregate assets of all programs in the STRP on a fair value basis are used in the determination of the net pension liability. GASB Statement No. 67 also specifies that, for financial reporting purposes, the entry age normal cost method should be used to calculate total pension liability.

For financial reporting purposes of the MPP Program, the actuarial cost method used is the entry age normal cost method as specified by GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other than Pension Plans*. The asset valuation method is fair value of assets.

Actuarial assumptions

The actuarial valuations use two types of assumptions: economic and demographic. Economic assumptions are related to the general economy and its impact on CalSTRS. Demographic assumptions predict the future experience of the membership with respect to eligibility and benefits and are directly related to the specific experience of CalSTRS members. As the DB Program and the DBS Program share the same population, it is reasonable to use most of the same assumptions for both programs. The assumptions for the DBS Program and the CBB Program will have minimal impact under the traditional unit credit actuarial cost method or only have significance when participants elect to annuitize the account balance. Under the DBS Program and the CBB Program, a member must have at least $3,500 in their account to elect to annuitize the account balance.

CalSTRS, through our consulting actuary, generally performs an experience study every four years to determine appropriate demographic and economic assumptions. These assumptions are then applied when the consulting actuary performs actuarial valuations to monitor the funding status of the DB, DBS, CBB and MPP programs.

The most recent experience study for demographic and economic assumptions examined data for the three-year period spanning July 1, 2015, through June 30, 2018, and the assumptions were adopted by the board in January 2020. Following is a summary of the different types of assumptions used.

Economic assumptions

The two major economic assumptions for the DB, DBS and CBB programs are investment return and wage growth, and each is affected by the underlying assumed rate of inflation. The assumption for investment return, also known as the discount rate, is 7.00% for the DB and DBS programs and 6.50% for the CBB Program (net of investment and administrative expenses). The investment return assumption for the CBB program is 0.5% lower than the assumption for the DB and DBS programs due to differences in asset allocations between the programs. The assumption for general wage increase is 3.50%, of which 2.75% is due to inflation and 0.75% is due to expected gain in productivity.

The major economic assumptions used for the MPP Program valuation are the investment return, medical inflation and rate of inflation. The investment return assumption for the MPP Program is 7.00% (net of investment and administrative expenses). The assumption for premium cost trend rates varies by years; however, the increases are approximately equivalent to a 4.5% and 5.4% increase each year for Medicare Part A and Part B, respectively. The assumption for price inflation is also 2.75%.

As required by GASB Statement No. 67 for financial reporting for the STRP, the discount rate of 7.10% is net of investment expenses but gross of administrative expenses. The MPP Program is funded on a pay-as-you-go basis, and the other postemployment benefit plan's fiduciary net position was not projected to be sufficient to make projected future benefit payments. As such, GASB Statement No. 74 requires the MPP Program's discount rate be based on 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher. The board has adopted The Bond Buyer 20-Bond GO Index for this purpose. The MPP Program's discount rate as of June 30, 2022, is 3.54%. Table 6 provides a summary of the economic actuarial assumptions for these programs as reflected in the most recent actuarial valuations.

Demographic assumptions

Demographic assumptions are based on the most recent CalSTRS experience study adopted by the board in January 2020 and include assumptions for postretirement mortality; probabilities of retirement, disability or withdrawal from the system; assumptions for pay increases due to promotions; and various other assumptions needed to value the DB, DBS and CBB program benefits. Members whose retirement date is on or after July 1, 2012, are not eligible for coverage under the MPP Program. As such, no active members are eligible for benefits under the MPP Program, and the assumptions related to active members are not applicable to this program. The primary MPP Program demographic assumptions are postretirement mortality rates and program enrollment rates. Tables 1 through 5 and 7 through 9 provide a summary of the demographic assumption information for these programs as reflected in the most recent actuarial valuations.

Changes since prior valuation

Changes in actuarial methods

There were no changes in the actuarial methods for the DB, DBS, CBB and MPP programs. In January 2022, the board adopted changes to the DB valuation policy that include limiting decreases in the state supplemental contribution rate and removing a provision that could have resulted in an increase in the employer supplemental contribution rate if the state supplemental contribution rate was not sufficient.

Changes in actuarial assumptions

There were no changes in the funding actuarial assumptions for the DB, DBS, CBB and MPP programs. The discount rate used for financial reporting for the MPP Program for the fiscal year ended June 30, 2022, was 3.54%, an increase of 1.38% from prior year.

Changes in plan provisions

There were no changes in plan provisions for the DBS, CBB and MPP programs that were reflected in the June 30, 2021, actuarial valuations. In June 2021, the board increased the lump-sum death benefits for the DB Program by 1.7% effective July 1, 2021, which was reflected on the June 30, 2021 valuation. Subsequent to the completion of the valuation, the board adopted an increase to the lump-sum death benefit of 6.5% effective July 1, 2022. This increase was included for financial reporting purposes and will be included for funding purposes in the June 30, 2022, valuation. In May 2022, the board adopted 13.21% and 11.65% additional earnings credits for the fiscal year ended June 30, 2021, for the DBS Program and the CBB Program, respectively. These additional earnings credits have been reflected in the June 30, 2021, valuations of both the DBS and CBB programs.

Valuation results

The most recent DB, DBS, CBB and MPP program actuarial valuations were completed as of June 30, 2021. All actuarial valuations were presented to the board on May 4, 2022.

The DB Program valuation showed a decrease of $16.2 billion in the unfunded actuarial obligation of the DB Program to a total of $89.7 billion and an increase in the funded ratio from 67.1% to 73.0%. This increase is primarily attributable to a greater than expected investment return of 27.2% in fiscal year 2020-21. Despite the investment loss experienced in fiscal year 2021-22, the DB Program is still projected to reach approximately 100% funding by 2046, the target set by the funding plan. The DB Program actuarial valuation provides the best estimate of the program's long-term financing by using the actuarial methods and assumptions adopted by the board. Comparing the unfunded actuarial obligation as of two valuation dates does not provide enough information to determine if there were actuarial gains or losses. A better comparison is between the unfunded actuarial obligation on the valuation date and the expected unfunded actuarial obligation projected from the prior valuation date using the actuarial assumptions in effect for the period of comparison.

Actuarial gains reduce the DB Program's unfunded actuarial obligation as of the valuation date, and actuarial losses increase the DB Program's unfunded actuarial obligation. Most actuarial gains and losses are a result of short-term fluctuations in experience. Because of the long-term nature of actuarial assumptions, future patterns of emerging experience may offset these short-term fluctuations.

The DBS Program valuation determined there was an actuarial surplus of approximately $6.0 billion before the awarding of any additional earnings credit. After awarding the 13.21% additional earnings credit, the actuarial surplus was reduced to $4.7 billion.

The CBB Program valuation determined there was an actuarial surplus of approximately $152.1 million before the awarding of any additional earnings credit. After awarding the 11.65% additional earnings credit, the actuarial surplus was reduced to $115.0 million.

The MPP Program valuation indicated that the current program assets, along with MPP Program-allocated funding from future employer contributions that would otherwise have been credited to the DB Program, were sufficient to finance the future MPP Program obligations of $258.9 million for both Medicare Part A premiums and Medicare Parts A and B late enrollment surcharges.

Tables 10 through 14 provide summaries of all the valuation results. The data displayed in Table 10 is as of June 30 of the specified year. Other information, specifically annual payroll amounts, reported in the Financial section of this report will generally not be consistent with this data as the financial data reflects payroll for all individuals who were active during the year, while Table 10 only includes those individuals who are active as of June 30. It does not include those individuals who were active at some point during the year but not as of June 30.

In addition, amounts provided in Table 11 represent the status of the population as of June 30 of the indicated year. For the DB Program, information provided in the "Removed from rolls" and "Rolls end of year" columns include the application of the noncompounded 2% annual postretirement benefit adjustment.

The data provided for each year in Table 11 is a snapshot of the population taken following year-end closing for the indicated period. It is likely adjustments will be made subsequent to this closing. No attempt is made to update the data in Table 11 for these adjustments.

Independent actuarial review

Actuarial services for CalSTRS are provided under contract by a qualified independent actuarial firm with additional review provided by CalSTRS actuarial staff. The current actuarial firm, Milliman, has been the program's actuarial firm since January 15, 2000.

In addition to the review performed by CalSTRS actuarial staff, all actuarial services are subject to a periodic independent review. The selection of the firm performing the independent review is done through the competitive bid process. In 2019, CalSTRS selected the actuarial firm Cheiron to perform the independent review of all actuarial work performed by Milliman.

In the spring of 2020, Cheiron completed its review of the 2020 actuarial experience study. Cheiron found the recommendations made by Milliman in the Actuarial Experience Study to be reasonable, and they agreed with the rationales and processes that led to Milliman's recommendations. In the fall of 2020, Cheiron completed its review of the June 30, 2019, actuarial valuations for all programs. Overall, Cheiron was able to replicate the results of all of the actuarial valuations with no material differences. Cheiron commented that the actuarial valuations were performed by qualified actuaries and in accordance with generally accepted actuarial principles. Both independent review reports are available on CalSTRS.com.

Summary of plan provisions — DB Program

The plan provisions of the DB Program are detailed in the Teachers' Retirement Law. The following is a summary of these provisions, which were used in the June 30, 2021, valuation of the DB Program.

Normal retirement

Eligibility requirement—CalSTRS 2% at 60 members: Age 60 with five years of credited service.

CalSTRS 2% at 62 members: Age 62 with five years of credited service.

Benefit–2% of final compensation for each year of credited service.

Benefit factors

Credited service—For each year of membership, credited service is granted based on the ratio of salary earned to annualized pay rate. No more than one full year of service credit is allowed during any school year; however, the contributions for any service in excess of one year are deposited to the member and employer contribution accounts within the DBS Program.

Contributions received for DBS compensation that are attributable to increases under the CalSTRS Funding Plan will be returned to school district employers. School district employers return excess member contributions to their employees, and the returned pre-tax contributions will be considered taxable income in the year they are received by the employee.

Final compensation—CalSTRS 2% at 60 members: Highest average annual compensation earnable for 36 consecutive months of credited service. For members with 25 or more years of service, the calculation is based on the highest average annual compensation earnable for 12 consecutive months.

CalSTRS 2% at 62 members: Final compensation is based on the highest average annual compensation earnable for 36 consecutive months of credited service. The annual compensation limit in 2021–22 was $154,418 and is adjusted annually based on changes to the Consumer Price Index for All Urban Consumers. CalSTRS 2% at 62 members are not eligible for the one-year final compensation benefit enhancement.

Internal Revenue Code (IRC) section 401(a)(17)—Compensation is limited under IRC section 401(a)(17) and assumed to increase at the rate of inflation. The annual compensation limit effective in fiscal year 2021–22 was $290,000.

Sick leave service credit—Credited service is granted for unused sick leave at the time of retirement. Up to 0.2 years of credited service for sick leave may be used for eligibility for one-year final compensation or to attain the career factor or the longevity bonus for eligible members.

Career factor—If a CalSTRS 2% at 60 member has 30 or more years of credited service, the age factor is increased by 0.2%. However, the maximum age factor is 2.4%. The career factor does not apply to CalSTRS 2% at 62 members.

Longevity bonus—If a CalSTRS 2% at 60 member attains 30 years of service before January 1, 2011, a longevity bonus of $200 per month is added to the Member-Only Benefit. The bonus is increased to $300 per month with 31 years of service and $400 per month with 32 or more years of service. The longevity bonus does not apply to CalSTRS 2% at 62 members.

Postretirement benefit adjustment

Annual Benefit Adjustment—2% simple increase on September 1 following the first anniversary of the effective date of the benefit, applied to all continuing benefits.

IRC Section 415(b)—For all CalSTRS members, benefits are subject to federal limits imposed under IRC section 415(b). When performing the actuarial valuation of the DB Program, the 415(b) limits are ignored in order to address the potential pay-as-you-go funding needs of the Teachers' Replacement Benefits Program Fund. Note that CalSTRS 2% at 62 members are not eligible to receive benefits from the Teachers' Replacement Benefits Program Fund and are not expected to ever receive benefits in excess of the federal limit as a result of limits on creditable compensation as per the California Public Employees' Pension Reform Act of 2013.

Early retirement

Eligibility requirement—CalSTRS 2% at 60 members: Age 55 with five years of credited service, or age 50 with 30 years of credited service.

CalSTRS 2% at 62 members: Age 55 with five years of credited service.

Benefit reduction—CalSTRS 2% at 60 members:

A 0.5% reduction in the normal retirement allowance for each full month or partial month the member is younger than age 60, plus a reduction of 0.25% for each full month or partial month the member is younger than age 55.

CalSTRS 2% at 62 members: A 0.5% reduction in the normal retirement allowance for each full month or partial month the member is younger than age 62.

Late retirement

Benefit—CalSTRS 2% at 60 members: For members who continue to earn additional service credit after age 60, the 2% age factor increases by 0.033% for each quarter year of age that the member is over age 60, up to a maximum of 2.4%.

CalSTRS 2% at 62 members: For members who continue to earn additional service credit after age 62, the 2% age factor increases by 0.033% for each quarter year of age that the member is over age 62, up to a maximum of 2.4%.

Deferred retirement

Benefit—Any time after satisfying the minimum service requirement, a member may cease active service, leave the accumulated contributions on deposit and later retire upon attaining the minimum age requirement.

Disability Allowance—Coverage A

Eligibility requirement—Applicable only to members who became a member before October 16, 1992, who did not elect Coverage B. Member has five years of credited California service and has not attained age 60, or a member has earned one year of creditable service and is disabled due to an unlawful act of bodily harm committed by another person while performing creditable service.

Benefit—50% of earned final compensation.

- or -

5% of final compensation for each year of service credit if over age 45 with fewer than 10 years of service credit.

Children's benefit—10% for each eligible dependent child, up to a maximum of 40% of earned final compensation. The increment for each eligible child continues until the child marries or attains age 22.

Offsets—Benefit, including children's increment, is reduced by disability benefits payable under Social Security, workers' compensation and employer-paid income protection plans.

Disability Allowance—Coverage B

Eligibility requirement—Applicable to members who became members on or after October 16, 1992, and to certain other members who elected Coverage B. Member has five years of credited California service, or a member has earned one year of creditable service and is disabled due to an unlawful act of bodily harm committed by another person while performing creditable service.

Benefit—50% of earned final compensation, regardless of age and service credit.

Children's benefit—10% for each eligible child up to four children, for a maximum of 40% of earned final compensation. The increment for each child continues until the child attains age 21, regardless of student, marital or employment status.

Offsets—The member's benefit is reduced by disability benefits payable under workers' compensation.

Death before retirement—Coverage A

Eligibility requirement—Applicable only to members who became a member before October 16, 1992, who did not elect Coverage B. One or more years of service credit for active members or members receiving a disability benefit.

Lump-sum payment—Effective July 1, 2021, the one-time death benefit recipient receives a $6,480 lump-sum payment for deaths that occurred during the 2021–22 fiscal year.

Benefit—The surviving spouse or registered domestic partner with eligible children will receive a family benefit of 40% of final compensation for as long as there is at least one eligible child. An additional 10% of earned final compensation is payable for each eligible child up to a maximum benefit of 90%.

If there is no surviving spouse or registered domestic partner, a benefit of 10% of earned final compensation is payable to eligible children up to a maximum benefit of 50%.

When there are no eligible children, the spouse or registered domestic partner may elect to receive one-half of a 50% joint and survivor benefit projected to age 60 or take a lump-sum payment of the remaining contributions and interest.

Death before retirement—Coverage B

Eligibility—Applicable to members who became members on or after October 16, 1992, and to certain other members who elected Coverage B. One or more years of service credit for active members.

Lump-sum payment—Effective July 1, 2021, the one-time death benefit recipient receives a $25,920 lump-sum payment for deaths that occurred during the 2021–22 fiscal year.

Benefit–A lump-sum payment of the contributions and interest.

- or -

One-half of a 50% joint and survivor benefit, beginning on the member's 60th birthday or immediately with a reduction based on the member's age and that of the spouse or registered domestic partner at the time the benefit begins.

If the surviving spouse or registered domestic partner elects a monthly benefit, or there is no surviving spouse, each eligible child would receive 10% of the member's earned final compensation, with a maximum benefit of 50%.

Death after retirement

Lump-sum payment—Effective July 1, 2021, the one-time death benefit recipient received a $6,480 lump-sum payment for deaths that occurred during the 2021–22 fiscal year.

Benefit—Members of retirement age may make a preretirement election of an option to designate a beneficiary.

Annuity form—If the retired member had elected one of the joint and survivor options, the option beneficiary's benefit would be reduced in accordance with the option elected.

If no option was elected, payment of the unpaid contributions and interest, if any, remaining in the member's account will be made to the beneficiary, if one is named, or to the deceased member's estate.

Termination from CalSTRS

Refund—Refund of the member's contributions with interest as credited to the member's account to date of withdrawal. A refund terminates membership and all rights to future benefits from the program.

Re-entry after refund—Former members who re-enter the program may redeposit all amounts previously refunded plus regular interest. The member must earn one year of credited service after re-entry before becoming eligible for program benefits.

Summary of plan provisions — DBS Program

The plan provisions of the DBS Program are detailed in the Teachers' Retirement Law. The following is a summary of these provisions, which were used in the June 30, 2021, valuation of the DBS Program.

Membership

Eligibility requirement—All members of the DB Program who perform creditable service and earn creditable compensation after December 31, 2000, have a DBS account.

Member—An eligible employee with creditable service subject to coverage who has contributions credited in the program or is receiving an annuity from the program.

Account balance

Account balance—Nominal accounts are established for the purpose of determining DBS benefits payable to the member. Accounts are credited with contributions, interest at the minimum interest rate and, if applicable, additional earnings credits.

Contributions—Member and employer contributions are credited to the member's DBS account for service credit in excess of one year during a single school year, and for CalSTRS 2% at 60 members, compensation for limited-term payments and compensation determined to have been paid to enhance their DB Program benefits are credited.

Minimum interest rate—Annual rate determined for the plan year by the board in accordance with federal laws and regulations. The minimum interest rate is equal to the average of the yields on 30-year Treasury Notes for the 12 months ending in February preceding the beginning of the plan year, rounded to the next highest 0.01%. The minimum interest rate is not less than the rate at which interest is credited under the DB Program.

Additional earnings credit—Annual rate determined for the plan year by the board based on the actual earnings during the plan year but only to the extent the earnings are sufficient to credit the minimum interest rate and provide any additions to the gain and loss reserve deemed warranted by the board.

The board adopted an additional earnings credit of 13.21% for the fiscal year ended June 30, 2021. The credit is applied to the June 30, 2021, account balance for members who have not yet retired as of the board adoption date of May 4, 2022.

Normal retirement

Eligibility requirement—Receipt of a corresponding benefit under the DB Program.

Benefit—The account balance at the benefit effective date subject to limits imposed under IRC section 415(b).

Form of payment—The normal form of payment is a lump-sum distribution. Annuity options are available if the account balance is at least $3,500.

Early retirement

Eligibility requirement—Same as normal retirement.

Benefit and form of payment—Same as normal retirement.

Late retirement

Benefit and form of payment—Same as normal retirement.

Contributions and interest continue to be credited to the account balance.

Deferred retirement

Benefit—A member must receive a DBS Program benefit when the corresponding benefit is received under the DB Program.

Disability benefit

Eligibility requirement—Receipt of a corresponding benefit under the DB Program.

Benefit—The account balance at the date the disability benefit becomes payable.

Form of payment—Same as normal retirement. An annuity benefit is discontinued upon termination of the corresponding DB Program benefit.

Death before retirement

Eligibility requirement—Deceased member has an account balance.

Benefit—The account balance at the date of death is payable to the designated beneficiary.

Form of payment—Same as normal retirement, except annuity options are limited to a period certain annuity.

Death after retirement

Eligibility requirement—The deceased member was receiving an annuity.

Benefit—According to the terms of the annuity elected by the member.

Termination from the program

Eligibility requirement—Termination of all CalSTRS-covered employment.

More than five years has elapsed since the most recent termination benefit, if any, has been paid.

Benefit and form of payment—Lump-sum distribution of the account balance as of the date of distribution.

Summary of plan provisions — CBB Program

The plan provisions of the CBB Program are detailed in the Teachers' Retirement Law. The following is a summary of these provisions, which were used in the June 30, 2021, valuation of the CBB Program.

Membership

Eligibility requirement—Membership if employed at less than 50% of a full-time position for a California school district or county office of education that has elected to offer the CBB Program.

Extended eligibility to members hired by a community college district to perform creditable service on a part-time or temporary basis (semester to semester) or for not more than 67% of the hours per week considered a regular full-time assignment.

Participant–An eligible employee with creditable service subject to coverage who has contributions credited in the program or is receiving an annuity from the program or has not yet received their lump-sum benefit.

Account balance

Account balance—Nominal accounts established for the purpose of determining benefits payable to the participant. Accounts are credited with contributions, minimum interest rate and, if applicable, additional earnings credits.

Contributions—For participants hired on or after January 1, 2013, salary credited to CalSTRS from all employers is capped at $154,418 for 2021–22 fiscal year. The limit is adjusted each fiscal year based on the changes in the Consumer Price Index for all Urban Consumers: U.S. City

Average. For participants hired before January 1, 2013, salary credited to CalSTRS from all employers is capped at $290,000 for 2021–22 fiscal year under IRC section 401(a)(17).

Minimum interest rate—Annual rate determined for the plan year by the board in accordance with federal laws and regulations. The minimum interest rate is equal to the average of the yields on 30-year Treasury Notes for the 12 months ending in February preceding the beginning of the plan year, rounded to the next highest 0.01%.

Additional earnings credit—Annual rate determined for the plan year by the board based on the actual earnings during the plan year but only to the extent the earnings are sufficient to credit the minimum interest rate and provide any additions to the gain and loss reserve deemed warranted by the board.

The board adopted an additional earnings credit of 11.65% for the fiscal year ended June 30, 2021. The credit is applied to the June 30, 2021, account balance for members who have not yet retired as of the board adoption date of May 4, 2022.

Normal retirement

Eligibility requirement—Age 60, or age 62 for participants hired on or after January 1, 2013.

Benefit–The account balance at the retirement date subject to limits imposed under IRC section 415(b).

Form of payment—The normal form of payment is a lump-sum distribution. Annuity options are available if the sum of the employer and employee accounts equals or exceeds $3,500.

Early retirement

Eligibility requirement—Age 55.

Benefit and form of payment—Same as normal retirement.

Late retirement

Benefit and form of payment—Same as normal retirement. Contributions and interest continue to be credited to the account balances until distributed.

Deferred retirement

Benefit—A participant may cease active service, leave the accumulated account balance on deposit and later retire upon attaining the minimum age requirement.

Disability benefit

Eligibility requirement—Determination by the board that the participant has a total and permanent disability.

Benefit—The account balance at the date of disability. An annuity benefit is discontinued if the participant is re-employed and performs service creditable under the program.

Form of payment—Same as normal retirement.

Death before retirement

Eligibility requirement—Deceased participant has an account balance.

Benefit—The account balance at the date of death payable to the designated beneficiary.

Form of payment—Normal distribution is a lump-sum benefit. A participant's beneficiary may elect to receive the benefit in the form of a period-certain annuity if the sum of the balance of credits to the participant's employee and employer accounts is $3,500 or more.

Death after retirement

Eligibility requirement—The deceased participant was receiving an annuity.

Benefit—According to the terms of the annuity elected by the participant.

Termination from the program

Eligibility requirement—More than five years has elapsed since the most recent termination benefit, if any, has been paid.

Benefit and form of payment—Lump-sum distribution of the account balance as of the date of distribution. The benefit is payable six months from the termination of creditable service.

Summary of plan provisions — MPP Program

The plan provisions of the MPP Program are detailed in the Teachers' Retirement Law. The following is a summary of these provisions which were used in the June 30, 2021, valuation of the MPP Program.

Membership

Eligibility requirement – Part A

DB member – 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 above requirements, except retired or disabled before July 1, 2012; district completed a Medicare Division election prior to retirement; and active member voted yes if they were 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.

Members who retire on or after July 1, 2012, are not eligible for coverage under the MPP Program.

Eligibility requirement – Part A and B late enrollment surcharges

Only those currently enrolled are eligible.

Benefits paid

Premium payments are made directly to the Centers for Medicare and Medicaid Services (CMS) on a monthly basis. Medicare Part A premium rates for fiscal year 2021–22 are as follows:

Medicare Part A premium rate

July 1, 2021, to December 31, 2021	$471
January 1, 2022, to June 30, 2022	$499

Individuals with 30-39 quarters of Medicare-covered employment pay a reduced monthly premium rate, which was $259 and $274 for the period of July 1, 2021, to December 31, 2021, and January 1, 2022, to June 30, 2022, respectively.

Part A late enrollment surcharge is generally 10% of the respective monthly premium rates, and Part B late enrollment surcharge is usually 10% of the respective monthly premium rates for each full 12-month period the person is late enrolling; however, the fees charged to individual participants may be higher based on certain income thresholds.

Based on the published premium rates during fiscal year 2021–22, Part A late enrollment surcharges were $47.10 and $49.90 for the period of July 1, 2021, to December 31, 2021, and January 1, 2022, to June 30, 2022, respectively. Each 10% of Part B late enrollment surcharges were $14.85 and $17.01 for the period of July 1, 2021, to December 31, 2021, and January 1, 2022, to June 30, 2022, respectively.

All demographic assumptions used in the actuarial valuations were adopted by the board when the experience study was adopted on January 31, 2020. The following are the assumptions adopted by the board for the DB, DBS, CBB and MPP programs unless stated otherwise. Where indicated, duration is based on elapsed service since membership date.

Table 1A

Preretirement mortality for sample ages—DB Program only

	Active member/participants[1]	
Age	Male	Female
25	0.012%	0.007%
30	0.017%	0.011%
35	0.023%	0.015%
40	0.032%	0.023%
45	0.050%	0.036%
50	0.084%	0.055%
55	0.130%	0.081%
60	0.199%	0.121%
65	0.327%	0.203%

Table 1B

Postretirement mortality for sample ages

	Retired members/participants and beneficiaries[1]		Disabled members/participants (after year 3)[1]	
Age	Male	Female	Male	Female
50	0.230%	0.128%	1.768%	0.998%
55	0.339%	0.202%	2.056%	1.249%
60	0.454%	0.268%	2.331%	1.474%
65	0.645%	0.404%	2.713%	1.761%
70	1.033%	0.666%	3.364%	2.286%
75	1.853%	1.225%	4.436%	3.253%
80	3.399%	2.348%	6.142%	4.818%
85	6.536%	4.684%	8.922%	7.159%
90	12.631%	9.548%	13.558%	10.600%
95	21.628%	17.929%	20.312%	15.721%

Select minimum rates for disability

	Male	Female
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 for the mortality rates. Projected improvement is based on 110% of the MP-2019 Ultimate Projection Scale. The rates shown reflect mortality improvement through June 30, 2021. The projection scale does not apply to the select minimum rates.

Table 2

Probabilities of service retirement for sample ages and years of service[1] — DB Program only

		CalSTRS 2% at 60					CalSTRS 2% at 62		
Male	**Age**	**20–24 years**	**25 years**	**26–29 years**	**30 years**	**31 or more years**	**20–24 years**	**25–29 years**	**30 or more years**
	55	4.0%	6.0%	5.0%	7.5%	5.5%	3.0%	4.0%	5.0%
	60	8.0%	11.5%	9.5%	28.0%	20.5%	6.0%	7.5%	9.0%
	65	21.0%	32.0%	27.0%	32.5%	32.5%	21.0%	28.0%	28.0%
	70	18.0%	27.5%	23.0%	25.0%	25.0%	18.0%	24.0%	24.0%
	75+	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Female	**Age**	**20–24 years**	**25 years**	**26–29 years**	**30 years**	**31 or more years**	**20–24 years**	**25–29 years**	**30 or more years**
	55	4.5%	6.0%	5.0%	8.5%	6.5%	3.5%	4.0%	5.0%
	60	9.5%	15.5%	12.5%	30.5%	23.0%	7.0%	10.0%	12.0%
	65	24.5%	39.0%	31.0%	38.0%	38.0%	24.5%	32.5%	32.5%
	70	21.5%	36.0%	28.5%	30.0%	30.0%	21.5%	30.0%	30.0%
	75+	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

[1] The assumptions shown above are for retirement from active status. It is assumed that all vested terminated 2% at 60 members retire at age 60 and 2% at 62 members retire at age 62.

Table 3

Probabilities of withdrawal from active service for sample years of service — DB Program only

Year[1]	Male	Female
0	12.25%	11.25%
1	8.50%	7.00%
2	6.75%	5.50%
3	5.40%	4.25%
4	3.75%	3.25%
5	3.10%	2.70%
10	1.65%	1.50%
15	1.05%	1.05%
20	0.75%	0.75%
25	0.50%	0.50%
30	0.45%	0.40%

[1] Based on elapsed service since membership date.

Table 4

Probabilities of refund by sample entry ages and years of service — DB Program only

Year[1]	Entry age					
	Under 25	25–29	30–34	35–39	40–44	45 and up
Under 5	100%	100%	100%	100%	100%	100%
5	60%	60%	60%	54%	50%	45%
10	38%	38%	38%	34%	25%	–
15	30%	30%	28%	17%	–	–
20	24%	22%	18%	–	–	–
25	14%	12%	–	–	–	–
30	5%	–	–	–	–	–

[1] Assumption applied at the time of assumed termination based on credited service. Members who terminate with less than five years of credited service are assumed to have 100% probability of refund.

Table 5

Assumption for pay increase due to promotions and longevity for sample ages in years[1] — DB Program only

Year[2]	Entry age					
	Under 25	25–29	30–34	35–39	40–44	45 and up
0	6.4%	5.8%	5.3%	4.8%	4.5%	3.7%
1	6.4%	5.8%	5.3%	4.8%	4.5%	3.7%
2	6.0%	5.5%	5.0%	4.5%	4.3%	3.5%
3	5.6%	5.3%	4.8%	4.3%	4.1%	3.3%
4	5.4%	5.0%	4.5%	4.1%	3.9%	3.0%
5	5.2%	4.8%	4.3%	3.9%	3.8%	2.8%
10	3.7%	3.4%	3.0%	2.7%	2.5%	1.8%
15	1.8%	1.7%	1.5%	1.2%	1.2%	0.9%
20	1.3%	1.2%	1.2%	0.8%	0.8%	0.6%
25	1.1%	1.0%	0.9%	0.6%	0.6%	–
30	0.9%	0.8%	0.7%	0.5%	–	–
35	0.8%	0.7%	0.6%	–	–	–
40	0.8%	0.7%	–	–	–	–
45	0.8%	–	–	–	–	–

[1] The total expected increase in salary includes both merit (shown above) and the general wage increase assumption of 3.50% per annum. The total result is compounded rather than additive. For example, the total assumed increase for service less than one year (Year 0 above) is 10.124% (1.064 x 1.035) for members in the entry age under 25 group.

[2] Based on elapsed service since membership date.

Table 6

Economic assumptions

	DB Program	DBS Program	CBB Program	MPP Program
Investment yield (net of expenses)[1]	7.00%	7.00%	6.50%	7.00%
Consumer price inflation	2.75%	2.75%	2.75%	2.75%
Wage inflation	3.50%	3.50%	3.50%	N/A
Interest on member accounts	3.00%	7.00%	6.50%	N/A
Standard deviation of portfolio	N/A	13.10%	11.00%	N/A
Medical inflation (varies by year—average percentage below)				
Part A premiums	N/A	N/A	N/A	4.50%
Part B premiums	N/A	N/A	N/A	5.40%

1 For financial reporting purposes, the investment rate of return for the STRP (which includes the DB, DBS and CBB programs) is 7.10% (net of investment expenses but gross of administrative expenses) in accordance with GASB Statement No. 67. The MPP Program uses an investment rate of return of 3.54%, which represents the yield or index rate for the 20-year tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher in accordance with GASB Statement No. 74.

Table 7

Probabilities of disability retirement for sample ages — DB Program only

Coverage A				Coverage B			
Male		Female		Male		Female	
Age	Rate	Age	Rate	Age	Rate	Age	Rate
25	0.015%	25	0.015%	25	0.010%	25	0.015%
30	0.025%	30	0.025%	30	0.015%	30	0.015%
35	0.040%	35	0.050%	35	0.025%	35	0.030%
40	0.065%	40	0.075%	40	0.050%	40	0.055%
45	0.090%	45	0.090%	45	0.085%	45	0.095%
50	0.130%	50	0.180%	50	0.125%	50	0.165%
55	0.170%	55	0.225%	55	0.235%	55	0.285%
				60	0.345%	60	0.360%
				65	0.380%	65	0.380%
				70	0.380%	70	0.380%

Table 8

Supplemental assumptions — DB Program only

PEPRA coverage	All members hired on or after the valuation date are assumed to be subject to the provisions of PEPRA.	
Unused sick leave	Credited service is increased by 1.7%.	
Optional forms	Active and inactive: Based on single-life annuity assumed. Retirees and beneficiaries: Based on optional form in data.	
Probability of marriage	Male: 85% Female: 65% Male spouses are assumed to be three years older than female spouses.	
Number of children	Married members under age 60 are assumed to have the number of children shown in the following table. Children are assumed to receive benefits until the member would have turned age 60.	
	Member's gender	**Assumed number of children**
	Male	0.65
	Female	0.50
Assumed offsets	No offsets to disability and survivor benefits are assumed.	
Valuation of inactive members	Salary and benefit information is not available on the valuation data provided for inactive members. Therefore, we estimate the projected retirement benefits for inactive members as follows: 1. The inactive member's annualized pay rate information is retrieved from when they were active by matching with a database of active valuation data back to 2001 and taking the highest annualized pay rate for the member during the period. 2. For those members who cannot be located on the active database (because they terminated prior to 2001 or another reason), their annualized pay rate is estimated based on 120% of the average annualized pay rate for all active members in the year the member terminated. 3. The annualized pay rate amount from the prior steps is treated as the member's final compensation with two additional adjustments. a. An additional load of 5% for all inactive members is applied to their salary amount to account for potential post-termination increases in salary due to factors such as reciprocity. b. Final compensation is increased by an additional 4.3% if the member has 25 or more years of credited service. 4. Based on the salary data described above and the birth date and credited service from the current year's valuation data, the projected benefit amount is calculated and valued as a deferred service retirement. 5. Non-vested members who have been inactive for less than two years are assumed to take an immediate refund of their member contributions.	

Table 9

Schedule of Medicare Part A enrollment rates[1] — MPP Program only

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)		2.00%	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)		100.00%	100.00%

[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.

Table 10

Schedule of active member valuation data

Valuation date (as of June 30)[1]	Number of participating employers[2]	Active number	Annual payroll	Annual average pay	Percent increase in average pay
			DB Program		
2012	1,660	421,499	$25,388,209,920	$60,233	1.2%
2013	1,670	416,643	25,479,056,693	61,153	1.5%
2014	1,690	420,887	26,469,883,008	62,891	2.8%
2015	1,724	429,460	28,013,191,853	65,229	3.7%
2016	1,739	438,537	29,826,149,337	68,013	4.3%
2017	1,746	445,935	31,136,104,704	69,822	2.7%
2018	1,752	449,595	31,884,303,004	70,918	1.6%
2019	1,776	451,429	32,896,686,907	72,872	2.8%
2020	1,782	448,419	33,811,320,984	75,401	3.5%
2021	1,795	429,681	33,914,004,303	78,928	4.7%
			DBS Program		
2012	1,660	421,499	$25,388,209,920	$60,233	1.2%
2013	1,670	416,643	25,479,056,693	61,153	1.5%
2014	1,690	420,887	26,469,883,008	62,891	2.8%
2015	1,724	429,460	28,013,191,853	65,229	3.7%
2016	1,739	438,537	29,826,149,337	68,013	4.3%
2017	1,746	445,935	31,136,104,704	69,822	2.7%
2018	1,752	449,595	31,884,303,004	70,918	1.6%
2019	1,776	451,429	32,896,686,907	72,872	2.8%
2020	1,782	448,419	33,811,320,984	75,401	3.5%
2021	1,795	429,681	33,914,004,303	78,928	4.7%
			CBB Program		
2012	33	9,273	$151,284,621	$16,315	2.1%
2013	31	9,129	151,281,260	16,572	1.6%
2014	32	9,955	175,058,251	17,585	6.1%
2015	33	10,416	193,075,185	18,536	5.4%
2016	30	10,676	211,259,529	19,788	6.8%
2017	30	10,480	220,767,125	21,066	6.5%
2018	29	10,469	231,621,196	22,124	5.0%
2019	29	10,029	228,618,038	22,796	3.0%
2020	29	9,471	225,022,559	23,759	4.2%
2021	29	7,940	208,273,967	26,231	10.4%
			MPP Program[3]		
N/A	N/A	N/A	N/A	N/A	N/A

1 The data provided in this table is as of the most recent actuarial valuation (June 30, 2021) for each respective program. Actuarial valuation results as of June 30, 2022, are expected to be available by May 2023.

2 Number of employers is based on employers who submit the last contribution line for the active member in each respective fiscal year; however, the number of the employers in the Financial section is based on contributing employers as of the end of the respective fiscal year.

3 The MPP Program is a closed program for members whose retirement date is on or after July 1, 2012, and active members are not currently eligible for coverage.

Table 11

Schedule of retired members/participants and beneficiaries added to and removed from rolls[1]

Valuation date (as of June 30)[2]	Added to rolls: Number	Added to rolls: Annual allowances	Removed from rolls: Number	Removed from rolls: Annual allowances	Rolls – end of year: Number	Rolls – end of year: Annual allowances	Percent increase in annual allowances	Average annual allowances
DB Program								
2012	14,316	$635,935,000	6,860	$187,271,000	262,039	$10,458,555,000	6.7%	$39,912
2013	12,377	555,751,000	7,119	205,779,000	269,429	11,091,944,000	6.1%	41,168
2014	11,383	507,801,000	7,299	221,733,000	275,627	11,624,220,000	4.8%	42,174
2015	11,952	558,655,000	7,759	247,766,000	282,100	12,197,828,000	4.9%	43,239
2016	12,014	591,902,000	7,871	262,170,000	288,195	12,792,104,000	4.9%	44,387
2017	12,823	649,503,000	8,381	289,955,000	294,874	13,439,239,000	5.1%	45,576
2018	13,340	682,533,000	8,606	300,558,000	301,859	14,114,787,000	5.0%	46,760
2019	12,867	633,138,000	8,656	319,809,000	308,639	14,788,565,000	4.8%	47,915
2020	12,139	637,229,000	8,843	342,648,000	314,518	15,420,155,000	4.3%	49,028
2021	13,217	724,410,000	9,981	406,459,000	320,413	16,086,094,000	4.3%	50,204
DBS Program								
2012	8,257	$32,650,936	2,386	$11,666,909	42,055	$124,148,784	20.4%	$2,952
2013	7,425	30,392,875	2,657	13,354,982	47,014	141,044,393	13.6%	3,000
2014	6,753	27,678,797	3,115	16,285,428	50,963	153,375,082	8.7%	3,010
2015	7,097	31,304,181	3,423	18,040,255	54,901	167,972,370	9.5%	3,060
2016	7,324	35,828,397	3,335	17,497,131	59,075	187,434,597	11.6%	3,173
2017	7,813	39,827,784	3,444	18,242,423	63,653	209,657,263	11.9%	3,294
2018	7,873	40,794,850	3,535	19,256,485	68,194	231,963,834	10.6%	3,402
2019	7,275	40,953,264	4,019	21,433,419	71,408	252,321,939	8.8%	3,534
2020	6,988	40,002,030	4,307	23,823,406	74,312	269,201,680	6.7%	3,623
2021	7,142	44,696,206	4,284	25,415,637	77,369	289,240,352	7.4%	3,738
CBB Program								
2012	42	$139,297	5	$18,110	105	$294,000	69.1%	$2,800
2013	30	132,912	8	26,578	127	401,112	36.4%	3,158
2014	42	212,087	10	43,746	159	568,682	41.8%	3,577
2015	52	164,451	11	74,583	200	658,550	15.8%	3,293
2016	62	261,067	10	43,035	252	841,230	27.7%	3,338
2017	80	430,331	22	87,768	310	1,223,947	45.5%	3,948
2018[3]	85	475,148	25	159,001	370	1,539,585	25.8%	4,161
2019	69	272,865	30	198,936	410	1,633,925	6.1%	3,985
2020	72	401,075	23	146,754	458	1,875,819	14.8%	4,096
2021	65	421,084	44	316,800	482	2,004,082	6.8%	4,158
MPP Program								
2012	359	$1,177,000	218	$634,000	6,742	$33,708,000	(2.8%)	$5,000
2013[4]	305	1,009,000	212	641,000	6,770	33,663,000	(0.1%)	4,972
2014	235	751,000	259	703,000	6,684	32,047,000	(4.8%)	4,795
2015	178	443,000	254	772,000	6,474	29,729,000	(7.2%)	4,592
2016	166	404,000	264	768,000	6,324	28,345,000	(4.7%)	4,482
2017	102	211,000	273	766,000	6,124	27,632,000	(2.5%)	4,512
2018	119	451,000	281	751,000	5,917	26,947,000	(2.5%)	4,554
2019	43	153,000	245	623,000	5,686	26,626,000	(1.2%)	4,683
2020	23	91,000	377	747,000	5,383	26,148,000	(1.8%)	4,858
2021	12	45,000	380	888,000	5,042	25,374,000	(3.0%)	5,033

1 Each year's data population is a snapshot taken following year-end closings; subsequent adjustments made to snapshots of data prior to the current period are not reflected in the table.

2 The data provided in this table is as of the most recent actuarial valuation (June 30, 2021) for each respective program. Actuarial valuation results as of June 30, 2022, are expected to be available by May 2023.

3 Numbers revised in 2019.

4 Numbers revised in 2014.

Table 12

Solvency test

Valuation date (as of June 30)[1]	Aggregate accrued liabilities for: (1) Active member contributions on deposit	(2) Future benefits to benefit recipients	(3) Service already rendered by active members (financed by employer)	Actuarial value of assets	Funding of liabilities: (1)	(2)	(3)
DB Program (dollars in millions)							
2012	$27,245	$116,475	$71,469	$144,232	100.0%	100.0%	0.7%
2013	27,683	121,714	72,884	148,614	100.0%	99.4%	0.0%
2014	28,290	126,235	76,688	158,495	100.0%	100.0%	5.2%
2015	28,935	131,451	81,367	165,553	100.0%	100.0%	6.4%
2016	30,046	145,108	91,550	169,976	100.0%	96.4%	0.0%
2017	31,523	154,618	100,809	179,689	100.0%	95.8%	0.0%
2018	33,012	161,219	103,372	190,451	100.0%	97.7%	0.0%
2019	34,903	167,716	108,100	205,016	100.0%	100.0%	2.2%
2020	37,345	173,268	111,514	216,252	100.0%	100.0%	5.1%
2021	39,262	179,598	113,222	242,363	100.0%	100.0%	20.8%
DBS Program (dollars in thousands)							
2012	$7,280,977	$710,586	$–	$8,042,090	100.0%	100.0%	0.0%
2013	7,641,488	850,275	–	8,983,919	100.0%	100.0%	0.0%
2014	8,077,762	942,945	–	10,493,062	100.0%	100.0%	0.0%
2015	8,532,216	1,021,092	–	10,940,917	100.0%	100.0%	0.0%
2016	8,604,042	1,200,485	–	10,943,296	100.0%	100.0%	0.0%
2017	9,020,170	1,381,932	–	12,269,382	100.0%	100.0%	0.0%
2018	9,426,949	1,541,170	–	13,173,522	100.0%	100.0%	0.0%
2019	9,433,196	1,692,848	–	13,904,497	100.0%	100.0%	0.0%
2020	9,866,874	1,824,609	–	14,243,827	100.0%	100.0%	0.0%
2021	11,164,339	1,950,617	–	17,789,853	100.0%	100.0%	0.0%
CBB Program (dollars in thousands)							
2012	$156,600	$1,386	$–	$158,020	100.0%	100.0%	0.0%
2013	174,171	1,952	–	188,551	100.0%	100.0%	0.0%
2014	194,792	3,061	–	231,671	100.0%	100.0%	0.0%
2015	215,851	3,843	–	248,699	100.0%	100.0%	0.0%
2016	230,864	4,974	–	256,675	100.0%	100.0%	0.0%
2017	253,572	7,411	–	302,448	100.0%	100.0%	0.0%
2018	270,269	9,433	–	328,022	100.0%	100.0%	0.0%
2019	283,382	10,449	–	357,273	100.0%	100.0%	0.0%
2020	306,987	11,448	–	375,450	100.0%	100.0%	0.0%
2021	355,596	12,435	–	482,983	100.0%	100.0%	0.0%
MPP Program[2] (dollars in millions)							
2008	$–	$630	$–	$630	0.0%	100.0%	0.0%
2010	–	602	–	602	0.0%	100.0%	0.0%
2012	–	424	–	424	0.0%	100.0%	0.0%
2014	–	342	–	342	0.0%	100.0%	0.0%
2016	–	315	–	315	0.0%	100.0%	0.0%
2017	–	302	–	302	0.0%	100.0%	0.0%
2018	–	286	–	286	0.0%	100.0%	0.0%
2019	–	288	–	288	0.0%	100.0%	0.0%
2020	–	274	–	274	0.0%	100.0%	0.0%
2021	–	259	–	259	0.0%	100.0%	0.0%

1 The data provided in this table is as of the most recent actuarial valuation (June 30, 2021) for each respective program. Actuarial valuation results as of June 30, 2022, are expected to be available by May 2023.

2 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.

Table 13

Analysis of financial experience

(Gains and losses in unfunded actuarial obligation resulting from differences between assumed and actual experience. Dollars in millions.)

	Actuarial valuation as of June 30[1,2]	
	DB Program	
	2021	2020
Actuarial obligation as of June 30	**$322,127**	**$310,719**
Normal cost	7,152	7,004
Benefit payments	(15,946)	(15,277)
Expected interest	22,246	21,466
Expected actuarial obligation as of June 30	**335,579**	**323,912**
Less: expected actuarial value of assets as of June 30	**227,612**	**217,138**
Expected UAO as of June 30	**107,967**	**106,774**
Actuarial (gains) or losses		
Change in assumptions	–	–
Investment return assumptions	(14,909)	966
Demographic assumptions	(3,497)	(1,785)
Net change other sources	158	(80)
Change in actuarial asset method	–	–
Total actuarial (gains) or losses	**(18,248)**	**(899)**
Unfunded actuarial obligation as of June 30	**$89,719**	**$105,875**
Funded ratio	**73.0%**	**67.1%**

	Actuarial valuation as of June 30[1,2]			
	DBS Program		CBB Program	
	2021	2020	2021	2020
Actuarial obligation as of June 30	**$11,691**	**$11,126**	**$318**	**$294**
Expected changes:				
Contributions	278	277	17	18
Benefit paid	(545)	(508)	(13)	(14)
Expected earnings/credits	809	771	21	19
Expected actuarial obligation as of June 30	**12,233**	**11,666**	**343**	**317**
Less: expected actuarial value of assets as of June 30	**14,964**	**14,639**	**404**	**385**
Expected UAO as of June 30	**(2,731)**	**(2,973)**	**(61)**	**(68)**
Actuarial (gains) or losses				
(Gain) on actuarial obligation	(421)	(343)	(12)	(9)
(Gain) or loss on assets	(2,826)	395	(79)	10
Assumption change (treatment of GASB expenses)	–	–	–	–
Total actuarial (gains) or losses	**(3,247)**	**52**	**(91)**	**1**
Additional earnings credits	1,303	369	37	10
Unfunded actuarial obligation as of June 30	**($4,675)**	**($2,552)**	**($115)**	**($57)**
Funded ratio	**135.6%**	**121.8%**	**131.3%**	**117.9%**

1 The data provided in this table is as of the most recent actuarial valuation (June 30, 2021) for each respective program. Actuarial valuation results as of June 30, 2022, are expected to be available by May 2023.

2 Numbers may not align with actuarial valuation report due to rounding.

Table 13

Analysis of financial experience (continued)

(Gains and losses in unfunded actuarial obligation resulting from differences between assumed and actual experience. Dollars in millions.)

	Actuarial valuation as of June 30[1]	
	MPP Program	
	2021	2020
Actuarial obligation as of June 30:	**not calculated**	**not calculated**
Expected changes:		
Eligibility extended	not calculated	not calculated
Benefit paid	($26)	($27)
Interest	not calculated	not calculated
Expected actuarial obligation as of June 30	**not calculated**	**not calculated**
Less: expected actuarial value of assets as of June 30	**not calculated**	**not calculated**
Expected UAO as of June 30	**not calculated**	**not calculated**
Actuarial (gains) or losses		
(Gain) on medical trend assumption	not calculated	not calculated
(Gain) on premium/penalty	not calculated	not calculated
(Gain) on Part B Premium for higher earners	not calculated	not calculated
(Gain) other sources	not calculated	not calculated
Total actuarial gains or losses	**not calculated**	**not calculated**
Unfunded actuarial obligation as of June 30[2]	**$—**	**$—**
Funded ratio	**100.0%**	**100.0%**

1 The data provided in this table is as of the most recent actuarial valuation (June 30, 2021) for each respective program. Actuarial valuation results as of June 30, 2022, are expected to be available by May 2023.

2 Based on the actuarial value of assets. For funding purposes, the MPP Program assets are valued as the allocated value of DB Program assets, which are equal to the actuarial obligation of the MPP Program benefits.

Table 14

Schedule of funding progress

(dollars in millions)

Valuation date as of June 30[1]	Actuarial value of assets (a)	Actuarial accrued liability (AAL) (b)	Unfunded AAL (funding excess) (UAAL) (b-a)	Funded ratio (a/b)	Covered payroll (c)	UAAL as a % of covered payroll ((b-a)/c)
DB Program						
2012	$144,232	$215,189	$70,957	67.0%	$26,404	268.7%
2013	148,614	222,281	73,667	66.9%	26,483	278.2%
2014	158,495	231,213	72,718	68.5%	26,398	275.5%
2015	165,553	241,753	76,200	68.5%	28,640	266.1%
2016	169,976	266,704	96,728	63.7%	30,324	319.0%
2017	179,689	286,950	107,261	62.6%	31,961	335.6%
2018	190,451	297,603	107,152	64.0%	32,613	328.6%
2019	205,016	310,719	105,703	66.0%	33,679	313.9%
2020	216,252	322,127	105,875	67.1%	34,617	305.8%
2021	242,363	332,082	89,719	73.0%	34,668	258.8%
DBS Program						
2012	$8,042	$7,992	($50)	100.6%	$25,091	(0.2%)
2013	8,984	8,492	(492)	105.8%	24,994	(2.0%)
2014	10,493	9,021	(1,472)	116.3%	25,805	(5.7%)
2015	10,941	9,553	(1,388)	114.5%	27,143	(5.1%)
2016	10,943	9,805	(1,138)	111.6%	28,788	(4.0%)
2017	12,269	10,402	(1,867)	117.9%	29,971	(6.2%)
2018	13,173	10,968	(2,205)	120.1%	30,650	(7.2%)
2019	13,904	11,126	(2,778)	125.0%	31,501	(8.8%)
2020	14,244	11,692	(2,552)	121.8%	32,450	(7.9%)
2021	17,790	13,115	(4,675)	135.6%	32,740	(14.3%)
CBB Program						
2012	$158	$158	$–	100.0%	$151	0.0%
2013	189	176	(13)	107.4%	151	(8.6%)
2014	232	198	(34)	117.2%	174	(19.5%)
2015	249	220	(29)	113.2%	192	(15.1%)
2016	257	236	(21)	108.9%	209	(10.0%)
2017	302	261	(41)	115.7%	218	(18.8%)
2018	328	280	(48)	117.1%	232	(20.7%)
2019	357	294	(63)	121.4%	229	(27.5%)
2020	375	318	(57)	117.9%	225	(25.3%)
2021	483	368	(115)	131.3%	208	(55.3%)
MPP Program[2]						
2008	$630	$630	$–	100.0%	N/A	N/A
2010	602	602	–	100.0%	N/A	N/A
2012	424	424	–	100.0%	N/A	N/A
2014	342	342	–	100.0%	N/A	N/A
2016	315	315	–	100.0%	N/A	N/A
2017	302	302	–	100.0%	N/A	N/A
2018	286	286	–	100.0%	N/A	N/A
2019	288	288	–	100.0%	N/A	N/A
2020	274	274	–	100.0%	N/A	N/A
2021	259	259	–	100.0%	N/A	N/A

Note: Information regarding actuarially determined and actual contributions for the State Teachers' Retirement Plan is provided in the Financial section, Schedule III, "Contributions of employer and nonemployer contributing entity" table.

1 The data provided in this table is as of the most recent actuarial valuation (June 30, 2021) for each respective program. Actuarial valuation results as of June 30, 2022, are expected to be available by May 2023. Numbers may not align with actuarial valuation report due to rounding.

2 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.

Statistical section

In fiscal year 2021–2022, CalSTRS members, on average, retired at age 63 after about 24 years of service with a pension replacing approximately 54% of their highest salary.

Statistical overview

The Statistical section presents additional detailed information to assist users of the basic financial statements, notes to the basic financial statements and required supplementary information in assessing the economic condition of CalSTRS. The section provides financial trend information for the State Teachers' Retirement Plan (STRP), which includes Defined Benefit (DB), Defined Benefit Supplement (DBS), Cash Balance Benefit (CBB) and Replacement Benefits programs, as well as operating information for Pension2, the Medicare Premium Payment (MPP) Program and the Teachers' Deferred Compensation Fund. Financial trend information for the DB, DBS and CBB programs has been consolidated and presented as the STRP to be consistent with the basic financial statements. Operating information for STRP programs continues to be presented separately because consolidation would not provide meaningful information due to the unique characteristics of those programs.

The financial trend schedules assist users in understanding and assessing how the system's financial position has changed over time and include:

- Changes in fiduciary net position
- Benefit and refund deductions from net position by type

The operating information schedules provide data about the system's operations and resources to assist users in understanding CalSTRS benefits and services and include:

- Members and benefit recipient statistics
- Participating employers statistics

The information in this section was derived from the Financial section and the CalSTRS pension administration system, START, except where noted. Due to the timing of when membership numbers were pulled, there will be a difference between the membership numbers reported in this section and the Financial section of this report.

Supplemental statistical tables are available on request.

Table 1

Changes in fiduciary net position for the State Teachers' Retirement Plan

(dollars in millions)

	Fiscal year ended June 30									
	2022	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Additions										
Member contributions	$4,068	$3,743	$3,735	$3,648	$3,496	$3,441	$2,958	$2,510	$2,264	$2,337
Employer contributions	6,521	5,758	6,080	5,644	4,867	4,173	3,391	2,678	2,272	2,283
State of California contributions	4,280	3,731	4,447	5,335	2,797	2,478	1,940	1,426	1,384	1,328
Net investment income (loss)	(7,390)	67,039	10,103	14,898	18,674	25,165	2,305	7,612	30,402	20,682
Other income	130	90	101	128	105	72	42	4	2	1
Total additions	**$7,609**	**$80,361**	**$24,466**	**$29,653**	**$29,939**	**$35,329**	**$10,636**	**$14,230**	**$36,324**	**$26,631**
Deductions										
Benefit payments[1]	$17,173	$16,415	$15,707	$15,002	$14,271	$13,626	$12,892	$12,284	$11,725	$11,133
Purchasing power benefits	242	191	215	194	162	161	172	193	202	222
Refunds of member contributions	112	102	103	100	104	116	84	88	108	105
Administrative expenses	191	252	219	254	216	182	180	145	154	137
Borrowing costs[2]	123	90	95	105	94	58	–	–	–	–
Other expenses	5	1	6	4	2	10	15	9	9	4
Total deductions	**$17,846**	**$17,051**	**$16,345**	**$15,659**	**$14,849**	**$14,153**	**$13,343**	**$12,719**	**$12,198**	**$11,601**
Changes in fiduciary net position	**($10,237)**	**$63,310**	**$8,121**	**$13,994**	**$15,090**	**$21,176**	**($2,707)**	**$1,511**	**$24,126**	**$15,030**

Note: There may be immaterial rounding differences between the figures presented in this table and in the statement of changes in fiduciary net position presented in the Financial section.

1 Includes member-elected administrative transfers to purchase service credit in the DB Program.

2 Beginning in fiscal year 2016-17, borrowing costs associated with the master facility credit portfolio, which were previously reported in "net investment income," were reclassified to "deductions" for financial reporting purposes.

Table 2

Benefit and refund deductions from changes in fiduciary net position by type

(dollars in millions)

	Fiscal year ended June 30									
Type of benefit	**2022**	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Age & service benefits										
Retired members[1]	$15,725	$15,067	$14,430	$13,797	$13,121	$12,538	$11,869	$11,306	$10,821	$10,281
Survivors	943	876	820	768	732	686	634	591	547	528
Death	129	101	93	80	72	66	63	76	57	74
Purchasing power benefits	242	191	215	194	162	161	172	193	202	222
Disability benefits										
Retired members	376	371	364	357	346	336	326	311	300	251
Total benefits	**$17,415**	**$16,606**	**$15,922**	**$15,196**	**$14,433**	**$13,787**	**$13,064**	**$12,477**	**$11,927**	**$11,356**
Type of refund										
Separation	$112	$102	$103	$100	$104	$116	$84	$88	$108	$105
Total refunds	**$112**	**$102**	**$103**	**$100**	**$104**	**$116**	**$84**	**$88**	**$108**	**$105**

Note: There may be immaterial rounding differences between the figures presented in this table and in the statement of changes in fiduciary net position presented within the Financial section.

[1] Includes member-elected administrative transfers to purchase service credit in the DB Program.

Defined Benefit Program schedules

Table 1

Active member characteristics

Fiscal year ended June 30	Count	Average annualized pay rate[1]	Average age	Average service credit	Average service projected to age 60
2013	416,643	$65,571	45.6	12.2	26.6
2014	420,887	67,276	45.6	12.3	26.6
2015	429,460	69,597	45.5	12.2	26.7
2016	438,537	72,550	45.4	12.1	26.7
2017	445,935	74,346	45.3	12.1	26.8
2018	449,595	75,604	45.2	12.1	26.9
2019	451,429	77,736	45.2	12.2	27.0
2020	448,419	80,182	45.3	12.4	27.1
2021	429,681	83,289	45.4	12.9	27.5
2022	449,418	85,302	45.1	12.5	27.4

1 Salary or wages that would be paid if members worked on a full-time basis.

Table 2

Members retired for service during fiscal year 2021–22, classified by Member-Only Benefit[1,2]

Monthly Member-Only Benefit	Count	Average age at retirement	Average service credit	Average final compensation[3]	Average allowance payable[4]
Less than $500	393	63.5	4.8	$4,153	$315
500–1,000	628	63.5	8.4	4,630	723
1,000–1,500	544	63.3	11.3	5,838	1,214
1,500–2,000	462	62.7	14.0	6,387	1,677
2,000–2,500	542	62.0	16.7	7,073	2,186
2,500–3,000	624	62.3	18.8	7,378	2,668
3,000–3,500	760	62.5	20.6	7,804	3,144
3,500–4,000	808	62.7	22.2	8,188	3,616
4,000–4,500	794	63.0	23.9	8,345	4,089
4,500–5,000	840	63.4	25.5	8,591	4,576
5,000–5,500	802	63.1	27.2	8,860	5,047
5,500–6,000	782	63.1	28.7	9,048	5,522
6,000 & greater	3,775	63.1	33.3	10,356	7,577
Total	**11,754**	**63.0**	**24.2**	**$8,403**	**$4,614**

1 Does not include formerly disabled members.
2 Member-Only Benefit includes longevity bonus.
3 Excludes new retirees with no final compensation data.
4 Includes cumulative application of annual 2% benefit improvement factor.

Table 3

Members retired for service during fiscal year 2021–22, classified by age and joint & survivor option elected[1,2]

			Option types							
Age	**Total**	**Member-Only**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Under 55	24	11	–	–	–	–	6	3	1	3
55	492	339	–	–	–	–	89	31	10	23
56	369	224	–	–	–	–	79	32	10	24
57	405	253	–	–	–	–	82	44	4	22
58	487	290	–	–	–	–	67	68	10	52
59	618	373	–	–	–	–	109	68	7	61
60	1,049	615	–	–	–	–	190	137	14	93
61	1,310	707	–	–	–	–	251	205	25	122
62	1,372	725	–	–	–	–	262	209	42	134
63	1,350	812	–	–	–	–	228	175	30	105
64	776	440	–	1	–	–	143	102	12	78
65	774	453	–	–	–	–	150	97	15	59
66	562	352	–	1	–	–	93	48	16	52
67	491	312	–	–	–	–	83	46	10	40
68	343	207	–	–	–	–	62	34	6	34
69	333	222	–	–	–	–	54	27	11	19
70	242	159	1	–	–	–	34	25	8	15
71	175	115	–	–	–	–	26	15	3	16
72	127	84	–	–	–	–	26	8	2	7
73	115	73	1	–	–	–	21	8	4	8
74	86	53	–	–	–	–	13	8	2	10
75 & over	254	168	3	–	–	–	36	21	11	15
Total	**11,754**	**6,987**	**5**	**2**	**–**	**–**	**2,104**	**1,411**	**253**	**992**
% of total	**100.0%**	**59.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**17.9%**	**12.0%**	**2.2%**	**8.4%**

1 Does not include formerly disabled members.

2 Option elected:

Option 2 - Beneficiary receives 100% of member's modified allowance.

Option 3 - Beneficiary receives 50% of member's modified allowance.

Option 4 - Beneficiary receives two-thirds of member's modified allowance.

Option 5 - Survivor receives 50% of member's modified allowance, upon death of either member or beneficiary.

Option 6 - Beneficiary receives 100% of member's modified allowance. If beneficiary predeceases the member, the allowance increases to the Member-Only Benefit.

Option 7 - Beneficiary receives 50% of member's modified allowance. If beneficiary predeceases the member, the allowance increases to the Member-Only Benefit.

Option 8 - Compound option that allows the member to provide for more than one beneficiary.

Option 9 - Beneficiary receives 75% of member's modified allowance. If beneficiary pre-deceases the member, the allowance increases to the Member-Only Benefit.

Table 4

Characteristics of members going on disability during target fiscal year

Fiscal year ended June 30	Count	Average disability allowance payable	Average service credit	Average final compensation	Average age at disability
2013	571	$2,788	14.8	$5,742	54.9
2014	494	2,875	15.0	5,967	55.1
2015	503	2,899	15.2	6,002	54.3
2016	455	2,936	14.9	6,081	54.1
2017	394	3,056	16.0	6,365	54.4
2018	381	3,144	16.4	6,512	54.9
2019	373	3,150	16.4	6,631	54.5
2020	282	3,292	16.7	7,001	53.5
2021	252	3,382	16.9	7,051	54.1
2022	267	3,461	17.1	7,284	53.8

Table 5

Total number of benefit recipients by type of benefit

Fiscal year ended June 30	Service retirement	Disability benefits	Benefits for survivors	Total benefit recipients[1]
2013	236,487	9,374	23,413	269,274
2014	241,920	9,604	24,103	275,627
2015	247,353	9,848	24,899	282,100
2016	252,672	9,940	25,583	288,195
2017	258,550	10,023	26,301	294,874
2018	264,780	10,089	26,990	301,859
2019	270,835	10,152	27,652	308,639
2020	276,070	10,095	28,353	314,518
2021	281,302	9,973	29,138	320,413
2022	285,704	9,885	29,879	325,468

1 Benefit recipients reported in this section will differ from those reported in the Financial section due to timing of when membership numbers were pulled.

Table 6

Members retired for service characteristics by year of retirement[1]

Effective date of retirement by service credit	Number of retirements	Average service credit	Average Member-Only Benefit	Average final compensation	Average age at retirement
7/1/2012 thru 6/30/2013[2]					
0–5	132	2.5	$311	$6,092	62.8
5–10	1,017	7.2	710	4,540	63.1
10–15	1,298	12.6	1,521	5,528	63.1
15–20	1,678	17.4	2,392	6,272	63.0
20–25	1,760	22.6	3,367	6,802	62.8
25–30	1,817	27.2	4,319	7,169	62.7
30–35	2,150	32.5	5,700	7,528	61.6
35–40	1,522	37.2	7,329	8,038	61.8
40 & over	271	42.3	8,924	8,439	65.6
Total	**11,645**	**24.1**	**$3,980**	**$6,769**	**62.6**
7/1/2013 thru 6/30/2014[2]					
0–5	144	2.2	$268	$5,994	62.9
5–10	950	7.4	721	4,463	63.2
10–15	1,176	12.6	1,533	5,553	63.1
15–20	1,604	17.4	2,425	6,286	63.2
20–25	1,593	22.4	3,334	6,743	62.9
25–30	1,845	27.2	4,443	7,367	63.0
30–35	1,814	32.3	5,607	7,532	61.6
35–40	1,374	37.2	7,295	7,973	61.9
40 & over	236	42.2	9,197	8,741	65.5
Total	**10,736**	**23.8**	**$3,939**	**$6,774**	**62.7**
7/1/2014 thru 6/30/2015[2,3]					
0–5	168	2.2	$275	$6,195	62.6
5–10	855	7.4	736	4,517	63.7
10–15	1,125	12.6	1,554	5,597	63.4
15–20	1,764	17.6	2,520	6,467	63.4
20–25	1,585	22.4	3,415	6,883	63.0
25–30	2,069	27.2	4,603	7,576	63.3
30–35	1,948	32.1	5,709	7,787	62.0
35–40	1,482	37.1	7,490	8,207	62.2
40 & over	282	42.4	9,539	9,166	65.8
Total	**11,278**	**24.2**	**$4,142**	**$7,013**	**63.0**

[1] Does not include formerly disabled members.

[2] The average Member-Only Benefit for this fiscal year includes the longevity bonus.

[3] Excludes retirees with no final compensation data.

Table 6

Members retired for service characteristics by year of retirement (continued)[1]

Effective date of retirement by service credit	Number of retirements	Average service credit	Average Member-Only Benefit	Average final compensation	Average age at retirement
7/1/2015 thru 6/30/2016[2,3]					
0–5	170	2.4	$314	$6,438	62.7
5–10	793	7.4	754	4,637	63.9
10–15	1,046	12.6	1,608	5,792	63.5
15–20	1,751	17.6	2,612	6,664	63.6
20–25	1,652	22.2	3,534	7,149	63.4
25–30	2,152	27.3	4,861	7,928	63.4
30–35	2,034	32.1	5,899	8,108	62.0
35–40	1,467	37.2	7,836	8,624	62.4
40 & over	309	42.5	9,666	9,215	66.4
Total	**11,374**	**24.5**	**$4,369**	**$7,329**	**63.2**
7/1/2016 thru 6/30/2017[2,3]					
0–5	155	2.2	$306	$6,402	63.6
5–10	837	7.4	773	4,709	63.9
10–15	1,075	12.6	1,628	5,861	63.5
15–20	1,836	17.7	2,701	6,857	63.7
20–25	1,932	22.2	3,628	7,326	63.6
25–30	2,246	27.3	4,955	8,082	63.5
30–35	2,423	32.2	6,126	8,438	62.1
35–40	1,414	37.3	7,807	8,711	62.4
40 & over	329	42.6	10,267	9,986	66.4
Total	**12,247**	**24.6**	**$4,475**	**$7,527**	**63.3**
7/1/2017 thru 6/30/2018[2,3]					
0–5	190	2.5	$335	$6,521	63.2
5–10	877	7.3	787	4,830	63.8
10–15	1,091	12.6	1,676	5,955	63.7
15–20	1,855	17.7	2,817	7,110	63.8
20–25	2,362	22.3	3,832	7,645	63.9
25–30	2,368	27.5	5,123	8,379	63.4
30–35	2,530	32.2	6,308	8,642	62.0
35–40	1,262	37.1	8,049	9,057	62.7
40 & over	243	43.2	10,476	9,956	68.1
Total	**12,778**	**24.3**	**$4,512**	**$7,729**	**63.3**

1 Does not include formerly disabled members.
2 The average Member-Only Benefit for this fiscal year includes the longevity bonus.
3 Excludes retirees with no final compensation data.

Table 6

Members retired for service characteristics by year of retirement (continued)[1]

Effective date of retirement by service credit	Number of retirements	Average service credit	Average Member-Only Benefit	Average final compensation	Average age at retirement
7/1/2018 thru 6/30/2019[2,3]					
0–5	216	2.3	$320	$6,713	62.9
5–10	878	7.3	762	4,658	64.0
10–15	1,072	12.7	1,725	6,141	63.7
15–20	1,772	17.7	2,847	7,252	63.7
20–25	2,309	22.4	3,883	7,824	63.5
25–30	2,174	27.4	5,255	8,578	63.6
30–35	2,543	32.2	6,457	8,925	61.9
35–40	1,137	37.1	8,108	9,225	62.7
40 & over	230	42.8	10,496	9,978	67.8
Total	**12,331**	**24.1**	**$4,547**	**$7,880**	**63.3**
7/1/2019 thru 6/30/2020[2,3]					
0–5	209	2.4	$335	$6,817	63.4
5–10	922	7.4	817	5,027	63.9
10–15	939	12.6	1,689	6,048	63.8
15–20	1,562	17.6	2,801	7,195	63.8
20–25	2,157	22.4	3,953	7,938	63.7
25–30	1,919	27.2	5,248	8,692	63.4
30–35	2,536	32.2	6,525	8,980	62.1
35–40	1,223	36.9	7,894	9,152	62.5
40 & over	239	42.9	10,143	9,606	67.7
Total	**11,706**	**24.3**	**$4,614**	**$7,948**	**63.3**
7/1/2020 thru 6/30/2021[2,3]					
0–5	166	2.3	$363	$7,633	63.2
5–10	855	7.3	826	5,097	64.0
10–15	953	12.7	1,711	6,143	63.6
15–20	1,640	17.7	2,913	7,418	63.8
20–25	2,453	22.5	4,065	8,145	63.8
25–30	2,379	27.2	5,290	8,763	63.3
30–35	2,848	32.2	6,639	9,226	61.8
35–40	1,262	36.9	8,394	9,836	62.4
40 & over	229	42.9	10,065	9,567	68.1
Total	**12,785**	**24.7**	**$4,813**	**$8,240**	**63.2**

1 Does not include formerly disabled members.

2 The average Member-Only Benefit for this fiscal year includes the longevity bonus.

3 Excludes retirees with no final compensation data.

Table 6

Members retired for service characteristics by year of retirement (continued)[1]

Effective date of retirement by service credit	Number of retirements	Average service credit	Average Member-Only Benefit	Average final compensation	Average age at retirement
7/1/2021 thru 6/30/2022[2,3]					
0–5	199	2.5	$372	$6,878	63.9
5–10	975	7.4	867	5,328	64.0
10–15	928	12.6	1,748	6,311	63.6
15–20	1,445	17.6	2,926	7,544	63.7
20–25	2,158	22.5	4,115	8,356	63.3
25–30	2,243	27.1	5,399	9,106	63.0
30–35	2,470	32.3	6,878	9,566	61.4
35–40	1,162	36.9	8,470	9,883	62.5
40 & over	174	42.8	11,088	10,786	68.1
Total	**11,754**	**24.2**	**$4,809**	**$8,403**	**63.0**

[1] Does not include formerly disabled members.
[2] The average Member-Only Benefit for this fiscal year includes the longevity bonus.
[3] Excludes retirees with no final compensation data.

Table 7

Members retired for service characteristics[1]

Fiscal year ended June 30	Average age at retirement	Average years of service credit	Average final compensation	Average monthly benefit[2]
2013	61.1	26.1	$5,385	$3,609
2014	61.2	26.0	5,487	3,694
2015	61.3	25.9	5,597	3,786
2016	61.3	25.8	5,716	3,884
2017	61.4	25.7	5,846	3,985
2018	61.5	25.6	5,981	4,086
2019	61.6	25.6	6,110	4,184
2020	61.7	25.5	6,229	4,321
2021	61.7	25.4	6,365	4,413
2022	61.8	25.3	6,490	4,517

[1] Does not include formerly disabled members.
[2] Prior to 2020, the average monthly benefit does not include supplemental benefits from the SBMA.

Table 8

Benefit recipients by type of benefit and option elected

		Type of benefit[1]			Option elected[2]								
Monthly Member-Only Benefit[3]	**Total**	**1 [4]**	**2**	**3**	**Member-Only**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Less than $500	16,316	14,239	40	2,037	11,900	816	233	44	57	2,090	664	238	274
500–1,000	23,804	21,122	339	2,343	16,270	1,084	460	76	72	3,508	1,523	167	644
1,000–1,500	23,283	19,770	695	2,818	13,968	1,416	695	113	111	3,804	2,186	175	815
1,500–2,000	25,384	20,792	1,308	3,284	14,279	1,508	609	306	125	4,042	3,199	218	1,098
2,000–2,500	27,543	21,891	1,943	3,709	14,505	1,558	635	260	156	4,777	4,051	283	1,318
2,500–3,000	26,685	21,314	2,024	3,347	13,810	1,311	460	205	101	4,980	4,106	297	1,415
3,000–3,500	25,078	20,538	1,912	2,628	12,974	1,029	310	192	57	4,698	3,889	341	1,588
3,500–4,000	21,760	18,792	995	1,973	11,019	762	245	136	48	4,202	3,544	331	1,473
4,000–4,500	20,344	18,412	398	1,534	10,040	700	217	81	36	3,921	3,561	345	1,443
4,500–5,000	19,637	18,122	127	1,388	9,220	672	193	58	27	4,098	3,520	366	1,483
5,000–5,500	19,368	18,104	55	1,209	8,904	644	167	63	18	4,153	3,490	344	1,585
5,500–6,000	17,605	16,610	23	972	7,951	552	138	55	16	3,864	3,101	349	1,579
6,000 & greater	58,661	55,998	26	2,637	23,526	2,067	324	140	42	14,355	9,917	1,827	6,463
Total	**325,468[5]**	**285,704**	**9,885**	**29,879**	**168,366**	**14,119**	**4,686**	**1,729**	**866**	**62,492**	**46,751**	**5,281**	**21,178**

1 Type of benefit: 1) Service retirement 2) Disability benefits 3) Survivor benefits.

2 Option elected:

Option 2 - Beneficiary receives 100% of member's modified allowance.
Option 3 - Beneficiary receives 50% of member's modified allowance.
Option 4 - Beneficiary receives two-thirds of member's modified allowance.
Option 5 - Survivor receives 50% of member's modified allowance, upon death of either member or beneficiary.
Option 6 - Beneficiary receives 100% of member's modified allowance. If beneficiary pre-deceases the member, the allowance increases to the Member-Only Benefit.
Option 7 - Beneficiary receives 50% of member's modified allowance. If beneficiary pre-deceases the member, the allowance increases to the Member-Only Benefit.
Option 8 - Compound option that allows the member to provide for more than one beneficiary.
Option 9 - Beneficiary receives 75% of member's modified allowance. If beneficiary pre-deceases the member, the allowance increases to the Member-Only Benefit.

3 Member-Only Benefit includes longevity bonus.

4 Does not include formerly disabled members.

5 Benefit recipients reported in this section will differ from those reported in the Financial section due to the timing of when membership numbers were pulled.

Table 9

Largest participating Defined Benefit and Defined Benefit Supplement employers for current year and nine years ago

Fiscal year 2021-22

Participating employers	Covered employees[1]	Percentage of total system
Los Angeles Unified School District	38,528	7.6%
San Diego Unified School District	8,871	1.8%
Fresno Unified School District	6,255	1.2%
Long Beach Unified School District	5,808	1.1%
San Francisco Unified School District	5,194	1.0%
Elk Grove Unified School District	4,431	0.9%
San Bernardino City Unified School District	3,876	0.8%
Santa Ana Unified School District	3,377	0.7%
Oakland Unified School District	3,229	0.6%
Corona-Norco Unified School District	3,203	0.6%
Top 10 total	**82,772**	**16.3%**
All other	423,813	83.7%
Total covered employees	**506,585**	**100.0%**

Fiscal year 2012-13

Participating employers	Covered employees[1]	Percentage of total system
Los Angeles Unified School District	39,918	8.5%
San Diego Unified School District	8,653	1.8%
Long Beach Unified School District	4,861	1.0%
Fresno Unified School District	4,765	1.0%
San Francisco Unified School District	4,728	1.0%
Elk Grove Unified School District	3,930	0.8%
San Bernardino City Unified School District	3,632	0.8%
Corona-Norco Unified School District	3,367	0.7%
Santa Ana Unified School District	3,319	0.7%
Sacramento City Unified School District	3,244	0.7%
Top 10 total	**80,417**	**17.0%**
All other	392,243	83.0%
Total covered employees	**472,660**	**100.0%**

[1] Covered employees are calculated as all employees for whom an employer reports service credit during the fiscal year. Covered employees in this table are counted more than once if they are reported by multiple employers. They are also counted if their employer reports service credit for a retired employee from prior fiscal years. Therefore, the total number of covered employees in this table is higher than the number of active members shown in Table 11 of the Actuarial section.

Table 10

Restoration of purchasing power by year of retirement, fiscal year 2021–22[1]

		Member retired before September 1			Member retired on or after September 1[2]		
Calendar year of benefit effective date	CCPI increases since benefit effective date	Benefit increases since benefit effective date	Purchasing power percentage (prior to SBMA)	Purchasing power restored by SBMA	Benefit increases since benefit effective date	Purchasing power percentage (prior to SBMA)	Purchasing power restored by SBMA
1955	1057.4%	132.0%	20.0%	65.0%	130.0%	19.9%	65.1%
1956	1035.3%	130.0%	20.3%	64.7%	128.0%	20.1%	64.9%
1957	997.6%	128.0%	20.8%	64.2%	126.0%	20.6%	64.4%
1958	958.5%	126.0%	21.4%	63.6%	124.0%	21.2%	63.8%
1959	943.7%	124.0%	21.5%	63.5%	122.0%	21.3%	63.7%
1960	922.2%	122.0%	21.7%	63.3%	120.0%	21.5%	63.5%
1961	908.3%	120.0%	21.8%	63.2%	118.0%	21.6%	63.4%
1962	891.5%	118.0%	22.0%	63.0%	116.0%	21.8%	63.2%
1963	884.9%	116.0%	21.9%	63.1%	114.0%	21.7%	63.3%
1964	865.7%	114.0%	22.2%	62.8%	112.0%	22.0%	63.0%
1965	841.3%	112.0%	22.5%	62.5%	110.0%	22.3%	62.7%
1966	826.6%	110.0%	22.7%	62.3%	108.0%	22.4%	62.6%
1967	804.1%	108.0%	23.0%	62.0%	106.0%	22.8%	62.2%
1968	767.2%	106.0%	23.8%	61.2%	104.0%	23.5%	61.5%
1969	726.2%	104.0%	24.7%	60.3%	102.0%	24.4%	60.6%
1970	684.8%	102.0%	25.7%	59.3%	100.0%	25.5%	59.5%
1971	654.9%	100.0%	26.5%	58.5%	98.0%	26.2%	58.8%
1972	634.4%	98.0%	27.0%	58.0%	96.0%	26.7%	58.3%
1973	596.6%	96.0%	28.1%	56.9%	94.0%	27.8%	57.2%
1974	531.5%	94.0%	30.7%	54.3%	92.0%	30.4%	54.6%
1975	472.0%	92.0%	33.6%	51.4%	90.0%	33.2%	51.8%
1976	438.9%	90.0%	35.3%	49.7%	88.0%	34.9%	50.1%
1977	399.9%	88.0%	37.6%	47.4%	86.0%	37.2%	47.8%
1978	360.4%	86.0%	40.4%	44.6%	84.0%	40.0%	45.0%
1979	318.9%	84.0%	43.9%	41.1%	82.0%	43.4%	41.6%
1980	257.1%	82.0%	51.0%	34.0%	80.0%	50.4%	34.6%
1981	230.1%	80.0%	54.5%	30.5%	78.0%	53.9%	31.1%
1982	202.0%	78.0%	58.9%	26.1%	76.0%	58.3%	26.7%
1983	200.1%	76.0%	58.6%	26.4%	74.0%	58.0%	27.0%
1984	187.1%	74.0%	60.6%	24.4%	72.0%	59.9%	25.1%
1985	174.4%	72.0%	62.7%	22.3%	70.0%	62.0%	23.0%

1 The SBMA for fiscal year 2021–22 is based on June 2021 California Consumer Price Index (CCPI).

2 Members who retired on or after September 1 have to wait an extra year to be eligible for the 2% benefit adjustment.

Table 10

Restoration of purchasing power by year of retirement, fiscal year 2021–22 (continued)[1]

		Member retired before September 1			Member retired on or after September 1[2]		
Calendar year of benefit effective date	CCPI increases since benefit effective date	Benefit increases since benefit effective date	Purchasing power percentage (prior to SBMA)	Purchasing power restored by SBMA	Benefit increases since benefit effective date	Purchasing power percentage (prior to SBMA)	Purchasing power restored by SBMA
1986	165.1%	70.0%	64.1%	20.9%	68.0%	63.4%	21.6%
1987	155.8%	68.0%	65.7%	19.3%	66.0%	64.9%	20.1%
1988	144.4%	66.0%	67.9%	17.1%	64.0%	67.1%	17.9%
1989	132.0%	64.0%	70.7%	14.3%	62.0%	69.8%	15.2%
1990	121.5%	62.0%	73.1%	11.9%	60.0%	72.2%	12.8%
1991	112.3%	60.0%	75.4%	9.6%	58.0%	74.4%	10.6%
1992	104.9%	58.0%	77.1%	7.9%	56.0%	76.2%	8.8%
1993	99.8%	56.0%	78.1%	6.9%	54.0%	77.1%	7.9%
1994	97.4%	54.0%	78.0%	7.0%	52.0%	77.0%	8.0%
1995	92.9%	52.0%	78.8%	6.2%	50.0%	77.8%	7.2%
1996	89.9%	50.0%	79.0%	6.0%	48.0%	77.9%	7.1%
1997	85.9%	48.0%	79.6%	5.4%	46.0%	78.5%	6.5%
1998	81.8%	46.0%	80.3%	4.7%	44.0%	79.2%	5.8%
1999	77.3%	44.0%	81.2%	3.8%	42.0%	80.1%	4.9%
2000	70.9%	42.0%	83.1%	1.9%	40.0%	81.9%	3.1%
2001	62.4%	40.0%	86.2%	0.0%	38.0%	85.0%	0.0%
2002	60.0%	38.0%	86.2%	0.0%	36.0%	85.0%	0.0%
2003	56.6%	36.0%	86.8%	0.0%	34.0%	85.6%	0.0%
2004	51.9%	34.0%	88.2%	0.0%	32.0%	86.9%	0.0%
2005	47.8%	32.0%	89.3%	0.0%	30.0%	88.0%	0.0%
2006	41.0%	30.0%	92.2%	0.0%	28.0%	90.8%	0.0%
2007	36.8%	28.0%	93.6%	0.0%	26.0%	92.1%	0.0%
2008	30.3%	26.0%	96.7%	0.0%	24.0%	95.2%	0.0%
2009	32.2%	24.0%	93.8%	0.0%	22.0%	92.3%	0.0%
2010	31.0%	22.0%	93.2%	0.0%	20.0%	91.6%	0.0%
2011	27.5%	20.0%	94.1%	0.0%	18.0%	92.5%	0.0%
2012	25.1%	18.0%	94.3%	0.0%	16.0%	92.7%	0.0%
2013	22.9%	16.0%	94.3%	0.0%	14.0%	92.7%	0.0%
2014	20.3%	14.0%	94.8%	0.0%	12.0%	93.1%	0.0%
2015	18.8%	12.0%	94.3%	0.0%	10.0%	92.6%	0.0%
2016	16.4%	10.0%	94.5%	0.0%	8.0%	92.8%	0.0%
2017	13.4%	8.0%	95.2%	0.0%	6.0%	93.5%	0.0%
2018	9.2%	6.0%	97.1%	0.0%	4.0%	95.3%	0.0%
2019	5.9%	4.0%	98.2%	0.0%	2.0%	96.3%	0.0%
2020	4.4%	2.0%	97.7%	0.0%	0.0%	95.8%	0.0%
2021	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%

1 The SBMA for fiscal year 2021–22 is based on June 2021 California Consumer Price Index (CCPI).

2 Members who retired on or after September 1 have to wait an extra year to be eligible for the 2% benefit adjustment.

Table 11

Restoration of allowance purchasing power through supplemental benefit payments

Retirees' purchasing power protection account payments

Year	Purchasing power	Count	Total $ paid	Income source: School lands	Income source: Investment earnings	Income source: General Fund
83–84	58.4%	35,654	$21,394,183	N/A	$894,183	$20,500,000
84–85	62.4%	57,189	54,306,976	$10,119,124	2,426,456	41,761,396
85–86	65.5%	56,811	85,675,243	7,770,757	3,994,458	73,910,028
86–87	68.2%	57,343	122,275,289	4,167,970	5,511,448	112,595,871
87–88	68.2%	59,092	128,231,357	6,083,374	5,317,456	116,830,527
88–89	68.2%	58,037	143,061,285	4,479,266	5,956,019	132,626,000
89–90	68.2%	55,971	158,274,048	2,751,075	N/A	155,522,973[1]

Supplemental benefit payments

Year	Purchasing power	Count	Total $ paid	Income source: School lands	Income source: Teachers' Retirement Fund	Income source: SBMA
90–91	68.2%	52,199	$168,922,827	$2,964,211	$111,103,596	$54,855,020
91–92	68.2%	48,650	178,057,887	2,913,338	56,985,521	118,159,028
92–93	68.2%	54,029	184,551,442	6,658,800	–	177,892,642
93–94	68.2%	49,113	178,886,980	4,225,808	–	174,661,172
94–95	68.2%	46,459	168,359,918	4,973,687	–	163,386,231
95–96	68.2%	41,703	168,517,183	1,171,779	–	167,345,404
96–97	68.2%	38,939	159,786,521	1,870,825	–	157,915,696
97–98	68.2%[2]/75.0%	44,887	179,308,000	2,586,920	–	176,721,080
98–99	75.0%	42,624	197,860,324	4,168,363	–	193,691,961
99–00	75.0%	41,048	190,478,334	2,704,171	–	187,774,163
00–01	75.0%	44,699	189,388,495	4,023,007	–	185,365,488
01–02	80.0%[3]	60,428	256,976,204	7,967,992	–	249,008,212
02–03	80.0%	58,591	233,814,578	3,543,362	–	230,271,216
03–04	80.0%	55,779	223,501,415	2,922,844	–	220,578,571
04–05	80.0%	57,079	221,271,470	3,318,095	–	217,953,375
05–06	80.0%	54,360	215,257,813	4,301,959	–	210,955,854
06–07	80.0%	56,002	230,336,754	6,205,860	–	224,130,894
07–08	80.0%	53,122	229,860,349	6,522,856	–	223,337,493
08–09	85.0%[4]	89,142	348,105,380	7,036,201	–	341,069,179
09–10	85.0%	63,949	272,579,522	6,334,670	–	266,244,852
10–11	85.0%	53,870	237,572,962	1,929,606	–	235,643,356
11–12	85.0%	57,337	234,612,294	5,227,046	–	229,385,248
12–13	85.0%	54,847	221,451,056	10,277,064	–	211,173,992
13–14	85.0%	50,331	202,231,778	10,297,864	–	191,933,914
14–15	85.0%	52,474	192,831,167	4,386,099	–	188,445,068
15–16	85.0%	47,764	172,292,148	5,256,886	–	167,035,262
16–17	85.0%	49,519	160,729,280	4,675,196	–	156,054,084
17–18	85.0%	61,476	161,932,385	4,409,980	–	157,522,405
18–19	85.0%	72,216	194,467,089	5,454,757	–	189,012,332
19-20	85.0%	70,862	215,025,823	6,169,540	–	208,856,283
20–21	85.0%	65,704	191,089,318	5,640,203	–	185,449,115
21-22	85.0%	67,900	241,702,281	5,377,819	–	236,324,462

[1] The appropriation for fiscal year 1989–90 was from the Teachers' Retirement Fund. This amount plus regular interest was repaid from General Fund contributions to the SBMA.

[2] Percentage changed to 75% effective January 1, 1998, and payable April 1,1998 (Chapter 939, Statutes of 1997).

[3] Percentage changed to 80% effective January 1, 2002, and payable October 1, 2001 (Chapter 840, Statutes of 2001).

[4] Percentage changed to 85% effective September 30, 2008, and payable October 1, 2008 (Chapter 751, Statutes of 2008).

Defined Benefit Supplement Program schedules

Table 1

Members retired for service during fiscal year 2021–22, classified by age and option elected[1]

Age	Total	Regular annuity: Single life with cash	Regular annuity: 100% joint and survivor	Regular annuity: 75% joint and survivor	Regular annuity: 50% joint and survivor	Period-certain annuity: 10 years	Period-certain annuity: 9 years	Period-certain annuity: 8 years	Period-certain annuity: 7 years	Period-certain annuity: 6 years	Period-certain annuity: 5 years	Period-certain annuity: 4 years	Period-certain annuity: 3 years
Under 55	23	7	3	–	–	9	–	–	–	1	2	–	1
55	333	98	29	5	10	77	2	3	3	9	47	10	40
56	211	54	16	2	6	48	7	2	7	4	24	8	33
57	229	54	17	7	14	64	2	5	8	4	19	5	30
58	271	58	30	2	14	72	3	2	12	8	37	6	27
59	384	99	38	9	14	93	10	4	12	20	50	5	30
60	587	146	57	10	35	148	8	4	18	11	96	12	42
61	792	167	75	21	53	217	19	7	11	22	104	43	53
62	700	182	76	16	54	165	12	13	16	9	64	24	69
63	582	158	45	13	34	135	11	7	20	12	61	20	66
64	375	114	43	9	25	69	9	2	6	11	42	9	36
65	385	116	36	11	18	86	2	7	15	6	48	8	32
66	239	82	25	9	9	48	2	–	5	8	32	2	17
67	192	62	15	1	9	56	3	1	1	5	25	4	10
68	165	41	15	6	10	47	3	2	1	2	20	2	16
69	132	32	22	3	2	29	1	1	2	2	19	2	17
70	116	38	9	4	11	24	2	1	2	2	12	2	9
71	77	18	8	3	6	18	2	1	1	–	12	2	6
72	68	21	6	4	4	19	–	2	–	2	4	2	4
73	50	13	9	1	2	10	1	2	–	–	8	–	4
74	42	14	4	1	4	7	–	1	–	3	2	1	5
75 & over	95	29	9	4	1	17	–	2	1	3	12	7	10
Total	**6,048**	**1,603**	**587**	**141**	**335**	**1,458**	**99**	**69**	**141**	**144**	**740**	**174**	**557**

[1] Does not include formerly disabled members.

Defined Benefit Supplement Program schedules

Table 2

Characteristics of all members retired for service and receiving an annuity

Fiscal year ended June 30	Count	Average monthly retirement annuity	Average accumulated credits[1]	Average age at retirement
2013	45,110	$254	$14,088	62.1
2014	48,745	255	14,848	62.2
2015	52,335	259	15,659	62.3
2016	56,238	269	16,590	62.4
2017	60,505	280	23,873	62.5
2018	64,796	289	24,883	62.6
2019	68,091	301	25,750	62.7
2020	70,780	309	26,555	62.7
2021	73,689	319	27,280	62.7
2022	75,644	330	27,956	62.7

[1] Neither service credit nor final compensation are factors in determining a benefit from the DBS Program and, therefore, are not included in this table.

Table 3

Characteristics of all members retired for disability and receiving an annuity

Fiscal year ended June 30	Count	Average monthly retirement annuity	Average accumulated credits[1]	Average age at retirement
2013	977	$244	$11,495	55.6
2014	1,123	239	12,407	55.8
2015	1,263	245	13,237	55.6
2016	1,340	239	13,953	55.5
2017	1,428	246	19,793	55.3
2018	1,464	244	20,232	55.2
2019	1,495	243	20,441	55.2
2020	1,501	245	20,776	55.0
2021	1,497	239	20,873	54.9
2022	1,457	233	21,079	54.7

[1] Neither service credit nor final compensation are factors in determining a benefit from the DBS Program and, therefore, are not included in this table.

Defined Benefit Supplement Program schedules

Table 4

Benefit recipients by type of benefit and option elected

(as of June 30, 2022)

	Monthly annuity amount					
Type of benefit	**Less than $250**	**$250–500**	**$500–750**	**$750–1,000**	**$1,000 & greater**	**Total**
Retirement	40,536	21,449	7,552	2,943	3,164	75,644
Disability	1,015	331	76	22	13	1,457
Survivors	1,599	423	156	74	115	2,367
Total	**43,150**	**22,203**	**7,784**	**3,039**	**3,292**	**79,468**

Type of payment						
Regular annuity						
Single life with cash	22,635	6,045	832	258	162	29,932
Single life without cash	978	1	–	–	–	979
100% joint & survivor	10,669	3,295	517	154	146	14,781
75% joint & survivor	1,679	683	117	31	29	2,539
50% joint & survivor	3,907	1,401	242	88	35	5,673
Period-certain annuity						
10 year	2,523	8,133	2,866	799	751	15,072
9 year	119	571	254	79	77	1,100
8 year	51	309	216	74	62	712
7 year	68	444	449	147	129	1,237
6 year	63	240	440	148	152	1,043
5 year	260	716	1,443	775	687	3,881
4 year	54	114	182	187	254	791
3 year	144	251	226	299	808	1,728
Total	**43,150**	**22,203**	**7,784**	**3,039**	**3,292**	**79,468**

Cash Balance Benefit Program schedules

Table 1

Participants retired for service during fiscal year 2021–22, classified by age and type of annuity elected

		Regular annuity				Period-certain annuity							
Age	Total	Participant Only[1]	100% Beneficiary[2]	75% Beneficiary[3]	50% Beneficiary[4]	10 years	9 years	8 years	7 years	6 years	5 years	4 years	3 years
Under 55	–	–	–	–	–	–	–	–	–	–	–	–	–
55	1	–	–	–	–	–	–	–	–	–	–	–	1
56	–	–	–	–	–	–	–	–	–	–	–	–	–
57	1	–	–	–	–	–	–	–	–	–	–	1	–
58	–	–	–	–	–	–	–	–	–	–	–	–	–
59	1	–	–	–	–	–	–	–	–	–	1	–	–
60	–	–	–	–	–	–	–	–	–	–	–	–	–
61	3	–	1	–	–	–	–	–	–	–	–	1	1
62	4	2	–	–	–	2	–	–	–	–	–	–	–
63	2	–	1	–	–	1	–	–	–	–	–	–	–
64	2	–	1	–	–	–	–	–	–	–	–	–	1
65	4	1	–	–	–	1	–	–	–	–	2	–	–
66	4	2	1	–	–	–	–	–	–	–	–	1	–
67	3	1	–	–	–	–	1	–	–	–	1	–	–
68	4	1	–	1	–	–	–	1	–	–	–	–	1
69	5	1	1	–	–	1	–	–	–	1	–	–	1
70	5	1	2	–	1	1	–	–	–	–	–	–	–
71	7	4	–	–	–	–	–	1	–	–	–	–	2
72	7	1	1	–	–	1	–	–	–	–	2	1	1
73	3	3	–	–	–	–	–	–	–	–	–	–	–
74	3	2	–	–	–	1	–	–	–	–	–	–	–
75 & over	13	4	–	–	–	3	–	–	–	–	1	1	4
Total	**72**	**23**	**8**	**1**	**1**	**11**	**1**	**2**	**–**	**1**	**7**	**5**	**12**

1 Formerly known as the single life annuity with cash refund.

2 Formerly known as the 100% joint and survivor annuity.

3 New option available for selection effective January 1, 2007.

4 Formerly known as the 50% joint and survivor annuity.

Cash Balance Benefit Program schedules

Table 2

Characteristics of all participants retired for service and receiving an annuity

Fiscal year ended June 30	Average age at retirement	Average annuitant reserve	Average monthly annuity
2013	67.1	$18,442	$263
2014	67.5	20,365	281
2015	67.6	20,815	251
2016	67.9	21,700	270
2017	68.0	26,501	308
2018 [1]	68.3	27,869	335
2019	68.5	28,665	322
2020	68.7	29,791	338
2021	68.7	31,205	340
2022	68.9	32,363	354

[1] Revised in 2019.

Table 3

All participants receiving an annuity by type of benefit and type of annuity elected

(as of June 30, 2022)

	Monthly annuity amount					
Type of benefit	**Less than $250**	**$250–500**	**$500–750**	**$750–1,000**	**$1,000 & greater**	**Total**
Retirement	266	131	54	22	26	499
Disability	–	–	–	–	1	1
Survivors	10	5	3	–	1	19
Total	**276**	**136**	**57**	**22**	**28**	**519**

Type of payment						
Regular annuity						
Single life with cash	1	–	–	–	–	1
Single life without cash	1	1	–	–	–	2
Participant only	139	69	16	4	1	229
100% Beneficiary Annuity	53	14	5	1	1	74
75% Beneficiary Annuity	5	3	2	–	–	10
50% Beneficiary Annuity	13	5	1	–	1	20
Period—certain annuity						
10 year	36	19	15	5	4	79
9 year	3	3	–	1	1	8
8 year	3	1	–	2	–	6
7 year	1	1	4	1	–	7
6 year	4	–	5	–	–	9
5 year	8	12	3	3	5	31
4 year	3	3	2	1	4	13
3 year	6	5	4	4	11	30
Total	**276**	**136**	**57**	**22**	**28**	**519**

Cash Balance Benefit Program schedules

Table 4

Largest participating employers for the Cash Balance Benefit Program, current year and nine years ago

Fiscal year 2021–22

Participating employers	Covered employees[1]	Percentage of total system
Los Angeles Community College District	6,427	15.0%
Contra Costa Community College District	2,739	6.4%
Peralta Community College District	2,648	6.2%
West Contra Costa Unified School District	2,050	4.8%
City College of San Francisco	2,033	4.7%
San Jose/Evergreen Community College District	1,968	4.6%
Foothill De Anza Community College District	1,859	4.3%
Glendale Community College District	1,782	4.2%
Chabot-Las Positas Community College District	1,779	4.2%
Santa Rosa Junior College	1,557	3.6%
Top 10 total	**24,842**	**58.0%**
All other	18,013	42.0%
Total covered employees	**42,855**	**100.0%**

Fiscal year 2012–13

Participating employers	Covered employees[1]	Percentage of total system
Los Angeles Community College District	4,397	12.8%
Contra Costa Community College District	2,258	6.6%
Peralta Community College District	2,203	6.4%
West Contra Costa Unified School District	2,129	6.2%
City College of San Francisco	1,865	5.4%
San Jose/Evergreen Community College District	1,746	5.1%
Chabot-Las Positas Community College District	1,613	4.7%
Foothill De Anza Community College District	1,450	4.2%
Santa Rosa Junior College	1,404	4.1%
Glendale Community College District	1,384	4.0%
Top 10 total	**20,449**	**59.5%**
All other	13,934	40.5%
Total covered employees	**34,383**	**100.0%**

[1] Covered employees are calculated as all employees for whom an employer reports service credit during the fiscal year. Covered employees in this table are counted more than once if they are reported by multiple employers. They are also counted if their employer reports service credit for a retired employee from prior fiscal years. Therefore, the total number of covered employees in this table is higher than the number of active members shown in Table 11 of the Actuarial section under the CBB Program.

Programs administered or overseen by the retirement system (Pension2)

Table 1A

Changes in fiduciary net position for the Pension2 IRC 403(b) Plan[1]

(dollars in thousands)

	Fiscal year ended June 30									
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Additions										
Participant contributions	$226,996	$217,424	$198,217	$174,230	$122,113	$121,945	$96,347	$72,042	$66,545	$57,273
Employer contributions	1,955	1,137	590	982	369	393	377	301	151	269
Net investment income (loss)	(141,643)	291,739	35,903	51,467	65,104	77,730	9,548	19,363	66,002	43,151
Other income	288	397	306	273	309	141	120	91	28	–
Total additions	**$87,596**	**$510,697**	**$235,016**	**$226,952**	**$187,895**	**$200,209**	**$106,392**	**$91,797**	**$132,726**	**$100,693**
Deductions										
Distributions and withdrawals[2]	$82,197	$79,744	$63,994	$67,772	$48,481	$36,322	$32,936	$32,648	$22,173	$25,727
Refunds of participant contributions	4,625	6,524	6,068	5,754	5,614	4,657	4,965	7,753	2,523	–
Administrative expenses	4,765	4,065	3,179	2,739	2,406	1,975	1,583	1,405	1,146	754
Total deductions	**$91,587**	**$90,333**	**$73,241**	**$76,265**	**$56,501**	**$42,954**	**$39,484**	**$41,806**	**$25,842**	**$26,481**
Changes in fiduciary net position	**($3,991)**	**$420,364**	**$161,775**	**$150,687**	**$131,394**	**$157,255**	**$66,908**	**$49,991**	**$106,884**	**$74,212**

[1] Certain changes have been made to the presentation of this table to conform with the presentation on the statement of changes in fiduciary net position in the Financial section.

[2] Distributions and withdrawals reflect the benefit payments to members and refunds of member contributions combined for fiscal years 2012–13.

Table 1B

Changes in fiduciary net position for the Pension2 IRC 457(b) Plan[1]

(dollars in thousands)

	Fiscal year ended June 30									
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Additions										
Participant contributions	$21,312	$17,084	$13,302	$9,307	$7,038	$6,516	$4,898	$4,025	$3,230	$2,591
Employer contributions	169	146	126	110	85	44	77	71	51	37
Net investment income (loss)	(11,095)	17,771	1,343	2,432	2,555	3,338	426	547	1,934	1,081
Other income	10	11	11	10	11	8	4	2	–	–
Total additions	**$10,396**	**$35,012**	**$14,782**	**$11,859**	**$9,689**	**$9,906**	**$5,405**	**$4,645**	**$5,215**	**$3,709**
Deductions										
Distributions and withdrawals[2]	$2,757	$3,151	$2,358	$1,659	$1,411	$769	$905	$807	$358	$530
Refunds of participant contributions	1,302	89	54	141	88	36	266	–	45	–
Administrative expenses	278	222	152	122	100	79	56	47	36	22
Total deductions	**$4,337**	**$3,462**	**$2,564**	**$1,922**	**$1,599**	**$884**	**$1,227**	**$854**	**$439**	**$552**
Changes in fiduciary net position	**$6,059**	**$31,550**	**$12,218**	**$9,937**	**$8,090**	**$9,022**	**$4,178**	**$3,791**	**$4,776**	**$3,157**

[1] Certain changes have been made to the presentation of this table to conform with the presentation on the statement of changes in fiduciary net position in the Financial section.

[2] Distributions and withdrawals reflect the benefit payments to members and refunds of member contributions combined for fiscal years 2012–13.

Table 2

Largest participating employers for CalSTRS Pension2, current year and nine years ago

Fiscal year 2021–22

Participating employers	Covered employees[1]	Percentage of total system
Los Angeles Unified School District	3,485	11.8%
Los Angeles Community College District	661	2.3%
San Diego Unified School District	595	2.0%
Elk Grove Unified School District	511	1.7%
San Francisco Unified School District	455	1.5%
Los Rios Community College District	352	1.2%
City College of San Francisco	288	1.0%
Long Beach Unified School District	273	0.9%
Oakland Unified School District	248	0.8%
Sacramento City Unified School District	236	0.8%
Top 10 total	**7,104**	**24.0%**
All other	22,452	76.0%
Total covered employees	**29,556**	**100.0%**

Fiscal year 2012–13

Participating employers	Covered employees[1]	Percentage of total system
Los Angeles Unified School District	4,723	42.3%
San Diego Unified School District	179	1.6%
Fremont Unified School District	158	1.4%
Los Angeles Community College District	144	1.3%
City College of San Francisco	114	1.0%
Long Beach Unified School District	101	0.9%
San Francisco Unified School District	92	0.8%
Sacramento City Unified School District	89	0.8%
San Juan Unified School District	83	0.8%
Elk Grove Unified School District	69	0.6%
Top 10 total	**5,752**	**51.5%**
All other	5,408	48.5%
Total covered employees	**11,160**	**100.0%**

[1] If employers offer a 403(b) or 457(b), they are counted twice; totals also include all accounts with or without balances.

Medicare Premium Payment Program

Table 1

Changes in fiduciary net position for the Medicare Premium Payment Program

(dollars in thousands)

	Fiscal year ended June 30									
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Additions										
Employer contributions	$26,352	$26,988	$27,685	$27,977	$28,218	$29,117	$29,982	$30,527	$33,395	$35,022
Net investment income	1	6	25	29	18	11	9	–	10	6
Total additions	**$26,353**	**$26,994**	**$27,710**	**$28,006**	**$28,236**	**$29,128**	**$29,991**	**$30,527**	**$33,405**	**$35,028**
Deductions										
Premiums paid	$25,776	$26,377	$27,217	$27,546	$28,036	$28,929	$29,661	$30,615	$32,632	$34,702
Administrative expenses	468	788	510	1,901	578	168	380	360	327	340
Other expenses	1	–	2	1	–	–	–	–	–	–
Total deductions	**$26,245**	**$27,165**	**$27,729**	**$29,448**	**$28,614**	**$29,097**	**$30,041**	**$30,975**	**$32,959**	**$35,042**
Changes in fiduciary net position	**$108**	**($171)**	**($19)**	**($1,442)**	**($378)**	**$31**	**($50)**	**($448)**	**$446**	**($14)**

Table 2

Benefit and refund deductions from changes in fiduciary net position by type

(dollars in thousands)

	Fiscal year ended June 30									
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Type of benefit										
Age & services benefits										
Retired members	$25,776	$26,377	$27,217	$27,546	$28,036	$28,929	$29,661	$30,615	$32,632	$34,702
Total benefits	**$25,776**	**$26,377**	**$27,217**	**$27,546**	**$28,036**	**$28,929**	**$29,661**	**$30,615**	**$32,632**	**$34,702**

Medicare Premium Payment Program

Table 3

Retired members enrolled in Medicare Premium Payment Program during fiscal year 2021–22, classified by age at retirement

Age	Count
<55	1
55–56	8
56–57	–
57–58	–
58–59	–
59–60	–
60–61	1
61–62	–
62–63	–
63–64	1
64–75	1
75 & over	–
Grand total	**12**

Table 4

Characteristics of all retired members enrolled in Medicare Premium Payment Program

Fiscal year ended June 30	Average age at retirement	Average monthly Medicare premium
2013	60.3	$413
2014	60.3	400
2015	60.2	383
2016	60.2	374
2017	60.2	376
2018	60.1	380
2019	60.1	390
2020	60.1	405
2021	60.0	419
2022	60.1	436

Teachers' Deferred Compensation Fund

Table 1

Changes in fiduciary net position for the Teachers' Deferred Compensation Fund

(dollars in thousands)

	Fiscal year ended June 30									
	2022	**2021**	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**
Additions										
Net investment income (loss)	($31)	$1	$40	$39	$17	$9	$6	$1	$4	$3
Other income	1,964	2,089	1,893	1,743	1,607	1,453	1,339	1,072	1,241	563
Total additions	**$1,933**	**$2,090**	**$1,933**	**$1,782**	**$1,624**	**$1,462**	**$1,345**	**$1,073**	**$1,245**	**$566**
Deductions										
Administrative expenses	$1,001	$1,844	$1,502	$1,622	$2,198	$1,542	$1,433	$996	$874	$600
Other expenses	2	–	4	3	–	22	14	14	15	30
Total deductions	**$1,003**	**$1,844**	**$1,506**	**$1,625**	**$2,198**	**$1,564**	**$1,447**	**$1,010**	**$889**	**$630**
Changes in fiduciary net position	**$930**	**$246**	**$427**	**$157**	**($574)**	**($102)**	**($102)**	**$63**	**$356**	**($64)**

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