SAN FRANCISCO CITY AND COUNTY
EMPLOYEES' RETIREMENT SYSTEM

Financial Statements and
Required Supplementary Information
(With Independent Auditor's Report Thereon)

Years Ended June 30, 2022 and 2021

MGO Certified Public Accountants

SAN FRANCISCO CITY AND COUNTY EMPLOYEES' RETIREMENT SYSTEM
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(With Independent Auditor's Report Thereon)
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Independent Auditor's Report

Retirement Board of San Francisco
City and County Employees' Retirement System
San Francisco, California

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of the San Francisco City and County Employees' Retirement System (Retirement System), a pension trust fund of the City and County of San Francisco, California, as of and for the years ended June 30, 2022, and 2021, and the related notes to the financial statements, which collectively comprise the Retirement 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 Retirement System as of June 30, 2022 and 2021, and the changes in its fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audits 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*, issued by the Comptroller General of the United States (*Government Auditing Standards*). 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 Retirement 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 Matter

As described in Note 1, the financial statements present only the Retirement System and do not purport to, and do not, present fairly the financial position of the City and County of San Francisco as of June 30, 2022 and 2021, the changes in its financial position, or, where applicable, its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

The Retirement System's 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.

Macias Gini & O'Connell LLP
2121 N. California Boulevard, Suite 750
Walnut Creek, CA 94596

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 Retirement 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 Retirement 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 Retirement 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, the schedule of changes in collective net pension liability/(asset) and related ratios, the schedule of employer contributions, and the schedule of money-weighted rate of return, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, 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 financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with GAAS, 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 audits 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.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated February 3, 2023, on our consideration of the 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 Retirement 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 the Retirement System's internal control over financial reporting and compliance.

Macias Gini & O'Connell LLP

Walnut Creek, California
February 3, 2023

The management of the City and County of San Francisco Employees' Retirement System (Retirement System) is pleased to provide this overview and analysis of the financial activities of its cost-sharing multiple-employer defined benefit pension plan (Plan) for the years ended June 30, 2022 and 2021. We encourage readers to consider the information presented here in conjunction with the *Basic Financial Statements and Required Supplementary Information*, which follow this discussion. All amounts, unless otherwise indicated, are expressed in thousands of dollars.

Financial Highlights

Fiscal Year 2022

- The assets and deferred outflows of resources of the Retirement System exceeded its liabilities and deferred inflows of resources at the close of the year ended June 30, 2022. The Plan held $32,798,524 of net position restricted for pension benefits. All of the fiduciary net position is available to meet the Retirement System's ongoing obligations to plan participants and their beneficiaries.

- The Retirement System's funding objective is to meet long-term benefit obligations through contributions and investment income. The Retirement System's fiduciary net position as a percentage of the total pension liability should be considered when evaluating the Retirement System's financial health. Based on the June 30, 2022, measurement date, the fiduciary net position was 92.4% of the total pension liability.

- For the year ended June 30, 2022, the Retirement System's net investment loss of $2,308,320 represents a 6.5% decrease in fiduciary net position as of the beginning of the fiscal year.

- Total fiduciary net position held in trust for pension benefits decreased by $2,875,310, or 8.1%, primarily as a result of market declines and the net difference between contributions to the Plan and benefits, refunds, and administrative expenses incurred by the Plan.

- Members' contributions to the Plan totaled $423,471, an increase of $14,073 or 3.4% from the prior year, primarily as a result of a 3.3% increase in covered payroll. Employee contribution rates in fiscal year 2021-22 ranged from 7.5% - 13.0%, same as in fiscal year 2020-21.

- In order to maintain the fiscal soundness of the Plan, required employer contributions to the Plan totaled $768,463, a decrease of $68,096 or 8.1% from the prior year, primarily due to decreased employer contribution rates offset by a 3.3% increase in covered payroll. Employer contribution rates ranged from 19.91% to 24.41% in fiscal year 2021-22 and 22.40% to 26.90% in fiscal year 2020-21.

- Total deductions from the Plan were $1,758,924, an increase of 7.3% from the prior year due to an increase in benefits paid during the current fiscal year, as a result of an increase in the number of payees, higher average retirement benefits and an increase in the cost of living adjustments (COLA).

Fiscal Year 2021

- The assets and deferred outflows of resources of the Retirement System exceeded its liabilities and deferred inflows of resources at the close of the year ended June 30, 2021. The Plan held $35,673,834 of net position restricted for pension benefits. All of the fiduciary net position is available to meet the Retirement System's ongoing obligations to plan participants and their beneficiaries.

- The Retirement System's funding objective is to meet long-term benefit obligations through contributions and investment income. The Retirement System's fiduciary net position as a percentage of the total pension liability should be considered when evaluating the Retirement System's financial health. Based on the June 30, 2021, measurement date, the fiduciary net position was 107.8% of the total pension liability.

- For the year ended June 30, 2021, the Retirement System's net investment income of $9,447,669 represents 35.5% of fiduciary net position as of the beginning of the fiscal year.

- Total fiduciary net position held in trust for pension benefits increased by $9,053,616, or 34.0%, primarily as a result of positive investment returns, which were reduced by the net difference between contributions to the Plan and benefits, refunds, and administrative expenses incurred by the Plan.

- Members' contributions to the Plan totaled $409,398, an increase of $8,749 or 2.2% from the prior year, primarily as a result of a 1.6% increase in covered payroll. Employee contribution rates in fiscal year 2020-21 ranged from 7.5% - 13.0%, same as in fiscal year 2019-20.

- In order to maintain the fiscal soundness of the Plan, required employer contributions to the Plan totaled $836,559, an increase of $93,574 or 12.6% from the prior year, partly due to the 1.6% increase in covered payroll and partly due to increased employer contribution rates. Employer contribution rates ranged from 22.40% to 26.90% in fiscal year 2020-21 and 20.69% to 25.19% in fiscal year 2019-20.

- Total deductions from the Plan were $1,640,010, an increase of 4.6% from the prior year due to an increase in benefits paid during the current fiscal year, as a result of an increase in the number of payees, higher average retirement benefits and an increase in the cost of living adjustments (COLA).

Overview of Financial Statements

The following discussion and analysis are intended to serve as an introduction to the Retirement System's financial statements, which are comprised of the following components:

1. ***Statements of Fiduciary Net Position*** are snapshots of account balances as of the close of the years June 30, 2022 and 2021. They indicate the total assets, deferred outflows of resources, total liabilities, deferred inflows of resources, and the net position restricted for future payment of retirement benefits and operating expenses as of June 30, 2022 and 2021.

2. ***Statements of Changes in Fiduciary Net Position*** provide a view of additions to and deductions from the Plan during the years ended June 30, 2022 and 2021.

3. ***Notes to Financial Statements*** provide additional information that is essential to a full understanding of the data provided in the financial statements.

The statements of fiduciary net position and the statements of changes in fiduciary net position report information about the Retirement System's financial activities, prepared using the accrual basis of accounting. Contributions to the Plan are recognized when due pursuant to legal requirements and benefits and refunds are recognized when currently due and payable in accordance with the terms of the Plan.

(Dollar amounts in thousands)

Investments are reported at fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Securities that do not have an established market are reported at estimated fair value derived from third party pricing services. Purchases and sales of investments are recorded on a trade date basis. The fair values of the Retirement System's partnership interests, which include private equity, real assets, private credit, absolute return, and some public equity investments, are based on net asset values provided by the general partners and investment managers.

Investments in forward currency contract investments are commitments to purchase and sell stated amounts of foreign currency. Changes in fair value of open contracts are immediately recognized as gains or losses. The fair value of forward currency contracts is determined by quoted currency prices from national exchanges.

Additional information on the Retirement System's investments can be found in Notes 4, 5, 6 and 7 of this report.

Financial Analysis

The Plan's net position may serve over time as a useful indication of the Plan's financial position. The assets and deferred outflows of resources of the Plan exceeded its liabilities and deferred inflows of resources at June 30, 2022 and 2021. All of the Plan's fiduciary net position is restricted to meet the Retirement System's ongoing obligation to Plan participants and their beneficiaries.

The Plan's fiduciary net position as of June 30, 2022, 2021, and 2020 are represented in the table below:

Fiduciary Net Position Summary – June 30, 2022, 2021, and 2020

	2022	2021	2020
Other assets	$ 199,264	$ 330,508	$ 539,779
Investments at fair value	33,362,050	36,210,381	26,704,727
Total assets	33,561,314	36,540,889	27,244,506
Deferred outflows of resources	2,092	2,255	1,587
Total assets and deferred outflows of resources	33,563,406	36,543,144	27,246,093
Total liabilities	762,713	867,338	624,636
Deferred inflows of resources	2,169	1,972	1,239
Total liabilities and deferred inflows of resources	764,882	869,310	625,875
Fiduciary net position	$ 32,798,524	$ 35,673,834	$ 26,620,218

As of June 30, 2022, the Plan's total fiduciary net position held in trust for pension benefits decreased by $2,875,310 or 8.1% for the year, primarily due to market declines. Payables to brokers decreased by $4,597 and payables to borrowers of securities decreased by $228,957 due to the timing of investments and lending activities.

As of June 30, 2021, the Plan's total fiduciary net position held in trust for pension benefits increased by $9,053,616 or 34.0% for the year, primarily due to positive investment returns. Payables to brokers increased by $6,073 and payables to borrowers of securities increased by $223,485 due to the timing of investments and lending activities.

The Retirement Board believes that the Plan remains in a strong financial position to meet its obligations to the Plan members and beneficiaries. Markets broadly declined in the year ended June 30, 2022. The U.S. economy, despite nominal growth, contracted in real terms over the first two quarters of calendar year 2022, meeting the traditional definition of an economic recession. The rolling 12-month seasonally-adjusted CPI was 9.1% at the end of the second quarter, the highest mark in 40 years. The Federal Reserve, in its efforts to combat rapidly rising inflation, began its quantitative tightening measures and raised the Fed Funds Rate to a targeted range of 1.50% - 1.75%. Similar actions were taken by central banks globally. The tightening measures undertaken by central banks globally resulted in negative performance for both stocks and bonds. U.S. stocks posted their first year of negative returns in over a decade, but outperformed international equities, returning -10.6% as measured by the S&P 500 Index. International developed-markets equities (-17.8% for the year) also struggled as inflationary pressures, the ongoing conflict between Russia and Ukraine, and currency weakness led to underperformance relative to U.S. stocks. Emerging markets equities returned -25.3%, underperforming both U.S. equities and international-developed markets equities. U.S. high quality fixed income returns were also negative as yields rose substantially during the timeframe, returning -10.3% in the fiscal year as measured by the Bloomberg U.S. Aggregate Bond Index.

As fiduciaries to the Plan members and beneficiaries, the Retirement Board, Retirement System staff, and our investment consultants continuously monitor the Plan's investment strategies, which comply with a "prudent expert" standard, to secure and maintain the sustainability of the Plan.

(Dollar amounts in thousands)

Highlights of Changes in Fiduciary Net Position – Years ended June 30, 2022, 2021, and 2020

	2022	2021	2020
Additions:			
Member contributions	$ 423,471	$ 409,398	$ 400,649
Employer contributions	768,463	836,559	742,985
Interest	43,365	50,520	80,729
Dividends	106,986	84,514	108,344
Net appreciation (depreciation) in fair value of investments	(2,380,535)	9,372,334	822,342
Securities lending income	4,819	4,059	1,313
Investment expenses	(80,806)	(62,331)	(46,671)
Securities lending borrower rebates and expenses	(2,149)	(1,427)	225
Total additions	(1,116,386)	10,693,626	2,109,916
Deductions:			
Benefits	1,710,092	1,599,507	1,531,041
Refunds of contributions	27,658	20,254	17,036
Administrative expenses	21,364	20,995	19,670
Administrative expenses and offset - OPEB	(190)	(746)	600
Total deductions	1,758,924	1,640,010	1,568,347
Net increase (decrease) in fiduciary net position	(2,875,310)	9,053,616	541,569
Fiduciary net position – restricted for pension benefits:			
Beginning of year	35,673,834	26,620,218	26,078,649
End of the year	$ 32,798,524	$ 35,673,834	$ 26,620,218

Fiscal Year 2022

- Members' contributions to the Plan totaled $423,471, an increase of $14,073 or 3.4% from the prior year, primarily as a result of a 3.3% increase in covered payroll. Employee contribution rates in fiscal year 2021-22 ranged from 7.5% - 13.0%, same as in fiscal year 2020-21.

- In order to maintain the fiscal soundness of the Plan, required employer contributions to the Plan totaled $768,463, a decrease of $68,096 or 8.1% from the prior year, primarily due to decreased employer contribution rates offset by a 3.3% increase in covered payroll. Employer contribution rates ranged from 19.91% to 24.41% in fiscal year 2021-22 and 22.40% to 26.90% in fiscal year 2020-21.

- Net investment income for the retirement system decreased by $11,755,989 on a year over year basis. The majority of the decrease is attributable to the decline in net appreciation of investments, primarily due to broad declines in the public markets and slowed appreciation in private equity. Interest income decreased by $7,155, mainly due to the domestic fixed income markets.

- Benefit payments to Plan participants increased by $110,585 or 6.9%, due to an increase in the number of payees, an increase in average retirement benefits and an increase in the COLA.

Fiscal Year 2021

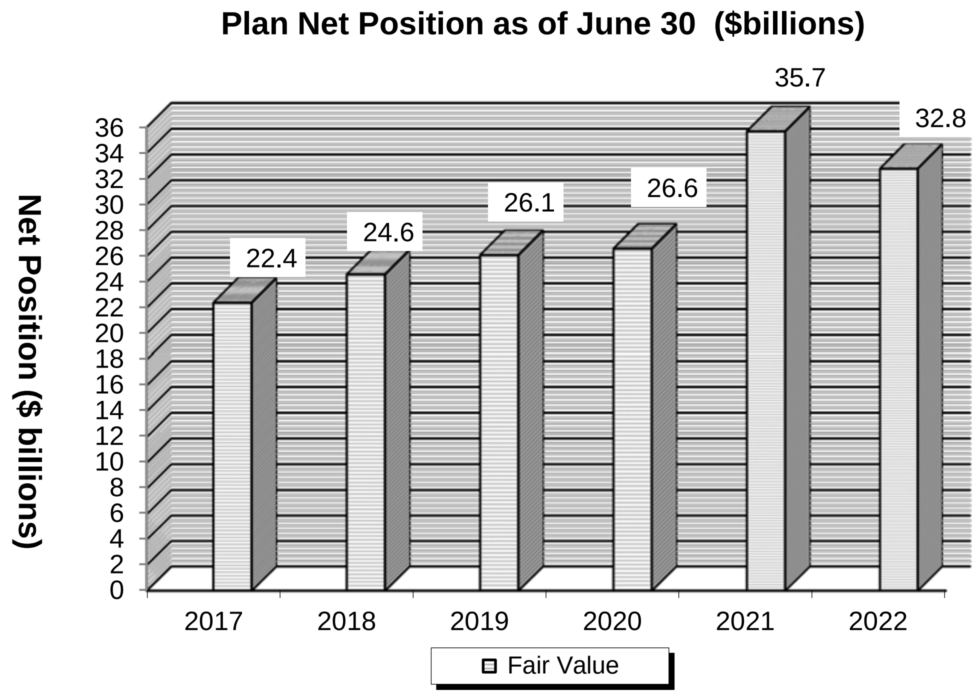
- Members' contributions to the Plan totaled $409,398, an increase of $8,749 or 2.2% from the prior year, primarily as a result of a 1.6% increase in covered payroll. Employee contribution rates in fiscal year 2020-21 ranged from 7.5% - 13.0%, same as in fiscal year 2019-20.

- In order to maintain the fiscal soundness of the Plan, required employer contributions to the Plan totaled $836,559, an increase of $93,574 or 12.6% from the prior year, partly due to the 1.6% increase in covered payroll and partly due to increased employer contribution rates. Employer contribution rates ranged from 22.40% to 26.90% in fiscal year 2020-21 and 20.69% to 25.19% in fiscal year 2019-20.

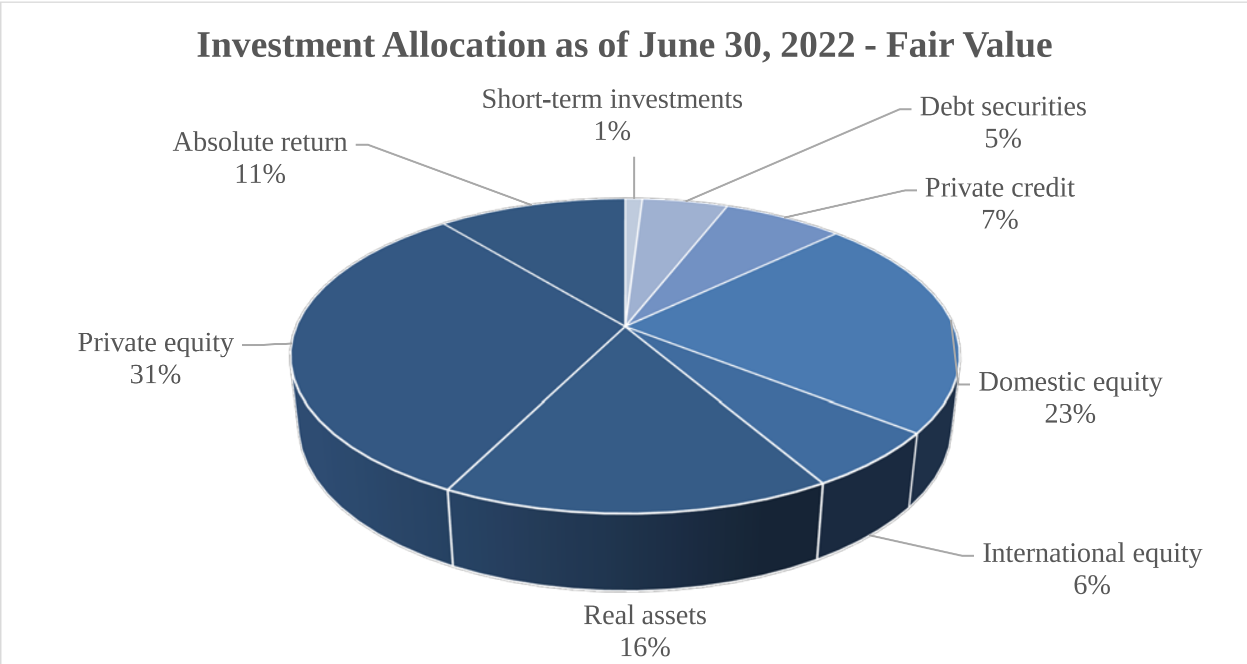
- Net investment income increased by $8,481,387 from the prior year. The majority of the increase is attributed to the $8,549,992 increase in net appreciation in fair value of investments primarily due to strong investment returns in most of the asset classes that the Retirement System invests in. Interest income decreased by $30,209, mainly due to the domestic fixed income markets.

- Benefit payments to Plan participants increased by $68,466 or 4.5%, due to a 2.4% increase in the number of payees, an increase in average retirement benefits and an increase in the COLA.

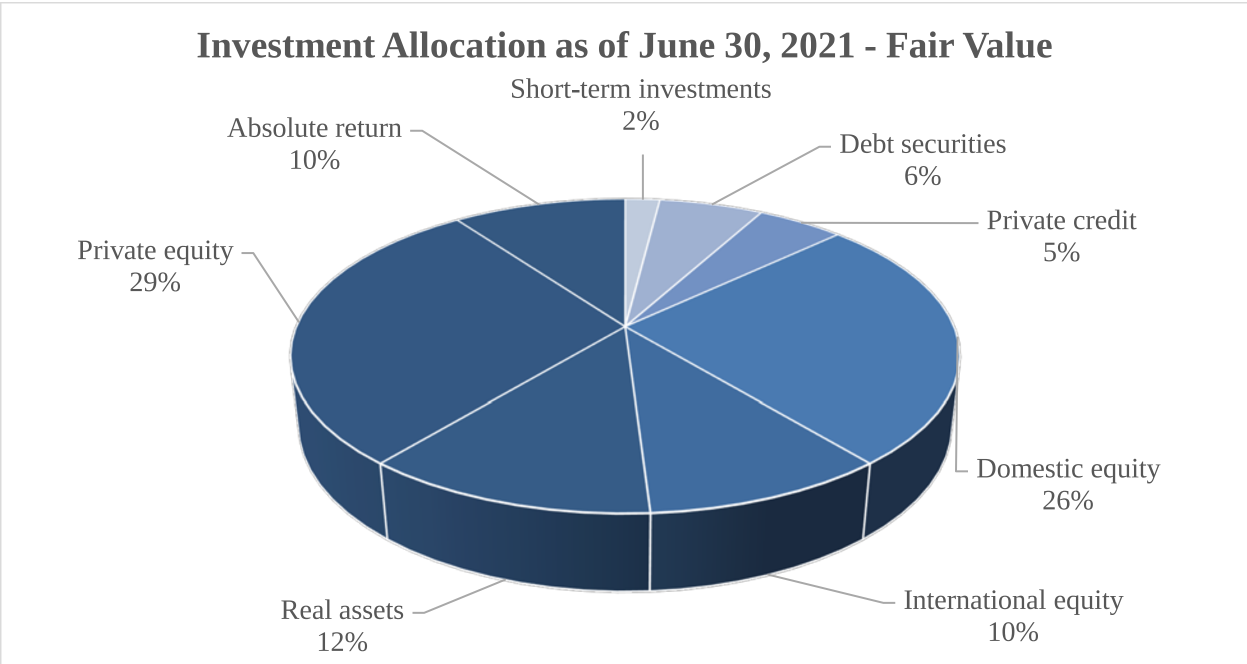
Fiduciary net position as of June 30, 2017 through 2022, expressed at fair value of investments are represented in the chart below:



The investment allocation at fair value based on investment category (excluding securities lending collateral and foreign currency contracts) as of June 30, 2022, is represented in the chart below:



The investment allocation at fair value based on investment category (excluding securities lending collateral and foreign currency contracts) as of June 30, 2021, is represented in the chart below:



Currently Known Facts and Events Affecting Next Year

The Retirement System's funding objective is to meet long-term benefit obligations through contributions and investment income. The Retirement Board believes that the Retirement System remains in a strong financial position to meet its obligations to Plan participants and beneficiaries.

Requests for information

This financial report is designed to provide a general overview of the Retirement System's finances for the years ended June 30, 2022 and 2021. Questions regarding any of the information provided in this report or requests for additional financial information should be addressed to:

Alison Romano, Chief Executive Officer & Chief Investment Officer
San Francisco City and County Employees' Retirement System
1145 Market Street – 5th floor
San Francisco, CA 94103

SAN FRANCISCO CITY AND COUNTY EMPLOYEES' RETIREMENT SYSTEM

Statements of Fiduciary Net Position

June 30, 2022 and 2021

(In thousands)

	2022	2021
Assets:		
Deposits	$ 131,252	$ 49,724
Contributions receivable - members	21,690	19,837
Investment income receivable:		
Interest	9,434	9,578
Dividends	2,680	2,154
Securities Lending	182	275
Receivable from brokers, general partners, and others	34,026	248,940
Investments at fair value:		
Short-term investments	369,099	651,504
City investment pool	15,352	9,184
Debt securities:		
U.S. government and agency securities	875,900	1,090,034
Other debt securities	846,696	1,094,046
Equity securities:		
Domestic	7,485,899	9,126,749
International	2,093,752	3,530,581
Real assets	5,113,451	4,182,366
Private credit	2,171,037	1,818,240
Private equity	10,338,629	10,280,363
Absolute return	3,511,019	3,656,388
Foreign currency contracts, net	(197)	69
Invested securities lending collateral	541,413	770,857
Total investments	33,362,050	36,210,381
Total assets	33,561,314	36,540,889
Deferred outflows of resources:		
Other postemployment benefits (OPEB)	2,092	2,255
Total assets and deferred outflows of resources	33,563,406	36,543,144
Liabilities:		
Payable to brokers	37,250	41,847
Custodian line of credit	120,000	-
Other	63,906	54,977
Payable to borrowers of securities	541,557	770,514
Total liabilities	762,713	867,338
Deferred inflows of resources:		
Other postemployment benefits (OPEB)	2,169	1,972
Total liabilities and deferred inflows of resources	764,882	869,310
Fiduciary net position – restricted for pension benefits	$ 32,798,524	$ 35,673,834

See accompanying notes to financial statements.

SAN FRANCISCO CITY AND COUNTY EMPLOYEES' RETIREMENT SYSTEM

Statements of Changes in Fiduciary Net Position

Years Ended June 30, 2022 and 2021

(In thousands)

	2022	2021
Additions:		
Member contributions		
Miscellaneous	$ 352,731	$ 338,135
Police	41,334	42,304
Fire	29,406	28,959
Total member contributions	423,471	409,398
Employer contributions		
Miscellaneous	649,819	709,918
Police	70,116	73,398
Fire	48,528	53,243
Total employer contributions	768,463	836,559
Investment income (expenses)		
Interest	43,365	50,520
Dividends	106,986	84,514
Net appreciation (depreciation) in fair value of investments	(2,380,535)	9,372,334
Securities lending income	4,819	4,059
Investment expenses	(80,806)	(62,331)
Securities lending borrower rebates and expenses	(2,149)	(1,427)
Net investment income (loss)	(2,308,320)	9,447,669
Total additions	(1,116,386)	10,693,626
Deductions:		
Benefits	1,710,092	1,599,507
Refunds of contributions	27,658	20,254
Administrative expenses	21,364	20,995
Administrative expenses and offset - OPEB	(190)	(746)
Total deductions	1,758,924	1,640,010
Net increase (decrease) in fiduciary net position	(2,875,310)	9,053,616
Fiduciary net position – restricted for pension benefits		
Beginning of year	35,673,834	26,620,218
End of year	$ 32,798,524	$ 35,673,834

See accompanying notes to financial statements.

(1) Plan Description

(a) General

The San Francisco City and County Employees' Retirement System (the Retirement System) administers a cost-sharing multiple-employer defined benefit pension plan (the Plan) established to provide pension benefits for substantially all employees of the City and County of San Francisco (the City and County), certain classified and certificated employees of the Community College and Unified School Districts, and San Francisco Trial Court employees other than judges. The Retirement System provides service retirement, disability, and death benefits based on specified percentages of defined final average monthly salary and annual cost of living adjustments after retirement. While the Plan is not subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA), it is a tax-qualified plan under Internal Revenue Code provisions. The City and County Charter (the Charter) and the Administrative Code are the authorities that establish and amend the benefit provisions and employer and member contributions to the Plan.

The Retirement System is considered to be a part of the City and County's financial reporting entity and is included in the City and County's basic financial statements as a pension trust fund. The financial statements of the Retirement System are intended to present only the fiduciary net position and changes in fiduciary net position of the Retirement System. They do not purport to, and do not, present fairly the financial position of the City and County as of June 30, 2022 and 2021, the changes in its financial position, or, where applicable, its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America. The City and County's Annual Comprehensive Financial Report can be obtained from City Hall, Room 316, 1 Dr. Carlton B. Goodlett Place, San Francisco, CA 94102.

The Retirement System is administered by the Chief Executive Officer and Chief Investment Officer, an employee of the City and County, in accordance with the provisions of the Charter and Administrative Code, and the policies and regulations of the Retirement Board. The Retirement Board is composed of seven members: three members elected by the active and retired members of the Retirement System; three members appointed by the Mayor in accordance with Section 12.100 of the Charter; and one member of the Board of Supervisors appointed by the President of the Board of Supervisors.

The Retirement System pays benefits according to the category of employment and the type of benefit coverage provided by the City and County. The four main categories of Plan membership are:

a. **Miscellaneous Non-Safety Members** – staff, operational, supervisory, and all other eligible employees who are not in special membership categories.
b. **Sheriff's Department and Miscellaneous Safety Members** – sheriffs assuming office on and after January 7, 2012, and undersheriffs, deputized personnel of the sheriff's department, and miscellaneous safety employees hired on or after January 7, 2012.
c. **Firefighter Members** – firefighters and other employees whose principal duties are in fire prevention and suppression work or who occupy positions designated by law as firefighter member positions.
d. **Police Members** – police officers and other employees whose principal duties are in active law enforcement or who occupy positions designated by law as police member positions.

(b) Service Retirement

Miscellaneous Non-Safety Members who became members prior to July 1, 2010, qualify for a service retirement benefit if they are at least 50 years old and have at least 20 years of credited service or if they are at least 60 years old and have at least 10 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest one-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 75% of the member's final compensation.

Miscellaneous Non-Safety Members who became members on or after July 1, 2010, and prior to January 7, 2012, qualify for a service retirement benefit if they are at least 50 years old and have at least 20 years of credited service or if they are at least 60 years old and have at least 10 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest two-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 75% of the member's final compensation.

Miscellaneous Non-Safety Members who became members on or after January 7, 2012, qualify for a service retirement benefit if they are at least 53 years old and have at least 20 years of credited service or if they are at least 60 years old and have at least 10 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest three-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 75% of the member's final compensation.

Sheriff's Department Members and Miscellaneous Safety Members who were hired on or after January 7, 2012, qualify for a service retirement benefit if they are at least 50 years old and have at least 5 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest three-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 90% of the member's final compensation.

Firefighter Members and Police Members who became members of the Plan before November 2, 1976, qualify for a service retirement benefit if they are at least 50 years old and have at least 25 years of credited service. The service retirement benefit is calculated using the member's final compensation (monthly salary earnable at the rank or position the member held for at least one year immediately prior to retiring) multiplied by the member's years of credited service times the member's age factor up to a maximum of 90% of the member's final compensation.

Firefighter Members and Police Members who became members of the Plan on or after November 2, 1976, and prior to July 1, 2010, qualify for a service retirement benefit if they are at least 50 years old and have at least 5 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest one-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 90% of the member's final compensation.

Firefighter Members and Police Members who became members of the Plan on or after July 1, 2010, and prior to January 7, 2012, qualify for a service retirement benefit if they are at least 50 years old and have at least 5 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest two-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 90% of the member's final compensation.

Firefighter Members and Police Members who became members of the Plan on or after January 7, 2012, qualify for a service retirement benefit if they are at least 50 years old and have at least 5 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest three-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 90% of the member's final compensation.

(c) Disability Retirement

Miscellaneous Non-Safety Members are eligible to apply for a disability retirement benefit, regardless of age, when they have 10 or more years of credited service and they sustain an injury or illness that prevents them from performing their duties. The disability retirement benefit is calculated using the member's average final compensation multiplied by the member's years of credited service times the disability factor (1.8) up to a maximum of 75% of average final compensation.

Firefighter Members, Police Members, Sheriff Members, and Miscellaneous Safety Members are eligible to apply for an industrial disability retirement benefit from their first day on the job in firefighter or police service if their disability is caused by an illness or injury that they receive while performing their duties. The industrial disability retirement benefit is based on the member's average final compensation multiplied by the permanent disability rating (from 50% to 90%) or the member's service retirement benefit if the member is eligible for a service retirement.

Firefighter Members, Police Members, Sheriff Members, and Miscellaneous Safety Members are eligible to apply for an ordinary disability retirement benefit, regardless of age, when they have 10 or more years of credited service and they sustain an injury or illness that is not caused by their work, but that prevents them from performing their duties. The disability retirement benefit is calculated using 1.5% of the member's average final compensation multiplied by years of credited service subject to a minimum of 33.3% and a maximum of 75% to 90%.

(d) Separation and Death Benefits

<u>Separation from Employment</u>

Upon separation from City employment, **Miscellaneous Non-Safety Members** may either elect to withdraw their accumulated contributions from the Plan or, if they have 5 or more years of credited service, elect to leave their accumulated contributions in the Plan and receive a vesting benefit that is first payable at or after age 50 for members hired prior to January 7, 2012, or at or after age 53 for members hired on or after January 7, 2012. Miscellaneous members hired before November 2, 1976, need 10 years of credited service to elect the vesting option.

Upon separation from City employment, **Firefighter Members, Police Members, Sheriff Members, and Miscellaneous Safety Members** may either elect to withdraw their accumulated contributions from the Plan or, if they have 5 or more years of credited service, elect to leave their accumulated contributions in the Plan and receive a deferred benefit that is first payable at or after age 50.

Death Benefits Prior to Retirement

Generally, upon the death of an active employee who is eligible for a service retirement, the Retirement System provides continuation benefits to a qualified surviving spouse or qualified domestic partner equal to 50% to 100% of the member's retirement allowance that the member would have received had he or she retired on the date of death.

For qualified surviving spouses and qualified domestic partners of **Firefighter Members, Police Members, Sheriff Members, and Miscellaneous Safety Members** who die prior to becoming eligible for service retirement and whose death is due to an injury received in or illness caused by the performance of duty, salary continuation is provided to the qualified survivor until such time as the member would have qualified for service retirement had he or she lived at which time a continuation benefit equal to 100% of the member's service retirement allowance is provided to the qualified survivor.

A lump sum death payment equal to 6 months' earnable salary plus the member's accumulated contributions is provided upon the death of an active employee not yet eligible for a service retirement to the member's named beneficiary or estate.

Death Benefits after Retirement

Generally, upon the death of a retired member, the Retirement System provides continuation benefits to a qualified surviving spouse or qualified domestic partner equal to 50% to 100% of the member's retirement allowance as of the date of death.

(e) Cost of Living Adjustments (COLA)

Basic COLA

Miscellaneous Non-Safety Members receive a benefit adjustment each July 1 equal to the percentage increase or decrease in the Consumer Price Index (CPI) rounded to the nearest 1%, to a maximum of 2% of the member's previous June 30 retirement benefit. If the CPI decreases in a particular year, however, the negative adjustment cannot reduce a member's monthly retirement benefit below the initial pension amount.

Firefighter Members and Police Members who became members of the Plan before November 2, 1976, receive a benefit adjustment each July 1 equal to 50% of the actual dollar or percentage increase or decrease in the salary of the rank or position on which the member's retirement benefit is based. Although decreases are possible in a given year, a negative adjustment cannot reduce a member's monthly benefit below the initial pension amount.

Firefighter Members and Police Members who became members of the Plan on or after November 2, 1976, and Sheriff Members and Miscellaneous Safety Members receive a benefit adjustment each July 1 equal to the percentage increase or decrease in the CPI rounded to the nearest 1%, to a maximum of 2% of the member's previous June 30 retirement benefit. If the CPI decreases in a particular year, however, the negative adjustment cannot reduce a member's monthly retirement benefit below the initial pension amount.

Supplemental COLA

The Plan provides for a Supplemental COLA in years when there are sufficient "excess" investment earnings in the Plan. Effective July 1, 2012, voters approved changes in the criteria for payment of the Supplemental COLA benefit. Certain provisions of the voter approved proposition (Prop C) were challenged in the courts. A decision by the California courts modified the interpretation of the proposition. Effective July 1, 2012, Retirement System members who retired before November 6, 1996, will receive a Supplemental COLA when there are sufficient "excess" investment earnings in the Plan and the Plan is also fully funded on a market value of assets basis. The "full funding" requirement does not apply to Retirement System members who retired after November 6, 1996, and were hired before January 7, 2012. For members who were hired before January 7, 2012, all Supplemental COLAs paid to them in retirement benefits will continue into the future even where an additional Supplemental COLA is not payable in any given year. For members who are hired on and after January 7, 2012, a Supplemental COLA will be paid to retirees when there are sufficient "excess" investment earnings in the Plan and the Plan is also fully funded on a market value of assets basis. For this group, Supplemental COLAs will not be permanent adjustments to retirement benefits. In years when a Supplemental COLA is not paid, all previously paid Supplemental COLAs will expire.

(Dollar amounts in thousands)

(f) Membership

Membership of the Retirement System consisted of the following as of June 30, 2022:

	Police[1]	Fire	Miscellaneous	Total
Retirees and beneficiaries currently receiving benefits	2,893	2,272	26,554	31,719
Active members	2,269	1,664	29,266	33,199
Terminated members entitled to but not yet receiving benefits	376	100	11,609	12,085
Total	5,538	4,036	67,429	77,003

[1] Police counts include Sheriff and Miscellaneous Safety.

Membership of the Retirement System consisted of the following as of June 30, 2021:

	Police[1]	Fire	Miscellaneous	Total
Retirees and beneficiaries currently receiving benefits	2,801	2,223	25,830	30,854
Active members	2,475	1,599	29,570	33,644
Terminated members entitled to but not yet receiving benefits	294	84	10,748	11,126
Total	5,570	3,906	66,148	75,624

[1] Police counts include Sheriff and Miscellaneous Safety.

(2) Summary of Significant Accounting Policies

(a) Basis of Presentation

The accompanying financial statements are prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America as promulgated by the Governmental Accounting Standards Board (GASB).

Member contributions are recognized in the period in which the contributions are due. Employer contributions and member contributions made by the employer to the Plan are recognized when due pursuant to legal requirements. Benefits and refunds are recognized when currently due and payable in accordance with the terms of the Plan.

(b) Investments

Investments are reported at fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Securities that do not have an established market are reported at estimated fair value derived from third party pricing services. Purchases and sales of investments are recorded on a trade date basis.

The fair values of the Retirement System's partnership interests, which include private equity, real assets, private credit, and some public equity investments, are based on net asset values (NAV) provided by the general partners and investment managers. Partnership financial statements are audited annually as of December 31 and NAV is adjusted monthly or quarterly for cash flows to/from the Retirement System, investment earnings and changes in fair value. Such fair value estimates involve subjective judgments of unrealized gains and losses, and the actual market price of the investments can only be determined by negotiation between independent third parties in a purchase and sale transaction.

Fair valuation for public equity investments is reported as domestic or international based on individual investment's country of registration, although commingled funds may have underlying investments in both domestic and international markets.

The Absolute Return Program invests in limited partnerships and other alternative investment vehicles. The most common investment strategies include, but are not limited to, equity, credit, macro, emerging markets, quantitative, multi-strategy, special situations/other, co-investments and commodities. These investments are valued using their respective NAV, and are audited annually. The most significant input into the NAV of such an entity is the fair value of its investment holdings. These holdings are typically valued on a monthly basis by each fund's independent administrator and for certain illiquid investments, where no market exists, the General Partner may provide pricing input. The management assumptions are based upon the nature of the investment and the underlying business. Investments have the potential to become illiquid under stressed market conditions and, in certain circumstances, investors may be subject to redemption restrictions which can impede the timely return of capital. The valuation techniques vary based upon underlying investment type, but are predominantly derived from observed market prices.

At its January 8, 2020 Board Meeting, the Retirement Board approved reinstating a securities lending program through the Retirement System's custodian bank. The Charter and Retirement Board policies permit the Retirement System to use investments of the Plan to enter into securities lending transactions – loans of securities to broker-dealers and other entities for collateral with a simultaneous agreement to return the collateral for the same securities in the future. The collateral guidelines allow for both cash or non-cash collateral; non-cash collateral includes equity security baskets, investment grade corporate bonds, and sovereign debt issued by Organization for Economic Co-operation and Development (OECD) member countries.

The Retirement System's custodian, BNY Mellon, is the agent in lending the Plan's securities for cash and non-cash collateral. Contracts with the lending agent indemnify the Retirement System if the borrowers fail to return the securities (and if the collateral were inadequate to replace the securities lent) or fail to pay the Retirement System for income distributions by the securities' issuers while the securities are on loan. BNY Mellon also indemnifies Retirement System from loss on all repurchase agreements held in the securities lending cash collateral account. If, with respect to investments of cash collateral in repurchase transactions, the counterparty fails to deliver the repurchase price upon termination, BNY Mellon will sell the purchased securities and deposit the proceeds to Retirement System's collateral account. If the proceeds are less than the repurchase price, BNY Mellon will credit the amount of such difference to Retirement System's collateral account.

To manage its counterparty risk, BNY Mellon requires additional collateral ranging between 102% and 110% depending on collateral type. As of June 30, 2022, BNY Mellon collected 103.07% for cash loans and 109.59% for non-cash loans, resulting in 107.08% over collateralization on extended loans. As of June 30, 2021, BNY Mellon collected 105.25% for cash loans and 109.82% for non-cash loans, resulting in 108.20% over collateralization on extended loans.

Non-cash collateral cannot be pledged or sold unless the borrower defaults, and therefore, is not reported in the Retirement System's financial statements.

All securities loans can be terminated on demand by either the Retirement System or the borrower, although the average term of the loans as of June 30, 2022 and 2021 was 87 days and 68 days, respectively. All cash collateral received was invested in a separately managed account by the lending agent using investment guidelines developed and approved by the Retirement System. As of June 30, 2022 and 2021, the weighted average maturity of the reinvested cash collateral account was 4 days and 30 days, respectively. The term to maturity of the loaned securities is generally not matched with the term to maturity of the investment of said collateral.

Cash collateral invested in the separate account managed by the lending agent is reported at fair value. Payable to borrowers of securities in the statements of fiduciary net position represents the cash collateral received from borrowers. Additionally, the income and costs of securities lending transactions, such as borrower rebates and fees, are recorded respectively as revenues and expenses in the statements of changes in fiduciary net position.

(c) Administrative Expenses

All costs to administer the Retirement System are borne by the Retirement System.

(d) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows of resources, liabilities, and deferred inflows of resources, and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of additions and deductions during the reporting period. Actual results could differ from those estimates.

(e) Other Postemployment Benefits Other Than Pensions

The Retirement System adopted GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions.* As prescribed under GASB Statement No. 75, net other postemployment benefits (OPEB) liability, deferred outflows/inflows of resources related to OPEB, and OPEB expense are actuarially determined on a citywide basis. Net OPEB liability is measured as the portion of the present value of projected benefit payments to be provided to current active and inactive employees attributed to those employees' past service, less the amount of the Retiree Health Care Trust Fund investments measured at fair value.

(Dollar amounts in thousands)

(3) Deposits

Deposits are carried at cost, which approximates fair value. Deposits in bank accounts were $131,252 and $49,724 as of June 30, 2022 and 2021, respectively.

Custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, a government may not be able to recover its deposits or may not be able to recover collateral securities that are in the possession of an outside party. The Retirement System does not have a specific policy addressing custodial credit risk for deposits. As of June 30, 2022 and 2021, the Retirement System's deposits in bank accounts were not exposed to custodial credit risk.

(4) Investments

The Retirement System's investments are invested pursuant to investment policy guidelines as established by the Retirement Board. The objective of the policy is to maximize the expected return of the fund at an acceptable level of risk. The Retirement Board has established percentage guidelines for types of investments to ensure the portfolio is diversified.

Investment managers retained by the Retirement System follow specific investment guidelines and are evaluated against specific market benchmarks that represent their investment style. Any exemption from general guidelines requires approval from the Retirement Board. The Retirement System invests in securities with contractual cash flows, such as asset-backed securities, commercial mortgage-backed securities, and collateralized mortgage obligations. The value, liquidity, and related income of these securities are sensitive to changes in economic conditions, including real estate values, delinquencies or defaults, or both, and may be affected by shifts in the market's perception of the issuers and changes in interest rates.

The investment policy permits investments in domestic and international debt and equity securities, securities lending, foreign currency contracts, derivative instruments, private equity, real assets, private credit, and absolute return investments, which include investments in a variety of commingled partnership vehicles.

The Retirement Board's asset allocation policies for the years ended June 30, 2022 and 2021, are as follows:

Asset Class	Target Allocation through October 2020	Target Allocation since November 2020
Global Equity	31.0%	37.0%
Treasuries	6.0%	8.0%
Liquid Credit	3.0%	5.0%
Private Credit	10.0%	10.0%
Private Equity	18.0%	23.0%
Real Assets	17.0%	10.0%
Absolute Return	15.0%	10.0%
Leverage	0.0%	-3.0%
	100.0%	100.0%

The Retirement System is not directly involved in repurchase or reverse repurchase agreements. However, external investment managers retained by the Retirement System may employ repurchase arrangements if the securities purchased or sold comply with the manager's investment guidelines. The Retirement System monitors the investment activity of its investment managers to ensure compliance with guidelines. In addition, the Retirement System's securities lending cash collateral separately managed account is authorized to use repurchase arrangements. As of June 30, 2022 and 2021, $83,444 (or 15.4% of reinvested cash collateral) and $266,178 (or 34.5% of reinvested cash collateral), respectively, consisted of such agreements.

The Retirement System maintains its operating fund cash in the City and County's investment pool. The City and County's pool is invested pursuant to investment policy guidelines established by the City Treasurer, subject to review by the Treasury Oversight Committee. The Treasury Oversight Committee, established under California Government Code Sections 27130 to 27137, is composed of various City and County officials and representatives of agencies with large cash balances in the pool. The investment policy addresses soundness of financial institutions in which the City and County will deposit funds, types of investment instruments as permitted by the California Government Code, and the percentage of the portfolio which may be invested in certain instruments with longer terms to maturity. The provisions of the City and County's investment policy also address interest rate risk, credit risk, and concentration of credit risk and provide for additional restrictions related to investments. The notes to the basic financial statements of the City and County provide more detailed information concerning deposit and investment risks associated with the City and County's pool of cash and investments at June 30, 2022 and 2021.

(a) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates may adversely affect the fair value of an investment. The Retirement System does not have a specific policy to manage interest rate risk. The Retirement System employs a diversified asset allocation approach to manage interest rate (and other) risks. Assets with the highest sensitivity to interest rates are most commonly found in the Retirement System's Public Fixed Income portfolio which allocates to U.S. Treasuries and other long duration assets including corporate bonds and non-U.S. sovereign bonds. Other asset classes have varied, but more limited exposure to interest rates. With respect to interest rate (and other) risks, investment managers are required to follow investment guidelines approved by the Retirement Board. Investment managers in the Public Fixed Income portfolio manage portfolios to mandates that target either an interest rate exposure within a specific range or an interest rate exposure relative to a benchmark within a more limited, specific range.

Below are tables depicting the segmented time distribution for fixed income investments based upon the expected maturity (in years) as of June 30, 2022 and 2021.

(Dollar amounts in thousands)

Investments at Fair Value as of June 30, 2022

		Maturities			
Investment Type	**Fair Value**	**Less than 1 year**	**1-5 years**	**6-10 years**	**10+ years**
Asset-Backed Securities	$ 8,516	$ -	$ 697	$ 897	$ 6,922
Bank Loans	111,655	1,835	54,566	55,254	-
City Investment Pool	15,352	7,532	7,820	-	-
Collateralized Bonds	6,576	-	-	1,594	4,982
Commercial Mortgage-Backed	82,457	387	1,762	1,962	78,346
Commingled and Other Fixed Income Funds	186,996	(7,406)	-	53,204	141,198
Corporate Bonds	244,913	2,295	80,655	123,347	38,616
Corporate Convertible Bonds	119,864	5,187	97,177	11,966	5,534
Government Bonds	920,331	2,045	589,061	298,137	31,088
Government Mortgage-Backed Securities	2	-	-	-	2
Municipal/Provincial Bonds	963	-	607	356	-
Non-Government Backed Collateralized Mortgage Obligations	32,811	-	-	-	32,811
Options	(2)	(12)	10	-	-
Short-Term Investment Funds	374,407	374,407	-	-	-
Swaps*	2,310	2,999	(198)	(370)	(121)
Total	$ 2,107,151	$ 389,269	$ 832,157	$ 546,347	$ 339,378

* ($104) Credit default swaps are excluded because they are not subject to interest rate risk.

Investments at Fair Value as of June 30, 2021

		Maturities			
Investment Type	**Fair Value**	**Less than 1 year**	**1-5 years**	**6-10 years**	**10+ years**
Asset-Backed Securities	$ 24,457	$ 20	$ 3,915	$ 4,108	$ 16,414
Bank Loans	112,605	3,151	57,243	52,211	-
City Investment Pool	9,184	6,597	2,587	-	-
Collateralized Bonds	2,011	-	-	533	1,478
Commercial Mortgage-Backed	87,798	-	621	1,927	85,250
Commingled and Other Fixed Income Funds	321,260	2,009	-	87,236	232,015
Corporate Bonds	274,249	1,686	89,417	142,457	40,689
Corporate Convertible Bonds	197,414	1,917	141,231	49,560	4,706
Government Bonds	1,139,367	1,545	755,004	351,452	31,366
Government Mortgage-Backed Securities	4,783	-	-	-	4,783
Municipal/Provincial Bonds	3,079	-	1,292	337	1,450
Non-Government Backed Collateralized Mortgage Obligations	16,541	366	-	-	16,175
Options	6	(6)	12	-	-
Short-Term Investment Funds	651,504	651,504	-	-	-
Swaps	510	26	217	292	(25)
Total	$ 2,844,768	$ 668,815	$ 1,051,539	$ 690,113	$ 434,301

(Dollar amounts in thousands)

(b) Credit Risk – Investments

Credit risk is the risk that an issuer or other counterparty to an investment may not fulfill its obligations. Fixed income investment managers retained by the Retirement System follow specific investment guidelines and are evaluated against specific market benchmarks that represent their investment style. Fixed income managers typically are limited within their portfolios to no more than 5% exposure in any single security, with the exception of United States Treasury and government agency securities. The Retirement System's credit risk policy is embedded in the individual investment manager agreements as prescribed and approved by the Retirement Board.

Investments are classified and rated using the lower of (1) S&P Global Ratings (S&P) rating or (2) Moody's Investors Service (Moody's) rating corresponding to the equivalent S&P rating. If only a Moody's rating is available, the rating equivalent to S&P is used for the purpose of this disclosure.

The credit rating of the United States remains a point of concern for some investors. In 2011, S&P lowered the credit rating for U.S. long-term debt to AA+ from AAA and continues to maintain that posture. Moody's and Fitch, the other two large credit rating agencies, continue to maintain a AAA rating for U.S. long-term debt. Additional ratings changes by the credit rating agencies would likely have a material impact on the credit risk and value of the Retirement System's investments in U.S. government agency securities, U.S. government bonds, and U.S. government mortgage-backed securities.

The following table illustrates the Retirement System's exposure to credit risk as of June 30, 2022. Investments issued or explicitly guaranteed by the U.S. government of $874,934 as of June 30, 2022, are exempt from the credit rating disclosures and are excluded from the table below.

Credit Ratings of Fixed Income Investments as of June 30, 2022

Credit Rating	Fair Value	Fair Value as a Percentage of Total
AAA	$ 352,514	28.6%
AA	5,392	0.4%
A	20,668	1.7%
BBB	78,622	6.4%
BB	104,296	8.5%
B	194,604	15.8%
CCC	30,458	2.5%
CC	5,089	0.4%
D	7,053	0.6%
Not Rated	433,417	35.1%
Total	$ 1,232,113	100.0%

(Dollar amounts in thousands)

The following table illustrates the Retirement System's exposure to credit risk as of June 30, 2021. Investments issued or explicitly guaranteed by the U.S. government of $1,082,472 as of June 30, 2021, are exempt from the credit rating disclosures and are excluded from the table below.

Credit Ratings of Fixed Income Investments as of June 30, 2021

Credit Rating	Fair Value	Fair Value as a Percentage of Total
AAA	$ 630,147	35.8%
AA	11,985	0.7%
A	34,910	2.0%
BBB	95,573	5.4%
BB	112,351	6.4%
B	205,694	11.7%
CCC	45,619	2.6%
CC	4,806	0.3%
D	5,589	0.3%
Not Rated	615,622	34.8%
Total	$ 1,762,296	100.0%

The securities listed as "Not Rated" include short-term investment funds, government mortgage-backed securities, and investments that invest primarily in rated securities, such as commingled funds and money market funds, but do not themselves have a specific credit rating. Excluding these investments, the "not rated" component of credit would be approximately 10.1% for 2022 and 8.4% for 2021.

(c) Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the Retirement System's investment in a single issuer. Securities issued or guaranteed by the U.S. government or its agencies are exempt from this limit.

As of June 30, 2022 and 2021, the Retirement System had no investments of a single issuer that equaled or exceeded 5% of total Retirement System's investments or net position.

(d) Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, a government may not be able to recover the value of investment or collateral securities that are in the possession of an outside party. The Retirement System does not have a specific policy addressing custodial credit risk for investments, but investments are generally insured, registered, or held by the Retirement System or its agent in the Retirement System's name. As of June 30, 2022 and 2021, $210,091 and $127,431, respectively, of the Retirement System's investments were exposed to custodial credit risk because they were not insured or registered in the name of the Retirement System, and were held by the counterparty's trust department or agent but not in the Retirement System's name.

(e) Foreign Currency Risk

The Retirement System's exposure to foreign currency risk derives from its positions in foreign currency denominated cash, equity, fixed income, private equity, real assets, and private credit. The Retirement System's investment policy allows international managers to enter into foreign exchange contracts, which are limited to hedging currency exposure existing in the portfolio.

(Dollar amounts in thousands)

The Retirement System's net exposures to foreign currency risk as of June 30, 2022, are as follows:

Foreign Currency Risk Analysis as of June 30, 2022

Currency	Cash	Equities	Fixed Income	Private Equities	Real Assets	Private Credit	Foreign Currency Contracts	Total
Argentina peso	$ -	$ -	$ (134)	$ -	$ -	$ -	$ -	$ (134)
Australian dollar	-	12,130	97	25,264	-	-	3,869	41,360
Brazil real	-	16,100	768	-	-	-	3,279	20,147
Canadian dollar	-	25,678	170	-	-	-	8,124	33,972
Chilean peso	-	998	1,019	-	-	-	123	2,140
Chinese r yuan HK	-	-	-	-	-	-	(5,674)	(5,674)
Chinese yuan renminbi	3,253	339,021	5,997	-	-	-	(23,261)	325,010
Colombian peso	-	-	4,254	-	-	-	(2,949)	1,305
Czech koruna	-	-	(343)	-	-	-	1,686	1,343
Danish krone	-	45,936	-	-	-	-	-	45,936
Euro	-	411,136	33,248	106,757	419,877	86,851	(32,625)	1,025,244
Hong Kong dollar	-	84,706	-	-	-	-	-	84,706
Hungarian forint	-	1,838	352	-	-	-	625	2,815
Indian rupee	-	20,025	-	-	-	-	-	20,025
Indonesian rupiah	-	4,481	3,931	-	-	-	298	8,710
Israeli shekel	-	-	-	-	-	-	(17)	(17)
Japanese yen	-	67,479	-	-	43,652	-	17,290	128,421
Kazakhstan tenge	-	-	198	-	-	-	-	198
Malaysian ringgit	-	1,990	3,786	-	-	-	14	5,790
Mexican peso	-	1,729	3,096	-	-	-	1,968	6,793
New Taiwan dollar	-	29,109	-	-	-	-	-	29,109
Norwegian krone	-	3,149	-	-	-	-	(44)	3,105
Peruvian sol	-	-	2,618	-	-	-	(1,857)	761
Philippines peso	-	1,151	177	-	-	-	(139)	1,189
Polish zloty	-	3,844	(268)	-	-	-	2,662	6,238
Pound sterling	-	125,915	6,699	73,274	61,717	-	(14,275)	253,330
Romanian leu	-	-	621	-	-	-	460	1,081
New Russian ruble	-	1,525	-	-	-	-	-	1,525
Serbian dinar	-	-	113	-	-	-	-	113
Singapore dollar	-	1,843	-	-	-	-	-	1,843
South African rand	-	5,319	8,361	-	-	-	(4,318)	9,362
South Korean won	-	15,587	-	-	-	-	-	15,587
Swedish krona	-	22,147	-	-	-	-	(43)	22,104
Swiss franc	-	71,783	-	-	-	-	(78)	71,705
Thailand baht	-	6,386	2,100	-	-	-	1,745	10,231
Turkish lira	-	-	-	-	-	-	235	235
Total	$ 3,253	$ 1,321,005	$ 76,860	$ 205,295	$ 525,246	$ 86,851	$ (42,902)	$ 2,175,608

(Dollar amounts in thousands)

The Retirement System's net exposures to foreign currency risk as of June 30, 2021, are as follows:

Foreign Currency Risk Analysis as of June 30, 2021

Currency	Cash	Equities	Fixed Income	Private Equities	Real Assets	Private Credit	Foreign Currency Contracts	Total
Argentina peso	$ -	$ -	$ 1	$ -	$ -	$ -	$ -	$ 1
Australian dollar	-	20,693	121	12,820	-	-	2,565	36,199
Brazil real	-	10,282	1,995	-	-	-	1,764	14,041
Canadian dollar	-	51,175	14	-	-	-	3,976	55,165
Chilean peso	-	1,333	829	-	-	-	986	3,148
Chinese r yuan HK	-	-	-	-	-	-	(5,497)	(5,497)
Chinese yuan renminbi	38,546	483,245	4,622	-	-	-	(17,531)	508,882
Colombian peso	-	-	5,113	-	-	-	(3,431)	1,682
Czech koruna	-	-	(60)	-	-	-	1,760	1,700
Danish krone	-	54,690	-	-	-	-	-	54,690
Dominican Republic peso	-	-	618	-	-	-	(808)	(190)
Egyptian pound	-	-	670	-	-	-	-	670
Euro	-	578,211	45,092	139,170	431,880	65,124	(108,522)	1,150,955
Hong Kong dollar	-	120,819	-	-	-	-	872	121,691
Hungarian forint	-	3,342	828	-	-	-	882	5,052
Indonesian rupiah	-	1,176	3,707	-	-	-	595	5,478
Israeli shekel	-	-	-	-	-	-	(19)	(19)
Japanese yen	-	80,806	-	-	56,587	-	20,759	158,152
Kazakhstan tenge	-	-	253	-	-	-	-	253
Kenyan shilling	-	-	-	-	-	-	-	-
Malaysian ringgit	-	-	3,063	-	-	-	137	3,200
Mexican peso	-	6,589	1,923	-	-	-	2,111	10,623
New Taiwan dollar	-	46,346	-	-	-	-	-	46,346
Norwegian krone	-	4,817	-	-	-	-	-	4,817
Peruvian sol	-	-	5,679	-	-	-	(5,863)	(184)
Philippines peso	-	1,833	206	-	-	-	(152)	1,887
Polish zloty	-	9,086	2,024	-	-	-	847	11,957
Pound sterling	-	210,529	8,079	53,304	50,326	-	(11,917)	310,321
Romanian leu	-	-	851	-	-	-	501	1,352
New Russian ruble	-	2,332	2,523	-	-	-	1,219	6,074
Singapore dollar	-	1,495	-	-	-	-	-	1,495
South African rand	-	11,021	8,676	-	-	-	(6,419)	13,278
South Korean won	-	33,545	-	-	-	-	(459)	33,086
Swedish krona	-	45,299	-	-	-	-	-	45,299
Swiss franc	-	99,888	-	-	-	-	(645)	99,243
Thailand baht	-	4,330	1,442	-	-	-	2,219	7,991
Turkish lira	-	3,509	-	-	-	-	86	3,595
Uruguayan peso	-	-	-	-	-	-	130	130
Total	$38,546	$1,886,391	$98,269	$205,294	$538,793	$65,124	$(119,854)	$2,712,563

(f) Unfunded Investments Commitments

The Retirement System has unfunded commitments to contribute capital for real assets in the amount of $2,221,906, private equity in the amount of $3,464,725, private credit in the amount of $2,143,957 and absolute return in the amount of $55,741 totaling $7,886,329 as of June 30, 2022.

(g) Derivative Instruments

The Retirement System reports its derivative instruments under the provisions of GASB Statement No. 53, *Accounting and Financial Reporting for Derivative Instruments*. Pursuant to the requirements of this statement, the Retirement System has provided a summary of derivative instrument activities during the reporting periods presented and the related risks.

As of June 30, 2022 and 2021, the derivative instruments held by the Retirement System are considered investments and not hedges for accounting purposes. The gains and losses arising from this activity are recognized as incurred in the statement of changes in fiduciary net position. All investment derivatives discussed below are included within the investment risk schedules, which precede this subsection. Investment derivative instruments are disclosed separately to provide a comprehensive and distinct view of this activity and its impact on the overall investment portfolio.

Valuation methods used by the Retirement System are described in more detail in Note 2(b). The fair value of the exchange traded derivative instruments, such as futures, options, rights, and warrants are based on quoted market prices. The fair values of forward foreign currency contracts are determined using a pricing service, which uses published foreign exchange rates as the primary source. The fair values of swaps are determined by the Retirement System's investment managers based on quoted market prices of the underlying investment instruments or by an external pricing service using various proprietary methods.

(Dollar amounts in thousands)

The tables below present the notional amounts, the fair values, and the related net appreciation (depreciation) in the fair value of derivative instruments that were outstanding at June 30, 2022 and 2021.

As of and for the Year Ended June 30, 2022

Derivative Type / Contracts	Notional Amount	Fair Value	Net Appreciation (Depreciation) in Fair Value
Forwards			
Foreign Exchange Contracts	$ 204,130	$ (197)	$ (266)
Futures			
Bond Futures Long	7,398	(82)	(166)
Equity Index Futures Long	947	(1)	(1,073)
Treasury Futures Long	520,671	(4,894)	(6,368)
Treasury Futures Short	(5,215)	33	80
Options			
Credit Contracts	-	(12)	(13)
Foreign Exchange Contracts	200	10	(2)
Swaps			
Credit Contracts	5,554	(104)	(317)
Currency Contracts	440	309	62
Interest Rate Contracts	87,275	(1,200)	(951)
Total Return Contracts	185,719	3,201	3,201
Rights/Warrants			
Equity Contracts	62,912 shares	147,592	(6,429)
Total		$ 144,655	$ (12,242)

(Dollar amounts in thousands)

As of and for the Year Ended June 30, 2021

Derivative Type / Contracts	Notional Amount	Fair Value	Net Appreciation (Depreciation) in Fair Value
Forwards			
Foreign Exchange Contracts	$ 263,225	$ 69	$ 185
Futures			
Bond Futures Long	8,898	84	84
Equity Index Futures Long	76,766	1,073	(548)
Treasury Futures Long	400,741	1,474	1,070
Treasury Futures Short	(8,215)	(47)	(47)
Options			
Credit Contracts	-	(6)	12
Foreign Exchange Contracts	200	12	(133)
Swaps			
Credit Contracts	5,375	324	(150)
Currency Contracts	440	247	(306)
Interest Rate Contracts	115,953	(61)	(3,660)
Rights/Warrants			
Equity Contracts	40,449 shares	101,656	(5,254)
Total		$ 104,825	$ (8,747)

All investment derivatives are reported as investments at fair value in the statements of fiduciary net position. Rights, warrants, and equity index futures are reported in equity securities. Foreign exchange contracts are reported in foreign currency contracts, which also include spot contracts that are not derivatives. All other derivative contracts are reported in other debt securities. All changes in fair value are reported as net appreciation (depreciation) in fair value of investments in the statements of changes in fiduciary net position.

(Dollar amounts in thousands)

Counterparty Credit Risk

The Retirement System is exposed to credit risk on non-exchange traded derivative instruments that are in asset positions. The tables below present those investments being classified and rated using the lower of (1) S&P Global Ratings (S&P) rating or (2) Moody's Investors Service (Moody's) rating corresponding to the equivalent S&P rating. If only a Moody's rating is available, the rating equivalent to S&P is used for the purpose of this disclosure.

Derivative Instruments Subject to Counterparty Credit Risk as of June 30, 2022

Credit Rating	Fair Value
AA	$ 302
A	4,325
BBB	5,907
Total	$ 10,534

Derivative Instruments Subject to Counterparty Credit Risk as of June 30, 2021

Credit Rating	Fair Value
AA	$ 462
A	1,609
BBB	1,684
Total	$ 3,755

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. At June 30, 2022 and 2021, all of the Retirement System's investments in derivative instruments are held in the Retirement System's name and are not exposed to custodial credit risk.

(Dollar amounts in thousands)

Interest Rate Risk

The tables below describe the maturity periods of the derivative instruments exposed to interest rate risk at June 30, 2022 and 2021.

		Maturities			
Derivative Type / Contracts	**Fair Value**	**Less than 1 year**	**1-5 years**	**6-10 years**	**10+ years**
Futures					
Treasury Futures Long	$ (4,894)	$ (4,894)	$ -	$ -	$ -
Treasury Futures Short	33	33	-	-	-
Options					
Foreign Exchange Contracts	10	-	10	-	-
Swaps					
Currency Contracts	309	-	309	-	-
Interest Rate Contracts	(1,200)	(202)	(507)	(370)	(121)
Total Return Contracts	3,201	3,201	-	-	-
Total	$ (2,541)	$ (1,862)	$ (188)	$ (370)	$ (121)

Derivative Interest Rate Risk as of June 30, 2021

		Maturities			
Derivative Type / Contracts	**Fair Value**	**Less than 1 year**	**1-5 years**	**6-10 years**	**10+ years**
Futures					
Treasury Futures Long	$ 1,474	$ 1,474	$ -	$ -	$ -
Treasury Futures Short	(47)	(47)	-	-	-
Options					
Foreign Exchange Contracts	12	-	12	-	-
Swaps					
Currency Contracts	247	-	187	60	-
Interest Rate Contracts	(61)	-	(268)	232	(25)
Total	$ 1,625	$ 1,427	$ (69)	$ 292	$ (25)

(Dollar amounts in thousands)

The following table details the reference rate, notional amount, and fair value of interest rate swaps that are highly sensitive to changes in interest rates as of June 30, 2022 and 2021:

Derivative Instruments Highly Sensitive to Interest Rate Changes as of June 30, 2022

Investment Type	Reference Rate	Notional Value	Fair Value
Interest Rate Swap	Receive Fixed 0.25%, Pay Variable 3-Month BBA	$ 46,800	$ (1,273)
Interest Rate Swap	Receive Fixed 0.48%, Pay Variable 6-Month PRIBOR	630	(91)
Interest Rate Swap	Receive Fixed 0.57%, Pay Variable 6-Month WIBOR	1,491	(269)
Interest Rate Swap	Receive Fixed 1.48%, Pay Variable 6-Month PRIBOR	1,124	(252)
Interest Rate Swap	Receive Fixed 2.00%, Pay Variable 6-Month BUBOR	903	(93)
Interest Rate Swap	Receive Fixed 2.39%, Pay Variable 6-Month THB	542	(17)
Interest Rate Swap	Receive Fixed 2.42%, Pay Variable 6-Month THB	542	(16)
Interest Rate Swap	Receive Fixed 2.56%, Pay Variable 6-Month BUBOR	622	(128)
Interest Rate Swap	Receive Fixed 2.81%, Pay Variable 6-Month THB	521	5
Interest Rate Swap	Receive Fixed 3.34%, Pay Variable 3-Month KLIBOR	227	(9)
Interest Rate Swap	Receive Fixed 4.10%, Pay Variable 1-Day BIDOR	803	(57)
Interest Rate Swap	Receive Fixed 4.87%, Pay Variable 1-Day BIDOR	1,702	(196)
Interest Rate Swap	Receive Fixed 5.25%, Pay Variable 1-Day BIDOR	3,977	(144)
Interest Rate Swap	Receive Fixed 5.26%, Pay Variable 3-Month JIBAR	702	(48)
Interest Rate Swap	Receive Fixed 5.60%, Pay Variable 1-Day COOVIBR	81	(20)
Interest Rate Swap	Receive Fixed 6.71%, Pay Variable 28-Day MXIBR	649	(77)
Interest Rate Swap	Receive Fixed 7.13%, Pay Variable 28-Day MXIBR	605	(101)
Interest Rate Swap	Receive Variable 1-Day COOVIBR, Pay Fixed 1.20%	1,521	147
Interest Rate Swap	Receive Variable 1-Day COOVIBR, Pay Fixed 4.20%	1,033	155
Interest Rate Swap	Receive Variable 3-Month BBA, Pay Fixed 0.36%	22,800	1,284
Total Interest Rate Swaps		$ 87,275	$ (1,200)

(Dollar amounts in thousands)

Derivative Instruments Highly Sensitive to Interest Rate Changes as of June 30, 2021

Investment Type	Reference Rate	Notional Value	Fair Value
Interest Rate Swap	Receive Fixed 0.25%, Pay Variable 3-Month BBA	$ 1,760	$ (54)
Interest Rate Swap	Receive Fixed 0.48%, Pay Variable 6-Month PRIBOR	658	(7)
Interest Rate Swap	Receive Fixed 0.57%, Pay Variable 6-Month WIBOR	22,800	216
Interest Rate Swap	Receive Fixed 1.48%, Pay Variable 6-Month PRIBOR	1,152	35
Interest Rate Swap	Receive Fixed 2.00%, Pay Variable 6-Month BUBOR	379	82
Interest Rate Swap	Receive Fixed 2.39%, Pay Variable 6-Month THB	5,158	(103)
Interest Rate Swap	Receive Fixed 2.42%, Pay Variable 6-Month THB	191	10
Interest Rate Swap	Receive Fixed 2.81%, Pay Variable 6-Month THB	613	(21)
Interest Rate Swap	Receive Fixed 3.34%, Pay Variable 3-Month KLIBOR	5,201	96
Interest Rate Swap	Receive Fixed 3.35%, Pay Variable 1-Day BIDOR	959	(25)
Interest Rate Swap	Receive Fixed 4.10%, Pay Variable 1-Day BIDOR	805	(10)
Interest Rate Swap	Receive Fixed 4.35%, Pay Variable 28-Day MXIBR	91	(4)
Interest Rate Swap	Receive Fixed 4.50%, Pay Variable 1-Day BIDOR	598	48
Interest Rate Swap	Receive Fixed 4.87%, Pay Variable 1-Day BIDOR	790	(23)
Interest Rate Swap	Receive Fixed 5.25%, Pay Variable 1-Day BIDOR	241	7
Interest Rate Swap	Receive Fixed 5.26%, Pay Variable 3-Month JIBAR	837	(21)
Interest Rate Swap	Receive Fixed 5.60%, Pay Variable 1-Day COOVIBR	359	17
Interest Rate Swap	Receive Fixed 6.71%, Pay Variable 28-Day MXIBR	4,145	30
Interest Rate Swap	Receive Fixed 7.13%, Pay Variable 28-Day MXIBR	11,340	(96)
Interest Rate Swap	Receive Fixed 7.48%, Pay Variable 1-Day BIDOR	574	46
Interest Rate Swap	Receive Fixed 11.33%, Pay Variable 1-Day BIDOR	1,158	(3)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 6.25%	693	(37)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 7.17%	598	49
Interest Rate Swap	Receive Variable 1-Day COOVIBR, Pay Fixed 1.20%	996	(8)
Interest Rate Swap	Receive Variable 1-Day COOVIBR, Pay Fixed 4.20%	1,774	(63)
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 5.12%	1,696	(1)
Interest Rate Swap	Receive Variable 3-Month BBA, Pay Fixed 0.36%	998	68
Interest Rate Swap	Receive Variable 3-Month JIBAR, Pay Fixed 7.46%	2,591	124
Interest Rate Swap	Receive Variable 6-Month WIBOR, Pay Fixed 0.94%	46,798	(413)
Total Interest Rate Swaps		$ 115,953	$ (61)

(Dollar amounts in thousands)

Foreign Currency Risk

At June 30, 2022, the Retirement System is exposed to foreign currency risk on its derivative investments denominated in foreign currencies.

Derivative Instruments Foreign Currency Risk Analysis as of June 30, 2022

Currency	Forwards	Options	Rights/ Warrants	Swaps	Futures	Total
Argentina peso	$ -	$ -	$ -	$ (134)	$ -	$ (134)
Australian dollar	3,869	-	-	-	-	3,869
Brazil real	3,279	-	-	(398)	-	2,881
Canadian dollar	8,124	-	-	-	(27)	8,097
Chilean peso	123	-	-	-	-	123
Chinese r yuan HK	(5,674)	-	-	-	-	(5,674)
Chinese yuan renminbi	(23,261)	-	-	-	-	(23,261)
Colombian peso	(2,949)	-	-	282	-	(2,667)
Czech koruna	1,686	-	-	(343)	-	1,343
Euro	(32,625)	(10)	87	(35)	(54)	(32,637)
Hungarian forint	625	-	-	(221)	-	404
Indonesian rupiah	298	-	-	-	-	298
Israeli shekel	(17)	-	-	-	-	(17)
Japanese yen	17,290	-	-	-	-	17,290
Malaysian ringgit	14	-	-	(9)	-	5
Mexican peso	1,968	-	-	(178)	-	1,790
Norwegian krone	(44)	-	-	-	-	(44)
Peruvian sol	(1,857)	-	-	-	-	(1,857)
Philippines peso	(139)	-	-	-	-	(139)
Polish zloty	2,662	-	-	(268)	-	2,394
Pound sterling	(14,275)	-	-	-	-	(14,275)
Romanian leu	460	-	-	-	-	460
South African rand	(4,318)	-	-	(48)	-	(4,366)
Swedish krona	(43)	-	-	-	-	(43)
Swiss franc	(78)	-	4	-	-	(74)
Thailand baht	1,745	-	-	(27)	-	1,718
Turkish lira	235	-	-	-	-	235
Total	$ (42,902)	$ (10)	$ 91	$ (1,379)	$ (81)	$ (44,281)

(Dollar amounts in thousands)

At June 30, 2021, the Retirement System is exposed to foreign currency risk on its derivative investments denominated in foreign currencies.

Derivative Instruments Foreign Currency Risk Analysis as of June 30, 2021

Currency	Forwards	Options	Rights/ Warrants	Swaps	Futures	Total
Argentina peso	$ -	$ -	$ -	$ (197)	$ -	$ (197)
Australian dollar	2,565	-	-	-	-	2,565
Brazil real	1,764	-	-	161	-	1,925
Canadian dollar	3,976	-	-	-	14	3,990
Chilean peso	986	-	-	-	-	986
Chinese r yuan HK	(5,497)	-	-	-	-	(5,497)
Chinese yuan renminbi	(17,531)	-	-	-	-	(17,531)
Colombian peso	(3,431)	-	-	30	-	(3,401)
Czech koruna	1,760	-	-	(60)	-	1,700
Dominican rep peso	(808)	-	-	-	-	(808)
Euro	(108,522)	(4)	111	-	66	(108,349)
Hong Kong dollar	872	-	-	-	-	872
Hungarian forint	882	-	-	(3)	-	879
Indonesian rupiah	595	-	-	-	-	595
Israeli shekel	(19)	-	-	-	-	(19)
Japanese yen	20,759	-	-	-	-	20,759
Malaysian ringgit	137	-	-	7	-	144
Mexican peso	2,111	-	-	(122)	-	1,989
Peruvian sol	(5,863)	-	-	-	-	(5,863)
Philippines peso	(152)	-	-	-	-	(152)
Polish zloty	847	-	-	14	-	861
Pound sterling	(11,917)	-	-	-	3	(11,914)
Romanian leu	501	-	-	-	-	501
New Russian ruble	1,219	-	-	-	-	1,219
South African rand	(6,419)	-	-	(36)	-	(6,455)
South Korean won	(459)	-	-	-	-	(459)
Swiss franc	(645)	-	5	-	-	(640)
Thailand baht	2,219	-	-	143	-	2,362
Turkish lira	86	-	-	-	-	86
Uruguayan peso	130	-	-	-	-	130
Total	$ (119,854)	$ (4)	$ 116	$ (63)	$ 83	$ (119,722)

(Dollar amounts in thousands)

Contingent Features

At June 30, 2022 and 2021, the Retirement System held no positions in derivative instruments containing contingent features.

(5) Fair Value Measurement of Investments

The Retirement System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles.

The Retirement System has the following recurring fair value measurements as of June 30, 2022:

As of June 30, 2022	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Investments by fair value level				
Short-term investments	$ 353,250	$ 349,997	$ -	$ 3,253
Debt securities:				
U.S. government and agency securities	875,900	874,935	965	-
Other debt securities	745,912	88,122	542,813	114,977
Equity securities:				
Domestic	2,821,840	2,814,575	4,326	2,939
International	1,649,505	1,648,544	961	-
Foreign currency contracts, net	(197)	-	-	(197)
Invested securities lending collateral	541,413	-	541,614	(201)
Total investments by fair value level	6,987,623	$ 5,776,173	$ 1,090,679	$ 120,771
Investments measured at the net asset value (NAV)				
Short-term investments	15,849			
Fixed income funds invested in:				
Other debt securities	100,784			
Equity funds invested in:				
Domestic	4,664,059			
International	444,247			
Real assets	5,113,451			
Private credit	2,171,037			
Private equity	10,338,629			
Absolute return	3,511,019			
Total investments measured at the NAV	26,359,075			
Investments not subject to the fair value hierarchy				
City investment pool	15,352			
Total investments measured at fair value	$ 33,362,050			

(Dollar amounts in thousands)

The Retirement System has the following recurring fair value measurements as of June 30, 2021:

As of June 30, 2021	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Investments by fair value level				
Short-term investments	$ 644,979	$ 606,433	$ -	$ 38,546
Debt securities:				
U.S. government and agency securities	1,090,034	1,080,220	9,814	-
Other debt securities	951,706	178,928	656,576	116,202
Equity securities:				
Domestic	3,887,573	3,881,652	3,635	2,286
International	2,905,789	2,905,142	647	-
Foreign currency contracts, net	69	-	-	69
Invested securities lending collateral	770,857	-	417,710	353,147
Total investments by fair value level	10,251,007	$ 8,652,375	$ 1,088,382	$ 510,250
Investments measured at the net asset value (NAV)				
Short-term investments	6,525			
Fixed income funds invested in:				
Other debt securities	142,340			
Equity funds invested in:				
Domestic	5,239,176			
International	624,792			
Real assets	4,182,366			
Private credit	1,818,240			
Private equity	10,280,363			
Absolute return	3,656,388			
Total investments measured at the NAV	25,950,190			
Investments not subject to the fair value hierarchy				
City investment pool	9,184			
Total investments measured at fair value	$ 36,210,381			

Investments at Fair Value

Fair value is defined as the price 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. In some cases, a valuation technique may have multiple inputs used to measure fair value, and each input might fall into a different level of the fair value hierarchy. The level in the fair value hierarchy within which a fair value measurement falls in its entirety is determined based on the lowest level input that is significant to the measurement. The prices used in determining the fair value hierarchy are obtained from various pricing sources by the Retirement System's custodian bank.

Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets. Debt and equity securities classified in Level 2 of the fair value hierarchy are valued using prices determined by the use of matrix pricing techniques maintained by the various pricing vendors for these securities. Debt securities including short-term instruments are priced based on evaluated prices. Such evaluated prices may be determined by factors which include, but are not limited to, market quotations, yields, maturities, call features, ratings, institutional size trading in similar groups of securities and developments related to specific securities. For equity securities not traded on an active exchange, or if the closing price is not available, corroborated indicative quotes obtained from pricing vendors are generally used. Debt and equity securities classified in Level 3 of the fair value hierarchy are securities whose stated market prices are unobservable by the market place. Many of these securities are priced using uncorroborated indicative quotes, adjusted prices based on inputs from different sources, or evaluated prices using unobservable inputs, such as extrapolated data, proprietary models, and indicative quotes from pricing vendors.

Investments at Net Asset Value (NAV)

The equity and debt funds are commingled funds that are priced at net asset value by industry vendors and fund families. NAV is the fair value of all securities owned by a fund, minus its total liabilities, divided by the number of shares issued and outstanding. The NAV of an open-end fund is its price.

The fair value of the Retirement System's investments in private equity, real assets, private credit, absolute return, and some public equity investments are based on NAV provided by the investment managers and general partners (hereinafter collectively referred to as the "General Partners"). Such value generally represents the Retirement System's proportionate share of the net assets of the limited partnerships. The partnership financial statements are audited annually as of December 31 and the NAV is adjusted by additional contributions to and distributions from the partnership, the Retirement System's share of net earnings and losses, and unrealized gains and losses resulting from changes in fair value, as determined by the General Partners.

The General Partners may use one or more valuation methodologies outlined in FASB ASC 820, *Fair Value Measurement*. For some investments, little market activity may exist. The General Partners' determination of fair value is then based on the best information available in the circumstances and may involve subjective assumptions and estimates, including the General Partners' assessment of the information that market participants would use in valuing the investments. The General Partners may take into consideration a combination of internal and external factors, including but not limit to, appropriate risk adjustments for nonperformance and liquidity. Such fair value estimates involve subjective judgments of unrealized gains and losses.

The values provided by the General Partners may differ significantly from the values that would have been used had a ready market existed for these investments.

Private credit investment strategies include capital preservation, return maximization and opportunistic. Investments in the asset class are achieved through commingled funds and separate account partnerships. Private credit investments are mostly illiquid and distributions are received over the life of the investments. These investments are not typically redeemed, nor do they have set redemption schedules. There are seventeen public equity investments held in commingled funds valued at NAV. These investments may be subject to varying lock-up provisions and redemption schedules. The real asset holdings are illiquid. Distributions are received over the life of the investments, which could equal or exceed ten years. They are not redeemed, nor do they have set redemption schedules. Private equity investment strategies include buyout, venture capital, growth capital, and special situations. Investments in the asset class are achieved primarily through commingled funds and separate account partnerships, but may also include direct and co-investment opportunities. Private equity investments are illiquid and distributions are received over the life of the investments, which could equal or exceed ten years. These investments are not typically redeemed, nor do they have set redemption schedules.

Absolute return investment strategies include equity, credit, macro, emerging markets, quantitative, multi-strategy, special situations/other, co-investments and commodities. Investments are achieved through limited partnerships. Investments have the potential to become illiquid under stressed market conditions and, in certain circumstances, investors may be subject to redemption restrictions that differ from the standard terms and conditions summarized here, which can impede the return of capital according to those terms and conditions.

The table below provides a summary of the terms and conditions upon which the Retirement System may redeem its debt and equity funds, and absolute return investments.

(Dollar amounts in thousands)

Investment Type	NAV as of June 30, 2022	Unfunded Commitment	Redemption Frequency	Redemption Notice Period	NAV Lock Up and Years
Debt securities	$ 46,798	N/A	Monthly	On a business day (BD) at least 15 days prior to the last BD of the month	
	49,825		Daily	2 business days	
	4,161		N/A	N/A	
Total:	**$ 100,784**				
Domestic equity securities	590,616	N/A	Monthly	30 calendar days	
	280,236		Semi-monthly	6 business days	
	757,082		Semi-monthly	9 business days	
	292,413		Quarterly	30 calendar days	
	613,488		Quarterly	45 calendar days	
	54,509		Quarterly	60 calendar days	
	977,076		Quarterly	90 calendar days	
	310,585		Semi-annually	60 calendar days	
	408,389		Semi-annually	90 calendar days	
	379,665		Annually	60 calendar days	
Total:	**$ 4,664,059**				
International equity securities	444,247	N/A	Monthly	30 calendar days	
Absolute return	1,425,012	55,741	Monthly	5-95 Days	
	1,368,472		Quarterly	45-180 Days	$1,204,714 / No Lock Up $61,572 / Less than 1 Year $102,186 / 1-2 Years
	632,709		Semi-annually	60-180 Days	$352,351 / No Lock Up $54,343 / Less than 1 Year $226,015 / 1-2 Years
	84,826		N/A	N/A	
Total:	**$ 3,511,019**				

(6) Securities Lending

The Retirement System lends U.S. government obligations, domestic and international bonds, and equities to various brokers with a simultaneous agreement to return collateral for the same securities plus a fee in the future. The securities lending agent manages the securities lending program and receives securities and cash as collateral. Cash and non-cash collateral is pledged at 102% to 110% depending on security type. There are no restrictions on the number of securities that can be lent at one time. The term to maturity of the loaned securities is generally not matched with the term to maturity of the investment of the corresponding collateral.

The Retirement System does not have the ability to pledge or sell collateral securities unless a borrower defaults. The securities collateral is not reported on the statements of fiduciary net position. As of June 30, 2022 and 2021, the Retirement System has no credit risk exposure to borrowers because the amounts the Retirement System owes them exceed the amounts they owe the Retirement System. As with other extensions of credit, the Retirement System may bear the risk of delay in recovery or of rights in the collateral should the borrower of securities fail financially. However, the lending agent indemnifies the Retirement System against all borrower defaults.

As of June 30, 2022, the Retirement System has lent $1,364,036 in securities and received collateral of $541,557 and $919,041 in cash and securities, respectively, from borrowers. The cash collateral is invested in a separate account managed by the lending agent using investment guidelines approved by the Retirement Board. Due to the decrease in the fair value of assets held in the separately managed account, the Retirement System's invested cash collateral was valued at $541,413. The net unrealized loss of $144 is presented as part of the net appreciation (depreciation) in fair value of investments in the statement of changes in fiduciary net position in the year in which the unrealized gains and losses occur. The Retirement System is exposed to investment risk including the possible loss of principal value in the separately managed cash collateral reinvestment account due to the fluctuation in the fair value of the assets held in the account.

(Dollar amounts in thousands)

The Retirement System's securities lending transactions as of June 30, 2022 are summarized in the following table.

Securities Lending as of June 30, 2022

Investment Type	Fair Value of Loaned Securities	Cash Collateral	Fair Value of Non-Cash Collateral
Securities on Loan for Cash Collateral			
U.S. Corporate Fixed Income	$ 66,931	$ 69,333	$ -
U.S. Equities	197,936	205,922	-
U.S. Government Fixed Income	229,851	232,412	-
International Fixed Income	4,275	5,082	-
International Equities	26,408	28,808	-
Securities on Loan for Non-Cash Collateral			
U.S. Corporate Fixed Income	1,826	-	1,870
U.S. Equities	230,306	-	249,613
U.S. Government Fixed Income	484,796	-	529,252
International Fixed Income	3,973	-	4,334
International Equities	117,734	-	133,972
	$ 1,364,036	$ 541,557	$ 919,041

The following table presents the segmented time distribution for the reinvested cash collateral account based upon the expected maturity (in years) as of June 30, 2022.

Fair Value of Cash Collateral Account as of June 30, 2022

Investment Type	Fair Value	Maturities Less Than 1 Year
Floating Rate Notes	$ 338,170	$ 338,170
Money Market Funds	120,000	120,000
Repurchase Agreements	83,444	83,444
Payable/Receivable	(201)	(201)
Total	$ 541,413	$ 541,413

(Dollar amounts in thousands)

The Retirement System's exposure to credit risk in its reinvested cash collateral account as of June 30, 2022 is as follows:

Credit Rating of Cash Collateral Account as of June 30, 2022

Credit Rating	Fair Value	Fair Value as a Percentage of Total
A-1	$ 27,646	5.1%
AA	124,312	23.0%
A	186,212	34.4%
Not Rated *	203,243	37.5%
Total	$ 541,413	100.0%

* This figure includes $83,444 in repurchase agreements.

As of June 30, 2021, the Retirement System has lent $2,060,039 in securities and received collateral of $770,514 and $1,458,413 in cash and securities, respectively, from borrowers. The cash collateral is invested in a separate account managed by the lending agent using investment guidelines approved by the Retirement Board. Due to the increase in the fair value of assets held in the separately managed account, the Retirement System's invested cash collateral was valued at $770,857. The net unrealized gain of $343 is presented as part of the net appreciation (depreciation) in fair value of investments in the statement of changes in fiduciary net position in the year in which the unrealized gains and losses occur. The Retirement System is exposed to investment risk including the possible loss of principal value in the separately managed cash collateral reinvestment account due to the fluctuation in the fair value of the assets held in the account.

(Dollar amounts in thousands)

The Retirement System's securities lending transactions as of June 30, 2021 are summarized in the following table.

Securities Lending as of June 30, 2021

Investment Type	Fair Value of Loaned Securities	Cash Collateral	Fair Value of Non-Cash Collateral
Securities on Loan for Cash Collateral			
U.S. Corporate Fixed Income	$ 86,347	$ 88,523	$ -
U.S. Equities	445,420	477,334	-
U.S. Government Fixed Income	191,064	194,848	-
International Fixed Income	825	882	-
International Equities	8,418	8,927	-
Securities on Loan for Non-Cash Collateral			
U.S. Corporate Fixed Income	3,118	-	3,192
U.S. Equities	538,114	-	586,380
U.S. Government Fixed Income	655,451	-	717,379
International Fixed Income	4,753	-	5,153
International Equities	126,529	-	146,309
	$ 2,060,039	$ 770,514	$ 1,458,413

The following table presents the segmented time distribution for the reinvested cash collateral account based upon the expected maturity (in years) as of June 30, 2021.

Fair Value of Cash Collateral Account as of June 30, 2021

Investment Type	Fair Value	Maturities: Less Than 1 Year	Maturities: 1-5 Years
Certificates of Deposit	$ 20,728	$ 20,728	$ -
Commercial Paper	98,781	98,781	-
Floating Rate Notes	349,033	345,999	3,034
Money Market Funds	36,095	36,095	-
Repurchase Agreements	266,178	266,178	-
Payable/Receivable	42	42	-
Total	$ 770,857	$ 767,823	$ 3,034

(Dollar amounts in thousands)

The Retirement System's exposure to credit risk in its reinvested cash collateral account as of June 30, 2021 is as follows:

Credit Rating of Cash Collateral Account as of June 30, 2021

Credit Rating	Fair Value	Fair Value as a Percentage of Total
A-1	$ 125,609	16.3%
AAA	36,095	4.7%
AA	181,580	23.6%
A	161,353	20.9%
Not Rated *	266,220	34.5%
Total	$ 770,857	100.0%

* This figure includes $266,178 in repurchase agreements.

(7) Investments in Real Assets

Real assets investments represent the Retirement System's interests in real assets limited partnerships and separate accounts. The changes in these investments during the years ended June 30, 2022 and 2021, are summarized as follows:

	2022	2021
Investments:		
Beginning of the year	$ 4,182,366	$ 3,840,427
Capital investments	758,934	547,457
Equity in net earnings	82,352	72,408
Net appreciation in fair value	971,153	509,855
Capital distributions	(881,354)	(787,781)
End of the year	$ 5,113,451	$ 4,182,366

(8) Benefits

Allowances and benefits incurred during the years are summarized as follows:

	2022	2021
Service retirement benefits	$ 1,356,728	$ 1,272,492
Disability retirement benefits	211,292	204,831
Death benefits	10,705	11,538
COLA benefit adjustments	131,367	110,646
Total	$ 1,710,092	$ 1,599,507

(Dollar amounts in thousands)

(9) Funding Policy

Contributions are made to the Plan by both the employers and the participating employees. The basic employer contributions are the amounts deemed necessary on an actuarial basis using the entry age normal cost method to provide the Retirement System with assets sufficient to pay the basic benefits that are not provided for by employees' contributions. Contribution rates used in fiscal years 2021-22 and 2020-21 are based on a schedule of rates determined from actuarial studies by the consulting actuary as of July 1, 2020 and 2019, respectively.

Required and actual employer contribution rates for the years ended June 30, 2022 and 2021 as a percentage of covered payrolls were as follows:

	Fiscal Year 2021-22	Fiscal Year 2020-21
Police members	19.91% - 20.91%	22.40% - 23.40%
Fire members	19.91% - 20.91%	22.40% - 23.40%
Miscellaneous Non-Safety members	20.41% - 24.41%	22.90% - 26.90%
Sheriff and Miscellaneous Safety members	20.41% - 20.91%	22.90% - 23.40%

Employee contributions are mandatory as required by the Charter. Employee contribution rates for the years ended June 30, 2022 and 2021 as a percentage of gross covered salary were as follows:

	Fiscal Year 2021-22	Fiscal Year 2020-21
Participants entering the Retirement System prior to November 2, 1976		
Police and fire	11.5%	11.5%
Miscellaneous	8.0% - 12.0%	8.0% - 12.0%
Participants entering the Retirement System after November 2, 1976 and prior to July 1, 2010		
Police and fire	12.0%	12.0%
Miscellaneous	7.5% - 11.5%	7.5% - 11.5%
Participants entering the Retirement System on or after July 1, 2010		
Police and fire	12.5% - 13.0%	12.5% - 13.0%
Miscellaneous	7.5% - 11.5%	7.5% - 11.5%
Sheriff and Miscellaneous Safety hired on or after January 7, 2012	12.5% - 13.0%	12.5% - 13.0%

Beginning in the year ended June 30, 2006, most employee groups agreed through collective bargaining for employees to contribute all or a portion of the employee contributions, per memorandums of understanding (MOU's), on a pretax basis. As of July 1, 2011, substantially all employee groups have agreed through collective bargaining for employees to contribute all employee contributions on a pre-tax basis.

(Dollar amounts in thousands)

In the early 1950s, the City and County agreed to exclude uniformed police officers and firefighters from Social Security coverage. Prior to 1990, miscellaneous members covered by Social Security were able to elect to reduce the above stated rate of employee contributions in consideration of their anticipated Social Security benefit payments. All participants who elected such reduction must repay the amount of unpaid employee contributions with interest or there will be an appropriate actuarial reduction in benefits.

Participants terminating service with the employers may withdraw employee contributions plus interest. The interest rate applied to accumulated employee contributions is determined by the Retirement System's consulting actuary and recommended to the Retirement Board. The Retirement Board reviews and sets the crediting interest rate for the Plan on an annual basis. Interest for the years ended June 30, 2022 and 2021, accumulated at 4.00%.

(10) Net Pension Liability/(Asset) of Employers

The components of the employers' net pension liability/(asset) at June 30, 2022 and 2021, were as follows:

	June 30, 2022	June 30, 2021
Total pension liability	$ 35,489,639	$ 33,088,765
Fiduciary net position	$ 32,798,524	$ 35,673,834
Net pension liability/(asset)	$ 2,691,115	$ (2,585,069)
Fiduciary net position as a percentage of total pension liability	92.4%	107.8%

(a) Actuarial Assumptions

The total pension liabilities as of June 30, 2022 and 2021, were determined by actuarial valuations as of July 1, 2021 and 2020, respectively, which were rolled forward to June 30, 2022 and 2021, using standard roll forward procedures.

The following is a summary of actuarial methods and assumptions used at the June 30, 2022, measurement date:

Inflation	2.50%
Salary increases	3.25% plus merit component based on employee classification and years of service
Investment rate of return	7.20%, net of pension plan investment expense, including inflation

Mortality rates for healthy Miscellaneous members were based upon adjusted PubG-2010 Employee and Retiree tables for non-annuitants and retirees, respectively. Mortality rates for Safety members were based upon adjusted PubS-2010 Employee and Retiree tables for non-annuitants and retirees, respectively. Mortality rates were then projected generationally from the base year using the MP-2019 projection scale.

(Dollar amounts in thousands)

The actuarial assumptions used at the June 30, 2022 measurement date are based upon the results of a demographic experience study for the period July 1, 2014 through June 30, 2019, and an economic experience study as of July 1, 2021.

The Supplemental COLA assumption as of June 30, 2022, was developed based upon the probability and amount of Supplemental COLA for each future year. The tables below show the net assumed Supplemental COLA for members at sample years.

Assumed Future Supplemental COLA for Members Retiring Before 11/6/1996 or Hired After Prop C

July 1,	Old Miscellaneous and all New Plans	Old Police & Fire, pre-7/1/75 Retirements	Old Police & Fire A8.595, A8.596, Retirements
2022	0.00%	0.00%	0.00%
2023	0.70%	0.80%	0.50%
2024	0.60%	0.60%	0.40%
2025	0.60%	0.60%	0.40%
2026	0.50%	0.60%	0.30%
2027+	0.50%	0.50%	0.30%

Assumed Future Supplemental COLA for Members Retiring After 11/6/1996 and Hired Before Prop C

July 1,	Old Miscellaneous and all New Plans	Old Police & Fire
2022	0.00%	0.00%
2023+	0.75%	½ x (3.5% less assumed Basic COLA), not less than zero

The long-term expected rate of return on pension plan investments was 7.20%. It was set by the Retirement Board after consideration of both expected future returns and historical returns experienced by the Retirement System. Expected future returns were determined by using a building-block method in which best-estimate ranges of expected future real rates of return were developed for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

(Dollar amounts in thousands)

The target allocation and best estimates of geometric long-term expected real rates of return (expected returns, net of pension plan investment expense and inflation) for each major asset class as of June 30, 2022, are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	37.0%	4.8%
Treasuries	8.0%	0.6%
Liquid Credit	5.0%	3.5%
Private Credit	10.0%	5.8%
Private Equity	23.0%	7.9%
Real Assets	10.0%	4.7%
Absolute Return	10.0%	3.4%
Leverage	-3.0%	0.6%
	100.0%	

The following is a summary of actuarial methods and assumptions used at the June 30, 2021, measurement date:

Inflation	2.50%
Salary increases	3.25% plus merit component based on employee classification and years of service
Investment rate of return	7.40%, net of pension plan investment expense, including inflation

Mortality rates for healthy Miscellaneous members were based upon adjusted PubG-2010 Employee and Retiree tables for non-annuitants and retirees, respectively. Mortality rates for Safety members were based upon adjusted PubS-2010 Employee and Retiree tables for non-annuitants and retirees, respectively. Mortality rates were then projected generationally from the base year using the MP-2019 projection scale.

The actuarial assumptions used at the June 30, 2021 measurement date are based upon the results of a demographic experience study for the period July 1, 2014 through June 30, 2019, and an economic experience study as of July 1, 2020.

The Supplemental COLA assumption as of June 30, 2021, was developed based upon the probability and amount of Supplemental COLA for each future year. The tables below show the net assumed Supplemental COLA for members at sample years.

(Dollar amounts in thousands)

Assumed Future Supplemental COLA for Members Retiring Before 11/6/1996 or Hired After Prop C

July 1,	Old Miscellaneous and all New Plans	Old Police & Fire, pre-7/1/75 Retirements	Old Police & Fire A8.595, A8.596, Retirements
2021	1.50%	1.60%	1.00%
2022	0.80%	0.80%	0.50%
2027	0.60%	0.70%	0.40%
2032	0.50%	0.60%	0.40%
2034+	0.50%	0.60%	0.40%

Assumed Future Supplemental COLA for Members Retiring After 11/6/1996 and Hired Before Prop C

July 1,	Old Miscellaneous and all New Plans	Old Police & Fire
2021	1.50%	3.5% less assumed Basic COLA, not less than zero
2022+	0.75%	½ x (3.5% less assumed Basic COLA), not less than zero

The long-term expected rate of return on pension plan investments was 7.40%. It was set by the Retirement Board after consideration of both expected future returns and historical returns experienced by the Retirement System. Expected future returns were determined by using a building-block method in which best-estimate ranges of expected future real rates of return were developed for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

The target allocation and best estimates of geometric long-term expected real rates of return (expected returns, net of pension plan investment expense and inflation) for each major asset class as of June 30, 2021, are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	37.0%	4.2%
Treasuries	8.0%	0.0%
Liquid Credit	5.0%	2.3%
Private Credit	10.0%	5.1%
Private Equity	23.0%	7.9%
Real Assets	10.0%	5.1%
Absolute Return	10.0%	2.9%
Leverage	-3.0%	0.1%
	100.0%	

(b) Discount Rate

The discount rate used to measure the total pension liability at June 30, 2022, was 7.20%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will continue to be made at the rates specified in the Charter of the City and County of San Francisco. Employer contributions were assumed to be made in accordance with the contribution policy in effect for the July 1, 2021 actuarial valuation. While the contributions and measure of actuarial liability in the funding valuation do not anticipate any future Supplemental COLAs, the projected contributions for the determination of the discount rate include the anticipated future amortization payments on future Supplemental COLAs for current members when they are expected to be granted. The projection of benefit payments to current members for determining the discount rate includes the payment of anticipated future Supplemental COLAs.

As of June 30, 2022, the System's fiduciary net position was projected to be available to make all projected future benefit payments for current members. Projected benefit payments are discounted at the long-term expected return on assets of 7.20% to the extent the fiduciary net position is available to make the payments and at the municipal bond rate of 3.54% to the extent that they are not available. The single equivalent percentage rate used to determine the total pension liability as of June 30, 2022, rounded to two decimals is 7.20%.

The discount rate used to measure the total pension liability at June 30, 2021, was 7.40%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will continue to be made at the rates specified in the Charter. Employer contributions were assumed to be made in accordance with the contribution policy in effect for the July 1, 2020, actuarial valuation. While the contributions and measure of actuarial liability in the funding valuation do not anticipate any future Supplemental COLAs, the projected contributions for the determination of the discount rate include the anticipated future amortization payments on future Supplemental COLAs for current members when they are expected to be granted. The projection of benefit payments to current members for determining the discount rate includes the payment of anticipated future Supplemental COLAs.

As of June 30, 2021, the System's fiduciary net position was projected to be available to make all projected future benefit payments for current members. Projected benefit payments are discounted at the long-term expected return on assets of 7.40% to the extent the fiduciary net position is available to make the payments and at the municipal bond rate of 2.16% to the extent that they are not available. The single equivalent percentage rate used to determine the total pension liability as of June 30, 2021, rounded to two decimals is 7.40%.

The municipal bond rates of 3.54% and 2.16% used to determine the above discount rates represent the yields available on June 30, 2022 and June 24, 2021, respectively, on the Bond Buyer 20-Bond GO Index.

(Dollar amounts in thousands)

(c) Sensitivity of the Net Pension Liability/(Asset) to Changes in the Discount Rate

The following presents the net pension liability/(asset) as of June 30, 2022 and 2021, calculated using the discount rates of 7.20% and 7.40%, respectively, as well as what the total net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the discount rates:

	Net Pension Liability/(Asset)	
	June 30, 2022	June 30, 2021
1% Decrease	$7,369,281	$1,722,874
Current Discount Rate	$2,691,115	$(2,585,069)
1% Increase	$(1,165,469)	$(6,141,630)

(d) Money Weighted Rate of Returns

For the years ended June 30, 2022 and 2021, the annual money-weighted rates of return on pension plan investments, net of investment expenses, adjusted for the changing amounts actually invested, were -6.24% and 35.45%, respectively.

(11) Postemployment Healthcare Plan

(a) Other Postemployment Benefits (OPEB)

The Retirement System participates in the City's multiple-employer defined benefit other postemployment benefits plan (the OPEB Plan). The OPEB Plan is maintained by the City and is administered through the City's Health Service System. It provides postemployment medical, dental and vision insurance benefits to eligible employees, retired employees, surviving spouses, and domestic partners. Health benefit provisions are established and may be amended through negotiations between the City and the respective bargaining units. The City does not issue a separate report on its other postemployment benefit plan.

GASB Statement No. 75 requires that reported results must pertain to liability and asset information within certain defined timeframes. For the year ended June 30, 2022, the following timeframes are used.

(Dollar amounts in thousands)

San Francisco Health Service System Retiree Plan – Multiple-Employer

Valuation Date (VD)	June 30, 2020, updated to June 30, 2021
Measurement Date (MD)	June 30, 2021
Measurement Period (MP)	July 1, 2020 to June 30, 2021

The Retirement System's proportionate share percentage of the OPEB Plan was determined based on its percentage of citywide "pay-as-you-go" contributions for the year ended June 30, 2021. The Retirement System's net OPEB liability, deferred outflows/inflows of resources related to OPEB, amortization of deferred outflows/inflows and OPEB expense to each department is based on the Retirement System's allocated percentage. The Retirement System's proportionate share of the City's OPEB elements was 0.31% as of the measurement date.

(b) Benefits

Permanent full-time and elected employees are eligible to retire and receive postretirement health insurance benefits when they are eligible for retirement benefits from the City and County of San Francisco Employees' Retirement System. The eligibility requirements are as follows:

Normal Retirement	Miscellaneous	Age 50 with 20 years of credited service[1]
		Age 60 with 10 years of credited service
	Safety	Age 50 with 5 years of credited service
Disabled Retirement[2]	Any age with 10 years of credited service	
Terminated Vested	5 years of credited service at separation	

1. Age 53 with 20 years of credited service, age 60 with 10 years of credited service, or age 65 for Miscellaneous members hired on or after January 7, 2012.
2. No service requirement for Safety members retiring under the industrial disability benefit or for surviving spouses / domestic partners of those killed in the line of duty.

Retiree healthcare benefits are administered by the San Francisco Health Service System and include the following:

Medical:	PPO – City Health Plan (self-insured) and
	UHC Medicare Advantage (fully-insured)
	HMO – Kaiser (fully-insured) and Blue Shield (flex-funded)
Dental:	Delta Dental, DeltaCare USA and United Healthcare Dental
Vision:	Vision benefits are provided under the medical insurance plans and are administered by Vision Service Plan.

Projections of the sharing of benefit related costs are based on an established pattern of practice.

(c) Contributions

Benefits provided under the Plan are currently paid through "pay-as-you-go" funding. Additionally, under the City Charter, active officers and employees of the City who commenced employment on or after January 10, 2009, shall contribute to the Retiree Health Care Trust Fund (Trust Fund) a percentage of compensation not to exceed 2% of pre-tax compensation. The City shall contribute 1% of compensation for officers and employees who commenced employment on or after January 10, 2009, until the City's GASB Actuary has determined that the City's portion of the Trust Fund is fully funded. At that time, the City's 1% contribution shall cease, and officers and employees will each contribute 50% of the maximum 2% of pre-tax compensation.

Starting July 1, 2016, active officers and employees of the City who commenced employment on or before January 9, 2009, shall contribute 0.25% of pre-tax compensation into the Trust Fund. Beginning on July 1st of each subsequent year, the active officers and employees of the City who commenced employment on or before January 9, 2009, shall contribute an additional 0.25% of pre-tax compensation up to a maximum of 1%. Starting July 1, 2016, the City shall contribute 0.25% of compensation into the Trust Fund for each officer and employee who commenced employment on or before January 9, 2009. Beginning on July 1st of each subsequent year, the City shall contribute an additional 0.25% of compensation, up to a maximum of 1% for each officer and employee who commenced employment on or before January 9, 2009. When the City's GASB Actuary has determined that the City's portion of the Trust Fund is fully funded, the City's 1% contribution shall cease, and officers and employees will each contribute 50% of the maximum 1% of pre-tax compensation.

Additional or existing contribution requirements may be established or modified by amendment to the City's Charter.

For the fiscal year ended June 30, 2022, the City's funding was based on "pay as you go" plus a contribution of $41,841 to the Retiree Healthcare Trust Fund. The "pay as you go" portion paid by the City was $211,025 for a total contribution of $252,866 for the fiscal year ended June 30, 2022. The Retirement System's proportionate share of the City's contributions for fiscal year 2021-22 was $784.

(d) Net OPEB Liability, OPEB Expense and Deferred Outflows/Inflows of Resources Related to OPEB

As of June 30, 2022, the City reported a net OPEB liability related to the Plan of $3.7 billion. The Retirement System's proportionate share of the City's net OPEB liability as of June 30, 2022 was $11,437.

For the year ended June 30, 2022, the City's recognized OPEB expense was $272,001. Amortization of the City's deferred outflows and inflows is included as a component of OPEB expense. The Retirement System's proportionate share of the City's OPEB expense was $593.

(Dollar amounts in thousands)

As of June 30, 2022, the Retirement System reported its proportionate share of the City's deferred outflows and inflows of resources related to OPEB from the following sources:

Retirement System	**Deferred Outflows of Resources**	**Deferred Inflows of Resources**
Contributions subsequent to measurement date	$ 784	$ -
Differences between expected and actual experience	344	1,762
Changes in assumptions	483	-
Net difference between projected and actual earnings on plan investments	-	216
Change in proportion	481	191
Total	$ 2,092	$ 2,169

Amounts reported as deferred outflows, exclusive of contributions made after the measurement date, and deferred inflows of resources will be amortized annually and recognized in OPEB expense as follows:

Year ending June 30:	
2023	(230)
2024	(230)
2025	(227)
2026	(48)
2027	(78)
Thereafter	(48)

(Dollar amounts in thousands)

(e) Actuarial Assumptions

A summary of the actuarial assumptions and methods used to calculate the total OPEB liability as of June 30, 2021 (measurement date), is provided below:

Key Actuarial Assumptions

Valuation Date	June 30, 2020, updated to June 30, 2021
Measurement Date	June 30, 2021
Actuarial Cost Method	The Entry Age Actuarial Cost Method is used to measure the Plan's Total OPEB Liability
Healthcare Cost Trend Rates	Pre-Medicare trend starts at 6.74% trending down to ultimate rate of 4.04% in 2075 Medicare trend starts at 7.24% trending down to ultimate rate of 4.04% in 2075 10-County average trend starts at 5.50% trending down to ultimate rate of 4.04% in 2075 Vision and expenses trend remains a flat 3.00% for all years
Expected Rate of Return on Plan Assets	7.00%
Salary Increase Rate	Wage Inflation Component: 3.25% Additional Merit Component (dependent on years of service): Police: 0.50% - 7.50% Fire: 0.50% - 14.00% Muni Drivers: 0.00% - 16.00% Craft: 0.50% - 3.75% Misc: 0.30% - 5.50%
Inflation Rate	Wage Inflation: 3.25% compounded annually Consumer Price Inflation: 2.50% compounded annually
Mortality Tables	Base mortality tables are developed by multiplying a published table by an adjustment factor developed in SFERS experience study for the period ending June 30, 2019.

Non-Annuitants

	Published Table	Adjustment Factor Male	Adjustment Factor Female
Miscellaneous	PubG-2010 Employee	0.834	0.866
Safety	PubS-2010 Employee	1.011	0.979

Healthy Retirees

	Published Table	Adjustment Factor Male	Adjustment Factor Female
Miscellaneous	PubG-2010 Employee	1.031	0.977
Safety	PubS-2010 Employee	0.947	1.044

Disabled Retirees

	Published Table	Adjustment Factor Male	Adjustment Factor Female
Miscellaneous	PubG-2010 Employee	1.045	1.003
Safety	PubS-2010 Employee	0.916	0.995

Beneficiaries

	Published Table	Adjustment Factor Male	Adjustment Factor Female
Miscellaneous	PubG-2010 Employee	1.031	0.977
Safety	PubG-2010 Employee	1.031	0.977

The mortality rates in the base tables are projected generationally from the base year using the MP-2019 projection scale.

(f) Sensitivity of Net OPEB Liability to Changes in the Healthcare Cost Trend Rate

The following presents the Retirement System's proportionate share of the City's net OPEB liability calculated using the healthcare cost trend rate, as well as what the Retirement System's allocation of the City's net OPEB liability would be if it were calculated using a healthcare cost trend rate that is 1% lower or 1% higher than the current rate:

1% Decrease	Healthcare Trend	1% Increase
$ 9,735	$ 11,437	$ 13,559

(g) Discount Rate

The discount rate used to measure the total OPEB liability as of June 30, 2021 was 7.00%. Based on the assumption that plan member contributions will continue to be made at the rates specified in the Charter, it was determined that the Plan's projected fiduciary net position will be greater than or equal to the benefit payments projected for each future period. As such, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

The long-term expected rate of return on OPEB plan investments was 7.00% based on expected future returns and historical returns experienced by the Trust Fund. Expected future returns were determined based on 10-year and 20-year capital market assumptions for the Trust Fund's asset allocation. Target allocation for each major asset class and best estimates of geometric real rates of return are summarized in the following table:

(Dollar amounts in thousands)

Asset Class	Target Allocation	Long-term Expected Real Rate of Return
Equities		
U.S. Large Cap	28.0%	8.2%
U.S. Small Cap	3.0%	9.5%
Developed Market Equity (non-U.S.)	15.0%	8.9%
Emerging Market Equity	13.0%	11.0%
Credit		
Bank Loans	3.0%	4.4%
High Yield Bonds	3.0%	4.4%
Emerging Market Bonds	3.0%	4.3%
Rate Securities		
Investment Grade Bonds	9.0%	1.9%
Long-term Government Bonds	4.0%	3.2%
Short-term Treasury Inflation Protected Securities (TIPS)	4.0%	1.5%
Private Markets		
Private Equity	5.0%	13.0%
Core Private Real Estate	5.0%	6.2%
Risk Mitigating Strategies		
Global Macro	5.0%	4.4%
Total	100.0%	

The asset allocation targets summarized above have a 20-year return estimate of 6.54%, which was weighted against a 10-year model estimating a 6.58% return, resulting in the ultimate long-term expected rate of return of 7.00%.

The following presents the Retirement System's proportionate share of the City's net OPEB liability calculated using the discount rate, as well as what the Retirement System's proportionate share of the City's net OPEB liability would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current rate:

1% Decrease 6.00%	Discount Rate 7.00%	1% Increase 8.00%
$ 13,374	$ 11,437	$ 9,855

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Fiscal Year 2021 Postemployment Healthcare Plan

(a) Other Postemployment Benefits (OPEB)

The Retirement System participates in the City's multiple-employer defined benefit other postemployment benefits plan (the OPEB Plan). The OPEB Plan is maintained by the City and is administered through the City's Health Service System. It provides postemployment medical, dental and vision insurance benefits to eligible employees, retired employees, surviving spouses, and domestic partners. Health benefit provisions are established and may be amended through negotiations between the City and the respective bargaining units. The City does not issue a separate report on its other postemployment benefit plan.

GASB Statement No. 75 requires that reported results must pertain to liability and asset information within certain defined timeframes. For this report, the following timeframes are used.

(Dollar amounts in thousands)

San Francisco Health Service System Retiree Plan – Multiple-Employer

Valuation Date (VD)	June 30, 2020
Measurement Date (MD)	June 30, 2020
Measurement Period (MP)	July 1, 2019 to June 30, 2020

The Retirement System's proportionate share percentage of the OPEB Plan was determined based on its percentage of citywide "pay-as-you-go" contributions for the year ended June 30, 2020. The Retirement System's net OPEB liability, deferred outflows/inflows of resources related to OPEB, amortization of deferred outflows/inflows and OPEB expense to each department is based on the Retirement System's allocated percentage. The Retirement System's proportionate share of the City's OPEB elements was 0.31% as of the measurement date.

(b) Benefits

Permanent full-time and elected employees are eligible to retire and receive postretirement health insurance benefits when they are eligible for retirement benefits from the City and County of San Francisco Employees' Retirement System. The eligibility requirements are as follows:

Normal Retirement	Miscellaneous	Age 50 with 20 years of credited service[1]
		Age 60 with 10 years of credited service
	Safety	Age 50 with 5 years of credited service
Disabled Retirement[2]	Any age with 10 years of credited service	
Terminated Vested	5 years of credited service at separation	

1. Age 53 with 20 years of credited service, age 60 with 10 years of credited service, or age 65 for Miscellaneous members hired on or after January 7, 2012.
2. No service requirement for Safety members retiring under the industrial disability benefit or for surviving spouses / domestic partners of those killed in the line of duty.

Retiree healthcare benefits are administered by the San Francisco Health Service System and include the following:

Medical:	PPO – City Health Plan (self-insured) and
	UHC Medicare Advantage (fully-insured)
	HMO – Kaiser (fully-insured) and Blue Shield (flex-funded)
Dental:	Delta Dental, DeltaCare USA and United Healthcare Dental
Vision:	Vision benefits are provided under the medical insurance plans and are administered by Vision Service Plan.

Projections of the sharing of benefit related costs are based on an established pattern of practice.

(c) Contributions

Benefits provided under the Plan are currently paid through "pay-as-you-go" funding. Additionally, under the City Charter, active officers and employees of the City who commenced employment on or after January 10, 2009, shall contribute to the Retiree Health Care Trust Fund (Trust Fund) a percentage of compensation not to exceed 2% of pre-tax compensation. The City shall contribute 1% of compensation for officers and employees who commenced employment on or after January 10, 2009, until the City's GASB Actuary has determined that the City's portion of the Trust Fund is fully funded. At that time, the City's 1% contribution shall cease, and officers and employees will each contribute 50% of the maximum 2% of pre-tax compensation.

Starting July 1, 2016, active officers and employees of the City who commenced employment on or before January 9, 2009, shall contribute 0.25% of pre-tax compensation into the Trust Fund. Beginning on July 1st of each subsequent year, the active officers and employees of the City who commenced employment on or before January 9, 2009, shall contribute an additional 0.25% of pre-tax compensation up to a maximum of 1%. Starting July 1, 2016, the City shall contribute 0.25% of compensation into the Trust Fund for each officer and employee who commenced employment on or before January 9, 2009. Beginning on July 1st of each subsequent year, the City shall contribute an additional 0.25% of compensation, up to a maximum of 1% for each officer and employee who commenced employment on or before January 9, 2009. When the City's GASB Actuary has determined that the City's portion of the Trust Fund is fully funded, the City's 1% contribution shall cease, and officers and employees will each contribute 50% of the maximum 1% of pre-tax compensation.

Additional or existing contribution requirements may be established or modified by amendment to the City's Charter.

For the year ended June 30, 2021, the City's funding was based on "pay-as-you-go" plus a contribution of $39,555 to the Retiree Health Care Trust Fund. The "pay-as-you-go" portion paid by the City was $206,439 for a total contribution of $245,994 for the year ended June 30, 2021. The Retirement System's proportionate share of the City's contributions for fiscal year 2020-21 was $771.

(d) Net OPEB Liability, OPEB Expense and Deferred Outflows/Inflows of Resources Related to OPEB

As of June 30, 2021, the City reported net OPEB liability related to the Plan of $3.8 billion. The Retirement System's proportionate share of the City's net OPEB liability as of June 30, 2021 was $11,988.

For the year ended June 30, 2021, the City's recognized OPEB expense was $320,684. Amortization of the City's deferred outflows and inflows is included as a component of OPEB expense. The Retirement System's proportionate share of the City's OPEB expense was $25.

(Dollar amounts in thousands)

As of June 30, 2021, the Retirement System reported its proportionate share of the City's deferred outflows and inflows of resources related to OPEB from the following sources:

Retirement System	**Deferred Outflows of Resources**	**Deferred Inflows of Resources**
Contributions subsequent to measurement date	$ 771	$ -
Differences between expected and actual experience	435	1,717
Changes in assumptions	606	-
Net difference between projected and actual earnings on plan investments	8	-
Change in proportion	435	255
Total	$ 2,255	$ 1,972

Amounts reported as deferred outflows, exclusive of contributions made after the measurement date, and deferred inflows of resources will be amortized annually and recognized in OPEB expense as follows:

Year ending June 30:	
2022	(132)
2023	(127)
2024	(128)
2025	(125)
2026	57
Thereafter	(33)

(Dollar amounts in thousands)

(e) Actuarial Assumptions

A summary of the actuarial assumptions and methods used to calculate the total OPEB liability as of June 30, 2020 (measurement date), is provided below:

Key Actuarial Assumptions

Valuation Date	June 30, 2020
Measurement Date	June 30, 2020
Actuarial Cost Method	The Entry Age Actuarial Cost Method is used to measure the Plan's Total OPEB Liability
Healthcare Cost Trend Rates	Pre-Medicare trend starts at 4.00% in 2022, 7.00% in 2023, trending down to ultimate rate of 4.04% in 2075
	Medicare trend starts at 1.00% in 2022, 7.50% in 2023, trending down to ultimate rate of 4.04% in 2075
	10-County average trend starts at 4.50% in 2022, 5.50% in 2023, trending down to ultimate rate of 4.04% in 2075
	Vision and expenses trend remains a flat 3.00% for all years
Expected Rate of Return on Plan Assets	7.00%
Salary Increase Rate	Wage Inflation Component: 3.25%
	Additional Merit Component (dependent on years of service):
	Police: 0.50% - 7.50%
	Fire: 0.50% - 14.00%
	Muni Drivers: 0.00% - 16.00%
	Craft: 0.50% - 3.75%
	Misc: 0.30% - 5.50%
Inflation Rate	Wage Inflation: 3.25% compounded annually
	Consumer Price Inflation: 2.50% compounded annually
Mortality Tables	Base mortality tables are developed by multiplying a published table by an adjustment factor developed in SFERS experience study for the period ending June 30, 2019.

Non-Annuitants

		Adjustment Factor	
	Published Table	**Male**	**Female**
Miscellaneous	PubG-2010 Employee	0.834	0.866
Safety	PubS-2010 Employee	1.011	0.979

Healthy Retirees

		Adjustment Factor	
	Published Table	**Male**	**Female**
Miscellaneous	PubG-2010 Employee	1.031	0.977
Safety	PubS-2010 Employee	0.947	1.044

Disabled Retirees

		Adjustment Factor	
	Published Table	**Male**	**Female**
Miscellaneous	PubG-2010 Employee	1.045	1.003
Safety	PubS-2010 Employee	0.916	0.995

Beneficiaries

		Adjustment Factor	
	Published Table	**Male**	**Female**
Miscellaneous	PubG-2010 Employee	1.031	0.977
Safety	PubG-2010 Employee	1.031	0.977

The mortality rates in the base tables are projected generationally from the base year using the MP-2019 projection scale.

(f) Sensitivity of Net OPEB Liability to Changes in the Healthcare Cost Trend Rate

The following presents the Retirement System's proportionate share of the City's net OPEB liability calculated using the healthcare cost trend rate, as well as what the Retirement System's allocation of the City's net OPEB liability would be if it were calculated using a healthcare cost trend rate that is 1% lower or 1% higher than the current rate:

1% Decrease	Healthcare Trend	1% Increase
$ 10,365	$ 11,988	$ 14,103

(g) Discount Rate

The discount rate used to measure the total OPEB liability as of June 30, 2020 was 7.00%. Based on the assumption that plan member contributions will continue to be made at the rates specified in the Charter, it was determined that the Plan's projected fiduciary net position will be greater than or equal to the benefit payments projected for each future period. As such, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

The long-term expected rate of return on OPEB plan investments was 7.00% based on expected future returns and historical returns experienced by the Trust Fund. Expected future returns were determined based on 10-year and 20-year capital market assumptions for the Trust Fund's asset allocation. Target allocation for each major asset class and best estimates of geometric real rates of return are summarized in the following table:

(Dollar amounts in thousands)

Asset Class	Target Allocation	Long-term Expected Real Rate of Return
Equities		
U.S. Large Cap	28.0%	8.4%
U.S. Small Cap	3.0%	9.8%
Developed Market Equity (non-U.S.)	15.0%	9.6%
Emerging Market Equity	13.0%	11.7%
Credit		
Bank Loans	3.0%	4.9%
High Yield Bonds	3.0%	4.9%
Emerging Market Bonds	3.0%	4.8%
Rate Securities		
Investment Grade Bonds	9.0%	2.2%
Long-term Government Bonds	4.0%	3.1%
Short-term Treasury Inflation Protected Securities (TIPS)	4.0%	1.9%
Private Markets		
Private Equity	5.0%	12.5%
Core Private Real Estate	5.0%	6.4%
Risk Mitigating Strategies		
Global Macro	5.0%	4.1%
Total	100.0%	

The asset allocation targets summarized above have a 20-year return estimate of 6.90%, which was weighted against a 10-year model estimating a 6.93% return, resulting in the ultimate long-term expected rate of return of 7.00%.

The following presents the Retirement System's proportionate share of the City's net OPEB liability calculated using the discount rate, as well as what the Retirement System's proportionate share of the City's net OPEB liability would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current rate:

1% Decrease 6.00%	Discount Rate 7.00%	1% Increase 8.00%
$ 13,911	$ 11,988	$ 10,417

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(Dollar amounts in thousands)

Schedule of Changes in Collective Net Pension Liability/(Asset) and Related Ratios

	Year Ended June 30, 2022	Year Ended June 30, 2021	Year Ended June 30, 2020	Year Ended June 30, 2019
Total pension liability:				
Service cost	$ 781,610	$ 718,771	$ 704,637	$ 675,065
Interest on total pension liability	2,471,994	2,302,075	2,230,441	2,131,847
Changes of benefit terms	-	-	-	-
Differences between expected and actual experience	98,920	136,097	205,869	12,484
Changes of assumptions	786,100	(479,435)	(117,141)	351,902
Benefit payments, including refunds of contributions	(1,737,750)	(1,619,761)	(1,548,077)	(1,456,682)
Net change in total pension liability	2,400,874	1,057,747	1,475,729	1,714,616
Total pension liability - beginning of year	33,088,765	32,031,018	30,555,289	28,840,673
Total pension liability - end of year (a)	35,489,639	33,088,765	32,031,018	30,555,289
Fiduciary net position:				
Contributions - member	423,471	409,398	400,649	380,980
Contributions - employer	768,463	836,559	742,985	645,056
Net investment income (loss)	(2,308,320)	9,447,669	966,282	1,970,312
Benefit payments, including refunds of contributions	(1,737,750)	(1,619,761)	(1,548,077)	(1,456,682)
Administrative expense	(21,174)	(20,249)	(20,270)	(18,983)
Net change in fiduciary net position	(2,875,310)	9,053,616	541,569	1,520,683
Fiduciary net position - beginning of year				
Beginning of year (as previously reported)	35,673,834	26,620,218	26,078,649	24,557,966
Restatement due to adoption of GASB75	-	-	-	-
Beginning of year (as restated)	35,673,834	26,620,218	26,078,649	24,557,966
Fiduciary net position - end of year (b)	32,798,524	35,673,834	26,620,218	26,078,649
Net pension liability/(asset) - end of year (a) - (b)	$ 2,691,115	$ (2,585,069)	$ 5,410,800	$ 4,476,640
Fiduciary net position as a percentage of total pension liability	92.4%	107.8%	83.1%	85.3%
Covered payroll	$ 3,742,459	$ 3,623,898	$ 3,566,991	$ 3,375,447
Net pension liability/(asset) as a percentage of covered payroll	71.9%	-71.3%	151.7%	132.6%

SAN FRANCISCO CITY AND COUNTY EMPLOYEES' RETIREMENT SYSTEM

Required Supplementary Information – Unaudited (Continued)

Years Ended June 30, 2022 and 2021

(Dollar amounts in thousands)

	Year Ended June 30, 2018	Year Ended June 30, 2017	Year Ended June 30, 2016	Year Ended June 30, 2015	Year Ended June 30, 2014
Total pension liability:					
Service cost	$ 632,118	$ 644,277	$ 567,576	$ 523,644	$ 509,200
Interest on total pension liability	2,041,110	1,924,206	1,669,996	1,621,582	1,542,266
Changes of benefit terms	-	-	1,293,714	-	-
Differences between expected and actual experience	(42,382)	57,911	(119,270)	(197,981)	-
Changes of assumptions	170,699	88,180	1,087,309	216,845	(73,315)
Benefit payments, including refunds of contributions	(1,364,587)	(1,278,140)	(1,256,146)	(1,131,030)	(1,072,526)
Net change in total pension liability	1,436,958	1,436,434	3,243,179	1,033,060	905,625
Total pension liability - beginning of year	27,403,715	25,967,281	22,724,102	21,691,042	20,785,417
Total pension liability - end of year (a)	28,840,673	27,403,715	25,967,281	22,724,102	21,691,042
Fiduciary net position:					
Contributions - member	364,696	316,844	322,764	301,682	289,020
Contributions - employer	619,067	551,809	526,805	592,643	532,882
Net investment income	2,549,674	2,683,468	150,190	763,429	3,175,431
Benefit payments, including refunds of contributions	(1,364,587)	(1,278,140)	(1,256,146)	(1,131,030)	(1,072,526)
Administrative expense	(18,238)	(18,134)	(17,179)	(19,262)	(15,745)
Net change in fiduciary net position	2,150,612	2,255,847	(273,566)	507,462	2,909,062
Fiduciary net position - beginning of year					
Beginning of year (as previously reported)	22,410,350	20,154,503	20,428,069	19,920,607	17,011,545
Restatement due to adoption of GASB75	(2,996)	-	-	-	-
Beginning of year (as restated)	22,407,354	20,154,503	20,428,069	19,920,607	17,011,545
Fiduciary net position - end of year (b)	24,557,966	22,410,350	20,154,503	20,428,069	19,920,607
Net pension liability - end of year (a) - (b)	$ 4,282,707	$ 4,993,365	$ 5,812,778	$ 2,296,033	$ 1,770,435
Fiduciary net position as a percentage of total pension liability	85.2%	81.8%	77.6%	89.9%	91.8%
Covered payroll	$ 3,221,544	$ 3,041,818	$ 2,836,498	$ 2,642,752	$ 2,507,162
Net pension liability as a percentage of covered payroll	132.9%	164.2%	204.9%	86.9%	70.6%

***** This schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

(Dollar amounts in thousands)

Schedule of Employer Contributions

Year Ended June 30	Actuarially Determined Contributions	Contributions in Relation to Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2022	$ 768,463	$ 768,463	$ -	$ 3,742,459	20.5%
2021	836,559	836,559	-	3,623,898	23.1%
2020	742,985	742,985	-	3,566,991	20.8%
2019	645,056	645,056	-	3,375,447	19.1%
2018	619,067	619,067	-	3,221,544	19.2%
2017	551,809	551,809	-	3,041,818	18.1%
2016	526,805	526,805	-	2,836,498	18.6%
2015	592,643	592,643	-	2,642,752	22.4%
2014	532,882	532,882	-	2,507,162	21.3%
2013	442,870	442,870	-	2,448,734	18.1%

Schedule of Money-Weighted Rate of Return

Year Ended June 30	Money-Weighted Rate of Return
2022	-6.24%
2021	35.45%
2020	3.86%
2019	8.19%
2018	11.55%
2017	13.52%
2016	0.96%
2015	4.03%
2014	19.10%
2013	13.91%

(Dollar amounts in thousands)

Note to Schedule of Changes in Collective Net Pension Liability and Related Ratios

The total pension liability contained in the schedule was determined by the Retirement System's actuary, Cheiron, Inc. The collective net pension liability is measured as the total pension liability less the amount of the fiduciary net position of the Retirement System.

A summary of assumptions may be found in Note 10 to the financial statements. A complete description of methods and assumptions may be found in the Retirement System's *GASB 67/68 Report* for the corresponding fiscal years. The discount rates were as follows:

Year Ended June 30	Discount Rate for Total Pension Liability
2022	7.20%
2021	7.40%
2020	7.40%
2019	7.40%
2018	7.50%
2017	7.50%
2016	7.50%
2015	7.46%
2014	7.58%
2013	7.52%

(Dollar amounts in thousands)

Note to Schedule of Employer Contributions

Actuarially determined contribution rates are calculated based on the actuarial valuation one year prior to the beginning of the fiscal year in which contributions are reported. Methods and assumptions used to determine contribution rates are:

Year Ended June 30	Valuation Date	Discount Rate	Salary Increase/ Amortization Growth	Mortality	Significant Changes in Assumptions from Prior Year
2022	7/1/2020	7.40%	3.25%	Adj. 2010 Pub-G and 2010 Pub-S Mortality Tables projected generationally with MP-2019	Wage inflation assumption
2021	7/1/2019	7.40%	3.50%	Adj. 2009 CalPERS Mortality Tables projected generationally with mod. MP-2015	None
2020	7/1/2018	7.40%	3.50%		Discount rate
2019	7/1/2017	7.50%	3.50%		Wage inflation assumption
2018	7/1/2016	7.50%	3.75%		None
2017	7/1/2015	7.50%	3.75%		Demographic assumptions including rates of retirement, termination, refund, disability and mortality and salary merit based upon experience study
2016	7/1/2014	7.50%	3.75%	RP2000 Mortality projected with Scale AA	Investment return and wage inflation assumptions
2015	7/1/2013	7.58%	3.83%		None
2014	7/1/2012	7.58%	3.83%		Investment return and wage inflation assumptions
2013	7/1/2011	7.66%	3.91%		Investment return and wage inflation assumptions
2012	7/1/2010	7.75%	4.00%		Wage inflation and demographic assumptions including salary merit increases based upon experience study

A complete description of the methods and assumptions used to determine contribution rates can be found in the corresponding actuarial valuation reports.