

City of Fresno Employees Retirement System

Comprehensive Annual Financial Report

For the Fiscal Years Ended June 30, 2019 and 2018



**A Pension Trust Fund of the City of Fresno
Fresno, CA**

City of Fresno Employees Retirement System
A Pension Trust Fund of the City of Fresno (California)

COMPREHENSIVE ANNUAL FINANCIAL REPORT

FOR FISCAL YEARS ENDED JUNE 30, 2019 AND 2018

Issued by:

Robert T. Theller
Retirement Administrator

Kathleen Riley Brown
Assistant Retirement Administrator

2828 Fresno Street Suite 201, Fresno, CA 93721-1327

(559) 621-7080 / Retire@Fresno.gov

www.CFRS-CA.org

City of Fresno Employees Retirement System

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MISSION STATEMENT

To protect and provide System benefits through the highest quality delivery of service for our members and the employer, prudently fulfilling our fiduciary duties of investment and conservation of Trust assets.

BOARD AND STAFF COMMITMENT

We promise to carry out our Mission through a competent, professional, impartial and open decision-making process. In providing benefits and services, all persons will be treated fairly, with courtesy and respect. Assets will be invested and administered to balance the need to control risk with superior performance. We expect excellence in all activities. We will also be accountable and act in accordance with the law.

GOALS

- To create an environment in which Board Members can maximize their performance as trustees.*
- To improve business processes and our delivery of services provided to members and retirees.*
- To improve communications with members, retirees and the employer.*
- To attract, develop and retain competent and professional staff.*
- To achieve and maintain superior investment performance on a risk controlled basis measured by the Public Fund Universe.*

The Employees Retirement System was established on June 1, 1939 and is maintained and governed by Article 5 of the Fresno Municipal Code.

The Employees Retirement System (the System) provides retirement benefits for all qualified non-sworn employees of the City of Fresno.

INTRODUCTION

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Letter of Transmittal



Robert T. Theller, Esq.

RETIREMENT ADMINISTRATOR

Dear Board Members:

As Retirement Administrator of the City of Fresno Employees Retirement System (the System), it is with great pleasure that I submit the Comprehensive Annual Financial Report (CAFR) for the fiscal years ended June 30, 2019 and 2018.

Against a backdrop of rising downside risks, policymakers across the globe took steps to prevent a sharper deceleration of the economy as the global markets sold off sharply during the fourth quarter of 2018. Their forceful response supported market sentiment and triggered a sharp rebound in risk assets. Despite the improvements, financial markets remain susceptible to a sudden tightening in financial conditions. An intensification of trade tensions, a further slowdown in global economic activity, or political shocks could trigger repricing of risk assets. An abrupt deterioration in financial conditions could potentially unmask financial fragilities that have built up during the unprecedented period of very low interest rates.

The federal funds rate is the benchmark interest rate banks charge each other for overnight loans. It generally reflects the health of the economy and has a big impact on other interest rates. While many economists expect the Federal Reserve to hold the federal funds rate steady over the year ahead, further rate cuts might follow a severe deterioration of economic data. As of June 30, 2019, the Federal Reserve target interest rate was set in the range of 2.25% - 2.50%. After cuts of a quarter of a percentage point on August 1, September 19, and October 31, 2019, the federal funds rate, is now 1.50% - 1.75%. The October 31 cut was the third rate drop in 2019, after years of steady increases following the Great Recession. Conversely, in 2018 the federal funds rate increased four times, from a range of 1.50% - 1.75% to a range of 2.25% - 2.50% as of December 20, 2018. From a historical perspective, the federal funds target interest rate in the United States averaged 5.64 percent from 1971 until 2019, reaching an all-time high of 20 percent in March 1980 and a record low of 0.25 percent in December 2008.

Despite these global economic challenges, the System is at a fully funded status on both a market value and actuarial basis at 112.4 percent and 111.9 percent, respectively. From a long-term perspective, the System is positioned to provide a solid rate of return that is equal to or better than the respective asset classes market indices even as we enter yet another year of uncertainties in the global economic and financial markets. The Retirement Board (the Board) carefully managed the investment portfolio through last year's continued global economic turbulence and we remain confident that new investment opportunities will arise and the Board, with the required amount of due diligence and vigilance, will position the System's investments for future long-term growth.

Letter of Transmittal Continued

The System's returns for the last two years have been mixed at 5.60 percent and 8.87 percent for the fiscal years ended June 30, 2019 and 2018, respectively. Noticeably, for this two-year period the returns are both below and well above the System's assumed rate of return of 7.25 percent effective June 30, 2019 and 2018, respectively.

In fiscal year 2019, the System's gross of fee returns provided by its custodian, Northern Trust, when compared to other institutional investors and weighted policy benchmarks, were somewhat favorable. The System's gross of fees one-year return was 5.60 percent, 0.26 percent below its policy benchmark return of 5.86 percent; also under performing its actuarial interest rate assumption of 7.25 percent by 1.65 percent while out performing its actual weighted benchmark by 0.50 percent in Fiscal Year 2019. The five-year annualized gross of fees return of 6.58 percent was slightly above its policy benchmark return of 6.09 percent by 0.49 percent. The System's ten-year annualized gross of fees return at 10.10 percent exceeded its policy benchmarks of 9.48 percent by 0.62 percent and also exceeded its actuarial interest rate assumption by 2.85 percent for the same period.

The System remains highly funded and well positioned to serve our members and retirees. As illustrated by the System's 15 and 25-year long-term gross of fees returns of 7.28 percent and 8.66 percent, respectively, as of June 30, 2019, the System has the ability to achieve its long-term objectives over extended periods. Meanwhile, the System's actuarial and market value funding status continues to be the highest of any public non-safety pension defined benefit plan in California.

The Comprehensive Annual Financial Report (CAFR)

The Comprehensive Annual Financial Report (CAFR) of the City of Fresno Employees Retirement System for fiscal years ended June 30, 2019 and 2018 is submitted herewith. Information contained in this report is designed to provide a complete and accurate review of the years' operations. Responsibility for both the accuracy of the data, and the completeness and fairness of the presentation, rests with the management of the System. For a general overview of the City of Fresno Employees Retirement System's finances, please refer to the Management's Discussion and Analysis in the Financial Section of this report. The CAFR consists of six sections:

The Introduction Section contains our Mission Statement, a Letter of Transmittal, a description of the System's management and organizational structure, a listing of the professional services providers, and the Government Finance Officers Association's Certificate of Achievement for Excellence in Financial Reporting.

The Financial Section contains the opinion of the independent auditor, Brown Armstrong Accountancy Corporation, Management's Discussion and Analysis the Basic Financial Statements of the System, the Required Supplementary Information and the Other Supplementary Information.

The Investment Section includes an Investment Report from the Retirement Administrator, a letter from the System's Investment Consultant, NEPC, LLC, recapping the fiscal year investment results and activities, along with performance and asset allocation information. Investment Consultant returns may differ slightly from the custodian's book of record due to rounding methodology.

The Actuarial Section includes the certification letter produced by the independent actuary, The Segal Company, along with supporting schedules and information.

Letter of Transmittal Continued

The Statistical Section contains significant detailed data pertaining to the System.

The Compliance Section contains the Independent Auditor’s Report on Internal Control Over Financial Reporting and on Compliance And Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*.

I trust that you and the members of the System will find this CAFR helpful in understanding the System, and our commitment to financial integrity and member services.

THE EMPLOYEES RETIREMENT SYSTEM AND ITS SERVICES

The Employees Retirement System was established on June 1, 1939, under Charter Section 910 and is governed by Article 5 of Chapter 3 of the City of Fresno Municipal Code. The System provides retirement allowances to the non-safety members employed by the City of Fresno. In accordance with the provisions of the City of Fresno Municipal Code, the System provides lifetime retirement, disability, and death benefits to its members.

The Employees Retirement Board is responsible for establishing policies governing the administration of the System, making benefit determinations, and managing the investment of the System’s assets. The Board operates under the authority vested in Article 5 of Chapter 3 of the City of Fresno Municipal Code and the California Pension Protection Act of 1992. Article XVI, Section 17(b) of the Constitution of the State of California provides that “the members of the Retirement Board of a public retirement system shall discharge their duties ... solely in the interest of, and for the exclusive purpose of providing benefits to, participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of administering the System. A Retirement Board’s duty to its participants and their beneficiaries shall take precedence over any other duty.” Section 17(a) further provides that the Board has ... “the sole and exclusive responsibility to administer the System in a manner that will assure prompt delivery of benefits and related services to the participants and their beneficiaries.” The Retirement Board is also responsible for the prudent investment of member and employer contributions, and defraying reasonable expenses of administration.

The Retirement Board has five (5) members, two (2) management employees who are appointed by the Mayor and confirmed by the City Council, one (1) employee who is elected by the manual workers of the System, and one (1) employee who is elected by the clerical or supervisory workers of the System, both of which serve a four-year term. The fifth and final member of the Board is a qualified elector of the City, not connected with its government, appointed by the previously designated four members.

The Board oversees the Retirement Administrator and staff in the performance of their duties in accordance with the Municipal Code and the Board’s Rules, Regulations and Policies.

Letter of Transmittal Continued

Major Initiatives

The Board, jointly with the City of Fresno Fire & Police Retirement System Board (the Boards), continued evaluation and education related to Alternative investments.

The Boards authorized both Private Equity and MidStream Energy Portfolios (MLP) manager searches through its investment consultant, NEPC, during Fiscal Year 2019. The Boards hired Pantheon, a Private Equity Fund of One manager in April; and completed its MidStream Energy (MLP) search in June with the hiring of Harvest and Tortoise. The Boards will fund the new MidStream Energy (MLP) portfolios at the beginning of Fiscal Year 2020. Each selection concluded following full legal review of pertinent legal documents, investment due diligence, operational due diligence and background investigations of key personnel at each firm.

In May 2019, the Boards reaffirmed their decision to terminate REIT portfolio in the coming months as part of its efforts to continue to fund Value Add Real Estate and to add a Core Plus Real Estate manager. The Core Plus real estate manager search will commence in Fiscal Year 2020.

Effective January 1, 2017, the IRS eliminated its staggered five-year remedial amendment cycle system for individually designed qualified retirement plans and no longer accepts applications for determination letters. The System's letter of determination was effective through January 31, 2019. The IRS' current determination letter program, in general, provides that a plan sponsor that maintains a qualified plan, with a favorable determination letter, may continue to rely on the determination with respect to any plan provision, until such time that the plan provision subsequently is amended or affected by a change in law. The Boards retained the services of the law firm of Ice Miller, LLP to assist with a review of our plan documents and applicable statutes in effect through 2013; and any plan amendments or changes to provisions made after January 1, 2014. Based on their initial review, since the date of the Plan's May 26, 2014 favorable determination letter, the Plan has been timely amended to comply with the changes required in order to be tax qualified under Code § 401 (a). An official Ice Miller Comply Now report to the Boards will occur during Fiscal Year 2020.

During fiscal year 2019, the Retirement Benefits Staff continued their communication efforts with both employees and retirees of the System(s). Aggressive efforts deployed helped to maximize enrollment in the Member Direct module initially implemented in January 2016. Participation in Member Direct increased dramatically over the previous fiscal year. Mid-Career Retirement Seminars for active employees nearing important milestones in their careers continued with attendance and positive feedback from attendees meeting expectations after a full year.

With the assistance of its actuary and staff, the Board completed the annual actuarial valuations for June 30, 2019 and 2018, and Governmental Accounting Standards Board (GASB) Statement No. 67 which redefines pension liability and expense for financial reporting purposes only. In accordance with Actuarial Standards of Practice (ASOP) 51, the System's actuary has identified and assessed risks that may be reasonably anticipated to significantly affect the System's future financial condition, which helps intended users of the actuarial findings gain a better understanding of risks inherent in the measurements of pension obligations and actuarially determined pension plan contributions.

Letter of Transmittal Continued

Professional Services

Professional Services Consultants and Investment Portfolio Managers are retained by the Board to provide professional services essential to the effective and efficient operation of the System. See listings on pages xii and xiii.

An opinion from the Independent Auditor and the Actuary are included in this report along with a summary investment report from the Board's Investment Consultant. The Consultants and Investment Managers retained by the Board are listed in the following section of this report.

Certificate of Achievement

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the City of Fresno Employees Retirement System for its comprehensive annual financial report for the fiscal year ended June 30, 2018. The Certificate of Achievement is a prestigious national award recognizing excellence in the preparation of public employee retirement system comprehensive annual financial reports.

In order to be awarded a Certificate of Achievement for Excellence in Financial Reporting, a government entity must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement for Excellence in Financial Reporting is valid for a period of one year only. The System has received a Certificate of Achievement for the last twenty consecutive years. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate. For Fiscal Year 2019, the System will submit a Popular Annual Financial Report (PAFR) to the GFOA to determine its eligibility for a certificate. The PAFR provides System membership with condensed and concise information in an easier to read format than is presented in the CAFR.

Actuarial Funding Status and Net Pension Liability

The System's funding objective is to meet long-term benefit promises by retaining a well-funded plan status and obtaining superior investment returns while minimizing employer contributions. The Board's objective for employer contributions is to establish a rate as a level percent of member payroll. The greater the level of overall plan funding, the larger the ratio of assets accumulated compared to the actuarial accrued liability and the greater the level of investment potential. The advantage of a well-funded plan is that the benefits earned by participants are funded during their working careers and not by future generations of taxpayers.

The June 30, 2019 actuarial valuation is presented in this CAFR. As of June 30, 2019, the funded ratio of the Employees Retirement System was 111.9 percent. The ratio of the valuation value of assets to actuarial accrued liabilities was 114.8 percent as of the June 30, 2018, valuation. The funding ratios as of June 30, 2019 and 2018, if measured using the market value of assets instead of the actuarial valuation value of assets are 112.4 percent and 116.6 percent, respectively. The funded ratios were determined by using the actuarial value of the assets in accordance with actuarial standards.

Letter of Transmittal Continued

The actuarial accrued liability of the System at June 30, 2019, for funding purposes, amounted to \$1,106,660,000; the actuarial valuation value of assets amounted to \$1,238,650,718 and the market value of assets (including non-valuation reserves) amounted to \$1,379,415,129. At June 30, 2018, the actuarial valuation value of assets amounted to \$1,202,691,315; the market value of assets (including non-valuation reserves) amounted to \$1,348,690,633.

Under the Governmental Accounting Standards Board (GASB) Statement No. 67 Financial Reporting methodology, the net pension liability of the System as of June 30, 2019 indicates a surplus of \$101,319,007; while on an actuarial funding basis the valuation value of assets basis reflects a surplus of \$131,990,718 and a funding ratio of 111.9 percent. At June 30, 2018, the net pension liability of the System indicated a surplus of \$153,396,700 and a funding ratio of 114.8 percent. For financial reporting purposes, the Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 107.93% and 112.83% as of June 30, 2019 and 2018, respectively.

The Board engages an independent actuarial consulting firm to conduct annual actuarial valuations of the System. The purpose of the actuarial valuation is to reassess the magnitude of the benefit commitments. This is compared to the assets expected to be available to support those commitments. Recommendations are presented to the Board for consideration. The Segal Company is the System's independent actuarial consultant.

The Actuarial Section of this report contains a more detailed discussion of funding.

Accounting System & Reports

The management of the System is responsible for establishing and maintaining an internal control structure designed to ensure that System assets are protected from loss, theft, or misuse. Responsibility for the accuracy, completeness, and fair presentation of the information, and all disclosures, rests with the management of the System.

The accounting firm of Brown Armstrong Accountancy Corporation provides financial audit services. The financial audit ensures that the System's financial statements are presented in conformity with accounting principles generally accepted in the United States of America (GAAP) and are free of material misstatement. The internal controls are designed to provide reasonable but not absolute assurance that these objectives are met. The System recognizes that even sound internal controls have their inherent limitations. Internal controls are reviewed to ensure that the System's operating policies and procedures are being adhered to and that the controls are adequate to ensure accurate and reliable financial reporting and to safeguard the System's assets. The objective is to provide a reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements given the prudent need to ensure that the cost of a control should not exceed the benefits to be derived. We believe that the System's internal controls adequately safeguard assets.

This report has been prepared in accordance with Generally Accepted Accounting Principles for State and Local Governments (GAAP) as established by the Governmental Accounting Standards Board (GASB).

The System's transactions are reported on the accrual basis of accounting. Revenues are taken into account when earned, regardless of the date of collection. Expenses are recorded when the corresponding liabilities are incurred, regardless of when the payment is made.

Letter of Transmittal Continued

Investments

Article XVI, Section 17(c) of the Constitution of the State of California, provides that “the members of the Retirement Board of a public pension or retirement system shall discharge their duties... with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aim.” By permitting further diversification of investments within a fund, the prudent expert standard may enable a fund to reduce overall risk and increase returns. A summary of the asset allocation can be found in the investment section of this report and in Note 2 – Summary of Significant Accounting Policies (see section Investment).

The prudent expert rule permits the Board to establish an investment policy based upon professional advice and counsel and allows for delegation of investment authority to professional investment advisors. The Investment Objectives and Policy Statement of the Board outline the responsibility for the investment of the fund and the degree of risk that is deemed appropriate for the fund. Investment advisors are to execute the policy in accordance with the Board policy and guidelines.

For the fiscal years ended June 30, 2019 and 2018, the System’s investments provided a 5.60 percent and 8.87 percent gross of fees rate of return, respectively as reported by the custodian, Northern Trust.

Acknowledgments

The compilation of this report reflects the combined effort of the System’s staff under the leadership of the Board. It is intended to provide complete and reliable information as a basis for making management decisions, as a means of determining compliance with legal provisions, and as a means of determining responsible stewardship of the funds of the System.

On behalf of the Board, I would like to express my appreciation for the dedication and efforts of my staff members, Kathleen Riley Brown, Yvonne Timberlake, Chad Jacobs, Alberto Magallanes, Karen Espiritu, Cristina Jurado, Pattie Laygo, Andrea Ketch, Phillip Carbajal, Patricia Basquez, Joan Taketa, Ohn Viengsay, Stanton Perkins, Tracy Gonzales and the Board's consultants, for their assistance in the preparation of this report and for their ongoing commitment to serve the Board and the members of the System. I also would like to thank the Board members for their support in accomplishing the many tasks and goals over the past year.

Respectfully Submitted,

Robert Theller

Robert T. Theller, Esq.
Retirement Administrator

December 2, 2019

Retirement Board Members

As of June 30, 2019



Chair

Phillip Hardcastle
Re-Elected June 2016
Term Expires July 2020
Represents Clerical and Supervisory Members



Vice Chair

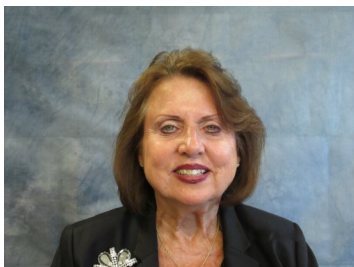
TJ Miller
Appointed September 2013
Term Continuous
Appointed by the Mayor and Confirmed by the Fresno City Council



David Cain
Re-Elected June 2018
Term Expires July 2022
Represents Manual Worker Members



Jane Sumpter
Appointed December 2016
Term Continuous
Appointed by the Mayor and Confirmed by the Fresno City Council



Marvell French
Appointed July 2000
Term Continuous
Outside Member Appointed by Retirement Board

Retirement Administrative Staff



Robert T. Theller, Esq.
Retirement Administrator



Pattie Laygo
Executive Asst. to Dept Director



Tracey Gonzales
Senior Administrative Clerk



Chad Jacobs
Investment Officer



Stanton Perkins
Programmer/Analyst IV

Financial Services



(From left to right)
Karen Espiritu
Accountant-Auditor II
Alberto Magallanes
Senior Accountant-Auditor
Kathleen Riley-Brown
Assistant Retirement Administrator
Cristina Jurado
Accounting Technician

Benefit Services



(From left to right)
Patti Basquez
Retirement Counselor II
Andrea Ketch
Senior Retirement Counselor
Yvonne Timberlake
Assistant Retirement-Administrator
Onh Viengsay
Retirement Counselor II
Phillip Carbajal
Retirement Counselor II
Joan Taketa
Retirement Counselor II

Administration of the System

Administration

The Administrative Section is responsible for the administration of the City of Fresno Employees Retirement System, including the risk management of the investment activities in accordance with the policies, regulations, and general guidelines of the Retirement Board. It is also responsible for interfacing with the investment managers, the investment consultant, the actuary, legal counsel, custodial bank, and any other consultants authorized by the Board. (See pages xii and xiii for professional services and consultants and investment portfolio managers and page 72 for a schedule of brokerage commissions.)

Member Services

This section is responsible for providing all benefit services to the members of the System. This includes benefit calculations, investigation of claims for disability retirement, preparation of data to support applications for retirement, preparation of the retiree payroll, membership counseling, and membership training.

Financial Services

This section is responsible for planning, organizing and directing all fiscal activities of the Retirement Systems. This includes the preparation and publication of the Annual Financial Reports, monthly or quarterly financial report and information to the Board; and all other financial records and reports including financial statements, control and balancing of payroll and members' contributions and reconciliation of investments.

Investment Officer

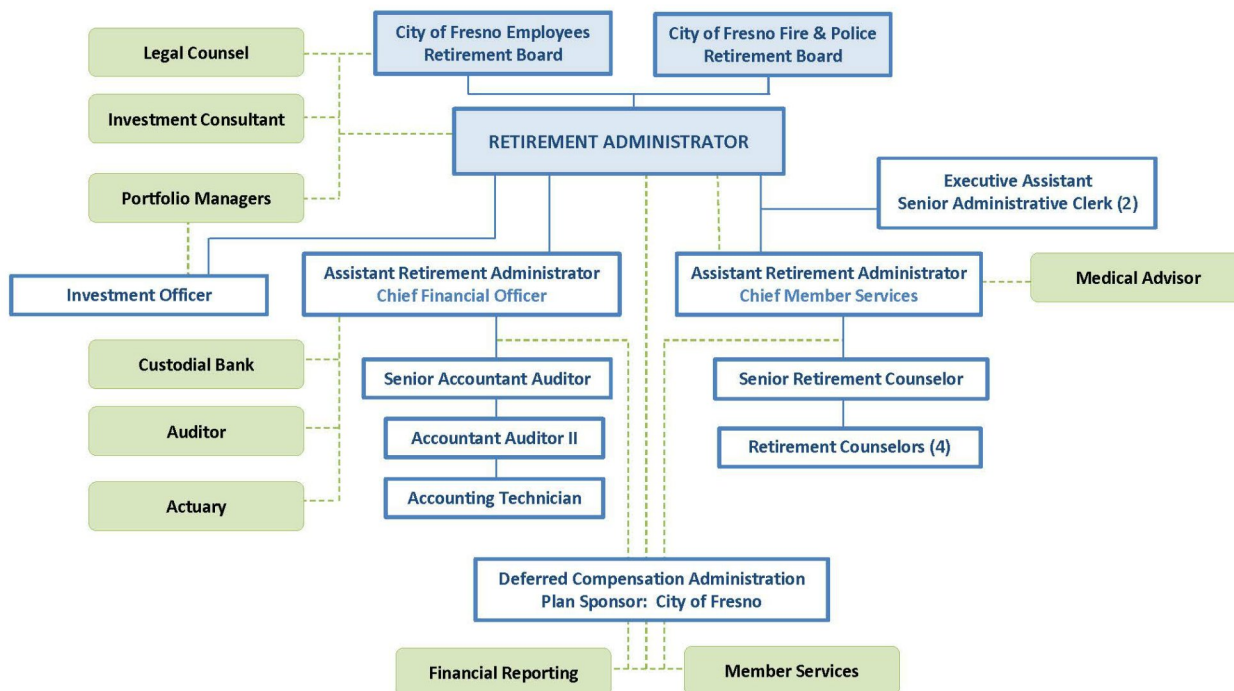
This position is responsible for monitoring compliance with the Board's Investment Objectives and Policy Statement and assists and coordinates in the management and administration of the System's investment program. This includes the planning and development of investment strategies.

Executive Assistant

This position is responsible for providing administrative and clerical support services for the Board and the retirement staff.

Organizational Structure

City of Fresno Retirement Systems



Professional Services and Consultants

Custodial Bank

NORTHERN TRUST
Chicago, Illinois

General Legal Advisor

SALTZMAN and JOHNSON LAW CORPORATION
San Francisco, California

Tax Counsel

ICE MILLER LLP
Indianapolis, Indiana

Investment Legal Advisor

FOLEY & LARDNER LLP
Boston, Massachusetts

Operational Due Diligence - Background Investigations

CHARLES LEVENBERG, LLC
Boulder, Colorado

Investment Consultant

NEPC, LLC
Boston, Massachusetts

Actuary

THE SEGAL COMPANY
San Francisco, California

Medical Advisor

BENCHMARK, AN EXAMWORKS COMPANY, INC.
Sacramento, California

Independent Auditor

BROWN ARMSTRONG ACCOUNTANCY CORPORATION
Bakersfield, California

Investment Portfolio Managers

DOMESTIC EQUITY

Large Cap

Northern Trust Asset Management, Denver, CO

Small Cap

Eagle Asset Mgmt., Inc., St. Petersburg, FL

Kennedy Capital Mgmt. Inc., St. Louis, MO

INTERNATIONAL & EMERGING MARKETS

International

BlackRock, San Francisco, CA

Baillie Gifford & Co., Edinburgh, Scotland

Principal Global Investors, Des Moines, IA

Emerging Market

Acadian Asset Mgmt. LLC, Boston, MA

Axiom Int'l Investors, LLC, Boston, MA

FIXED INCOME

Core Fixed Income

Dodge & Cox, San Francisco, CA

Prudential Investment Mgmt., Inc., Newark, NJ

PIMCO, Newport Beach, CA

High Yield

Loomis Sayles, Boston, MA

REAL ESTATE

Private Real Estate Investments

Core

JP Morgan Asset Mgmt., New York, NY

Value Add

Oaktree Capital Management, Los Angeles, CA

PCCP, LLC, Los Angeles, CA

PIMCO BRAVO III, Newport Beach, CA

Blue Vista Capital Management, Chicago, IL

Artemis Real Estate Partners, Chevy Chase, MD

Brookfield Asset Management, New York, NY

Real Estate Investment Trust (REIT)

Principal Real Estate Investors, Des Moines, IA

Heitman, LLC, Chicago, IL.

ALTERNATIVES

Private Debt/Credit

Crescent Capital, Los Angeles, CA

Monroe Capital, Chicago, IL

PIMCO COF II, Newport Beach, CA

Infrastructure

JP Morgan IIF, New York, NY

Ullico UIF, Silver Spring, MD

Private Equity

Pantheon Ventures, San Francisco, CA



Government Finance Officers Association

**Certificate of
Achievement
for Excellence
in Financial
Reporting**

Presented to

**City of Fresno
Employees Retirement System
California**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2018

Christopher P. Morill

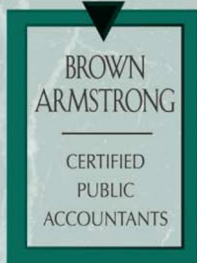
Executive Director/CEO

*To protect and provide
system benefits through
the highest quality
delivery of service for our
members and the
employer, prudently
fulfilling our fiduciary
duties of investment and
conservation of Trust
assets.*

FINANCIAL

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Independent Auditor's Report



BROWN ARMSTRONG

Certified Public Accountants

INDEPENDENT AUDITOR'S REPORT

To the Board of Retirement
City of Fresno Employees Retirement System
Fresno, California

Report on the Financial Statements

We have audited the accompanying Statements of Fiduciary Net Position of the City of Fresno Employees Retirement System (the System) as of June 30, 2019 and 2018, the related Statement of Changes in Fiduciary Net Position for the years then ended, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes 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.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the System's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the basic financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

BAKERSFIELD OFFICE
(MAIN OFFICE)
4200 TRUXTUN AVENUE
SUITE 300
BAKERSFIELD, CA 93309
TEL 661.324.4971
FAX 661.324.4997
EMAIL info@bacpas.com

FRESNO OFFICE
10 RIVER PARK PLACE EAST
SUITE 208
FRESNO, CA 93720
TEL 559.476.3592

STOCKTON OFFICE
1919 GRAND CANAL BLVD
SUITE C6
STOCKTON, CA 95207
TEL 888.565.1040

WWW.BACPAS.COM

REGISTERED with the Public Company
Accounting Oversight Board and
MEMBER of the American Institute of
Certified Public Accountants

Independent Auditor's Report Continued

Opinions

In our opinion, the basic financial statements referred to above present fairly, in all material respects, the respective Fiduciary Net Position of the System as of June 30, 2019 and 2018, and its Statements of Changes in Fiduciary Net Position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and Required Supplementary Information (RSI), 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 basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the RSI in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the System's basic financial statements. The Other Supplementary Information and the Introduction, Investment, Actuarial, and Statistical Sections, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The Other Supplementary Information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Other Supplementary Information is fairly stated in all material respects in relation to the basic financial statements as a whole.

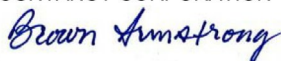
The Introduction, Investment, Actuarial, and Statistical Sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.


Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated December 2, 2019, on our consideration of the 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 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 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 System's internal control over financial reporting and compliance.

Bakersfield, California
December 2, 2019

BROWN ARMSTRONG
ACCOUNTANCY CORPORATION





Management's Discussion and Analysis

We are pleased to provide this overview and analysis of the financial activities of the City of Fresno Employees Retirement System (the System) for the fiscal years ended June 30, 2019 and 2018. We encourage readers to consider the information presented here in conjunction with additional information that we have furnished in the Letter of Transmittal beginning on page i of this report.

Financial Highlights

The System's net position restricted for pension benefits is for payment of pension benefits to participants and their beneficiaries and all of the net position is restricted to meet the System's ongoing obligations.

At the close of the fiscal year 2019, the assets of the System exceed its current liabilities by \$1,379,415,130; as of fiscal year 2018, the assets of the System exceeded its liabilities by \$1,348,690,633; as of fiscal year 2017, the assets of the System exceeded its liabilities by \$1,274,121,736.

The System's net position restricted for pension benefits increased by \$30,724,497 or 2.28 percent for fiscal year 2019; increased by \$74,568,897 or 5.85 percent for fiscal year 2018; and increased by \$130,822,717 or 11.44 percent for fiscal year 2017, primarily as a result of the performance of the investment markets.

The System's funding objective is to meet long-term benefit obligations through contributions and investment income. As of June 30, 2019, the date of the last actuarial valuation, the funded ratio for the System was 111.9 percent reflecting that the System has a valuation value of assets which is in excess of the actuarial accrued liability. In general, this indicates that for every dollar of benefits due, we have approximately \$1.12 of assets available for payment as of that date.

As of June 30, 2018, the date of the previous annual actuarial valuation, the funded ratio for the System was 114.8 percent; and as of June 30, 2017, the funded ratio for the System was 113.0 percent.

Additions to Fiduciary Net Position

Additions for the fiscal year 2019 decreased \$39,321,660 or 29.38 percent over the prior year from \$133,853,600 to \$94,531,940, which includes employee contributions of \$10,515,533, employer contributions of \$14,627,425, a net investment income gain of \$69,020,391 and net securities lending income of \$368,591.

Fiscal year 2018 additions decreased \$53,908,554 or 28.71 percent over the prior year from \$187,762,154 to \$133,853,600, which included member contributions of \$10,329,475, employer contributions of \$14,608,659, a net investment income gain of \$108,513,736 and net securities lending income of \$401,730.

For fiscal year 2017 additions increased \$160,514,681 or 589.10 percent over the prior year from \$27,247,473 to \$187,762,154, which included member contributions of \$10,180,589, employer contributions of \$15,205,360, a net investment income gain of \$161,942,699 and net securities lending income of \$433,506.

Deductions from Fiduciary Net Position

Deductions from fiduciary net position for the fiscal year 2019 increased \$4,522,740 or 7.63 percent over the prior fiscal year from \$59,284,703 to \$63,807,443.

Fiscal year 2018 deductions increased \$2,345,266 or 4.12 percent over the prior fiscal year 2017 from \$56,939,437 to \$59,284,703.

Management's Discussion and Analysis Continued

Fiscal year 2017 deductions increased \$3,064,427 or 5.69 percent over the prior fiscal year 2016 from \$53,875,010 to \$56,939,437.

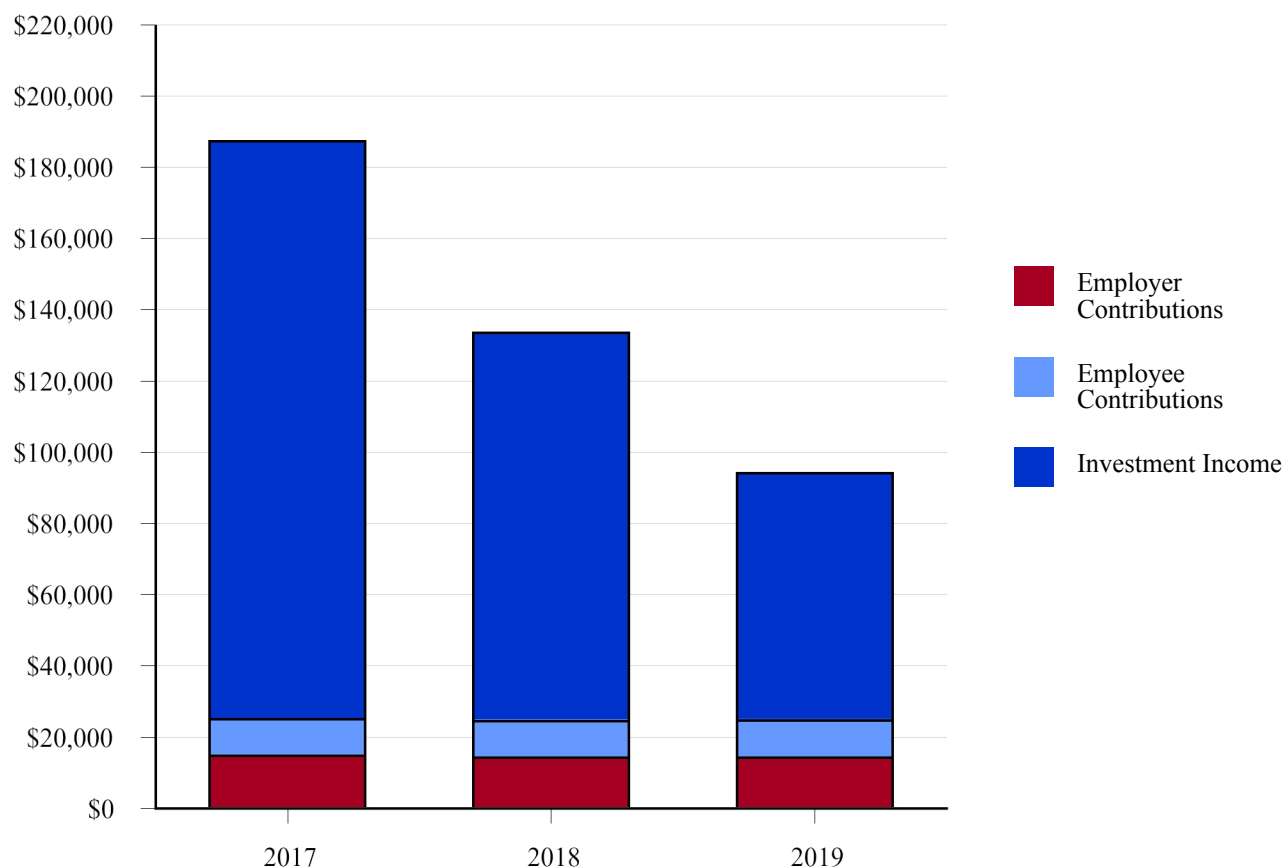
benefits paid in 2019 even though there were no Post Retirement Supplemental Benefits (PRSB) paid during calendar year 2019.

The current year increase in deductions is due primarily to the increases in retirees and the respective retirement

Schedule and Graph of Additions By Source

For Fiscal Years Ended June 30, 2019, 2018 and 2017 (In Thousands)

	2017	2018	2019
Employer Contributions	\$ 15,205	\$ 14,609	\$ 14,627
Employee Contributions	10,181	10,329	10,516
Investment Income	162,376	108,916	69,389
TOTAL	\$ 187,762	\$ 133,854	\$ 94,532

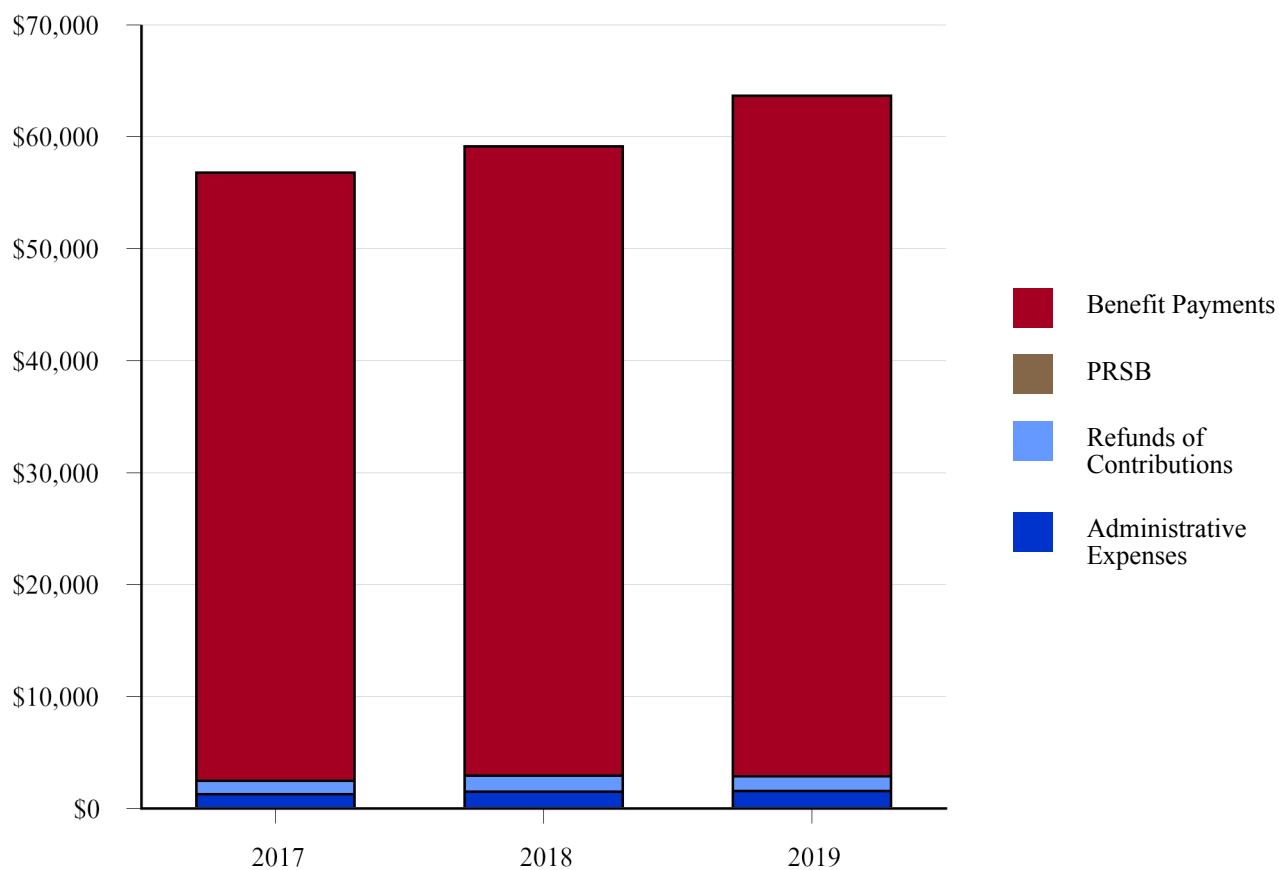


Management's Discussion and Analysis Continued

Schedule and Graph of Deductions By Type

For Fiscal Years Ended June 30, 2019, 2018 and 2017 (In Thousands)

	2017	2018	2019
Benefit Payments	\$ 54,351	\$ 56,242	\$ 60,814
PRSB	—	—	—
Refunds of Contributions	1,199	1,424	1,330
Administrative Expenses	1,389	1,619	1,663
TOTAL	\$ 56,939	\$ 59,285	\$ 63,807



Management's Discussion and Analysis Continued

Overview of the Financial Statements

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

Statement of Fiduciary Net Position – The Statement of Fiduciary Net Position presents the major categories of assets and liabilities and their related value as of the System's fiscal years ended June 30, 2019 and 2018. "Net Position Restricted for Pension Benefits" represents funds available to pay benefits and it is a point in time or a snapshot of account balances as of the fiscal year-end. It indicates the assets available for future payments to retirees and any current liabilities. Increases and decreases in Net Position Restricted for Pension Benefits, when analyzed over time, may serve as an indicator of whether the System's financial position is improving or deteriorating. Other factors, such as market conditions, should also be considered in measuring the System's overall health.

Statement of Changes in Fiduciary Net Position – This Statement of Changes in Fiduciary Net Position provides information about the financial activities during the reporting period that increased and decreased the Net Position Restricted for Pension Benefits.

The two statements above include all assets and liabilities, using the full accrual basis of accounting, which is similar to the accounting method used by most private sector companies. All of the current year's additions and deductions are taken into account regardless of when the cash is received or paid. All investment gains and losses are shown at trade date, not settlement date. In addition, both realized and unrealized gains and losses are shown on investments.

Both statements are in compliance with Governmental Accounting Standards Board (GASB) Pronouncements.

These pronouncements require certain disclosures and require State and Local governments to report using the full accrual basis of accounting. The System complies with all material requirements of these pronouncements.

Notes to the Basic Financial Statements - The Notes to the Basic Financial Statements are an integral part of the basic financial statements and provide additional information that is essential to acquire a full understanding of the information and data provided in the two statements discussed above. The notes include further discussion and details regarding the System's key policies, programs, investments and activities that occurred during the year.

Required Supplementary Information – The Required Supplementary Information presents historical trend information concerning the changes in net pension liability, employer contributions and investment returns, and includes notes that explain factors that significantly affect trends in the amounts reported, such as changes of benefit terms, changes in the size or composition of the population covered by the benefit terms, or the use of different assumptions over time. The information is based on actuarial valuations prepared for the pension plan. The actuarial valuation report includes additional actuarial information that contributes to the understanding of the changes in the net pension liability of the defined benefit pension plan over the past ten years as presented in the schedule. The actuarial information is based upon assumptions made regarding future events at the time the valuations are performed and is derived for both financial reporting and funding purposes.

Other Supplementary Information – The Other Supplementary Information, presented immediately following the required supplementary information, includes schedules pertaining to the System's administrative expenses, investment management fees and other

Management's Discussion and Analysis Continued

investment related expenses, and payments to consultants and other professional services providers.

The System's funding ratio at June 30, 2019, was 111.9 percent, which means the System's fund has approximately \$1.12 available for each \$1.00 of liability. The Statement of Fiduciary Net Position and the Statement of Changes in Fiduciary Net Position report information about the System's financial activities during the reporting periods that increased and decreased the Net Position Restricted for Pension Benefits.

Financial Analysis Net Position

As previously noted, net position restricted for pension benefits may serve over time as a useful indication of the System's financial position. The System's assets exceeded its liabilities at the close of the fiscal year 2019 by \$1,379,415,130. All of the net position is restricted to meet the System's ongoing obligations to plan participants and their beneficiaries.

In fiscal year 2019, the System's restricted fiduciary net position, representing assets available to pay current and future member pension benefits, increased by 2.28 percent due to strong performance of the investment markets; while in 2018 the System's restricted fiduciary net position increased by 5.85 percent due to strong performance of the global investment markets (See Table 1); and also, due to strong investment performance in 2017, the System's restricted fiduciary net position increased by 11.44 percent.

In order to determine whether the \$1.379 billion in net position will be sufficient to meet future obligations, the System's independent actuary performed an actuarial valuation as of June 30, 2019. The result of this valuation determines what future contributions by Plan members and the City of Fresno are needed to pay all expected future benefits. The valuation takes into account the Retirement Board's (the Board) funding policy which includes a

provision to smooth the impact of market volatility by spreading each year's gains or losses over five years.

There has been extreme volatility in the various economies of the world and throughout the global financial markets over the past twenty to twenty-five years, therefore, it is of utmost importance to examine the System's investment returns with a long-term view rather than a short-term focus which tends to distort the perception of how well the investments have actually performed. As an example, you cannot isolate the high returns during the Tech Bubble in the 1990's without including the Tech Bubble corrections in the early 2000's.

Historical long-term performance rates of returns demonstrate that the System has been able to meet or exceed its actuarial assumed rate of return of 7.25 percent over long periods. As of June 30, 2019, the System's 25-year annualized return is 8.66 percent and its 20-year annualized return is 6.51 percent.

Despite volatility in the stock market, management and the System's actuary concur that the System remains in a very strong financial position to meet its obligations to the plan participants and beneficiaries. The System's current financial position is a result of a very sound and carefully managed investment and risk management program.

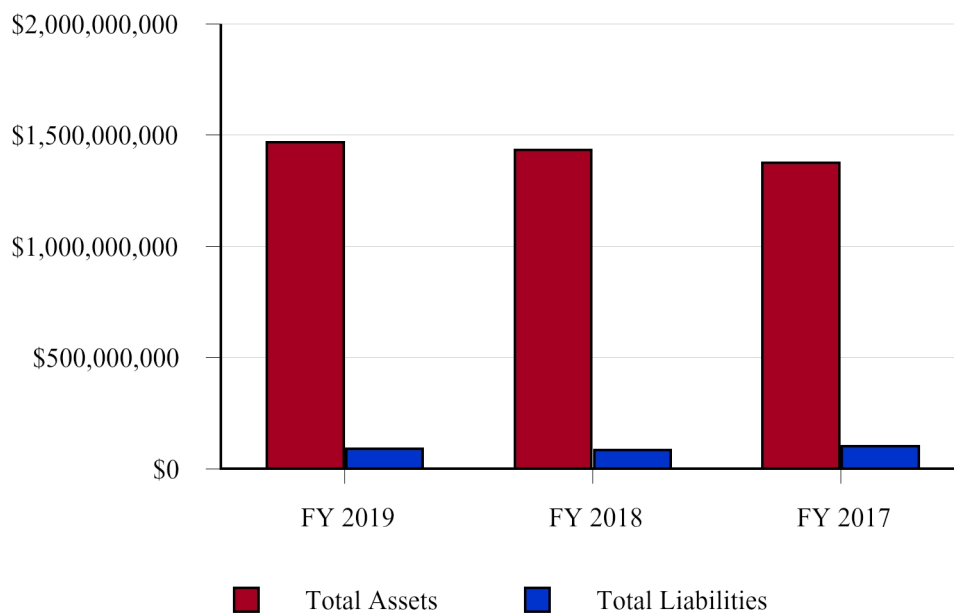
Management's Discussion and Analysis Continued

Table 1 – Employees Retirement System Fiduciary Net Position Restricted For Pension Benefits

As of June 30, 2019, 2018 And 2017

	FY 2019	FY 2018	FY 2019 Increase/ (Decrease) Amount	FY 2019 Increase/ (Decrease) Percent
Current and Other Assets	\$ 123,581,049	\$ 91,723,622	\$ 31,857,427	34.73%
Investments at Fair Value	1,351,121,470	1,346,977,080	4,144,390	0.31%
Total Assets	\$1,474,702,519	\$1,438,700,702	\$ 36,001,817	2.50%
Total Liabilities	95,287,389	90,010,069	5,277,320	5.86%
Net Position Restricted for Pension Benefits	\$1,379,415,130	\$1,348,690,633	\$ 30,724,497	2.28%

	FY 2018	FY 2017	FY 2018 Increase/ (Decrease) Amount	FY 2018 Increase/ (Decrease) Percent
Current and Other Assets	\$ 91,723,622	\$ 106,641,832	\$ (14,918,210)	(13.99%)
Investments at Fair Value	1,346,977,080	1,275,434,469	71,542,611	5.61%
Total Assets	\$1,438,700,702	\$1,382,076,301	\$ 56,624,401	4.10%
Total Liabilities	90,010,069	107,954,565	(17,944,496)	(16.62%)
Net Position Restricted for Pension Benefits	\$1,348,690,633	\$1,274,121,736	\$ 74,568,897	5.85%



Management's Discussion and Analysis Continued

Capital Assets

The System's investment in capital assets decreased from \$966,652 to \$828,412 (net of accumulated depreciation) between fiscal years 2018 and 2019 after decreasing from \$1,101,255 to \$966,652 (net of accumulated depreciation) between fiscal years 2017 and 2018. This investment in capital assets includes office equipment, furniture, software, and technology infrastructure. The total change in the System's investment in capital and intangible assets as of June 30, 2019 and 2018 was \$(138,240) and \$(134,603), respectively. These changes in both fiscal years were primarily due to the costs incurred for the development of software to program and install an upgrade to our original pension administration system that was originally installed in 1997, which was implemented effective July 1, 2015.

Reserves

Reserves are not required, nor recognized, under accounting principles generally accepted in the United States of America (GAAP). The reserves are not shown separately on the Statement of Fiduciary Net Position, but they equate to and are accounts within the net position restricted for pension benefits and are vital to the System's operations. They are established from contributions and the accumulation of investment income, after satisfying investment and administrative expenses. Investments of the System are stated at fair value instead of at cost, which includes the recognition of unrealized gains and losses in the current period.

The System's major reserve accounts, described in Note 5 – Net Position Restricted for Pension Benefits, include Active Member (Employee) Reserves, Employer Advance/Retired Reserves, DROP Reserves, PRSB Reserves and City Surplus Reserves.

Deferred Retirement Option Program (DROP) Reserve represents funds reserved for Deferred Retirement Option

Program benefits accumulated by active members and retirees. DROP is an alternate method of receiving retirement benefits. It is a voluntary program as described by the conditions and requirements of the City of Fresno Municipal Code Section 3-566. A DROP account is a nominal, bookkeeping account established within the System for each DROP participant. Monthly amounts credited to DROP accounts include an amount which represents the service retirement allowance which the member would have received if the member had retired on the date the member commenced DROP participation and interest credited at the five year average interest rate as adopted by the Retirement Board (the Board) in accordance with the City of Fresno Municipal Code requirements.

Post Retirement Supplemental Benefit (PRSB) Reserve represents surplus earnings that have been allocated but not distributed to eligible participants in accordance with the City of Fresno Municipal Code Section 3-567. PRSB is a supplemental benefit distributed to eligible participants in accordance with the City of Fresno Municipal Code Section 3-567, if and only if distributable actuarial surplus is available to provide such a benefit. Actuarial surplus means the amount by which the actuarial value of the System's assets exceeds one hundred and ten percent (110%) of the System's actuarial accrued liabilities.

The PRSB Reserve Account was exhausted at the end of December 2013.

City Surplus Reserve represents that portion of distributable actuarial surplus that has been allocated but not used as a reduction to offset or eliminate the City of Fresno's (the City) pension contributions in accordance with the conditions and requirements of Municipal Code Section 3-567 Post Retirement Supplemental Benefits. The City Surplus Reserve Account accrues interest at the average gross rate of return earned by the System's entire investment portfolio for each of the three prior fiscal years, including

Management's Discussion and Analysis Continued

realized and unrealized gains and losses and as reduced by all investment related expenses.

Table 2 shows that the vast majority of reserves are generated from Employer Advance/Retired reserves. DROP reserves represent funds credited for participants who elected to participate in the Deferred Retirement Option Program. PRSB Reserve presents that portion of distributable actuarial surplus that has been allocated for PRSB but not yet distributed to eligible participants.

Additions to and deductions from PRSB occur when surpluses and allocations occur, respectively. The City Surplus reserve

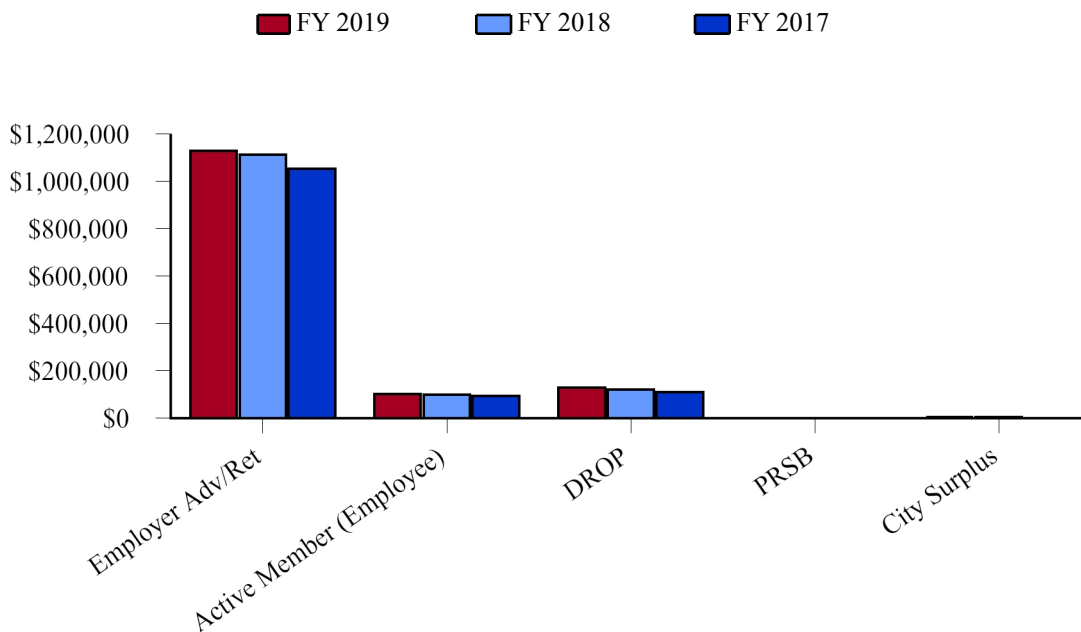
represents that portion of distributable actuarial surpluses and accrued interest, reduced by required City normal pension contributions. The City Surplus Reserve Account shall be drawn upon in subsequent years if needed to reduce or eliminate the City’s annual pension contribution requirement.

The City Surplus Reserve Account shows a positive balance for the fiscal year 2019, while fiscal year 2018 showed a slightly negative balance. The City’s normal contribution rate for fiscal years 2019 and 2018 included an adjustment for phase-in of assumption changes in the actuarial assumed rate of return.

Table 2 – Employees Retirement System’s Reserves

As of June 30, 2019, 2018 and 2017 (In Thousands)

	FY 2019	FY 2018	FY 2017
Employer Advance/Retired Reserves	\$ 1,134,426	\$ 1,117,261	\$ 1,058,611
Active Member (Employee) Reserves	109,263	104,834	100,665
DROP Reserves	136,301	126,597	114,835
PRSB Reserves	—	—	—
City Surplus Reserves	(575)	(1)	11
Net Position Restricted for Pension Benefits	\$ 1,379,415	\$ 1,348,691	\$ 1,274,122



Management's Discussion and Analysis Continued

System's Activities

Attributable in part to the continued growth and volatility in global economic and financial markets, the System's net position increased \$30,724,497 for the fiscal year 2019 resulting in an 2.28 percent increase in the fiduciary net position restricted for pension benefits for the fiscal year ended June 30, 2019. The System's fiduciary net position increased \$74,568,897 for the fiscal year 2018 resulting in a 5.85 percent increase in the fiduciary net position restricted for pension benefits for the fiscal year ended June 30, 2018, primarily attributable to the growth in the global financial markets. In fiscal year 2017, the System's fiduciary net position increased \$130,822,717 resulting in a 11.44 percent increase in the fiduciary net position restricted for pension benefits for the fiscal year ended June 30, 2017.

Key elements of the additions and deductions to Fiduciary Net Position for fiscal years 2019, 2018 and 2017 are described in the sections below.

Additions to the System's Fiduciary Net Position

The reserves needed to finance retirement benefits are normally accumulated through the collection of employer and employee contributions and through earnings on investment income net of investment expense. Total additions to the System's fiduciary net position for the fiscal year ended June 30, 2019 totaled \$94,531,940.

For the fiscal year ended June 30, 2019, overall additions had decreased by \$39,321,660 or 29.38 percent primarily due to lower than anticipated performance in the global investment markets. For fiscal year 2018, overall additions had decreased by \$53,908,554 or 28.71 percent from the prior year; and for fiscal year ended June 30, 2017, primarily due to the performance of the investment markets and changes in actuarial assumptions, overall additions had increased by \$160,514,681 or 589.10 percent from the prior

fiscal year. The investment section of this report reviews the details of the results of investment activity for the fiscal year ended June 30, 2019.

Deductions from the System's Fiduciary Net Position

The System was created to provide lifetime retirement annuities, survivor benefits and permanent disability benefits to qualified members and their beneficiaries. The cost of such programs includes recurring benefit payments, as designated by the System, refunds of contributions to terminated employees, and the cost of administering the System.

Deductions from the fiduciary net position for the fiscal year ended June 30, 2019, totaled \$63,807,443 which was an increase of \$4,522,740 or 7.63 percent over the prior fiscal year 2018. Deductions from the fiduciary net position for the fiscal year ended June 30, 2018, totaled \$59,284,703 which was an increase of \$2,345,266 or 4.12 percent over the prior fiscal year 2017. The fiscal year ending June 30, 2017 had deductions from the fiduciary net position totaling \$56,939,437, which was an increase of \$3,064,427 or 5.69 percent over the prior fiscal year 2016. The increase in benefits paid resulted primarily from an increase in the amount of benefit payments due to the number of retirees from the prior year.

The System's increases in total deductions have closely paralleled inflation and are reflective of the membership and services provided. The System has consistently met its Administrative Budget. There are no material variances between planned expenses and actual expenses.

Management's Discussion and Analysis Continued

Changes in Fiduciary Net Position (Condensed)

For Fiscal Years Ended June 30, 2019, 2018 and 2017

	FY 2019	FY 2018	FY 2019 Increase/ (Decrease) Amount	FY 2019 Increase/ (Decrease) Percent
Additions				
Employer Contributions	\$ 14,627,425	\$ 14,608,659	\$ 18,766	0.13%
Employee Contributions	10,515,533	10,329,475	186,058	1.80%
Net Investment Income *	69,388,982	108,915,466	(39,526,484)	(36.29%)
Total Additions	\$ 94,531,940	\$ 133,853,600	\$ (39,321,660)	(29.38%)
Deductions				
Retiree Benefit Payments	\$ 60,814,434	\$ 56,241,911	\$ 4,572,523	8.13%
Post Retirement Supplemental Benefit (PRSB)	—	—	—	—%
Refunds of Contributions	1,329,651	1,424,025	(94,374)	(6.63%)
Administrative Expenses	1,663,358	1,618,767	44,591	2.75%
Total Deductions	\$ 63,807,443	\$ 59,284,703	\$ 4,522,740	7.63%
Changes in Net Position	30,724,497	74,568,897	(43,844,400)	(58.80%)
Net Position Restricted for Pension Benefits				
Beginning of the Year	1,348,690,633	1,274,121,736	74,568,897	5.85%
End of the Year	\$ 1,379,415,130	\$ 1,348,690,633	\$ 30,724,497	2.28%

* Net of investment expense of \$13,449,271 and \$9,733,398 for June 30, 2019 and 2018, respectively.

	FY 2018	FY 2017	FY 2018 Increase/ (Decrease) Amount	FY 2018 Increase/ (Decrease) Percent
Additions				
Employer Contributions	\$ 14,608,659	\$ 15,205,360	\$ (596,701)	(3.92%)
Employee Contributions	10,329,475	10,180,589	148,886	1.46%
Net Investment Income *	108,915,466	162,376,205	(53,460,739)	(32.92%)
Total Additions	\$ 133,853,600	\$ 187,762,154	\$ (53,908,554)	(28.71%)
Deductions				
Retiree Benefit Payments	\$ 56,241,911	\$ 54,350,851	\$ 1,891,060	3.48%
Post Retirement Supplemental Benefit (PRSB)	—	—	—	—%
Refunds of Contributions	1,424,025	1,199,054	224,971	18.76%
Administrative Expenses	1,618,767	1,389,532	229,235	16.50%
Total Deductions	\$ 59,284,703	\$ 56,939,437	\$ 2,345,266	4.12%
Changes in Net Position	74,568,897	130,822,717	(56,253,820)	(43.00%)
Net Position Restricted for Pension Benefits				
Beginning of the Year	1,274,121,736	1,143,299,019	130,822,717	11.44%
End of the Year	\$ 1,348,690,633	\$ 1,274,121,736	\$ 74,568,897	5.85%

* Net of investment expense of \$9,733,398 and \$7,668,935 for June 30, 2018 and 2017, respectively.

Management's Discussion and Analysis Continued

System's Fiduciary Responsibilities

The System's Board and management staff are fiduciaries of the pension trust fund. Under the California Constitution, the assets must be used exclusively for the benefit of plan participants and their beneficiaries.

Requests for Information

This financial report is designed to provide the Retirement Board, our membership, taxpayers, investment managers, and creditors with a general overview of the City of Fresno Employees Retirement System's finances, and to show accountability for the funds it receives. Questions concerning any of the information provided in this report, or requests for additional financial information should be addressed to:

City of Fresno Employees Retirement System

2828 Fresno Street Suite 201

Fresno, California 93721-1327

Respectfully submitted,

Robert Theller

Robert T. Theller, Esq.
Retirement Administrator

December 2, 2019

Basic Financial Statements

Statement of Fiduciary Net Position

As of June 30, 2019 and 2018

	2019	2018
ASSETS		
Cash (Note 7)	\$ 3,106,392	\$ 1,856,515
Collateral Held for Securities Lent (Note 9)	82,249,052	82,685,282
Receivables		
Receivables for Investments Sold	30,714,811	1,207,493
Interest and Dividends	3,436,967	3,368,358
Other Receivables	3,122,732	1,601,514
Total Receivables	37,274,510	6,177,365
Prepaid Expenses	—	37,808
Total Current Assets	122,629,954	90,756,970
Investments at Fair Value (Note 6 and 7) and NAV		
Domestic Equity	389,901,484	503,076,591
International Developed Market Equities	248,931,712	242,245,030
Government Bonds	114,662,797	149,212,777
Corporate Bonds	172,123,525	126,673,251
Alternatives	141,222,173	53,598,843
Real Estate	216,908,223	197,413,403
International Emerging Market Equities	47,148,575	46,735,917
Short-Term Investments	20,222,981	28,021,268
Total Investments	1,351,121,470	1,346,977,080
Capital Assets Net of Accumulated Depreciation (Note 12)	828,412	966,652
Other Assets	122,683	—
Total Assets	1,474,702,519	1,438,700,702
LIABILITIES		
Collateral Held for Securities Lent (Note 9)	82,249,052	82,685,282
Payable for Investments Purchased	8,332,615	4,702,838
Other Liabilities	1,593,399	1,201,360
Payable for Foreign Currency Purchased	3,112,323	1,420,589
Total Liabilities	95,287,389	90,010,069
Net Position Restricted for Pension Benefits (Note 5)	\$ 1,379,415,130	\$ 1,348,690,633

The notes to the financial statements on pages 17 - 51 are an integral part of this statement.

Basic Financial Statements Continued

Statement of Changes in Fiduciary Net Position
For Fiscal Years Ended June 30, 2019 and 2018

	2019	2018
ADDITIONS		
Contributions (Note 3)		
Employer	\$ 14,627,425	\$ 14,608,659
Employee	10,515,533	10,329,475
Total Contributions	25,142,958	24,938,134
Investment Income		
Net Appreciation/(Depreciation) in Value of Investments	56,085,150	93,756,411
Interest	12,463,697	12,299,109
Dividends	11,920,503	10,855,518
Other Investment Related	61,797	54,745
Total Investment Income	80,531,147	116,965,783
Less: Investment Expense	(11,510,756)	(8,452,047)
Total Net Investment Income	69,020,391	108,513,736
Securities Lending Income		
Securities Lending Earnings (Note 9)	2,307,106	1,683,081
Less: Securities Lending Expense	(1,938,515)	(1,281,351)
Total Net Securities Lending Income	368,591	401,730
Total Additions	94,531,940	133,853,600
DEDUCTIONS		
Benefit Payments	60,814,434	56,241,911
Post Retirement Supplemental Benefits (Note 11)	—	—
Refunds of Contributions	1,329,651	1,424,025
Administrative Expense	1,663,358	1,618,767
Total Deductions	63,807,443	59,284,703
Changes in Net Position	30,724,497	74,568,897
NET POSITION RESTRICTED FOR PENSION BENEFITS		
BEGINNING OF YEAR	1,348,690,633	1,274,121,736
END OF THE YEAR	\$ 1,379,415,130	\$ 1,348,690,633

The notes to the financial statements on pages 17 - 51 are an integral part of this statement.

Notes to the Basic Financial Statements

1 | Significant Provisions of the Retirement System

The City of Fresno Employees Retirement System (the System) was established on June 1, 1939, under Charter Section 910 and is governed by Article 5 of Chapter 3 of the City of Fresno Municipal Code. The System is a single-employer, contributory, defined benefit plan. The System provides lifetime retirement, disability, and death benefits to the non-safety members employed by the City of Fresno, including substantially all full-time employees, other than sworn officers of the Fire and Police Departments.

The System is administered by the Employees Retirement Board (Board) which operates under the authority vested in Article 5 of Chapter 3 of the City of Fresno Municipal Code and the California Pension Protection Act of 1992 which provides that “the members of the Retirement Board of a public retirement system shall discharge their duties... solely in the interest of, and for the exclusive purpose of providing benefits to participants and their beneficiaries, minimizing employer contribution thereto, and defraying reasonable expenses of administering the System.”

The Employees Retirement Board does not operate under the control of the City Council. The Board has the sole and exclusive responsibility to administer the System in a manner that will assure prompt delivery of benefits and related services to the members and their beneficiaries.

Fiduciary oversight of the Employees Retirement System is vested with the Board, which consists of five (5) members: two (2) management employees who are appointed by the Mayor and confirmed by the City Council, one (1) employee who is elected by the manual workers of the System, and one (1) employee who is elected by the clerical or supervisory workers of the System; both elected members

serve a four year term. The fifth and final member of the Board is a qualified elector of the County of Fresno, not connected with its government, elected by the previously designated four members and serves at the pleasure of the Board.

The Board, in conjunction with the Fire and Police Retirement Board, appoints, directs and oversees a Retirement Administrator. The Retirement Administrator is responsible for the overall management and administration of the Employees and Fire and Police Retirement Systems in accordance with the direction, policy and goals set by the Boards and for providing highly responsible and complex administrative support to the Boards. The Retirement Administrator serves at the pleasure of the Boards.

Working closely with the Boards, the Retirement Administrator and his staff develop investment and benefits policies, coordinate member services and programs, and develop long-term strategies that fulfill the Systems’ mission and goals.

The Board oversees the Retirement Administrator and staff in the performance of their duties in accordance with the City of Fresno Municipal Code and the Board’s Rules, Regulations and Policies.

*Notes to the Basic Financial Statements Continued**Membership and Benefit Eligibility*

All permanent full-time employees of the City of Fresno, except sworn Fire and Police personnel, are eligible to participate in the plan. Employees become eligible for membership on their first day of regular employment, and members become fully vested after earning 5 years of service credit.

Total participants of the System were comprised as follows at June 30, 2019 and 2018:

	<u>2019</u>	<u>2018</u>
Active Members		
Vested	1,266	1,285
Non-Vested	965	887
Total Active Members	<u>2,231</u>	<u>2,172</u>
Retirees and Beneficiaries of Deceased		
Retirees, Currently Receiving Benefits	2,035	1,970
Inactive Vested Members	247	251
Total Retirees and Inactive Members	<u>2,282</u>	<u>2,221</u>
Grand Total	<u>4,513</u>	<u>4,393</u>

Benefit Provisions

The System provides retirement allowances and other benefits such as disability and death benefits to the nonsafety members employed by the City of Fresno.

The retirement (pension) benefits the member will receive are based upon a combination of age at retirement, years of credited service, final average monthly salary, and the distribution option selected by the participant.

Members' contributions, including interest, are 100 percent vested at all times. Employer contributions do not become vested until completion of 5 years of credited service when the member becomes 100 percent vested, but are not payable until the member attains the age of 55.

Effective January 28, 2008, members may retire between age 50-55 with an actuarially equivalent service retirement benefit.

Member Retirement Benefits

Members are eligible for service retirement benefits upon completion of at least five years of service, upon termination of service, if they have left contributions and interest with the System and are at least age 55. Or, Members may retire upon written application to the Retirement Board provided that the Member is credited with five years of continuous service and has attained age fifty and consents in writing to the early retirement benefit reduction. Members may also be eligible for service retirement benefit if they have less than five years of service with the City of Fresno, but have established reciprocity with a prior employer and are eligible to retire from that agency.

The service retirement benefit is calculated pursuant to the provisions of Section 3-541 of the City of Fresno Municipal Code. The monthly allowance for a member is equal to 2 percent of final compensation times each of the first 25 years of accrued retirement service credit plus 1 percent of final compensation times any years of accrued retirement service credit in excess of 25 years, multiplied by the age factor at retirement age.

Final average compensation consists of the highest average consecutive 36 months of compensation earnable calculated using the rate of pay in effect at the time of retirement.

The member may elect an unmodified retirement allowance, or choose an optional retirement allowance. The unmodified retirement allowance provides the highest monthly benefit and a 50% continuance to an eligible surviving spouse or domestic partner. An eligible surviving spouse is one married to the member one year prior to the effective retirement date for members retiring on or before the effective date (February 10, 2000) of Ordinance No. 2000-5.

Notes to the Basic Financial Statements Continued

For members retiring after the effective date of Ordinance 2000-5, an eligible surviving spouse or domestic partner is one married to or registered with the member on or before the date of retirement.

There are four optional retirement allowances the member may choose. Each of the optional retirement allowances requires a reduction in the unmodified retirement allowance in order to allow the member the ability to provide certain benefits to a surviving spouse, domestic partner, or named beneficiary having an insurable interest in the life of the member.

Deferred Retirement Option Program (DROP)

DROP is an optional voluntary program that allows a member to have his or her retirement benefits deposited in a special account within the System while the member continues to work in his or her current position. It is a voluntary method of receiving a distribution of retirement benefits; it is not an additional retirement benefit.

DROP may not be beneficial to all members. Each member must determine how the DROP option will affect the member's retirement benefits prior to making an election to enter the DROP.

The member's retirement benefits are determined as of the date of entry into the DROP option and accumulate in the member's DROP account while the member continues to work. Members entering DROP, after January 27, 2011 in accordance with ordinances that amended sections of the City of Fresno Municipal Code, continue making employee contributions.

Eligibility: Any member who is eligible for a service retirement, is age 55 (or age 50 for an early retirement reduced benefit) with a minimum of 5 years of service.

Participation Period: The maximum participation period is ten years. Because the participation period cannot be extended, the member must retire at its conclusion; however, the member may end participation in DROP and terminate employment with the City and begin retirement at any time prior to the end of the ten-year period.

DROP Account: A DROP account is set up for each participant; the monthly amount credited to DROP accounts include an amount which represents the service retirement allowance which the member would have received if the member had retired on the date the member commenced DROP participation. Interest is also credited to the DROP account monthly at a rate which is set annually by the Retirement Board. The rate is based on the prior five-year moving average of net market returns of the System's investments in accordance with the City of Fresno Municipal Code requirements. The Board is authorized to reduce the annual interest crediting rate up to 3 percent, if necessary, to maintain DROP's cost neutrality.

A DROP account is a nominal, bookkeeping account established within the System for each DROP participant.

Upon termination of DROP participation and retirement from the City, a member receives the amounts credited to their DROP account, including interest. In addition, the member will also begin receiving his or her monthly retirement allowance in the amount being credited to their DROP account. The member may select a method of withdrawing the money from their DROP account from the options provided.

Notes to the Basic Financial Statements Continued

DROP Reserves which represent funds reserved for DROP benefits accumulated by active members and retirees were \$136,300,915 and \$126,596,636 as of June 30, 2019 and 2018, respectively.

Terminated Member Benefits

If a member terminates before earning five years of credited service, the member forfeits the right to receive his or her service retirement benefit and is entitled to withdraw refundable contributions made, together with accumulated interest. If the member enters a reciprocal retirement system within 180 days (6 months) of terminating employment with the City of Fresno and elects to leave their accumulated contributions on deposit with the System, then the member will receive a deferred retirement allowance when eligible.

Death and Disability Benefits

Death benefits are based upon whether the death occurred before or after retirement. Disability benefits are based upon whether the member has at least ten years of credited service, over or under age 55 and whether the permanent incapacity is found to be service or non service-connected.

Cost of Living Benefits

Cost-of-living adjustments (COLA) increases for retirees under the Employees Retirement System are provided for in the Municipal Code, and are determined by annual changes in the Consumer Price Index (CPI) for each of the two immediately preceding calendar years. Retirement staff research the percentage change in CPI (United States city average for urban wage earners and clerical workers – all items) and propose that percent to the Retirement Board as the COLA to be adopted for the following fiscal year. This procedure is completed by the end of April each year for implementation in July. The COLA is limited to a five percent (5.00%) maximum change per year and any excess over 5.00 percent is banked for the retiree for use in a year where the percent of CPI change is negative.

The Board adopted the annual COLA, pursuant to Section 3- 553(b) of 2.2 percent, effective July 1, 2018 for fiscal year 2019, and 2.0 percent, effective July 1, 2017 for fiscal year 2018.

2 | Summary of Significant Accounting Policies

Reporting Entity

The Retirement System, with its own governing board, is an independent governmental entity separate and distinct from the City of Fresno. The System's annual financial statements are included in the City of Fresno Annual Financial Report as a pension trust fund.

Basis of Accounting

The System's financial statements are prepared using the accrual basis of accounting and in accordance with accounting principles generally accepted in the United States of America (GAAP), under which revenues are recognized when earned and deductions are recorded when the liability is incurred. Employer and employee contributions are recognized as revenue when due. Contributions are recorded in the period the related salaries are earned and become measurable. Investment income is recognized when it is earned. The net appreciation in fair value of investments held by the System is recorded as an increase to investment income based on the valuation of investments at fiscal year-end, which includes both realized and unrealized gains and losses on investments. Retirement benefits and refunds are recognized when due and payable under the terms of the plan as defined in Sections 3-534 and 3-538 of the City of Fresno Municipal Code. Other expenses are recognized when the corresponding liabilities are incurred.

Notes to the Basic Financial Statements Continued

Securities lending transactions are accounted for in accordance with Governmental Accounting Standards Board (GASB) Statement No. 28, *Accounting and Financial Reporting for Securities Lending Transactions*, which establishes reporting standards for securities lending transactions. In accordance with GASB Statement No. 28, cash received as collateral on securities lending transactions and investments made with that cash are reported as assets and liabilities, and the results from these transactions are reported in the Statement of Fiduciary Net Position. In addition, the costs of securities lending transactions are reported as an expense in the Statement of Changes in Fiduciary Net Position.

Investments

The System is authorized by the City of Fresno Municipal Code and the policies of the Retirement Board to invest in any form or type of investment deemed prudent by the Board and does so through its Investment Objectives and Policy Statement which establishes and outlines the responsibilities of the various parties that are associated with managing assets of the Retirement System, consistent with applicable sections of the Municipal Code, Federal laws and Article XVI, Section 17(c) of the Constitution of the State of California which provides that “the member of the Retirement Board of a public pension or retirement system shall discharge their duties...with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aim.”

System investments are reported at fair value. Fair value is the amount that the System can reasonably expect to receive for an investment in a current sale between a willing seller, that is, other than in a forced or liquidation sale. Fair value for investments of publicly traded securities is stated at fair value based upon closing sales prices reported on recognized securities exchanges on the last business day of the period

or for listed securities having no sales reported and for unlisted securities, based upon last reported bid prices. All purchases and sales of securities are accounted for on a trade date basis and dividends declared but not received are accrued on the ex-dividend date. Short-term investments are reported at cost, which approximates fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Investments in both bonds and mortgage-backed pass-through certificates are carried at fair value.

Cost values, as shown, are derived from Master Custodial Transaction Records. The fair value of real estate investments is based on independent appraisals. Investments that do not have an established market are reported at estimated fair values.

The asset allocation policy set by the Board, in conjunction with the Fire and Police Retirement Board, is outlined in the Boards’ Investment Objectives and Policy Statement. Plan assets are managed with a long-term objective of achieving and maintaining a fully funded status for the benefits provided by the System. The table on the following page provides the Boards’ adopted asset allocation policy as of June 30, 2019 and 2018.

*Notes to the Basic Financial Statements Continued***Asset Allocation Policy***As of June 30, 2019 and 2018*

Asset Class	FY 2019	FY 2018
Domestic Equity		
Large Cap	17.0%	15.8%
Small Cap	8.0%	7.2%
International Equity		
Developed Markets	20.0%	19.0%
Emerging Markets	7.0%	6.0%
Fixed Income		
Core Fixed Income	10.0%	10.0%
High Yield Bonds	5.0%	5.0%
Real Estate		
Core Real Estate	10.0%	11.0%
Value Add Real Estate/REITs	5.0%	4.0%
Alternatives		
Infrastructure	2.0%	4.0%
Midstream Energy (MLP's)	5.0%	5.0%
Private Equity	3.0%	5.0%
Private Debt	8.0%	8.0%
Short Term Investments	0.0%	0.0%
	100%	100%

Estimates

The preparation of financial statements in accordance with generally accepted accounting principles (GAAP) requires the System administrator to make estimates and assumptions that affect certain amounts and disclosures. Accordingly, actual results may differ from those estimates.

Reclassifications

Certain amounts presented in the prior year's data has been reclassified to be consistent with the current year's presentation. Such reclassifications had no effect on previously reported net plan assets.

Implementation of New Accounting Pronouncements

For the year ended June 30, 2019, the Board adopted and the System implemented all applicable new GASB pronouncements.

The most recent pronouncements, effective for fiscal year ended June 30, 2019, are provided below.

GASB Statement No. 83 - *Certain Asset Retirement Obligations*, was issued in November 2016. This Statement addresses accounting and financial reporting for certain asset retirement obligations (AROs). This Statement establishes criteria for determining the timing and pattern of recognition of a liability and a corresponding deferred outflow of resources for AROs. This Statement requires that recognition occur when the liability is both incurred and reasonably estimable. The System has determined that this standard is not applicable as the system does not have these types of transactions, thus, there was no material impact on the System's financial statements as a result of the implementation of GASB Statement No. 83.

Notes to the Basic Financial Statements Continued

GASB Statement No. 88 - *Certain Disclosures Related to Debt*, was issued in April 2018. The primary objective of this Statement is to improve the information that is disclosed in notes to government financial statements related to debt, including direct borrowings and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. This Statement requires that additional essential information related to debt be disclosed in notes to financial statements, including unused lines of credit; assets pledged as collateral for the debt; and terms specified in debt agreements related to significant events of default with finance-related consequences, significant termination events with finance-related consequences, and significant subjective acceleration clauses. The System has determined that this standard is not applicable as the system does not have these type of transactions, thus, there was no material impact on the System's financial statements as a result of the implementation of GASB Statement No. 88.

3 | Contributions

Authority to Collect

The responsibility for both City and employee contributions to the System is mandated by the City of Fresno Municipal Code Sections 3-523 and 3-529.

Contributions are made by the members and the employer at rates recommended by the System's independent actuary and adopted by the Board.

Employee contribution rates vary according to age and are designed to provide funding for approximately one third of retirement benefit basic normal costs and one-half of the cost-of-living component. All active members are required to make contributions to the System. The average member contribution rate as of June 30, 2019 for 2018-2019 (based on the June 30, 2017 valuation) was 7.80 percent of compensation. The average member contribution rate as of

June 30, 2018 for 2017-2018 (based on the June 30, 2016 valuation) was 8.24 percent of compensation.

The employer contribution rate is designed to provide funding for the remaining regular retirement and cost-of-living benefits, as well as all regular disability and survivors' benefits. The average employer contribution rate as of June 30, 2019 for 2018-2019 (based on the June 30, 2017 valuation) was 10.58 percent of compensation. The average employer contribution rate as of June 30, 2018 for 2017-2018 (based on the June 30, 2016 valuation) was 11.39 percent of compensation.

One of the funding objectives of the System is to establish contribution rates which, over time, will remain level as a percentage of payroll unless the System benefit provisions are changed.

Funding Status & Method

Actuarial Funding Policy and Actuarial Cost Methodology for Funding Purposes.

The Board adopted a Comprehensive Actuarial Funding Policy on November 7, 2012. For the Employees Retirement System, that policy included a change in actuarial cost methodology from the Projected Unit Credit (PUC) method used for funding purposes to the Entry Age Normal (EAN) method as the EAN method is used by a substantial majority of the retirement systems in California and nationwide. More importantly, the Board made this change in actuarial cost methodology due to the adoption of GASB Statements No. 67 and 68 which substantially revised the financial reporting requirements for governmental pension plans and their sponsors.

Notes to the Basic Financial Statements Continued

Goals of the Actuarial Funding Policy:

- To achieve long-term full funding of the cost of benefits provided by the System;
- To seek reasonable and equitable allocation of the cost of benefits over time; and
- To minimize any volatility of the City's contribution to the extent reasonably possible, consistent with other policy goals.

Funding Requirements and Policy Components

The System's annual funding requirement is comprised of a payment of the Normal Cost and a payment on the Unfunded Actuarial Accrued Liability (UAAL) if applicable. The Normal Cost and the amount of the payment on UAAL are determined by three components of the Board's funding policy: 1) Actuarial Cost Method – the techniques used to allocate the cost/liability of retirement benefits to a given period; 2) Asset Smoothing Method – the techniques that spread the recognition of investment gains or losses over a period of time for the purposes of determining the Actuarial Value of Assets used in the actuarial valuation process; and 3) Amortization Policy – the decisions on how, in terms of duration and pattern, to fund the difference between the Actuarial Accrued Liability and the Actuarial Value of Assets in a systematic manner.

Using the Asset Smoothing Method, the investment gains or losses of each valuation period, as a result of comparing the actual market return to the expected market return, are recognized in level amounts over five (5) years in calculating the Actuarial Value of Assets.

As of June 30, 2019, the System does not have an Unfunded Actuarial Accrued Liability (UAAL). The Board's Amortization Policy sets forth the amortization procedures

for funding any UAAL or amortization and allocation of any available surplus in the System.

Any new UAAL as a result of actuarial gains or losses identified in the annual valuation as of June 30 will be amortized over a period of fifteen (15) years. Any new UAAL as a result of any change in actuarial assumptions or methods will be amortized over a period of twenty-five (25) years. The amortization period for any increase in UAAL as a result of any amendments to the System will be amortized over a period of fifteen (15) years, while any increase in UAAL resulting from a temporary retirement incentive will be funded over a period not to exceed five (5) years.

UAAL shall be amortized over "closed" (separate) amortization periods so that the amortization period for each layer decreases by one year with each actuarial valuation.

UAAL is amortized as a level percentage of payroll so that the amortization amount in each year during the amortization period shall be expected to be a level percentage of covered payroll, taking into consideration the current assumption for general payroll increase.

If an overfunding status exists (i.e., the Valuation Value of Assets exceeds the Unfunded Actuarial Accrued Liability (UAAL), the System is considered to have a surplus in the System as of a point in time), such actuarial surplus and any subsequent surpluses will be amortized over an "open" amortization period of twenty-five (25) years. This amortization period of twenty-five years shall be applicable to the provisions in Fresno Municipal Code Sections relating to the amortization period used in the calculation of the Post Retirement Supplemental Benefit (PRSB). Any prior Unfunded Actuarial Accrued Liability (UAAL) amortization layers will be considered fully amortized, and any subsequent UAAL will be amortized over fifteen (15) years as the first of a new series of amortization layers.

Notes to the Basic Financial Statements Continued

The System uses a five year smoothing of market gains and losses to derive the actuarial value of assets. As of the fiscal year ended June 30, 2019, the actuarial value of assets was \$1.239 billion with a funded percentage of 111.9 percent on a valuation value of assets.

The progress being made towards meeting the System's funding objective through June 30, 2019 is illustrated in the Schedule of Funding Progress shown below and Actuarial Section on page 83.

Schedule of Funding Progress

For The Three Years Ending June 30, 2019

(Dollars in Millions)

	(1)	(2)	(3)	(4)	(5)	(6)
Actuarial Valuation Date	Actuarial Valuation Value of Assets	Actuarial Accrued Liability (AAL)	Percentage Funded (1)/(2)	(Prefunded) / Unfunded AAL (2)-(1)	Annual Covered Payroll	(Prefunded) / Unfunded AAL Percentage of Covered Payroll (4)/(5)
2019	\$1,239	\$1,107	111.9%	\$(132)	\$145	90.7%
2018	\$1,203	\$1,048	114.8%	\$(155)	\$135	114.9%
2017	\$1,145	\$1,014	113.0%	\$(131)	\$126	104.3%

Funding Policy

The City (Employer) currently funds, at a minimum, the amounts recommended by the actuary and approved by the Retirement Board. Such amounts are determined using the individual entry age normal funding method applied to the projected benefits in determining the Normal Cost and Actuarial Accrued Liability. The Normal Cost is determined on an individual basis for each active member. If there is a positive (Surplus) or negative (Unfunded) difference between the Valuation of Assets and the Actuarial Accrued Liability (AAL), the amortization policy determines the amortization of the Unfunded Actuarial Accrued Liability (UAAL) on a level percentage of payroll needed to fund the UAAL or the amount of available surplus which would be distributable in any given year. This method produces an employer contribution rate consisting of amounts for (a) normal cost and (b) amortization of any unfunded (UAAL) or prefunded (PAAL) actuarial accrued liability.

These minimum contributions are recognized currently in the Statement of Changes in Fiduciary Net Position.

Employees' contributions are funded and recognized currently through payroll deductions in amounts recommended by the actuary. Costs of administering the System are charged against System assets.

Total contributions (basic and cost-of-living adjustments (COLA)) to the System for fiscal year 2019 totaled \$25,142,958. Employees contributed \$10,515,533 and the City made contributions of \$14,627,425.

Contributions aggregating \$25,142,958 (\$14,627,425 employer contributions and \$10,515,533 employee contributions) were made in fiscal year 2019, based on an actuarial valuation determined as of June 30, 2017, which became effective for the year ended June 30, 2019. During fiscal year 2019, the Employer normal contribution rate was set at 11.66 percent. However, due to an adjustment for an excess contribution from the prior year Employer and System member basic and COLA contributions represented 10.58 percent and 7.80 percent, respectively, of the fiscal year 2019 covered payroll.

Notes to the Basic Financial Statements Continued

Contributions aggregating \$24,938,134 (\$14,608,659 employer contributions and \$10,329,475 employee contributions) were made in fiscal year 2018, based on an actuarial valuation determined as of June 30, 2016, which became effective for the year ended June 30, 2018.

During fiscal year 2018, the Employer normal contribution rate was set at 11.69 percent. Employer and System member contributions represented 11.39 percent and 8.24 percent, respectively, of the fiscal year 2018 covered payroll.

Contributions Required and Contributions Made

The employer's required normal contributions to the System has two components: basic and COLA. For fiscal year 2019 and 2018, the employer's required normal contributions (basic and COLA) to the System were as follows:

Normal Cost

	FY2019	FY2018
Employee Contributions	\$ 10,515,533	\$ 10,329,475
Employer Contribution Rate	11.66%	11.69%
Employer Contributions	\$ 16,136,949	\$ 15,017,145
Prior Year Contribution (Surplus)/Shortfall	(1,509,524)	(408,486)
Net Employer Contributions	\$ 14,627,425	\$ 14,608,659
Pensionable Payroll	\$ 138,395,785	\$ 128,461,461

4 | Net Pension Liability

The components of the net pension liability of the System are as follows:

Schedules of Changes in the System's Net Pension Liability (GASB 67)

As of June 30, 2019 and 2018

(In Thousands)

	As of June 30, 2019	As of June 30, 2018
Total Pension Liability	\$1,278,096	\$1,195,294
Plan Fiduciary Net Position	(\$1,379,415)	(\$1,348,691)
Net Pension Liability/(Surplus)	(\$101,319)	(\$153,397)
Plan Fiduciary Net Position as a percentage of the total pension liability	107.93%	112.83%

The net pension liability was measured as of June 30, 2019 and 2018, and determined based upon the total pension liability (on a GASB 67 basis) from actuarial valuations as of June 30, 2019 and 2018, respectively.

Notes to the Basic Financial Statements Continued

Actuarial Assumptions

Key Methods and Assumptions Used in Valuation of Total Pension Liability

The total pension liability as of June 30, 2019 was determined by an actuarial valuation as of June 30, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Valuation Date	June 30, 2019 ¹
Actuarial Experience Study	3 Year Period Ending June 30, 2018
Actuarial Cost Method	Entry Age Normal Actuarial Cost Method
	Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation.

Actuarial Assumptions

Inflation	2.75%
Salary Increases	3.75% to 11.25%, varying by service, including inflation
Discount Rate	7.00%, net of pension plan investment expense, including inflation
Other Assumptions	See June 30, 2019 funding valuation for the service retirement rates after they have been adjusted to treat DROP participation as service retirement.
Mortality Rates	Mortality rates used in the latest actuarial valuation are based on the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional scale MP-2015, set forward one year. For healthy members, the separate tables for males and females ages are set forward one year. For members that are disabled, the separate tables for males and females ages are set forward four years. For beneficiaries, the separate tables for males and females ages set forward one year, weighted 65% male and 35% female.

¹ Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported. As such, the actuarial valuations dated, June 30, 2019 and 2018, will impact the contribution rates for the fiscal years ended June 30, 2021 and 2020.

Notes to the Basic Financial Statements Continued

The valuation interest rate is 7.00 percent; total salary scale increases range between 3.75% to 11.25% (include 2.75 percent for inflation plus 0.50 percent across the board salary increase plus merit and promotion increases based on completed years of service) were based on the June 30, 2018 Experience Analysis and Economic Assumptions Reports.

Actuarial valuations of an ongoing plan involve estimates of the fair value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, inflation and investment returns. Amounts determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revisions as actual results are compared with past expectations and new estimates are made about the future.

GASB Statement No. 67 addresses accounting and financial reporting requirements for pension plans and redefines pension liability and expense for financial reporting purposes, and does not apply to contribution amounts for pension funding purposes.

When measuring pension liability under GASB Statement No. 67, the actuary uses the same actuarial cost method (Entry Age method) and the same type of discount rate (expected return on assets) as the System uses for funding. Note that, unrelated to the investment return assumption, the new rules use a version of the Entry Age method where the Total Pension Liability (TPL) for financial reporting purposes must be fully accrued by the time a member either enters DROP or is expected to elect the DROP. This is in contrast to the version of the Entry Age method used for funding, where the Actuarial Accrued Liability (AAL) does not have to be fully accrued until members retire from employment after participation in the DROP. Under GASB Statement No. 67, active members who are expected to

enroll in the DROP in the future would report a Service Cost that is higher than the Normal Cost used for funding, while members already in the DROP would report no Service Cost even though their Normal Cost continues to accrue.

Long-Term Expected Real Rate of Return

The long-term expected rate of return on the System's investments was determined using a building-block method in which expected future real rates of return (expected returns, net of pension plan investment expense and net of inflation) are developed for each major asset class. This information is 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 and deducting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table.

The actual asset class target allocations from the Board's prior adopted Asset Allocation Target Policy were utilized in the Analysis of Actuarial Experience during the period July 1, 2015 through June 30, 2018 and for the Review of Economic Actuarial Assumptions used for the June 30, 2019 Actuarial Valuation.

The actual asset class target allocations from the Board's prior adopted Asset Allocation Target Policy were utilized in the Analysis of Actuarial Experience during the period July 1, 2012 through June 30, 2015 and for the Review of Economic Actuarial Assumptions used for the June 30, 2018 Actuarial Valuation.

Notes to the Basic Financial Statements Continued

Asset Class/Target Allocation/Long-term Expected Real Rate of Return Table

Asset Class	As of June 30, 2019		As of June 30, 2018	
	Target Asset Allocation	Weighted Average Long-Term Expected Real Rate of Return* (Arithmetic)	Target Asset Allocation	Weighted Average Long-Term Expected Real Rate of Return** (Arithmetic)
Large Cap U.S. Equity	15.8%	5.44%	22.5%	5.80%
Small Cap U.S. Equity	7.2%	6.18%	7.5%	6.47%
Developed International Equity	19.0%	6.54%	22.0%	6.98%
Emerging Market Equity	6.0%	8.73%	8.0%	8.99%
Private Equity	5.0%	9.27%	—	—
Domestic Fixed Income	10.0%	1.42%	15.0%	0.83%
High Yield Bonds	5.0%	3.64%	6.0%	3.44%
Private Debt/Direct Lending	8.0%	5.54%	4.0%	5.73%
Midstream Energy	5.0%	6.24%	—	—
Real Estate	15.0%	4.60%	15.0%	4.45%
Private Real Assets - Infrastructure/Land	4.0%	4.89%	—	—
Total	100.0%		100.0%	

*Based on June 30, 2018 Economic Study of Assumptions.

**Based on June 30, 2015 Economic Study of Assumptions.

Mortality Rates

Mortality rates used in the latest actuarial valuation are based on the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional scale MP-2015. For healthy members, the separate tables for males and females ages are set forward one year. For members that are disabled, the ages are set forward four years. For beneficiaries, the separate tables for males and females ages are set forward one year, weighted 65% male and 35% female.

Discount Rate

The discount rates used to measure the total pension liability were 7.00 and 7.25 percent as of June 30, 2019 and 2018, respectively.

The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employer contributions that are intended to fund benefits for current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service costs for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on the System's investments was applied to all periods of projected benefit payments to determine the total pension liability as of both June 30, 2019 and June 30, 2018.

Notes to the Basic Financial Statements Continued

The table below presents the net pension liability of the Retirement System calculated using the discount rate of 7.00 and 7.25 percent, as of June 30, 2019 and 2018, respectively, as well as what the System's net pension

liability would be if it were calculated using a discount rate that is 1.00 percent lower or 1.00 percent higher than the current rate:

Sensitivity of Net Pension Liability to Changes in the Discount Rate

As of June 30, 2019 and 2018 (In Thousands)

	1% Decrease	Current Discount Rate	1% Increase
Net Pension Liability	6%	7.00%	8.00%
June 30, 2019	(\$48,132)	(\$101,319)	(\$223,778)
	1% Decrease	Current Discount Rate	1% Increase
Net Pension Liability	6.25%	7.25%	8.25%
June 30, 2018	(\$17,239)	(\$153,397)	(\$265,860)

5 Net Position Restricted for Pension Benefits

Net position restricted for pension benefits is segregated into Active Members Reserve (members' accumulated contributions) and reserves established by the Board for various benefit payments.

Reserves are established by the System from member and employer contributions and the accumulation of investment income after satisfying investment and administrative expenses. Note: The reserves do not represent the present value of assets needed, as determined by actuarial valuation, to satisfy retirements and other benefits as they become due.

The System's major reserves are as follows:

ACTIVE MEMBER (EMPLOYEE) RESERVES represent the total accumulated member contributions. Additions include member contributions and investment earnings; deductions include refunds of member contributions and transfers to Employer Advance/Retired Reserves.

EMPLOYER ADVANCE/RETIRED RESERVES represent the total accumulated employer contributions for future retirement payments to current active and vested

terminated members and the total accumulated transfers from Active Member Reserves and investment earnings, less payments to retirees and transfers to the DROP Reserve. Additions include contributions from the employer, transfers from Active Member Reserve and investment earnings; deductions include payments to retirees and transfers to the DROP Reserve.

DEFERRED RETIREMENT OPTION PROGRAM (DROP) RESERVE represents funds reserved for Deferred Retirement Option Benefits accumulated by members and retirees.

Notes to the Basic Financial Statements Continued

POST RETIREMENT SUPPLEMENTAL BENEFIT (PRSB) RESERVE represents surplus earnings that have been allocated but not distributed to eligible retirees in accordance with the City of Fresno Municipal Code Section 3-567 “Post Retirement Supplemental Benefit.” The PRSB Reserve Account was exhausted at the end of calendar year 2013.

CITY SURPLUS RESERVE represents surplus earnings that have been allocated but not used as a reduction to offset or eliminate the City’s pension contributions in accordance with the conditions and requirements of Municipal Code Section 3-567 “Post Retirement Supplemental Benefit.” The City Surplus Reserve Account was slightly negative for fiscal year 2018 and positive for fiscal year 2017 due to the

differences between the actual and estimated surplus allocation for the City for offsetting the City’s contributions for those years. The City’s normal contribution rate for fiscal year 2019 will include funding of the fiscal year 2018 deficit City Surplus Reserve balance. Interest is allocated at an actuarially determined interest rate as approved by the Board and is credited monthly to the Active Member Reserves and the Employer Advance/Retired Reserves. Active members in the Deferred Retirement Option Program accrue interest on their accumulated DROP accounts monthly at an interest rate annually adopted by the Board.

The amount of reserves for the years ended June 30, 2019 and 2018, consisted of the following:

Reserves Table as of FY 2019 and FY 2018

(In Thousands)

	2019	2018
Employer Advance/Retired Reserves	\$ 1,134,426	\$ 1,117,261
Active Member (Employee) Reserves	109,263	104,834
DROP Reserves	136,301	126,597
PRSB Reserves	—	—
City Surplus Reserves	(575)	(1)
Net Position Restricted for Pension Benefits	\$ 1,379,415	\$ 1,348,691

Notes to the Basic Financial Statements Continued

6 | Fair Value Measurements

In accordance with GASB Statement No. 72, *Fair Value Measurement and Application*, which addresses accounting and financial reporting issues related to fair value measurements and disclosures. The System's investments are measured and reported within the fair value hierarchy established by generally accepted accounting principles. The fair value hierarchy, which has three levels, is based on the valuation inputs used to measure an asset's fair value and gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements). The three levels of the fair value hierarchy are as follows:

Level 1: Inputs are based on quoted prices for identical assets or liabilities in an active market that the System can access. An active market for the asset or liability is one in which transactions for the asset or liability occurs with sufficient frequency and volume to provide pricing information on an ongoing basis. A quoted price in an active market usually provides the most reliable evidence of fair value and is generally used without adjustment if available. This classification includes public equities with observable market prices.

Level 2: Inputs that are observable either directly or indirectly but are not Level 1 inputs. Level 2 inputs include quoted prices for similar instruments, broker quotes, or observable inputs that directly impact value such as interest rates, prepayment speeds, and credit risk. Pricing inputs, including broker quotes, are generally those other than exchange quoted prices in active markets, and fair values are determined through the use of models or other valuation methodologies. For investments in funds where there is an ability to redeem such investments at the Net Asset Value (NAV) per share (or its equivalent) at the measurement date

or in the near term, the fair value of the investment is generally categorized as Level 2.

Level 3: Inputs that are unobservable. Level 3 inputs are generally used in situations where there is little, if any, market activity for the investment. These inputs into the determination of fair value require significant management judgment or estimation. Due to the inherent uncertainty of these estimates, these values may differ significantly from the values that would have been used had a ready market for these investments existed. Investments that are included in this category generally include public entities and other fixed income securities where there is an inability to redeem such investments at the NAV per share (or its equivalent) at the measurement date or in the near term.

The tables on the following pages show the fair value leveling of the System's investments as of June 30, 2019 and 2018.

Notes to the Basic Financial Statements Continued

Investment Type	June 30, 2019	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by Fair Value Level				
Debt Securities				
Asset Backed Securities	\$ 6,529,589	\$ —	\$ 6,529,589	\$ —
Commercial Mortgage-Backed	3,749,633	—	3,749,633	—
Corporate Bonds	129,086,185	—	129,086,185	—
Corporate Convertible Bonds	5,727,113	—	5,461,544	265,569
Government Agencies	1,679,781	—	1,679,781	—
Government Bonds	44,517,799	—	44,517,799	—
Government Mortgage Backed Securities	62,853,177	—	62,853,177	—
Gov't-issued Commercial Mortgage-Backed	643,700	—	643,700	—
Municipal/Provincial Bonds	4,968,340	—	4,968,340	—
Non-Government Backed C.M.O.s	405,510	—	405,510	—
Total Debt Securities	260,160,827	—	259,895,258	265,569
Equity Securities				
Consumer Discretionary	59,287,356	59,283,986	3,370	—
Consumer Staples	26,626,997	25,830,479	796,518	—
Energy	12,481,405	12,361,147	120,258	—
Financials	90,543,797	90,543,797	—	—
Health Care	34,740,103	34,740,103	—	—
Industrials	71,497,060	71,497,060	—	—
Information Technology	51,199,801	51,199,801	—	—
Materials	22,407,448	22,407,448	—	—
Real Estate	72,679,910	72,679,910	—	—
Telecommunication Services	21,359,735	21,359,735	—	—
Utilities	6,719,628	6,719,628	—	—
Total Equity Securities	469,543,240	468,623,094	920,146	—
Securities Lending	82,249,052	82,249,052	—	—
Short-Term Investments	20,222,981	10,988,153	9,234,828	—
Private Real Estate Holdings	3,358,395	—	3,358,395	—
Total Investments by Fair Value Level	\$ 835,534,495			
Investments Measured at the Net Asset Value (NAV)				
Commingled Fund - Equities	\$ 279,796,233			
Commingled Fund - Real Estate	116,347,231			
Commingled Fund - Fixed Income	24,464,349			
Commingled Fund - Infrastructure	56,430,181			
Private Real Estate Funds	35,965,557			
Private Debt/Private Credit	76,611,202			
Private Equity	8,180,791			
Total Investments Measured at NAV	597,795,544			
Total Investments Measured at Fair Value and NAV	\$1,433,330,039			
Investment Derivative Instruments*				
Equities - Rights/Warrants	\$ 40,483	\$ 40,478	\$ 5	\$ —
Total Investment Derivative Instruments	\$ 40,483	\$ 40,478	\$ 5	\$ —

* Short-term derivative instruments included on page 46 are excluded here.

Notes to the Basic Financial Statements Continued

Investment Type	Fair Value Measurements Using			
	June 30, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by Fair Value Level				
Debt Securities				
Asset Backed Securities	\$ 3,656,542	\$ —	\$ 3,656,542	\$ —
Commercial Mortgage-Backed	3,298,219	—	3,157,045	141,174
Corporate Bonds	111,033,351	—	111,033,351	—
Corporate Convertible Bonds	5,560,069	—	5,560,069	—
Government Agencies	2,564,720	—	2,564,720	—
Government Bonds	49,561,223	—	49,561,223	—
Government Mortgage Backed Securities	55,674,054	—	55,674,054	—
Gov't-issued Commercial Mortgage-Backed	566,329	—	566,329	—
Municipal/Provincial Bonds	5,487,682	—	5,487,682	—
Non-Government Backed C.M.O.s	818,894	—	818,894	—
Total Debt Securities	238,221,083	—	238,079,909	141,174
Equity Securities				
Consumer Discretionary	61,721,071	61,721,071	—	—
Consumer Staples	20,494,764	19,848,616	646,148	—
Energy	17,138,062	16,979,995	158,067	—
Financials	85,983,591	85,983,591	—	—
Health Care	32,237,130	32,237,130	—	—
Industrials	70,987,933	70,982,309	—	5,624
Information Technology	50,538,965	50,391,137	—	147,828
Materials	23,821,445	23,821,445	—	—
Real Estate	79,839,299	79,836,177	3,122	—
Telecommunication Services	22,630,174	22,630,174	—	—
Utilities	4,360,354	4,360,354	—	—
Total Equity Securities	469,752,788	468,791,999	807,337	153,452
Securities Lending	82,685,282	82,685,282	—	—
Short-Term Investments	28,021,268	12,556,176	15,465,092	—
Private Real Estate Holdings	3,035,896	—	3,035,896	—
Total Investments by Fair Value Level	\$ 821,716,317			
Investments Measured at the Net Asset Value (NAV)				
Commingled Fund - Equities	\$ 393,182,571			
Commingled Fund - Real Estate	110,756,212			
Commingled Fund - Fixed Income	35,358,769			
Private Real Estate Funds	16,073,426			
Private Debt/Private Credit	52,562,616			
Total Investments Measured at NAV	607,933,594			
Total Investments Measured at Fair Value and NAV	\$ 1,429,649,911			
Investment Derivative Instruments*				
Equities - Rights/Warrants	\$ 12,451	\$ 11,983	\$ 468	\$ —
Total Investment Derivative Instruments	\$ 12,451	\$ 11,983	\$ 468	\$ —

* Short-term derivative instruments included on page 46 are excluded here.

Notes to the Basic Financial Statements Continued

Commingled equity and real estate funds are valued based on NAV reported by the investment manager, which are generally calculated based on the last reported sale price of the underlying assets held by such funds. Direct lending funds are typically structured as limited partnerships and limited liability companies. Since there is no readily available market for these investments in limited partnerships and limited liability companies, such investments are stated at fair value as estimated in an inactive market. These investments include securities of companies that may not be immediately liquid, such as private debt securities, real estate or other assets. The valuations of these investments are based upon values provided by the investment managers, based on the guidelines established with the investment managers and in consideration of other factors related to the System's interests in these investments.

Investments that are measured at fair value using the net asset value per share (NAV or its equivalent) as a practical expedient are not classified in the fair value hierarchy. In these instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. The System's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability.

Equity and derivative securities classified in Level 1 are valued using prices quoted in active markets for those securities. Equity and debt securities classified in Level 2 and Level 3 are using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, observable market based inputs and unobservable inputs (i.e., extrapolated data, proprietary models, and indicative quotes). Matrix pricing is used to value securities based on the securities relationship to benchmark quoted prices. Investment derivative

instruments classified as Level 2 and 3 are valued using market approaches that consider, as applicable, benchmark interest rates or foreign exchange rates.

Real estate assets classified in Level 2 are the System's private real estate investments which are valued using independent external appraisers. The System's policy is to perform independent appraisals of the property every three years. The appraisals include a complete property and market inspection and analysis by designated Members of the Appraisal Institute (MAI). The appraisals are performed using generally accepted valuation approaches applicable to the property type. Calculations used in the System's independent appraisals are generally based on a discounted cash flow analysis.

Investments in Entities That Calculate Net Asset Value Per Share

The fair value measurement of investments in commingled equity, real estate and direct lending funds are valued based on the investments' net asset value (NAV) per share (or its equivalent) reported by the investment manager, which are generally calculated based on the last reported sale price of the underlying assets held by such funds. These include funds that are structured as limited partnerships and limited liability companies.

Since there is no readily available market for investments in limited partnerships and limited liability companies, such investments are stated at fair value as estimated in an inactive market. These investments include securities of companies that may not be immediately liquid, such as private debt securities and real estate or other assets.

The valuations of these investments are based upon values provided by the investment managers, and in consideration of other factors, including guidelines established with those investment managers, related to the System's interests in these investments. Such fair value measurements are shown on the following page as of June 30, 2019 and 2018.

Notes to the Basic Financial Statements Continued

City Of Fresno Employees Retirement System
Investments Measured at the NAV
As of June 30, 2019

Investment Type	Fair Value	Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
Commingled Fund - Equities	\$ 279,796,233	\$ —	Daily	None
Commingled Fund - Real Estate	116,347,231	—	Quarterly	45-90 Days
Commingled Fund - Fixed Income	24,464,349	—	Daily	None
Commingled Fund - Infrastructure	56,430,181	—	Not Eligible	N/A
Private Real Estate Funds	35,965,557	41,345,972	Not Eligible	N/A
Private Debt/Private Credit	76,611,202	42,686,179	Not Eligible	N/A
Private Equity	8,180,791	73,820,531	Not Eligible	N/A
Total investments measured at the NAV	\$ 597,795,544	\$ 157,852,682		

City Of Fresno Employees Retirement System
Investments Measured at the NAV
As of June 30, 2018

Investment Type	Fair Value	Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
Commingled Fund - Equities	\$ 393,182,571	\$ —	Daily	None
Commingled Fund - Real Estate	110,756,212	—	Quarterly	45-90 Days
Commingled Fund - Fixed Income	35,358,769	—	Daily	None
Commingled Fund - Infrastructure	—	54,825,288	Not Eligible	N/A
Private Real Estate Funds	16,073,426	29,282,084	Not Eligible	N/A
Private Debt/Private Credit	52,562,616	69,938,720	Not Eligible	N/A
Total investments measured at the NAV	\$ 607,933,594	\$ 154,046,092		

On the following page is an explanation of the investment types listed above.

Notes to the Basic Financial Statements Continued

The investment types listed in the tables on the preceding page were measured at the NAV as follows.

(1) Commingled equity funds are highly liquid and can be redeemed within short-term periods of time. The System's investments of this type consist of institutional investment funds - one international ACWIexUS equity fund that is diversified across developed and emerging market countries and sectors and two domestic large cap equity index funds (S&P 500 Index and Russell 1000 Index). The fair value of these investment types has been determined using the NAV per share of the investments.

(2) Commingled real estate fund: The System's commingled real estate fund is a core investment strategy designed to deliver a relatively high level of current income combined with moderate appreciation potential. It is comprised of institutional quality office, retail, residential and industrial investments in major markets throughout the U.S. The redemption frequency of the real estate fund is quarterly, if liquidity is available, with a notice of redemption 45 days before the end of a quarter.

(3) Commingled fixed income funds: The System's commingled fixed income fund is fairly liquid and can be redeemed within short periods of time. This is an institutional quality fund that invests in high, medium, and low grade instruments such as US treasuries, investment grade corporates, securitized products, and derivatives. The fund is designed to provide current income through tactical positioning. The fair value of these investment types has been determined using the NAV per share of the investments.

(4) Private real estate funds: The System's two private real estate funds are designed to act as a diversifier and alpha generator to the core real estate portfolio. Investments are made in middle-market assets across various domestic and international regions and sectors such as industrial, multifamily, office, and retail.

The strategies focus on identifying investments with pricing dislocations that can be renovated, repurposed, and exited at opportunistic levels. The investment period is generally 3-5 years with a lifespan of 10-12 years.

(5) Private Debt/Private Credit - direct lending funds: The System's two direct lending funds are each invested through a master-feeder structure, on a leveraged basis primarily in senior secured loans of private U.S. lower-middle-market companies. Strategies employ a capital preservation focus and structured investments with strong covenant provisions to reduce associated risks, underwriting multiple cushions to provide downside protections. Investment period is generally 3-5 years with reinvestment of committed capital.

(6) Commingled infrastructure funds: The System's two infrastructure funds invest in core assets that generate long-term stable cash yields, have modest price appreciation, and provide inflation protection. Types of assets include energy (water, wind, and solar, etc.), transportation (toll roads and bridges, airports, and seaports, etc.), and social (hospitals, prisons, and schools, etc.). Investments are located domestically as well as in the Organization for Economic Co-operation and Development (OECD) countries internationally. Each fund has lockup periods of 4 years and, after that initial period, redemptions can be requested on a quarterly basis, if liquidity is available.

*Notes to the Basic Financial Statements Continued***7 | Deposits and Investments**

The System's investment guidelines reflect the duties imposed by an investment standard known as the "prudent expert rule." The prudent expert rule establishes a standard for all fiduciaries which includes anyone who has discretionary authority with respect to the System's investments.

Northern Trust serves as custodian of the System's investments. The System's asset classes include U.S. Equity, International Equity, Emerging Market Equity, U.S. Fixed Income, and Real Estate. Any class may be held in direct form, pooled form, or both. The System has fifteen external investment managers, managing eighteen individual portfolios. Investments as of June 30, 2019 and 2018, consist of the following:

Investments at Fair Value as of June 30, 2019 and 2018

(In Thousands)

	2019	2018
Investments at Fair Value		
Domestic Equity	\$ 389,901	\$ 503,077
International Developed Market Equities	248,932	242,245
International Emerging Market Equities	47,149	46,736
Government Bonds	114,663	149,213
Corporate Bonds	172,123	126,673
Alternatives	141,222	53,599
Real Estate	216,908	197,413
Short-Term Investments	20,223	28,021
Total Investments at Fair Value	\$ 1,351,121	\$ 1,346,977

Notes to the Basic Financial Statements Continued

The Board, through its Investment Objectives and Policy Statement, provides guidelines for investments and established the following target allocations with a minimum and maximum range for each of the asset classes:

Asset Class Minimum Target and Maximum Allocations

Asset Class	FY 2019			FY 2018		
	Minimum	Target	Maximum	Minimum	Target	Maximum
Domestic Equities						
Large Cap	13.0%	17.0%	27.0%	13.0%	15.8%	27.0%
Small Cap	2.0%	8.0%	9.0%	2.0%	7.2%	9.0%
International Equities						
Developed Markets	13.0%	20.0%	27.0%	13.0%	19.0%	27.0%
Emerging Markets	0.0%	7.0%	10.0%	0.0%	6.0%	10.0%
Fixed Income						
Core Fixed Income	4.0%	10.0%	19.0%	4.0%	10.0%	19.0%
High Yield Bonds	3.0%	5.0%	12.0%	3.0%	5.0%	12.0%
Real Estate						
Core Real Estate	5.0%	10.0%	20.0%	5.0%	11.0%	20.0%
Value Add Real Estate/REITs	1.0%	5.0%	9.0%	1.0%	4.0%	9.0%
Alternatives						
Infrastructure	0.0%	2.0%	10.0%	0.0%	4.0%	10.0%
MLPs	0.0%	5.0%	10.0%	0.0%	5.0%	10.0%
Private Equity	0.0%	3.0%	10.0%	0.0%	5.0%	10.0%
Private Debt	0.0%	8.0%	10.0%	0.0%	8.0%	10.0%
Short-Term Investments	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		100%			100%	

Allowable securities must meet the reporting requirements of the Securities and Exchange Commission and must meet a “prudent expert” standard for investing. In no case may the System have five percent (5%) or more of System net position invested in any one organization.

The Board’s investment policies and guidelines permit investment in numerous specified asset classes to take advantage of the non-correlated economic behavior of diverse asset classes. The result is a well-diversified portfolio.

Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the

System will not be able to recover the value of its investment or collateral securities that are in the possession of another party. The Retirement System’s investment securities are not exposed to custodial credit risk since all securities are registered in the System’s name and held by the System’s custodial bank.

Custodial credit risk for deposits is the risk that, in the event of the failure of the depository financial institution, the System will not be able to recover its deposits or will not be able to recover collateral securities that are in the possession of an outside party. Any cash associated with the System’s investment portfolios not invested at the end of a day is temporarily swept overnight to the Northern Trust Collective Short-Term Investment Fund.

Notes to the Basic Financial Statements Continued

That portion of the System's cash held by the City in a Trust account as part of the City's cash investment pool totaled \$2,144,968 and \$1,085,492 at June 30, 2019 and 2018, respectively. Accordingly, the System's investments in the pool are held in the name of the City and are not specifically identifiable.

Disclosure of the legal and contractual provisions of the City's investment policy and carrying amounts by type of investments may be found in the notes to the City's separate Comprehensive Annual Financial Report for the fiscal year ended June 30, 2019.

Credit and Interest Rate Risk

Credit risk associated with the System's debt securities is identified by their ratings in the table below. Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. The System has no general policy on credit and interest rate risk. The System limits its investments in below investment grade bonds and monitors the interest rate risk inherent in its portfolio by measuring the duration of its portfolio.

The average duration of the System's debt portfolios in years is also listed in the following table:

Type of Investment	2019			2018		
	Fair Value	Credit Quality	Duration	Fair Value	Credit Quality	Duration
Asset Backed Securities	\$ 6,529,589	AA+	0.18	\$ 3,656,543	AA	2.68
Commercial Mortgage-Backed	3,749,633	A+	5.42	3,298,219	AA-	5.37
Corporate Bonds	129,086,185	BB+	5.11	111,033,351	BB+	3.31
Corporate Convertible Bonds	5,727,113	CC	3.54	5,560,069	CC	5.11
Funds - Corporate Bond	24,464,349	—	—	—	—	—
Non-Government backed C.M.O.s	405,511	CC	2.91	818,894	BBB-	1.79
Rights & Warrants	5	CC	0.00	468	B-	—
Convertible Equity	916,776	BBB-	5.05	804,215	BB-	14.75
Common Stock	122,540	BB-	0.00	396,427	B-	0.00
Preferred Stock	1,121,824	BB+	0.14	1,105,065	BB+	0.00
Government Agencies	1,679,781	AAA	8.00	2,564,720	AAA	4.41
Government Bonds	44,517,799	AAA	6.31	49,561,223	AAA	5.24
Gov't Issued Commercial Mortgage Backed Securities	643,700	AAA	7.42	566,329	AAA	7.89
Government Mortgage Backed Securities	62,853,177	AAA	2.60	55,674,054	AAA	3.69
Funds - Government Agencies	—	—	—	35,358,769	AAA	—
Municipal/Provincial Bonds	4,968,340	A	10.17	5,487,682	A	9.65
Total Credit Risk Fixed Income	\$ 286,786,322			\$ 275,886,028		

Notes to the Basic Financial Statements Continued

Per Section 3.5.f.i. of the System's Investment Policy Statement, no more than 15 percent of an investment manager's fixed income portfolio may be invested in below investment grade rated securities (BB or B rated bonds). Therefore, at least 85 percent of the manager's fixed income portfolio must be invested in investment grade securities. Intermediate Bond portfolios shall maintain an average credit quality of A+ or better.

High yield fixed income portfolios, in accordance with Section 3.5.f.ii. of the System's Investment Policy Statement, shall maintain an average credit quality rating equal to or higher than that of the Barclays US Corporate High Yield Index. Based on the Barclays US Corporate High Yield Index, a high yield manager's portfolio shall have a constraint of the benchmark weight plus five percent (5%) in bonds rated Caa1/CCC+ or lower with non-rated bonds being limited to five percent (5%) of the portfolio with both limits subject to maintaining the average portfolio credit quality requirement of the Barclays US Corporate High Yield index. No more than 25 percent of a high yield manager's portfolio may be invested in foreign securities; within this limit, a manager may allocate up to 20 percent in emerging market government securities including both on-US dollar denominated securities and US dollar denominated Yankee securities and up to 15 percent of the portfolio may be invested in non-US dollar denominated securities.

High yield bond portfolios may hold up to the benchmark weight plus five percent (5%) of assets in Rule 144A bond issues with or without registration rights. No more than 10 percent of the high yield manager's portfolio may be invested in convertibles or preferreds, and no more than 20 percent may be invested in securitized bank debt. No single security and/or issuer can represent more than five percent (5%) of the market value of a portfolio at the time of purchase, and no single industry can represent more than 25

percent of the fair value of the account at the time of purchase.

Firms that manage fixed income portfolios will continually monitor the risk associated with their fixed income investments. They will be expected to report, as a component of their quarterly report, a risk/reward analysis of the management decisions relative to their benchmarks. Statistics that relate performance variance to effective duration decisions will be included in each quarterly report.

Concentration Risk

The investment portfolio as of June 30, 2019 and 2018, contained no concentration of investments in any one entity (other than those issued or guaranteed by the U.S. Government) that represented five percent (5%) or more of the total investment portfolio or fiduciary net position.

Foreign Currency Risk

Foreign Currency Risk is the risk that changes in foreign exchange rates will adversely affect the fair value of an investment or deposit. The System has no general investment policy with respect to foreign currency risk. The System's investment policy guidelines allow international developed and emerging equity managers to hedge their currency risks in foreign countries through the purchase of derivatives. Used as a defensive measure and in an effort to control the risks associated with international portfolios, international equity investment managers are permitted to invest in forward currency contracts, swaps, currency futures, and exchanged-traded index futures that represent broad equity exposure to countries represented in their respective benchmark index.

The positions shown on the following page represent the System's exposure to foreign currency risk as of June 30, 2019 and 2018.

Notes to the Basic Financial Statements Continued

Foreign Currency Risk Exposure

As of June 30, 2019

	Base Currency	Country	Equities / Fixed Income	Foreign Currency Contracts	Rights & Warrants	Cash & Cash Equivalents	Total
AED	United Arab Emirates Dirham	United Arab Emirates	\$ 123,607	\$ —	\$ —	\$ 1,265	\$ 124,872
ARS	Argentine Peso	Argentina	88,812	—	—	—	88,812
AUD	Australian Dollar	Australia	9,095,477	—	—	—	9,095,477
BRL	Brazilian Real	Brazil	5,096,989	16,582	—	(10,125)	5,103,446
CAD	Canadian Dollar	Canada	11,712,075	—	—	—	11,712,075
CHF	Swiss Franc	Switzerland	18,895,042	—	—	(139,700)	18,755,342
CLP	Chilean Peso	Chile	332,340	—	6,552	38	338,930
CNY	Chinese Yuan Renminbi	China	2,133,383	—	—	64,835	2,198,218
COP	Colombian Peso	Colombia	—	—	—	—	—
CZK	Czech Koruna	Czech Republic	3,788	—	—	—	3,788
DKK	Danish Krone	Denmark	6,721,439	—	—	—	6,721,439
EGP	Egyptian Pound	Egypt	115,529	—	—	—	115,529
EUR	Euro	Europe	65,197,582	—	33,925	(317,843)	64,913,664
GBP	British Pound Sterling	United Kingdom	36,944,496	—	—	(97,181)	36,847,315
HKD	Hong Kong Dollar	Hong Kong	22,473,969	—	—	10,468	22,484,437
HUF	Hungarian Forint	Hungary	406,158	—	—	—	406,158
IDR	Indonesian Rupiah	Indonesia	989,924	—	—	25,202	1,015,126
ILS	New Israeli Shekel	Israel	1,172,434	—	—	—	1,172,434
INR	Indian Rupee	India	6,093,119	—	—	13,453	6,106,572
JPY	Japanese Yen	Japan	37,077,657	—	—	—	37,077,657
KRW	South Korean Won	South Korea	10,647,527	—	—	(387,352)	10,260,175
MXN	Mexican Peso	Mexico	801,039	—	—	—	801,039
MYR	Malaysian Ringgit	Malaysia	674,110	—	—	1,785	675,895
NOK	Norwegian Krone	Norway	1,230,186	—	—	—	1,230,186
PEN	Peruvian Nuevo Sol	Peru	7,099	—	—	970	8,069
PHP	Philippine Peso	Philippines	435,059	—	—	166	435,225
PLN	Polish Zloty	Poland	1,113,632	—	—	—	1,113,632
QAR	Qatari Rial	Qatar	309,906	—	—	—	309,906
SEK	Swedish Krona	Sweden	8,008,120	—	—	—	8,008,120
SGD	Singapore Dollar	Singapore	3,977,770	—	—	—	3,977,770
THB	Thai Baht	Thailand	1,295,725	—	—	—	1,295,725
TRY	Turkish Lira	Turkey	1,426,185	—	—	—	1,426,185
TWD	New Taiwan Dollar	Taiwan	7,622,239	—	—	701	7,622,940
USD	United States Dollar	United States	793,573,558	976,091	5	44,105,458	838,655,112
ZAR	South African Rand	South Africa	5,851,354	767,208	—	(767,208)	5,851,354
Total Equities (In USD)			1,061,647,329	1,759,881	40,482	42,504,932	1,105,952,624
Total Non-USD Equities (In USD)			\$268,073,771	\$783,790	\$40,477	(\$1,600,526)	\$267,297,512

Notes to the Basic Financial Statements Continued

Foreign Currency Risk Exposure

As of June 30, 2018

	Base Currency	Country	Equities / Fixed Income	Foreign Currency Contracts	Rights & Warrants	Cash & Cash Equivalents	Total
AED	United Arab Emirates Dirham	United Arab Emirates	\$ 94,644	\$ —	\$ —	\$ —	\$ 94,644
ARS	Argentine Peso	Argentina	130,849	—	—	—	130,849
AUD	Australian Dollar	Australia	9,080,285	—	—	—	9,080,285
BRL	Brazilian Real	Brazil	2,757,918	—	—	9,121	2,767,039
CAD	Canadian Dollar	Canada	12,350,207	—	—	—	12,350,207
CHF	Swiss Franc	Switzerland	15,341,111	—	—	(23,356)	15,317,755
CLP	Chilean Peso	Chile	152,553	—	—	6,290	158,843
CNY	Chinese Yuan Renminbi	China	175,159	—	—	17,468	192,627
COP	Colombian Peso	Colombia	655,274	—	—	—	655,274
CZK	Czech Koruna	Czech Republic	3,717	—	—	—	3,717
DKK	Danish Krone	Denmark	6,968,550	—	—	—	6,968,550
EGP	Egyptian Pound	Egypt	106,833	—	—	657	107,490
EUR	Euro	Europe	61,200,900	—	10,949	421	61,212,270
GBP	British Pound Sterling	United Kingdom	37,965,659	—	—	(125,056)	37,840,603
HKD	Hong Kong Dollar	Hong Kong	21,570,463	—	—	14,100	21,584,563
HUF	Hungarian Forint	Hungary	—	—	—	—	—
IDR	Indonesian Rupiah	Indonesia	1,056,403	—	—	13,071	1,069,474
ILS	New Israeli Shekel	Israel	779,773	—	—	—	779,773
INR	Indian Rupee	India	3,578,775	—	—	(18,631)	3,560,144
JPY	Japanese Yen	Japan	38,685,270	51,130	—	(51,131)	38,685,269
KRW	South Korean Won	South Korea	11,496,253	—	—	—	11,496,253
MXN	Mexican Peso	Mexico	2,606,154	—	—	—	2,606,154
MYR	Malaysian Ringgit	Malaysia	1,366,462	—	—	2,856	1,369,318
NOK	Norwegian Krone	Norway	1,882,854	—	—	—	1,882,854
PEN	Peruvian Nuevo Sol	Peru	4,223	—	—	395	4,618
PHP	Philippine Peso	Philippines	373,367	—	—	2,870	376,237
PLN	Polish Zloty	Poland	959,449	—	—	—	959,449
QAR	Qatari Rial	Qatar	628,641	—	—	2,653	631,294
SEK	Swedish Krona	Sweden	8,166,044	—	—	—	8,166,044
SGD	Singapore Dollar	Singapore	3,996,771	—	—	—	3,996,771
THB	Thai Baht	Thailand	1,660,020	—	1,034	1,482	1,662,536
TRY	Turkish Lira	Turkey	1,180,570	—	—	577	1,181,147
TWD	New Taiwan Dollar	Taiwan	7,630,468	—	—	38,791	7,669,259
USD	United States Dollar	United States	872,408,162	1,072,942	468	26,225,398	899,706,970
ZAR	South African Rand	South Africa	9,501,434	—	—	(729,392)	8,772,042
Total Equities (In USD)			1,136,515,215	1,124,072	12,451	25,388,584	1,163,040,322
Total Non-USD Equities (In USD)			\$264,107,053	\$51,130	\$11,983	(\$836,814)	\$263,333,352

Notes to the Basic Financial Statements Continued

Per Section 3.5.e. of the System's Investment Objectives and Policy Statement, assets in international equity portfolios shall consist of liquid, publicly traded equity and equity like securities traded on major stock exchanges as well as cash and cash equivalents as necessary. Securities will be primarily composed of foreign ordinary shares and depository receipts (American Depository Receipts (ADR's) and Global Depository Receipts (GDR's) including ADR's and GDR's that are 144A securities). Securities that are 144A securities, including ADR and GDR 144A securities are authorized investments which in aggregate cannot exceed 10 percent of the portfolio. Primarily large capitalization securities may be held, although investments in small and mid capitalization securities are also allowed. Firms will continually monitor their country, currency, sector and security selection risks associated with their international portfolios. All of the risks will be included in the manager's quarterly reports and performance attribution based on these factors will also be included.

The System's complete Investment Objectives and Policy Statement can be found on the System's website at www.CFRS-CA.org or by contacting the Retirement Office at 2828 Fresno Street, Suite 201, Fresno, CA 93721.

Rate of Return

For the fiscal years ended June 30, 2019 and 2018, the annual money-weighted rate of return on the assets of the System, net of investment expense, was 5.2 percent and 8.57 percent, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for timing of cash flows and the changing amounts actually invested.

8 | Derivatives

The Retirement Board has authorized certain investment managers to invest in or otherwise enter into transactions involving derivative financial instruments when, in the judgment of management, such transactions are consistent with the investment objectives established for a specific investment manager's assignment. The acceptable investment purposes for the use of derivatives are as follows:

- a. Mitigation of risk (or risk reduction).
- b. A useful substitute for an existing, traditional investment. In certain circumstances it may be cheaper, quicker or easier to invest in a derivative instrument or security rather than transacting in cash or in the traditional security market.
- c. To provide investment value to the portfolio while being consistent with the System's overall and specific investment policies.
- d. To obtain investment exposure which is appropriate for the manager's investment strategy and the System's investment guidelines, but could not be made through traditional investment securities.

The Retirement Board monitors and reviews each investment manager's securities and derivative position as well as the manager's performance relative to established benchmark rates of return and risk measures. In management's opinion, derivative activities must be evaluated within the context of the overall portfolio performance and cannot be evaluated in isolation.

Allowable derivative financial instruments held by the System include stable and well-structured collateralized mortgage obligations (CMOs); centrally cleared instruments including, but not limited to, futures, swaps and options; and forwards including currency forwards. Derivative investments with allocation limits include

Notes to the Basic Financial Statements Continued

mortgage derivatives (interest only and principal only CMOs); non centrally cleared derivatives; caps and floors; and inverse floating rate notes and bonds. Allocation limits will be determined and specified in portfolio guidelines with individual investment managers based on the objectives and risk tolerances of a given strategy.

Cash securities containing derivative features include callable bonds, structural notes, and collateralized mortgage obligations (CMOs). These instruments are generally traded in over-the-counter bond markets.

Financial instruments whose value is dependent upon a contractual price or rate relative to one or more reference prices or rates, applied to a notional amount, including interest rate futures, options, swaps and caps, and foreign currency futures and forward contracts. Some of these instruments are exchange-traded and others are traded over-the-counter (OTC).

Market Risk

Market risk is the risk of change in fair value of an instrument in response to changes in a market price or index. While all investments are subject to market risk, derivatives often have a higher degree of market risk than other types of investment instruments. Values of cash securities containing derivative features are often more susceptible to market risk than other types of fixed income securities because the amounts and/or timing of their scheduled cash flows may fluctuate under changing market conditions, according to their contractual terms. For other types of derivatives, amounts of contractual cash flows may be either positive or negative depending upon prevailing market conditions relative to the reference prices or rates, and thus the values of such instruments may be positive or negative, despite the fact that little or no cash is initially exchanged to enter into such contracts.

Credit Risk

Credit risk of cash securities containing derivative features is based upon the credit worthiness of the issuers of such securities. The Retirement Board establishes minimum credit requirements for such securities. The other derivative instruments described above are subject to credit risk to the extent their value is a positive market fair value, and the counterparty to such contract fails to perform under the terms of the instrument.

Exchange traded derivatives are generally considered to be of lower credit risk than OTC derivatives due to the exchange margin requirements. Equity Index Swaps are derivatives and represent an agreement between two parties to swap two sets of equity values. Equity Futures are contracts used to replicate an underlying stock or stock market index. These futures can be used for hedging against an existing equity position, or for speculating on future movement of the index.

As of June 30, 2019 and 2018, the System held a total fair value of \$3,205,420 and \$2,400,234, respectively, in derivative holdings. These holdings consisted of Rights/Warrants and Foreign Currency Forwards and Futures designed to synthetically create equity returns and are held as components of the System's international equity investments, and S&P 500 E Mini Index Futures, S&P MidCap 400 E Mini Futures and a variety of ACWIexUS index related futures as components of the System's investments in BlackRock S&P 500 Equity Index, Russell 1000, and ACWIexUS Index Funds. Holdings also consist of futures – interest rate contracts, options and swaptions held as components of the System's absolute return fixed income strategy. These derivatives are used for the purpose of synthetically creating equity returns, synthetically creating floating rates and to buy or sell credit protection on the assets.

Notes to the Basic Financial Statements Continued

There is no net counterparty exposure for which there is a positive replacement cost to the fund. The details of these derivative holdings are as follows:

Derivative Type:	FY 2019		FY 2018	FY 2019 - FY 2018 Change in Fair Value
	Notional Amount	Fair Value	Fair Value	
Foreign Currency Forward	\$(1,749,799)	\$1,759,881	\$1,124,072	\$ 635,809
Future Contracts - International Equity Index	—	1,397,419	1,257,208	140,211
Rights & Warrants	—	48,120	18,954	29,166
	Total	\$3,205,420	\$2,400,234	

Derivative Type:	FY 2018		FY 2017	FY 2018 - FY 2017 Change in Fair Value
	Notional Amount	Fair Value	Fair Value	
Foreign Currency Forward	\$(1,048,240)	\$1,124,072	\$1,021,209	\$ 102,863
Future Contracts - Domestic Equity Index	—	—	4,903,156	(4,903,156)
Future Contracts - International Equity Index	—	1,257,208	982,179	275,029
Rights & Warrants	—	18,954	17,380	1,574
	Total	\$2,400,234	\$6,923,924	

*Notes to the Basic Financial Statements Continued***9 | Securities Lending**

The City of Fresno Municipal Code and the Board's policies permit the Retirement Board of the City of Fresno Fire and Police Retirement System and the City of Fresno Employees Retirement System (the Systems) to use investments of both Systems to enter into securities lending transactions, i.e., 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 Systems have contracted with Northern Trust, their custodian, to manage the securities lending program for the Systems and all securities held in a separately managed account are available for lending. As the securities lending agent, Northern Trust calculates collateral margins and accepts collateral in the form of cash or marketable securities and irrevocable bank letters of credit for all securities lending transactions. Transactions are collateralized at 102 percent of fair value (contract value) for domestic securities and 105 percent of fair value (contract value) for international securities. Collateral is marked to market daily. When a loan is secured by cash, a rebate is negotiated and the cash collateral is invested according to the guidelines in the collateral pool.

As designated by the Board, cash collateral is invested in Northern Trust's Core U.S.A. Collateral Section (short-term investment pool), which, as of June 30, 2019 and 2018, had a weighted average duration of 95 days and 102 days, respectively, an average maturity of 35 days and 29 days, respectively, and an average monthly yield of 2.62 percent and 2.24 percent, respectively. The relationship between the maturities of the investment pool and the System's loans is affected by the maturities of the security loans made by other entities that use the Northern Trust Core U.S.A. Collateral Section and a definitive statement of that relationship cannot be formulated by the System. As of June 30, 2019 and 2018, the Northern Trust CORE U.S.A. Cash

Collateral Fund had zero exposure in below investment grade long-term securities and there were no known credit risks related to the securities lending transactions.

As of June 30, 2019, the fair value of the securities on loan was \$90.0 million. The fair value of associated collateral was \$91.9 million (\$82.2 million of cash collateral and \$9.7 of non-cash collateral). Non-cash collateral, the collateral which the System does not have the ability to sell unless the borrower defaults, is not reported in the Statement of Fiduciary Net Position. As of June 30, 2018, the fair value of the securities on loan was \$95.0 million. The fair value of associated collateral was \$97.8 million (\$82.7 million of cash collateral and \$15.1 of non-cash collateral). Non-cash collateral, the collateral which the System does not have the ability to sell unless the borrower defaults, is not reported in the Statement of Fiduciary Net Position.

Northern Trust will ensure that, in any agreement with a borrower, it retains its absolute right to terminate the agreement without cause, upon short notice and without any penalty. The System cannot pledge or sell collateral securities received unless the borrower defaults. In the event of a borrower default, Northern Trust indemnifies the System against losses and will replace or reimburse the System for any borrowed securities not replaced. In general, the average term of all System loans is overnight or "on demand." All securities loans can be terminated on demand by either the lender or the borrower, although the average term of the System's loans were approximately 85 days and 102 days, respectively, as of June 30, 2019 and 2018.

Notes to the Basic Financial Statements Continued

The System's securities lending income is as follows:

Securities Lending Income

For Fiscal Years Ended June 30, 2019 and 2018

	2019	2018
Gross Income	\$2,307,106	\$1,683,081
Expenses:		
Bank Fees	1,938,515	1,281,351
Total Expenses	1,938,515	1,281,351
Net Income from Securities Lending	\$368,591	\$401,730

Fair Value of Loaned Securities

As of June 30, 2019 and 2018

Collateralized by	FY 2019			FY 2018		
	Cash	Securities	Total	Cash	Securities	Total
U.S. Government & Agency	\$ 15,567,283	\$ 3,461,284	\$ 19,028,567	\$ 23,201,310	\$ 62,255	\$ 23,263,565
Domestic Equities	45,215,735	2,987,484	48,203,219	41,626,181	5,322,557	46,948,738
Domestic Fixed	19,313,485	707,211	20,020,696	15,647,043	—	15,647,043
International Equities	474,457	2,300,794	2,775,251	51,513	9,055,444	9,106,957
Total Value	\$ 80,570,960	\$ 9,456,773	\$ 90,027,733	\$ 80,526,047	\$ 14,440,256	\$ 94,966,303

Fair Value of Collateral Received for Loaned Securities

As of June 30, 2019 and 2018

Collateralized by	FY 2019			FY 2018		
	Cash	Securities	Total	Cash	Securities	Total
U.S. Government & Agency	\$ 15,877,751	\$ 3,527,545	\$ 19,405,296	\$ 23,721,883	\$ 63,713	\$ 23,785,596
Domestic Equities	45,947,159	3,025,254	48,972,413	42,697,594	5,445,683	48,143,277
Domestic Fixed	19,698,166	720,369	20,418,535	16,027,604	—	16,027,604
International Equities	499,734	2,405,045	2,904,779	54,324	9,623,375	9,677,699
International Fixed	226,242	—	226,242	183,878	—	183,878
Total Value	\$ 82,249,052	\$ 9,678,213	\$ 91,927,265	\$ 82,685,283	\$15,132,771	\$ 97,818,054

*Notes to the Basic Financial Statements Continued***10 | Administrative Expenses**

Section 3-325 of the City of Fresno Municipal Code provides that all administrative costs of the System shall be a charge against the assets of the System. Per the City of Fresno Municipal Code, the Administrative expenses are a component of the City's contribution calculation.

11 | Post Retirement Supplemental Benefit (PRSB)

The System is not obligated to provide for or fund any other post-employment benefits as retirees do not receive paid healthcare benefits from the System. The Post Retirement Supplemental Benefit (PRSB) Program was created as a contingent program to provide supplemental distributions to eligible retirees which they could use to pay for various post retirement expenses. The Retirement Board will annually review the actuarial valuation report and declare an actuarial surplus, if available, in accordance with the procedures in the City of Fresno Municipal Code Section 3-567.

If an actuarial surplus is declared by the Board, the surplus is allocated into two components. One component composed of two-thirds of the declared surplus shall be used to reduce or eliminate the City's pension contributions. Any unused portion shall be reserved in the City Surplus Reserve and drawn upon in subsequent years if needed. The remaining one-third component shall be distributed among eligible post retirement supplemental benefit recipients in accordance with procedures in the City of Fresno Municipal Code Section 3-567(f)(4). Any unused portion shall be reserved in the PRSB Reserve and drawn upon in subsequent years if needed.

For the fiscal years ended June 30, 2019 and 2018, there was a surplus (or prefunded actuarial accrued liability) as the System had a valuation value of assets which was in excess of the actuarial accrued liability. The System's

valuation value of assets was 111.9 percent and 114.8 percent, respectively, which is above the required 110 percent for declaration of a surplus, therefore, there was an actuarial surplus available to reduce a portion of the City's and members' COLA contributions for Fiscal Years 2020 and 2019 but not enough surplus to fund new PRSB benefits.

As of June 30, 2019 and 2018, the City Surplus Reserve balances were \$(575,489) and \$(868), respectively. The City's normal rate in fiscal year 2019 included an adjustment of 1.08% which represented an actuarial surplus allocated in the June 30, 2017 actuarial report. In fiscal year 2018, the City's normal rate included an adjustment of 0.30% which represented an actuarial surplus allocated in the June 30, 2016 actuarial report.

12 | Capital Assets

Capital assets are carried at historical cost, net of accumulated depreciation. Capital assets are any items of equipment or furnishings purchased with a value of or an initial cost of \$500 or greater and \$5,000 for land, buildings and infrastructure and an estimated useful life in excess of two years.

Accumulated depreciation shall be summarized and reflected on the System's annual financial statements. Capital assets shall be depreciated over their estimated useful lives using the straight-line depreciation method. Intangible assets with limited useful lives (e.g., by legal or contractual provisions) should be depreciated over their estimated useful lives. Depreciation of computer software begins when the program is placed into service.

The System's major two-year project to program and install an upgrade to our original pension administration system that was installed in 1997 (the LRS Pension Gold Retirement Solutions' Version 3 project) includes software costs of \$797,756 and \$930,716 which were capitalized as of June

Notes to the Basic Financial Statements Continued

30, 2019 and 2018, respectively, and are amortized over a ten-year useful life period commencing July 1, 2015.

As of June 30, 2019, other capital assets consisting of office furniture and equipment for the System's Retirement Offices located at 2828 Fresno Street, Fresno, California, in the amount of \$30,656 are capitalized and depreciated over remaining estimated useful lives of 2-15 years.

As of June 30, 2018, capital assets consisting of office furniture and equipment for the System's Retirement Offices in the amount of \$35,936 were capitalized and depreciated over remaining estimated useful lives of 2-15 years.

13 | Leases

Under the lease agreement with CFRS Realty Holding Corporation, the holding corporation formed jointly by the Retirement Boards to take ownership of the building, effective September 19, 2005, the City of Fresno Employees and City of Fresno Fire and Police Retirement Boards and their staff occupy approximately 7,900 square feet of the second floor of the renovated building at 2828 Fresno Street, Fresno, California. The term of the lease is ten years with an option for two additional five year extensions. The first five (5) year extension was exercised effective September 1, 2015.

Under the terms of the lease agreement, the Systems share equally a base rent of \$13,367, originally \$1.35 per square foot per month, triple net which as of June 30, 2019 and 2018, is \$1.68 per square foot per month, triple net.

14 | Related Party Transactions

The Retirement System is involved in various business transactions with the City of Fresno, the primary plan sponsor. These include reimbursement to the City for the salary and benefits of the System's Retirement Staff members paid through the City, reimbursement to the City Personnel Department for personnel consulting services, and reimbursement to the City Information Services Department for computer and telephone support.

The Retirement Systems lease office space from the CFRS Realty Holding Corporation, a title holding company controlled jointly by the City of Fresno Employees and City of Fresno Fire and Police Retirement Systems. See note 13 for a description of this arrangement.

Notes to the Basic Financial Statements Continued

15 | Commitments and Contingencies

The Board, in accordance with its Asset Allocation Plan, has committed capital for investment in Private Debt/Private Credit, Private Real Estate and Infrastructure Funds. The following table details the outstanding capital commitments in these investments as of June 30, 2019 and 2018.

Investment Type	Unfunded Commitments	
	FY 2019	FY 2018
Private Real Estate Funds		
Artemis	\$ 8,113,900	\$ —
Brookfield	17,677,388	—
Oaktree Capital Mgt.	1,421,356	4,783,506
PIMCO BRAVO III	8,178,238	16,447,586
PCCP, LLC	5,955,090	8,050,992
Total	<u>\$ 41,345,972</u>	<u>\$ 29,282,084</u>
Private Debt/Private Credit		
Monroe Capital	\$ 15,879,820	\$ 30,839,225
Crescent Capital	18,059,551	24,296,667
PIMCO COF II	8,746,808	14,802,828
Total	<u>\$ 42,686,179</u>	<u>\$ 69,938,720</u>
Commingled Infrastructure		
JPM IIF	\$ —	\$ 27,412,644
Ullico UIF	—	27,412,644
Total	<u>\$ —</u>	<u>\$ 54,825,288</u>
Private Equity		
Pantheon	\$ 73,820,531	\$ —
Total	<u>\$ 73,820,531</u>	<u>\$ —</u>
Total Unfunded Commitments	<u>\$157,852,682</u>	<u>\$154,046,092</u>

16 | Date of Management Review

The date to which events occurring after June 30, 2019, have been evaluated for possible adjustments to the financial statements or disclosures is December 2, 2019, which is the date the financial statements were available to be issued.

Management did not identify any subsequent financial events that require disclosure.

Required Supplementary Information

Schedule of Changes in the Net Pension Liability

(Dollars in Thousands)

For Fiscal Years Ended June 30, 2013-2019

Change in Net Pension Liability	GASB 67 Basis*			
	Financial Reporting			
	2019	2018	2017	2016
Total Pension Liability				
Service cost	\$23,509	\$21,275	\$18,885	\$18,687
Interest	86,110	82,833	79,266	79,762
Change of benefit terms	—	—	—	—
Differences between expected and actual experience	(446)	(4,164)	5,263	(24,394)
Changes of assumptions	35,773	2,939	—	9,612
Benefit Payments (including refunds, excluding PRSB)	(62,144)	(57,666)	(55,550)	(52,528)
Net Change in Total Pension Liability	\$82,802	\$45,217	\$47,864	\$31,139
Total Pension Liability - Beginning	\$1,195,294	\$1,150,077	\$1,102,213	\$1,071,074
Total Pension Liability - Ending (a)*	\$1,278,096	\$1,195,294	\$1,150,077	\$1,102,213
Plan Fiduciary Net Position				
Employee Contributions	\$10,515	\$10,330	\$10,181	\$9,098
Employer Contributions	14,627	14,609	15,205	13,060
Net Investment Income	69,389	108,916	162,373	5,089
Actual Benefit Payments (including Refunds, PRSB)	(62,144)	(57,666)	(55,550)	(52,529)
Administrative & Professional Expense	(1,663)	(1,619)	(1,387)	(1,346)
Net Change in Plan Fiduciary Net Position	\$30,724	\$74,570	\$130,822	\$(26,628)
Plan Fiduciary Net Position - Beginning	\$1,348,691	\$1,274,121	\$1,143,299	\$1,169,927
Plan Fiduciary Net Position - Ending (b)	\$1,379,415	\$1,348,691	\$1,274,121	\$1,143,299
System Net Pension Liability (Surplus) - Ending (a)-(b)	\$(101,319)	\$(153,397)	\$(124,044)	\$(41,086)
Plan fiduciary net position as a percentage of total pension liability	107.93%	112.83%	110.79%	103.73%
Covered Payroll	138,396	128,461	119,007	108,541
Net Pension Liability as a percentage of covered payroll	(73.21)%	(119.41)%	(104.23)%	(37.85)%

* In accordance with provisions of GASB 67, the data on the next two pages show Total Pension Liability for the reporting periods from June 30, 2013 through June 30, 2019. Ten years of data in this format is not yet available, the System will provide 10 years in the format required by GASB 67 as information becomes available.

Note to Schedule:

Changes of Assumptions: The calculations above reflect various assumption changes, including the modification of the Board's assumed rate of return to 7.00 percent for use in preparing the June 30, 2019 annual actuarial valuation and other assumption changes based on the triennial experience study for the period from July 1, 2015 through June 30, 2018. The calculations above also reflect the assumed rate of return of 7.25 percent for use in preparing the June 30, 2016, 2017 and 2018 annual actuarial valuation and other assumption changes based on the triennial experience study for the period from July 1, 2012 through June 30, 2015 and 7.50 percent for use in preparing the June 30, 2013, 2014 and 2015 annual actuarial valuation and other assumption changes based on the triennial experience study for the period from July 1, 2009 through June 30, 2012 which included changes in assumptions for retirement from active employment, pre-retirement mortality, healthy life post-retirement mortality, disabled life post-retirement mortality, vested termination, disability DROP election, percentage of members married, spouse age difference and salary increases.

Required Supplementary Information Continued

Schedule of Changes in the Net Pension Liability Continued

(Dollars in Thousands)

For Fiscal Years Ended June 30, 2013-2019

Change in Net Pension Liability	GASB 67 Basis*		
	Financial Reporting		
	2015	2014	2013
Total Pension Liability			
Service cost	\$18,476	\$19,342	\$18,903
Interest	78,212	77,009	76,279
Change of benefit terms	—	—	—
Differences between expected and actual experience	(24,691)	(29,889)	(11,346)
Changes of assumptions	—	—	36,845
Benefit Payments (including refunds, excluding PRSB)	(50,546)	(48,580)	(47,040)
Net Change in Total Pension Liability	\$21,451	\$17,882	\$73,641
Total Pension Liability - Beginning	\$1,049,623	\$1,031,741	\$958,100
Total Pension Liability - Ending (a)*	\$1,071,074	\$1,049,623	\$1,031,741
Plan Fiduciary Net Position			
Employee Contributions	\$8,750	\$7,946	\$7,995
Employer Contributions	12,327	11,440	13,330
Net Investment Income	33,309	172,773	121,116
Actual Benefit Payments (including Refunds, PRSB)	(50,546)	(48,581)	(47,040)
Administrative & Professional Expense	(1,071)	(1,086)	(1,138)
Net Change in Plan Fiduciary Net Position	\$2,769	\$142,492	\$94,263
Plan Fiduciary Net Position - Beginning	\$1,167,158	\$1,024,666	\$930,403
Plan Fiduciary Net Position - Ending (b)	\$1,169,927	\$1,167,158	\$1,024,666
System Net Pension Liability (Surplus) - Ending (a)-(b)	\$(98,853)	\$(117,535)	\$7,075
Plan fiduciary net position as a percentage of			
total pension liability	109.23%	111.20%	99.31%
Covered Payroll	105,820	103,597	105,509
Net Pension Liability as a percentage of covered payroll	(93.42)%	(113.45)%	6.71%

Required Supplementary Information Continued

Schedule of Employer Contributions Last Ten Fiscal Years

(Dollars in Thousands)

Fiscal Year Ended June 30	Actuarially Determined Contribution (ADC)	Contributions in Relation to the ADC	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2019	\$14,627	\$14,627	\$—	\$138,396	10.57%
2018	14,609	14,609	—	128,461	11.37%
2017	15,205	15,205	—	119,007	12.78%
2016	13,060	13,060	—	108,541	12.03%
2015	12,327	12,327	—	105,820	11.65%
2014	11,440	11,440	—	103,597	11.04%
2013	13,330	13,330	—	105,509	12.63%
2012	11,374	11,374	—	110,492	10.29%
2011	8,215	8,215	—	119,260	6.89%
2010	3,267	3,267	—	129,258	2.53%

Schedule of Investment Returns Last Ten Fiscal Years

Fiscal Year Ending June 30	Annual Money-Weighted Rate of Return Gross of Investment Expenses	Annual Money-Weighted Rate of Return Net of Investment Expense
2019	5.54%	5.20%
2018	8.93%	8.57%
2017	14.73%	14.35%
2016	0.82%	0.53%
2015	3.32%	2.93%
2014	17.61%	17.16%
2013	13.65%	13.20%
2012	(0.20%)	(0.57%)
2011	24.42%	23.88%
2010	15.13%	14.55%

The Schedule of Investment Returns above shows the annual money-weighted rate of return on the assets of the System, both gross and net of investment expense for ten fiscal years (2010 – 2019). The money-weighted rate of return expresses investment performance adjusted for timing of cash flows and the changing amounts actually invested. These returns differ slightly from the time-weighted rate of returns calculated and reported by the System's custodian, Northern Trust (shown in the Transmittal Letter on page i and within the Investment Section beginning on page 60) and as independently reported by the System's investment consulting firm, NEPC, LLC (shown in the Investment Section on pages 67-68). The System's custodian and investment consulting firm must use time-weighted returns as opposed to money-weighted returns in order to meet Global Investment Performance Standards for the purposes of effectively evaluating and reporting the performance of the System's investment managers.

The time-weighted return method is a measure of the compound rate of return of a portfolio over a stated period of time. It requires a set of sub-period returns to be calculated whenever there is an external cash flow, such as a deposit or withdrawal from the portfolio. In essence, it calculates the geometric total and mean return as opposed to the arithmetic total and mean return. This method does not include or have any distortions created when money is deposited or withdrawn from a portfolio. This is in contrast to the money-weighted returns.

Notes to the Required Supplementary Information

For Fiscal Years Ended June 30, 2019 and 2018

Actuarial Assumptions

The Segal Company, the System's actuary, performed the most recent annual actuarial valuation as of June 30, 2019, which computes the contribution requirements (employee and employer contributions rates for fiscal year 2021), and determines the funding status of the plan. The fiscal year 2019 contribution rates and assumptions were based on the actuarial valuation as of June 30, 2017, these assumptions are detailed below.

Valuation Date:	Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported.
Actuarial Cost Method:	Entry Age Actuarial Cost Method
Amortization Method:	Level percent of payroll for total Unfunded or Prefunded Actuarial Accrued Liability (UAAL or PAAL)
Remaining Amortization Period:	Effective with the June 30, 2013 valuation, any new UAAL established on each subsequent valuation as a result of actuarial gains or losses or plan amendments are amortized over separate 15-year declining periods (with the exception of temporary retirement incentives which are amortized over its own declining period of up to 5 years). Any new UAAL established as a result of changes in actuarial assumptions or methods at each valuation is amortized over separate 25-year declining periods. Any actuarial surplus (when the funded ratio is over 110%) will be amortized over a non-declining 25-year period.
Asset Valuation Method:	Market value of assets less unrecognized returns from each of the last five years. Unrecognized returns are equal to the difference between the actual market return and the expected return on a market value basis and are recognized over a five-year period. The Actuarial Value of Assets is reduced by the value of the non-valuation reserves.

Notes to the Required Supplementary Information Continued

Actuarial Assumptions Continued:

Investment Rate of Return:	7.25%
Inflation Rate:	3.00%
Real Across-the-Board Salary Increase:	0.50%
Projected Salary Increases:	Ranges from 3.75 percent to 11.50 percent based on years of service. Includes inflation at 2.75% plus real across-the-board salary increase of 0.50% plus merit and promotion increases.
Cost of Living Adjustments:	3.00 percent of retirement income
Other Assumptions:	See June 30, 2017 funding valuation report and Exhibit III for the service retirement rates after they have been adjusted to treat DROP participation as service retirement.
Post-Retirement Mortality Rates:	For healthy members, Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional scale MP-2015, set forward one year; set forward four years for disabled members; For beneficiaries, set forward one year, weighted 65% male and 35% female.

Other Supplementary Information

Schedule of Administrative Expenses

For Fiscal Years Ended June 30, 2019 And 2018

	2019	2018
Personnel Services		
Staff Salaries	\$ 583,469	\$ 572,774
Fringe Benefits	151,130	148,484
Total Personnel Services	\$ 734,599	\$ 721,258
Professional Services		
Actuarial	\$ 94,595	\$ 77,771
Legal Counsel	107,847	82,000
Information Systems Services	153,013	154,210
Specialized Services	54,776	86,877
Total Professional Services	\$ 410,231	\$ 400,858
Communication		
Telephone	\$ 5,000	\$ 6,503
Postage	938	767
Total Communication	\$ 5,938	\$ 7,270
Rentals		
Office Rent	\$ 81,540	\$ 104,782
Common Area Maintenance (CAM) Charges	54,375	43,155
Total Rentals	\$ 135,915	\$ 147,937
Other		
Education and Conference	\$ 89,040	\$ 66,712
Membership & Dues	5,808	6,428
Subscriptions & Publications	1,940	222
Office Supplies	6,457	5,826
Computer Equipment	4,782	6,129
Equipment Lease	18,740	5,575
Insurance	37,808	40,486
Miscellaneous	8,610	5,237
Reimbursement to City for Inter-Dept Services	63,777	65,804
Depreciation	139,713	139,025
Total Other	\$ 376,675	\$ 341,444
Total Administrative Expenses	\$ 1,663,358	\$ 1,618,767

Other Supplementary Information Continued

Schedule of Investment Management Expenses

For Fiscal Years Ended June 30, 2019 and 2018

	2019	2018
Investment Manager Fees		
Equity		
Domestic	\$ 890,369	\$ 804,455
International	1,481,689	1,638,054
Fixed Income	758,945	794,454
Alternatives	3,184,474	1,646,827
Real Estate	4,084,232	2,368,276
Total Investment Manager Fees	10,399,709	7,252,066
Other Investment Expenses		
Foreign Income Taxes & Related Services, Charges	690,947	842,167
Custodial Services	150,903	147,962
Investment Consultant	159,441	127,975
Investment Legal Counsel	65,741	35,360
Analytical Database Service	44,015	46,517
Total Other Investment Expenses	1,111,047	1,199,981
Total Fees & Other Investment Expenses	11,510,756	8,452,047
Securities Lending Expenses		
Agent Fees	1,938,515	1,281,351
Total Securities Lending Expenses	1,938,515	1,281,351
Total Investment Expenses	\$ 13,449,271	\$ 9,733,398

Schedule of Payments To Consultants

For Fiscal Years Ended June 30, 2019 and 2018

	2019	2018
Actuarial Services	\$ 94,595	\$ 77,771
Audit Services	21,392	19,403
City Information Services	153,013	154,210
Legal Services	107,847	82,000
Medical Consultant	20,648	23,200
Miscellaneous	12,736	44,274
Total Payments to Consultants	\$ 410,231	\$ 400,858

We promise to carry out our Mission through a competent, professional, impartial and open decision-making process. In providing benefits and services, all persons will be treated fairly, with courtesy and respect.

INVESTMENT

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Investment Report from the Retirement Administrator

For the Years June 30, 2019 and 2018

Analysis of Our Portfolio in Fiscal Year 2019

The Board's responsibility, as a long-term investor, is to manage in and through the global financial market environments as they unfold. Our Board understands the System's portfolio requires a sound and stable strategy for meeting investment goals over the long-term with appropriate risk levels and controls.

In spite of increased volatility in the global economy during the most recent fiscal year, and the longest bull market in modern history, and while outperforming its actual weighted benchmark by 0.50% the System generated a gross return of 5.60% as reported by its custodian, Northern Trust. The System underperformed its assumed rate of return by 1.65% and underperformed its policy weighted benchmark by 0.26% during Fiscal Year 2019. The System has outperformed its assumed rate of return for most intermediate and long-term periods, excluding the five-year and 20-year periods as of June 30, 2019.

During this year, U.S. Gross Domestic Product (GDP) achieved a consistent and modest growth trend; while trade wars with traditional allies heightened tensions between countries; the Federal Reserve started further unwinding of its balance sheet increasing the discount rate during Fiscal Year 2019. The European Central Bank (ECB) considered tapering their quantitative easing (QE) process and Brexit continued to weigh on investors' minds.

The System's public market (equity and fixed income portfolios) remain over-allocated by more than 7% while capital drawdowns in Value Add Real Estate and Private Debt have accelerated. Public equity continued to be the dominant driver of total portfolio performance but also the

largest risk element. Meanwhile, recently completed investment manager searches for Value Add Real Estate, Private Equity, and Midstream Energy continue to diversify the System's assets.

Domestic equity, led by Small Cap Growth, International Developed equities, and REITS produced the largest relative return gains for the portfolio while Emerging Market equities and High Yield fixed income experienced the largest relative under performance. In spite of those setbacks, the portfolio reached a new high water mark in terms of market value.

Investment Performance

The table below highlights the gross and net of fees performance of each major asset class provided by the System's custodian, Northern Trust, for Fiscal Year 2019. These returns may differ slightly from the performance reported by the System's investment consultant due to rounding methodology:

Asset Class	Gross Return	Net Return
Total Fund	5.60%	5.26%
Domestic Equity	6.35%	6.07%
International Equity	2.38%	2.00%
Fixed Income	7.90%	7.67%
Real Estate	8.84%	8.14%
Alternatives	6.12%	6.12%
Fiscal Year End Fund Value	\$1,379,415,130	

Investment Report from the Retirement Administrator Continued

The System’s 15 and 25-year long-term gross returns of 7.28 percent and 8.66 percent, respectively, illustrate the System’s ability to achieve our long-term objectives over extended periods. Meanwhile, the System remains highly funded and well positioned to serve our members and retirees.

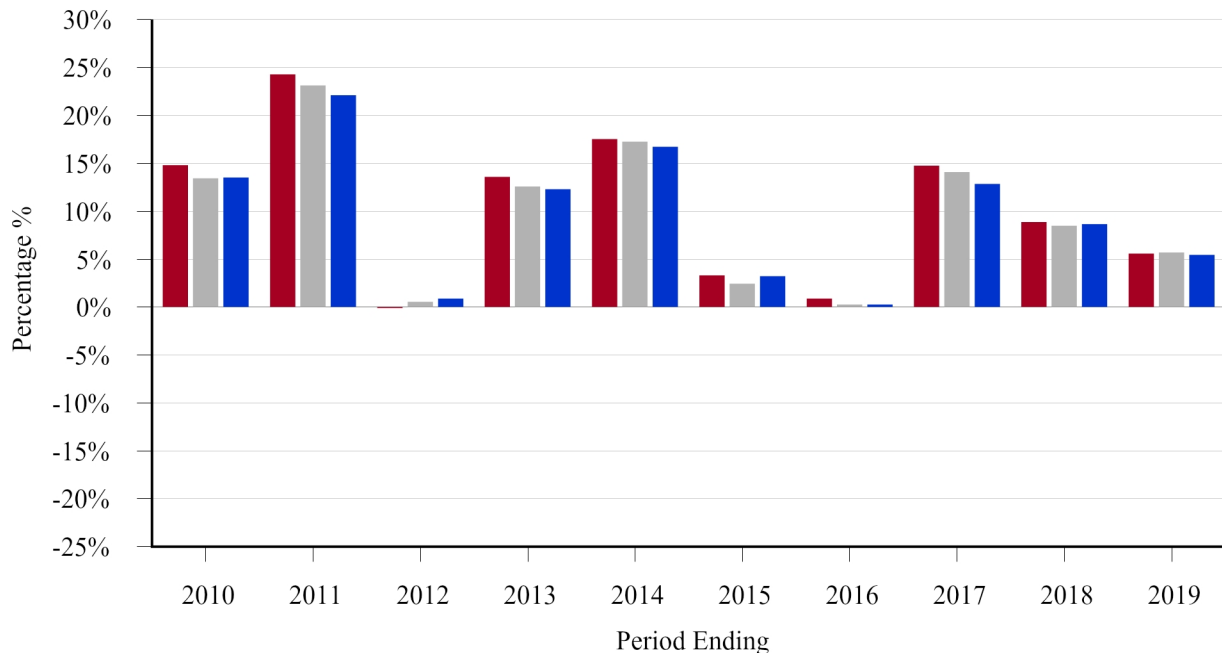
The principal goals of the System’s Board in managing the System’s Investment Portfolio are the following:

- 1) To fund the System’s benefit payments;
- 2) To assume a prudent risk posture to minimize the cost of meeting the obligations of the System;
- 3) To achieve rates of return above inflation;
- 4) To comply with legal statutes and regulations; and
- 5) To maintain a fully funded pension status.

These are the fundamental goals as stated in the Board’s Investment Objectives and Policy Statement. The Board has strong controls in place to manage the overall investment objectives of the System’s assets and hold the fiduciary responsibility for the System.

Presented in the graph below are the System’s Total Fund returns versus NEPC, LLC’s InvestorForce (IF) Public Funds Universe (Gross of Fee), for plans with \$1 billion or more in assets:

**City of Fresno Retirement Systems
Fiscal Year Total Fund and Median Fund Annual Returns**



■ Fresno Total Fund (Gross of Fees)
 ■ Weighted Benchmark Indexes
■ IF Median Public Pension Fund

Investment Report from the Retirement Administrator Continued

Summary of Portfolio Results

The fiscal year ended June 30, 2019, marked yet another extraordinarily volatile year which ended with a decline from its peak fiscal year performance for the System. The System experienced a total investment gain of 5.60 percent for the fiscal year ended June 30, 2019, under performing the System's actuarial interest rate assumption of 7.25 percent by 1.65 percent and under performing the System's policy benchmark (a weighted average of the fund's target allocation to the various asset classes and their respective benchmarks) return of 5.86 percent by 0.26 percent. The System's ten-year annualized returns averaged 10.10 percent, outperforming its policy benchmarks return of 9.48 percent for the period by 0.62 percent. Over the longer term, our investment results remain sound with annualized returns of 6.51 percent and 8.66 percent, respectively, over the past twenty and twenty-five years. After paying all benefits and expenses of the System, the year-end value of the System reached \$1.379 billion.

General Information

The System's investment assets are managed by external investment management firms. Professional investment consultants, along with staff, closely monitor the activity of these managers and assist the Board with the implementation of investment policies and long-term strategies. The System's goal is to fund benefit payments, while assuming a risk posture that is consistent with the Board's risk tolerance, protecting against loss of purchasing power by achieving rates of return above inflation, and to maintain a fully funded pension status.

Summary of General Investment Guidelines, Policies and Procedures

The Board, having sole and exclusive authority and sole and exclusive fiduciary responsibility for the investment and administration of the System and its assets, has adopted an

Investment Objectives and Policy Statement which reflects the Board's policies for management of the System's investments. The Board reserves the right to amend, supplement or rescind this statement at any time. This Investment Objectives and Policy Statement establishes the investment program goals and policies, asset allocation policies, performance objectives, investment management policies and risk controls. It also defines the principal duties of the Board, staff, investment managers, master custodian and consultants.

The System's primary investment objective is to take prudent risk, as necessary, to minimize the cost of meeting the obligations of the System. The purpose of the Investment Objectives and Policy Statement is to express, in operational terms: Return expectations, prudence with respect to risk and compliance with statutes and regulations.

An integral part of the overall investment policy is the strategic asset allocation policy. This allocation mix is designed to provide an optimal mix of asset categories with return expectations that reflect expected risk. This emphasizes a maximum diversification of the portfolio that protects the System from declines that a particular asset class may experience in a given period. Both traditional assets (cash, bonds, domestic, international developed and emerging market stocks, fixed income and mortgages) and alternative assets (real estate, infrastructure, midstream energy (MLP's), private equity, and private debt) are included in the mix.

Total portfolio return, over the long-term, is directed toward achieving and maintaining a fully funded status for the System. Prudent risk taking is warranted within the context of overall portfolio diversification to meet this objective. All activities will be conducted so as to serve the best interests of the System's members and beneficiaries.

Investment Report from the Retirement Administrator Continued

Summary of Proxy Voting Guidelines and Procedures

In recognition of its duty to manage retirement plan assets in the best interest of the plan participants, the Board has established proxy voting guidelines and procedures which are intended to assist in the faithful discharge of the Board's duty to vote proxies on behalf of plan participants. These guidelines consist of preferences with respect to specific, recurring proxy-voting issues followed by a general statement of voting policies. The System will at all times strive to cast proxy votes so as to advance the overall good of the System.

The Board incorporates International equity proxy voting guidelines for share-blocking markets into its Proxy Voting policy. Share-blocking markets are markets of countries outside the U.S. and Canada, which restrict trade activity by shareholders who vote proxies. For portfolio managers managing assets in these international developed and emerging market countries, the requirement to vote proxies may prevent the full exercise of their fiduciary duty to manage the portfolio in the best interest of the System. Therefore, under these circumstances, the portfolio manager is granted the authority to choose whether or not to vote proxies in share-blocking markets based upon the manager's determination of what is in the best interest of the System.

Specific Investment Results by Asset Classification

As of June 30, 2019, the System's portfolio was slightly over-weight in total equities, with 52.8 percent in total equities versus the target of 52.0 percent. Domestic equities were slightly under-weight with 21.0 percent versus the target of 25.0 percent, and international equity with 23.4 percent developed and 8.4 percent emerging markets was slightly over-weight total international equity with 31.8 percent versus the target of 27.0 percent. Fixed income with 21.3 percent was 6.3 percent over-weight its target of 15.0 percent and real estate at 15.8 percent was 0.8 percent over-weight its target of 15.0 percent. Alternative investments represented 10.1 percent of the System's portfolio, which is 7.9 percent under-weight of its target of 18.0 percent.

Investment Report from the Retirement Administrator Continued

The investments were further diversified into the following asset classes and target percentages:

Asset Classification	Actual	Target
Domestic Equities:		
Large-Cap	12.7%	17.0%
Small-Cap	8.3%	8.0%
International Equities:		
Developed Markets	23.4%	20.0%
Emerging Markets	8.4%	7.0%
Fixed Income:		
Domestic Fixed Income	15.4%	10.0%
High Yield Fixed Income	5.9%	5.0%
Real Estate:		
Core Real Estate	8.5%	10.0%
Value Add Real Estate/REITs	7.3%	5.0%
Alternatives		
Infrastructure	4.0%	2.0%
Midstream Energy (MLP's)	—	5.0%
Private Equity	0.6%	3.0%
Private Debt	5.5%	8.0%
Short-Term Investments	0.0%	0.0%
Total	100.0%	100.0%

This asset class diversification along with portfolio investment style diversification is all part of the Retirement Board's Investment Risk Management Program. The investment returns presented herein are based on a time-weighted rate of return methodology based upon market values. As Fiscal Year 2019 ended, historical alliances unraveled, geo-political tensions increased, and the market flashed signals of uncertainty. There were several months where large drawdowns occurred which had a negative impact to the portfolio were coupled with v-shaped recoveries each time.

Respectfully submitted,

Robert Theller

Robert T. Theller, Esq.
Retirement Administrator

December 2, 2019

Investment Consultant's Report



DON STRACKE
SENIOR CONSULTANT

October 29, 2019

City of Fresno Retirement Systems
2828 Fresno Street Suite 201
Fresno, California 93721

Dear Board Members,

The overall objective of the City of Fresno Retirement Systems (CFRS) is to ensure continued access to retirement, disability and survivor benefits for current and future CFRS participants. To ensure a solid foundation for the future of the Retirement Systems, CFRS' Boards carefully plan and implement an investment program designed to produce superior long-term investment returns, while prudently managing the risk in the portfolio. Investment policy and asset allocation are reviewed and revised by the CFRS Retirement Boards, at least annually, to reflect the Systems' actuarial assumptions, accrued liabilities, and economic and investment outlook. The following is a report on the performance of the Fund for the fiscal year ending June 30, 2019 with background on the underlying market environment.

Fiscal Year 2019 Market Review

The U.S. economic expansion entered its tenth year, setting a record for duration, although total cumulative GDP growth trails other recoveries. The Federal Reserve Bank initially maintained its path of methodically normalizing monetary policy through increasing interest rates, however the Fed shifted its stance on monetary policy in early 2019 signaling potential interest rate cuts in the near future. US market volatility returned in late 2018 in response to concerns over the Fed's pace of interest rate increases, slowing global economic growth, and the U.S. – China trade tensions. Many of these concerns eased in the first half of 2019 and volatility dissipated through the end of the fiscal year. U.S. stocks, as a result, posted their tenth consecutive year of positive returns and outperformed international equities. Global capital markets continued to be largely driven by accommodative Central Bank policy from both the European Central Bank and Bank of Japan. Despite this, volatility increased in global markets in the year ending June 30, 2019 as concerns of slowing economic growth, historically low and broadly negative real interest rates and fears over U.S. trade policy caused uncertainty to impact investor sentiment. Despite these risks, U.S. equities posted a robust 10.4% return as measured by the S&P 500 Index. International developed-markets equities (1.1% for the year) performed positively but lagged domestic equities by 9.3%. Underperformance in international developed-markets was driven by uncertainty stemming from slowing economic growth and U.S. trade policy. Emerging markets equities underperformed U.S. and outperformed developed-international equities as markets reacted to U.S. Dollar strength and negative sentiment associated with the trade tensions between the U.S. and China. Driven by declining interest rates, U.S. high quality fixed income investments generated a positive return for the year, returning 7.9% as measured by the Bloomberg Barclays U.S. Aggregate Bond Index.

The Systems returned 5.6%, gross of fees, for the fiscal year ending June 30, 2019. By comparison, the median public fund in the comparative universe returned 5.4% for the period¹. The Systems' allocation to public equities and real estate are significantly higher than many of its peers, and the US-equity exposure and Real Estate exposure were positive contributors to performance. Real Estate was the primary contributor to absolute performance, returning 8.9% gross of fees.

¹ As of June 30, 2019, the Investment Metrics Public Funds Greater than \$1 Billion Universe was comprised of 88 total funds with approximately \$859 billion in assets.

900 Veterans Blvd. | Ste. 340 | Redwood City, CA 94063-1741 | TEL: 650.364.7000 | www.nepc.com
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Investment Consultant's Report Continued



For the five-year period ending June 30, 2019, the Systems returned 6.6% gross of fees per annum. As you can see in the chart below, this was an above average return but with a higher level of volatility than the average public fund.

Data as of 6/30/2019	1 Yr(%)	3 Yrs(%)	5 Yrs(%)	10 Yrs(%)	15 Yrs(%)
Systems' Total Return (Gross of Fees)	5.6	9.7	6.6	10.1	7.3
Systems' Total Return (Net of Fees)	5.3	9.3	6.2	9.7	6.9
Policy Index	5.7	9.4	6.1	9.5	7.1

**Investment Metrics Public Funds Greater than \$1 Billion Universe
Risk-Return Comparison (Gross of Fees)**



NEPC provides the Systems with quarterly economic and investment market updates, performance reviews, investment manager monitoring and selection advice, and related investment services for traditional and non-traditional asset classes. In preparing our performance analysis for the Systems, we rely on the accuracy of financial data provided by the Systems' custodian bank and investment managers. CFRS's custodian, The Northern Trust Company, independently prepared the underlying performance data used in this report. The Systems' goals are measured against stated policy objectives, appropriate benchmarks and comparative universes over multiple time periods. This review process allows the Boards to evaluate whether established goals are being achieved on an absolute, relative and risk-adjusted basis.

Sincerely, 
Don Stracke

Investment Results

	Market Value (\$)	% of Portfolio	Gross of Fees Ending June 30, 2019			
			1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund	3,015,796,207	100.00	5.59	9.66	6.57	10.10
<i>Policy Index</i>			5.69	9.36	6.08	9.55
<i>Allocation Index</i>			5.07	8.76	5.70	9.53
<i>InvMetrics Public DB > \$1B Gross Median</i>			5.43	8.91	5.78	9.04
Total Equity Composite	1,592,003,050	52.79	4.31	12.41	7.01	11.56
<i>MSCI ACWI</i>			5.74	11.62	6.16	10.15
<i>InvMetrics Public DB Gbl Eq Gross Median</i>			6.54	11.97	6.48	6.90
Domestic Equity Composite	632,347,094	20.97	6.35	13.82	9.94	14.86
<i>Domestic Equity Index</i>			5.31	13.41	9.65	14.35
<i>InvMetrics Public DB US Eq Gross Median</i>			8.14	13.66	9.77	14.50
Large Cap Equity Composite	382,016,216	12.67	10.14	14.32	10.52	15.00
<i>Large Cap Equity Index</i>			10.02	14.10	10.66	14.67
<i>eV US Large Cap Equity Gross Median</i>			9.03	13.50	9.86	14.41
Small Cap Equity Composite	250,330,878	8.30	0.27	13.75	9.03	14.84
<i>Russell 2000</i>			-3.31	12.30	7.06	13.45
<i>eV US Small Cap Equity Gross Median</i>			-2.21	12.12	7.59	14.68
International Equity Composite	959,655,956	31.82	2.38	11.17	4.22	8.37
<i>International Equity Index</i>			1.73	9.63	2.57	6.95
<i>InvMetrics Public DB ex-US Eq Gross Median</i>			0.32	8.99	2.76	7.47
International Developed Equity Composite	854,819,478	28.34	2.84	11.20	4.30	8.72
<i>Developed Equity Index</i>			1.74	9.70	2.65	7.13
<i>InvMetrics Public DB Dev Mkt ex-US Eq Gross Median</i>			0.47	8.84	3.04	7.50
ACWI ex US Equity Composite	630,266,370	20.90	3.03	11.70	4.47	8.9
<i>MSCI ACWI ex USA Gross</i>			1.80	9.91	2.65	7.03
<i>eV ACWI ex-US All Cap Equity Gross Median</i>			0.45	10.02	3.87	9.23
EAFE Equity Composite	224,553,108	7.45	1.23	9.48	3.62	8.50
<i>MSCI EAFE Gross</i>			1.60	9.65	2.74	7.40
<i>eV All EAFE Equity Gross Median</i>			-0.68	9.27	3.59	8.67
International Emerging Markets Equity Composite	104,836,475	3.48	1.05	11.88	4.06	6.19
<i>MSCI Emerging Markets Gross</i>			1.61	11.07	2.87	6.17
<i>InvMetrics Public DB Emg Mkt Eq Gross Median</i>			2.34	9.21	2.35	5.48
Total Fixed Income Composite	644,675,106	21.38	7.91	5.05	4.07	6.07
<i>Fixed Income Index</i>			7.79	4.43	3.76	5.28
<i>BBgBarc US Aggregate TR</i>			7.87	2.31	2.95	3.90
<i>InvMetrics Public DB Total Fix Inc Gross Median</i>			7.04	3.01	3.03	4.92
Core Fixed Composite	476,573,525	15.80	8.04	3.89	3.68	4.95
<i>BBgBarc US Aggregate TR</i>			7.87	2.31	2.95	3.90
<i>InvMetrics Public DB US Fix Inc Gross Median</i>			6.87	2.30	2.66	4.23
High Yield Composite	168,101,581	5.57	7.46	7.30	4.86	9.72
<i>BBgBarc US High Yield TR</i>			7.48	7.52	4.70	9.24
<i>InvMetrics Public DB US Fix Inc Gross Median</i>			6.87	2.30	2.66	4.23
Alternatives	306,066,336	10.15	6.13	0.00	0.00	0.00
<i>Alternatives Index</i>			7.56	0.00	0.00	0.00
Private Credit	165,975,143	5.50	7.11	8.80	0.00	0.00
<i>Private Credit Index</i>			8.81	8.03	0.00	0.00
Infrastructure	122,129,787	4.05	0.00	0.00	0.00	0.00
<i>CPI + 4% (Unadjusted)</i>			5.71	6.12	5.50	5.80
Private Equity	17,961,406	0.60	0.00	0.00	0.00	0.00
Real Estate Composite	471,150,480	15.62	8.92	7.04	9.66	12.20
<i>Real Estate Index</i>			6.84	5.42	8.67	12.27
<i>InvMetrics Public DB Real Estate Pub+Priv Gross Median</i>			6.71	7.22	9.45	10.13
Private Real Estate Composite	334,468,904	11.09	6.36	7.72	9.50	9.94
<i>NCREIF ODCE</i>			6.41	7.57	9.75	9.88
Public Real Estate Composite	136,681,576	4.53	14.23	6.53	10.13	16.94
<i>Wilshire RESI</i>			10.47	4.30	8.16	15.84
<i>eV US REIT Gross Median</i>			12.17	5.31	8.69	16.20
Cash & Equivalents Composite	1,901,235	0.06	2.25	1.47	0.96	0.56
<i>91 Day T-Bills</i>			2.27	1.40	0.87	0.47

Calculations are prepared by NEPC, LLC using a time-weighted rate of return based on market values.

Investment Results

	Market Value (\$)	% of Portfolio	Net of Fees Ending June 30, 2019			
			1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund	3,015,796,207	100.00	5.26	9.31	6.21	9.68
<i>Policy Index</i>			5.69	9.36	6.08	9.55
<i>Allocation Index</i>			5.07	8.76	5.70	9.53
<i>InvMetrics Public DB > \$1B Net Median</i>			5.39	8.72	5.64	9.00
Total Equity Composite	1,592,003,050	52.79	3.98	12.07	6.67	11.14
<i>MSCI ACWI</i>			5.74	11.62	6.16	10.15
<i>InvMetrics Public DB Gbl Eq Net Median</i>			6.23	11.20	6.71	7.54
Domestic Equity Composite	632,347,094	20.97	6.07	13.56	9.66	14.52
<i>Domestic Equity Index</i>			5.31	13.41	9.65	14.35
<i>InvMetrics Public DB US Eq Net Median</i>			8.17	13.53	9.66	14.20
Large Cap Equity Composite	382,016,216	12.67	10.13	14.30	10.46	14.88
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<i>eV US Large Cap Equity Net Median</i>			8.25	12.70	9.14	13.77
Small Cap Equity Composite	250,330,878	8.30	-0.46	12.91	8.21	13.96
<i>Russell 2000</i>			-3.31	12.30	7.06	13.45
<i>eV US Small Cap Equity Net Median</i>			-2.70	11.33	6.76	13.74
International Equity Composite	959,655,956	31.82	2.00	10.76	3.82	7.87
<i>International Equity Index</i>			1.73	9.63	2.57	6.95
<i>InvMetrics Public DB ex-US Eq Net Median</i>			0.31	9.02	2.54	7.22
International Developed Equity Composite	854,819,478	28.34	2.51	10.84	3.97	8.30
<i>Developed Equity Index</i>			1.74	9.70	2.65	7.13
<i>InvMetrics Public DB Dev Mkt ex-US Eq Net Median</i>			0.00	8.58	2.14	6.69
ACWI ex US Equity Composite	630,266,370	20.90	2.78	11.42	4.21	8.55
<i>MSCI ACWI ex USA Gross</i>			1.80	9.91	2.65	7.03
<i>eV ACWI ex-US All Cap Equity Net Median</i>			-0.05	9.46	3.36	8.45
EAFE Equity Composite	224,553,108	7.45	0.74	8.95	3.11	7.95
<i>MSCI EAFE Gross</i>			1.60	9.65	2.74	7.40
<i>eV All EAFE Equity Net Median</i>			-1.81	8.68	3.11	8.09
International Emerging Markets Equity Composite	104,836,475	3.48	0.20	10.93	3.21	5.21
<i>MSCI Emerging Markets Gross</i>			1.61	11.07	2.87	6.17
<i>InvMetrics Public DB Emg Mkt Eq Net Median</i>			1.78	8.68	1.72	5.08
Total Fixed Income Composite	644,675,106	21.38	7.66	4.82	3.82	5.83
<i>Fixed Income Index</i>			7.79	4.43	3.76	5.28
<i>BBgBarc US Aggregate TR</i>			7.87	2.31	2.95	3.90
<i>InvMetrics Public DB Total Fix Inc Net Median</i>			6.79	3.14	2.76	4.70
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High Yield Composite	168,101,581	5.57	6.93	6.76	4.34	9.17
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<i>Private Credit Index</i>			8.81	8.03	0.00	0.00
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<i>CPI + 4% (Unadjusted)</i>			5.71	6.12	5.50	5.80
Private Equity	17,961,406	0.60	9.51	0.00	0.00	0.00
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Private Real Estate Composite	334,468,904	11.09	5.60	6.87	8.57	8.92
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Cash & Equivalents Composite	1,901,235	0.06	2.25	1.47	0.96	0.56
<i>91 Day T-Bills</i>			2.27	1.40	0.87	0.47

Calculations are prepared by NEPC, LLC using a time-weighted rate of return based on market values.

Target and Actual Asset Allocation

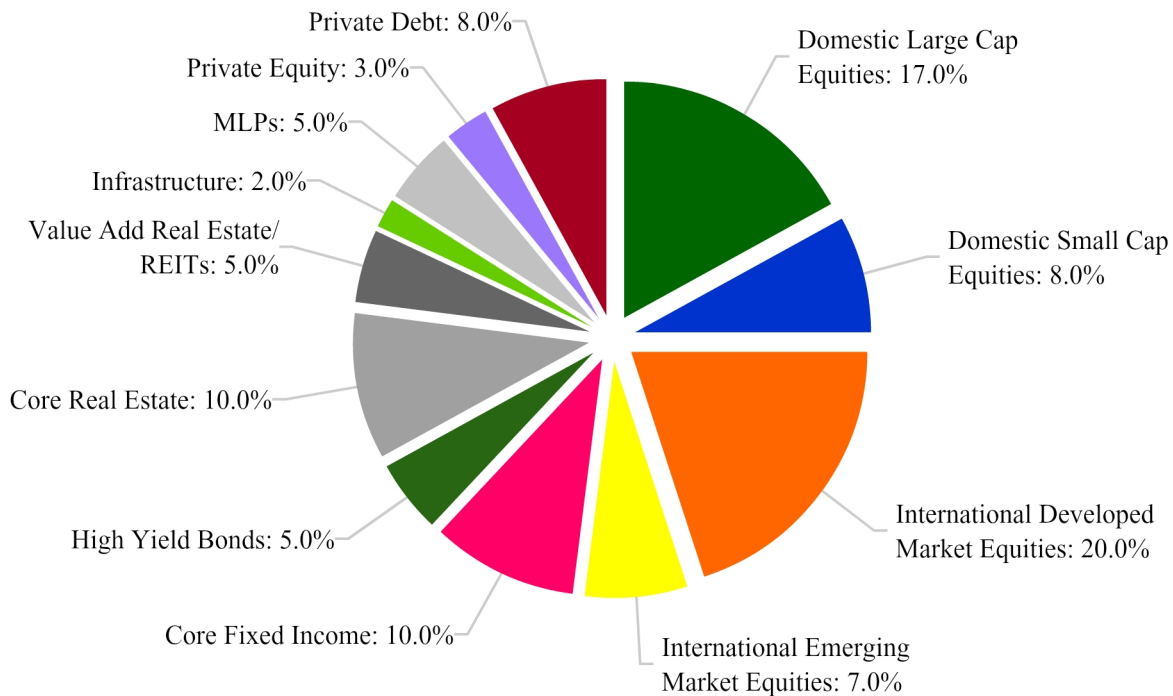
As of June 30, 2019

Asset Class	Current Target	Allocation Range	Actual
Domestic Large Cap Equities	17.0%	13.0% - 27.0%	12.7%
Domestic Small Cap Equities	8.0%	2.0% - 9.0%	8.3%
International Developed Market Equities	20.0%	13.0% - 27.0%	23.4%
International Emerging Market Equities	7.0%	0.0% - 10.0%	8.4%
Core Fixed Income	10.0%	4.0% - 19.0%	15.4%
High Yield Bonds*	5.0%	3.0% - 12.0%	5.9%
Core Real Estate	10.0%	5.0% - 20.0%	8.5%
Value Add Real Estate/REITs	5.0%	1.0% - 9.0%	7.3%
Infrastructure	2.0%	0.0% - 10.0%	4.0
Midstream Energy (MLPs)	5.0%	0.0% - 10.0%	—
Private Equity	3.0%	0.0% - 10.0%	0.6
Private Debt	8.0%	0.0% - 10.0%	5.5%
Short-Term Investments	0.0%	0%	0%

* 1% High Yield Bonds Managed Within Domestic Fixed Income

Target Asset Allocation*

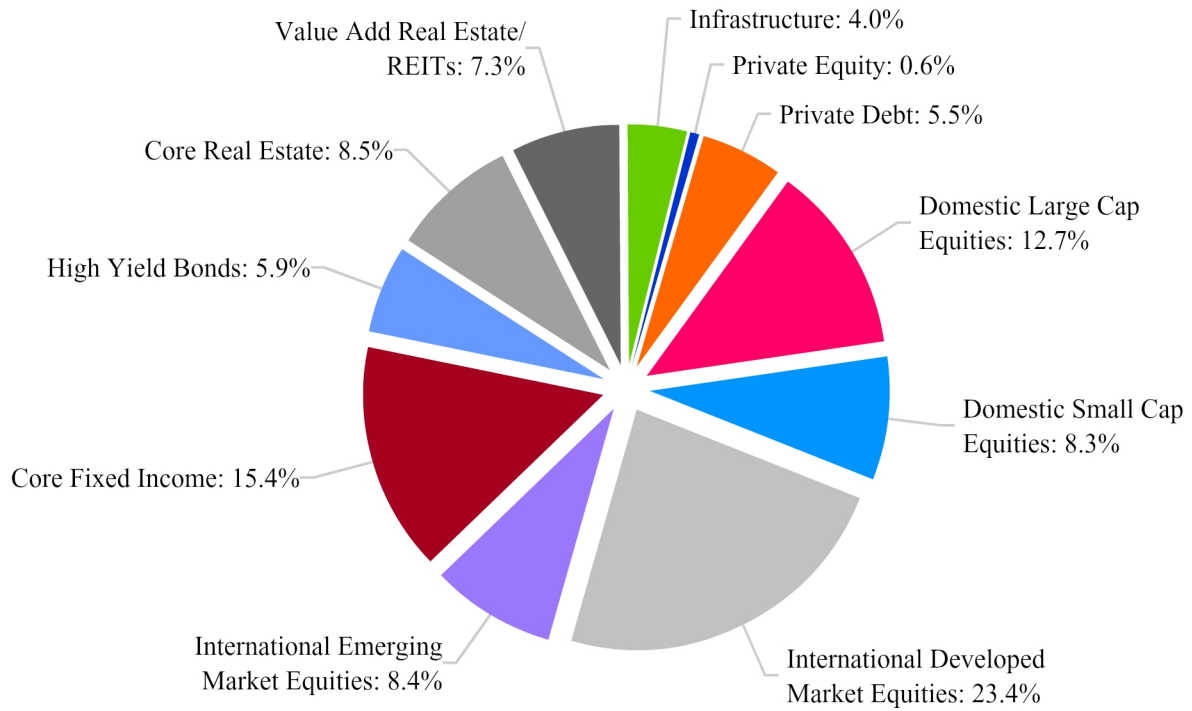
As of June 30, 2019



* Short-Term Investments is 0%.

Actual Asset Allocation*

As of June 30, 2019



* Short-Term Investments is 0%.

Largest Stock Holdings (by Market Value)

As of June 30, 2019

	Shares	Stock Holding	Market Value
1)	63,777	NESTLE SA CHF0.10(REGD)	\$ 6,610,519
2)	151,410	SAMSUNG ELECTRONICS CO KRW5000	6,163,139
3)	8,919	MERCADOLIBRE INC COM STK	5,456,383
4)	633,688	TAIWAN SEMICONDUCTOR MANUFACTURING TWD10	4,876,171
5)	28,141	ADR ALIBABA GROUP HOLDING LTD SPON ADS E	4,768,498
6)	435,791	AIA GROUP LIMITED NPV	4,699,575
7)	57,949	PROLOGIS INC COM	4,641,676
8)	67,914	RIO TINTO PLC ORD GBP0.10(REGD)	4,218,444
9)	8,311	EQUINIX INC COM PAR \$0.001	4,191,070
10)	30,289	SAP SE	4,165,390
Total Largest Stock Holdings			\$ 49,790,865

Largest Bond Holdings (by Market Value)

As of June 30, 2019

	Share/Par Value	Bond Holding	Coupon Rate	Maturity Date	Market Value
1)	5,519,145	UNITED STATES TREAS NTS 2.875% DUE	2.875%	15 May 2028	\$ 5,926,397
2)	4,493,682	FNMA POOL #MA3616 4.5% DUE 03-01-2049	4.500%	1 Mar 2049	4,704,382
3)	3,644,503	UNITED STATES TREAS NTS DTD 11/30/2018	2.875%	30 Nov 2025	3,870,718
4)	3,172,084	SLC STUDENT LN TR 2006-1 ASSET BACKED NT	2.570%	15 Mar 2055	2,993,556
5)	2,596,607	FNMA POOL #MA3307 4.5% DUE 03-01-2048	4.500%	1 Mar 2048	2,730,020
6)	2,610,375	US TREASURY N/B 2.375% 05-15-2029	2.375%	15 May 2029	2,697,557
7)	2,219,564	FEDERAL HOME LN MTG CORP POOL #Q55948	4.500%	1 May 2048	2,333,295
8)	2,379,861	SLC STUDENT LN TR SER 05-2 CL A4 ASSET	2.570%	15 Dec 2039	2,296,228
9)	2,236,814	UNITED STATES TREAS NTS 2.125% DUE	2.125%	30 Sep 2021	2,255,688
10)	2,245,925	UNITED STATES TREAS NTS US TREASURY N/B	1.875%	30 Apr 2022	2,254,960
Total Largest Bond Holdings					\$ 32,062,801

A complete list of portfolio holdings is available upon request.

Brokerage Commission Recapture

The System participates in a commission recapture program offered by Northern Trust Securities Inc. (NTSI). Investment Managers are instructed to seek best execution and to seek to minimize omission and market impact costs when trading securities. Consistent with the pursuit of best execution, equity managers participating in the Brokerage Commission Recapture Program are to give consideration to executing a portion of the trades for their account through brokerage firms identified by NTSI as eligible Broker Dealer firms. The System receives a rebate in the amount of 80 percent for domestic and 70 percent for international of the total commissions directed through the NTSI Network. For fiscal years ended June 30, 2019 and 2018, the net income from Brokerage Commission Recapture was \$13,773 and \$3,960 respectively. During these periods, the overall participating rate by the System's equity managers was 5.85 percent and 2.21 percent, respectively. The percentage of equity trading being executed through the program is generally at a low cost and has resulted over the years in a meaningful cost recapture. Program economics are tough in the lower commission environment and participation by the System's investment managers is voluntary.

Schedule of Commissions

For The Fiscal Year Ended June 30, 2019

Brokerage Firm	Total Commissions	Number of Shares	Commission Cost/Share
RBC CAPITAL MARKETS, LLC	\$ 10,876	6,047,235	\$ 0.0018
GOLDMAN, SACHS & CO.	9,716	10,899,557	0.0009
CITATION GROUP (THE)	8,574	208,623	0.0411
CREDIT SUISSE SECURITIES (USA) LLC	8,268	7,440,548	0.0011
NORTHERN TRUST SECURITIES, INC.	8,071	201,778	0.0400
CREDIT SUISSE SECURITIES(EUROPE)LTD	7,632	591,242	0.0129
MERRILL LYNCH INTERNATIONAL LIMITED	5,943	930,490	0.0064
STIFEL, NICOLAUS & COMPANY, INCORPORATE	5,826	243,727	0.0239
MIZUHO SECURITIES USA INC.	5,815	545,079	0.0107
CITIGROUP GLOBAL MARKETS INC.	5,742	7,447,161	0.0008
	\$ 76,463	34,555,440	\$ 0.0022
All Other Brokerage Firms	204,247	2,513,571,651	0.00008
TOTAL	\$ 280,710	2,548,127,091	\$ 0.0001

Investment Summary

For The Fiscal Year Ended June 30, 2019

	Investment Value	Percent of Fund	Investment Management Fees
Equity			
Domestic	\$ 389,901,484	28.9%	\$ 890,369
International Developed Market	248,931,712	18.4%	1,090,468
International Emerging Market	47,148,575	3.5%	391,221
Fixed Income	286,786,322	21.2%	758,945
Alternatives	141,222,173	10.5%	3,184,474
Real Estate	216,908,223	16.1%	4,084,232
Short-term Investments	20,222,981	1.4%	—
Total	\$ 1,351,121,470	100.0%	\$ 10,399,709

*Assets will be invested
and administered to
balance the need to
control risk with
superior performance.*

*We expect excellence
in all activities. We
will also be
accountable and act in
accordance with the
law.*

ACTUARIAL

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Actuarial Certification Letter



180 Howard Street Suite 1100 San Francisco, CA 94105-6147
T 415.263.8200 www.segalco.com

VIA E-MAIL

November 21, 2019

Board of Retirement
City of Fresno Employees Retirement System
2828 Fresno Street, Suite 201
Fresno, CA 93721-1327

**Re: City of Fresno Employees Retirement System
June 30, 2019 Actuarial Valuation**

Dear Members of the Board:

Segal Consulting (Segal) prepared the June 30, 2019 annual actuarial valuation of the City of Fresno Employees Retirement System. We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices and the System's funding policy that was last reviewed with the Board in 2012 and the amendment made to lengthen the period used to amortize the actuarial surplus in 2019. We have also reflected the new actuarial assumptions approved by the Board in 2019. It is our understanding that the assumptions and methods used for funding purposes meet the parameters set by Actuarial Standards of Practice (ASOPs).

As part of the June 30, 2019 actuarial valuation, Segal conducted an examination of all participant data for reasonableness. Summaries of the employee data used in performing the actuarial valuations over the past several years are provided in our valuation report. We did not audit the System's financial statements. For actuarial valuation purposes, Plan assets are valued at Actuarial Value. Under this method, the assets used to determine employer contribution rates take into account market value by recognizing the differences between the total actual investment return at market value and the expected investment return over a five-year period.

One of the general goals of an actuarial valuation is to establish contribution rates which, over time, will remain level as a percentage of payroll unless Plan benefit provisions are changed. Actuarial funding is based on the Entry Age Cost Method. Under this method, the employer contribution rate provides for current cost (normal cost) plus a level percentage of payroll to amortize any prefunded actuarial accrued liability or unfunded actuarial accrued liability (UAAL). The UAAL is amortized over different periods depending on the source.

Benefits, Compensation and HR Consulting. Member of The Segal Group. Offices throughout the United States and Canada

Actuarial Certification Letter Continued

Board of Retirement
 City of Fresno Employees Retirement System
 November 21, 2019
 Page 2

Effective with the June 30, 2013 valuation, any new UAAL established as a result of actuarial gains or losses or plan amendments are amortized over separate 15-year declining periods (with the exception of temporary retirement incentives which are amortized over a separate declining period of up to 5 years). Any new UAAL established as a result of changes in actuarial assumptions or methods at each valuation is amortized over separate 25-year declining periods. Any actuarial surplus (when the funded ratio is over 110%) will be amortized over a non-declining 30-year period. The progress being made towards meeting the funding objective through June 30, 2019 is illustrated in the Schedule of Funding Progress.

Notes number 1, 3 and 4 to the Basic Financial Statements and the Required Supplemental Information (RSI) included in the Financial Section were prepared by the System based on the results of the Governmental Accounting Standards Statement No. 67 (GAS 67) actuarial valuation as of June 30, 2019 prepared by Segal. For the Financial Section of the Comprehensive Annual Financial Report (CAFR), Segal provided the Schedule of Funding Progress, Schedule of Changes in Net Pension Liability and Schedule of Employer Contributions as shown in the RSI. A listing of the other supporting schedules Segal prepared for inclusion in the Actuarial and Statistical Sections of the System's CAFR is provided below. These schedules were prepared based on the results of the actuarial valuation as of June 30, 2019 for funding purposes.

1. Summary of Actuarial Assumptions and Methods;
2. Schedule of Funded Liabilities by Type; and
3. Actuarial Analysis of Financial Experience.

The valuation assumptions included in the Actuarial Section were adopted by the Retirement Board based on the Analysis of Actuarial Experience During the Period July 1, 2015 through June 30, 2018 and the Review of Economic Actuarial Assumptions for the June 30, 2019 Actuarial Valuation. It is our opinion that the assumptions used in the June 30, 2019 valuation produce results, which, in the aggregate, reflect the future experience of the Plan. Actuarial valuations are performed on an annual basis. An experience analysis is performed every three years. The next experience analysis is due to be performed as of June 30, 2021 and those assumptions will be used in the June 30, 2022 valuation. The Retirement System utilizes the actuarial surplus to provide contribution rate offsets and a Post Retirement Supplemental Benefit (PRSB) benefit. The impact of the application of the actuarial surplus on the future financial condition of the Plan has not been explicitly measured in the valuation.

In the June 30, 2019 valuation, the ratio of the valuation assets to actuarial accrued liabilities decreased from 114.8% to 111.9%. The aggregate employer rate has increased from 11.11%¹ of payroll to 13.03%² of payroll, while the aggregate member rate has increased from 7.58%³ of payroll to 9.04%⁴ of payroll.

¹ This rate has been decreased by 1.00% of payroll as a result of surplus allocation.

² This rate has been decreased by 0.39% of payroll as a result of surplus allocation.

³ This rate has been decreased by 1.20% of payroll as a result of surplus allocation.

⁴ This rate has been decreased by 0.47% of payroll as a result of surplus allocation.

5613990v2/09313.001

Actuarial Certification Letter Continued

Board of Retirement
City of Fresno Employees Retirement System
November 21, 2019
Page 3

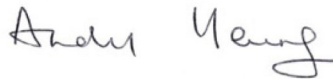
As a result of using the actuarial value of assets in the actuarial valuation, there were \$5.0 million in unrecognized deferred investment gains as of June 30, 2019, which represented 0.4% of the market value of assets. This is a deterioration from last year's amount of \$19.4 million in unrecognized deferred investment gains. If \$5.0 million in deferred investment gains were recognized immediately in the actuarial value of assets, the funded percentage would increase from 111.9% to 112.4%, the aggregate employer rate would decrease from 13.03% of payroll to 12.93% of payroll and the aggregate member rate would decrease from 9.04% of payroll to 8.93% of payroll.

The undersigned are Members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sincerely,



Paul Angelo, FSA, MAAA, FCA, EA
Senior Vice President and Actuary



Andy Yeung, ASA, MAAA, FCA, EA
Vice President and Actuary

JB/jl
Enclosures

5613990v2/09313.001

Summary of Actuarial Assumptions and Funding Method

These actuarial assumptions and methods based on June 30, 2019 data were adopted by the City of Fresno Employees Retirement System (the System) Retirement Board on November 26, 2019, and were effective for July 1, 2020.

Assumptions

Valuation Interest Rate:	7.00%
Inflation:	2.75%

Post-Retirement Mortality

(a) Service Retirement

Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional scale MP-2015, set forward one year.

Beneficiary: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional scale MP-2015, set forward one year, weighted 65% male and 35% female.

(b) Disability Retirement

Member: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional scale MP-2015, set forward four years.

Pre-Retirement Mortality

Based upon the Analysis of Actuarial Experience during the period July 1, 2015 through June 30, 2018.

Withdrawal Rates

Based upon the Analysis of Actuarial Experience during the period July 1, 2015 through June 30, 2018.

Disability Rates

Based upon the Analysis of Actuarial Experience during the period July 1, 2015 through June 30, 2018.

Service Retirement Rates

Based upon the Analysis of Actuarial Experience during the period July 1, 2015 through June 30, 2018.

Assets

Five-year smoothed recognition of realized and unrealized capital gains and losses greater or lesser than the actuarial assumed rate of return.

Funding Method

The System's liability is being funded on the Entry Age Normal Actuarial Cost method. Entry age is the age of the member on their hire date. Normal Cost and Actuarial Accrued Liability are compensation, as if the current benefit formulas have always been in effect (i.e., "replacement life").

The System's funding policy for determining Total Pension Liability (for funding purposes) uses a version of the Entry Age method whereby the Actuarial Accrued Liability is fully accrued when a member retires from employment after participating in DROP (Deferred Retirement Option Program). While for financial reporting purposes only, in accordance with GASB 67 provisions, for determining Total Pension Liability, the Actuarial Accrued Liability is fully accrued when a member either enters DROP or is expected to elect DROP (See page 27 of the Financial Section and pages 55 and 56 of the Required Supplementary Information on the different actuarial assumptions used for financial reporting versus funding progress).

Summary of Actuarial Assumptions and Funding Method Continued

DROP Rates

1st year eligible	30% participation
2nd year eligible	15% participation
3rd and 4th year eligible	10% participation
5th year eligible	15% participation
6th year eligible	10% participation
Thereafter	0% participation

Members are assumed to remain in DROP for six years.

Marriage Rates

It is assumed that 80% of all male members and 55% of all female members will be married at retirement.

Age of Spouse:

Male members are three years older than their spouses.

Female members are two years younger than their spouses.

Cost-of-Living Adjustment (COLA) Assumption

3.00% per year; Retiree COLA increases due to Consumer Price Index (CPI) are limited to maximum at 3.00% per year.

Ultimate Salary Scale

Salary Scale is made up of merit and longevity, and inflation components. The inflation component is equal to 2.75%; plus 0.50% real across-the-board salary increase. The merit and longevity component varies by service and is illustrated below:

Years Since Hire	Merit and Longevity Assumption
< 1 year	8.00%
1 year	5.75%
2 years	4.50%
3 years	3.75%
4 years	3.00%
5 years	1.85%
6 years	1.05%
7 years	0.70%
8 years	0.70%
9 or more years	0.25%

Probabilities of Separation Prior to Retirement

Rate (%)		
Mortality		
Age	Male	Female
25	0.04	0.01
30	0.04	0.02
35	0.04	0.03
40	0.05	0.03
45	0.07	0.05
50	0.13	0.09
55	0.22	0.15
60	0.40	0.21
65	0.68	0.30

All pre-retirement deaths are assumed to be non-service connected.

Rate (%)	
Disability	
Age	All Members
20	0.00
25	0.00
30	0.01
35	0.03
40	0.14
45	0.20
50	0.26
55	0.48
60	0.90
65	1.79

All disabilities are assumed to be non-service connected.

Rate (%)		Rate (%)	
Total Terminations (Less than 5 years of service)		Total Terminations (5 or more years of service)	
Years of Service	All Members	Age	All Members
0 – 1	12.00	20	7.50
1 – 2	10.00	25	7.20
2 – 3	5.00	30	7.00
3 – 4	5.00	35	6.40
4 – 5	5.00	40	4.80
		45	3.70
		50	0.00

85% of members are assumed to elect a withdrawal of contributions. No termination is assumed after a member is assumed to retire.

45% of members are assumed to elect a withdrawal of contributions. The remaining members are assumed to elect a deferred vested benefit. No termination is assumed after a member is assumed to retire.

Schedule of Active Member Valuation Data

Valuation Date	Active/DROP	Number	Annual Payroll	Annual Average Pay	% Increase (Decrease) in Average Pay
June 30, 2019	Active Members	1,890	\$ 122,353,908	\$ 64,738	4.9%
	DROP Participants	338	23,103,904	68,355	3.9%
	Totals	2,228	\$ 145,457,812	\$ 65,286	
June 30, 2018	Active Members	1,812	\$ 111,852,669	\$ 61,729	3.4%
	DROP Participants	351	23,093,533	65,794	3.3%
	Totals	2,163	\$ 134,946,202	\$ 62,388	
June 30, 2017	Active Members	1,715	\$ 102,354,521	\$ 59,682	4.4%
	DROP Participants	370	23,560,592	63,677	3.9%
	Totals	2,085	\$ 125,915,113	\$ 60,391	
June 30, 2016	Active Members	1,592	\$ 91,007,785	\$ 57,166	(1.1%)
	DROP Participants	366	22,428,051	61,279	1.3%
	Totals	1,958	\$ 113,435,836	\$ 57,935	
June 30, 2015	Active Members	1,524	\$ 88,090,729	\$ 57,802	(0.5%)
	DROP Participants	364	22,015,866	60,483	(0.5%)
	Totals	1,888	\$ 110,106,595	\$ 58,319	
June 30, 2014	Active Members	1,512	\$ 87,842,034	\$ 58,097	(3.8%)
	DROP Participants	347	21,100,432	60,808	(3.6%)
	Totals	1,859	\$ 108,942,466	\$ 58,603	
June 30, 2013	Active Members	1,528	\$ 92,244,313	\$ 60,369	3.2%
	DROP Participants	311	19,610,437	63,056	0.7%
	Totals	1,839	\$ 111,854,750	\$ 60,824	
June 30, 2012	Active Members	1,620	\$ 94,766,049	\$ 58,498	0.1%
	DROP Participants	280	17,540,903	62,646	(0.4%)
	Totals	1,900	\$ 112,306,952	\$ 59,109	
June 30, 2011	Active Members	1,739	\$ 101,597,247	\$ 58,423	2.4%
	DROP Participants	254	15,980,093	62,914	3.3%
	Totals	1,993	\$ 117,577,340	\$ 58,995	
June 30, 2010	Active Members	2,040	\$ 116,427,736	\$ 57,072	2.7%
	DROP Participants	243	14,796,085	60,889	3.3%
	Totals	2,283	\$ 131,223,821	\$ 57,479	

Schedule of Retirees and Beneficiaries Added to or Removed from Rolls

Fiscal Year Ended June 30	Added to Rolls		Removed from Rolls		Rolls at Fiscal Year End		Average Annual Allowance	% Increase/ (Decrease) in Retiree Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance		
June 30, 2019	120	\$1,905,246	(55)	\$(672,253)	2,035	\$60,814,434	\$29,884	4.68
June 30, 2018	114	\$1,570,066	(60)	\$(834,397)	1,970	\$56,241,911	\$28,549	0.64
June 30, 2017	135	\$1,458,929	(68)	\$(786,272)	1,916	\$54,350,851	\$28,367	2.44
June 30, 2016	123	\$1,578,451	(64)	\$(898,105)	1,849	\$51,198,523	\$27,690	1.00
June 30, 2015	103	\$1,402,353	(62)	\$(718,791)	1,790	\$49,072,063	\$27,415	1.21
June 30, 2014	110	\$1,518,754	(61)	\$(686,326)	1,749	\$47,376,551	\$27,088	0.36
June 30, 2013	104	\$1,607,660	(66)	\$(825,889)	1,700	\$45,883,057	\$26,990	4.73
June 30, 2012	99	\$1,026,077	(59)	\$(640,326)	1,662	\$42,833,718	\$25,772	0.76
June 30, 2011	160	\$1,810,188	(41)	\$(541,232)	1,622	\$41,487,860	\$25,578	(3.76)
June 30, 2010	151	\$2,030,635	(48)	\$(558,850)	1,503	\$39,946,446	\$26,578	(4.67)

Solvency Test (In thousands)

Valuation Date As Of June 30	Aggregate Accrued Liabilities for			Portion of Accrued Liabilities Covered by Reported Asset			
	Active Member Contributions	Retirees and Beneficiaries (Includes Deferred Vested)	Active Members (Employer Financed Portion)	Actuarial Valuation Value of Assets	Active Member Contributions	Retirees and Beneficiaries (Includes Deferred Vested)	Active Members (Employer Financed Portion)
6/30/2019	\$92,076	\$819,374	\$195,210	\$1,238,651	100%	100%	100%
6/30/2018	87,404	798,382	161,906	1,202,691	100%	100%	100%
6/30/2017	84,476	768,142	161,066	1,145,061	100%	100%	100%
6/30/2016	84,142	736,665	156,102	1,087,125	100%	100%	100%
6/30/2015	85,644	704,462	170,258	1,049,093	100%	100%	100%
6/30/2014	85,712	694,761	169,801	993,641	100%	100%	100%
6/30/2013	86,768	663,832	184,347	933,722	100%	100%	100%
6/30/2012	86,590	609,218	176,150	891,366	100%	100%	100%
6/30/2011	87,568	572,959	130,578	920,217	100%	100%	100%
6/30/2010	94,746	525,289	136,223	926,370	100%	100%	100%

Actuarial Analysis of Financial Experience

(Dollars in Millions)

	Plan Years									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Prior Valuation Actuarial Accrued Liability	\$1,048	\$1,014	\$977	\$960	\$950	\$935	\$872	\$791	\$756	\$715
Expected Increase from Prior Valuation	—	—	—	—	—	—	—	—	—	—
Salary Increase (Greater) Less than Expected	5	1	5	(7)	(11)	(17)	(3)	(13)	(6)	(10)
Asset Return (Less) Greater than Expected	—	—	—	—	—	—	—	—	—	—
COLA Increase Greater (Less) than Expected	(8)	(6)	(7)	(18)	(18)	(10)	(9)	(1)	(9)	(4)
Other Experience	3	(2)	3	(6)	(2)	(1)	(2)	(4)	7	—
Economic Assumption Changes	21	3	—	8	—	—	33	—	—	10
Noneconomic Assumption Changes	—	—	—	—	—	—	—	—	—	—
Normal Cost	26	24	21	22	22	23	22	24	22	24
Interest	74	72	70	71	70	69	69	67	60	58
Payments	(62)	(58)	(55)	(52)	(51)	(49)	(47)	(44)	(42)	(37)
Change in Valuation Programs and Methods	—	—	—	(1)	—	—	—	52	3	—
Ending Actuarial Accrued Liability	\$1,107	\$1,048	\$1,014	\$977	\$960	\$950	\$935	\$872	\$791	\$756

Schedule of Funding Progress

(Dollars in Millions)

Actuarial Valuation As of June 30	(1) Actuarial Valuation Value of Assets	(2) Actuarial Accrued Liability (AAL)	(3) Percentage Funded (1) / (2)	(4) (Prefunded) / Unfunded AAL (3)	(5) Annual Covered Payroll	(6) (Prefunded) / Unfunded AAL Percentage of Covered Payroll (4) / (5)
	2019	\$1,239	\$1,107	111.9%	(\$132)	\$145
2018	\$1,203	\$1,048	114.8%	(\$155)	\$135	114.90%
2017	\$1,145	\$1,014	113.0%	(\$131)	\$126	104.30%
2016	\$1,087	\$977	111.3%	(\$110)	\$113	(97.20%)
2015	\$1,049	\$960	109.2%	(\$89)	\$110	(80.60%)
2014	\$994	\$950	104.6%	(\$43)	\$109	(39.80%)
2013	\$934	\$935	99.9%	\$1	\$112	1.10%
2012	\$891	\$872	102.2%	(\$19)	\$112	(17.30%)
2011	\$920	\$791	116.3%	(\$129)	\$118	(109.80%)
2010	\$926	\$756	122.5%	(\$170)	\$131	(129.60%)

Major Benefit Provisions of the Retirement System

ELIGIBLE EMPLOYEES

All non-Fire and Police employees who enter service after July 1, 1952, and are certified from a civil service list for permanent employment.

FINAL AVERAGE SALARY (FAS)

Highest three consecutive-year average using the rate of pay in effect at the time of retirement.

NORMAL RETIREMENT

Requirement: age 55 and 5 years of service.

Benefit: Sum of (1) and (2) times (3)

- (1) 2% of FAS times years of service, not-to-exceed 25 years
- (2) 1% of FAS times years of service in excess of 25 years
- (3) **RETIREMENT AGE FACTOR TABLE**

Age	Factor	Age	Factor
55	1.000	61	1.140
56	1.020	62	1.180
57	1.040	63	1.220
58	1.060	64	1.260
59	1.080	65	1.300
60	1.100	Add .01 for every quarter after age 65	

EARLY RETIREMENT PROVISION

An employee who is age 50 with 5 years of continuous service may elect an early retirement and shall have his or her retirement allowance reduced by the early retirement actuarial adjustment factor.

DEFERRED RETIREMENT OPTION PROGRAM (DROP)

An employee who is age 55 with 5 years of service may enter DROP. The eligibility age may be reduced to age 50 with 5 years of service if the employee elects an early retirement. Retirement amount is calculated and monthly deposits are made to the employee's DROP account while the employee continues to work up to maximum of 10 years.

DISABILITY RETIREMENT

Requirement: 10 years of service.

Benefit: 1.8 percent times FAS times years of service, if exceeds 1/3 of FAS; or 33-1/3%, or service retirement, if higher.

MEMBER CONTRIBUTIONS RATES

Basic rates are based on a formula reflecting the age at entry into the System. The rates are such as to provide an average annuity, at age 55, of 1/150 of FAS for each of the first 25 years of service, plus 1/300 of FAS for each year of service after 25. Member cost-of-living rates are designed to pay for one-half of the future cost-of-living increases.

DEATH BEFORE RETIREMENT

- A. Before eligible to retire for disability (less than 5 years):
 - (1) One month's salary for each year of service, not-to-exceed six months.
 - (2) Return of contributions with interest.
- B. While eligible for service retirement:

Fifty percent (50%) of service retirement benefit to eligible beneficiary
- C. With 5 or more years:

Fifty percent (50%) of service retirement benefit formula at age 55, based on years of service at death.

DEATH AFTER RETIREMENT

Fifty percent (50%) of the member's allowance continued to eligible spouse for life.

WITHDRAWAL OF BENEFITS

If less than five years of service, return of contributions. If more than five years of service, right to have vested deferred retirement benefit at normal retirement date.

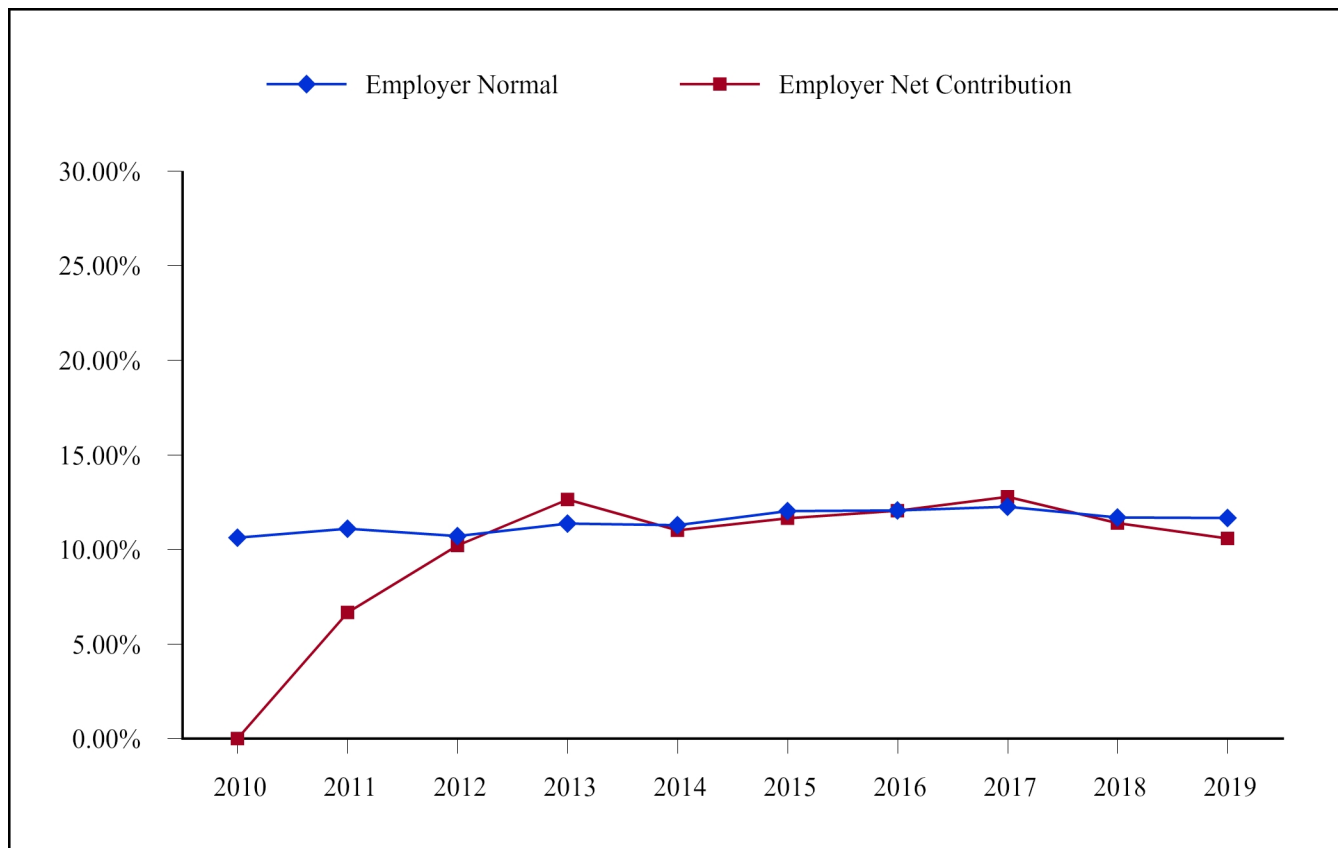
POST RETIREMENT SUPPLEMENTAL BENEFIT (PRSB)

On August 27, 1998, the City Council adopted the Post Retirement Supplemental Benefit (PRSB) Program which is intended to provide assistance to retirees to pay for various post-retirement expenses. Annually, after an actuarial study has been performed, the Retirement Board will review the availability of surplus earnings in the System and determine whether a benefit can be paid to eligible PRSB recipients. If a surplus is declared by the Board, PRSB benefit payments will be calculated for eligible recipients and payments for the following calendar year will begin in January.

COST-OF-LIVING BENEFITS

Based on the percentage change in Consumer Price Index (U.S. city-average for urban wage earners and clerical works—all items), limited to a five percent (5%) maximum change per year each July 1.

History of Employer Net Contribution Rates



Fiscal Year Ending June 30	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Employer Normal	10.62 %	11.09 %	10.70 %	11.37 %	11.28 %	12.03 %	12.06 %	12.26 %	11.69 %	11.66 %
Prefunded Liability/Prepaid Contributions	10.62 %	4.42 %	0.49 %	-1.26 %	0.27 %	0.38 %	0.02 %	-0.51 %	0.30 %	1.08 %
Employer Net Contribution	0.00 %	6.67 %	10.21 %	12.63 %	11.01 %	11.65 %	12.04 %	12.77 %	11.39 %	10.58 %

*To create an environment
in which Board Members
can maximize their
performance as trustees.*

*To improve business
processes and our delivery
of services provided to
members and retirees.*

*To improve
communications with
members, retirees and the
employer.*

STATISTICAL

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Statistical Section Review

This section provides additional historical perspective, context, and detail in order to provide a more comprehensive understanding of this year's financial statements, note disclosures, and supplementary information which covers the benefits provided by the City of Fresno Employees Retirement System.

It also provides multi-year trend of financial and operation information to facilitate comprehensive understanding of how the organization's financial position and performance has changed over time.

More specifically, the financial and operating information provides contextual data for the System's net position, benefits, refunds, contribution rates and different types of retirement benefits.

The financial and operating trend information is located on the following pages.

Schedule of Changes in Fiduciary Net Position

Last Ten Fiscal Years 2010 - 2019

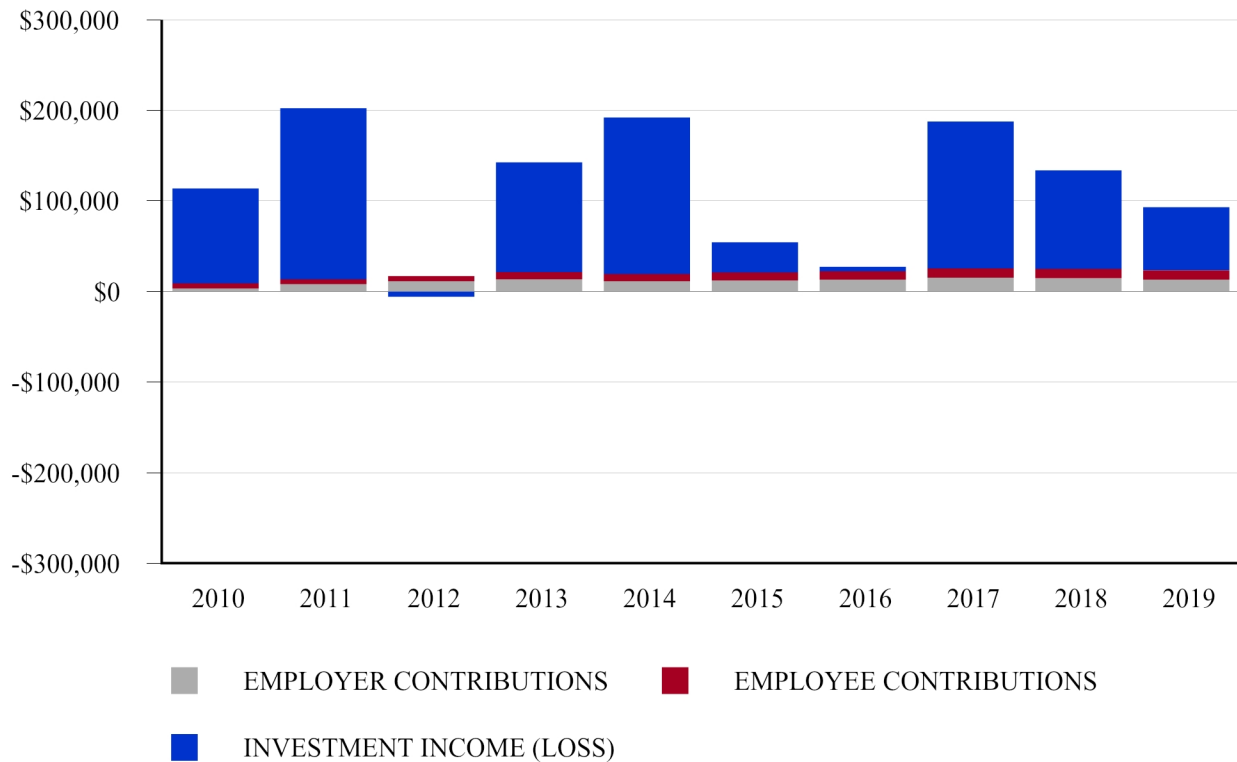
(Dollars in Millions)

	2019	2018	2017	2016	2015
Additions					
Employer Contributions	\$ 14.6	\$ 14.6	\$ 15.2	\$ 13.1	\$ 12.3
Employee Contributions	10.5	10.3	10.1	9.1	8.8
Investment Income (Loss)	69.4	109.0	162.3	5.0	33.3
Total Additions	94.5	133.9	187.6	27.2	54.4
Deductions					
Benefit Payments	\$ 60.8	\$ 56.2	\$ 54.3	\$ 51.2	\$ 49.1
Post Retirement Supplemental Benefits	—	—	—	—	—
Refunds	1.3	1.5	1.1	1.3	1.5
Administrative	1.7	1.6	1.3	1.3	1.1
Total Deductions	63.8	59.3	56.7	53.8	51.7
Change in Fiduciary Net Position	\$ 30.7	\$ 74.6	\$ 130.9	\$ (26.6)	\$ 2.7

	2014	2013	2012	2011	2010
Additions					
Employer Contributions	\$ 11.4	\$ 13.3	\$ 11.4	\$ 8.2	\$ 3.3
Employee Contributions	7.9	8.0	5.5	5.3	5.7
Investment Income (Loss)	172.9	121.1	(5.6)	188.9	104.5
Total Additions	192.2	142.4	11.3	202.4	113.5
Deductions					
Benefit Payments	47.4	45.8	42.7	39.9	35.7
Post Retirement Supplemental Benefits	—	0.1	0.1	1.6	4.2
Refunds	1.2	1.2	1.3	2.1	1.7
Administrative	1.1	1.1	1.1	1.0	0.9
Total Deductions	49.7	48.2	45.2	44.6	42.5
Change in Fiduciary Net Position	\$ 142.5	\$ 94.2	\$ (33.9)	\$ 157.8	\$ 71.0

Schedule and Graph of Additions by Source (In Thousands)

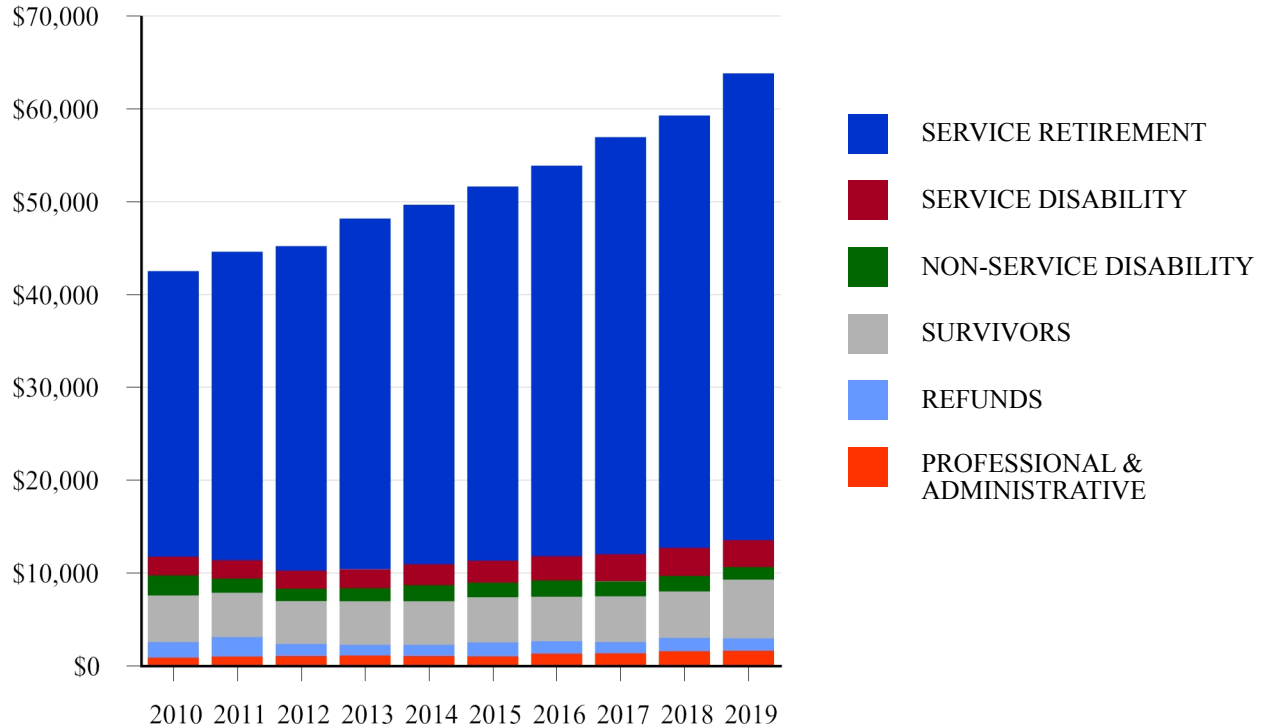
Last Ten Fiscal Years 2010 - 2019



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
EMPLOYER CONTRIBUTIONS	\$ 3,267	\$ 8,215	\$ 11,374	\$ 13,330	\$ 11,440	\$ 12,327	\$ 13,060	\$ 15,205	\$ 14,609	\$ 14,627
EMPLOYEE CONTRIBUTIONS	5,740	5,275	5,507	7,995	7,945	8,750	9,098	10,181	10,329	10,516
INVESTMENT INCOME (LOSS)	104,511	188,925	(5,620)	121,116	172,773	33,309	5,089	162,376	108,916	69,389
TOTAL	\$ 113,518	\$ 202,415	\$ 11,261	\$ 142,441	\$ 192,158	\$ 54,386	\$ 27,247	\$ 187,762	\$ 133,854	\$ 94,532

Schedule and Graph of Deductions by Type (In Thousands)

Last Ten Fiscal Years 2010 - 2019



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
SERVICE RETIREMENTS	\$ 30,751	\$ 33,193	\$ 34,944	\$ 37,748	\$ 38,677	\$ 40,261	\$ 42,031	\$ 44,883	\$ 46,548	\$ 50,237
SERVICE DISABILITY	2,014	1,997	1,940	2,042	2,286	2,358	2,625	2,915	3,027	2,913
NON-SERVICE DISABILITY	2,141	1,527	1,338	1,400	1,709	1,579	1,744	1,602	1,654	1,344
SURVIVORS	5,041	4,771	4,612	4,693	4,704	4,874	4,799	4,951	5,013	6,320
REFUNDS	1,651	2,092	1,313	1,157	1,204	1,474	1,330	1,199	1,424	1,330
PROFESSIONAL & ADMINISTRATIVE	929	1,029	1,087	1,138	1,086	1,071	1,346	1,389	1,619	1,663
TOTAL	\$ 42,527	\$ 44,609	\$ 45,234	\$ 48,178	\$ 49,666	\$ 51,617	\$ 53,875	\$ 56,939	\$ 59,285	\$ 63,807

Schedule of Average Benefit Payments

Retirement Effective Dates	Years of Credited Service						Fiscal Year Average/ New Retirants
	5-10	10-15	15-20	20-25	25-30	30+	
Period 7/1/18 to 6/30/19*							
Average Monthly Pension Benefits	\$ 1,477	\$ 1,791	\$ 1,927	\$ 2,611	\$ 3,447	\$ 3,267	\$ 2,420
Average Monthly DROP Payment	—	218	539	1,627	2,323	2,389	1,419
Average Final Average Salary	5,817	6,114	4,750	5,114	6,243	4,825	5,477
Number of New Retired Members	8	29	22	16	13	11	99
Period 7/1/17 to 6/30/18*							
Average Monthly Pension Benefits	821.7	1492	1777	2820	2462	3560	\$ 2,155
Average Monthly DROP Payment	—	277	594	1549	1569	2473	1,292
Average Final Average Salary	5746	5217	4478	6058	4559	5679	5,290
Number of New Retired Members	7	18	22	22	10	10	89
Period 7/1/16 to 6/30/17*							
Average Monthly Pension Benefits	\$ 976	\$ 1,446	\$ 2,448	\$ 2,624	\$ 2,851	\$ 3,648	\$ 2,332
Average Monthly DROP Payment	—	153	901	1,590	1,989	1,718	1,270
Average Final Average Salary	5,707	4,938	5,905	5,403	4,333	5,531	5,303
Number of New Retired Members	12	26	23	20	8	9	98
Period 7/1/15 to 6/30/16*							
Average Monthly Pension Benefits	\$ 938	\$ 1,567	\$ 1,847	\$ 2,606	\$ 2,596	\$ 2,402	\$ 1,993
Average Monthly DROP Payment	1,506	1,046	1,446	2,264	1,684	1,624	1,595
Average Final Average Salary	5,576	5,480	5,048	5,325	4,961	4,395	5,131
Number of New Retired Members	14	23	24	16	20	11	108
Period 7/1/14 to 6/30/15							
Average Monthly Pension Benefits	\$ 912	\$ 1,409	\$ 2,173	\$ 2,509	\$ 5,125	\$ 5,039	\$ 2,861
Number of New Retired Members	13	11	25	6	16	6	77
Period 7/1/13 to 6/30/14							
Average Monthly Pension Benefits	\$ 1,060	\$ 1,610	\$ 2,144	\$ 3,586	\$ 3,258	\$ 6,795	\$ 3,076
Number of New Retired Members	12	12	17	15	10	8	74
Period 7/1/12 to 6/30/13							
Average Monthly Pension Benefits	\$ 864	\$ 1,476	\$ 2,315	\$ 3,598	\$ 4,335	\$ 4,925	\$ 2,919
Number of New Retired Members	16	15	14	12	10	10	77
Period 7/1/11 to 6/30/12							
Average Monthly Pension Benefits	\$ 568	\$ 1,551	\$ 2,341	\$ 2,659	\$ 4,268	\$ 5,167	\$ 2,759
Number of New Retired Members	22	13	17	13	7	5	77
Period 7/1/10 to 6/30/11							
Average Monthly Pension Benefits	\$ 848	\$ 1,231	\$ 1,966	\$ 2,966	\$ 3,293	\$ 4,409	\$ 2,452
Number of New Retired Members	33	31	17	15	18	19	133
Period 7/1/09 to 6/30/10							
Average Monthly Pension Benefits	\$ 839	\$ 1,309	\$ 2,731	\$ 3,461	\$ 3,626	\$ 4,023	\$ 2,665
Number of New Retired Members	13	20	20	24	27	14	118

Data Source: PensionGold Administration System V3

*The Schedule of Average Benefit Payments includes information in accordance with GASB Statement No. 44 for the periods from July 1, 2015 through June 30, 2019. Since implementing PG3 - our new Pension Administration System commencing July 1, 2015, we are now able to capture information prospectively that is necessary for the System to comply with GASB 44 reporting. The System will provide 10 years in the format required by GASB 44 as information becomes available.

Retirees by Type of Benefit

As of June 30, 2019

Amount of Monthly Benefit	Number of Retirees	Type of Retirement*		
		1	2	3
\$1 - \$1,000	372	267	3	102
\$1,001 - \$2,000	635	391	89	155
\$2,001 - \$3,000	467	373	41	53
\$3,001 - \$4,000	243	219	15	9
\$4,001 - \$5,000	142	135	5	2
\$5,001 - \$6,000	82	73	6	3
\$6,001 - \$7,000	44	43	1	—
> \$7,000	50	50	—	—
Total	2,035	1,551	160	324

*Type of Retirement

1 - Service Retiree

2 - Disability Retiree

3 - Beneficiary/Continuant/Survivor

Amount of Monthly Benefit	Number of Retirees	Option Selected**			
		Unmodified	Option 1	Option 2	Option 3
\$1 - \$1,000	372	210	78	67	17
\$1,001 - \$2,000	635	305	169	125	36
\$2,001 - \$3,000	467	215	109	101	42
\$3,001 - \$4,000	243	107	58	60	18
\$4,001 - \$5,000	142	55	40	30	17
\$5,001 - \$6,000	82	43	16	18	5
\$6,001 - \$7,000	44	23	8	8	5
> \$7,000	50	14	11	19	6
Total	2,035	972	489	428	146

**Option Selected

Unmodified - Beneficiary receives 50% of the member's allowance

Option 1 - Beneficiary receives lump sum of member's unused contributions

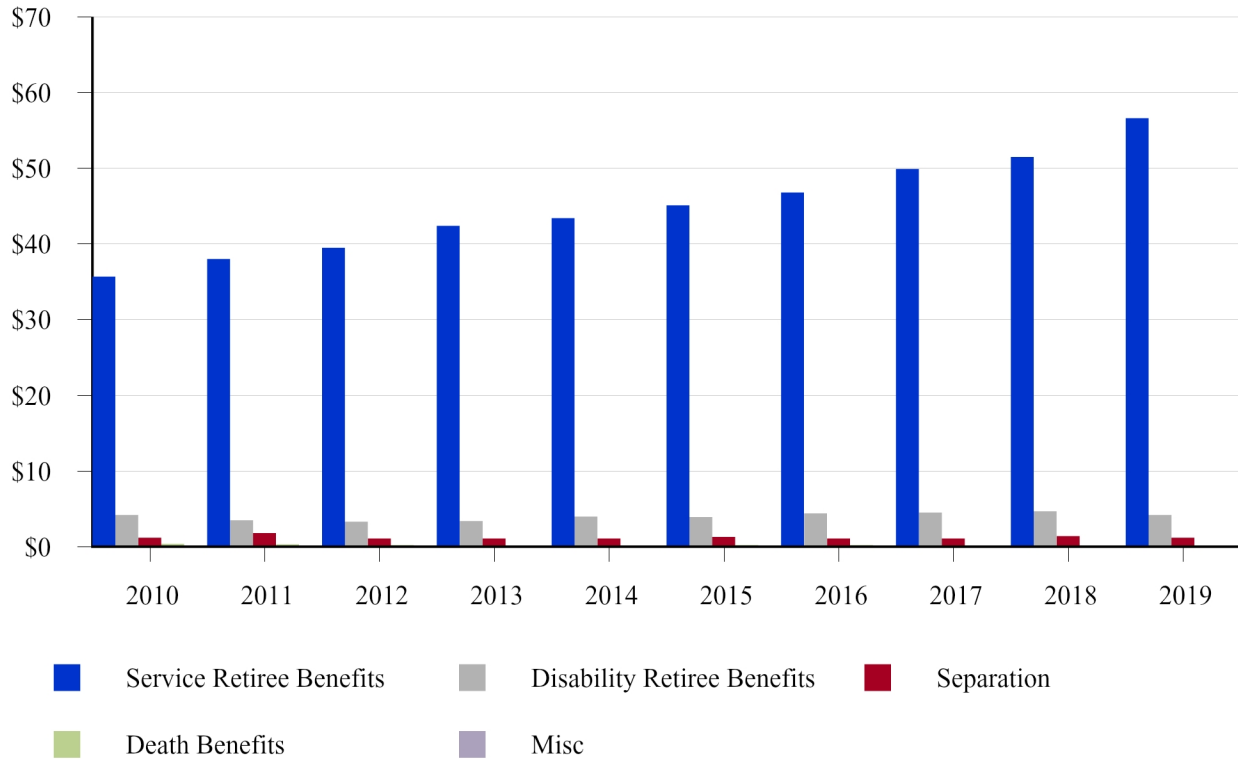
Option 2 - Beneficiary receives 100% of member's reduced monthly benefit

Option 3 - Beneficiary receives 75% of member's reduced monthly benefit

Schedule and Graph of Pension Benefit Payments Deductions by Type

Last Ten Fiscal Years 2010 - 2019

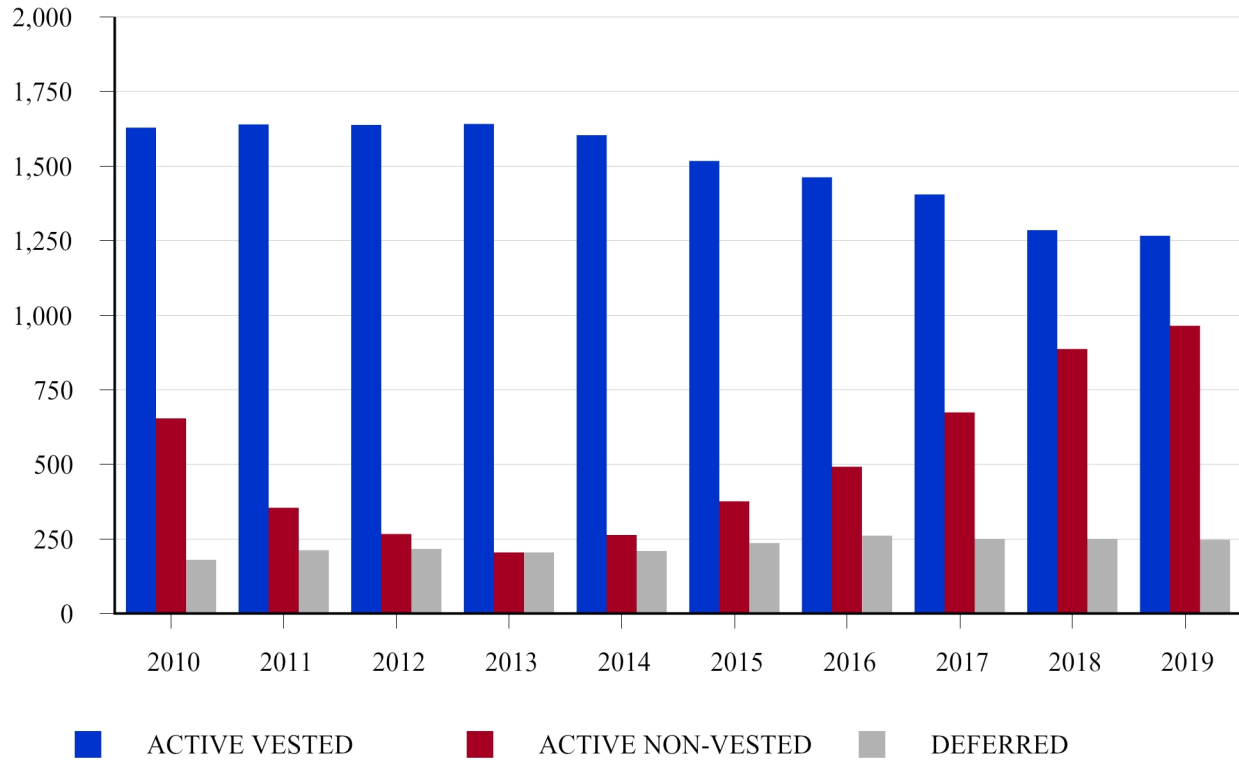
(Dollars in Millions)



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Service Retiree Benefits	\$35.7	\$38.0	\$39.5	\$42.4	\$43.4	\$45.1	\$46.8	\$49.9	\$51.5	\$56.6
Disability Retiree Benefits	4.2	3.5	3.3	3.4	4.0	3.9	4.4	4.5	4.7	4.2
Separation	1.2	1.8	1.1	1.1	1.1	1.3	1.1	1.1	1.4	1.2
Death Benefits	0.4	0.3	0.2	0.1	0.1	0.2	0.2	—	—	0.1
Misc	—	—	—	—	—	—	—	—	—	—
Total Benefit Deductions	\$41.5	\$43.6	\$44.1	\$47.0	\$48.6	\$50.5	\$52.5	\$55.5	\$57.6	\$62.1

Schedule and Graph of Active Vested, Active Non-Vested and Deferred Membership History

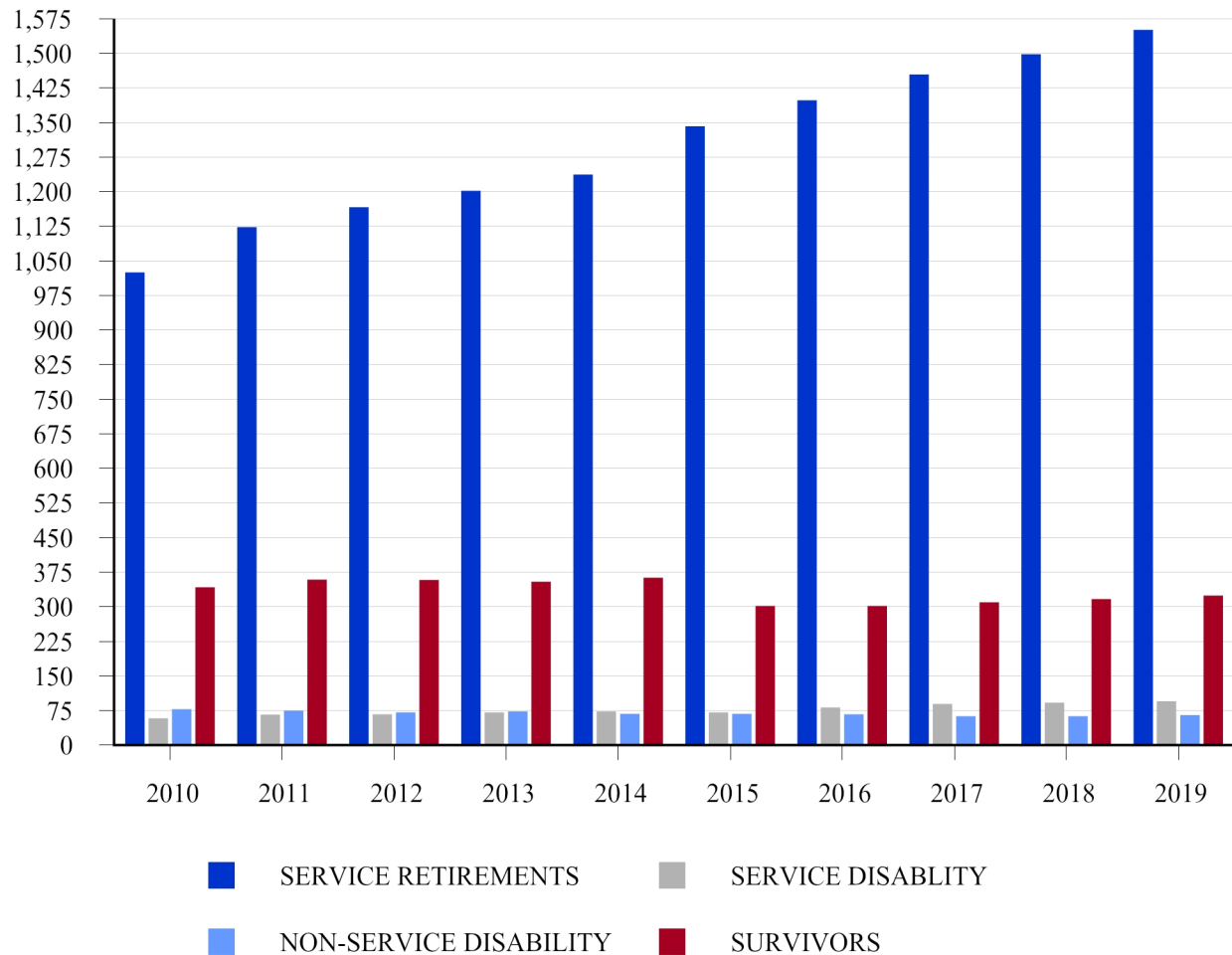
Last Ten Fiscal Years 2010 - 2019



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ACTIVE VESTED	1,629	1,639	1,638	1,641	1,604	1,517	1,462	1,405	1,285	1,266
ACTIVE NON-VESTED	654	354	267	205	263	376	492	674	887	965
DEFERRED	180	212	217	205	209	236	261	251	251	247
TOTAL	2,463	2,205	2,122	2,051	2,076	2,129	2,215	2,330	2,423	2,478

Schedule and Graph of Retirees Pension Benefit Payments by Type of Benefit

Last Ten Fiscal Years 2010 - 2019



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
SERVICE RETIREMENTS	1,025	1,123	1,166	1,202	1,237	1,342	1,398	1,454	1,498	1,551
SERVICE DISABLITY	58	66	67	71	73	71	82	89	92	95
NON-SERVICE DISABILITY	78	74	71	73	68	68	67	63	63	65
SURVIVORS	342	359	358	354	363	302	302	310	317	324
TOTAL	1,503	1,622	1,662	1,700	1,741	1,783	1,849	1,916	1,970	2,035

Summary of Active Participants

YEAR	NUMBER OF MEMBERS	PENSIONABLE PAYROLL	ANNUAL AVERAGE SALARY	NET CHANGE IN AVERAGE SALARY
2019	2,231	\$138,395,785	\$62,033	4.88%
2018	2,172	\$128,461,461	\$59,144	3.32%
2017	2,079	\$119,006,918	\$57,242	3.05%
2016	1,954	\$108,541,068	\$55,548	(0.63%)
2015	1,893	\$105,820,382	\$55,901	0.46%
2014	1,867	\$103,890,391	\$55,646	(2.64%)
2013	1,846	\$105,508,591	\$57,155	(1.46%)
2012	1,905	\$110,492,026	\$58,001	(3.07%)
2011	1,993	\$119,260,220	\$59,840	5.69%
2010	2,283	\$129,258,191	\$56,618	6.39%

Summary of Retirees

YEAR	NUMBER OF RETIREES	ANNUAL BENEFITS TO PARTICIPANTS	ANNUAL AVERAGE ALLOWANCE (INDIVIDUAL)	NET CHANGE IN BENEFITS TO PARTICIPANTS
2019	2,035	\$60,814,434	\$29,884	4.68%
2018	1,970	\$56,241,911	\$28,549	0.64%
2017	1,916	\$54,350,851	\$28,367	2.44%
2016	1,849	\$51,198,523	\$27,690	0.61%
2015	1,783	\$49,072,063	\$27,522	1.14%
2014	1,741	\$47,376,551	\$27,212	0.82%
2013	1,700	\$45,883,057	\$26,990	4.73%
2012	1,662	\$42,833,718	\$25,772	0.76%
2011	1,622	\$41,487,860	\$25,578	(3.76%)
2010	1,503	\$39,946,446	\$26,578	(4.67%)

Member and City Contribution Rates

Last Ten Fiscal Years 2010 - 2019

As of June 30 Fiscal Year Valuation Date		Member Rates			City Contribution Rates				
		Basic at Entry Age			Basic	COLA	Total City Rate	Less Prefunded Actuarial Accrued Liability (PAAL)	Net City Contribution Rate
20	25	30							
June 30, 2019	June 30, 2017	4.84%	5.72%	6.89%	9.14%	2.52%	11.66%	(1.08%)	10.58%
June 30, 2018	June 30, 2016	5.12%	6.05%	7.29%	9.18%	2.51%	11.69%	(0.3%)	11.39%
June 30, 2017	June 30, 2015	5.69%	6.69%	7.99%	9.5%	2.76%	12.26%	0.51%	12.77%
June 30, 2016	June 30, 2014	5.69%	6.68%	7.98%	9.31%	2.75%	12.06%	(0.02%)	12.04%
June 30, 2015	June 30, 2013	5.69%	6.68%	7.98%	9.02%	3.01%	12.03%	(0.38%)	11.65%
June 30, 2014	June 30, 2012	5.33%	6.28%	7.53%	8.63%	2.65%	11.28%	(0.27%)	11.01%
June 30, 2013	June 30, 2011	5.34%	6.29%	7.56%	8.75%	2.62%	11.37%	1.26%	12.63%
June 30, 2012	June 30, 2010	3.47%	4.09%	4.91%	8.2%	2.5%	10.70%	(0.49%)	10.21%
June 30, 2011	June 30, 2009	2.99%	3.59%	4.38%	8.48%	2.61%	11.09%	(4.42%)	6.67%
June 30, 2010	June 30, 2008	2.99%	3.59%	4.38%	8.09%	2.53%	10.62%	(10.62%)	0.00%

Data Source: Annual Actuarial Valuation Reports

Economic Assumptions and Funding Method

Last Ten Fiscal Years 2010 - 2019

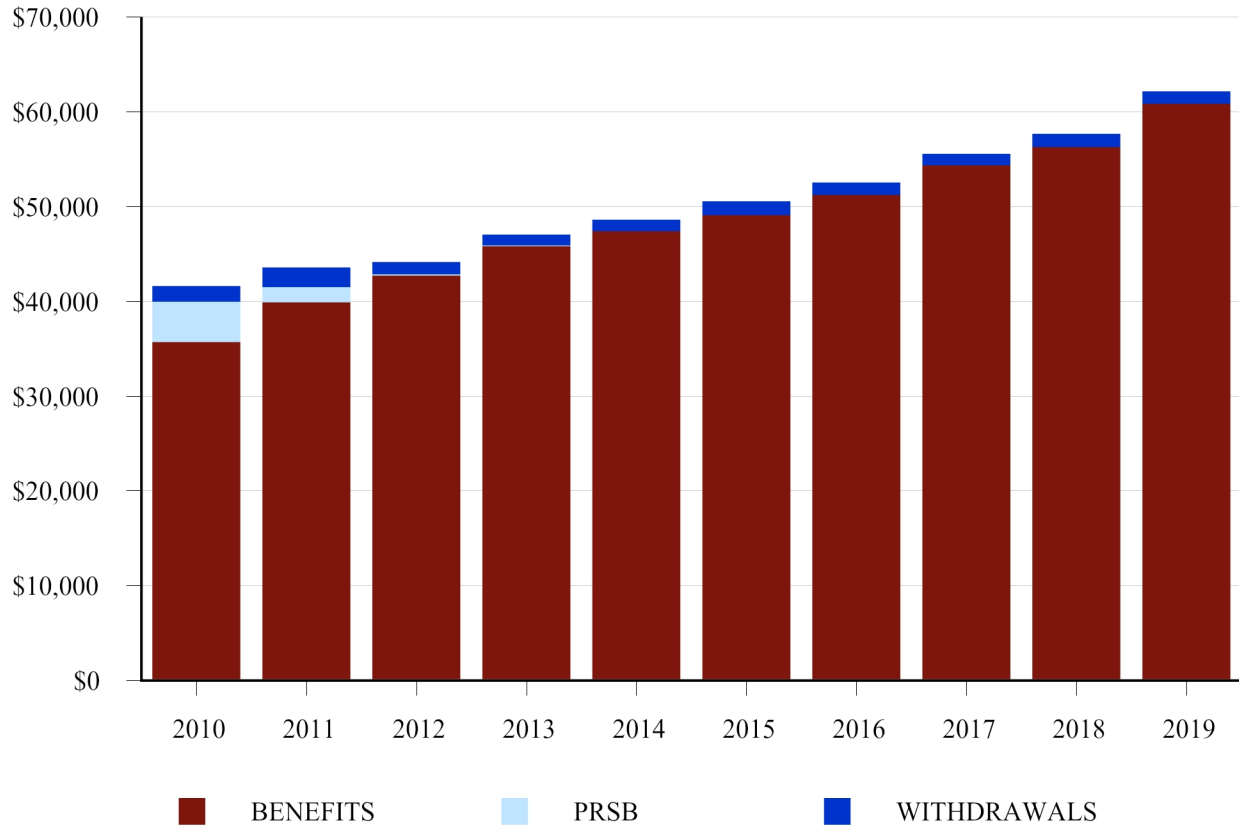
Valuation Date as of June 30	Interest	Salary Scale	Cost-of- Living (COLA)	Inflation Component	Funding Method
June 30, 2019	7.00%	.25 - 8.0%	2.75%	2.75%	Entry Age Normal
June 30, 2018	7.25%	.25 - 8.0%	3.00%	3.00%	Entry Age Normal
June 30, 2017	7.25%	.25 - 8.0%	3.00%	3.00%	Entry Age Normal
June 30, 2016	7.25%	.25 - 8.0%	3.00%	3.00%	Entry Age Normal
June 30, 2015	7.50%	.50 - 8.0%	3.25%	3.25%	Entry Age Normal
June 30, 2014	7.50%	.60 - 8.5%	3.25%	3.25%	Entry Age Normal
June 30, 2013	7.50%	.60 - 8.5%	3.25%	3.25%	Entry Age Normal
June 30, 2012	8.00%	.60 - 8.5%	3.50%	3.50%	Entry Age Normal
June 30, 2011	8.00%	.60 - 8.5%	3.50%	3.50%	Projected Unit Credit
June 30, 2010	8.00%	.60 - 8.5%	3.50%	3.50%	Projected Unit Credit

Source: The Segal Company June 30, 2019, Actuarial Valuation Report

Benefits and Withdrawals Paid

Last Ten Fiscal Years 2010 - 2019

(In Thousands)

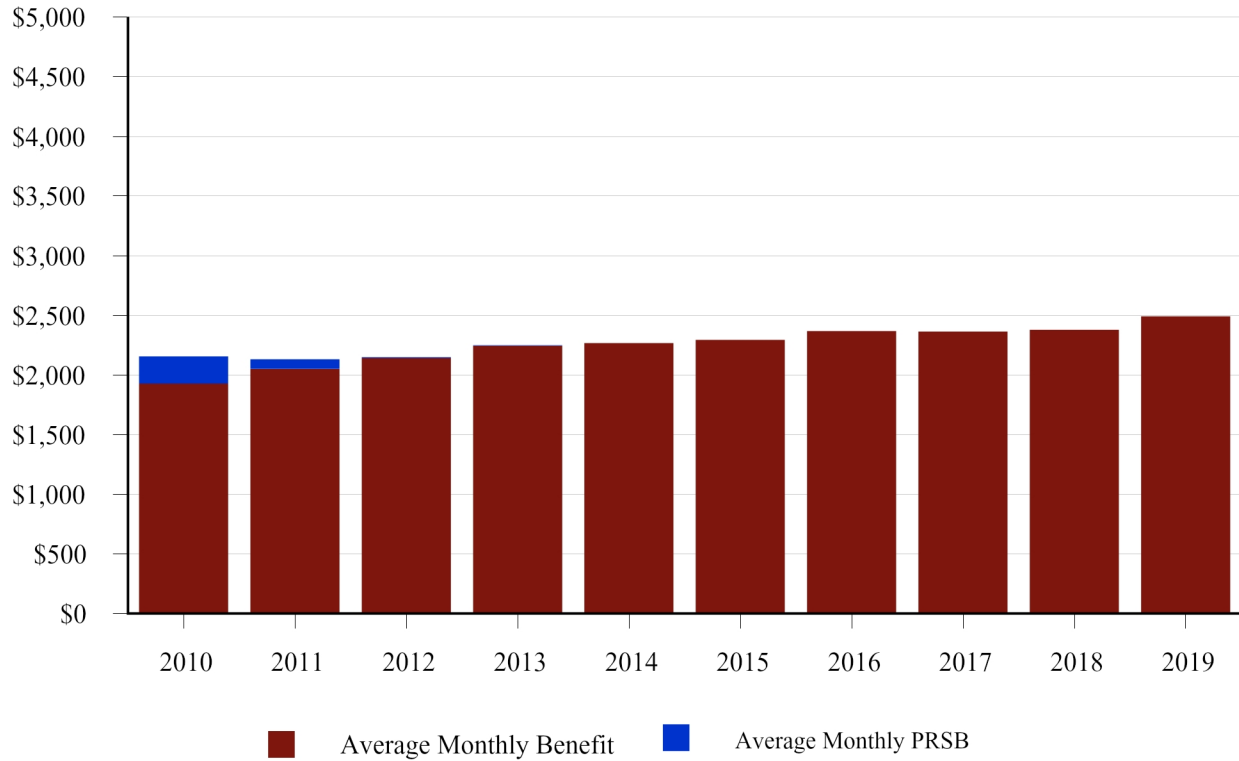


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BENEFITS	\$ 35,699	\$ 39,901	\$ 42,696	\$ 45,807	\$ 47,368	\$ 49,072	\$ 51,199	\$ 54,351	\$ 56,242	\$ 60,814
PRSB	4,248	1,587	138	76	9	—	—	—	—	—
WITHDRAWALS	1,651	2,092	1,313	1,157	1,204	1,474	1,330	1,199	1,424	1,330

Average Monthly Benefits to Retirees

Last Ten Fiscal Years 2010 - 2019

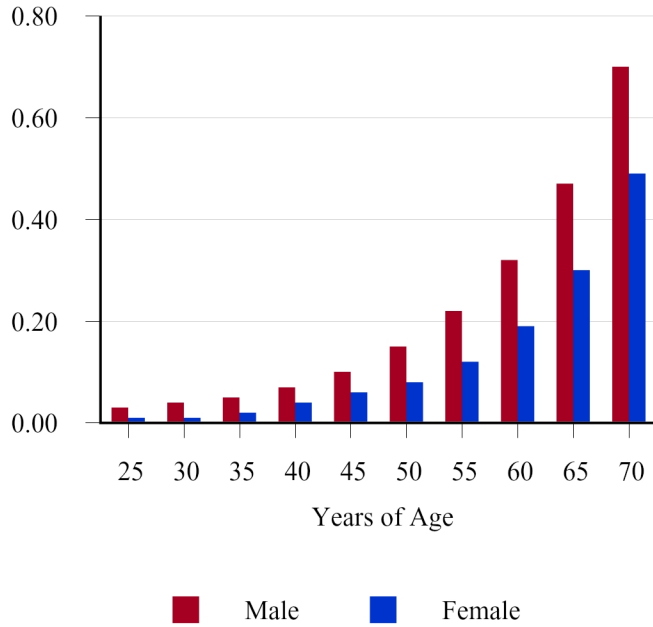
(In Thousands)



Average Monthly	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Benefit	\$1,927	\$2,050	\$2,141	\$2,245	\$2,267	\$2,294	\$2,367	\$2,363	\$2,379	\$2,490
PRSB	229	81	7	4	—	—	—	—	—	—
Total Average Monthly	\$2,156	\$2,131	\$2,148	\$2,249	\$2,267	\$2,294	\$2,367	\$2,363	\$2,379	\$2,490

EXPECTATION OF LIFE

(Age and Service Retirees)

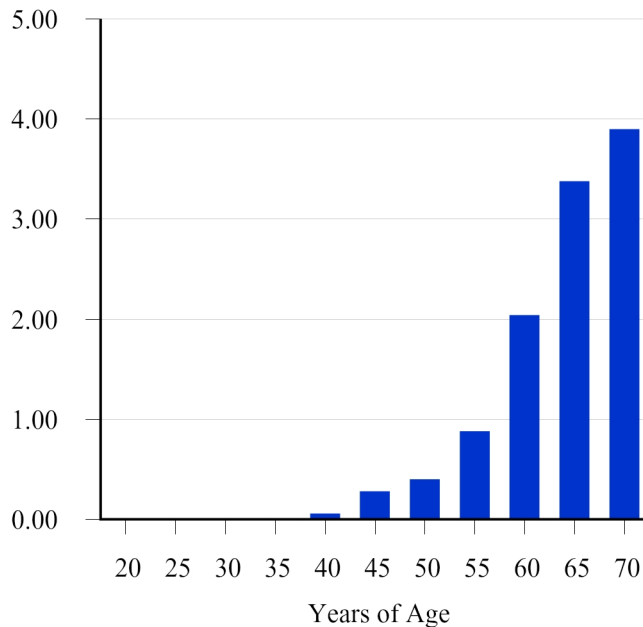


Separation Rate Before Retirement Due to Death*		
Rate %		
Age	Male	Female
25	0.03	0.01
30	0.04	0.01
35	0.05	0.02
40	0.07	0.04
45	0.10	0.06
50	0.15	0.08
55	0.22	0.12
60	0.32	0.19
65	0.47	0.30
70	0.70	0.49

*All pre-retirement deaths are assumed to be non-service connected.

EXPECTATION OF LIFE

(Disabled Retirees)



Separation Rates Prior to Retirement Due to Disability	
Rate %	
Age	Rate (%)
20	0.00
25	0.00
30	0.00
35	0.00
40	0.06
45	0.28
50	0.40
55	0.88
60	2.04
65	3.38
70	3.90

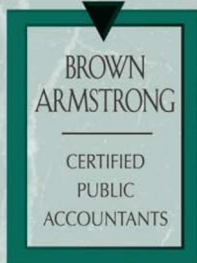
*To attract, develop and
retain competent and
professional staff.*

*To achieve and
maintain superior
investment
performance on a risk
controlled basis
measured by the
Public Fund Universe.*

COMPLIANCE

- 102 Independent Auditor's Report on Internal Control Over
Financial Reporting and On Compliance and Other Matters
Based on an Audit of Financial Statements Provided in
Accordance with *Government Auditing Standards*

Independent Auditor's Internal Control Letter



BROWN ARMSTRONG

Certified Public Accountants

**INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER
FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS
BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN
ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS**

To the Board of Retirement
City of Fresno Employees Retirement System
Fresno, California

**BAKERSFIELD OFFICE
(MAIN OFFICE)**

4200 TRUXTUN AVENUE
SUITE 300
BAKERSFIELD, CA 93309
TEL 661.324.4971
FAX 661.324.4997
EMAIL info@bacpas.com

FRESNO OFFICE

10 RIVER PARK PLACE EAST
SUITE 208
FRESNO, CA 93720
TEL 559.476.3592

STOCKTON OFFICE

1919 GRAND CANAL BLVD
SUITE C6
STOCKTON, CA 95207
TEL 888.565.1040

WWW.BACPAS.COM

REGISTERED with the Public Company
Accounting Oversight Board and
MEMBER of the American Institute of
Certified Public Accountants

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the City of Fresno Employees Retirement System (the System), as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise the System's basic financial statements, and have issued our report thereon dated December 2, 2019.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the System's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Independent Auditor's Internal Control Letter Continued

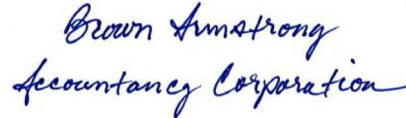
Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

BROWN ARMSTRONG
ACCOUNTANCY CORPORATION

A handwritten signature in blue ink that reads "Brown Armstrong Accountancy Corporation". The signature is written in a cursive style.

Bakersfield, California
December 2, 2019