

City of Fresno Fire & Police 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 Fire and Police 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

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City of Fresno Fire and Police 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 Fire and Police Retirement System was established on July 1, 1955 and is maintained and governed by Articles 3 and 4 of the Fresno Municipal Code.

The Fire and Police Retirement System (the System) provides retirement allowances to all full-time sworn safety members employed by 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 Fire and Police 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 117.5 percent and 117.0 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, mixed. 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 outperforming 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 Fire and Police 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 Fire and Police 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 FIRE AND POLICE RETIREMENT SYSTEM AND ITS SERVICES

The Fire and Police Retirement System was established on July 1, 1955, under charter Section 910 and is governed by Articles 3 and 4 of Chapter 3 of the City of Fresno Municipal Code. Effective August 27, 1990, the City of Fresno (the City) added a Second Tier that includes all full-time sworn Fire, Police, and Airport Safety personnel hired on or after that date. The System provides retirement allowances to all full-time sworn 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 safety members.

The Fire and Police 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 Articles 3 and 4 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 sworn Fire Department members of the System, and one (1) employee who is elected by the Police and Airport Safety Officers of the System, both of which serve a four-year term. The fifth and final member of the Board shall be a qualified elector of the County of Fresno, 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 City of Fresno 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 xiii and xiv.

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 Fire and Police 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 Fire and Police Retirement System was 117.0 percent. The ratio of the valuation value of assets to actuarial accrued liabilities was 120.3 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 117.5 percent and 122.2 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 \$1,277,749,000; the actuarial valuation value of assets amounted to \$1,495,023,241 and the market value of assets (including non-valuation reserves) amounted to \$1,647,799,602. At June 30, 2018, the actuarial valuation value of assets amounted to \$1,436,725,409; the market value of assets (including non-valuation reserves) amounted to \$1,602,585,594.

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 \$143,671,068; while on an actuarial funding basis the valuation value of assets basis reflects a surplus of \$217,274,241 and a funding ratio of 117.0 percent. At June 30, 2018, the net pension liability of the System indicated a surplus of \$215,103,888 and a funding ratio of 120.3 percent. For financial reporting purposes, the Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 109.55% and 115.50% 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

Jonathan Lusk

Re-Elected June 2018
Term Expires June 2022
Represents Fire Members



Vice Chair

John Jensen

Elected December 2018
Term Expires June 2020
Represents Police Members



Ted Semonious

Appointed March 2016
Term Continuous
Appointed by the Mayor and Confirmed by the Fresno City Council



Lynn Bennink

Appointed June 2017
Term Continuous
Outside Member Appointed by the Retirement Board



Donald Gross

Appointed May 2019
Term Continuous
Appointed by the Mayor and Confirmed by the Fresno City Council

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 Fire and Police 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 xiii and xiv for professional services and consultants and investment portfolio managers and page 76 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

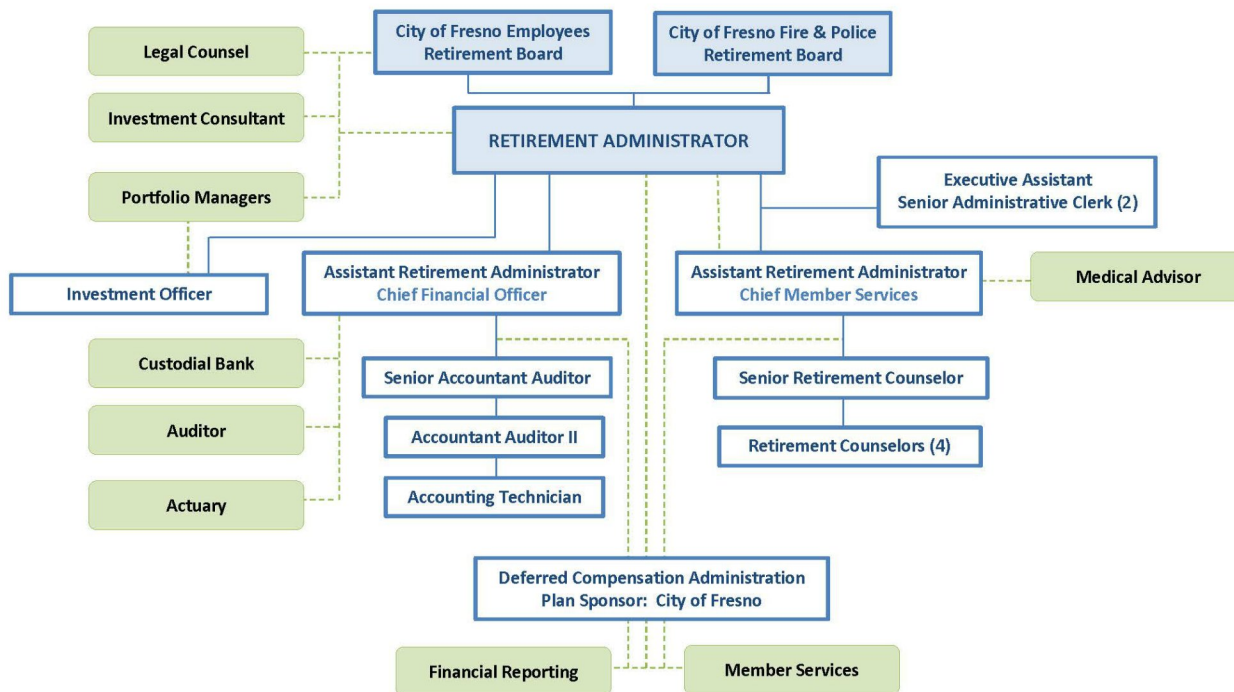
This position is responsible for monitoring compliance with the Board's Investment Objectives and Policy Statement and assists and coordinates in the management and administration of the System's investment program. This includes the planning and development of investment strategies.

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
Fire and Police Retirement System
California**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2018

Christopher P. Morill

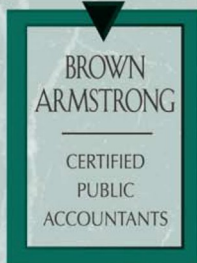
Executive Director/CEO

*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 Fire and Police Retirement System
Fresno, California

Report on the Financial Statements

We have audited the accompanying Statements of Fiduciary Net Position of the City of Fresno Fire and Police Retirement System (the System) as of June 30, 2019 and 2018, the related Statements of Changes in Fiduciary Net Position for the fiscal 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.

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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.

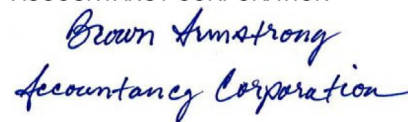
The Introduction, Investment, Actuarial, and Statistical Sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

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 Fire and Police 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 \$1,647,799,602; as of fiscal year 2018, the assets of the System exceeded its liabilities by \$1,602,585,594; and as of fiscal year 2017, the assets of the System exceeded its liabilities by \$1,509,542,788.

The System's net position restricted for pension benefits increased by \$45,214,008 or 2.82 percent for fiscal year 2019; for the prior fiscal year 2018 total net position increased by \$93,042,806 or 6.16 percent; and for the prior fiscal year 2017 total net position increased by \$158,254,148 or 11.71 percent, all primarily as a result of the performance of the global 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 117.0 percent. In general, this indicates that for every dollar of benefits due we have approximately \$1.17 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 120.3 percent; and as of June 30, 2017, the date of the previous annual actuarial valuation, the funded ratio for the System was 119.8 percent.

Additions to Fiduciary Net Position

Additions for the fiscal year 2019 decreased \$44,750,028 or 28.35 percent over the prior year from \$157,823,418 to \$113,073,390, which includes member contributions of \$9,597,068, employer contributions of \$20,604,377, a net investment income gain of \$82,431,446 and net securities lending income of \$440,499.

Fiscal year 2018 additions decreased \$61,206,567 or 27.94 percent over the prior year from \$219,029,985 to \$157,823,418, which included member contributions of \$8,963,672, employer contributions of \$19,696,957, a net investment income gain of \$128,685,224 and net securities lending income of \$477,565.

For fiscal year 2017 additions increased \$186,481,127 or 572.93 percent over the prior year from \$32,548,858 to \$219,029,985, which included member contributions of \$8,169,019, employer contributions of \$18,543,308, a net investment income gain of \$191,803,916 and net securities lending income of \$513,742.

Management's Discussion and Analysis Continued

Deductions from Fiduciary Net Position

Deductions for the fiscal year 2019 increased \$3,078,770 or 4.75 percent over the prior fiscal year from \$64,780,612 to \$67,859,382.

Fiscal year 2018 deductions increased \$4,004,775 or 6.59 percent over the prior fiscal year from \$60,775,837 to \$64,780,612.

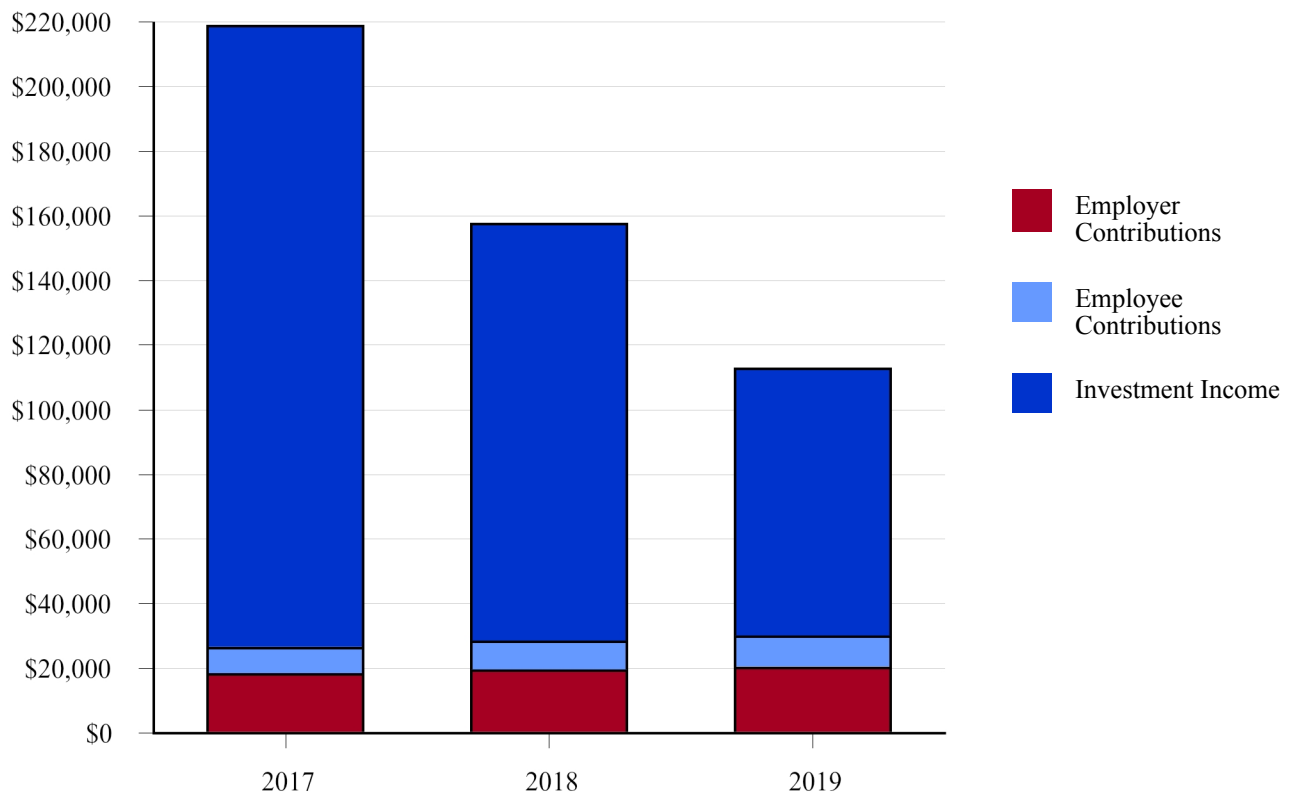
Fiscal year 2017 deductions increased \$2,797,956 or 4.83 percent over the prior fiscal year from \$57,977,881 to \$60,775,837.

The current year increase in deductions is due primarily to an increase in the number of retirees and a modest increase in the Post Retirement Supplemental Benefit (PRSB) payments for calendar year 2019.

Schedule and Graph of Additions By Source

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

	2017	2018	2019
Employer Contributions	\$ 18,543	\$ 19,697	\$ 20,604
Employee Contributions	8,169	8,964	9,597
Investment Income	192,318	129,162	82,872
TOTAL	\$ 219,030	\$ 157,823	\$ 113,073

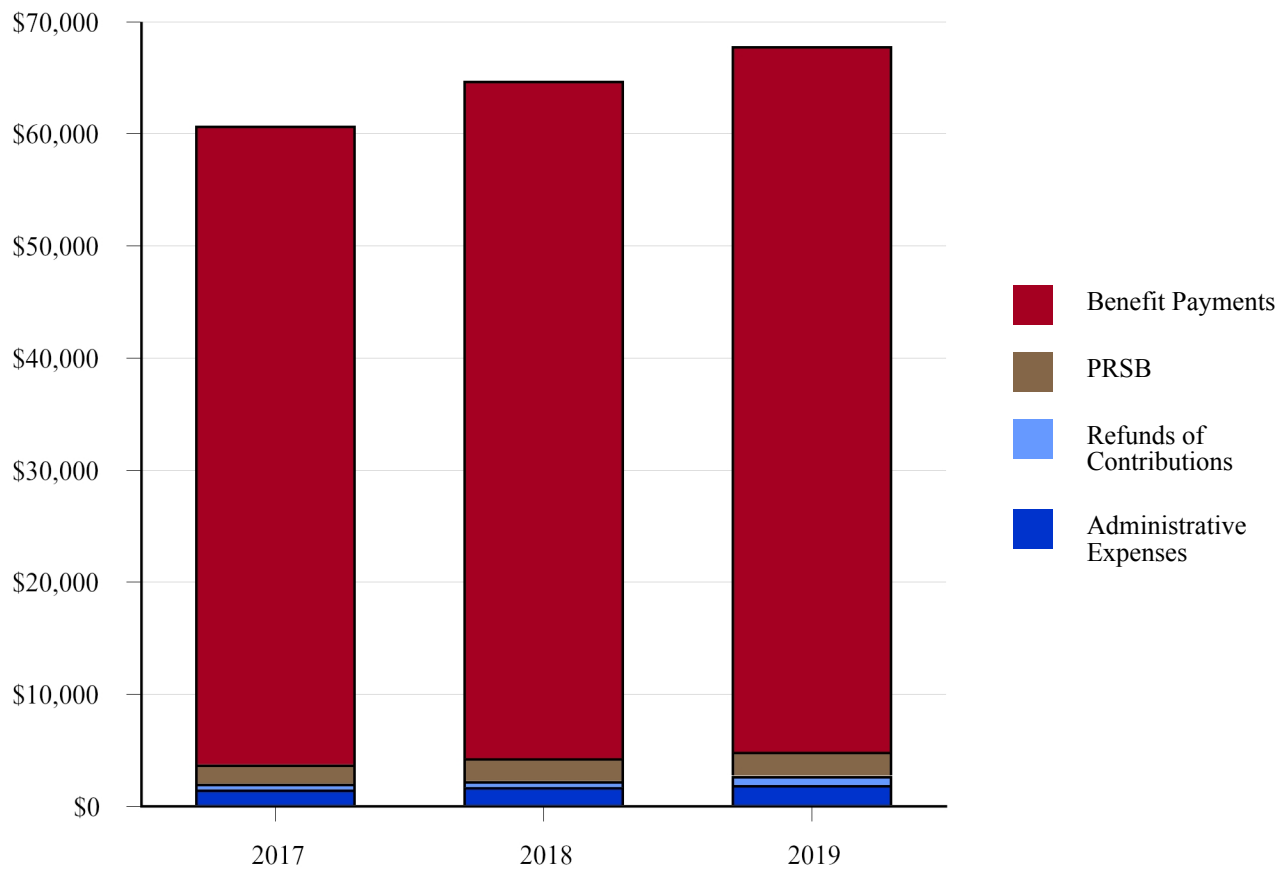


Management's Discussion and Analysis Continued

Schedule and Graph of Deductions By Type

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

	2017	2018	2019
Benefit Payments	\$ 57,029	\$ 60,492	\$ 62,991
PRSB	1,719	2,019	2,122
Refunds of Contributions	525	560	849
Administrative Expenses	1,503	1,710	1,897
TOTAL	\$ 60,776	\$ 64,781	\$ 67,859



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 117.0 percent, which means the System's fund has approximately \$1.17 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 \$1,647,799,602. All of the net position restricted for pension benefits is available 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 2.82 percent due to strong performance of the investment markets; while in 2018 the System's restricted fiduciary net position increased by 6.16 percent due to strong performance of the global investment markets; and also, due to strong investment performance in 2017, the System's restricted fiduciary net position increased by 11.71 percent (See Table 1).

In order to determine whether the \$1.648 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 Board's

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.

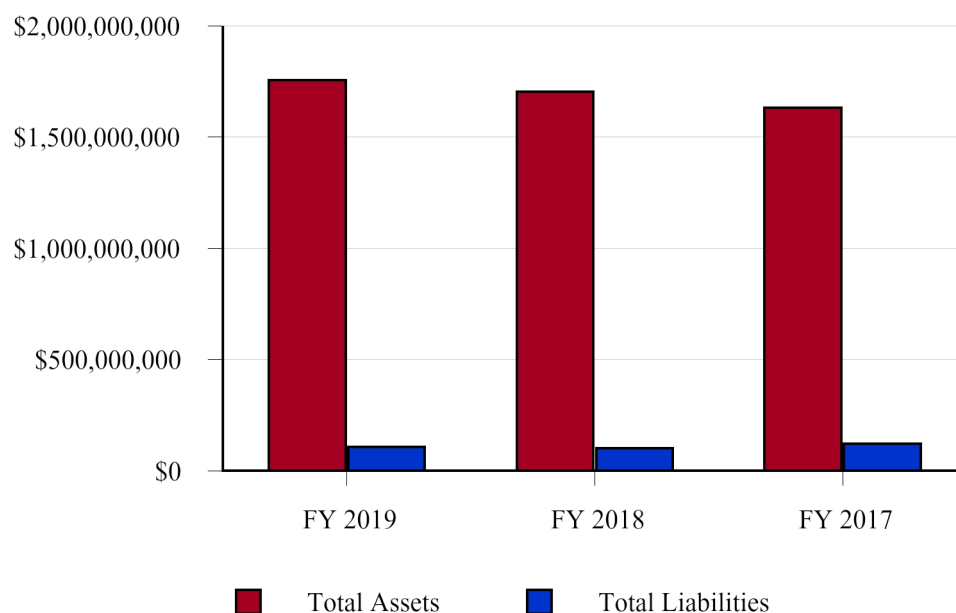
Management's Discussion and Analysis Continued

**Table 1 – Fire and Police 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	\$ 147,619,240	\$ 108,904,110	\$ 38,715,130	35.55%
Investments at Fair Value	1,614,051,932	1,600,674,190	13,377,742	0.84%
Total Assets	\$1,761,671,172	\$1,709,578,300	\$ 52,092,872	3.05%
Total Liabilities	113,871,570	106,992,706	6,878,864	6.43%
Net Position Restricted for Pension Benefits	\$1,647,799,602	\$1,602,585,594	\$ 45,214,008	2.82%

	FY 2018	FY 2017	FY 2018 Increase/ (Decrease) Amount	FY 2018 Increase/ (Decrease) Percent
Current and Other Assets	\$ 108,904,110	\$ 126,535,268	\$ (17,631,158)	(13.93%)
Investments at Fair Value	1,600,674,190	1,510,940,012	89,734,178	5.94%
Total Assets	\$1,709,578,300	\$1,637,475,280	\$ 72,103,020	4.40%
Total Liabilities	106,992,706	127,932,492	(20,939,786)	(16.37%)
Net Position Restricted for Pension Benefits	\$1,602,585,594	\$1,509,542,788	\$ 93,042,806	6.16%



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) Reserve, Employer Advance/Retired Reserve, DROP Reserve, PRSB Reserve and City Surplus Reserve.

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 3-353. 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 3-354. PRSB is a supplemental benefit distributed to eligible participants in accordance with the City of Fresno Municipal Code Section 3-354, 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.

City Surplus Reserve represents the 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 the City of Fresno Municipal Code Section 3-354 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

Management's Discussion and Analysis Continued

prior fiscal years, including 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 positive balances for fiscal years 2019, 2018 and 2017 due to estimated surplus allocations available to the City for offsetting the City's contributions for fiscal years 2019, 2020 and 2021. The City's normal contribution rate for fiscal years 2019 and 2018 also included adjustments for economic and non-economic actuarial assumption changes including the assumed rate of return which is 7.25 percent effective July 1, 2016.

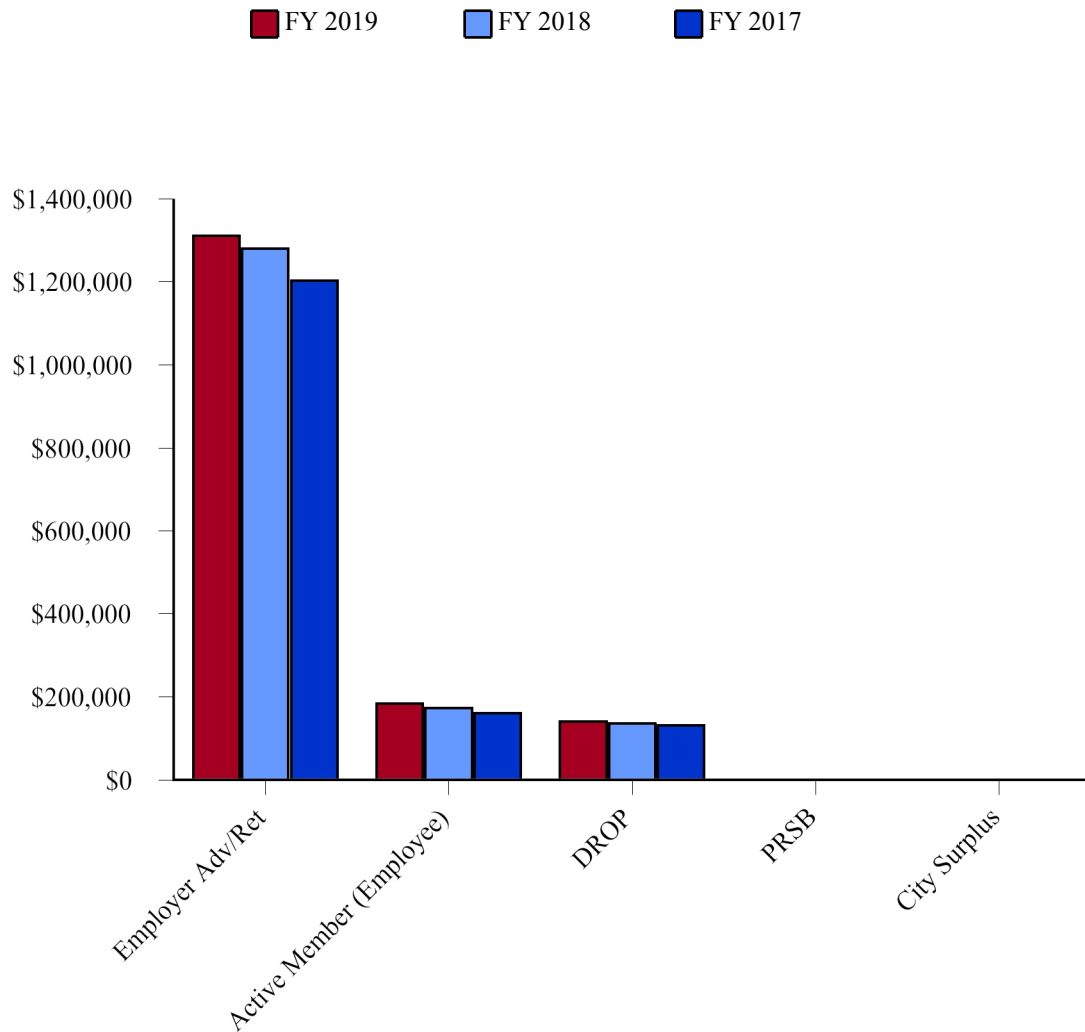
Additions to and deductions from PRSB occur when surpluses and allocations occur, respectively. The City Surplus reserve represents that portion of distributable actuarial surpluses and accrued interest, reduced by required City normal pension contributions. The City Surplus Reserve Account shall be drawn upon in subsequent years if needed to reduce or eliminate the City's annual pension contribution requirement.

Management's Discussion and Analysis Continued

Table 2 – Fire and Police Retirement System’s Reserves

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

	FY 2019	FY 2018	FY 2017
Employer Advance/Retired Reserves	\$ 1,314,392	\$ 1,282,881	\$ 1,206,941
Active Member (Employee) Reserves	186,720	177,163	164,672
DROP Reserves	144,291	139,944	135,164
PRSB Reserves	2,084	2,011	1,854
City Surplus Reserves	313	587	912
Net Position Restricted for Pension Benefits	\$ 1,647,800	\$ 1,602,586	\$ 1,509,543



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 \$45,214,008 for the fiscal year 2019 resulting in an 2.82 percent increase in the fiduciary net position restricted for pension benefits for the fiscal year ended June 30, 2019. Primarily attributable to the growth in the global financial markets in fiscal year 2018, the System's fiduciary net position increased \$93,042,806 for the fiscal year resulting in a 6.16 percent increase in the fiduciary net position restricted for pension benefits for the fiscal year ended June 30, 2018; the System's fiduciary net position increased \$158,254,148 resulting in a 11.71 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 for the fiscal year ended June 30, 2019 totaled \$113,073,390.

For the fiscal year ended June 30, 2019, overall additions had decreased by \$44,750,028 or 28.35 percent primarily due to lower than anticipated performance in the global investment markets; for fiscal year 2018, overall additions had decreased by \$61,206,567 or 27.94 percent primarily due to lower than anticipated performance in the global investment markets; for fiscal year 2017, overall additions had increased by \$186,481,127 or 572.93 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 \$67,859,382 which was an increase of \$3,078,770 or 4.75 percent over the prior fiscal year 2018. Deductions from the fiduciary net position for the fiscal year ended June 30, 2018, totaled \$64,780,612 which was an increase of \$4,004,775 or 6.59 percent over the prior fiscal year 2017. The fiscal year ended June 30, 2017 had deductions from the fiduciary net position totaling \$60,775,837, which was an increase of \$2,797,956 or 4.83 percent over the prior fiscal year 2016. The current year increase in benefits paid resulted primarily from a modest increase in PRSB payments for calendar year 2019 and the normal increase in the number of new retirees receiving benefits.

The System's increases in total expenses have closely paralleled inflation and the growth in the membership and services provided. The System has consistently met its Administrative Expense 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	\$ 20,604,377	\$ 19,696,957	\$ 907,420	4.61%
Employee Contributions	9,597,068	8,963,672	633,396	7.07%
Net Investment Income *	82,871,945	129,162,789	(46,290,844)	(35.84%)
Total Additions	\$ 113,073,390	\$ 157,823,418	\$ (44,750,028)	(28.35%)
Deductions				
Retiree Benefit Payments	\$ 62,990,700	\$ 60,491,661	\$ 2,499,039	4.13%
Post Retirement Supplemental Benefit (PRSB)	2,122,442	2,019,167	103,275	5.11%
Refunds of Contributions	848,993	560,170	288,823	51.56%
Administrative Expenses	1,897,247	1,709,614	187,633	10.98%
Total Deductions	\$ 67,859,382	\$ 64,780,612	\$ 3,078,770	4.75%
Changes in Net Position	45,214,008	93,042,806	(47,828,798)	(51.41%)
Net Position Restricted for Pension Benefits				
Beginning of the Year	1,602,585,594	1,509,542,788	93,042,806	6.16%
End of the Year	\$ 1,647,799,602	\$ 1,602,585,594	\$ 45,214,008	2.82%

* Net of investment expense of \$16,012,333 and \$11,544,650 for June 30, 2019 and 2018, respectively.

	FY 2018	FY 2017	FY 2018 Increase/ (Decrease) Amount	FY 2018 Increase/ (Decrease) Percent
Additions				
Employer Contributions	\$ 19,696,957	\$ 18,543,308	\$ 1,153,649	6.22%
Employee Contributions	8,963,672	8,169,019	794,653	9.73%
Net Investment Income *	129,162,789	192,317,658	(63,154,869)	(32.84%)
Total Additions	\$ 157,823,418	\$ 219,029,985	\$ (61,206,567)	(27.94%)
Deductions				
Retiree Benefit Payments	\$ 60,491,661	\$ 57,028,861	\$ 3,462,800	6.07%
Post Retirement Supplemental Benefit (PRSB)	2,019,167	1,719,441	299,726	17.43%
Refunds of Contributions	560,170	524,636	35,534	6.77%
Administrative Expenses	1,709,614	1,502,899	206,715	13.75%
Total Deductions	\$ 64,780,612	\$ 60,775,837	\$ 4,004,775	6.59%
Changes in Net Position	93,042,806	158,254,148	(65,211,342)	(41.21%)
Net Position Restricted for Pension Benefits				
Beginning of the Year	1,509,542,788	1,351,288,640	158,254,148	11.71%
End of the Year	\$ 1,602,585,594	\$ 1,509,542,788	\$ 93,042,806	6.16%

* Net of investment expense of \$11,544,650 and \$9,085,443 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 Fire and Police 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 Fire and Police Retirement System

2828 Fresno Street Suite 201

Fresno, California 93721-1327

Respectfully submitted,

Robert Theller

Robert T. Theller, Esq.
Retirement Administrator

December 2, 2019

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Basic Financial Statements

Statement of Fiduciary Net Position

As of June 30, 2019 and 2018

	2019	2018
ASSETS		
Cash (Note 7)	\$ 3,739,323	\$ 2,206,598
Collateral Held for Securities Lent (Note 9)	98,294,737	98,293,865
Receivables		
Receivables for Investments Sold	36,794,678	1,510,664
Interest and Dividends	4,107,473	4,004,206
Other Receivables	3,731,934	1,884,317
Total Receivables	44,634,085	7,399,187
Prepaid Expenses	—	37,808
Total Current Assets	146,668,145	107,937,458
Investments at Fair Value (Note 6 and Note 7) and NAV		
Domestic Equity	465,966,024	598,042,858
International Developed Market Equities	297,494,943	287,973,864
Government Bonds	137,031,968	177,379,820
Corporate Bonds	205,702,512	150,585,487
Alternatives	168,772,722	63,716,750
Real Estate	258,568,925	234,106,238
International Emerging Market Equities	56,346,628	55,558,303
Short-Term Investments	24,168,210	33,310,870
Total Investments	1,614,051,932	1,600,674,190
Capital Assets Net of Accumulated Depreciation (Note 12)	828,412	966,652
Other Assets	122,683	—
Total Assets	1,761,671,172	1,709,578,300
LIABILITIES		
Collateral Held for Securities Lent (Note 9)	98,294,737	98,293,865
Payable for Investments Purchased	9,958,277	5,590,678
Other Liabilities	1,899,061	1,419,408
Payable for Foreign Currency Purchased	3,719,495	1,688,755
Total Liabilities	113,871,570	106,992,706
Net Position Restricted for Pension Benefits (Note 5)	\$ 1,647,799,602	\$ 1,602,585,594

The notes to the financial statements on pages 19 - 55 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	\$ 20,604,377	\$ 19,696,957
Employee	9,597,068	8,963,672
Total Contributions	30,201,445	28,660,629
Investment Income		
Net Appreciation/(Depreciation) in Value of Investments	66,984,611	111,163,089
Interest	14,865,131	14,600,658
Dividends	14,216,423	12,886,994
Other Investment Related	60,921	55,900
Total Investment Income	96,127,086	138,706,641
Less: Investment Expense	(13,695,640)	(10,021,417)
Total Net Investment Income	82,431,446	128,685,224
Securities Lending Income		
Securities Lending Earnings (Note 9)	2,757,192	2,000,798
Less: Securities Lending Expense	(2,316,693)	(1,523,233)
Total Net Securities Lending Income	440,499	477,565
Total Additions	113,073,390	157,823,418
DEDUCTIONS		
Benefit Payments	62,990,700	60,491,661
Post Retirement Supplemental Benefits (Note 11)	2,122,442	2,019,167
Refunds of Contributions	848,993	560,170
Administrative Expense	1,897,247	1,709,614
Total Deductions	67,859,382	64,780,612
Changes in Net Position	45,214,008	93,042,806
NET POSITION RESTRICTED FOR PENSION BENEFITS		
BEGINNING OF YEAR	1,602,585,594	1,509,542,788
END OF THE YEAR	\$ 1,647,799,602	\$ 1,602,585,594

The notes to the financial statements on pages 19 - 55 are an integral part of this statement.

Notes to the Basic Financial Statements

1 | Significant Provisions of the Retirement System

The City of Fresno Fire and Police Retirement System (the System) was established on July 1, 1955, under provisions of the City of Fresno Ordinance Number 4611, and charter Section 910, and is maintained and governed by Article 3 and 4 of Chapter 3 of the Municipal Code of the City of Fresno but not under the control of the City Council. The System is a single-employer, contributory, defined benefit pension plan. The System is a public employee retirement system that provides lifetime retirement, disability, and death benefits to the safety members employed by the City of Fresno, includes all full time sworn fire, police and airport safety personnel.

The System is administered by the Fire and Police Retirement Board (Board) which operates under the authority vested in Article 3 and 4 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 Fire and Police 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 Fire and Police 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 sworn Fire Department members of the System, and one (1) employee who is elected by the Police and Airport Safety Officers 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 Employees 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

The Fire and Police Retirement System is one System with two tiers. Effective August 27, 1990, the City of Fresno (the City) added the Fire and Police Second Tier for all full time sworn fire, police and airport safety personnel hired on or after that date (and closed the Fire and Police First Tier to new entrants). Both tiers are governed by the City of Fresno Municipal Code. The provisions of Tier 1 are set forth in Article 3 of Chapter 3, while the Tier 2 provisions are stated in Article 4.

All permanent sworn Fire and Police personnel of the City of Fresno are eligible to participate in the plan. Temporary Public Safety employees are not eligible to participate in the plan. Employees become eligible for membership on their first day of full-time regular employment, and members become fully vested after earning 5 years of service credit.

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

	<u>2019</u>	<u>2018</u>
Active Members		
Vested	795	808
Non-Vested	331	330
Total Active Members	<u>1,126</u>	<u>1,138</u>
Retirees and Beneficiaries of Deceased		
Retirees, Currently Receiving Benefits	1,079	1,062
Inactive Vested Members	88	94
Total Retirees and Inactive Members	<u>1,167</u>	<u>1,156</u>
Grand Total	<u>2,293</u>	<u>2,294</u>

Benefit Provisions

The System provides lifetime retirement, disability, and death benefits to all eligible permanent sworn Fire, Police and Airport personnel 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, tier and the option selected by the participant. Death and disability benefits are additionally based upon whether the disability was service connected and whether the death occurred before or after retirement.

Members' contributions, including interest, are 100 percent vested at all times. Employer contributions do not become vested until completion of 10 years of credited service under the First Tier and five years of credited service under the Second Tier when they become 100 percent vested, but are not payable until the member attains the age of 50 under both tiers. Contributions are made by the members and the employer at rates recommended by the System's actuary and adopted by the Retirement Board.

Member Retirement Benefits

Members of Tier 1, hired prior to August 27, 1990, are eligible to retire once they attain the age of 65 regardless of service or at age 50 and have acquired 10 or more years of retirement service credit. Tier 1 benefit is calculated pursuant to the provisions of Section 3-333 of the City of Fresno Municipal Code. The monthly allowance for a member with at least 20 years of service who retires from active status is equal to 55 percent of final compensation plus 2 percent of final compensation for each year of service in excess of 20 years completed after age 50. For Tier 1, final average compensation consists of the final highest consecutive 36 months of compensation earnable calculated using the rate of pay actually earned by the member in effect at the time of retirement. Some members can elect to have their final compensation based on a rank average.

Notes to the Basic Financial Statements Continued

Members of Tier 2, hired on or after August 27, 1990, are eligible to retire once they attain the age of 65 regardless of service or at age 50 and have acquired 5 or more years of retirement service credit. Tier 2 benefit is calculated pursuant to the provisions of Section 3-411 of the City of Fresno Municipal Code. The monthly allowance for a member who is age 55 or older is equal to 2.70 percent of final compensation times years of accrued retirement service credit. The maximum monthly retirement allowance is 75 percent of final compensation. For Tier 2, final average compensation consists of the highest consecutive 36 months of compensation earnable during any 36 months of service before the date 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 66 2/3 percent 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. 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.

The City of Fresno contributes to the retirement plan based upon actuarially determined contribution rates adopted by the Board. Employer contribution rates are adopted annually based upon recommendations received from the Retirement

System's actuary after the completion of the annual actuarial valuation. The average employer contribution rate as of June 30, 2019 for 2018-2019 (based on the June 30, 2017 valuation) was 18.76 percent of compensation.

All members are required to make contributions to the Retirement System. The average member contribution rate as of June 30, 2019 for 2018-2019 (based on the June 30, 2017 valuation) was 8.74 percent of compensation.

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 50 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

Notes to the Basic Financial Statements Continued

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 his or her DROP account from the options provided.

DROP Reserves which represent funds reserved for DROP benefits accumulated by active members and retirees were \$144,291,360 and \$139,944,340 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 final average salary, years of credited service and whether the member is over or under age 50 and whether the permanent incapacity is found to be service connected (caused by the job) or ordinary (injury or illness not caused by their job) disability. There is no minimum service requirement before benefits are payable for service-connected disability. However, in order to receive ordinary disability benefits, the member must have completed at least 10 years of service.

Cost of Living Benefits

Cost-of-living adjustment (COLA) increases for the First Tier retirees are determined by the increases attached to ranks of active safety employees for those having retired under the rank-average option. For those retired under the 3-year average, cost-of-living is based on the percentage of change in the weighted mean average monthly compensation attached to all ranks of members, as compared with the prior fiscal year and limited to a maximum of 5 percent per year.

Tier 1 cost-of-living adjustments (COLA) depend on the type of method chosen by the employee at retirement. If the employee chose the Career Rank method, the COLA is a recalculation of his/her retirement based on the new salaries adopted for the current year. If the method chosen by the retiree is the final 3-year method, the COLA is based on the change in the weighted mean average compensation attached to all ranks in the department with a cap of five

Notes to the Basic Financial Statements Continued

percent (5%) per year. Any excess over the 5% is banked for use in years when the COLA calculation is less than 5%.

Cost-of-Living Adjustment (COLA) increases for the Tier 2 retirees will be determined by the change in Consumer Price Index with a maximum of 3 percent per year. Provisions for the COLA increases are outlined in the City of Fresno Municipal Code and changes may be made only by code amendment.

Tier 2 COLAs are based on the change in the Consumer price index (for all Urban Wage Earners and all Clerical Workers – U.S. City Average) as provided in the City of Fresno Municipal Code. Retirement staff research the percentage change in CPI and propose that percent to the Fire and Police Retirement Board as the COLA to be adopted for the following fiscal year. This procedure must be complete by the end of April each year for implementation in January of the following calendar year. The COLA is limited to a three percent (3%) maximum change per year and any excess over 3 percent is banked for the retiree for use in a year where the percent of CPI change is less than 3 percent.

The Board adopted the annual COLA adjustment, pursuant to Section 3-411, 2.18 percent, January 1, 2019, 1.9 percent, January 1, 2018, 0.4 percent, effective January 1, 2017.

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 and per Sections 3-322 and 3-324 of the City of Fresno Municipal Code. Other expenses are recognized when the corresponding liabilities are incurred.

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 Statement No. 28, cash received as collateral on securities lending transactions and investments made with that cash are reported as assets and liabilities resulting from these transactions and are both 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.

Notes to the Basic Financial Statements Continued

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 City of Fresno 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 national or international exchanges 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 Employees 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 below provides the Boards’ adopted asset allocation policy as of June 30, 2019 and 2018.

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%
MLPs	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%

Notes to the Basic Financial Statements Continued

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.

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 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. 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 3-319, 3-324, and 3-405.

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

All active members are required to make contributions to the System. Employee contribution rates vary in Tier 1 according to entry age and are designed to provide funding for approximately one-third of the retirement benefits. The Tier 1 average member contribution rate as of June 30, 2019 for 2018-2019 (based on the June 30, 2017 valuation) was 0.00% of compensation for members not in the DROP Program. The Tier 1 average member contribution rate as of June 30, 2018 for 2017-2018 (based on the June 30, 2016 valuation) was 5.02% of compensation.

Notes to the Basic Financial Statements Continued

Employee contribution rates in Tier 2 are established at nine percent (9%) of pensionable base pay.

The City's contribution rates are designed to provide funding for the remaining regular retirement and cost-of-living benefits, as well as all disability and survivors' benefits.

The aggregate employer contribution rate as of June 30, 2019 for 2018-2019 (based on the June 30, 2017 valuation) was 18.72% of compensation. The aggregate employer contribution rate as of June 30, 2018 for 2017-2018 (based on the June 30, 2016 valuation) was 18.92% 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

Comprehensive Actuarial Funding Policy and Actuarial Cost Methodology for Funding Purposes

The Board adopted a Comprehensive Actuarial Funding Policy on November 7, 2012. For the Fire & Police Retirement System, that policy included a change in actuarial cost methodology from the aggregate Entry Age Normal funding method used for funding purposes to the individual Entry Age Normal (EAN) method as this individual 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 revises the financial reporting requirements for governmental pension plans and their sponsors.

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.

Notes to the Basic Financial Statements Continued

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 the City of Fresno Municipal Code Sections relating to the amortization period used in the calculation of the Post Retirement Supplement 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.

The System uses a five year smoothing of market gains and losses to derive the actuarial value of assets. For the fiscal year ended June 30, 2019, the actuarial value of assets was \$1.495 billion with a funded percentage of 117.0 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 87.

Notes to the Basic Financial Statements Continued

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	\$1,495	\$1,278	117.0%	(\$217)	\$115	(188.8%)
2018	\$1,437	\$1,195	120.3%	(\$242)	\$111	(218.1%)
2017	\$1,355	\$1,131	119.8%	(\$224)	\$103	(217.8%)

Funding Policy

The City 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. 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 to the System for fiscal year 2019 totaled \$30,201,445. Employees (members in both tiers) contributed \$9,597,068 and the City made (basic and cost-of-living adjustments (COLA)) contributions of \$20,604,377.

First Tier

Contributions aggregating \$1,170,409 (\$969,582 net employer and \$200,827 employee) 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. For fiscal year 2019, the employer contribution rate was set at 28.45 percent; however, only a cash contribution of \$969,582 was required from the City due to the difference between actual and the estimated June 30, 2017 surplus allocated to the City in the June 30, 2016 valuation for offsetting the City's contributions for the 2017/2018 plan year. Based on the June 30, 2017 actuarial valuation, the employer contributions represent 18.72 percent of the fiscal year 2019 covered payroll. Although the June 30, 2017 actuarial valuation shows the employee contribution rate of 0.00 percent for Tier 1 because there are no new Tier 1 members, the actual employee contributions represent 3.88 percent of covered payroll for those active members participating in DROP.

Notes to the Basic Financial Statements Continued

Contributions aggregating \$1,398,934 (\$1,190,040 net employer and \$208,894 employee) 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. For fiscal year 2018, the employer contribution rate was set at 28.38 percent; however, only a cash contribution of \$1,190,040 was required from the City due to the difference between actual and the estimated June 30, 2016 surplus allocated to the City in the June 30, 2015 valuation for offsetting the City's contributions for the 2016/2017 plan year. Based on the June 30, 2016 actuarial valuation, employer and employee contributions represented 18.92 percent and 5.02 percent, respectively, of the fiscal year 2018 covered payroll.

Second Tier

Contributions aggregating \$29,031,036 (\$19,634,795 net employer and \$9,396,241 employee) 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. For fiscal year 2019, the employer contribution rate was set at 23.07 percent; however, only a cash contribution of \$19,634,795 was required from the City due to the difference between actual and the estimated June 30, 2017 surplus allocated to the City in the June 30, 2016 valuation for offsetting the City's contributions for the 2017/2018 plan year. Employer and employee contributions represented 18.77 percent and 9.00 percent, respectively, of the fiscal year 2019 covered payroll.

Contributions aggregating \$27,261,695 (\$18,506,917 net employer and \$8,754,778 employee) 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. For fiscal year 2018, the employer contribution rate was set at 23.15 percent; however, only a cash contribution of \$18,506,917 was required from the City due to the difference between actual and the estimated June 30, 2016 surplus allocated to the City in the June 30, 2015

valuation for offsetting the City's contributions for the 2016/2017 plan year. Employer and employee contributions represented 18.95 percent and 9.00 percent, respectively, of the fiscal year 2018 covered payroll.

The City's normal contributions to the Fire and Police Retirement System for 2019 were estimated in accordance with actuarially determined requirements computed through an actuarial valuation performed as of June 30, 2017, as follows:

Actuarial Rates as a Percentage of Pensionable Payroll

	Effective FY 19	Effective FY 18
Employer Normal (First Tier)	28.45%	28.38%
Employer Normal (Second Tier)	23.07%	23.15%

Notes to the Basic Financial Statements Continued

Normal Cost

	FY 2019		
	Tier 1	Tier 2	Total
Employee Contributions	\$ 200,827	\$ 9,396,241	\$ 9,597,068
Employer Contribution Rate	28.45%	23.07%	
Employer Contributions	\$ 1,472,713	\$ 24,137,378	\$ 25,610,091
Prior Year Contribution (Surplus)/Shortfall	(503,131)	(4,502,583)	(5,005,714)
Net Employer Contributions	\$ 969,582	\$ 19,634,795	\$ 20,604,377
Pensionable Payroll	\$ 5,176,497	\$104,626,693	\$ 109,803,190

	FY 2018		
	Tier 1	Tier 2	Total
Employee Contributions	\$ 208,894	\$ 8,754,778	\$ 8,963,672
Employer Contribution Rate	28.38%	23.15%	
Employer Contributions	\$ 1,783,709	\$ 22,605,777	\$ 24,389,486
Prior Year Contribution (Surplus)/Shortfall	(593,669)	(4,098,860)	(4,692,529)
Net Employer Contributions	\$ 1,190,040	\$ 18,506,917	\$ 19,696,957
Pensionable Payroll	\$ 6,285,092	\$ 97,649,142	\$ 103,934,234

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	\$1,504,129	\$1,387,482
Plan Fiduciary Net Position	(\$1,647,800)	(\$1,602,586)
Net Pension Liability/(Surplus)	(\$143,671)	(\$215,104)
Plan Fiduciary Net Position as a percentage of the total pension liability	109.55%	115.50%

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	4.00% to 12.75%, 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. For healthy members the separate tables for males and females ages assume no setback for males and are set forward one year for females. For members that are disabled, the ages are set forward four years. For beneficiaries, the separate tables assume no setback for males and are set forward one year for females, weighted 80% male and 20% 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 valuation 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 4.00% to 12.75% (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 table on the following page.

The actual asset class target allocations from the Board's current adopted Asset Allocation Target Policy will be 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 for the June 30, 2019 Actuarial Valuation.

The actual asset class target allocations from the Board's current adopted Asset Allocation Target Policy will be 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 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 Assumptions.

** Based on June 30, 2015 Economic Study 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 have no setback for males and are set forward one year for females. For members that are disabled, the ages are set forward four years. For beneficiaries, the separate tables have no setback for males and are set forward one year for females, weighted 80% male and 20% female.

Discount Rate

The discount rate 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, 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	\$62,471	(\$143,671)	(\$309,363)

	1% Decrease	Current Discount Rate	1% Increase
Net Pension Liability	6.25%	7.25%	8.25%
June 30, 2018	(\$34,508)	(\$215,104)	(\$361,693)

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 members 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.

Notes to the Basic Financial Statements Continued

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

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 3-354 Post-Retirement Supplemental Benefit.

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 the City of Fresno Municipal Code Section 3-354 Post-Retirement Supplemental Benefit.

Interest is allocated at an actuarially determined interest rate as approved by the Board and is credited monthly to the Active Member Reserve 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	\$ 1,314,392	\$ 1,282,881
Active Member (Employee) Reserves	186,720	177,163
DROP Reserves	144,291	139,944
PRSB Reserves	2,084	2,011
City Surplus Reserves	313	587
Net Position Restricted for Pension Benefits	\$ 1,647,800	\$ 1,602,586

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	\$ 7,803,425	\$ —	\$ 7,803,425	\$ —
Commercial Mortgage-Backed	4,481,136	—	4,481,136	—
Corporate Bonds	154,269,165	—	154,269,165	—
Corporate Convertible Bonds	6,844,396	—	6,527,018	317,378
Government Agencies	2,007,483	—	2,007,483	—
Government Bonds	53,202,623	—	53,202,623	—
Government Mortgage Backed Securities	75,114,987	—	75,114,987	—
Gov't-issued Commercial Mortgage-Backed	769,277	—	769,277	—
Municipal/Provincial Bonds	5,937,597	—	5,937,597	—
Non-Government Backed C.M.O.s	484,620	—	484,620	—
Total Debt Securities	310,914,709	—	310,597,331	317,378
Equity Securities				
Consumer Discretionary	70,853,522	70,849,495	4,027	—
Consumer Staples	31,821,567	30,869,659	951,908	—
Energy	14,916,359	14,772,640	143,719	—
Financials	108,207,675	108,207,675	—	—
Health Care	41,517,431	41,517,431	—	—
Industrials	85,445,176	85,445,176	—	—
Information Technology	61,188,194	61,188,194	—	—
Materials	26,778,840	26,778,840	—	—
Real Estate	86,858,784	86,858,784	—	—
Telecommunication Services	25,526,732	25,526,732	—	—
Utilities	8,030,537	8,030,537	—	—
Total Equity Securities	561,144,817	560,045,163	1,099,654	—
Securities Lending	98,294,737	98,294,737	—	—
Short-Term Investments	24,168,210	13,131,794	11,036,416	—
Private Real Estate Holdings	3,358,395	—	3,358,395	—
Total Investments by Fair Value Level	\$ 997,880,868			
Investments Measured at the Net Asset Value (NAV)				
Commingled Fund - Equities	\$ 334,380,718			
Commingled Fund - Real Estate	139,045,013			
Commingled Fund - Fixed Income	29,237,015			
Commingled Fund - Infrastructure	67,438,951			
Private Real Estate Funds	42,981,954			
Private Debt/Private Credit	91,557,017			
Private Equity	9,776,753			
Total Investments Measured at NAV	714,417,421			
Total Investments Measured at Fair Value and NAV	\$1,712,298,289			
Investment Derivative Instruments*				
Equities - Rights/Warrants	\$ 48,380	\$ 48,374	\$ 6	\$ —
Total Investment Derivative Instruments	\$ 48,380	\$ 48,374	\$ 6	\$ —

* Short-term derivative instruments included on page 50 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	\$ 4,346,792	\$ —	\$ 4,346,792	\$ —
Commercial Mortgage-Backed	3,920,827	—	3,753,004	167,823
Corporate Bonds	131,993,227	—	131,993,227	—
Corporate Convertible Bonds	6,609,649	—	6,609,649	—
Government Agencies	3,048,865	—	3,048,865	—
Government Bonds	58,916,944	—	58,916,944	—
Government Mortgage Backed Securities	66,183,700	—	66,183,700	—
Gov't-issued Commercial Mortgage-Backed	673,236	—	673,236	—
Municipal/Provincial Bonds	6,523,597	—	6,523,597	—
Non-Government Backed C.M.O.s	973,478	—	973,478	—
Total Debt Securities	283,190,315	—	283,022,492	167,823
Equity Securities				
Consumer Discretionary	73,372,218	73,372,218	—	—
Consumer Staples	24,363,581	23,595,459	768,122	—
Energy	20,373,231	20,185,326	187,905	—
Financials	102,214,799	102,214,799	—	—
Health Care	38,322,566	38,322,566	—	—
Industrials	84,388,396	84,381,710	—	6,686
Information Technology	60,079,255	59,903,522	—	175,733
Materials	28,318,243	28,318,243	—	—
Real Estate	94,910,644	94,906,932	3,712	—
Telecommunication Services	26,902,095	26,902,095	—	—
Utilities	5,183,461	5,183,461	—	—
Total Equity Securities	558,428,489	557,286,331	959,739	182,419
Securities Lending	98,293,865	98,293,865	—	—
Short-Term Investments	33,310,871	14,926,418	18,384,453	—
Private Real Estate Holdings	3,035,896	—	3,035,896	—
Total Investments by Fair Value Level	\$ 976,259,436			
Investments Measured at the Net Asset Value (NAV)				
Commingled Fund - Equities	\$ 467,404,033			
Commingled Fund - Real Estate	131,663,771			
Commingled Fund - Fixed Income	42,033,478			
Private Real Estate Funds	19,107,622			
Private Debt/Private Credit	62,484,914			
Total Investments Measured at NAV	722,693,818			
Total Investments Measured at Fair Value and NAV	\$ 1,698,953,254			
Investment Derivative Instruments*				
Equities - Rights/Warrants	\$ 14,801	\$ 14,245	\$ 556	\$ —
Total Investment Derivative Instruments	\$ 14,801	\$ 14,245	\$ 556	\$ —

* Short-term derivative instruments included on page 50 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.

Notes to the Basic Financial Statements Continued

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 in the tables below as of June 30, 2019 and 2018.

**City Of Fresno Fire and Police 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	\$ 334,380,718	\$ —	Daily	None
Commingled Fund - Real Estate	139,045,013	—	Quarterly	45-90 Days
Commingled Fund - Fixed Income	29,237,015	—	Daily	None
Commingled Fund - Infrastructure	67,438,951	—	Not Eligible	N/A
Private Real Estate Funds	42,981,954	49,412,015	Not Eligible	N/A
Private Debt/Private Credit	91,557,017	51,013,679	Not Eligible	N/A
Private Equity	9,776,753	88,221,925	Not Eligible	N/A
Total investments measured at the NAV	\$ 714,417,421	\$ 188,647,619		

**City Of Fresno Fire and Police 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	\$ 467,404,033	\$ —	Daily	None
Commingled Fund - Real Estate	131,663,771	—	Quarterly	45-90 Days
Commingled Fund - Fixed Income	42,033,478	—	Daily	None
Commingled Fund - Infrastructure	—	65,174,712	Not Eligible	N/A
Private Real Estate Funds	19,107,622	34,809,693	Not Eligible	N/A
Private Debt/Private Credit	62,484,914	83,141,121	Not Eligible	N/A
Total investments measured at the NAV	\$ 722,693,818	\$ 183,125,526		

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 fund: 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	\$ 465,966	\$ 598,043
International Developed Market Equities	297,495	287,974
International Emerging Market Equities	56,347	55,558
Government Bonds	137,032	177,380
Corporate Bonds	205,702	150,585
Alternatives	168,772	63,717
Real Estate	258,569	234,106
Short-Term Investments	24,168	33,311
Total Investments at Fair Value	\$ 1,614,051	\$ 1,600,674

Notes to the Basic Financial Statements Continued

The Board, through its Investment Policy Statement, provides guidelines for investments and established the following target allocations with a minimum and maximum range for each of these 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%
Midstream Energy (MLP's)	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 Retirement 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 \$2,704,791 and \$1,352,251 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	\$ 7,803,425	AA+	0.18	\$ 4,346,791	AA	2.68
Commercial Mortgage-Backed	4,481,136	A+	5.42	3,920,827	AA-	5.37
Corporate Bonds	154,269,165	BB+	5.11	131,993,227	BB+	3.31
Corporate Convertible Bonds	6,844,396	CC	3.54	6,609,649	CC	5.11
Funds - Corporate Bond	29,237,015	—	—	—	—	—
Non-Government backed C.M.O.s	484,619	CC	2.91	973,478	BBB-	1.79
Rights & Warrants	6	CC	0.00	556	B-	—
Convertible Equity	1,095,627	BBB-	5.05	956,028	BB-	14.75
Common Stock	146,446	BB-	0.00	471,262	B-	0.00
Preferred Stock	1,340,677	BB+	0.14	1,313,669	BB+	0.00
Government Agencies	2,007,483	AAA	8.00	3,048,865	AAA	4.41
Government Bonds	53,202,623	AAA	6.31	58,916,944	AAA	5.24
Gov't Issued Commercial Mortgage Backed Securities	769,278	AAA	7.42	673,236	AAA	7.89
Government Mortgage Backed Securities	75,114,987	AAA	2.60	66,183,700	AAA	3.69
Funds - Government Agencies	—	—	—	42,033,478	AAA	—
Municipal/Provincial Bonds	5,937,597	A	10.17	6,523,597	A	9.65
Total Credit Risk Fixed Income	\$ 342,734,480			\$ 327,965,307		

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 fair 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	\$ 147,721	\$ —	\$ —	\$ 1,512	\$ 149,233
ARS	Argentine Peso	Argentina	106,138	—	—	—	106,138
AUD	Australian Dollar	Australia	10,869,883	—	—	—	10,869,883
BRL	Brazilian Real	Brazil	6,091,343	19,817	—	(12,100)	6,099,060
CAD	Canadian Dollar	Canada	13,996,944	—	—	—	13,996,944
CHF	Swiss Franc	Switzerland	22,581,211	—	—	(166,954)	22,414,257
CLP	Chilean Peso	Chile	397,175	—	7,831	46	405,052
CNY	Chinese Yuan Renminbi	China	2,549,577	—	—	77,483	2,627,060
COP	Colombian Peso	Colombia	—	—	—	—	—
CZK	Czech Koruna	Czech Republic	4,526	—	—	—	4,526
DKK	Danish Krone	Denmark	8,032,701	—	—	—	8,032,701
EGP	Egyptian Pound	Egypt	138,068	—	—	—	138,068
EUR	Euro	Europe	77,916,754	—	40,544	(379,850)	77,577,448
GBP	British Pound Sterling	United Kingdom	44,151,870	—	—	(116,139)	44,035,731
HKD	Hong Kong Dollar	Hong Kong	26,858,338	—	—	12,510	26,870,848
HUF	Hungarian Forint	Hungary	485,394	—	—	—	485,394
IDR	Indonesian Rupiah	Indonesia	1,183,045	—	—	30,118	1,213,163
ILS	New Israeli Shekel	Israel	1,401,160	—	—	—	1,401,160
INR	Indian Rupee	India	7,281,805	—	—	16,078	7,297,883
JPY	Japanese Yen	Japan	44,311,010	—	—	—	44,311,010
KRW	South Korean Won	South Korea	12,724,717	—	—	(462,920)	12,261,797
MXN	Mexican Peso	Mexico	957,311	—	—	—	957,311
MYR	Malaysian Ringgit	Malaysia	805,619	—	—	2,133	807,752
NOK	Norwegian Krone	Norway	1,470,179	—	—	—	1,470,179
PEN	Peruvian Nuevo Sol	Peru	8,485	—	—	1,159	9,644
PHP	Philippine Peso	Philippines	519,933	—	—	198	520,131
PLN	Polish Zloty	Poland	1,330,886	—	—	—	1,330,886
QAR	Qatari Rial	Qatar	370,364	—	—	—	370,364
SEK	Swedish Krona	Sweden	9,570,396	—	—	—	9,570,396
SGD	Singapore Dollar	Singapore	4,753,780	—	—	—	4,753,780
THB	Thai Baht	Thailand	1,548,503	—	—	—	1,548,503
TRY	Turkish Lira	Turkey	1,704,414	—	—	—	1,704,414
TWD	New Taiwan Dollar	Taiwan	9,109,236	—	—	838	9,110,074
USD	United States Dollar	United States	948,389,095	1,166,513	6	52,709,840	1,002,265,454
ZAR	South African Rand	South Africa	6,992,875	916,880	—	(916,880)	6,992,875
Total Equities (In USD)			1,268,760,456	2,103,210	48,381	50,797,072	1,321,709,119
Total Non-USD Equities (In USD)			\$ 320,371,361	\$ 936,697	\$ 48,375	\$ (1,912,768)	\$ 319,443,665

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	\$ 112,510	\$ —	\$ —	\$ 112,510	
ARS	Argentine Peso	Argentina	155,549	—	—	155,549	
AUD	Australian Dollar	Australia	10,794,379	—	—	10,794,379	
BRL	Brazilian Real	Brazil	3,278,533	—	—	10,843	3,289,376
CAD	Canadian Dollar	Canada	14,681,568	—	—	—	14,681,568
CHF	Swiss Franc	Switzerland	18,237,067	—	—	(27,765)	18,209,302
CLP	Chilean Peso	Chile	181,350	—	—	7,477	188,827
CNY	Chinese Yuan Renminbi	China	208,224	—	—	20,765	228,989
COP	Colombian Peso	Colombia	778,971	—	—	—	778,971
CZK	Czech Koruna	Czech Republic	4,419	—	—	—	4,419
DKK	Danish Krone	Denmark	8,284,010	—	—	—	8,284,010
EGP	Egyptian Pound	Egypt	126,999	—	—	781	127,780
EUR	Euro	Europe	72,753,854	—	13,016	501	72,767,371
GBP	British Pound Sterling	United Kingdom	45,132,474	—	—	(148,663)	44,983,811
HKD	Hong Kong Dollar	Hong Kong	25,642,341	—	—	16,762	25,659,103
HUF	Hungarian Forint	Hungary	—	—	—	—	—
IDR	Indonesian Rupiah	Indonesia	1,255,821	—	—	15,538	1,271,359
ILS	New Israeli Shekel	Israel	926,972	—	—	—	926,972
INR	Indian Rupee	India	4,254,344	—	—	(22,148)	4,232,196
JPY	Japanese Yen	Japan	45,987,926	60,782	—	(60,782)	45,987,926
KRW	South Korean Won	South Korea	13,666,412	—	—	—	13,666,412
MXN	Mexican Peso	Mexico	3,098,121	—	—	—	3,098,121
MYR	Malaysian Ringgit	Malaysia	1,624,410	—	—	3,395	1,627,805
NOK	Norwegian Krone	Norway	2,238,282	—	—	—	2,238,282
PEN	Peruvian Nuevo Sol	Peru	5,020	—	—	469	5,489
PHP	Philippine Peso	Philippines	443,848	—	—	3,412	447,260
PLN	Polish Zloty	Poland	1,140,565	—	—	—	1,140,565
QAR	Qatari Rial	Qatar	747,311	—	—	3,153	750,464
SEK	Swedish Krona	Sweden	9,707,556	—	—	—	9,707,556
SGD	Singapore Dollar	Singapore	4,751,245	—	—	—	4,751,245
THB	Thai Baht	Thailand	1,973,384	—	1,229	1,762	1,976,375
TRY	Turkish Lira	Turkey	1,403,427	—	—	686	1,404,113
TWD	New Taiwan Dollar	Taiwan	9,070,878	—	—	46,114	9,116,992
USD	United States Dollar	United States	1,037,093,516	1,275,482	556	31,175,992	1,069,545,546
ZAR	South African Rand	South Africa	11,295,029	—	—	(867,080)	10,427,949
Total Equities (In USD)			1,351,056,315	1,336,264	14,801	30,181,212	1,382,588,592
Total Non-USD Equities (In USD)			\$ 313,962,799	\$ 60,782	\$ 14,245	\$ (994,780)	\$ 313,043,046

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 (ADRs) and Global Depository Receipts (GDRs) including ADRs and GDRs 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 mortgage collateralized mortgage obligations (CMOs); centrally cleared instruments including, but not limited to, futures, swaps and options; and forwards including currency

Notes to the Basic Financial Statements Continued

forwards. Derivative investments with allocation limits include 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 \$3,830,755 and \$2,853,327, 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	\$(2,091,161)	\$2,103,210	\$1,336,264	\$ 766,946
Future Contracts - International Equity Index	—	1,670,037	1,494,532	175,505
Rights & Warrants	—	57,508	22,531	34,977
	Total	\$3,830,755	\$2,853,327	

Derivative Type:	FY 2018		FY 2017	FY 2018 - FY 2017 Change in Fair Value
	Notional Amount	Fair Value	Fair Value	
Foreign Currency Forward	\$(1,246,118)	\$1,336,264	\$1,210,222	\$ 126,042
Future Contracts - Domestic Equity Index	—	—	5,810,671	(5,810,671)
Future Contracts - International Equity Index	—	1,494,532	1,163,969	330,563
Rights & Warrants	—	22,531	20,597	1,934
	Total	\$2,853,327	\$8,205,459	

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

The City of Fresno Municipal Code and the Board's policies permit the Retirement Boards 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 \$107.6 million. The fair value of associated collateral was \$109.9 million (\$98.3 million of cash collateral and \$11.6 million 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 \$112.9 million. The fair value of associated collateral was \$116.3 million (\$98.3 million of cash collateral and \$18 million 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 was 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	\$2,757,192	\$2,000,798
Expenses:		
Bank Fees	2,316,693	1,523,233
Total Expenses	2,316,693	1,523,233
Net Income from Securities Lending	\$440,499	\$477,565

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	\$ 18,604,250	\$ 4,136,534	\$ 22,740,784	\$ 27,581,044	\$ 74,007	\$ 27,655,051
Domestic Equities	54,036,717	3,570,303	57,607,020	49,483,996	6,327,301	55,811,297
Domestic Fixed	23,081,287	845,178	23,926,465	18,600,751	—	18,600,751
International Equities	567,018	2,749,648	3,316,666	61,238	10,764,849	10,826,087
International Fixed	—	—	—	—	—	—
Total Value	\$ 96,289,272	\$11,301,663	\$107,590,935	\$ 95,727,029	\$17,166,157	\$112,893,186

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	\$ 18,975,287	\$ 4,215,722	\$ 23,191,009	\$ 28,199,886	\$ 75,740	\$ 28,275,626
Domestic Equities	54,910,833	3,615,441	58,526,274	50,757,662	6,473,670	57,231,332
Domestic Fixed	23,541,013	860,904	24,401,917	19,053,150	—	19,053,150
International Equities	597,225	2,874,237	3,471,462	64,578	11,439,990	11,504,568
International Fixed	270,379	—	270,379	218,589	—	218,589
Total Value	\$ 98,294,737	\$11,566,304	\$109,861,041	\$ 98,293,865	\$17,989,400	\$116,283,265

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 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 3-354.

If an actuarial surplus is declared, 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 3-354(f)(4). Any unused portion shall be reserved in the PRSB Reserve and drawn upon in subsequent years if needed.

For the fiscal year ended June 30, 2019, the System distributed PRSB benefits in the total amount of \$2,329,036 to eligible recipients (including \$2,122,442 to retirees and \$206,594 to DROP participants). As of June 30, 2019, the City Surplus Reserve balance was \$312,365 and the PRSB Reserve balance was \$2,084,393.

For the fiscal years ended June 30, 2019 and 2018, there was a surplus (or prefunded actuarial accrued liability) as the System has a valuation value of assets which is in excess of the actuarial accrued liability. The System's valuation value of assets was 117.0 percent and 120.3 percent, respectively, which was above the required 110 percent for declaration of a surplus, thus a 7.0 percent and 10.3 percent, actuarial surplus was available to reduce the City's contributions and to fund new PRSB benefits for the years ended June 30, 2019 and 2018. The June 30, 2019 PRSB portion of the surplus is \$1,650,513, of which 80 percent will be allocated in the 2020 calendar year to retirees at \$149.17 per month commencing January 1, 2020. For June 30, 2018 the PRSB portion of the surplus was \$2,260,076, of which 80 percent was allocated in the 2019 calendar year to retirees at \$184.57 per month commencing January 1, 2019.

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

Notes to the Basic Financial Statements Continued

Solutions' Version 3 project) includes software costs of \$797,757 and \$930,716 which are capitalized as of June 30, 2019 and 2018, respectively, and will be 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 \$30,655 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	\$ 9,696,813	\$ —
Brookfield	21,126,009	—
Oaktree Capital Mgt.	1,698,644	5,686,494
PIMCO BRAVO III	9,773,702	19,552,414
PCCP, LLC	7,116,847	9,570,785
Total	<u>\$ 49,412,015</u>	<u>\$ 34,809,693</u>
Private Debt/Private Credit		
Monroe Capital	\$ 18,977,760	\$ 36,660,776
Crescent Capital	21,582,727	28,883,173
PIMCO COF II	10,453,192	17,597,172
Total	<u>\$ 51,013,679</u>	<u>\$ 83,141,121</u>
Infrastructure		
JPM IIF	\$ —	\$ 32,587,356
Ullico UIF	—	32,587,356
Total	<u>\$ —</u>	<u>\$ 65,174,712</u>
Private Equity		
Pantheon	\$ 88,221,925	\$ —
Total	<u>\$ 88,221,925</u>	<u>\$ —</u>
Total Unfunded Commitments	<u>\$188,647,619</u>	<u>\$183,125,526</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	\$33,211	\$30,298	\$28,838	\$26,569
Interest	100,609	95,274	90,184	88,363
Change of benefit terms	—	—	—	—
Differences between expected and actual experience	(7,067)	6,723	10,896	(42,953)
Changes of assumptions	55,856	2,891	—	49,427
Benefit Payments (including refunds, excluding PRSB)	(65,962)	(63,071)	(59,272)	(56,581)
Net Change in Total Pension Liability	\$116,647	\$72,115	\$70,646	\$64,825
Total Pension Liability - Beginning	\$1,387,482	\$1,315,367	\$1,244,721	\$1,179,896
Total Pension Liability - Ending (a)*	\$1,504,129	\$1,387,482	\$1,315,367	\$1,244,721
Plan Fiduciary Net Position				
Employee Contributions	\$9,597	\$8,964	\$8,169	\$7,748
Employer Contributions	20,604	19,697	18,543	18,738
Net Investment Income	82,872	129,163	192,315	6,063
Actual Benefit Payments (including Refunds, PRSB)	(65,962)	(63,071)	(59,273)	(56,581)
Administrative & Professional Expense	(1,897)	(1,710)	(1,500)	(1,397)
Net Change in Plan Fiduciary Net Position	\$45,214	\$93,043	\$158,254	\$(25,429)
Plan Fiduciary Net Position - Beginning	\$1,602,586	\$1,509,543	\$1,351,289	\$1,376,718
Plan Fiduciary Net Position - Ending (b)	\$1,647,800	\$1,602,586	\$1,509,543	\$1,351,289
System Net Pension Liability (Surplus) - Ending (a) - (b)	\$(143,671)	\$(215,104)	\$(194,176)	\$(106,568)
Plan fiduciary net position as a percentage of				
total pension liability	109.55%	115.50%	114.76%	108.56%
Covered Payroll	109,803	103,934	97,369	94,266
Net Pension Liability as a percentage of covered payroll	(130.84)%	(206.96)%	(199.42)%	(113.05)%

* 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	\$26,518	\$28,058	\$25,663
Interest	86,772	86,092	87,850
Change of benefit terms	—	—	—
Differences between expected and actual experience	(36,529)	(49,879)	(30,574)
Changes of assumptions	—	—	17,284
Benefit Payments (including refunds, excluding PRSB)	(54,612)	(52,720)	(52,982)
Net Change in Total Pension Liability	\$22,149	\$11,551	\$47,241
Total Pension Liability - Beginning	\$1,157,747	\$1,146,196	\$1,098,955
Total Pension Liability - Ending (a)*	\$1,179,896	\$1,157,747	\$1,146,196
Plan Fiduciary Net Position			
Employee Contributions	\$7,385	\$7,294	\$7,399
Employer Contributions	18,967	18,575	18,725
Net Investment Income	39,164	201,838	140,701
Actual Benefit Payments (including Refunds, PRSB)	(54,612)	(52,720)	(52,982)
Administrative & Professional Expense	(1,108)	(1,119)	(1,182)
Net Change in Plan Fiduciary Net Position	\$9,796	\$173,868	\$112,661
Plan Fiduciary Net Position - Beginning	\$1,366,922	\$1,193,054	\$1,080,393
Plan Fiduciary Net Position - Ending (b)	\$1,376,718	\$1,366,922	\$1,193,054
System Net Pension Liability (Surplus) - Ending (a) - (b)	\$(196,822)	\$(209,175)	\$(46,858)
Plan fiduciary net position as a percentage of			
total pension liability	116.68%	118.07%	104.09%
Covered Payroll	91,075	91,721	94,368
Net Pension Liability as a percentage of covered payroll	(216.11)%	(228.06)%	(49.65)%

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	\$20,604	\$20,604	\$—	\$109,803	18.76%
2018	19,697	19,697	—	103,934	18.95%
2017	18,543	18,543	—	97,369	19.04%
2016	18,738	18,738	—	94,266	19.88%
2015	18,967	18,967	—	91,075	20.83%
2014	18,575	18,575	—	91,721	20.25%
2013	18,725	18,725	—	94,368	19.84%
2012	22,875	22,875	—	96,195	23.78%
2011	19,397	19,397	—	96,758	20.05%
2010	12,094	12,094	—	99,166	12.20%

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 64) and as independently reported by the System's investment consulting firm, NEPC, LLC (shown in the Investment Section on pages 71-72). 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 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 4.00 percent to 12.00 percent based on years of service. Includes inflation at 3.00% plus real across-the-board salary increase of 0.50% plus merit and promotion increases.
Cost of Living Adjustments:	4.00% of Tier 1 retirement income and 3.00% of Tier 2 retirement income.
Other Assumptions:	See June 30, 2017 funding valuation report and Appendix A for the service retirement rates after they have been adjusted to treat DROP participation as service retirement.
Post-Retirement Mortality Rates:	Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional scale MP-2015, with no setback for healthy males and set forward one year for healthy females. For Disabled members, set forward four years. For Beneficiaries, no setback for males and set forward one year for females, weighted 80% male and 20% 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	\$ 572,773
Fringe Benefits	151,130	148,485
Total Personnel Services	\$ 734,599	\$ 721,258
Professional Services		
Actuarial	\$ 96,780	\$ 81,449
Legal Counsel	109,051	86,658
Information Systems Services	153,013	154,210
Specialized Services	250,188	148,767
Total Professional Services	\$ 609,032	\$ 471,084
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	\$ 103,356	\$ 89,390
Membership & Dues	5,808	6,428
Subscriptions & Publications	1,940	222
Office Supplies	5,727	5,843
Computer Equipment	3,605	6,129
Equipment Lease	20,217	9,223
Insurance	37,808	40,486
Miscellaneous	9,463	5,195
Reimbursement to City for Inter-Dept Services	84,126	60,124
Depreciation	139,713	139,025
Total Other	\$ 411,763	\$ 362,065
Total Administrative Expenses	\$ 1,897,247	\$ 1,709,614

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	\$ 985,807	\$ 954,989
International	1,844,252	1,944,466
Fixed Income	905,905	943,520
Alternatives	3,805,722	1,957,701
Real Estate	4,878,746	2,813,169
Total Investment Manager Fees	12,420,432	8,613,845
Other Investment Expenses		
Foreign Income Taxes & Related Services, Charges	824,100	999,861
Custodial Services	180,178	175,634
Investment Consultant	159,442	143,991
Investment Legal Counsel	65,741	41,569
Analytical Database Service	45,747	46,517
Total Other Investment Expenses	1,275,208	1,407,572
Total Fees & Other Investment Expenses	13,695,640	10,021,417
Securities Lending Expenses		
Agent Fees	2,316,693	1,523,233
Total Securities Lending Expenses	2,316,693	1,523,233
Total Investment Expenses	\$ 16,012,333	\$ 11,544,650

Schedule of Payments To Consultants

For Fiscal Years Ended June 30, 2019 and 2018

	2019	2018
Actuarial Services	\$ 96,780	\$ 81,449
Audit Services	21,392	22,972
City Information Services	153,013	154,210
Legal Services	109,051	86,658
Medical Consultant	216,060	81,756
Miscellaneous	12,736	44,039
Total Payments to Consultants	\$ 609,032	\$ 471,084

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%. 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	\$1,647,799,602	

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.

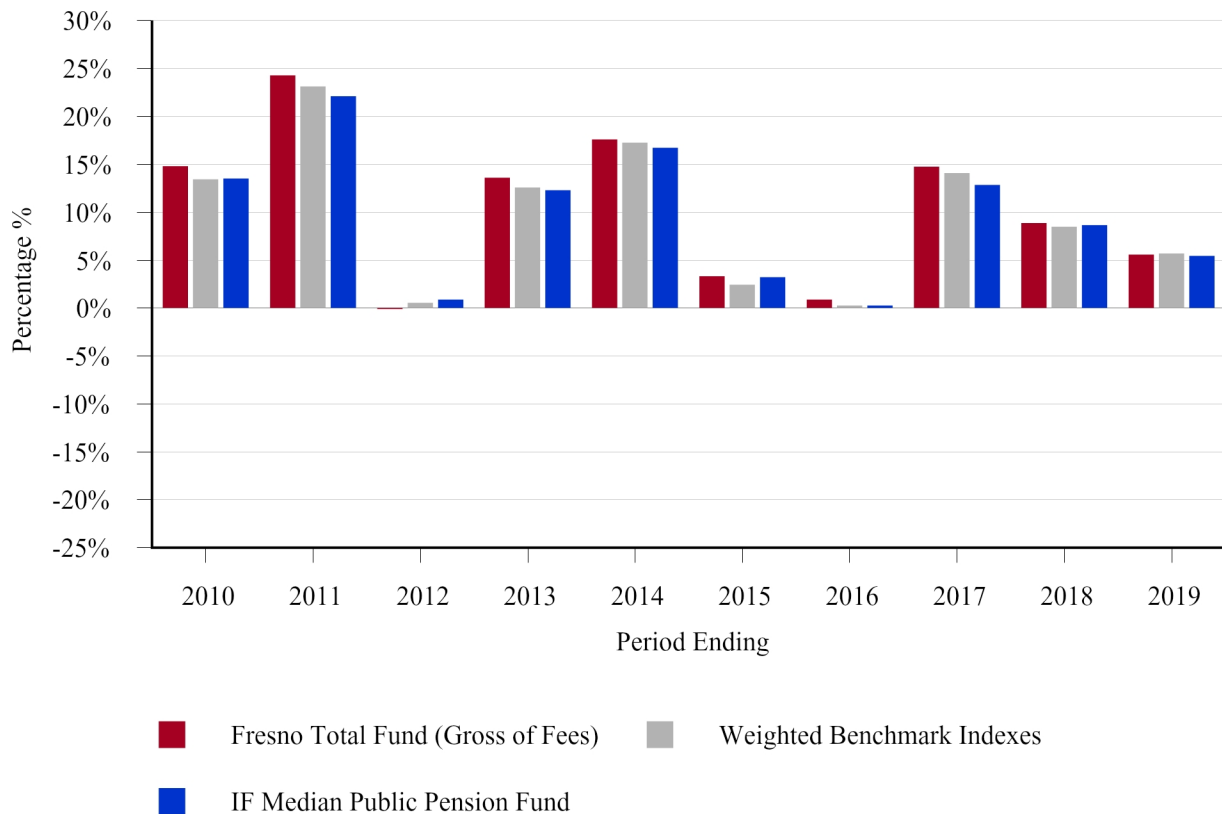
The principal goals of the System’s Board in managing the System’s Investment Portfolio are the following:

- 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**



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 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 \$1.648 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 prudent 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 stocks, fixed income and mortgages) and nontraditional assets (real estate, alternatives such as infrastructure and private debt/credit, private equity, international stock and emerging equity market stock) 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.

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.

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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
<i>Large Cap Equity Index</i>			10.02	14.10	10.66	14.67
<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
Core Fixed Composite	476,573,525	15.80	7.91	3.76	3.52	4.80
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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>InvMetrics Public DB US Fix Inc Net Median</i>			6.78	2.48	2.87	4.06
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	9.51	0.00	0.00	0.00
Real Estate Composite	471,150,480	15.62	8.21	6.31	8.86	11.34
<i>Real Estate Index</i>			6.84	5.42	8.67	12.27
<i>InvMetrics Public DB Real Estate Pub+Priv Net Median</i>			6.66	6.89	9.01	9.54
Private Real Estate Composite	334,468,904	11.09	5.60	6.87	8.57	8.92
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<i>Wilshire RESI</i>			10.47	4.30	8.16	15.84
<i>eV US REIT Net Median</i>			11.38	4.48	7.95	15.67
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

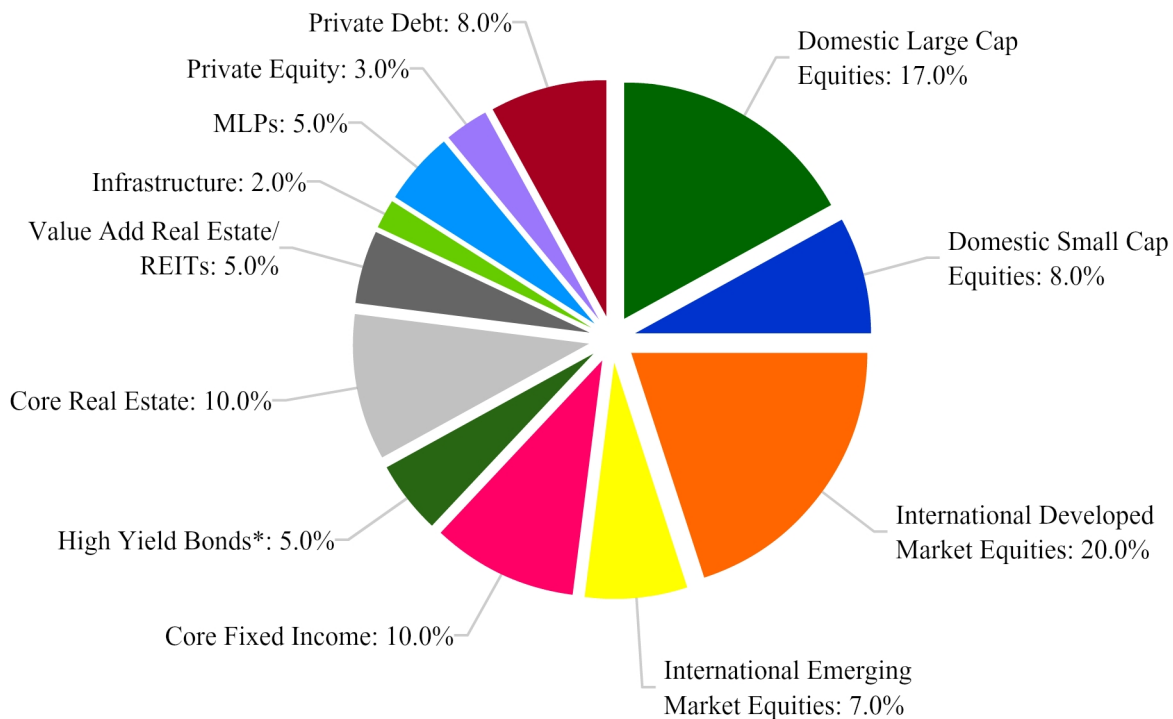
As of June 30, 2019

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*

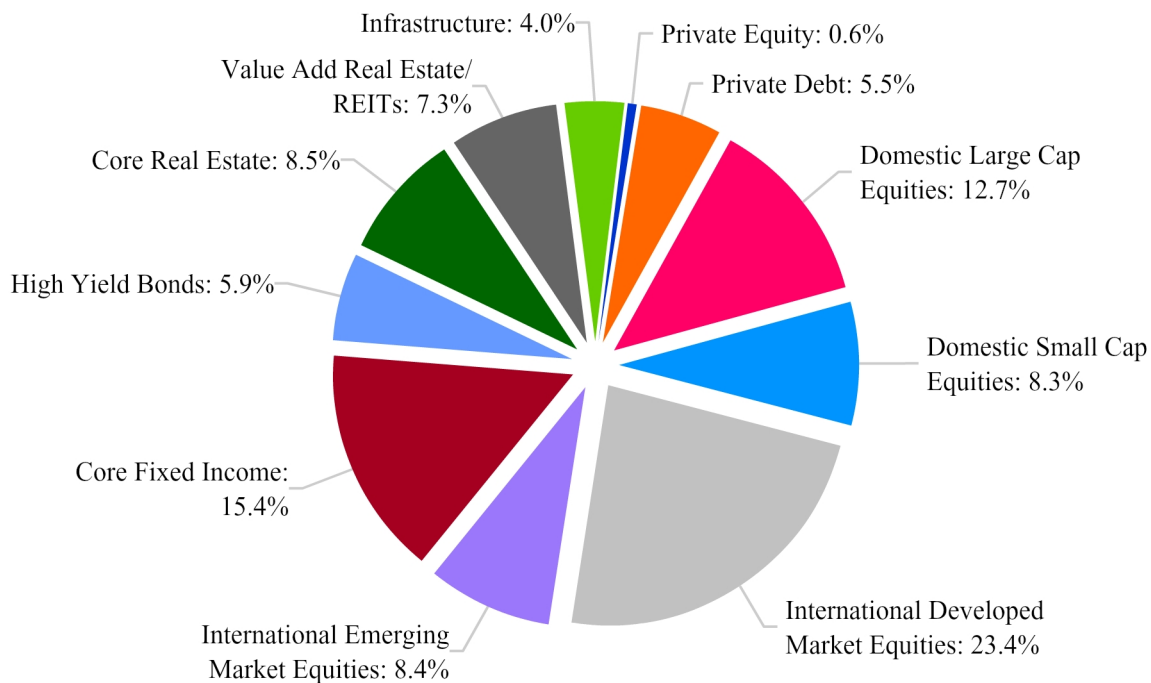
As of June 30, 2019



* 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)	76,218	NESTLE SA CHF0.10(REGD)	\$ 7,900,142
2)	180,948	SAMSUNG ELECTRONICS CO KRW5000	7,365,485
3)	10,659	MERCADOLIBRE INC COM STK	6,520,850
4)	757,312	TAIWAN SEMICONDUCTOR MANUFACTURING TWD10	5,827,446
5)	33,631	ADR ALIBABA GROUP HOLDING LTD SPON ADS E	5,698,768
6)	520,809	AIA GROUP LIMITED NPV	5,616,399
7)	69,253	PROLOGIS INC COM	5,547,204
8)	81,164	RIO TINTO PLC ORD GBP0.10(REGD)	5,041,406
9)	9,932	EQUINIX INC COM PAR \$0.001	5,008,692
10)	36,198	SAP SE	4,978,001
Total Largest Stock Holdings			\$ 59,504,393

Largest Bond Holdings (by Market Value)

As of June 30, 2019

	Share/Par Value	Bond Holding	Coupon Rate	Maturity Date	Market Value
1)	6,595,855	UNITED STATES TREAS NTS 2.125% DUE	0.000%	15 May 2028	\$ 7,082,557
2)	5,370,339	UNITED STATES TREAS NTS DTD 1.625% DUE	0.000%	1 Mar 2049	5,622,144
3)	4,355,497	UNITED STATES TREAS NTS 1.875% DUE	0.000%	30 Nov 2025	4,625,842
4)	3,790,916	FNMA SINGLE FAMILY MORTGAGE 3.5% 30	0.000%	15 Mar 2055	3,577,559
5)	3,103,170	UNITED STATES TREAS NTS DTD 00407 .625%	0.000%	1 Mar 2048	3,262,610
6)	3,119,625	UNITED STATES TREAS INFL INDEXED BONDS	0.000%	15 May 2029	3,223,814
7)	2,652,571	UNITED STATES TREAS NTS DTD 05/31/2014	0.000%	1 May 2048	2,788,489
8)	2,844,139	VERIZON COMMUNICATIONS 6.55% BDS DUE	0.000%	15 Dec 2039	2,744,191
9)	2,673,186	UNITED STATES TREAS NTS 1.0% DUE	0.000%	30 Sep 2021	2,695,743
10)	2,684,075	CALIFORNIA ST 7.5% DUE 04-01-2034 BEO	0.000%	30 Apr 2022	2,694,873
Total Largest Bond Holdings					\$ 38,317,822

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	\$ 12,998	7,226,969	\$ 0.0018
GOLDMAN, SACHS & CO.	11,612	13,025,914	0.0009
CITATION GROUP (THE)	10,246	249,323	0.0411
CREDIT SUISSE SECURITIES (USA) LLC	9,881	8,892,099	0.0011
NORTHERN TRUST SECURITIES, INC.	9,646	241,142	0.0400
CREDIT SUISSE SECURITIES(EUROPE)LTD	9,121	706,585	0.0129
MERRILL LYNCH INTERNATIONAL LIMITED	7,103	1,112,017	0.0064
STIFEL, NICOLAUS & COMPANY, INCORPORATE	6,963	291,274	0.0239
MIZUHO SECURITIES USA INC.	6,950	651,417	0.0107
CITIGROUP GLOBAL MARKETS INC.	6,862	8,900,001	0.0008
	<u>\$ 91,382</u>	<u>41,296,741</u>	<u>\$ 0.0022</u>
All Other Brokerage Firms	244,093	3,003,935,703	0.0001
TOTAL	\$ 335,475	3,045,232,444	\$ 0.0001

Investment Summary

For The Fiscal Year Ended June 30, 2019

	Investment Value	Percent of Fund	Investment Management Fees
Equity			
Domestic	\$ 465,966,024	28.9%	\$ 985,807
International Developed Market	297,494,943	18.4%	1,377,482
International Emerging Market	56,346,628	3.5%	466,770
Fixed Income	342,734,480	21.2%	905,905
Alternatives	168,772,722	10.5%	3,805,722
Real Estate	258,568,925	16.0%	4,878,746
Short-term Investments	24,168,210	1.5%	—
Total	\$ 1,614,051,932	100.0%	\$ 12,420,432

*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 Fire and Police Retirement System
2828 Fresno Street, Suite 201
Fresno, CA 93721-1327

**Re: City of Fresno Fire and Police 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 Fire and Police 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 Fire and Police Retirement System
 November 21, 2019
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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 120.3% to 117.0%. The aggregate employer rate has increased from 19.59%¹ of payroll to 22.82%² of payroll, while the aggregate member rate has increased from 8.97% of payroll to 8.99% of payroll.

¹ This rate has been decreased by 3.94% of payroll as a result of surplus allocation.

² This rate has been decreased by 2.78% of payroll as a result of surplus allocation.

5613991v2/09328.001

Actuarial Certification Letter Continued

Board of Retirement
City of Fresno Fire and Police Retirement System
November 21, 2019
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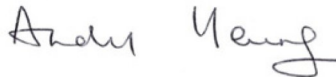
As a result of using the actuarial value of assets in the actuarial valuation, there were \$6.1 million in unrecognized deferred investment gains as of June 30, 2019, which represented 0.4% of the market value of assets. This is a deterioration from last year's amount of \$23.3 million in unrecognized deferred investment gains. If \$6.1 million in deferred investment gains were recognized immediately in the actuarial value of assets, the funded percentage would increase from 117.0% to 117.5% and the aggregate employer rate would decrease from 22.82% of payroll to 22.64% 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

5613991v2/09328.001

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 Fire and Police 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, with no setback for males and set forward one year for females.

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, with no setback for males and set forward one year for females, weighted 80% male and 20% 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.

Percentage Married at Retirement

85% of all active members are assumed to be married at retirement. Their spouses will be eligible for the 2/3 automatic survivor benefits.

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 Cost method with the Unfunded Actuarial Accrued Liability (UAAL) amortized as a level percentage of payroll. There is no UAAL as of June 30, 2019.

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 31 of the Financial Section and pages 59 and 60 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

Cost-of-Living Adjustment (COLA) Assumption

The annual cost-of-living adjustment (COLA) is 3.00% for Tier 2 members and 3.25% for Tier 1 members and retirees who have retired with the final average formula, or with the career average formula.

DROP Assumptions

	Tier 1	Tier 2
1st year eligible	100%	40%
Following year	0%	10%
Next following year	0%	5%
Thereafter	0%	0%

Members are assumed to remain in the Deferred Retirement Option Program (DROP) for 7 years.

Ultimate Salary Scale

5.85% for the first five years of service. Graded increases thereafter ranging from 1.70% at age 25 to 0.40% at ages 50 and over. Of the total salary increases assumed, 3.00% is for inflation, plus 0.50% real across-the-board salary increase.

Probabilities of Separation Prior to Retirement

Rate (%)		
Mortality		
Tier 1 and Tier 2		
Age	Male	Female
25	0.03	0.01
30	0.03	0.02
35	0.04	0.02
40	0.04	0.03
45	0.07	0.05
50	0.11	0.08
55	0.20	0.13
60	0.35	0.19
65	0.60	0.26

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

Rate (%)				
Disability				
Age	Tier 1		Tier 2	
	Duty	Non-Duty	Duty	Non-Duty
20	0.02	0.00	0.14	0.00
25	0.14	0.01	0.29	0.01
30	0.26	0.01	0.50	0.01
35	0.39	0.03	0.72	0.03
40	0.60	0.12	0.98	0.12
45	0.88	0.25	1.22	0.25
50	2.80	0.20	1.48	0.20
55	8.20	0.00	1.78	0.00
60	0.00	0.00	0.00	0.00

Rate (%)		
Total Termination (Less Than 5 years of service)		
Service	Tier 1	Tier 2

0 – 1	4.47	12.00
1 – 2	4.47	8.00
2 – 3	4.47	2.00
3 – 4	4.47	1.50
4 – 5	4.47	1.00

100% of members are assumed to elect a withdrawal of contributions. No termination is assumed after a member is assumed to retire.

Rate (%)				
Total Termination (5 or more years of service)				
Age	Tier 1		Tier 2	
	5-10 Years	10+ Years		

20	2.87	3.57	3.10	
25	2.87	3.57	2.85	
30	1.88	2.63	2.36	
35	0.87	1.44	1.74	
40	0.44	0.92	1.32	
45	0.19	0.63	0.96	
50	0.00	0.00	0.00	

100% of Tier 1 members with 5 – 10 years of service, 0% of Tier 1 members with 10+ years of service and 50% of Tier 2 members with 5+ years of service 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	1,033	\$ 103,910,274	\$ 100,591	4.6%
	DROP Participants	90	11,163,174	124,035	4.3%
	Totals	1,123	\$ 115,073,448	\$ 224,626	
June 30, 2018	Active Members	1,043	\$ 100,270,371	\$ 96,137	3.6%
	DROP Participants	90	10,701,563	118,906	5.4%
	Totals	1,133	\$ 110,971,934	\$ 215,043	
June 30, 2017	Active Members	990	\$ 91,850,923	\$ 92,779	1.1%
	DROP Participants	96	10,828,198	112,794	1.1%
	Totals	1,086	\$ 102,679,121	\$ 205,573	
June 30, 2016	Active Members	947	\$ 86,884,960	\$ 91,748	(2.5)%
	DROP Participants	107	11,932,935	111,523	1.3%
	Totals	1,054	\$ 98,817,895	\$ 203,271	
June 30, 2015	Active Members	880	\$ 82,820,376	\$ 94,114	(0.8)%
	DROP Participants	113	12,441,847	110,105	2.3%
	Totals	993	\$ 95,262,223	\$ 204,219	
June 30, 2014	Active Members	872	\$ 82,701,177	\$ 94,841	(2.2)%
	DROP Participants	126	13,557,816	107,602	(3.1)%
	Totals	998	\$ 96,258,993	\$ 202,443	
June 30, 2013	Active Members	899	\$ 87,164,227	\$ 96,957	4.1%
	DROP Participants	122	13,540,941	110,991	3.9%
	Totals	1,021	\$ 100,705,168	\$ 207,948	
June 30, 2012	Active Members	939	\$ 87,461,980	\$ 93,144	1.6%
	DROP Participants	123	13,133,740	106,778	8.1%
	Totals	1,062	\$ 100,595,720	\$ 199,922	
June 30, 2011	Active Members	953	\$ 87,339,861	\$ 91,647	1.3%
	DROP Participants	118	11,659,869	98,812	9.0%
	Totals	1,071	\$ 98,999,730	\$ 190,459	
June 30, 2010	Active Members	992	\$ 89,718,011	\$ 90,442	3.0%
	DROP Participants	143	12,968,418	90,688	2.3%
	Totals	1,135	\$ 102,686,429	\$ 181,130	

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		
2019	48	\$1,585,314	(29)	(\$676,320)	1,085	\$65,113,142	\$60,012	2.34
2018	51	\$1,231,992	(31)	(\$708,568)	1,066	\$62,510,828	\$58,641	4.41
2017	55	\$1,432,672	(20)	(\$456,710)	1,046	\$58,748,302	\$56,165	2.48
2016	32	\$728,058	(26)	(\$730,485)	1,011	\$55,408,166	\$54,805	2.55
2015	48	\$1,429,630	(21)	(\$514,195)	1,005	\$53,711,161	\$53,444	(0.58)
2014	41	\$1,068,770	(31)	(\$703,986)	978	\$52,573,897	\$53,757	0.05
2013	48	\$1,438,868	(40)	(\$856,967)	968	\$52,011,489	\$53,731	0.39
2012	31	\$481,428	(19)	(\$413,006)	960	\$51,378,999	\$53,520	0.36
2011	71	\$1,895,852	(25)	(\$691,254)	948	\$50,556,250	\$53,329	(3.09)
2010	69	\$2,889,037	(32)	(\$838,327)	902	\$49,638,574	\$55,032	1.23

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)
2019	\$173,489	\$839,837	\$264,423	\$1,495,023	100%	100%	100%
2018	165,233	801,931	227,567	1,436,725	100%	100%	100%
2017	154,607	770,352	206,389	1,354,974	100%	100%	100%
2016	143,208	728,510	195,698	1,276,604	100%	100%	100%
2015	131,828	713,712	174,376	1,220,269	100%	100%	100%
2014	124,550	717,618	163,860	1,142,649	100%	100%	100%
2013	115,277	711,124	171,435	1,061,399	100%	100%	100%
2012	107,138	697,622	148,106	1,003,929	100%	100%	100%
2011	96,649	678,264	143,028	1,022,996	100%	100%	100%
2010	88,824	683,318	147,144	1,018,605	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	\$1,195	\$1,131	\$1,067	\$1,020	\$1,006	\$998	\$953	\$918	\$919	\$874
Salary Increase Greater/ (Less) than Expected	—	5	(9)	(28)	(10)	(20)	(1)	(6)	(9)	(6)
Asset Return (Greater)/ Less than Expected	—	—	—	—	—	—	—	—	—	—
COLA Increase Greater/(Less) than Expected	(5)	(6)	11	(24)	(27)	(23)	(23)	(10)	(26)	(29)
Other Experience	1	9	11	8	1	—	(1)	2	(2)	(8)
Economic Assumption Changes	31	3	—	50	—	—	20	—	—	36
Non-economic Assumption Changes	—	—	—	—	—	—	—	—	—	—
Normal Cost	35	33	32	30	30	30	28	28	29	28
Interest	85	81	76	76	75	74	75	73	73	71
Payments	(64)	(61)	(57)	(55)	(54)	(53)	(53)	(52)	(49)	(47)
Change in Valuation Programs and Methods	—	—	—	(10)	(1)	—	—	—	(17)	—
Ending Actuarial Accrued Liability	\$1,278	\$1,195	\$1,131	\$1,067	\$1,020	\$1,006	\$998	\$953	\$918	\$919

Schedule of Funding Progress

(Dollars in Millions)

Actuarial Valuation As of June 30	(1)	(2)	(3) Percentage Funded (1) / (2)	(4)	(5) Annual Covered Payroll	(6)
	Actuarial Valuation Value of Assets	Actuarial Accrued Liability (AAL)		(Prefunded) / Unfunded AAL (3)		(Prefunded) / Unfunded AAL Percentage of Covered Payroll (4) / (5)
2019	\$1,495	\$1,278	117.0%	(\$217)	\$115	(188.80%)
2018	\$1,437	\$1,195	120.3%	(\$242)	\$111	(218.10%)
2017	\$1,355	\$1,131	119.8%	(\$224)	\$103	(217.80%)
2016	\$1,277	\$1,067	119.6%	(\$209)	\$99	(211.70%)
2015	\$1,220	\$1,020	119.6%	(\$200)	\$95	(210.30%)
2014	\$1,143	\$1,006	113.6%	(\$137)	\$96	(141.90%)
2013	\$1,061	\$998	106.4%	(\$64)	\$101	(63.10%)
2012	\$1,004	\$953	105.4%	(\$51)	\$101	(50.80%)
2011	\$1,023	\$918	111.4%	(\$105)	\$99	(106.10%)
2010	\$1,019	\$919	110.8%	(\$99)	\$103	(96.70%)

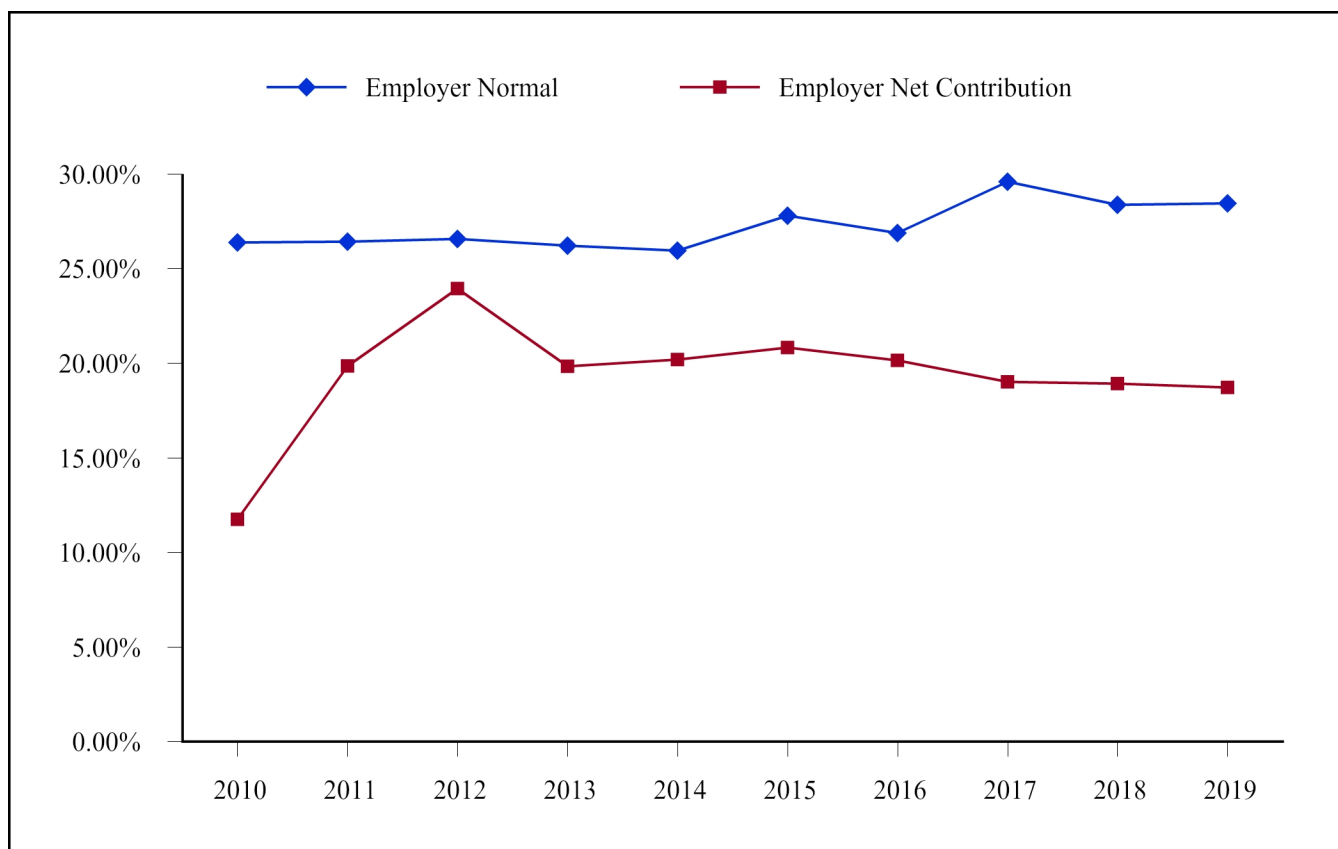
Major Benefit Provisions of the Retirement System

	<u>Fire & Police First Tier</u>	<u>Fire & Police Second Tier</u>														
Coverage	All Fire and Police employees hired on or after October 27, 1927, and before August 27, 1990.	All Fire and Police employees hired on or after August 27, 1990.														
Final Average Salary (FAS)	<p>A. Three-year final average salary; or</p> <p>B. Salary attached to rank average-service weighted compensation for each rank held.</p>	A. Highest three consecutive year average.														
Service Retirement	<p>Requirement: Age 50 and 10 years of Service, or age 60.</p> <p>Benefit: (1) and (2)</p> <p>1. $2\frac{3}{4}\%$ of FAS times years of service before age 50, not to exceed 20 years.</p> <p>2. 2% of FAS times years of service after age 50, not to exceed 10 years</p> <p>Maximum Benefit: 75% of FAS</p>	<p>Requirement: Age 50 and 5 years of service.</p> <p>Benefit:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Retirement Age</th> <th style="text-align: left;">Benefit Formula</th> </tr> </thead> <tbody> <tr> <td>50</td> <td>$2.00\% \times \text{FAS} \times \text{service}$</td> </tr> <tr> <td>51</td> <td>$2.14\% \times \text{FAS} \times \text{service}$</td> </tr> <tr> <td>52</td> <td>$2.28\% \times \text{FAS} \times \text{service}$</td> </tr> <tr> <td>53</td> <td>$2.42\% \times \text{FAS} \times \text{service}$</td> </tr> <tr> <td>54</td> <td>$2.56\% \times \text{FAS} \times \text{service}$</td> </tr> <tr> <td>55 and over</td> <td>$2.70\% \times \text{FAS} \times \text{service}$</td> </tr> </tbody> </table> <p>Maximum Benefit: 75% of FAS</p>	Retirement Age	Benefit Formula	50	$2.00\% \times \text{FAS} \times \text{service}$	51	$2.14\% \times \text{FAS} \times \text{service}$	52	$2.28\% \times \text{FAS} \times \text{service}$	53	$2.42\% \times \text{FAS} \times \text{service}$	54	$2.56\% \times \text{FAS} \times \text{service}$	55 and over	$2.70\% \times \text{FAS} \times \text{service}$
Retirement Age	Benefit Formula															
50	$2.00\% \times \text{FAS} \times \text{service}$															
51	$2.14\% \times \text{FAS} \times \text{service}$															
52	$2.28\% \times \text{FAS} \times \text{service}$															
53	$2.42\% \times \text{FAS} \times \text{service}$															
54	$2.56\% \times \text{FAS} \times \text{service}$															
55 and over	$2.70\% \times \text{FAS} \times \text{service}$															
Deferred Retirement Option Program (DROP)	An employee who is age 50 with 10 years of service may join the DROP program which is in essence an alternative form of retirement distribution. Retirement amount is calculated and monthly deposits are made to the employee's DROP account while the employee continues to work for a maximum of 10 years.	An employee who is age 50 with 5 years of service may join the DROP program which is in essence an alternative form of retirement distribution. Retirement amount is calculated and monthly deposits are made to the employee's DROP account while the employee continues to work for a maximum of 10 years.														
Disability Retirement	<p>a. Requirements:</p> <ol style="list-style-type: none"> 1. Service-Connected: None 2. Non-Service Connected: 10 years of service. <p>b. Benefit:</p> <ol style="list-style-type: none"> 1. Service-Connected: 55% of FAS or service retirement, if higher. 2. Non-Service Connected: $1.65\% \times \text{FAS} \times \text{years of service}$, if exceeds 36.67% of FAS; or 36.67% of FAS; or service retirement, if higher. <p>Benefit reduced to the extent that income earned while on disability and the amount of the disability retirement benefits exceeds the current salary attached to the last rank held.</p>	<p>a. Requirements:</p> <ol style="list-style-type: none"> 1. Service-Connected: None 2. Non-Service Connected: 10 years of service. <p>b. Benefit:</p> <ol style="list-style-type: none"> 1. Service-Connected: 50% of FAS or service retirement, if higher. 2. Non-Service Connected: $1\frac{1}{2}\% \times \text{FAS} \times \text{years of service}$, if exceeds 1/3 of FAS; or 1/3 of FAS; or service retirement, if higher. <p>Benefit reduced to the extent that income earned while on disability and the amount of the disability retirement benefits exceeds the current salary attached to the last rank held.</p>														

Major Benefit Provisions of the Retirement System Continued

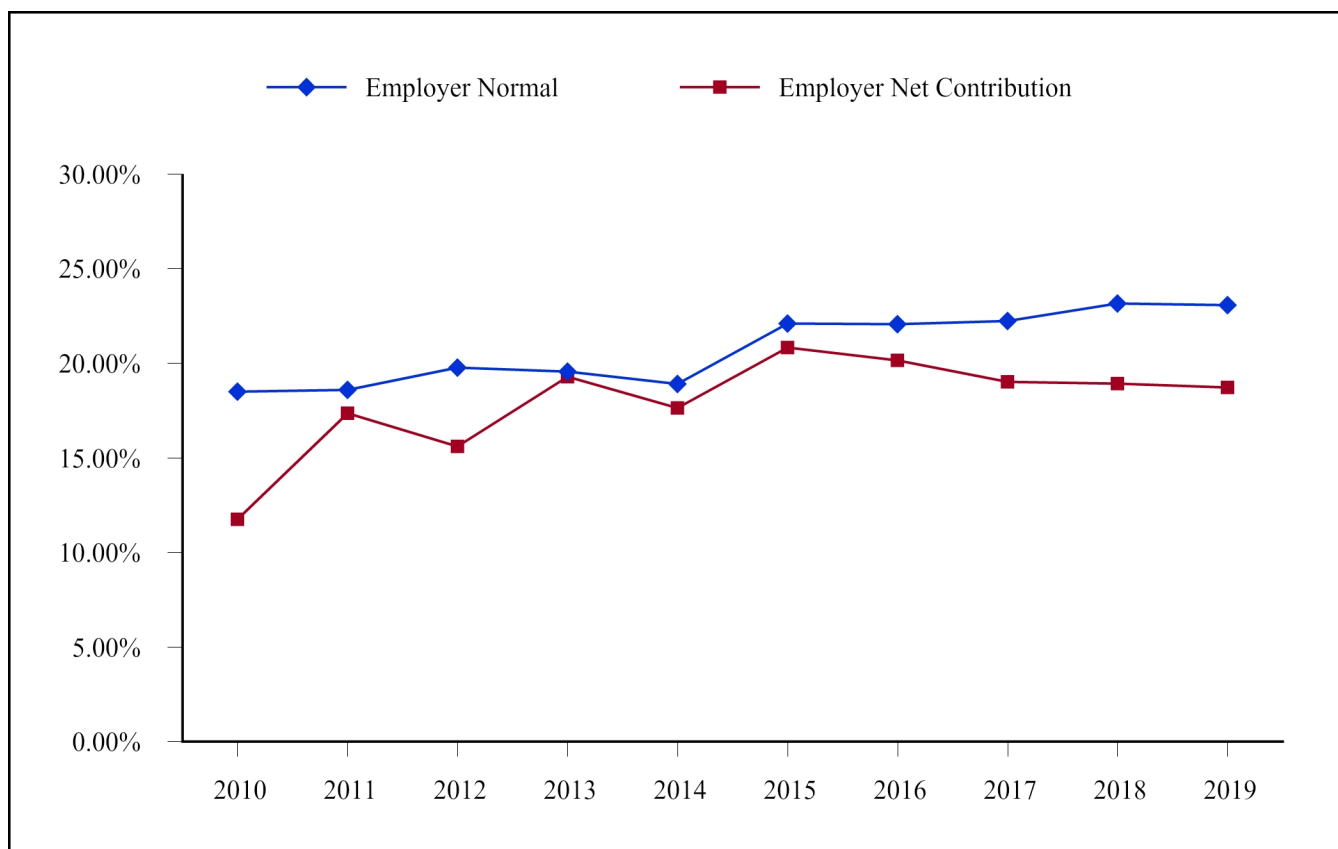
	Fire & Police First Tier	Fire and Police Second Tier
Death Before Retirement	<p>a. Before eligible to retire for disability (less than 5 years).</p> <ol style="list-style-type: none"> 1. One month's salary for each year of service, not-to-exceed 6 months. 2. Return of contributions with interest. <ol style="list-style-type: none"> a. While eligible to retire (after 10 years): 2/3 of Service or Non-Service-connected Disability Retirement Benefit. <p>b. Service-Connected Death: 55% of FAS</p>	<p>a. Before eligible to retire (less than 5 years).</p> <ol style="list-style-type: none"> 1. One month's salary for each year of service, not-to-exceed 6 months. 2. Return of contributions with interest. <ol style="list-style-type: none"> a. While eligible to retire (after 5 years): 2/3 of Service or Non-Service-connected Disability Retirement Benefit b. Service-Connected Death: 50% of FAS
Death After Retirement	Two-thirds of the member's allowance continued to eligible spouse for life.	Two-thirds of the member's allowance continued to eligible spouse for life.
Withdrawal Benefits	<ol style="list-style-type: none"> a. If less than 10 years of service, return of contributions. b. If greater than 10 years of service, right to have vested deferred retirement benefit at normal retirement date. 	<ol style="list-style-type: none"> a. If less than 5 years of service, return of contributions. b. If greater than 5 years of service, right to have vested deferred retirement benefit.
Post Retirement Supplemental Benefit (PRSB)	On May 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 Retirement Board, PRSB benefit payments will be calculated for eligible recipients and payments for the following calendar year will begin in January.	On May 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 Retirement 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	<ol style="list-style-type: none"> a. Based on the weighted mean average compensation attached to all ranks in the department, limited to a 5% maximum change per year, if based on three-year FAS. b. Based on salary increase for each rank held, if benefit was calculated on salary attached to average rank. 	<ol style="list-style-type: none"> a. Based on the Consumer Price Index for all Urban Wage Earners and all Clerical Workers (U.S. City Average) limited to 3% change per year.
Member Contribution Rates	Varies based on entry age.	9% of Compensation.

History of Employer Net Contribution Rates (Tier 1)



Fiscal Year Ending June 30	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Employer Normal	26.38 %	26.43 %	26.57 %	26.22 %	25.95 %	27.80 %	26.88 %	29.59 %	28.38 %	28.45 %
Prefunded Liability/Prepaid Contributions	14.64 %	6.58 %	2.63 %	6.38 %	5.76 %	6.97 %	6.74 %	10.57 %	9.46 %	9.73 %
Employer Net Contribution	11.74%	19.85%	23.94%	19.84%	20.19%	20.83%	20.14%	19.02%	18.92%	18.72%

History of Employer Net Contribution Rates (Tier 2)



Fiscal Year Ending June 30	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Employer Normal	18.49 %	18.60 %	19.77 %	19.56 %	18.91 %	22.09 %	22.07 %	22.24 %	23.15 %	23.07 %
Prefunded Liability/Prepaid Contributions	6.75 %	1.25 %	4.17 %	0.28 %	1.28 %	1.26 %	1.93 %	3.22 %	4.23 %	4.35 %
Employer Net Contribution	11.74%	17.35%	15.60%	19.28%	17.63%	20.83%	20.14%	19.02%	18.92%	18.72%

*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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- 95 Schedule and Graph of Additions by Source
- 96 Schedule and Graph of Deductions by Type
- 97 Membership Information

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 Fire and Police 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

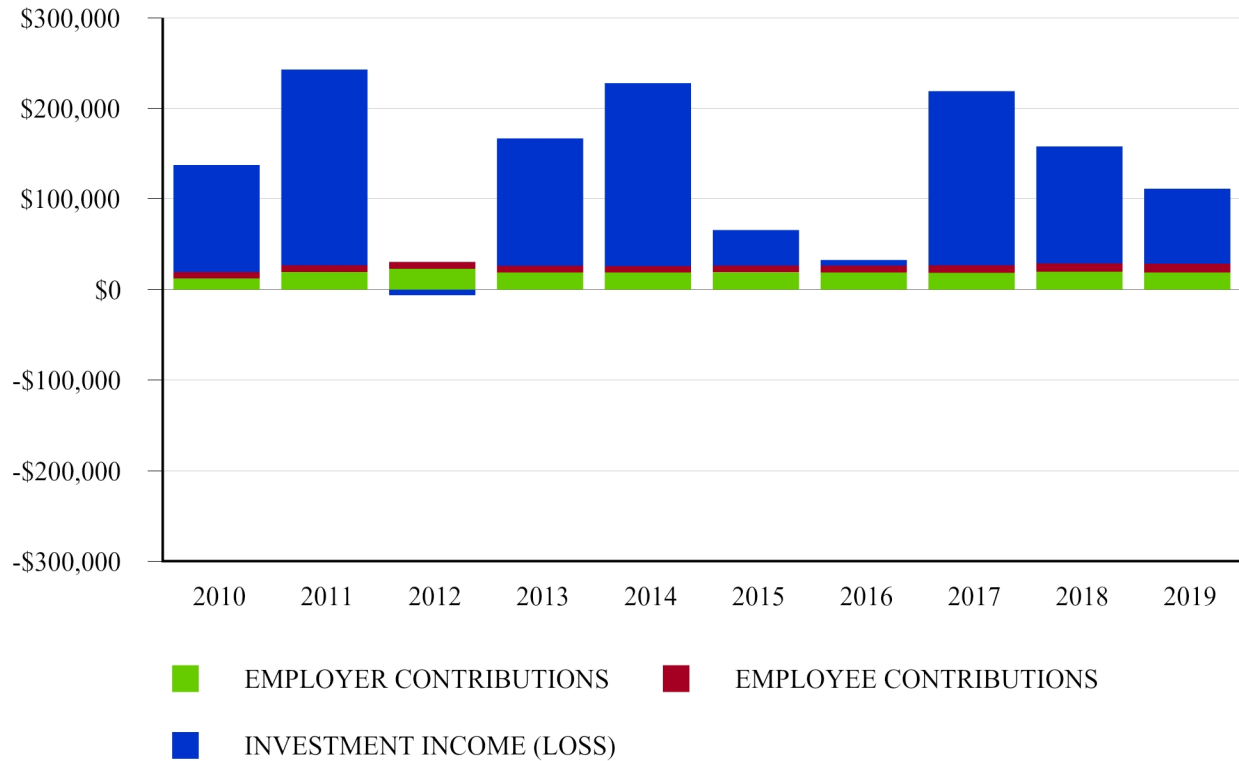
(Dollars in Millions)

	2019	2018	2017	2016	2015
Additions					
Employer Contributions	\$ 20.6	\$ 19.7	\$ 18.5	\$ 18.7	\$ 19.0
Member Contributions	9.6	9.0	8.1	7.7	7.4
Investment Income (Loss)	82.9	129.1	192.3	6.1	39.10
Total Additions	\$ 113.1	\$ 157.8	\$ 218.9	\$ 32.5	\$ 65.5
Deductions					
Benefit Payments	\$ 63.0	\$ 60.5	\$ 57.0	\$ 54.4	\$ 53.5
Post Retirement Supplemental Benefits	2.1	2.0	1.7	1.0	0.2
Refunds	0.9	0.6	0.5	1.2	0.9
Administrative	1.9	1.7	1.5	1.4	1.1
Total Deductions	67.9	64.8	60.7	58.0	55.7
Change in Fiduciary Net Position	\$ 45.2	\$ 93.0	\$ 158.2	\$ (25.5)	\$ 9.8

	2014	2013	2012	2011	2010
Additions					
Employer Contributions	\$ 18.6	\$ 18.7	\$ 22.9	\$ 19.4	\$ 12.1
Member Contributions	7.3	7.4	7.5	7.3	7.4
Investment Income (Loss)	201.8	140.7	(6.2)	215.9	117.9
Total Additions	\$ 227.7	\$ 166.8	\$ 24.2	\$ 242.6	\$ 137.4
Deductions					
Benefit Payments	\$ 52.5	\$ 51.8	\$ 51.0	\$ 48.9	\$ 46.3
Post Retirement Supplemental Benefits	0.1	0.2	0.4	1.7	3.3
Refunds	0.1	1.0	0.5	0.5	0.9
Administrative	1.1	1.2	1.1	1.0	1.0
Total Deductions	53.8	54.2	53.0	52.1	51.5
Change in Fiduciary Net Position	\$ 173.9	\$ 112.6	\$ (28.8)	\$ 190.5	\$ 85.9

Schedule and Graph of Additions by Source (In Thousands)

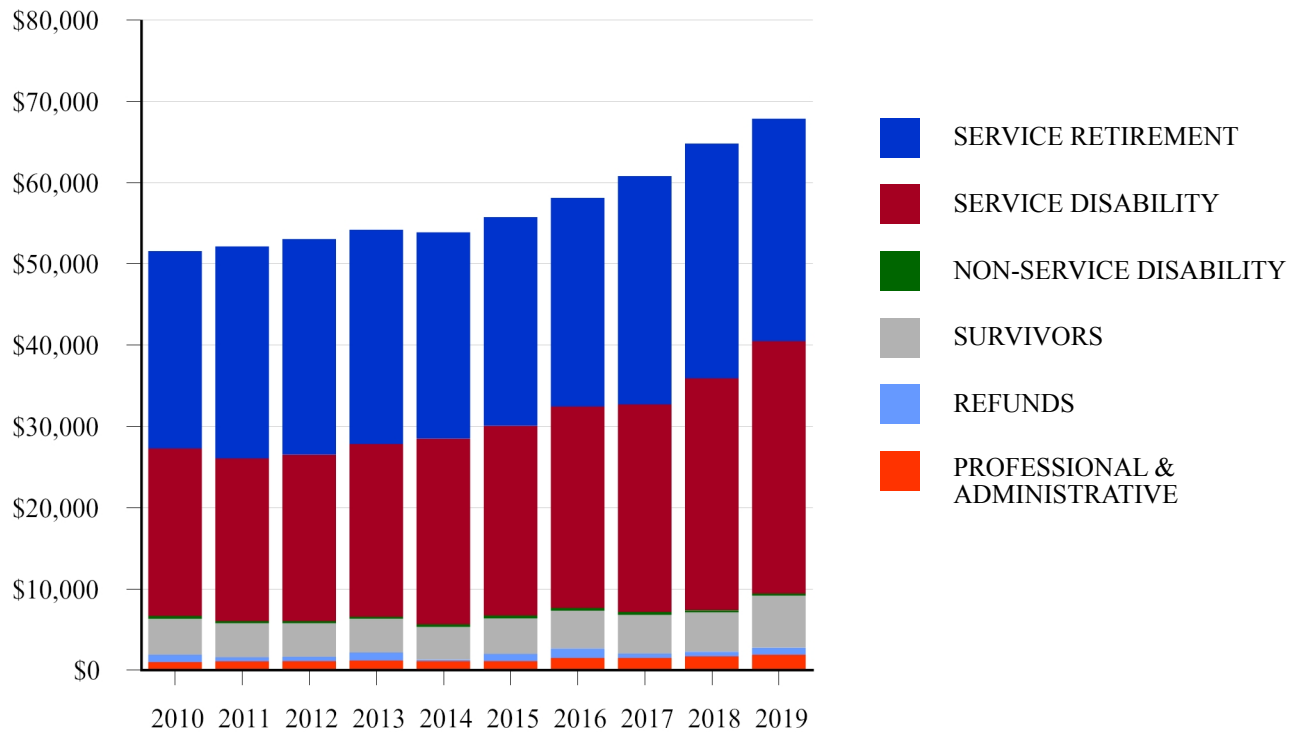
Last Ten Fiscal Years 2010 - 2019



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
EMPLOYER CONTRIBUTIONS	\$ 12,094	\$ 19,397	\$ 22,875	\$ 18,725	\$ 18,575	\$ 18,967	\$ 18,738	\$ 18,543	\$ 19,697	\$ 20,604
EMPLOYEE CONTRIBUTIONS	7,355	7,304	7,540	7,398	7,294	7,385	7,748	8,169	8,964	9,597
INVESTMENT INCOME (LOSS)	118,018	215,994	(6,201)	140,701	201,838	39,164	6,063	192,318	129,162	82,872
TOTAL	\$ 137,467	\$ 242,695	\$ 24,214	\$166,824	\$ 227,707	\$ 65,516	\$ 32,549	\$219,030	\$ 157,823	\$ 113,073

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	\$ 24,271	\$ 26,088	\$ 26,531	\$ 26,332	\$ 25,338	\$ 25,657	\$ 25,662	\$ 28,079	\$ 28,855	\$ 27,381
SERVICE DISABILITY	20,607	20,012	20,464	21,250	22,848	23,336	24,753	25,539	28,533	31,033
NON-SERVICE DISABILITY	349	244	242	242	339	348	340	350	280	285
SURVIVORS	4,411	4,212	4,142	4,188	4,049	4,370	4,653	4,780	4,843	6,414
REFUNDS	918	494	535	970	146	901	1,173	525	560	849
PROFESSIONAL & ADMINISTRATIVE	993	1,080	1,118	1,182	1,119	1,108	1,503	1,503	1,710	1,897
TOTAL	\$ 51,549	\$ 52,130	\$ 53,032	\$ 54,164	\$ 53,839	\$ 55,720	\$ 58,084	\$ 60,776	\$ 64,781	\$ 67,859

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	\$ 3,057	\$ 3,519	\$ 3,972	\$ 5,317	\$ 6,012	\$ 7,064	\$ 4,824
Average Monthly DROP Payment	205	—	858	3,765	4,303	6,515	3,860
Average Final Average Salary	5,052	9,006	8,182	9,428	9,754	11,499	8,820
Number of New Retired Members	3	4	7	8	7	1	30
Period 7/1/17 to 6/30/18*							
Average Monthly Pension Benefits	\$ 2,603	\$ 3,469	\$ 4,020	\$ 5,024	\$ 4,923	\$ 4,637	\$ 4,113
Average Monthly DROP Payment	—	—	1,174	3,520	2,858	3,108	2,665
Average Final Average Salary	7,949	8,113	7,730	8,508	9,046	7,019	8,061
Number of New Retired Members	7	6	6	9	7	1	36
Period 7/1/16 to 6/30/17*							
Average Monthly Pension Benefits	\$ 1,633	\$ 3,211	\$ 4,100	\$ 5,027	\$ 5,481	\$ 5,909	\$ 4,227
Average Monthly DROP Payment	—	—	2,305	2,560	4,372	4,266	3,376
Average Final Average Salary	6,049	7,648	8,067	8,565	9,524	10,141	8,332
Number of New Retired Members	3	4	5	11	10	1	34
Period 7/1/15 to 6/30/16*							
Average Monthly Pension Benefits	\$ 612	\$ 2,914	\$ 3,448	\$ 4,268	\$ 4,922	\$ 3,862	\$ 3,338
Average Monthly DROP Payment	—	3,128	1,154	3,245	5,207	2,907	3,128
Average Final Average Salary	4,761	7,579	8,011	7,845	8,928	6,689	7,302
Number of New Retired Members	1	5	5	5	3	3	22
Period 7/1/14 to 6/30/15							
Average Monthly Pension Benefits	\$ 3,735	\$ 3,565	\$ 3,846	\$ 6,323	\$ 8,405	\$ 7,434	\$ 5,551
Number of New Retired Members	1	4	6	10	10	3	34
Period 7/1/13 to 6/30/14							
Average Monthly Pension Benefits	\$ 2,665	\$ 2,540	\$ 4,759	\$ 7,181	\$ 8,611	\$ —	\$ 5,151
Number of New Retired Members	4	2	6	7	6	0	25
Period 7/1/12 to 6/30/13							
Average Monthly Pension Benefits	\$ 2,450	\$ 3,973	\$ 4,169	\$ 7,226	\$ —	\$ 7,842	\$ 5,132
Number of New Retired Members	3	8	6	6	0	3	26
Period 7/1/11 to 6/30/12							
Average Monthly Pension Benefits	\$ 3,458	\$ 3,265	\$ 4,866	\$ 4,484	\$ 5,527	\$ —	\$ 4,320
Number of New Retired Members	5	2	4	3	4	—	18
Period 7/1/10 to 6/30/11							
Average Monthly Pension Benefits	\$ 2,609	\$ 3,040	\$ 4,383	\$ 5,493	\$ 5,330	\$ 5,519	\$ 4,396
Number of New Retired Members	8	4	11	19	10	7	59
Period 7/1/09 to 6/30/10							
Average Monthly Pension Benefits	\$ 1,984	\$ 2,864	\$ 5,394	\$ 7,460	\$ 7,539	\$ 9,485	\$ 5,788
Number of New Retired Members	2	7	4	19	15	6	53

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	63	57	3	3
\$1,001 - \$2,000	79	61	5	13
\$2,001 - \$3,000	105	33	10	62
\$3,001 - \$4,000	188	22	100	66
\$4,001 - \$5,000	249	80	147	22
\$5,001 - \$6,000	89	39	42	8
\$6,001 - \$7,000	76	38	37	1
\$7,001 - \$8,000	73	39	33	1
\$8,001 - \$9,000	51	28	23	—
> \$9,000	106	61	45	—
Total	1,079	458	445	176

***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	63	53	7	3	—
\$1,001 - \$2,000	79	60	11	4	4
\$2,001 - \$3,000	105	54	32	16	3
\$3,001 - \$4,000	188	115	32	27	14
\$4,001 - \$5,000	249	161	47	30	11
\$5,001 - \$6,000	89	59	10	17	3
\$6,001 - \$7,000	76	49	9	16	2
\$7,001 - \$8,000	73	30	15	24	4
\$8,001 - \$9,000	51	31	7	12	1
> \$9,000	106	60	9	35	2
Total	1,079	672	179	184	44

****Option Selected**

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

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

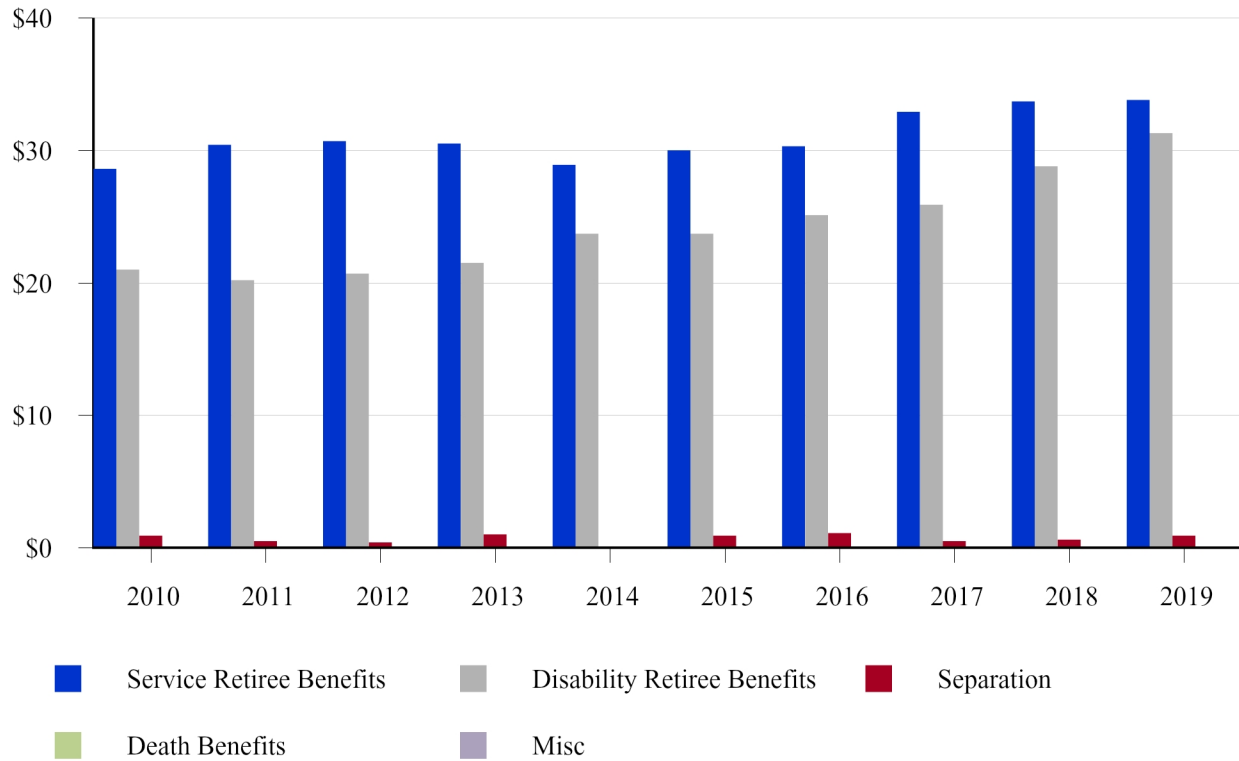
Option 2 - Beneficiary receives 100% of member's reduced monthly benefit

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

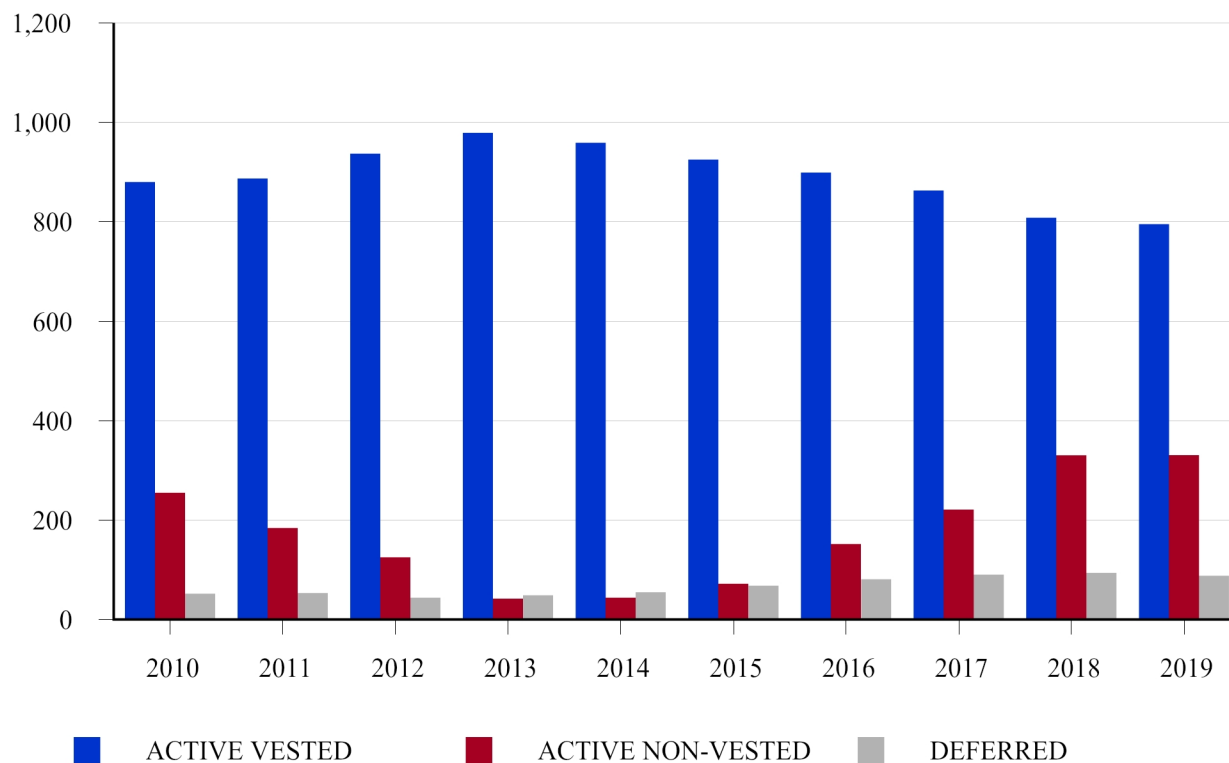
(Dollars in Millions)



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Service Retiree Benefits	\$28.6	\$30.4	\$30.7	\$30.5	\$28.9	\$30.0	\$30.3	\$32.9	\$33.7	\$33.8
Disability Retiree Benefits	21.0	20.2	20.7	21.5	23.7	23.7	25.1	25.9	28.8	31.3
Separation	0.9	0.5	0.4	1.0	0.1	0.9	1.1	0.5	0.6	0.9
Death Benefits	—	—	—	—	—	—	0.1	—	—	—
Misc	—	—	0.1	—	—	—	—	—	—	—
Total Benefit Deductions	\$50.5	\$51.1	\$51.9	\$53.0	\$52.7	\$54.6	\$56.6	\$59.3	\$63.1	\$66.0

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

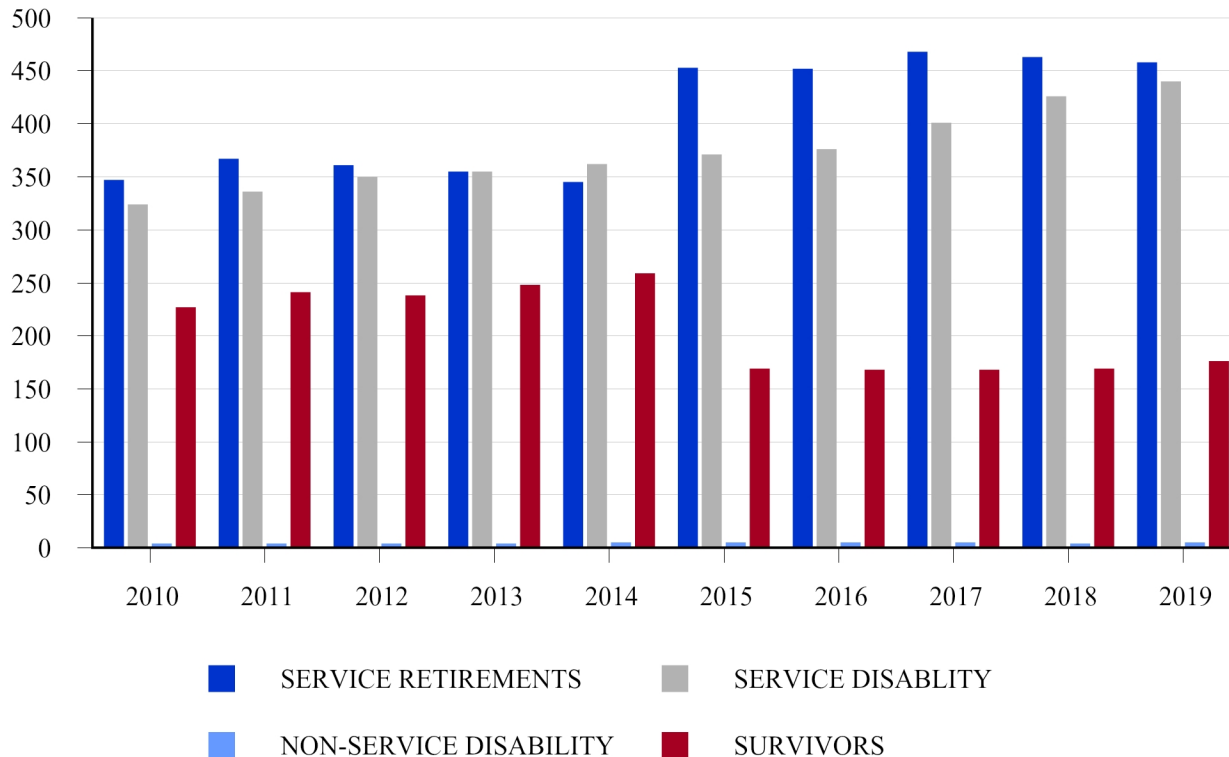
Last Ten Fiscal Years 2010 - 2019



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ACTIVE VESTED	880	887	937	979	959	925	899	863	808	795
ACTIVE NON-VESTED	255	184	125	42	44	72	152	221	330	331
DEFERRED	52	53	44	49	55	68	81	90	94	88
TOTAL	1,187	1,124	1,106	1,070	1,058	1,065	1,132	1,174	1,232	1,214

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	347	367	361	355	345	453	452	468	463	458
SERVICE DISABLITY	324	336	350	355	362	371	376	401	426	440
NON-SERVICE DISABILITY	4	4	4	4	5	5	5	5	4	5
SURVIVORS	227	241	238	248	259	169	168	168	169	176
TOTAL	902	948	953	962	971	998	1,001	1,042	1,062	1,079

Summary of Active Participants

YEAR	NUMBER OF MEMBERS	PENSIONABLE PAYROLL	ANNUAL AVERAGE SALARY	NET CHANGE IN AVERAGE SALARY
2019	1,126	\$109,803,190	\$97,516	6.77%
2018	1,138	\$103,934,234	\$91,331	1.68%
2017	1,084	\$97,368,618	\$89,823	1.48%
2016	1,051	\$93,030,822	\$88,516	(3.10)%
2015	997	\$91,075,093	\$91,349	(0.39)%
2014	1,003	\$91,980,224	\$91,705	(0.78)%
2013	1,021	\$94,368,329	\$92,427	2.04%
2012	1,062	\$96,194,537	\$90,579	0.26%
2011	1,071	\$96,757,692	\$90,343	3.40%
2010	1,135	\$99,166,002	\$87,371	2.39%

Summary of Retirees

YEAR	NUMBER OF RETIREES	ANNUAL BENEFITS TO PARTICIPANTS	ANNUAL AVERAGE ALLOWANCE (INDIVIDUAL)	NET CHANGE IN BENEFITS TO PARTICIPANTS
2019	1,079	\$65,113,142	\$60,346	2.52%
2018	1,062	\$62,510,828	\$58,861	4.40%
2017	1,042	\$58,748,302	\$56,380	1.86%
2016	1,001	\$55,408,166	\$55,353	2.85%
2015	998	\$53,711,161	\$53,819	(0.60)%
2014	971	\$52,573,897	\$54,144	0.14%
2013	962	\$52,011,489	\$54,066	0.28%
2012	953	\$51,378,999	\$53,913	1.10%
2011	948	\$50,556,250	\$53,329	(3.09)%
2010	902	\$49,638,574	\$55,032	1.23%

Member and City Contribution Rates

Last Ten Fiscal Years 2010 - 2019

TIER I							
As of June 30		Member Rates			City Contribution Rates		
		Basic at Entry Age			Total City	Less Prefunded Actuarial Accrued Liability	Net City Contribution
Fiscal Year	Valuation Date	20	30	40	Rate	(PAAL)	Rate
2019	2017	4.34%	7.84%	7.30%	23.44%	(4.72%)	18.72%
2018	2016	4.34%	7.84%	7.30%	28.38%	(9.46%)	18.92%
2017	2015	4.52%	7.75%	6.94%	29.59%	(10.57%)	19.02%
2016	2014	4.52%	7.75%	6.94%	26.88%	(6.74%)	20.14%
2015	2013	4.52%	7.75%	6.94%	27.80%	(6.97%)	20.83%
2014	2012	4.05%	7.10%	6.40%	25.95%	(5.76%)	20.19%
2013	2011	4.05%	7.10%	6.40%	26.22%	(6.38%)	19.84%
2012	2010	4.05%	7.10%	6.40%	26.57%	(2.63%)	23.94%
2011	2009	3.76%	6.65%	5.94%	26.43%	(6.58%)	19.85%
2010	2008	3.76%	6.65%	5.94%	26.38%	(14.64%)	11.74%

TIER II							
As of June 30		Member Rates			City Contribution Rates		
		Basic at Entry Age			Total City	Less Prefunded Actuarial Accrued Liability	Net City Contribution
Fiscal Year	Valuation Date	20	30	40	Rate	(PAAL)	Rate
2019	2017	0.00%	0.00%	0.00%	23.44%	(4.72%)	18.72%
2018	2016	0.00%	0.00%	0.00%	23.15%	(4.23%)	18.92%
2017	2015	0.00%	0.00%	0.00%	22.24%	(3.22%)	19.02%
2016	2014	9.00%	9.00%	9.00%	22.07%	(1.93%)	20.14%
2015	2013	9.00%	9.00%	9.00%	22.09%	(1.26%)	20.83%
2014	2012	9.00%	9.00%	9.00%	18.91%	(1.28%)	17.63%
2013	2011	9.00%	9.00%	9.00%	19.56%	(0.28%)	19.28%
2012	2010	9.00%	9.00%	9.00%	19.77%	(4.17%)	15.60%
2011	2009	9.00%	9.00%	9.00%	18.60%	(1.25%)	17.35%
2010	2008	9.00%	9.00%	9.00%	18.49%	(6.75%)	11.74%

Data Source: Annual Actuarial Valuation Reports

Economic Assumptions and Funding Method

Last Ten Fiscal Years 2010 - 2019

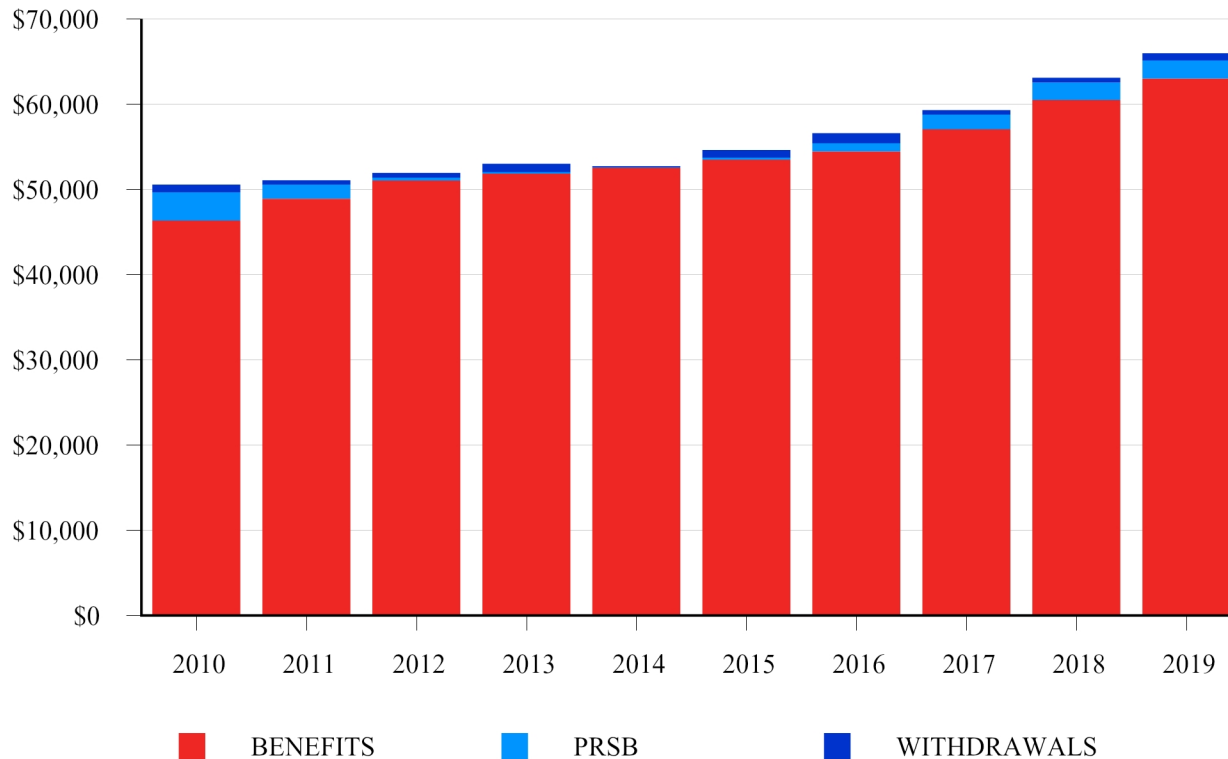
Valuation Date	Interest	Salary Scale	Cost-of-Living (COLA)	Inflation Component	Funding Method
2019	7.00%	5.25% Avg	2.75 - 3.25%	2.75%	Entry Age Normal
2018	7.25%	5.5% Avg	3.00 - 3.50%	3.00%	Entry Age Normal
2017	7.25%	5.5% Avg	3.00 - 3.50%	3.00%	Entry Age Normal
2016	7.25%	5.5% Avg	3.00 - 3.75%	3.00%	Entry Age Normal
2015	7.50%	5.5% Avg	3.00 - 3.75%	3.25%	Entry Age Normal
2014	7.50%	5.5% Avg	3.00 - 3.75%	3.25%	Entry Age Normal
2013	7.50%	5.5% Avg	3.00 - 3.75%	3.25%	Entry Age Normal
2012	8.00%	5.5% Avg	3.00 - 4.00%	3.50%	Entry Age Normal
2011	8.00%	5.5% Avg	3.00 - 4.00%	3.50%	Entry Age Normal
2010	8.00%	5.5% Avg	3.00 - 4.00%	3.50%	Entry Age Normal

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

Benefits and Withdrawals Paid

Last Ten Fiscal Years 2010 - 2019

(In Thousands)

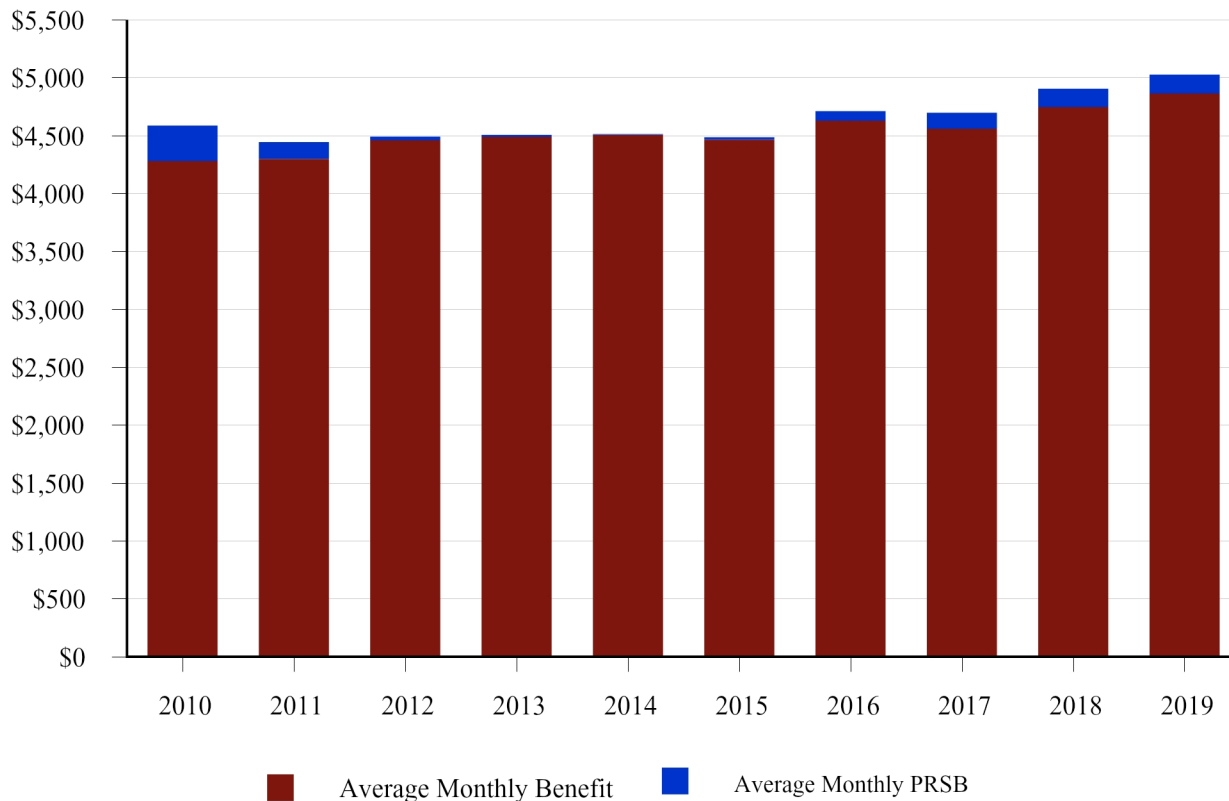


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
BENEFITS	\$46,327	\$48,894	\$51,006	\$51,827	\$52,513	\$53,471	\$54,428	\$57,029	\$60,492	\$62,991
PRSB	3,311	1,662	373	185	61	241	980	1,719	2,019	2,122
WITHDRAWALS	918	494	535	970	146	901	1,173	525	560	849

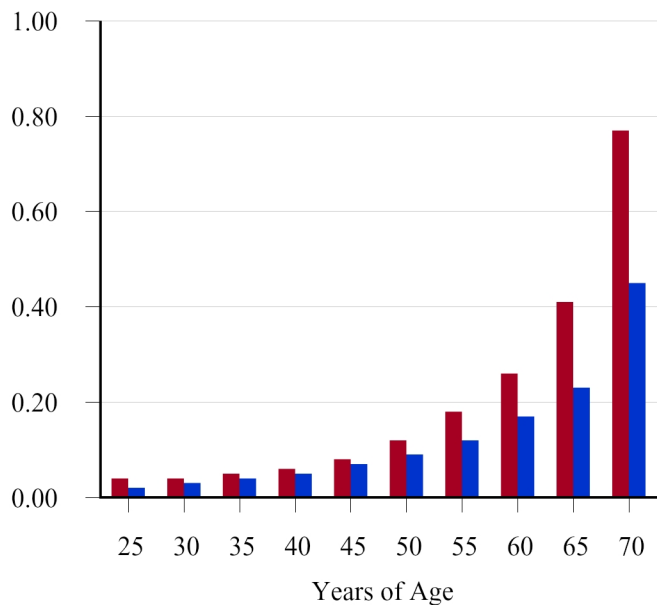
Average Monthly Benefits to Retirees

Last Ten Fiscal Years 2010 - 2019

(In Thousands)



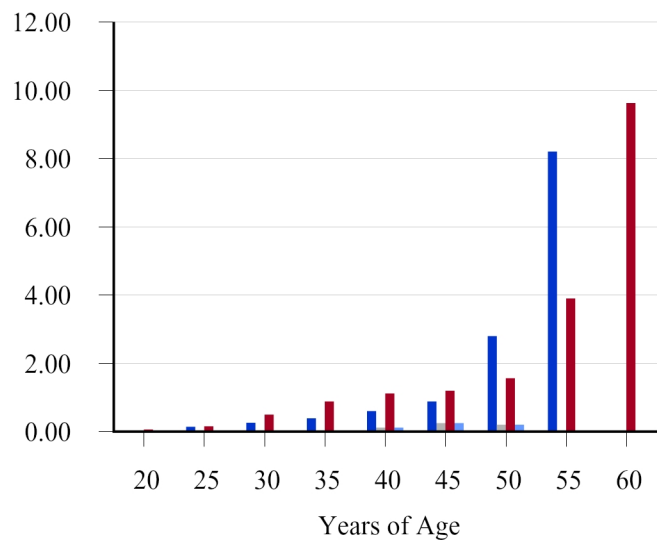
Average Monthly	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Benefit	\$4,280	\$4,298	\$4,460	\$4,490	\$4,507	\$4,465	\$4,629	\$4,560	\$4,746	\$4,864
PRSB	306	146	33	16	5	20	82	137	158	163
Average Monthly Benefit Total	\$4,586	\$4,444	\$4,493	\$4,506	\$4,512	\$4,485	\$4,711	\$4,697	\$4,904	\$5,027



Male Female

Separation Rate Before Retirement Due to Death* Rate %		
Age	Tier I & II	
	Male	Female
25	0.04	0.02
30	0.04	0.03
35	0.05	0.04
40	0.06	0.05
45	0.08	0.07
50	0.12	0.09
55	0.18	0.12
60	0.26	0.17
65	0.41	0.23
70	0.77	0.45

*All pre-retirement deaths are presumed to be duty



Tier I Duty Tier I Non-Duty
Tier II Duty Tier II Non-Duty

Separation Rates Prior to Retirement Due to Disability Rate %				
Age	Tier I Duty	Tier I Non-Duty	Tier II Duty	Tier II Non-Duty
20	0.02	0.00	0.06	0.00
25	0.14	0.01	0.16	0.01
30	0.26	0.01	0.50	0.01
35	0.39	0.03	0.88	0.03
40	0.60	0.12	1.12	0.12
45	0.88	0.25	1.20	0.25
50	2.80	0.20	1.56	0.20
55	8.20	0.00	3.90	0.00
60	0.00	0.00	9.62	0.00

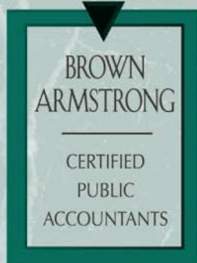
*To attract, develop and
retain competent and
professional staff.*

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

COMPLIANCE

- 109 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 Fire and Police Retirement System
Fresno, California

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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 Fire and Police 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

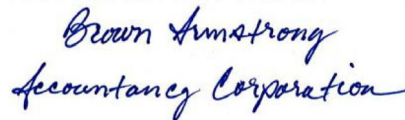
Compliance and Other Matters

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