

Comprehensive Annual Financial Report

For the Fiscal Years ended June 30, 2018 and 2017



City of Fresno Employees Retirement System

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



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

COMPREHENSIVE ANNUAL FINANCIAL REPORT

FOR FISCAL YEARS ENDED JUNE 30, 2018 AND 2017

Issued by:

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City of Fresno Employees Retirement System

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MISSION STATEMENT

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

BOARD AND STAFF COMMITMENT

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

GOALS

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

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

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

INTRODUCTION

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Letter of Transmittal



Robert T. Theller

RETIREMENT ADMINISTRATOR

December 12, 2018

Dear Board Members:

As Retirement Administrator of the City of Fresno Employees Retirement System (the System), it is with great pleasure that I submit the Comprehensive Annual Financial Report (CAFR) for the fiscal years ended June 30, 2018 and 2017.

As calendar year 2017 came to a close, investors were experiencing the second longest economic expansion in U.S. history. Many contemplated that if the current economic expansion were to last for another year and a half, it would be the longest on record. And, as such many economists stated that given the underlying U.S. economic fundamentals, it would be unlikely for there to be a severe bear market or recession in the next six to twelve months. After all, global economies were expanding after years of stagnation and the International Monetary Fund (IMF) had forecast global growth of 3.6% (2017) and 3.7% (2018), and worldwide inflation rates were low due to low commodity prices for oil, gas and materials, and an aging worldwide population along with a slowdown in population growth.

There is an old adage, that in the short term, any crazy political, natural disaster or global incident can negatively impact the stock market temporarily, but in the long term, the stock market follows the underlying fundamentals of the U.S. and worldwide economies. If the economies are trending up and expanding, the stock markets will follow. All that said, most would agree that the business cycle is clearly closer to its end than its beginning, increasing the uncertainty in the global financial markets.

During Fiscal Year 2018, the Federal Reserve raised the federal funds rate by 0.25 percent three times to the target range of 1.75 - 2.00 percent. At its meeting on September 26, 2018, the federal funds rate was raised another 0.25 percent for a current target range for the federal funds rate at 2 percent to 2.25 percent. During its November 2018 meeting, the Federal Reserve reaffirmed its plans to continue raising rates gradually, suggesting that a rate hike at its next meeting in December is likely. Federal Funds target Interest Rate in the United States averaged 5.70 percent from 1971 until 2018, reaching an all-time high of 20 percent in March of 1980 and a record low of 0.25 percent in December of 2008.

Letter of Transmittal Continued

Despite the persistent and overwhelming challenges of the global economy, the System is at a fully funded status on both a market value and actuarial basis at 116.6 percent and 114.8 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 that may be filled with 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.

Like almost all institutional investors and public pension plans, the System's returns for the last two years have been mixed at 8.87 percent and 14.74 percent for the fiscal years ended June 30, 2018 and 2017, respectively. Noticeably, the returns are well above the System's assumed rate of return of 7.25 percent effective June 30, 2018 and 2017, respectively.

In fiscal year 2018, the System's gross of fee returns provided by its custodian, Northern Trust, when compared to other institutional investors and weighted policy benchmarks, were very favorable. The System's gross of fees one-year return was 8.87 percent, 0.53 percent above its policy benchmark return of 8.34 percent; also outperforming its actuarial interest rate assumption of 7.25 percent by 1.62 percent. The five-year annualized gross of fees return of 8.90 percent was above its policy benchmark return of 8.29 percent by 0.61 percent. The System's ten-year annualized gross of fees return at 7.09 percent exceeded its policy benchmarks of 6.83 percent by 0.26 percent while slightly underperforming its actuarial interest rate assumption by 0.16 percent for the same period.

The System remains highly funded and well positioned to serve our members and retirees. The System's 20 and 25-year long-term gross of fees returns of 6.85 percent and 8.51 percent, respectively, as of June 30, 2018, illustrate the System's ability to achieve our long-term objectives over extended periods of time. 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 post-financial crisis world remains far less secure. The disappointing and uneven pace of the global recovery continues with struggles for communities around the world. Those enduring poor fortune question whether their governments are working for them. Restoring sustainable economic growth after the global financial crisis prolongs the hard work but we have confidence in our abilities to meet the challenges.

The Comprehensive Annual Financial Report (CAFR) of the City of Fresno Employees Retirement System for fiscal years ended June 30, 2018 and 2017, is submitted herewith. Information contained in this report is designed to provide a complete and accurate review of the years' operations. Responsibility for both the accuracy of the data, and the completeness and fairness of the presentation, rests with the management of the System. For a general overview of the City of Fresno Employees Retirement System's finances, please refer to the Management's Discussion and Analysis in the Financial Section of this report. The CAFR consists of six sections:

Letter of Transmittal Continued

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.

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

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

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

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

THE EMPLOYEES RETIREMENT SYSTEM AND ITS SERVICES

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

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

Letter of Transmittal Continued

Retirement Board is also responsible for the prudent investment of member and employer contributions, and defraying reasonable expenses of administration.

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

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

Major Initiatives

The Board, jointly with the City of Fresno Fire & Police Retirement System Board (the Boards), with the assistance of Staff and their Investment Consultant, performed Infrastructure, Value Add Real Estate and Private Equity asset class education sessions and conducted open invitation related request for information manager searches, and a Transaction Cost Analysis provider search. The Value Add Real Estate and Private Equity Fund of 1 manager search selections, while initiated during the year, will be completed during the first half of fiscal year 2019.

At their meeting in October 2017, the Boards approved the selection of infrastructure managers JPMorgan IIF, headquartered in New York City, and Ullico UIF, headquartered in Silver Springs, Maryland, pending completion of outside investment legal counsel's review of all pertinent legal fund documents, background investigations and operational due diligence reviews. The Boards approved the infrastructure target allocation of 4% or \$120.0 million to be split evenly among the two infrastructure managers and both fund retentions occurred effective June 30, 2018.

The Boards' Value Add Real Estate manager search began in April 2018 with the review of thirty-three different strategies and culminated in the summer with the selection of three firms as finalists in the search. The Boards approved for Staff and its Investment Consultant to conduct investment and operational due diligence on-site visits. In September 2018, the Boards approved the retention of Brookfield in New York, and in October 2018, the Boards approved the retention of Artemis in Chevy Chase, Maryland and Blue Vista in Chicago, pending completion of the legal review and background investigations. At their meeting on September 12, 2018, the Boards accepted Staff's recommendation to allocate a total of \$90 million to Value Add real estate allocating \$50 million to Brookfield, and splitting the remaining allocation of \$40 million among the two remaining firms (Artemis and Blue Vista, if investment and operational due diligence visits demonstrated their capabilities).

The Boards approved the service agreement with iCompass Meeting Manager Pro and Records Manager to automate meeting and records management workflow in one system, and to facilitate open governance through comprehensive and seamless access to information.

Following a thorough education and Request for Information (RFI) selection process, the Boards selected a third-party Transaction Cost Analysis (TCA) service provider to provide transaction cost evaluation services related to the Systems' total assets, measuring trading efficiency and evaluating the reasonableness of investment managers' trading costs and commissions. Three firms

Letter of Transmittal Continued

responded to the RFI; the top two firms merged shortly after the RFI completion and, thus, Staff recommended and the Boards selected, Zeno AN Consulting.

During fiscal year 2018, the Retirement Benefits Staff increased their communication efforts with both employees and retirees of the System(s). Aggressive efforts were deployed to maximize enrollment in the Member Direct module which was initially implemented in January 2016. Participation in Member Direct increased more than 50 percent over the previous fiscal year. Mid-Career Retirement Seminars were rolled out to active employees nearing important milestones in their careers. Attendance and positive feedback from those attending the seminars far exceeded expectations.

With the assistance of its actuary and staff, the Board completed the annual actuarial valuations for June 30, 2018 and 2017, and Governmental Accounting Standards Board (GASB) Statement No. 67 which redefines pension liability and expense for financial reporting purposes only.

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 Employees Retirement System for its comprehensive annual financial report for the fiscal year ended June 30, 2017. 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 nineteen 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.

*Letter of Transmittal Continued***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, 2018 actuarial valuation is presented in this CAFR. As of June 30, 2018, the funded ratio of the Employees Retirement System was 114.8 percent. The ratio of the valuation value of assets to actuarial accrued liabilities was 113.0 percent as of the June 30, 2017, valuation. The funding ratios as of June 30, 2018 and 2017, if measured using the market value of assets instead of the actuarial valuation value of assets are 116.6 percent and 114.3 percent, respectively. The funded ratios were determined by using the actuarial value of the assets in accordance with actuarial standards.

The actuarial accrued liability of the System at June 30, 2018, for funding purposes, amounted to \$1,047,692,000; the actuarial valuation value of assets amounted to \$1,202,691,315 and the market value of assets (including non-valuation reserves) amounted to \$1,348,690,633. At June 30, 2017, the actuarial valuation value of assets amounted to \$1,145,061,145; the market value of assets (including non-valuation reserves) amounted to \$1,274,121,736.

Under the Governmental Accounting Standards Board (GASB) Statement No. 67 Financial Reporting methodology, the net pension liability of the System as of June 30, 2018 indicates a surplus of \$153,396,700; while on an actuarial funding basis the valuation value of assets basis reflects a surplus of \$154,999,315 and a funding ratio of 114.8 percent. At June 30, 2017, the net pension liability of the System indicated a surplus of \$124,044,291 and a funding ratio of 113.0 percent. For financial reporting purposes, the Plan Fiduciary Net Position as a percentage of the Total Pension Liability is 112.83% and 110.79% as of June 30, 2018 and 2017, 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.

Letter of Transmittal Continued

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.

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, 2018 and 2017, the System's investments provided a 8.87 percent and 14.74 percent gross of fees rate of return, respectively.

Letter of Transmittal Continued

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, 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 T. Theller
Retirement Administrator

December 12, 2018

Retirement Board Members

As of June 30, 2018



Chair

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



Vice Chair

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



David Cain
Elected September 2014
Term Expires July 2018
Represents Manual Worker Members



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



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

Retirement Administrative Staff



LEFT TO RIGHT:

CHAD JACOBS, KATHLEEN RILEY BROWN, KAREN ESPIRITU, ALBERTO MAGALLANES, TRACY GONZALES, PATTIE LAYGO, ROBERT THELLER, PHILLIP CARBAJAL, ANDREA KETCH, PATTI BASQUEZ, YVONNE TIMBERLAKE, JOAN TAKETA, ONH VIENGSAY, STANTON PERKINS,

Administration of the System

Administration

The Administrative Section is responsible for the administration of the City of Fresno Employees Retirement System, including the risk management of the investment activities in accordance with the policies, regulations, and general guidelines of the Retirement Board. It is also responsible for interfacing with the investment managers, the investment consultant, the actuary, legal counsel, custodial bank, and any other consultants authorized by the Board. (See pages xiii and xiv for professional services and consultants and investment portfolio managers and page 73 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.

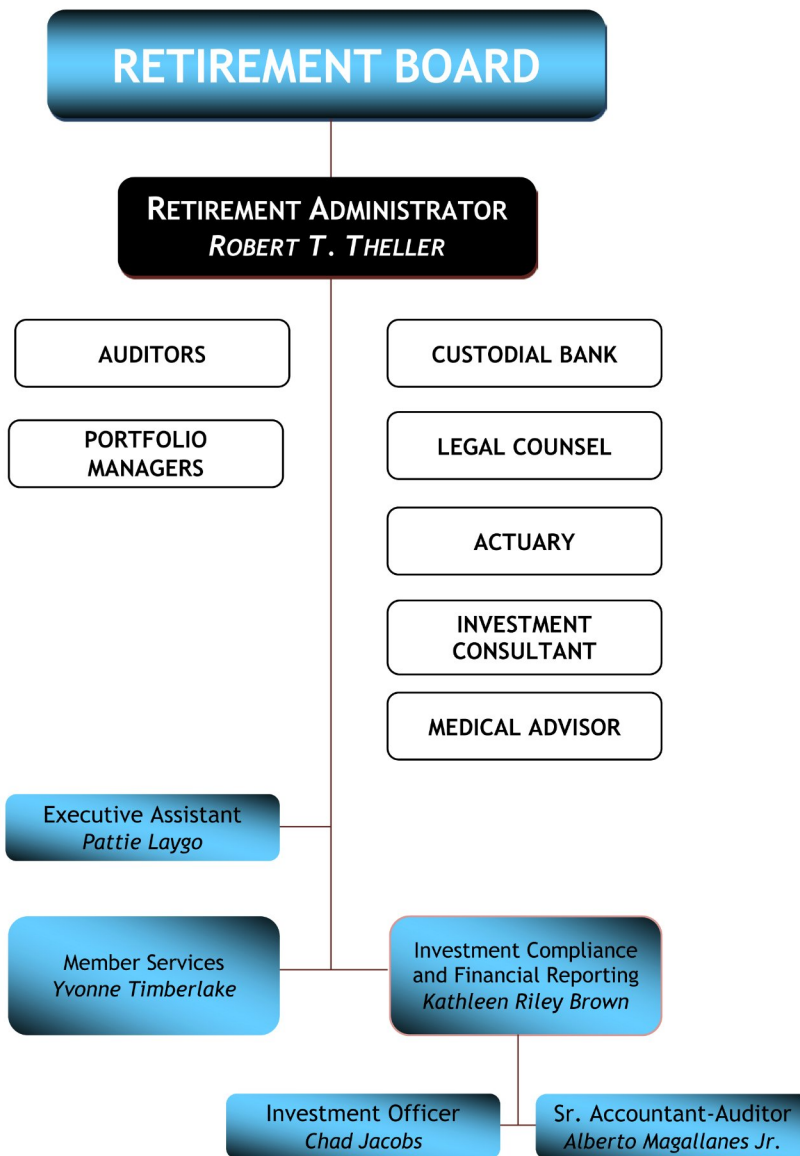
Investment Compliance and Financial Reporting

This section is responsible for monitoring compliance with the Board's Investment Objectives and Policy Statement and for all of the financial records and reports including financial statements, control and balancing of payroll and members' contributions and reconciliation of investments.

Executive Assistant

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

Organizational Structure



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

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

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



Government Finance Officers Association

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

Presented to

**City of Fresno
Employees Retirement System
California**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2017

Christopher P. Morill

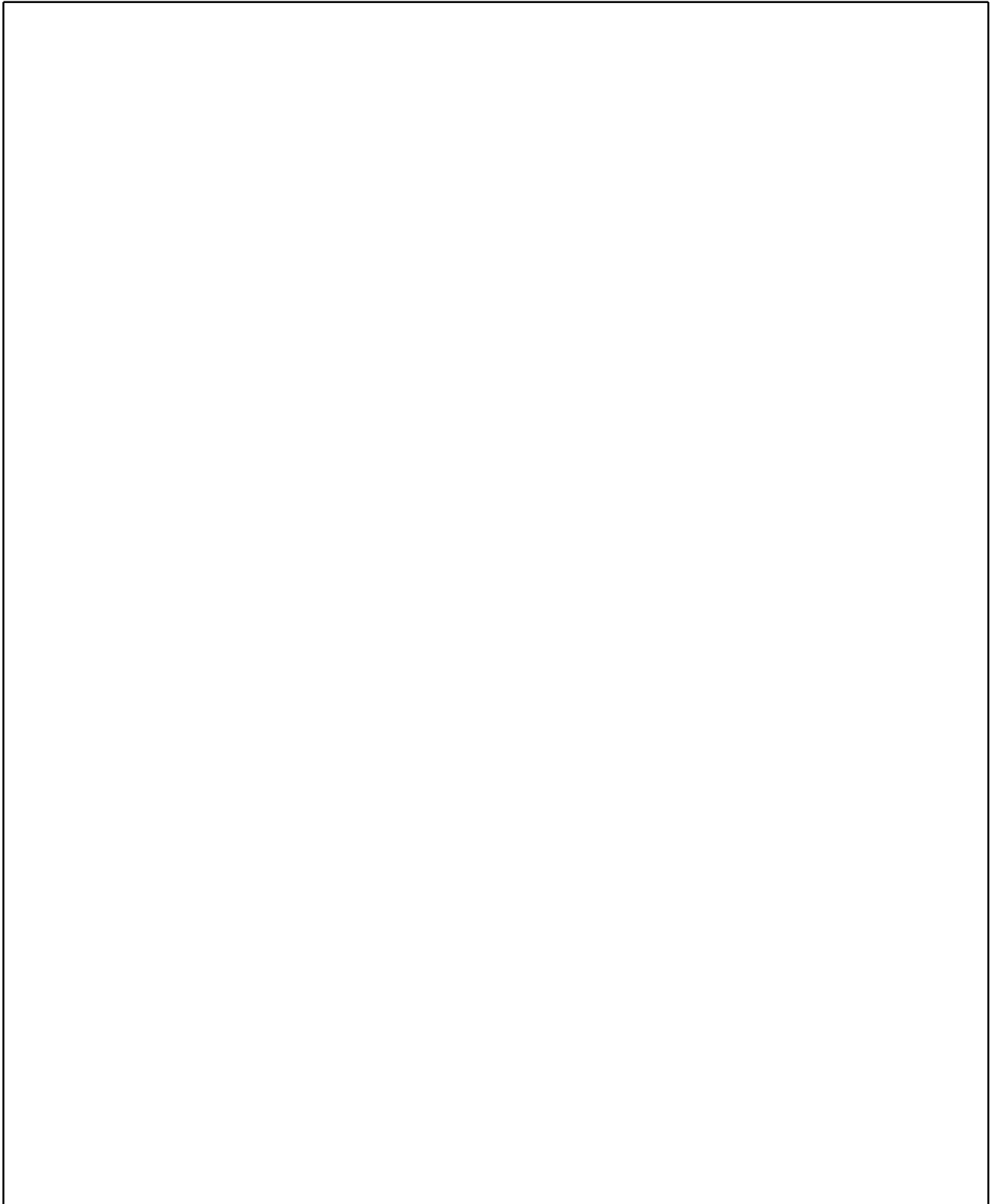
Executive Director/CEO

*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.*

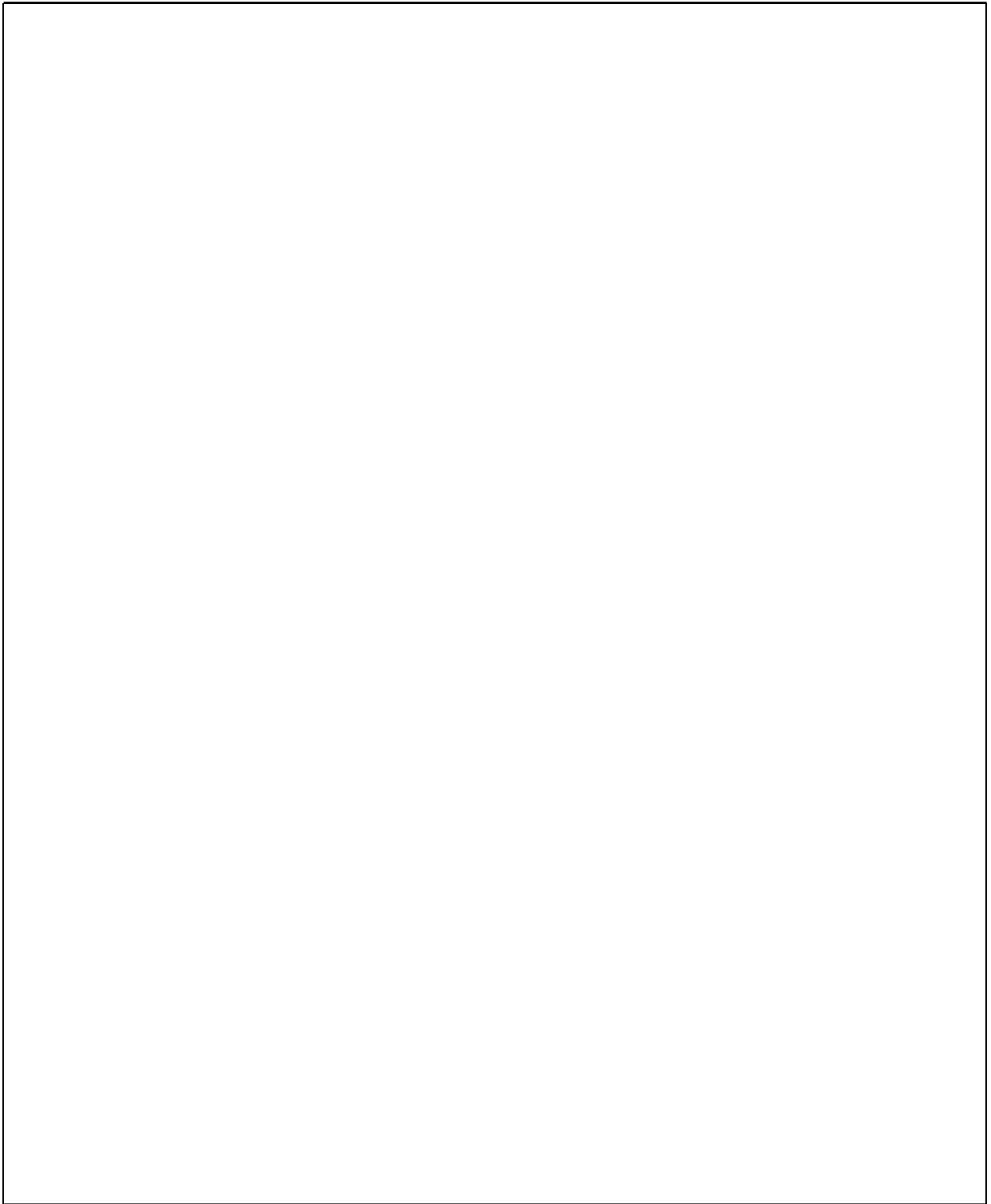
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Independent Auditor's Report



Independent Auditor's Report Continued



Management's Discussion and Analysis

We are pleased to provide this overview and analysis of the financial activities of the City of Fresno Employees Retirement System (the System) for the fiscal years ended June 30, 2018 and 2017. 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 2018, the assets of the System exceed its current liabilities by \$1,348,690,633; as of fiscal year 2017, the assets of the System exceed its current liabilities by \$1,274,121,736; as of fiscal year 2016, the assets of the System exceeded its liabilities by \$1,143,299,019.

The System's net position restricted for pension benefits increased by \$74,568,897 or 5.85 percent for fiscal year 2018; increased by \$130,822,717 or 11.44 percent for fiscal year 2017; and decreased by \$26,627,537 or 2.28 percent for fiscal year 2016, primarily as a result of the performance of the investment markets.

The System's funding objective is to meet long-term benefit obligations through contributions and investment income. As of June 30, 2018, the date of the last actuarial valuation, the funded ratio for the System was 114.8 percent reflecting that the System has a valuation value of assets which is in excess of the actuarial accrued liability. In general, this indicates that for every dollar of benefits due, we have approximately \$1.15 of assets available for payment as of that date.

As of June 30, 2017, the date of the previous annual actuarial valuation, the funded ratio for the System was 113.0 percent; and as of June 30, 2016, the funded ratio for the System was 111.3 percent.

Additions to Fiduciary Net Position

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

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

For fiscal year 2016 additions decreased \$27,138,699 or 49.90 percent over the prior year from \$54,386,172 to \$27,247,473, which includes member contributions of \$9,098,286, employer contributions of \$13,060,088, a net investment income gain of \$4,709,651 and net securities lending income of \$379,448.

Deductions from Fiduciary Net Position

Deductions from fiduciary net position for the fiscal year 2018 increased \$2,345,266 or 4.12 percent over the prior fiscal year from \$56,939,437 to \$59,284,703.

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

Management Discussion and Analysis Continued

Fiscal year 2016 deductions increased \$2,258,301 or 4.38 percent over the prior fiscal year 2015 from \$51,616,709 to \$53,875,010.

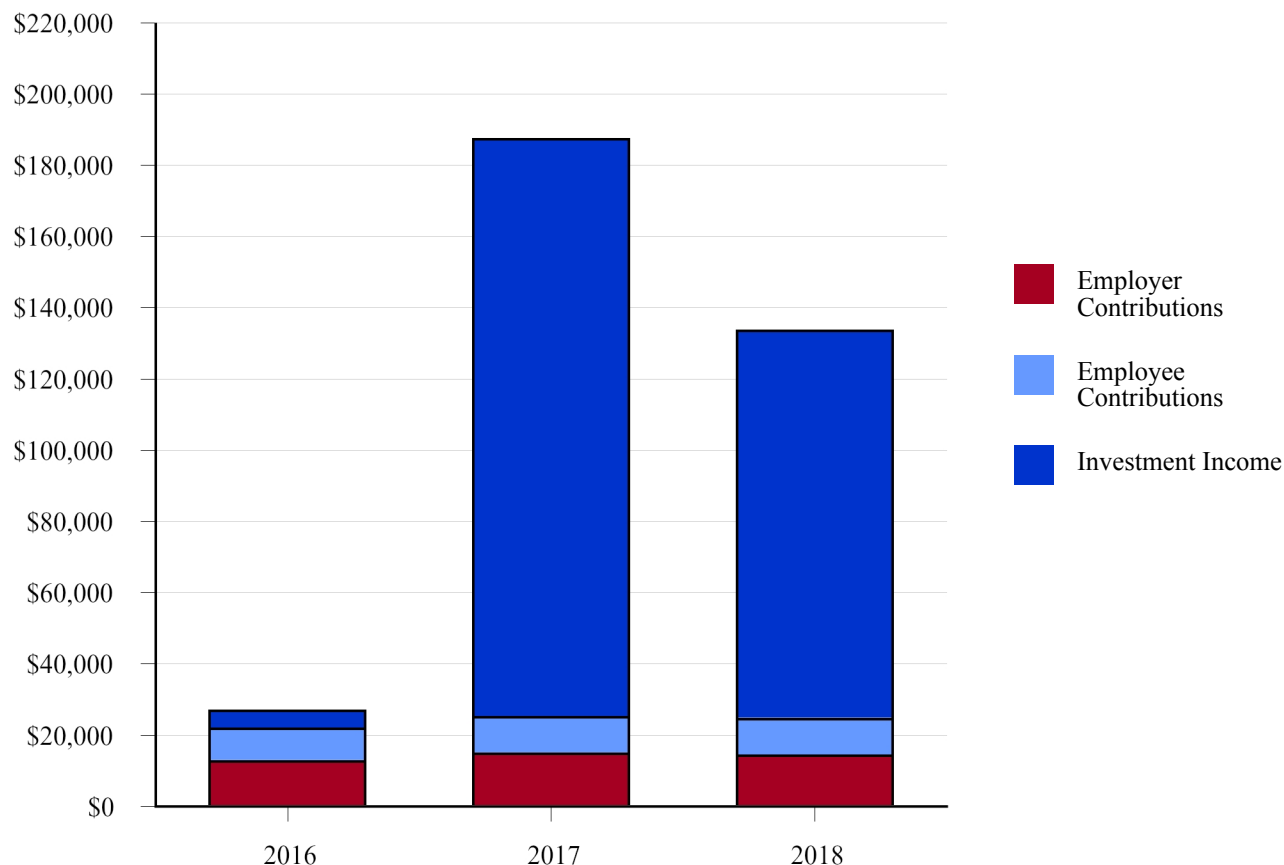
benefits paid in 2018 even though there were no Post Retirement Supplemental Benefits (PRSB) paid during calendar year 2018.

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

Schedule and Graph of Additions By Source

For Fiscal Years Ended June 30, 2018, 2017 and 2016 (In Thousands)

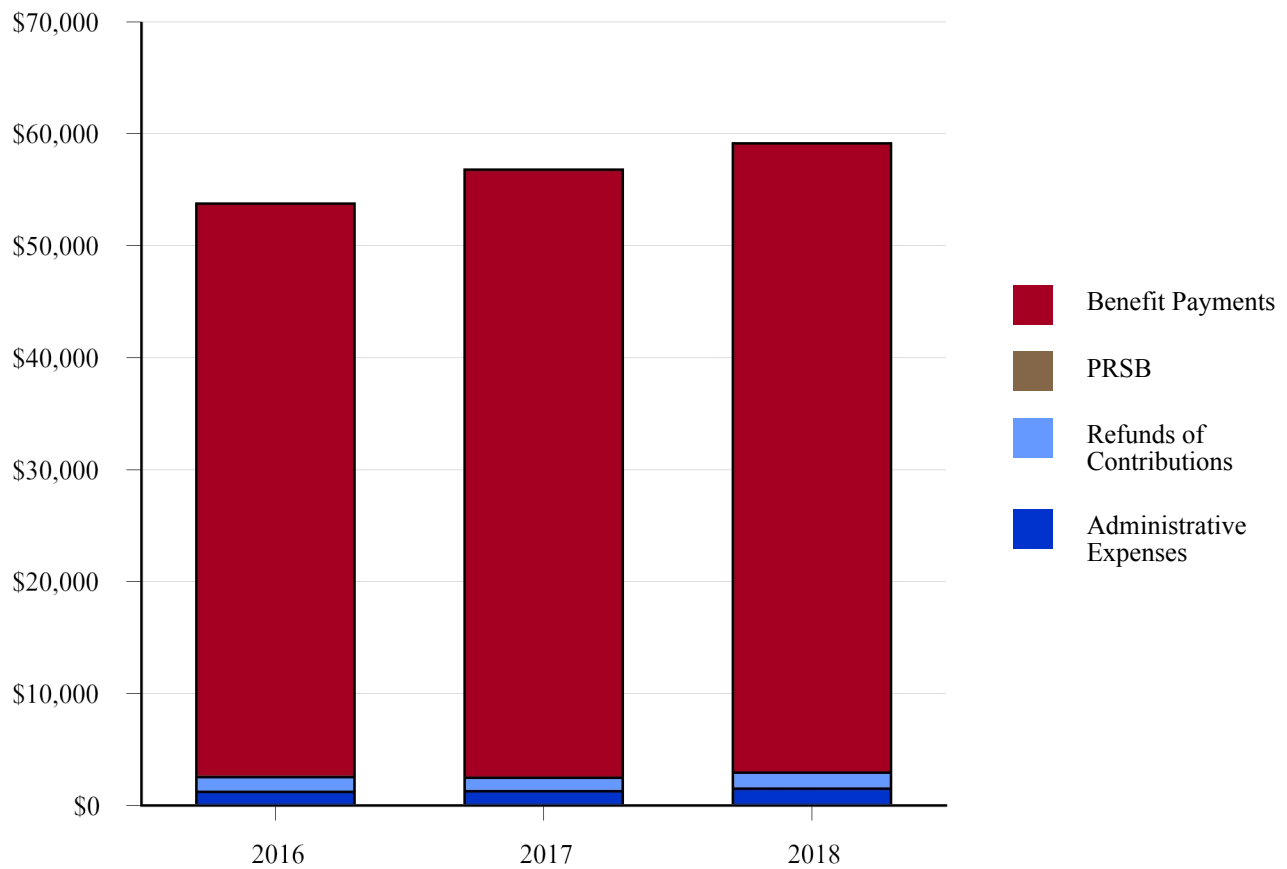
	2016	2017	2018
Employer Contributions	\$ 13,060	\$ 15,205	\$ 14,609
Employee Contributions	9,098	10,181	10,329
Investment Income	5,089	162,376	108,916
TOTAL	\$ 27,247	\$ 187,762	\$ 133,854



*Management Discussion and Analysis Continued***Schedule and Graph of Deductions By Type**

For Fiscal Years Ended June 30, 2018, 2017 and 2016 (In Thousands)

	2016	2017	2018
Benefit Payments	\$ 51,199	\$ 54,351	\$ 56,242
PRSB	—	—	—
Refunds of Contributions	1,330	1,199	1,424
Administrative Expenses	1,346	1,389	1,619
TOTAL	\$ 53,875	\$ 56,939	\$ 59,285



Management 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, 2018 and 2017. "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 Discussion and Analysis Continued

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

The System's funding ratio at June 30, 2018, was 114.8 percent, which means the System's fund has approximately \$1.15 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 2018 by \$1,348,690,633. All of the net position is restricted to meet the System's ongoing obligations to plan participants and their beneficiaries.

In fiscal year 2018, the System's restricted fiduciary net position, representing assets available to pay current and future member pension benefits, increased by 5.85 percent due to strong performance of the investment markets; while in 2017 the System's restricted fiduciary net position increased by 11.44 percent due to strong performance of the global investment markets; and also, due largely to volatility and fluctuations lowering performance in the investment markets in 2016, the System's restricted fiduciary net position decreased by 2.28 percent (See Table 1).

In order to determine whether the \$1.349 billion in net position will be sufficient to meet future obligations, the System's independent actuary performed an actuarial valuation as of June 30, 2018. The result of this valuation determines what future contributions by Plan members and the City of Fresno are needed to pay all expected future benefits. The valuation takes into account the Retirement

Board's (the Board) funding policy which includes a provision to smooth the impact of market volatility by spreading each year's gains or losses over five years.

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

Historical long-term performance rates of returns demonstrate that the System has been able to meet or exceed its actuarial assumed rate of return of 7.25 percent over long periods. As of June 30, 2018, the System's 25-year annualized return is 8.51 percent and its 20-year annualized return is 6.85 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.

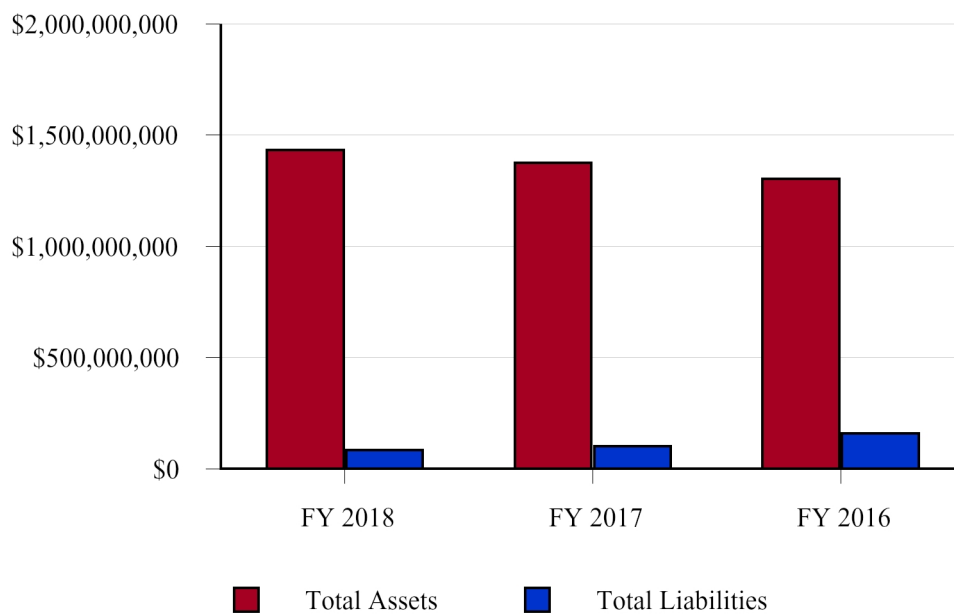
Management Discussion and Analysis Continued

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

As of June 30, 2018, 2017 And 2016

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

	FY 2017	FY 2016	FY 2017 Increase/ (Decrease) Amount	FY 2017 Increase/ (Decrease) Percent
Current and Other Assets	\$ 106,641,832	\$ 136,629,493	\$ (29,987,661)	(21.95%)
Investments at Fair Value	1,275,434,469	1,171,535,518	103,898,951	8.87%
Total Assets	\$1,382,076,301	\$1,308,165,011	\$ 73,911,290	5.65%
Total Liabilities	107,954,565	164,865,992	(56,911,427)	(34.52%)
Net Position Restricted for Pension Benefits	\$1,274,121,736	\$1,143,299,019	\$ 130,822,717	11.44%



Management Discussion and Analysis Continued

Capital Assets

The System's investment in capital assets decreased from \$1,101,255 to \$966,652 (net of accumulated depreciation) between fiscal years 2017 and 2018 after decreasing from \$1,235,045 to \$1,101,255 (net of accumulated depreciation) between fiscal years 2016 and 2017. 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, 2018 and 2017 was \$(134,603) and \$(133,790), respectively. These changes in both fiscal years were primarily due to the costs incurred for the development of software to program and install an upgrade to our original pension administration system that was originally installed in 1997, which was implemented effective July 1, 2015.

Reserves

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

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

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

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

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

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

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

Management Discussion and Analysis Continued

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

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

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

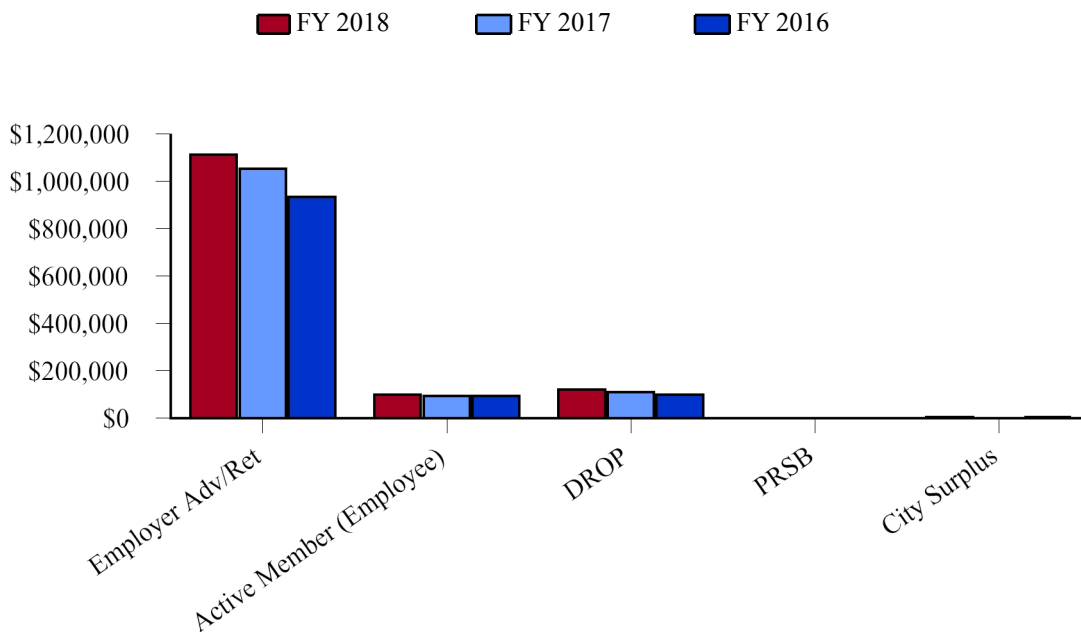
represents that portion of distributable actuarial surpluses and accrued interest, reduced by required City normal pension contributions. The City Surplus Reserve Account shall be drawn upon in subsequent years if needed to reduce or eliminate the City’s annual pension contribution requirement.

The City Surplus Reserve Account shows a positive balance for the fiscal year 2018, while fiscal year 2017 showed a slightly negative balance. The City’s normal contribution rate for fiscal years 2018 and 2017 included an adjustment for phase-in of assumption changes in the actuarial assumed rate of return.

Table 2 – Employees Retirement System’s Reserves

As of June 30, 2018, 2017 And 2016 (In Thousands)

	FY 2018	FY 2017	FY 2016
Employer Advance/Retired Reserves	\$ 1,117,261	\$ 1,058,611	\$ 939,693
Active Member (Employee) Reserves	104,834	100,665	98,785
DROP Reserves	126,597	114,835	105,406
PRSB Reserves	—	—	—
City Surplus Reserves	(1)	11	(585)
Net Position Restricted for Pension Benefits	\$ 1,348,691	\$ 1,274,122	\$ 1,143,299



Management 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 \$74,568,897 for the fiscal year 2018 resulting in an 5.85 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 \$130,822,717 for the fiscal year 2017 resulting in a 11.44 percent increase in the fiduciary net position restricted for pension benefits for the fiscal year ended June 30, 2017, primarily attributable to the growth in the global financial markets. In fiscal year 2016, the System's fiduciary net position decreased \$26,627,537 resulting in a 2.28 percent decrease in the fiduciary net position restricted for pension benefits for the fiscal year ended June 30, 2016.

Key elements of the additions and deductions to Fiduciary Net Position for fiscal years 2018, 2017 and 2016 are described in the sections below.

Additions to the System's Fiduciary Net Position

The reserves needed to finance retirement benefits are normally accumulated through the collection of employer and employee contributions and through earnings on investment income net of investment expense. Total additions to the System's fiduciary net position for the fiscal year ended June 30, 2018 totaled \$133,853,600.

For the fiscal year ended June 30, 2018, overall additions had decreased by \$53,908,554 or 28.71 percent primarily due to lower than anticipated performance in the global investment markets. For fiscal year 2017, overall additions had increased by \$160,514,681 or 589.10 percent from the prior year; and for fiscal year ended June 30, 2016, primarily due to the performance of the investment markets and changes in actuarial assumptions, overall additions had decreased by \$27,138,699 or 49.90 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, 2018.

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, 2018, totaled \$59,284,703 which was an increase of \$2,345,266 or 4.12 percent over the prior fiscal year 2017. Deductions from the fiduciary net position for the fiscal year ended June 30, 2017, totaled \$56,939,437 which was an increase of \$3,064,427 or 5.69 percent over the prior fiscal year 2016. The fiscal year ending June 30, 2016 had deductions from the fiduciary net position totaling \$53,875,010, which was an increase of \$2,258,301 or 4.38 percent over the prior fiscal year 2015. The increase in benefits paid resulted primarily from an increase in the amount of benefit payments due to the number of retirees from the prior year.

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

Management Discussion and Analysis Continued

Changes in Fiduciary Net Position (Condensed)

For Fiscal Years Ended June 30, 2018 and 2017 and 2016

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

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

	FY 2017	FY 2016	FY 2017 Increase/ (Decrease) Amount	FY 2017 Increase/ (Decrease) Percent
Additions				
Employer Contributions	\$ 15,205,360	\$ 13,060,088	\$ 2,145,272	16.43%
Employee Contributions	10,180,589	9,098,286	1,082,303	11.90%
Net Investment Income *	162,376,205	5,089,099	157,287,106	3,090.67%
Total Additions	\$ 187,762,154	\$ 27,247,473	\$ 160,514,681	589.10%
Deductions				
Retiree Benefit Payroll	\$ 54,350,851	\$ 51,198,523	\$ 3,152,328	6.16%
Post Retirement Supplemental Benefit (PRSB)	—	—	—	—%
Refunds of Contributions	1,199,054	1,330,298	-131,244	(9.87%)
Administrative Expenses	1,389,532	1,346,189	43,343	3.22%
Total Deductions	\$ 56,939,437	\$ 53,875,010	\$ 3,064,427	5.69%
Changes in Net Position	130,822,717	-26,627,537	157,450,254	(591.31%)
Net Position Restricted for Pension Benefits				
Beginning of the Year	1,143,299,019	1,169,926,556	-26,627,537	(2.28%)
End of the Year	\$ 1,274,121,736	\$ 1,143,299,019	\$ 130,822,717	11.44%

* Net of investment expense of \$7,668,935 and \$5,816,655 for June 30, 2017 and 2016, respectively.

Management Discussion and Analysis Continued

System's Fiduciary Responsibilities

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

Requests for Information

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

City of Fresno Employees Retirement System

2828 Fresno Street Suite 201

Fresno, California 93721-1327

Respectfully submitted,

Robert T. Theller
Retirement Administrator

December 12, 2018

Basic Financial Statements

Statement of Fiduciary Net Position

As of June 30, 2018 and 2017

	2018	2017
ASSETS		
Cash (Note 7)	\$ 1,856,515	\$ 1,920,674
Collateral Held for Securities Lent (Note 9)	82,685,282	97,085,038
Receivables		
Receivables for Investments Sold	1,207,493	1,629,505
Interest and Dividends	3,368,358	3,700,596
Other Receivables	1,601,514	1,204,554
Total Receivables	6,177,365	6,534,655
Prepaid Expenses	37,808	210
Total Current Assets	90,756,970	105,540,577
Investments at Fair Value (Note 6 and 7)		
Domestic Equity	503,076,591	489,461,127
International Developed Market Equities	242,245,030	222,684,997
Government Bonds	149,212,777	151,938,973
Corporate Bonds	126,673,251	129,020,657
Direct Lending	53,598,843	44,196,000
Real Estate	197,413,403	170,247,234
International Emerging Market Equities	46,735,917	43,228,458
Short-Term Investments	28,021,268	24,657,023
Total Investments	1,346,977,080	1,275,434,469
Capital Assets Net of Accumulated Depreciation (Note 12)	966,652	1,101,255
Total Assets	1,438,700,702	1,382,076,301
LIABILITIES		
Collateral Held for Securities Lent (Note 9)	82,685,282	97,085,038
Payable for Investments Purchased	4,702,838	7,903,088
Other Liabilities	1,201,360	1,824,671
Payable for Foreign Currency Purchased	1,420,589	1,141,768
Total Liabilities	90,010,069	107,954,565
Net Position Restricted for Pension Benefits (Note 5)	\$ 1,348,690,633	\$ 1,274,121,736

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

Basic Financial Statement Continued

Statement of Changes in Fiduciary Net Position
For Fiscal Years Ended June 30, 2018 and 2017

	2018	2017
ADDITIONS		
Contributions (Note 3)		
Employer	\$ 14,608,659	\$ 15,205,360
Employee	10,329,475	10,180,589
Total Contributions	24,938,134	25,385,949
Investment Income		
Net Appreciation/(Depreciation) in Value of Investments	93,756,411	147,571,076
Interest	12,299,109	12,131,185
Dividends	10,855,518	9,336,910
Other Investment Related	54,745	53,786
Total Investment Income	116,965,783	169,092,957
Less: Investment Expense	(8,452,047)	(7,150,258)
Total Net Investment Income	108,513,736	161,942,699
Securities Lending Income		
Securities Lending Earnings (Note 9)	1,683,081	952,183
Less: Securities Lending Expense	(1,281,351)	(518,677)
Total Net Securities Lending Income	401,730	433,506
Total Additions	133,853,600	187,762,154
DEDUCTIONS		
Benefit Payments	56,241,911	54,350,851
Post Retirement Supplemental Benefits (Note 11)	—	—
Refunds of Contributions	1,424,025	1,199,054
Administrative Expense	1,618,767	1,389,532
Total Deductions	59,284,703	56,939,437
Changes in Net Position	74,568,897	130,822,717
NET POSITION RESTRICTED FOR PENSION BENEFITS		
BEGINNING OF YEAR	1,274,121,736	1,143,299,019
END OF THE YEAR	\$ 1,348,690,633	\$ 1,274,121,736

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

Notes to the Basic Financial Statements

1 | Significant Provisions of the Retirement System

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

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

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

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

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

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

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

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

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

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

Total participants of the System were comprised as follows at June 30, 2018 and 2017:

	<u>2018</u>	<u>2017</u>
Active Members		
Vested	1,285	1,405
Non-Vested	887	674
Total Active Members	<u>2,172</u>	<u>2,079</u>
Retirees and Beneficiaries of Deceased		
Retirees, Currently Receiving Benefits	1,970	1,916
Inactive Vested Members	251	251
Total Retirees and Inactive Members	<u>2,221</u>	<u>2,167</u>
Grand Total	<u>4,393</u>	<u>4,246</u>

Benefit Provisions

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

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

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

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

Member Retirement Benefits

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

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

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

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

Notes to the Basic Financial Statement Continued

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

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

Deferred Retirement Option Program (DROP)

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

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

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

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

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

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

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

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

Notes to the Basic Financial Statement Continued

DROP Reserves which represent funds reserved for DROP benefits accumulated by active members and retirees were \$126,596,636 and \$114,834,678 as of June 30, 2018 and 2017, respectively.

Terminated Member Benefits

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

Death and Disability Benefits

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

Cost of Living Benefits

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

The Board adopted the annual COLA, pursuant to Section 3- 553(b) of 2.0 percent, effective July 1, 2017 for fiscal year 2018, and 0.4 percent, effective July 1, 2016 for fiscal year 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 as defined in Sections 3-534 and 3-538 of the City of Fresno Municipal Code. Other expenses are recognized when the corresponding liabilities are incurred.

Notes to the Basic Financial Statement Continued

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

Investments

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

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

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

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

The asset allocation policy set by the Board, in conjunction with the Fire and Police Retirement Board, is outlined in the Boards’ Investment Objectives and Policy Statement. Plan assets are managed with a long-term objective of achieving and maintaining a fully funded status for the benefits provided by the System. The table on the following page provides the Boards’ adopted asset allocation policy as of June 30, 2018 and 2017.

*Notes to the Basic Financial Statement Continued***Asset Allocation Policy***As of June 30, 2018 and 2017*

Asset Class	FY 2018	FY 2017
Domestic Equity		
Large Cap	15.8%	15.8%
Small Cap	7.2%	7.2%
International Equity		
Developed Markets	19.0%	19.0%
Emerging Markets	6.0%	6.0%
Fixed Income		
Core Fixed Income	10.0%	10.0%
High Yield Bonds	5.0%	5.0%
Real Estate		
Core Real Estate	11.0%	11.0%
Value Add Real Estate/REITs	4.0%	4.0%
Alternatives		
Infrastructure	4.0%	4.0%
MLPs	5.0%	5.0%
Private Equity	5.0%	5.0%
Private Debt	8.0%	8.0%
Short Term Investments	0.0%	0.0%
	100%	100%

Estimates

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

Reclassifications

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

Implementation of New Accounting Pronouncements

For the year ended June 30, 2018, the Board adopted and implemented all applicable new GASB pronouncements for the fiscal year ended June 30, 2018, as required by each

statement. The most recent pronouncement, effective for fiscal year ended June 30, 2018, is provided below.

GASB Statement No. 85, OMNIBUS 2017, was issued in March 2017. This Statement addresses a variety of topics including issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (pensions and other postemployment benefits [OPEB]). There was no material impact on the System's financial statements as a result of the implementation of GASB Statement No. 85.

Notes to the Basic Financial Statement Continued

3 | Contributions

Authority to Collect

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

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

Employee contribution rates vary according to age and are designed to provide funding for approximately one third of retirement benefit basic normal costs and one-half of the cost-of-living component. All active members are required to make contributions to the System. The average member contribution rate as of June 30, 2018 for 2017-2018 (based on the June 30, 2016 valuation) was 8.04 percent of compensation. The average member contribution rate as of June 30, 2017 for 2016-2017 (based on the June 30, 2015 valuation) was 8.55 percent of compensation.

The employer contribution rate is designed to provide funding for the remaining regular retirement and cost-of-living benefits, as well as all regular disability and survivors' benefits. The average employer contribution rate as of June 30, 2018 for 2017-2018 (based on the June 30, 2016 valuation) was 11.37 percent of compensation. The average employer contribution rate as of June 30, 2017 for 2016-2017 (based on the June 30, 2015 valuation) was 12.78 percent of compensation.

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

Funding Status & Method

Actuarial Funding Policy and Actuarial Cost Methodology for Funding Purposes.

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

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.

Notes to the Basic Financial Statement Continued

Funding Requirements and Policy Components

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

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

As of June 30, 2018, the System does not have an Unfunded Actuarial Accrued Liability (UAAL). The Board's Amortization Policy sets forth the amortization procedures for funding any UAAL or amortization and allocation of any available surplus in the System.

Any new UAAL as a result of actuarial gains or losses identified in the annual valuation as of June 30 will be amortized over a period of fifteen (15) years. Any new UAAL as a result of any change in actuarial assumptions or methods will be amortized over a period of twenty-five (25) years. The amortization period for any increase in UAAL as a result of any amendments to the System will be amortized over a period of fifteen (15) years, while any

increase in UAAL resulting from a temporary retirement incentive will be funded over a period not to exceed five (5) years.

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

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

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

The System uses a five year smoothing of market gains and losses to derive the actuarial value of assets. As of the fiscal year ended June 30, 2018, the actuarial value of assets was \$1.203 billion with a funded percentage of 114.8 percent on a valuation value of assets.

The progress being made towards meeting the System's funding objective through June 30, 2018 is illustrated in the Schedule of Funding Progress shown on the following page.

Notes to the Basic Financial Statement Continued

Schedule of Funding Progress
For The Three Years Ending June 30, 2018
(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)
2018	\$1,203	\$1,048	114.8%	\$(155)	\$135	114.9%
2017	\$1,145	\$1,014	113.0%	\$(131)	\$126	104.3%
2016	\$1,087	\$977	111.3%	\$(110)	\$113	(97.2%)

Funding Policy

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

These minimum contributions are recognized currently in the Statement of Changes in Fiduciary Net Position. Employees' contributions are funded and recognized currently through payroll deductions in amounts recommended by the actuary. Costs of administering the System are charged against System assets.

Total contributions (basic and cost-of-living adjustments (COLA)) to the System for fiscal year 2018 totaled \$24,938,134. Employees contributed \$10,329,475 and the City made contributions of \$14,608,659.

Contributions aggregating \$24,938,134 (\$14,608,659 employer contributions and \$10,329,475 employee contributions) were made in fiscal year 2018, based on an actuarial valuation determined as of June 30, 2016, which became effective for the year ended June 30, 2018. During fiscal year 2018, the Employer normal contribution rate was set at 11.69 percent. However, due to an adjustment for an excess contribution from the prior year Employer and System member basic and COLA contributions represented 11.37 percent and 8.04 percent, respectively, of the fiscal year 2018 covered payroll.

Contributions aggregating \$25,385,949 (\$15,205,360 employer contributions and \$10,180,589 employee contributions) were made in fiscal year 2017, based on an actuarial valuation determined as of June 30, 2015, which became effective for the year ended June 30, 2017. During fiscal year 2017, the Employer normal contribution rate was set at 12.26 percent. Employer and System member contributions represented 12.78 percent and 8.55 percent, respectively, of the fiscal year 2017 covered payroll.

*Notes to the Basic Financial Statement Continued**Contributions Required and Contributions Made*

The employer's required normal contributions to the System has two components: basic and COLA. For fiscal year 2018 and 2017, the employer's required normal contributions (basic and COLA) to the System were as follows:

Normal Cost

	FY2018		FY2017	
Employee Contributions	\$	10,329,475	\$	10,180,589
Employer Contribution Rate		11.69%		12.26%
Employer Contributions	\$	15,017,145	\$	14,590,248
Prior Year Contribution (Surplus)/Shortfall		(408,486)		615,112
Net Employer Contributions	\$	14,608,659	\$	15,205,360
Pensionable Payroll	\$	128,461,461	\$	119,006,918

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, 2018 and 2017

(In Thousands)

	As of June 30, 2018	As of June 30, 2017
Total Pension Liability	\$1,195,294	\$1,150,077
Plan Fiduciary Net Position	(\$1,348,691)	(\$1,274,121)
Net Pension Liability	(\$153,397)	(\$124,044)
Plan Fiduciary Net Position as a percentage of the total pension liability	112.83%	110.79%

The net pension liability was measured as of June 30, 2018 and 2017 and determined based upon the total pension liability (on a GASB 67 basis) from actuarial valuations as of June 30, 2018 and 2017, respectively.

Notes to the Basic Financial Statement Continued

Actuarial Assumptions

Key Methods and Assumptions Used in Valuation of Total Pension Liability

The total pension liability as of June 30, 2018 was determined by an actuarial valuation as of June 30, 2018, using the following actuarial assumptions, applied to all periods included in the measurement:

Valuation Date	June 30, 2018 ¹
Actuarial Experience Study	3 Year Period Ending June 30, 2015
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	3.00%
Salary Increases	3.75% to 11.50%, varying by service, including inflation
Discount Rate	7.25%, net of pension plan investment expense, including inflation
Other Assumptions	See June 30, 2018 funding valuation and (Appendix A) for the service retirement rates after they have been adjusted to treat DROP participation as service retirement.
Mortality Rates	Mortality rates used in the latest actuarial valuation are based on the Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional scale MP-2015, set forward one year. For healthy members, the separate tables for males and females ages are set forward one year. For members that are disabled, the separate tables for males and females ages are set forward four years. For beneficiaries, the separate tables for males and females ages set forward one year, weighted 35% male and 65% female.

¹ Actuarially determined contribution rates are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported. As such, the actuarial valuations dated June 30, 2018 and 2017 will impact the contribution rates for the fiscal years ended June 30, 2020 and 2019.

Notes to the Basic Financial Statement Continued

The valuation interest rate is 7.25 percent; total salary scale increases range between 3.75% to 11.50% (include 3.00 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, 2015 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. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before deducting investment expenses, used in the derivation of the long-term expected investment rate of return assumption are summarized in the following table.

The actual asset class target allocations from the Board's prior adopted Asset Allocation Target Policy were utilized in the Analysis of Actuarial Experience during the period July 1, 2012 through June 30, 2015 and for the Review of Economic Actuarial Assumptions used for the June 30, 2018 and 2017 Actuarial Valuations.

Notes to the Basic Financial Statement Continued

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

Asset Class	As of June 30, 2018		As of June 30, 2017	
	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	22.5%	5.80%	22.5%	5.80%
Small Cap U.S. Equity	7.5%	6.47%	7.5%	6.47%
Developed International Equity	22.0%	6.98%	22.0%	6.98%
Emerging Market Equity	8.0%	8.99%	8.0%	8.99%
Domestic Fixed Income	15.0%	0.83%	15.0%	0.83%
High Yield Fixed Income	6.0%	3.44%	6.0%	3.44%
Real Estate	15.0%	4.45%	15.0%	4.45%
Private Debt/Direct Lending	4.0%	5.73%	4.0%	5.73%
Total	100.0%		100.0%	

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

Mortality Rates

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

Discount Rate

The discount rate used to measure the total pension liability was 7.25 percent as of June 30, 2018 and 2017. 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, 2018 and June 30, 2017.

The table on the following page presents the net pension liability of the Retirement System calculated using the discount rate of 7.25 percent, as of June 30, 2018 and 2017, 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:

Notes to the Basic Financial Statement Continued

Sensitivity of Net Pension Liability to Changes in the Discount Rate

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

	1% Decrease	Current Discount Rate	1% Increase
Net Pension Liability	6.25%	7.25%	8.25%
June 30, 2018	(\$17,239)	(\$153,397)	(\$265,860)

	1% Decrease	Current Discount Rate	1% Increase
Net Pension Liability	6.25%	7.25%	8.25%
June 30, 2017	\$7,182	(\$124,044)	(\$232,579)

5 Net Position Restricted for Pension Benefits

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

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

The System's major reserves are as follows:

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

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

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

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

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

Notes to the Basic Financial Statement Continued

CITY SURPLUS RESERVE represents surplus earnings that have been allocated but not used as a reduction to offset or eliminate the City’s pension contributions in accordance with the conditions and requirements of Municipal Code Section 3-567 “Post Retirement Supplemental Benefit.” The City Surplus Reserve Account was slightly negative for fiscal year 2018 and positive for fiscal year 2017 due to the differences between the actual and estimated surplus allocation for the City for offsetting the City’s contributions for those years. The City’s normal contribution rate for fiscal year 2019 will include funding of the fiscal year 2018 deficit

City Surplus Reserve balance. Interest is allocated at an actuarially determined interest rate as approved by the Board and is credited monthly to the Active Member Reserves and the Employer Advance/Retired Reserves. Active members in the Deferred Retirement Option Program accrue interest on their accumulated DROP accounts monthly at an interest rate annually adopted by the Board.

The amount of reserves for the years ended June 30, 2018 and 2017, consisted of the following:

Reserves Table as of FY 2018 and FY 2017

(In Thousands)

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

Notes to the Basic Financial Statement Continued

6 | Fair Value Measurements

In accordance with GASB Statement No. 72, *Fair Value Measurement and Application*, 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, 2018 and 2017.

Notes to the Basic Financial Statement Continued

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

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

Notes to the Basic Financial Statement Continued

Investment Type	Fair Value Measurements Using			
	June 30, 2017	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	\$ 1,779,205	\$ —	\$ 1,779,205	\$ —
Commercial Mortgage-Backed	2,713,204	—	2,713,204	—
Corporate Bonds	116,846,519	—	116,835,744	\$ 10,775
Corporate Convertible Bonds	4,736,773	—	4,736,773	—
Government Agencies	3,737,200	—	2,683,093	1,054,107
Government Bonds	47,857,529	—	47,857,529	—
Government Mortgage Backed Securities	53,191,506	—	53,191,506	—
Gov't-issued Commercial Mortgage-Backed	372,933	—	372,933	—
Municipal/Provincial Bonds	6,325,007	—	6,325,007	—
Non-Government Backed C.M.O.s	1,169,857	—	1,169,857	—
Total Debt Securities	238,729,733	—	237,664,851	1,064,882
Equity Securities				
Consumer Discretionary	51,497,682	51,497,682	—	—
Consumer Staples	22,604,591	22,465,902	138,689	—
Energy	9,795,797	9,644,086	151,711	—
Financials	74,836,892	74,836,892	—	—
Health Care	28,791,141	28,791,141	—	—
Industrials	66,711,611	66,711,611	—	—
Information Technology	67,179,015	67,179,015	—	—
Materials	19,869,324	19,869,324	—	—
Miscellaneous	65,750,124	—	65,744,581	5,543
Real Estate	74,613,609	74,613,609	—	—
Telecommunication Services	6,402,923	6,402,923	—	—
Utilities	3,874,557	3,874,557	—	—
Total Equity Securities	491,927,266	425,886,742	66,034,981	5,543
Securities Lending	97,085,038	97,085,038	—	—
Short-Term Investments	24,657,023	24,657,023	—	—
Private Real Estate Holdings	3,035,895	—	3,035,895	—
Total Investments by Fair Value Level	\$ 855,434,955			
Investments Measured at the Net Asset Value (NAV)				
Commingled Fund - Equities	\$ 329,601,173			
Commingled Fund - Real Estate	102,819,750			
Commingled Fund - Fixed Income	40,454,798			
Private Real Estate Funds	6,533,476			
Private Debt/Private Credit	37,662,524			
Total Investments Measured at NAV	517,071,721			
Total Investments Measured at Fair Value and NAV	\$ 1,372,506,676			
Investment Derivative Instruments*				
Equities - Rights/Warrants	\$ 12,831	\$ 12,103	\$ 728	\$ —
Total Investment Derivative Instruments	\$ 12,831	\$ 12,103	\$ 728	\$ —

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

Notes to the Basic Financial Statement 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 categorized as Level 2 and 3 are valued using market approaches that consider, as applicable, benchmark interest rates or foreign exchange rates.

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

Investments in Entities That Calculate Net Asset Value Per Share

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

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

The valuations of these investments are based upon values provided by the investment managers, and in consideration of other factors, including guidelines established with those investment managers, related to the System's interests in these investments. Such fair value measurements are shown on the following page as of June 30, 2018 and 2017.

Notes to the Basic Financial Statement Continued

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

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

City Of Fresno Employees Retirement System
Investments Measured at the NAV
As of June 30, 2017

Investment Type	Fair Value	Unfunded Commitments	Redemption Frequency (If Currently Eligible)	Redemption Notice Period
Commingled Fund - Equities	\$ 329,601,173	\$ —	Daily	None
Commingled Fund - Real Estate	102,819,750	—	Quarterly	45-90 Days
Commingled Fund - Fixed Income	40,454,798	—	Daily	None
Private Real Estate Funds	6,533,476	29,712,450	Not Eligible	N/A
Private Debt/Private Credit	37,662,524	31,309,360	Not Eligible	N/A
Total investments measured at the NAV	\$ 517,071,721	\$ 61,021,810		

Notes to the Basic Financial Statement Continued

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

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

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

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

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

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

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

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

*Notes to the Basic Financial Statement 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 at June 30, 2018 and 2017, consist of the following:

Investments at Fair Value 2018 and 2017

(In Thousands)

	2018	2017
Investments at Fair Value		
Domestic Equity	\$ 503,077	\$ 489,461
International Developed Market Equities	242,245	222,685
International Emerging Market Equities	46,736	43,228
Government Bonds	149,213	151,939
Corporate Bonds	126,673	129,021
Direct Lending	53,599	44,196
Real Estate	197,413	170,247
Short-Term Investments	28,021	24,657
Total Investments at Fair Value	\$ 1,346,977	\$ 1,275,434

Notes to the Basic Financial Statement Continued

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

Asset Class Minimum Target and Maximum Allocations

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

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

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

Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the System will not be able to recover the value of its investment

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

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

Notes to the Basic Financial Statement 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 \$1,085,492 and \$1,275,220 at June 30, 2018 and 2017, 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, 2018.

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	2018			2017		
	Fair Value	Credit Quality	Duration	Fair Value	Credit Quality	Duration
Asset Backed Securities	\$ 3,656,543	AA	2.68	\$ 1,779,205	A	1.65
Commercial Mortgage-Backed	3,298,219	AA-	5.37	2,713,204	A	5.37
Corporate Bonds	111,033,351	BB+	3.31	116,846,519	BB+	5.76
Corporate Convertible Bonds	5,560,069	CC	5.11	4,736,773	B+	4.19
Non-Government backed C.M.O.s	818,894	BBB-	1.79	1,169,857	CC	0.62
Rights & Warrants	468	B-	0.00	728	NR	—
Convertible Equity	804,215	BB-	14.75	290,399	CC	3.60
Common Stock	396,427	B-	0.00	223,887	CCC+	0.02
Preferred Stock	1,105,065	BB+	0.00	1,260,085	BB	0.12
Government Agencies	2,564,720	AAA	4.41	3,737,200	AAA	4.04
Government Bonds	49,561,223	AAA	5.24	47,857,529	AAA	4.94
Gov't Issued Commercial Mortgage Backed Securities	566,329	AAA	7.89	372,933	AAA	6.20
Government Mortgage Backed Securities	55,674,054	AAA	3.69	53,191,506	AAA	2.98
Funds - Government Agencies	35,358,769	AAA	0.00	40,454,798	AAA	—
Municipal/Provincial Bonds	5,487,682	A	9.65	6,325,007	A-	9.23
Total Credit Risk Fixed Income	\$ 275,886,028			\$ 280,959,630		

Notes to the Basic Financial Statement Continued

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

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

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

percent of the market 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, 2018 and 2017, 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, 2018 and 2017.

Notes to the Basic Financial Statement Continued

Foreign Currency Risk Exposure

As of June 30, 2018

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

Notes to the Basic Financial Statement Continued

Foreign Currency Risk Exposure

As of June 30, 2017

	Base Currency	Country	Equities / Fixed Income	Foreign Currency Contracts	Rights & Warrants	Cash & Cash Equivalents	Total
AED	United Arab Emirates Dirham	United Arab Emirates	\$ 220,538	\$ —	\$ —	\$ —	\$ 220,538
ARS	Argentine Peso	Argentina	266,833	—	—	—	266,833
AUD	Australian Dollar	Australia	9,151,157	—	—	—	9,151,157
BRL	Brazilian Real	Brazil	2,248,545	365,182	—	(366,323)	2,247,404
CAD	Canadian Dollar	Canada	10,100,829	—	—	3,048	10,103,877
CHF	Swiss Franc	Switzerland	15,209,801	—	—	—	15,209,801
CLP	Chilean Peso	Chile	121,750	7,253	—	(2,363)	126,640
CNY	Chinese Yuan Renminbi	China	—	—	—	—	—
COP	Colombian Peso	Colombia	—	—	—	—	—
CZK	Czech Koruna	Czech Republic	77,059	—	—	—	77,059
DKK	Danish Krone	Denmark	9,957,981	—	—	—	9,957,981
EGP	Egyptian Pound	Egypt	72,266	—	—	—	72,266
EUR	Euro	Europe	57,753,098	—	12,103	(256,510)	57,508,691
GBP	British Pound Sterling	United Kingdom	32,220,994	—	—	—	32,220,994
HKD	Hong Kong Dollar	Hong Kong	15,294,478	—	—	1,194	15,295,672
IDR	Indonesian Rupiah	Indonesia	1,696,071	—	—	1,809	1,697,880
ILS	New Israeli Shekel	Israel	287,668	—	—	—	287,668
INR	Indian Rupee	India	4,073,806	—	—	8,372	4,082,178
JPY	Japanese Yen	Japan	34,202,638	46,492	—	(46,491)	34,202,639
KRW	South Korean Won	South Korea	12,708,225	—	—	3,733	12,711,958
MXN	Mexican Peso	Mexico	2,378,856	—	—	11,182	2,390,038
MYR	Malaysian Ringgit	Malaysia	1,205,027	—	—	16,203	1,221,230
NOK	Norwegian Krone	Norway	834,886	—	—	—	834,886
PEN	Peruvian Nuevo Sol	Peru	2,881	—	—	171	3,052
PHP	Philippine Peso	Philippines	526,181	—	—	1,142	527,323
PLN	Polish Zloty	Poland	1,100,232	—	—	1,929	1,102,161
QAR	Qatari Rial	Qatar	419,272	—	—	2,942	422,214
SEK	Swedish Krona	Sweden	7,874,737	—	—	—	7,874,737
SGD	Singapore Dollar	Singapore	2,046,269	—	—	—	2,046,269
THB	Thai Baht	Thailand	1,322,287	—	—	2,907	1,325,194
TRY	Turkish Lira	Turkey	2,173,830	—	—	10,262	2,184,092
TWD	New Taiwan Dollar	Taiwan	7,971,645	—	—	268	7,971,913
USD	United States Dollar	United States	860,975,082	602,282	728	18,862,471	880,440,563
ZAR	South African Rand	South Africa	6,218,047	—	—	5,660	6,223,707
Total Equities (In USD)			1,100,712,969	1,021,209	12,831	18,261,606	1,120,008,615
Total Non-USD Equities (In USD)			\$239,737,887	\$418,927	\$12,103	(\$600,865)	\$239,568,052

Notes to the Basic Financial Statement Continued

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

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

Rate of Return

For the fiscal years ended June 30, 2018 and 2017, the annual money-weighted rate of return on the assets of the System, net of investment expense, was 8.57 percent and 14.35 percent, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for timing of cash flows and the changing amounts actually invested.

8 | Derivatives

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

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

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

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

Notes to the Basic Financial Statement Continued

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

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

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

Market Risk

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

Credit Risk

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

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

As of June 30, 2018 and 2017, the System held a total fair value of \$2,400,234 and \$6,923,924, 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 Statement 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 2018		FY 2017	FY 2018 - FY 2017 Change in Fair Value
	Notional Amount	Fair Value	Fair Value	
Foreign Currency Forward	\$(1,048,240)	\$1,124,072	\$1,021,209	\$ 102,863
Future Contracts - Domestic Equity Index	—	—	4,903,156	(4,903,156)
Future Contracts - International Equity Index	—	1,257,208	982,179	275,029
Futures - Interest Rate Contracts	—	—	—	—
Options/Swaption	—	—	—	—
Rights & Warrants	—	18,954	17,380	1,574
Swaps	—	—	—	—
	Total	\$2,400,234	\$6,923,924	

Derivative Type:	FY 2017		FY 2016	FY 2017 - FY 2016 Change in Fair Value
	Notional Amount	Fair Value	Fair Value	
Foreign Currency Forward	\$(1,026,541)	\$1,021,209	\$17,626,659	\$ (16,605,450)
Future Contracts - Domestic Equity Index	—	4,903,156	2,309,198	2,593,958
Future Contracts - International Equity Index	—	982,179	538,867	443,312
Futures - Interest Rate Contracts	—	—	(16,333,961)	16,333,961
Options/Swaption	—	—	(27,284)	27,284
Rights & Warrants	—	17,380	—	17,380
Swaps	—	—	(1,297,605)	1,297,605
	Total	\$6,923,924	\$2,815,874	

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

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

As designated by the Board, cash collateral is invested in Northern Trust's Core U.S.A. Collateral Section (short-term investment pool), which, as of June 30, 2018 and 2017, had a weighted average duration of 102 days and 95 days, respectively, an average maturity of 29 days and 33 days, respectively, and an average monthly yield of 2.24 percent and 1.38 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, 2018 and 2017, 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, 2018, the fair value of the securities on loan was \$95.0 million. The fair value of associated collateral was \$97.8 million (\$82.7 million of cash collateral and \$15.1 of non-cash collateral). Non-cash collateral, the collateral which the System does not have the ability to sell unless the borrower defaults, is not reported in the Statement of Fiduciary Net Position. As of June 30, 2017, the fair value of the securities on loan was \$103.7 million. The fair value of associated collateral was \$106.2 million (\$97.1 million of cash collateral and \$9.1 of non-cash collateral). Non-cash collateral, the collateral which the System does not have the ability to sell unless the borrower defaults, is not reported in the Statement of Fiduciary Net Position.

Northern Trust will ensure that, in any agreement with a borrower, it retains its absolute right to terminate the agreement without cause, upon short notice and without any penalty. The System cannot pledge or sell collateral securities received unless the borrower defaults. In the event of a borrower default, Northern Trust indemnifies the System against losses and will replace or reimburse the System for any borrowed securities not replaced. In general, the average term of all System loans is overnight or "on demand". All securities loans can be terminated on demand by either the lender or the borrower, although the average term of the System's loans were approximately 102 days and 82 days, respectively, as of June 30, 2018 and 2017.

Notes to the Basic Financial Statement Continued

The System's securities lending income is as follows:

Securities Lending Income

For Fiscal Years Ended June 30, 2018 and 2017

	2018	2017
Gross Income	\$1,683,081	\$952,183
Expenses:		
Bank Fees	1,281,351	518,677
Total Expenses	1,281,351	518,677
Net Income from Securities Lending	\$401,730	\$433,506

Fair Value of Loaned Securities

As of June 30, 2018 and 2017

Collateralized by	FY 2018			FY 2017		
	Cash	Securities	Total	Cash	Securities	Total
U.S. Government & Agency	\$ 23,201,310	\$ 62,255	\$ 23,263,565	\$ 29,464,084	\$ 1,214,466	\$ 30,678,550
Domestic Equities	41,626,181	5,322,557	46,948,738	50,438,019	4,712,770	55,150,789
Domestic Fixed	15,647,043	—	15,647,043	14,280,395	224,924	14,505,319
International Equities	51,513	9,055,444	9,106,957	692,280	2,664,114	3,356,394
International Fixed	—	—	—	—	—	—
Total Value	\$ 80,526,047	\$ 14,440,256	\$ 94,966,303	\$ 94,874,778	\$ 8,816,274	\$103,691,052

Fair Value of Collateral Received for Loaned Securities

As of June 30, 2018 and 2017

Collateralized by	FY 2018			FY 2017		
	Cash	Securities	Total	Cash	Securities	Total
U.S. Government & Agency	\$ 23,721,883	\$ 63,713	\$ 23,785,596	\$ 30,127,406	\$ 1,241,671	\$ 31,369,077
Domestic Equities	42,697,594	5,445,683	48,143,277	51,610,987	4,809,640	56,420,627
Domestic Fixed	16,027,604	—	16,027,604	14,616,833	229,812	14,846,645
International Equities	54,324	9,623,375	9,677,699	729,813	2,830,844	3,560,657
International Fixed	183,878	—	183,878	—	—	—
Total Value	\$ 82,685,283	\$ 15,132,771	\$ 97,818,054	\$ 97,085,039	\$ 9,111,967	\$106,197,006

Notes to the Basic Financial Statement Continued

10 | Administrative Expenses

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

11 | Post Retirement Supplemental Benefit (PRSB)

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

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

For the fiscal years ended June 30, 2018 and 2017, there was a surplus (or prefunded actuarial accrued liability) as the System had a valuation value of assets which was in excess of the actuarial accrued liability. The System's

valuation value of assets was 114.8 percent and 113.0 percent, respectively, which is above the required 110 percent for declaration of a surplus, therefore, there was an actuarial surplus available to reduce a portion of the City's and members' COLA contributions for Fiscal Years 2019 and 2018 but not enough surplus to fund new PRSB benefits.

As of June 30, 2018 and 2017, the City Surplus Reserve balances were \$(868) and \$11,440, respectively. The City's normal rate in fiscal year 2018 included an adjustment of 0.30% which represented an actuarial surplus allocated in the June 30, 2016 actuarial report.

12 | Capital Assets

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

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

The System's major two-year project to program and install an upgrade to our original pension administration system that was installed in 1997 (the LRS Pension Gold Retirement Solutions' Version 3 project) includes software costs of \$930,716 and \$1,063,675 which were capitalized as of June 30, 2018 and 2017, respectively, and are amortized over a ten-year useful life period commencing July 1, 2015.

Notes to the Basic Financial Statement Continued

As of June 30, 2018, 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 \$35,936 are capitalized and depreciated over remaining estimated useful lives of 2-15 years.

As of June 30, 2017, capital assets consisting of office furniture and equipment for the System's Retirement Offices in the amount of \$37,580 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, 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.

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, 2018 and 2017.

Investment Type	Unfunded Commitments	
	FY 2018	FY 2017
Private Real Estate Funds		
Oaktree Capital Mgt.	\$ 4,783,506	\$ 6,449,062
PIMCO BRAVO III	16,447,586	19,770,372
PCCP, LLC	8,050,992	3,493,016
Total	<u>\$ 29,282,084</u>	<u>\$ 29,712,450</u>
Private Debt/Private Credit		
Monroe Capital	\$ 30,839,225	\$ 5,735,498
Crescent Capital	24,296,667	8,000,198
PIMCO COF II	14,802,828	17,573,664
Total	<u>\$ 69,938,720</u>	<u>\$ 31,309,360</u>
Commingled Infrastructure		
JPM IIF	\$ 27,412,644	\$ —
Ullico UIF	27,412,644	—
Total	<u>\$ 54,825,288</u>	<u>\$ —</u>
Total Unfunded Commitments	<u>\$154,046,092</u>	<u>\$ 61,021,810</u>

*Notes to the Basic Financial Statement Continued***16 | Date of Management Review**

The date to which events occurring after June 30, 2018, have been evaluated for possible adjustments to the financial statements or disclosures is December 12, 2018, 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, 2013-2018

Change in Net Pension Liability	GASB 67 Basis*					
	Financial Reporting					
	2018	2017	2016	2015	2014	2013
Total Pension Liability						
Service cost	\$21,275	\$18,885	\$18,687	\$18,476	\$19,342	\$18,903
Interest	82,833	79,266	79,762	78,212	77,009	76,279
Change of benefit terms	—	—	—	—	—	—
Differences between expected and actual experience	(4,164)	5,263	(24,394)	(24,691)	(29,889)	(11,346)
Changes of assumptions	2,939	—	9,612	—	—	36,845
Benefit Payments (including refunds, excluding PRSB)	(57,666)	(55,550)	(52,528)	(50,546)	(48,580)	(47,040)
Net Change in Total Pension Liability	\$45,217	\$47,864	\$31,139	\$21,451	\$17,882	\$73,641
Total Pension Liability - Beginning	\$1,150,077	\$1,102,213	\$1,071,074	\$1,049,623	\$1,031,741	\$958,100
Total Pension Liability - Ending (a)*	\$1,195,294	\$1,150,077	\$1,102,213	\$1,071,074	\$1,049,623	\$1,031,741
Plan Fiduciary Net Position						
Employee Contributions	\$14,609	\$10,181	\$9,098	\$8,750	\$7,946	\$7,995
Employer Contributions	10,330	15,205	13,060	12,327	11,440	13,330
Net Investment Income	108,916	162,373	5,089	33,309	172,773	121,116
Actual Benefit Payments (including Refunds, PRSB)	(57,666)	(55,550)	(52,529)	(50,546)	(48,581)	(47,040)
Administrative & Professional Expense	(1,619)	(1,387)	(1,346)	(1,071)	(1,086)	(1,138)
Net Change in Plan Fiduciary Net Position	\$74,570	\$130,822	\$(26,628)	\$2,769	\$142,492	\$94,263
Plan Fiduciary Net Position - Beginning	\$1,274,121	\$1,143,299	\$1,169,927	\$1,167,158	\$1,024,666	\$930,403
Plan Fiduciary Net Position - Ending (b)	\$1,348,691	\$1,274,121	\$1,143,299	\$1,169,927	\$1,167,158	\$1,024,666
System Net Pension Liability (Surplus) - Ending (a)-(b)	\$(153,397)	\$(124,044)	\$(41,086)	\$(98,853)	\$(117,535)	\$7,075
Plan fiduciary net position as a percentage of total pension liability	112.83%	110.79%	103.73%	109.23%	111.20%	99.31%
Covered Payroll	128,461	119,007	108,541	105,820	103,597	105,509
Net Pension Liability as a percentage of covered payroll	(119.41)%	(104.23)%	(37.85)%	(93.42)%	(113.45)%	6.71%

* Data above, as of June 30, 2013 through June 30, 2018, are provided in accordance with provisions of GASB 67 for determining Total Pension Liability, which for financial reporting purposes uses a version of the Entry Age method whereby the Actuarial Accrued Liability is fully accrued when a member either enters DROP or is expected to elect DROP. Data as of June 30, 2009 through June 30, 2012 are not available in a comparable format.

Note to Schedule:

Changes of Assumptions: The calculations above for June 30, 2018, 2017, 2016, 2015, 2014, and 2013 reflect various assumption changes, including the modification of the Board's assumed rate of return to 7.25 percent for use in preparing the June 30, 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 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, 2009-2012

Change in Net Pension Liability	GASB 25 Basis**			
	Actuarial Funding			
	2012	2011	2010	2009
Total Pension Liability				
Service Cost	\$24,000	\$21,730	\$24,382	\$24,386
Interest	67,000	59,000	57,000	55,000
Salary Increase (Greater) Less than Expected	(13,000)	(6,083)	(10,093)	—
COLA Increase Greater (Less) than Expected	(1,000)	(8,787)	(3,931)	—
Other Experience	(4,000)	7,980	1,000	(19,000)
Economic Assumption Changes	—	—	10,000	—
Change in Valuation Programs and Methods	52,000	3,000	—	—
Benefit Payments (including refunds, excluding PRSB)	(44,147)	(41,993)	(37,350)	(34,969)
Net Change in Total Pension Liability	\$80,853	\$34,847	\$41,008	\$25,417
Total Pension Liability - Beginning	\$791,105	\$756,258	\$715,250	\$689,833
Total Pension Liability - Ending (a)**	\$871,958	\$791,105	\$756,258	\$715,250
Plan Fiduciary Net Position				
Employee Contributions	\$5,507	\$5,275	\$5,740	\$5,845
Employer Contributions	11,374	8,215	3,267	1,345
Net Investment Income (Loss)	(5,620)	188,925	104,511	(199,694)
Benefit Payments (including Refunds, PRSB)	(44,147)	(43,580)	(41,598)	(40,054)
Administrative & Professional Expense	(1,087)	(1,029)	(929)	(894)
Net Change in Plan Fiduciary Net Position	\$(33,973)	\$157,806	\$70,991	\$(233,452)
Plan Fiduciary Net Position - Beginning	\$964,376	\$806,570	\$735,579	\$969,031
Plan Fiduciary Net Position - Ending (b)	\$930,403	\$964,376	\$806,570	\$735,579
System Net Pension Liability (Surplus) - Ending (a) - (b)	\$(58,445)	\$(173,271)	\$(50,312)	\$(20,329)
Plan fiduciary net position as a percentage of total pension liability	106.70%	121.90%	106.65%	102.84%
Covered Employee Payroll	112,307	117,577	131,224	139,274
Net Pension Liability as a percentage of covered employee payroll	(52.04)%	(147.37)%	(38.34)%	(14.60)%

**Data above, as of June 30, 2009 through June 30, 2012, are provided in accordance with provisions of GASB 25 and the System's funding policy for determining Total Pension Liability, which 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 participation in DROP.

Required Supplementary Information Continued

Schedule of Employer Contributions Last Ten Fiscal Years

(Dollars in Thousands)

Fiscal Year Ending June 30	Actuarially Determined Contribution (ADC)	Contributions in Relation to the ADC	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2018	\$14,609	\$14,609	\$—	\$128,461	11.37%
2017	15,205	15,205	—	119,007	12.78%
2016	13,060	13,060	—	108,541	12.03%
2015	12,327	12,327	—	105,820	11.65%
2014	11,440	11,440	—	103,597	11.04%
2013	13,330	13,330	—	105,509	12.63%
2012	11,374	11,374	—	110,492	10.29%
2011	8,215	8,215	—	119,260	6.89%
2010	3,267	3,267	—	129,258	2.53%
2009	1,345	1,345	—	132,512	1.02%

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
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%
2009	(20.14%)	(20.50%)

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 (2009 – 2018). The money-weighted rate of return expresses investment performance adjusted for timing of cash flows and the changing amounts actually invested. These returns differ slightly from the time-weighted rate of returns calculated and reported by the System's custodian, Northern Trust (shown in the Transmittal Letter on page i and within the Investment Section beginning on page 60) and as independently reported by the System's investment consulting firm, NEPC, LLC (shown in the Investment Section on pages 68-69). The System's custodian and investment consulting firm must use time-weighted returns as opposed to money-weighted returns in order to meet Global Investment Performance Standards for the purposes of effectively evaluating and reporting the performance of the System's investment managers.

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

Notes to the Required Supplementary Information

For Fiscal Years Ended June 30, 2018 and 2017

Actuarial Assumptions

The Segal Company, the System's actuary, performed the most recent annual actuarial valuation as of June 30, 2018, which computes the contribution requirements (employee and employer contributions rates for fiscal year 2020), and determines the funding status of the plan.

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

Actuarial Assumptions (Continued):

Investment Rate of Return:	7.25%
Inflation Rate:	3.00%
Real Across-the-Board Salary Increase:	0.50%
Projected Salary Increases:	Ranges from 3.75 percent to 11.50 percent based on years of service. Includes inflation at 3.00% plus real across-the-board salary increase of 0.50% plus merit and promotion increases.
Cost of Living Adjustments:	3.00 percent of retirement income
Other Assumptions:	See June 30, 2018 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:	For healthy members, Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional scale MP-2015, set forward one year; set forward four years for disabled members; For beneficiaries, set forward one year, weighted 35% male and 65% female.

Other Supplementary Information

Schedule of Administrative Expenses

For Fiscal Years Ended June 30, 2018 And 2017

	2018	2017
Personnel Services		
Staff Salaries	\$ 572,774	\$ 526,130
Fringe Benefits	148,484	144,918
Total Personnel Services	\$ 721,258	\$ 671,048
Professional Services		
Actuarial	\$ 77,771	\$ 55,500
Legal Counsel	82,000	73,046
Information Systems Services	154,210	132,970
Specialized Services	86,877	59,257
Total Professional Services	\$ 400,858	\$ 320,773
Communication		
Telephone	6,503	3,877
Postage	767	1,179
Total Communication	\$ 7,270	\$ 5,056
Rentals		
Office Rent	\$ 104,782	\$ 64,241
Common Area Maintenance (CAM) Charges	43,155	34,404
Total Rentals	\$ 147,937	\$ 98,645
Other		
Education and Conference	\$ 66,712	\$ 36,295
Membership & Dues	6,428	3,510
Subscriptions & Publications	222	27
Office Supplies	5,826	7,211
Computer Equipment	6,129	2,169
Equipment Lease	5,575	8,701
Insurance	40,486	37,189
Miscellaneous	5,237	6,514
Reimbursement to City for Inter-Dept Services	65,804	53,440
Depreciation	139,025	138,954
Total Other	\$ 341,444	\$ 294,010
Total Administrative Expenses	\$ 1,618,767	\$ 1,389,532

Other Supplementary Information Continued

Schedule of Investment Management Expenses

For Fiscal Years Ended June 30, 2018 and 2017

	2018	2017
Investment Manager Fees		
Equity		
Domestic	\$ 804,455	\$ 867,229
International	1,638,054	1,315,837
Fixed Income		
Domestic	3,536,784	2,609,761
Real Estate	1,272,773	1,202,473
Total Investment Manager Fees	7,252,066	5,995,300
Other Investment Expenses		
Foreign Income Taxes & Related Services, Charges	842,167	854,916
Custodial Services	147,962	124,043
Investment Consultant	127,975	111,655
Investment Legal Counsel	35,360	21,001
Analytical Database Service	46,517	43,343
Total Other Investment Expenses	1,199,981	1,154,958
Total Fees & Other Investment Expenses	8,452,047	7,150,258
Securities Lending Expenses		
Agent Fees	1,281,351	518,677
Total Securities Lending Expenses	1,281,351	518,677
Total Investment Expenses	\$ 9,733,398	\$ 7,668,935

Schedule of Payments To Consultants

For Fiscal Years Ended June 30, 2018 and 2017

	2018	2017
Actuarial Services	\$ 77,771	\$ 55,500
Audit Services	19,403	16,375
City Information Services	154,210	132,970
Legal Services	82,000	73,046
Medical Consultant	23,200	23,684
Miscellaneous	44,274	19,198
Total Payments to Consultants	\$ 400,858	\$ 320,773

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, 2018 and 2017

Analysis of Issues Affecting Our Portfolio in FY 2018

In spite of the overwhelming challenges of the global economy, the continued prudent leadership of the City of Fresno Employees Retirement System (the System) Retirement Board (the Board) is undoubtedly the most important factor in the long-term success of our System. Our Board understands that the Retirement System's portfolio requires a sound and stable strategy for meeting investment goals over the long-term and that in times of unprecedented financial market volatility a well-diversified portfolio with strong controls to manage risk and ensure compliance are likely to produce superior performance relative to its indices over the long term.

The System is well funded at a fully funded status on both a market fair value basis and an actuarial valuation value of assets basis. 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 uncertainty in the global financial markets.

The great recession's hangover is evidenced by the fact that even though the stock market has climbed and the housing market has largely recovered from the crisis, ordinary people have not made up all the ground they lost after the financial crisis. Home ownership is lower than any time in recent history; the unemployment rate, while very low, excludes some people who lost jobs to the recession and may never make it back to work. The crisis reordered the giants of finance and slowed major economies allowing others like China to surge ahead. Now Chinese banks are among the

largest in the world. And, global debt has hit a new record, raising fears of a new peril.

Throughout these uncertain and volatile times, it is the Board's responsibility to manage in and through the global financial market environment as it is unfolding. The Board, in its wisdom, feels certain that the path forward will be marked by uncertainty and market volatility. While the outcome of the recent US election represents a seismic shift, and as markets are discovering how this shift will change the landscape, we anticipate sharp market moves along the way in both up and down directions.

All investments involve risks, including possible loss of principal. Stock prices fluctuate, sometimes rapidly and dramatically, due to factors affecting individual companies, particular industries or sectors, or general market conditions. Bond prices generally move in the opposite direction of interest rates. Thus, as prices of bonds in an investment portfolio adjust to a rise in interest rates, the value of the portfolio may decline. Special risks are associated with foreign investing, including currency fluctuations, economic instability and political developments. Investments in emerging markets involve heightened risks related to the same factors, in addition to those associated with these markets' smaller size, lesser liquidity and lack of established legal, political, business and social frameworks to support securities markets.

Investment Report from the Retirement Administrator Continued

Sudden swings in investor sentiment, from irrational exuberance to widespread pessimism, account for moments of epic value destruction. Some express the opinion that risk is greater now than in the past. However, we should be careful of that statement as businesses faced extremely high levels of uncertainty in periods such as the early 1970s (with the Arab oil embargo and transition to floating exchange rates) and the financial crisis that began in August 2007. Today's risks are different, but they are hardly greater. The balance of risks, however, looks biased toward things that could go wrong; that's why many judge the potential risk of slower growth to be greater than the risk of faster growth. This creates an environment in which well-timed and careful investment can still be profitable, and in which the probability remains high that job growth and the economy will stay relatively healthy.

Investment Performance

Highlighted Investment Performance of the System's Investment Portfolio gross of fees provided by its custodian for Fiscal Year 2018:

	Return
Total Fund	8.87%
Domestic Equity	15.68%
International Equity	8.96%
Fixed Income	1.86%
Real Estate	7.35%
Alternatives	9.50%

Fiscal Year End Fund Value: \$1,348,690,633

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.

The System's Total Fund Returns versus NEPC, LLC's InvestorForce (IF) Public Fund Universe (Gross of Fee) Returns for the one-year period ended June 30, 2018, 8.87 percent ranked the System in the 2nd quartile (38th percentile) of our Investment Consultant's universe of all public funds (\$1 Billion + in assets). For the three years ended June 30, 2018, the System's Total Fund Returns of 8.02 percent ranked the System in the 2nd quartile (41st percentile), exceeding its policy weighted benchmark by

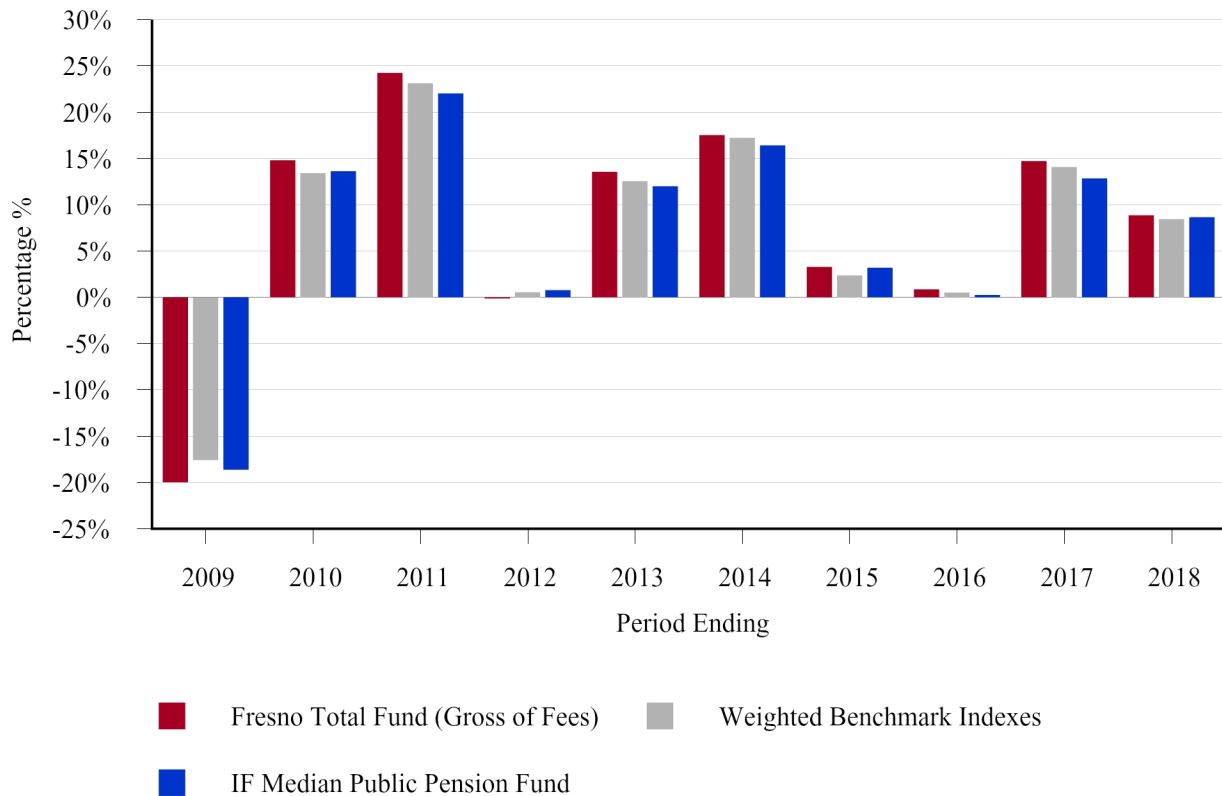
Investment Report from the Retirement Administrator Continued

0.60 percent and also exceeding the Median IF Public Pensions Funds (\$1 Billion+ in assets) return of 8.65 percent by 0.22 percent. Over the past ten years, the System’s investment returns have remained sound and outperformed its policy benchmark returns in seven of the ten years and the median fund returns in six of the nine years as shown in the chart below.

Due to the extreme volatility in the various economies of the world and the global financial markets over the past twenty to twenty-five years, 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. The intermediate term (five, ten, and fifteen-year) performance rates demonstrate the extreme volatility of the markets, while the historical long-term performance rates of returns demonstrate that, despite the short and intermediate term volatility, 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, 2018, the System’s 25-year annualized return is 8.51 percent and its 20-year annualized return is 6.85 percent, ranking the System in the top quartile (17th and 18th percentile, respectively).

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, 2018, 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 8.87 percent for the fiscal year ended June 30, 2018, outperforming the System's actuarial interest rate assumption of 7.25 percent by 1.62 percent and outperforming the System's policy benchmark (a weighted average of the fund's asset classes and their respective benchmarks) return of 8.34 percent by 0.53 percent. The System's ten-year annualized returns averaged 7.09 percent, outperforming its policy benchmarks return of 6.83 percent for the period by 0.26 percent. Over the longer term, our investment results remain sound with annualized returns of 6.85 percent and 8.51 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 \$1.349 billion.

General Information

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

Summary of General Investment Guidelines, Policies and Procedures

The Board, having sole and exclusive authority and sole and exclusive fiduciary responsibility for the investment and administration of the System and its assets, has adopted an Investment Objectives and Policy Statement which reflects

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

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

An integral part of the overall investment policy is the strategic asset allocation policy. This allocation mix is designed to provide an optimal mix of asset categories with return expectations that reflect expected risk. This emphasizes a maximum diversification of the portfolio that protects the System from declines that a particular asset class may experience in a given period. Both traditional assets (cash, bonds, domestic stocks, fixed income and mortgages) and nontraditional assets (real estate, 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, 2018, the System's portfolio was slightly over-weight in total equities, with 59.9 percent in total equities versus the target of 48.0 percent. Domestic equities were slightly over-weight with 28.0 percent versus the target of 23.0 percent, and international equity with 23.7 percent developed and 8.2 percent emerging markets was slightly over-weight total international equity with 31.9 percent versus the target of 25.0 percent. Fixed income with 18.6 percent was 3.6 percent over-weight its target of 15.0 percent and real estate at 14.5 percent was 0.5 percent under-weight its target of 15.0 percent. Alternative investments represented 6.5 percent of the System's portfolio, which is 15.5 percent under-weight of its target of 22.0 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	19.5%	15.8%
Small-Cap	8.5%	7.2%
International Equities:		
Developed Markets	23.7%	19.0%
Emerging Markets	8.2%	6.0%
Fixed Income:		
Domestic Fixed Income	12.8%	10.0%
High Yield Fixed Income	5.8%	5.0%
Real Estate:		
Core Real Estate	8.3%	11.0%
Value Add Real Estate/REITs	6.2%	4.0%
Alternatives		
Infrastructure	—	4.0%
MLPs	—	5.0%
Private Equity	—	5.0%
Private Debt	7.0%	8.0%
Short-Term Investments	—	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 T. Theller
Retirement Administrator

December 12, 2018

Investment Consultant's Report



DON STRACKE
SENIOR CONSULTANT

November 15, 2018

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, 2018 with background on the underlying market environment.

Fiscal Year 2018 Market Review

The U.S. economic expansion entered its ninth year, approaching a record for duration, powered by fiscal stimulus from the Tax Cuts and Jobs Act of 2017, corporate earnings growth and investment of repatriated cash. Although the Federal Reserve Bank maintained its path of methodically normalizing monetary policy through increasing interest rates, US market volatility remained relatively placid with equities appearing to price in near-term expectation of further economic growth. U.S. stocks, as a result, posted their ninth consecutive year of positive returns and outperformed international equities. Global capital markets continued to be largely driven by accommodative Central Bank policy with the European Central Bank and Bank of Japan suggesting that stimulative monetary policy may persist into 2019 and perhaps beyond. Volatility increased in global markets in the year ending June 30, 2018 as concerns over anti-establishment political change, historically low and broadly negative real interest rates and fears over U.S. trade policy caused uncertainty to impact investor sentiment. These risks were largely shrugged off by markets, resulting in U.S. equities posting a robust 14.4% return as measured by the S&P 500 Index. International developed-markets equities (6.8% for the year) performed well but lagged domestic equities by 7.6%. Underperformance in international developed-markets was driven by political and economic growth uncertainty in Europe. Emerging markets equities underperformed U.S. and outperformed developed-international equities as markets reacted to U.S. Dollar strength and trade policy uncertainty. Driven by increasing interest rates, U.S. high quality fixed income investments generated a negative return for the second consecutive year, returning -0.4% as measured by the Bloomberg Barclays U.S. Aggregate Bond Index.

The Systems returned 8.9%, gross of fees, for the fiscal year ending June 30, 2018. By comparison, the median public fund in the comparative universe returned 8.7% for the period¹. The Systems' allocation to public equities is significantly higher than many of its peers, and the US-equity exposure and Non-US Equity exposure were positive contributors to performance. US Equity was the primary contributor to absolute performance, returning 15.7% gross of fees.

¹ As of June 30, 2018, the InvestorForce Public Funds Greater than \$1 Billion Universe was comprised of 63 total funds with approximately \$723 billion in assets.

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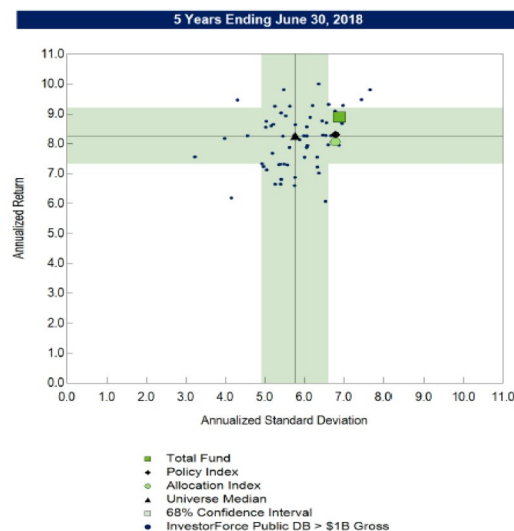
Investment Consultant's Report Continued



For the five-year period ending June 30, 2018, the Systems returned 8.9% 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 6/30/2018	1 Yr(%)	3 Yrs(%)	5 Yrs(%)	10 Yrs(%)	15 Yrs(%)
Systems' Total Return (Gross of Fees)	8.9	8.0	8.9	7.1	8.1
Systems' Total Return (Net of Fees)	8.5	7.6	8.5	6.7	7.6
Weighted Benchmark	8.5	7.5	8.3	6.9	7.8

Investor Force 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.

Don Stracke

Sincerely,
Don Stracke

Investment Results

	Market Value (\$)	% of Portfolio	Gross of Fees Ending June 30, 2018			
			1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund (Employees and Fire & Police Systems)	2,942,312,411	100.00	8.86	8.01	8.89	7.08
<i>Weighted Index</i>			8.47	7.46	8.30	6.86
<i>Allocation Index</i>			8.10	7.12	8.06	7.10
<i>InvestorForce Public DB > \$1B Gross Median</i>			8.65	7.18	8.26	6.63
Total Equity Composite	1,759,978,198	59.82	11.97	9.41	10.55	7.26
<i>MSCI ACWI</i>			10.73	8.19	9.41	5.80
<i>InvestorForce Public DB Glbl Eq Gross Median</i>			9.86	8.59	10.63	3.25
Domestic Equity Composite	822,642,296	27.96	15.68	11.90	13.47	10.63
<i>Domestic Equity Index</i>			15.74	11.94	13.37	10.41
<i>InvestorForce Public DB US Eq Gross Median</i>			14.65	11.37	13.08	10.26
Large Cap Equity Composite	573,010,398	19.47	14.59	11.55	13.42	10.20
<i>Large Cap Equity Index</i>			14.52	11.98	13.45	10.18
<i>eV US Large Cap Equity Gross Median</i>			13.44	10.76	12.80	10.21
Small Cap Equity Composite	249,631,898	8.48	18.06	12.59	13.50	11.86
<i>Russell 2000</i>			17.57	10.96	12.46	10.60
<i>eV US Small Cap Equity Gross Median</i>			16.60	11.33	13.11	11.73
International Equity Composite	937,335,903	31.86	8.94	7.01	7.77	3.60
<i>International Equity Index</i>			6.70	5.26	6.37	2.99
<i>InvestorForce Public DB ex-US Eq Gross Median</i>			7.52	5.99	6.94	3.49
International Developed Equity Composite	833,578,752	28.33	8.97	6.90	8.01	3.62
<i>Developed Equity Index</i>			7.30	5.40	6.65	3.12
<i>InvestorForce Public DB Dev Mkt ex-US Eq Gross Median</i>			6.78	4.30	6.06	3.76
ACWI ex US Equity Composite	611,732,869	20.79	9.16	7.37	8.05	0
<i>MSCI ACWI ex USA Gross</i>			7.79	5.56	6.48	3.01
<i>eV ACWI ex-US All Cap Equity Gross Median</i>			8.72	6.50	8.20	4.86
EAFE Equity Composite	221,845,883	7.54	8.49	5.66	7.70	3.42
<i>MSCI EAFE Gross</i>			7.37	5.41	6.93	3.33
<i>eV All EAFE Equity Gross Median</i>			8.30	6.41	7.96	4.65
International Emerging Markets Equity Composite	103,757,147	3.53	8.84	7.99	6.46	2.99
<i>MSCI Emerging Markets Gross</i>			8.59	5.98	5.39	2.60
<i>InvestorForce Public DB Emg Mkt Eq Gross Median</i>			5.58	4.99	4.69	1.55
Total Fixed Income Composite	624,643,271	21.23	1.86	3.71	4.09	5.37
<i>Fixed Income Index</i>			1.12	3.27	3.58	5.01
<i>BBgBarc US Aggregate TR</i>			-0.40	1.72	2.27	3.72
<i>InvestorForce Public DB Total Fix Inc Gross Median</i>			0.72	2.53	2.63	4.54
Core Fixed Composite	468,210,594	15.91	0.75	2.84	3.26	4.47
<i>BBgBarc US Aggregate TR</i>			-0.40	1.72	2.27	3.72
<i>InvestorForce Public DB US Fix Inc Gross Median</i>			0.07	2.17	2.71	4.08
High Yield Composite	156,432,676	5.32	2.55	5.53	5.85	8.31
<i>BBgBarc US High Yield TR</i>			2.62	5.53	5.51	8.19
<i>InvestorForce Public DB US Fix Inc Gross Median</i>			0.07	2.17	2.71	4.08
Private Credit	128,517,116	4.37	9.50	0.00	0.00	0.00
<i>Private Credit Index</i>			7.19	0.00	0.00	0.00
Real Estate Composite	427,379,804	14.53	7.35	9.42	10.82	7.18
<i>Real Estate Index</i>			5.08	8.47	9.95	7.17
<i>InvestorForce Public DB Real Estate Pub+Priv Gross Median</i>			8.12	9.18	10.62	5.76
Private Real Estate Composite	275,550,492	9.37	8.56	9.29	11.04	5.96
<i>NCREIF ODCE</i>			8.44	9.36	11.03	5.29
Public Real Estate Composite	151,829,311	5.16	5.50	9.54	10.44	9.41
<i>Wilshire RESI</i>			4.00	8.27	8.80	7.91
<i>eV US REIT Gross Median</i>			4.52	8.55	9.02	9.10
Cash & Equivalents Composite	1,794,023	0.06	1.41	0.82	0.54	0.46
<i>91 Day T-Bills</i>			1.40	0.70	0.43	0.30

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, 2018			
			1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund (Employees and Fire & Police Systems)	2,942,312,411	100.00	8.52	7.64	8.50	6.66
<i>Weighted Index</i>			8.47	7.46	8.30	6.86
<i>Allocation Index</i>			8.10	7.12	8.06	7.10
<i>InvestorForce Public DB > \$1B Net Median</i>			8.00	6.68	7.50	6.06
Total Equity Composite	1,759,978,198	59.82	11.65	9.07	10.20	6.83
<i>MSCI ACWI</i>			10.73	8.19	9.41	5.80
<i>InvestorForce Public DB Glbl Eq Net Median</i>			9.05	7.73	10.26	2.98
Domestic Equity Composite	822,642,296	27.96	15.43	11.64	13.17	10.28
<i>Domestic Equity Index</i>			15.74	11.94	13.37	10.41
<i>InvestorForce Public DB US Eq Net Median</i>			14.33	11.20	12.84	9.95
Large Cap Equity Composite	573,010,398	19.47	14.58	11.49	13.33	10.03
<i>Large Cap Equity Index</i>			14.52	11.98	13.45	10.18
<i>eV US Large Cap Equity Net Median</i>			12.61	9.88	12.09	9.60
Small Cap Equity Composite	249,631,898	8.48	17.18	11.74	12.64	11.00
<i>Russell 2000</i>			17.57	10.96	12.46	10.60
<i>eV US Small Cap Equity Net Median</i>			15.96	10.62	12.26	10.79
International Equity Composite	937,335,903	31.86	8.55	6.61	7.35	3.10
<i>International Equity Index</i>			6.70	5.26	6.37	2.99
<i>InvestorForce Public DB ex-US Eq Net Median</i>			7.15	5.49	6.44	3.31
International Developed Equity Composite	833,578,752	28.33	8.64	6.55	7.65	3.19
<i>Developed Equity Index</i>			7.30	5.40	6.65	3.12
<i>InvestorForce Public DB Dev Mkt ex-US Eq Net Median</i>			6.53	4.00	5.57	3.50
ACWI ex US Equity Composite	611,732,869	20.79	8.89	7.09	7.77	0
<i>MSCI ACWI ex USA Gross</i>			7.79	5.56	6.48	3.01
<i>eV ACWI ex-US All Cap Equity Net Median</i>			9.25	5.81	7.87	4.09
EAFE Equity Composite	221,845,883	7.54	7.96	5.15	7.17	2.88
<i>MSCI EAFE Gross</i>			7.37	5.41	6.93	3.33
<i>eV All EAFE Equity Net Median</i>			7.93	5.85	7.23	4.10
International Emerging Markets Equity Composite	103,757,147	3.53	7.91	7.07	5.57	2.05
<i>MSCI Emerging Markets Gross</i>			8.59	5.98	5.39	2.60
<i>InvestorForce Public DB Emg Mkt Eq Net Median</i>			5.04	4.38	4.25	1.55
Total Fixed Income Composite	624,643,271	21.23	1.66	3.48	3.84	5.12
<i>Fixed Income Index</i>			1.12	3.27	3.58	5.01
<i>BBgBarc US Aggregate TR</i>			-0.40	1.72	2.27	3.72
<i>InvestorForce Public DB Total Fix Inc Net Median</i>			0.39	2.34	2.44	4.38
Core Fixed Composite	468,210,594	15.91	0.64	2.68	3.09	4.31
<i>BBgBarc US Aggregate TR</i>			-0.40	1.72	2.27	3.72
<i>InvestorForce Public DB Total Fix Inc Net Median</i>			0.39	2.34	2.44	4.38
High Yield Composite	156,432,676	5.32	2.03	5.01	5.31	7.77
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<i>InvestorForce Public DB US Fix Inc Net Median</i>			-0.16	2.00	2.52	3.91
Private Credit	128,517,116	4.37	9.51	0.00	0.00	0.00
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Real Estate Composite	427,379,804	14.53	6.60	8.64	9.99	6.32
<i>Real Estate Index</i>			5.08	8.47	9.95	7.17
<i>InvestorForce Public DB Real Estate Pub+Priv Net Median</i>			7.87	8.84	10.35	4.97
Private Real Estate Composite	275,550,492	9.37	7.69	8.37	10.04	4.93
<i>NCREIF ODCE</i>			8.44	9.36	11.03	5.29
Public Real Estate Composite	151,829,311	5.16	4.96	8.97	9.85	8.81
<i>Wilshire RESI</i>			4.00	8.27	8.80	7.91
<i>eV US REIT Net Median</i>			3.88	7.60	8.61	8.53
Cash & Equivalents Composite	1,794,023	0.06	1.41	0.82	0.54	0.46
<i>91 Day T-Bills</i>			1.40	0.70	0.43	0.30

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

Target and Actual Asset Allocation

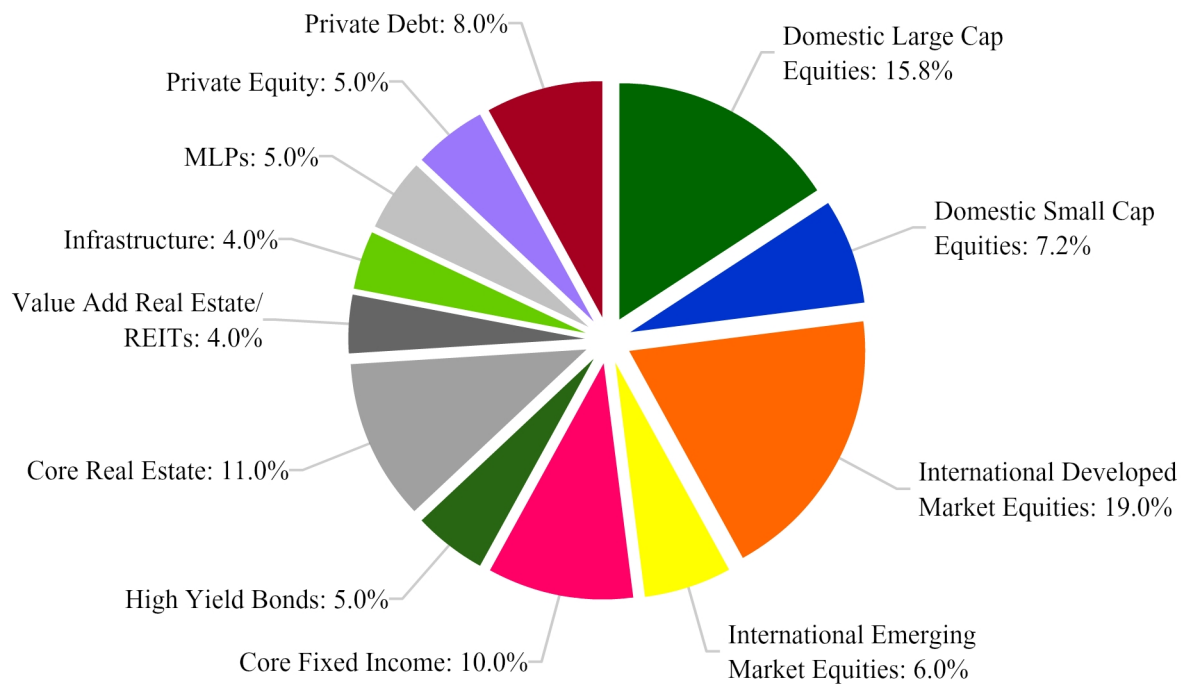
As of June 30, 2018

Asset Class	Current Target	Allocation Range	Actual
Domestic Large Cap Equities	15.8%	13.0% - 27.0%	19.5%
Domestic Small Cap Equities	7.2%	2.0% - 9.0%	8.5%
International Developed Market Equities	19.0%	13.0% - 27.0%	23.7%
International Emerging Market Equities	6.0%	0.0% - 10.0%	8.2%
Core Fixed Income	10.0%	4.0% - 19.0%	12.8%
High Yield Bonds*	5.0%	3.0% - 12.0%	5.8%
Core Real Estate	11.0%	5.0% - 20.0%	8.3%
Value Add Real Estate/REITs	4.0%	1.0% - 9.0%	6.2%
Infrastructure	4.0%	0.0% - 10.0%	—
MLPs	5.0%	0.0% - 10.0%	—
Private Equity	5.0%	0.0% - 10.0%	—
Private Debt	8.0%	0.0% - 10.0%	7.0%
Short-Term Investments	0.0%	0%	0%

* 1% High Yield Bonds Managed Within Domestic Fixed Income

Target Asset Allocation*

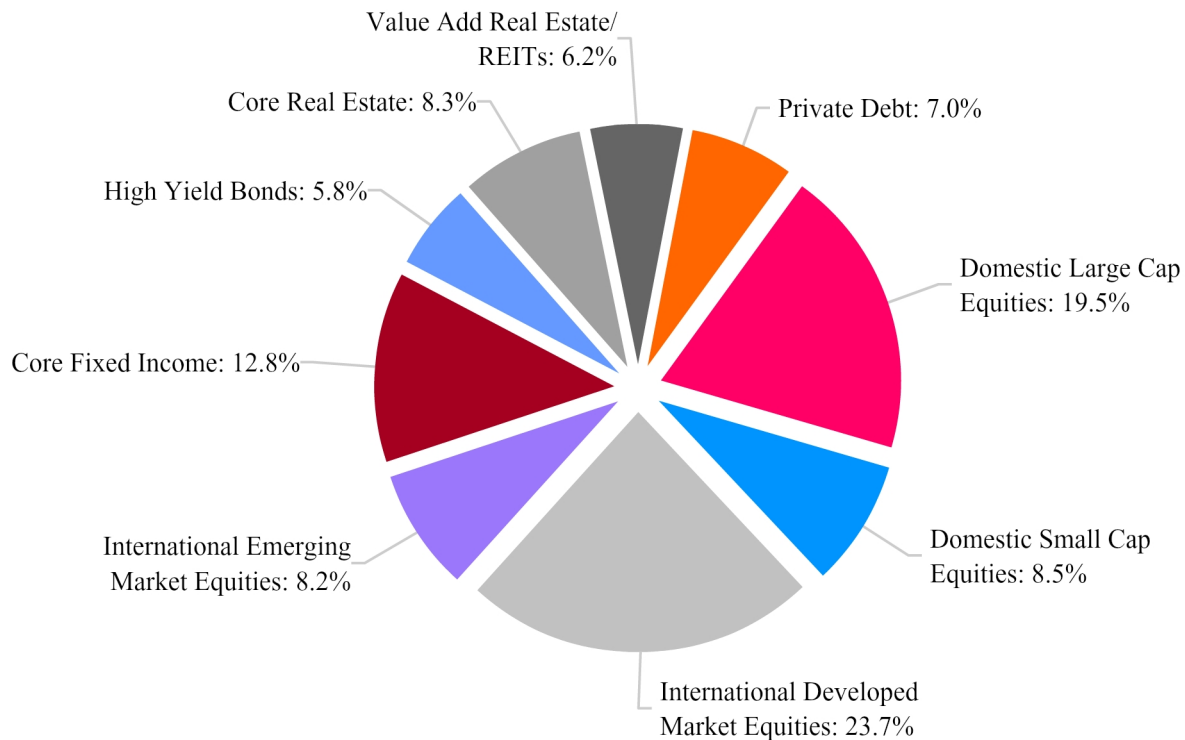
As of June 30, 2018



* Short-Term Investments is 0%.

Actual Asset Allocation*

As of June 30, 2018



* Short-Term Investments is 0%.

Largest Stock Holdings (by Market Value)

As of June 30, 2018

	Shares	Stock Holding	Market Value
1)	166,750	SAMSUNG ELECTRONICS CO KRW5000	\$ 6,979,703
2)	22,370	NASPERS LIMITED N ZAR0.02	5,687,828
3)	71,578	NESTLE SA CHF0.10(REGD)	5,543,422
4)	32,524	SIMON PROPERTY GROUP INC COM	5,535,197
5)	11,506	EQUINIX INC COM PAR \$0.001	4,946,192
6)	636,588	TAIWAN SEMICONDUCTOR MANUFACTURING TWD10	4,520,433
7)	24,734	AVALONBAY CMNTYS REIT	4,251,609
8)	35,128	SAP SE	4,058,265
9)	66,734	RIO TINTO PLC ORD GBP0.10(REGD)	3,701,324
10)	27,535	DEUTSCHE BOERSE AG	3,669,726
Total Largest Stock Holdings			\$ 48,893,699

Largest Bond Holdings (by Market Value)

As of June 30, 2018

	Share/Par Value	Bond Holding	Coupon Rate	Maturity Date	Market Value
1)	5,710,968	UNITED STATES TREAS NTS 2.125% DUE	2.000%	31 Dec 2021	\$ 5,584,258
2)	3,655,019	UNITED STATES TREAS NTS DTD 1.625% DUE	2.625%	15 May 2021	3,655,304
3)	3,042,803	UNITED STATES TREAS NTS 1.875% DUE	2.875%	15 May 2028	3,048,865
4)	2,535,290	FNMA SINGLE FAMILY MORTGAGE 3.5% 30	4.500%	1 May 2048	2,642,963
5)	2,473,718	UNITED STATES TREAS NTS DTD 00407 .625%	4.500%	1 May 2047	2,576,331
6)	2,284,387	UNITED STATES TREAS INFL INDEXED BONDS	1.875%	31 Jan 2022	2,222,281
7)	2,243,268	UNITED STATES TREAS NTS DTD 05/31/2014	2.125%	30 Sep 2021	2,206,815
8)	1,960,004	VERIZON COMMUNICATIONS 6.55% BDS DUE	1.625%	30 Jun 2020	1,925,169
9)	1,842,958	UNITED STATES TREAS NTS 1.0% DUE	4.000%	1 Apr 2047	1,882,784
10)	1,923,454	CALIFORNIA ST 7.5% DUE 04-01-2034 BEO	1.125%	30 Sep 2021	1,832,615
Total Largest Bond Holdings					\$ 27,577,385

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, 2018 and 2017, the net income from Brokerage Commission Recapture was \$3,960 and \$23,852 respectively. During these periods, the overall participating rate by the System's equity managers was 2.21 percent and 8.89 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, 2018

Brokerage Firm	Total Commissions	Number of Shares	Commission Cost/Share
JEFFERIES LLC	\$ 12,272	670,176	\$ 0.0183
CITIGROUP GLOBAL MARKETS INC.	10,425	4,425,589	0.0024
MERRILL LYNCH INTERNATIONAL LIMITED	8,287	1,029,838	0.0080
CITATION GROUP (THE)	7,769	194,219	0.0400
J.P. MORGAN SECURITIES LLC	7,653	221,970	0.0345
WEEDEN AND CO	6,748	442,075	0.0153
CREDIT SUISSE SECURITIES (USA) LLC	5,689	639,341	0.0089
GOLDMAN, SACHS AND CO.	5,603	529,542	0.0106
STIFEL, NICOLAUS & COMPANY, INCORPORATED	5,364	155,237	0.0346
INVESTMENT TECHNOLOGY GROUP LTD.	5,346	603,339	0.0089
	<u>\$ 75,156</u>	<u>8,911,326</u>	<u>\$ 0.0084</u>
All Other Brokerage Firms	188,965	720,779,442	0.00026
TOTAL	\$ 264,121	729,690,768	\$ 0.0004

Investment Summary

For The Fiscal Year Ended June 30, 2018

	Investment Value	Percent of Fund	Investment Management Fees
Equity			
Domestic	\$ 503,076,591	37.3%	\$ 804,455
International Developed Market	242,245,030	17.9%	1,215,623
International Emerging Market	46,735,917	3.5%	422,431
Fixed Income			
Domestic	329,484,871	24.5%	3,536,784
Real Estate	197,413,403	14.7%	1,272,773
Short-term Investments	28,021,268	2.1%	—
Total	\$ 1,346,977,080	100.0%	\$ 7,252,066

*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



100 Montgomery Street Suite 500 San Francisco, CA 94104-4308
T 415.263.8200 www.segalco.com

VIA E-MAIL

December 4, 2018

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

**Re: City of Fresno Employees Retirement System
June 30, 2018 Actuarial Valuation**

Dear Members of the Board:

Segal Consulting (Segal) prepared the June 30, 2018 annual actuarial valuation of the City of Fresno Employees Retirement System. We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices and the System's funding policy that was last reviewed with the Board in 2012. We have also reflected the lengthening of the period used to amortize actuarial surplus approved by the Board in 2018. 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, 2018 actuarial valuation, Segal conducted an examination of all participant data for reasonableness. Summaries of the employee data used in performing the actuarial valuations over the past several years are provided in our valuation report. We did not audit the System's financial statements. For actuarial valuation purposes, Plan assets are valued at Actuarial Value. Under this method, the assets used to determine employer contribution rates take into account market value by recognizing the differences between the total actual investment return at market value and the expected investment return over a five-year period.

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

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

Actuarial Certification Letter Continued

Board of Retirement
 City of Fresno Employees Retirement System
 December 4, 2018
 Page 2

Effective with the June 30, 2013 valuation, any new UAAL established as a result of actuarial gains or losses or plan amendments are amortized over separate 15-year declining periods (with the exception of temporary retirement incentives which are amortized over a separate declining period of up to 5 years). Any new UAAL established as a result of changes in actuarial assumptions or methods at each valuation is amortized over separate 25-year declining periods. Any actuarial surplus (when the funded ratio is over 110%) will be amortized over a non-declining 30-year period.¹ The progress being made towards meeting the funding objective through June 30, 2018 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, 2018 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, 2018 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 June 30, 2015 Experience Analysis and the June 30, 2016 Economic Assumptions Report. It is our opinion that the assumptions used in the June 30, 2018 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, 2018 and those assumptions will be used in the June 30, 2019 valuation. The Retirement System utilizes the actuarial surplus to provide contribution rate offsets and a 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, 2018 valuation, the ratio of the valuation assets to actuarial accrued liabilities increased from 113.0% to 114.8%. The employer's rate has increased from 10.58%² of payroll to 11.11%³ of payroll, while the employee's rate has decreased from 7.80%⁴ of payroll to 7.58%⁵ of payroll.

¹ In the June 30, 2017 valuation, a non-declining 25-year period was used to amortize actuarial surplus.

² This rate has been decreased by 0.71% of payroll as a result of surplus allocation.

³ This rate has been decreased by 1.00% of payroll as a result of surplus allocation.

⁴ This rate has been decreased by 0.87% of payroll as a result of surplus allocation.

⁵ This rate has been decreased by 1.20% of payroll as a result of surplus allocation.

Actuarial Certification Letter Continued

Board of Retirement
City of Fresno Employees Retirement System
December 4, 2018
Page 3

As a result of using the actuarial value of assets in the actuarial valuation, there were \$19.4 million in unrecognized deferred investment gains as of June 30, 2018, which represented 1.4% of the market value of assets. This is an improvement from last year's amount of \$13.8 million in unrecognized deferred investment gains. If \$19.4 million in deferred investment gains were recognized immediately in the actuarial value of assets, the funded percentage would increase from 114.8% to 116.6%, the aggregate employer's rate would decrease from 11.11% of payroll to 10.73% of payroll and the aggregate employee's rate would decrease from 7.58% of payroll to 7.12% 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

MYM/jl
Enclosures

5562427v1/09313.001

Summary of Actuarial Assumptions and Funding Method

These actuarial assumptions and methods based on June 30, 2018 data were adopted by the City of Fresno Employees Retirement System (the System) Retirement Board on December 12, 2018, and were effective for July 1, 2019.

Assumptions

Valuation Interest Rate	7.25%
Inflation:	3.00%

Post-Retirement Mortality

(a) Service Retirement

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

Beneficiary: Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table (separate tables for males and females), projected 20 years with the two-dimensional scale MP-2015, set forward one year, weighted 35% male and 65% 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, 2012 through June 30, 2015.

Withdrawal Rates

Based upon the Analysis of Actuarial Experience during the period July 1, 2012 through June 30, 2015.

Disability Rates

Based upon the Analysis of Actuarial Experience during the period July 1, 2012 through June 30, 2015.

Service Retirement Rates

Based upon the Analysis of Actuarial Experience during the period July 1, 2012 through June 30, 2015.

Assets

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

Funding Method

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

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

Summary of Actuarial Assumptions and Funding Method Continued

DROP RATES

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

Members are assumed to remain in DROP for six years.

Marriage Rates

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

Wives are 2 years younger than their husbands.

Cost-of-Living (COLA) Assumption

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

Ultimate Salary Scale

Salary Scale is made up of merit and longevity, and inflation components. The inflation component is equal to 3.00%; plus 0.50% real across-the-board salary increase. The merit and longevity component varies by service and is illustrated below:

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

Probabilities of Separation Prior to Retirement

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

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

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

All disabilities are assumed to be non-service connected.

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

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

40% of members are assumed to elect a withdrawal of contributions. The remaining members are assumed to elect a deferred vested benefit. No termination is assumed after a member is assumed to retire.

Schedule of Active Member Valuation Data

Valuation Date	Active/DROP	Number	Annual Payroll	Annual Average Pay	% Increase (Decrease) in Average Pay
June 30, 2018	Active Members	1,812	\$ 111,852,669	\$ 61,729	3.4%
	DROP Participants	351	23,093,533	65,794	3.3%
	Totals	2,163	\$ 134,946,202	\$ 62,388	
June 30, 2017	Active Members	1,715	\$ 102,354,521	\$ 59,682	4.4%
	DROP Participants	370	23,560,592	63,677	3.9%
	Totals	2,085	\$ 125,915,113	\$ 60,391	
June 30, 2016	Active Members	1,592	\$ 91,007,785	\$ 57,166	(1.1%)
	DROP Participants	366	22,428,051	61,279	1.3%
	Totals	1,958	\$ 113,435,836	\$ 57,935	
June 30, 2015	Active Members	1,524	\$ 88,090,729	\$ 57,802	(0.2%)
	DROP Participants	364	22,015,866	60,483	0.3%
	Totals	1,888	\$ 110,106,595	\$ 58,319	
June 30, 2014	Active Members	1,517	\$ 87,842,034	\$ 57,905	(3.6%)
	DROP Participants	350	21,100,432	60,287	(4.4%)
	Totals	1,867	\$ 108,942,466	\$ 58,352	
June 30, 2013	Active Members	1,535	\$ 92,244,313	\$ 60,094	3.0%
	DROP Participants	311	19,610,437	63,056	0.7%
	Totals	1,846	\$ 111,854,750	\$ 60,593	
June 30, 2012	Active Members	1,625	\$ 94,766,049	\$ 58,318	(0.2%)
	DROP Participants	280	17,540,903	62,646	(0.4%)
	Totals	1,905	\$ 112,306,952	\$ 58,954	
June 30, 2011	Active Members	1,739	\$ 101,597,247	\$ 58,423	2.4%
	DROP Participants	254	15,980,093	62,914	3.3%
	Totals	1,993	\$ 117,577,340	\$ 58,995	
June 30, 2010	Active Members	2,040	\$ 116,427,736	\$ 57,072	2.7%
	DROP Participants	243	14,796,085	60,889	3.3%
	Totals	2,283	\$ 131,223,821	\$ 57,479	
June 30, 2009	Active Members	2,217	\$ 123,176,724	\$ 55,560	5.9%
	DROP Participants	273	16,097,424	58,965	1.6%
	Totals	2,490	\$ 139,274,148	\$ 55,933	

Schedule of Retirees and Beneficiaries Added to or Removed from Rolls

Year Ended June 30	Added to Rolls		Removed from Rolls		Rolls at End of Year		Average Annual Allowance	% Increase/ (Decrease) in Retiree Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance		
June 30, 2018	114	\$1,570,066	(60)	\$(834,397)	1,970	\$56,241,911	\$28,549	0.64
June 30, 2017	135	\$1,458,929	(68)	\$(786,272)	1,916	\$54,350,851	\$28,367	2.44
June 30, 2016	123	\$1,578,451	(64)	\$(898,105)	1,849	\$51,198,523	\$27,690	1.00
June 30, 2015	103	\$1,402,353	(62)	\$(718,791)	1,790	\$49,072,063	\$27,415	1.21
June 30, 2014	110	\$1,518,754	(61)	\$(686,326)	1,749	\$47,376,551	\$27,088	0.36
June 30, 2013	104	\$1,607,660	(66)	\$(825,889)	1,700	\$45,883,057	\$26,990	4.73
June 30, 2012	99	\$1,026,077	(59)	\$(640,326)	1,662	\$42,833,718	\$25,772	0.76
June 30, 2011	160	\$1,810,188	(41)	\$(541,232)	1,622	\$41,487,860	\$25,578	(3.76)
June 30, 2010	151	\$2,030,635	(48)	\$(558,850)	1,503	\$39,946,446	\$26,578	(4.67)
June 30, 2009	85	\$1,406,728	(48)	\$(682,366)	1,400	\$39,031,190	\$27,879	7.47

Solvency Test (In thousands)

Valuation Date As Of June 30	Aggregate Accrued Liabilities for				Portion of Accrued Liabilities Covered by Reported Asset		
	Active Member Contributions	Retirees and Beneficiaries (Includes Deferred Vested)	Active Members (Employer Financed Portion)	Actuarial Valuation Value of Assets	Active Member Contributions	Retirees and Beneficiaries (Includes Deferred Vested)	Active Members (Employer Financed Portion)
6/30/2018	\$87,404	\$798,382	\$161,906	\$1,202,691	100%	100%	100%
6/30/2017	84,476	768,142	161,066	1,145,061	100%	100%	100%
6/30/2016	84,142	736,665	156,102	1,087,125	100%	100%	100%
6/30/2015	85,644	704,462	170,258	1,049,093	100%	100%	100%
6/30/2014	85,712	694,761	169,801	993,641	100%	100%	100%
6/30/2013	86,768	663,832	184,347	933,722	100%	100%	100%
6/30/2012	86,590	609,218	176,150	891,366	100%	100%	100%
6/30/2011	87,568	572,959	130,578	920,217	100%	100%	100%
6/30/2010	94,746	525,289	136,223	926,370	100%	100%	100%
6/30/2009	95,047	480,189	140,014	958,032	100%	100%	100%

Actuarial Analysis of Financial Experience

(Dollars in Millions)

	Plan Years									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Prior Valuation Actuarial Accrued Liability	\$1,014	\$977	\$960	\$950	\$935	\$872	\$791	\$756	\$715	\$690
Expected Increase from Prior Valuation	—	—	—	—	—	—	—	—	—	—
Salary Increase (Greater) Less than Expected	1	5	(7)	(11)	(17)	(3)	(13)	(6)	(10)	—
Asset Return (Less) Greater than Expected	—	—	—	—	—	—	—	—	—	—
COLA Increase Greater (Less) than Expected	(6)	(7)	(18)	(18)	(10)	(9)	(1)	(9)	(4)	—
Other Experience	(2)	3	(6)	(2)	(1)	(2)	(4)	7	—	(20)
Economic Assumption Changes	3	—	8	—	—	33	—	—	10	—
Noneconomic Assumption Changes	—	—	—	—	—	—	—	—	—	—
Normal Cost	24	21	22	22	23	22	24	22	24	24
Interest	72	70	71	70	69	69	67	60	58	56
Payments	(58)	(55)	(52)	(51)	(49)	(47)	(44)	(42)	(37)	(35)
Change in Valuation Programs and Methods	—	—	(1)	—	—	—	52	3	—	—
Ending Actuarial Accrued Liability	\$1,048	\$1,014	\$977	\$960	\$950	\$935	\$872	\$791	\$756	\$715

Schedule of Funding Progress

(Dollars in Millions)

Actuarial Valuation As of June 30	(1) Actuarial Valuation Value of Assets	(2) Actuarial Accrued Liability (AAL)	(3) Percentage Funded (1) / (2)	(4) (Prefunded) / Unfunded AAL (3)	(5) Annual Covered Payroll	(6) (Prefunded) / Unfunded AAL Percentage of Covered Payroll (4) / (5)
	2018	\$1,203	\$1,048	114.8%	(\$155)	\$135
2017	\$1,145	\$1,014	113.0%	(\$131)	\$126	104.30%
2016	\$1,087	\$977	111.3%	(\$110)	\$113	(97.20%)
2015	\$1,049	\$960	109.2%	(\$89)	\$110	(80.60%)
2014	\$994	\$950	104.6%	(\$43)	\$109	(39.80%)
2013	\$934	\$935	99.9%	\$1	\$112	1.10%
2012	\$891	\$872	102.2%	(\$19)	\$112	(17.30%)
2011	\$920	\$791	116.3%	(\$129)	\$118	(109.80%)
2010	\$926	\$756	122.5%	(\$170)	\$131	(129.60%)
2009	\$958	\$715	133.9%	(\$243)	\$139	(174.30%)

Major Benefit Provisions of the Retirement System

ELIGIBLE EMPLOYEES

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

FINAL AVERAGE SALARY (FAS)

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

NORMAL RETIREMENT

Requirement: age 55 and 5 years of service.

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

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

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

EARLY RETIREMENT PROVISION

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

DEFERRED RETIREMENT OPTION PROGRAM (DROP)

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

DISABILITY RETIREMENT

Requirement: 10 years of service.

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

MEMBER CONTRIBUTIONS RATES

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

DEATH BEFORE RETIREMENT

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

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

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

DEATH AFTER RETIREMENT

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

WITHDRAWAL OF BENEFITS

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

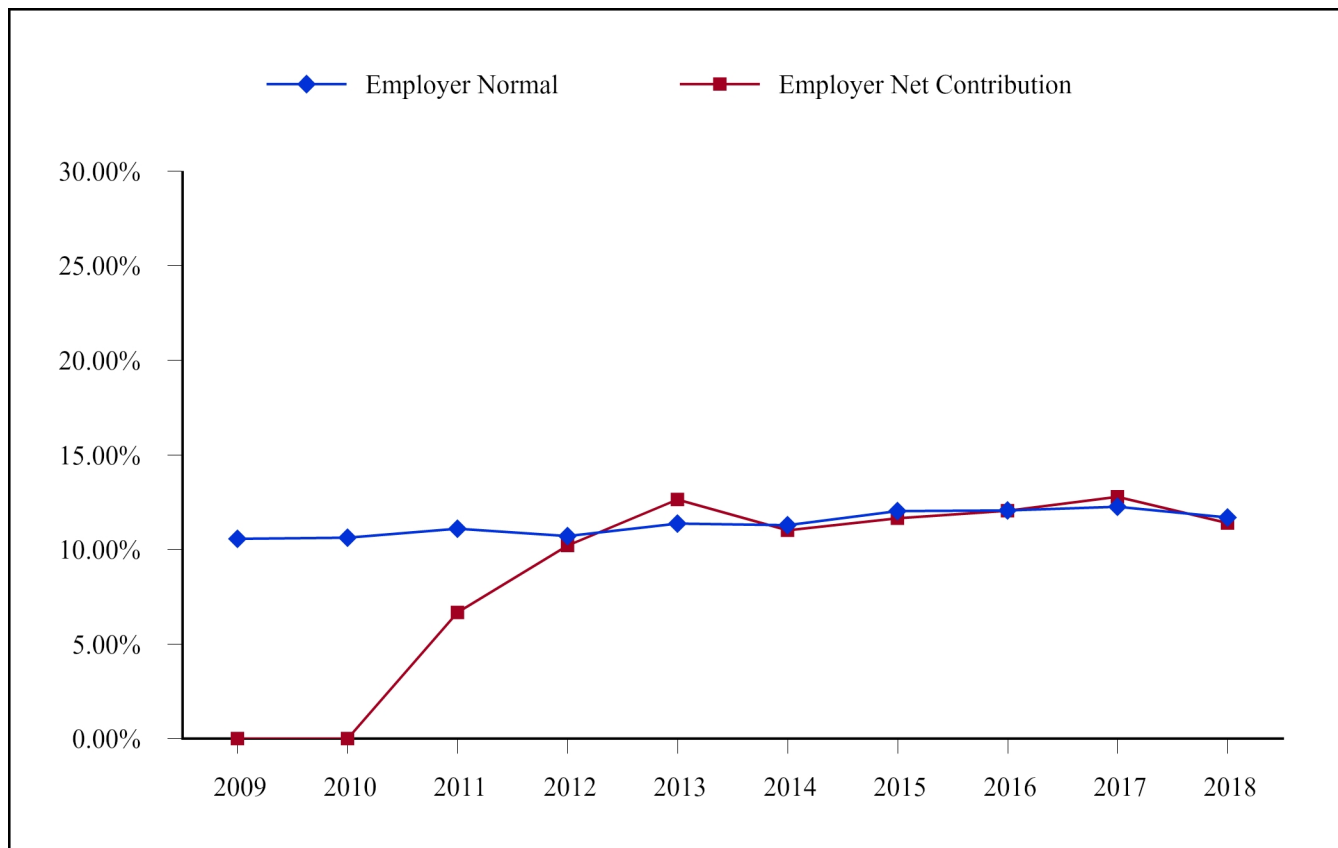
POST RETIREMENT SUPPLEMENTAL BENEFIT (PRSB)

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

COST-OF-LIVING BENEFITS

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

History of Employer Net Contribution Rates



Fiscal Year Ending June 30	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Employer Normal	10.56 %	10.62 %	11.09 %	10.70 %	11.37 %	11.28 %	12.03 %	12.06 %	12.26 %	11.69 %
Prefunded Liability/Prepaid Contributions	10.56 %	10.62 %	4.42 %	0.49 %	-1.26 %	0.27 %	0.38 %	0.02 %	-0.51 %	0.30 %
Employer Net Contribution	0.00 %	0.00 %	6.67 %	10.21 %	12.63 %	11.01 %	11.65 %	12.04 %	12.77 %	11.39 %

*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

- 89 Schedule of Changes in Fiduciary Net Position
- 90 Schedule and Graph of Additions by Source
- 91 Schedule and Graph of Deductions by Type
- 92 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 Employees Retirement System.

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

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

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

Schedule of Changes in Fiduciary Net Position

Last Ten Fiscal Years 2009 - 2018

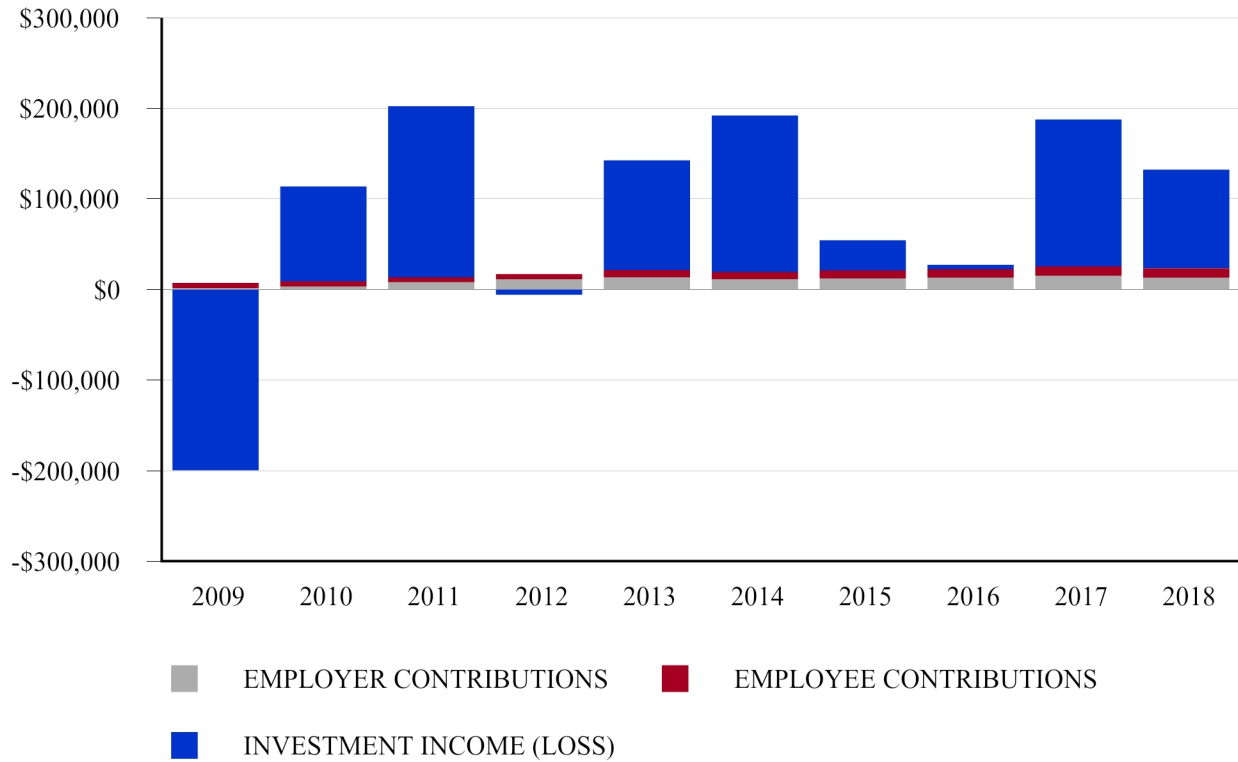
(Dollars in Millions)

	2018	2017	2016	2015	2014
Additions					
Employer Contributions	\$ 14.6	\$ 15.2	\$ 13.1	\$ 12.3	\$ 11.4
Employee Contributions	10.3	10.1	9.1	8.8	7.9
Investment Income (Loss)	108.9	162.3	5.0	33.3	172.9
Total Additions	133.8	187.6	27.2	54.4	192.2
Deductions					
Benefit Payments	\$ 56.2	\$ 54.3	\$ 51.2	\$ 49.1	\$ 47.4
Post Retirement Supplemental Benefits	0.0	0.0	0.0	0.0	0.0
Refunds	1.4	1.1	1.3	1.5	1.2
Administrative	1.6	1.3	1.3	1.1	1.1
Total Deductions	59.2	56.7	53.8	51.7	49.7
Change in Fiduciary Net Position	\$ 74.6	\$ 130.9	\$ (26.6)	\$ 2.7	\$ 142.5

	2013	2012	2011	2010	2009
Additions					
Employer Contributions	\$ 13.3	\$ 11.4	\$ 8.2	\$ 3.3	\$ 1.3
Employee Contributions	8.0	5.5	5.3	5.7	5.8
Investment Income (Loss)	121.1	(5.6)	188.9	104.5	(199.7)
Total Additions	142.4	11.3	202.4	113.5	(192.6)
Deductions					
Benefit Payments	45.8	42.7	39.9	35.7	33.9
Post Retirement Supplemental Benefits	0.1	0.1	1.6	4.2	5.1
Refunds	1.2	1.3	2.1	1.7	1.0
Administrative	1.1	1.1	1.0	0.9	0.9
Total Deductions	48.2	45.2	44.6	42.5	40.9
Change in Fiduciary Net Position	\$ 94.2	\$ (33.9)	\$ 157.8	\$ 71.0	\$ (233.5)

Schedule and Graph of Additions by Source (In Thousands)

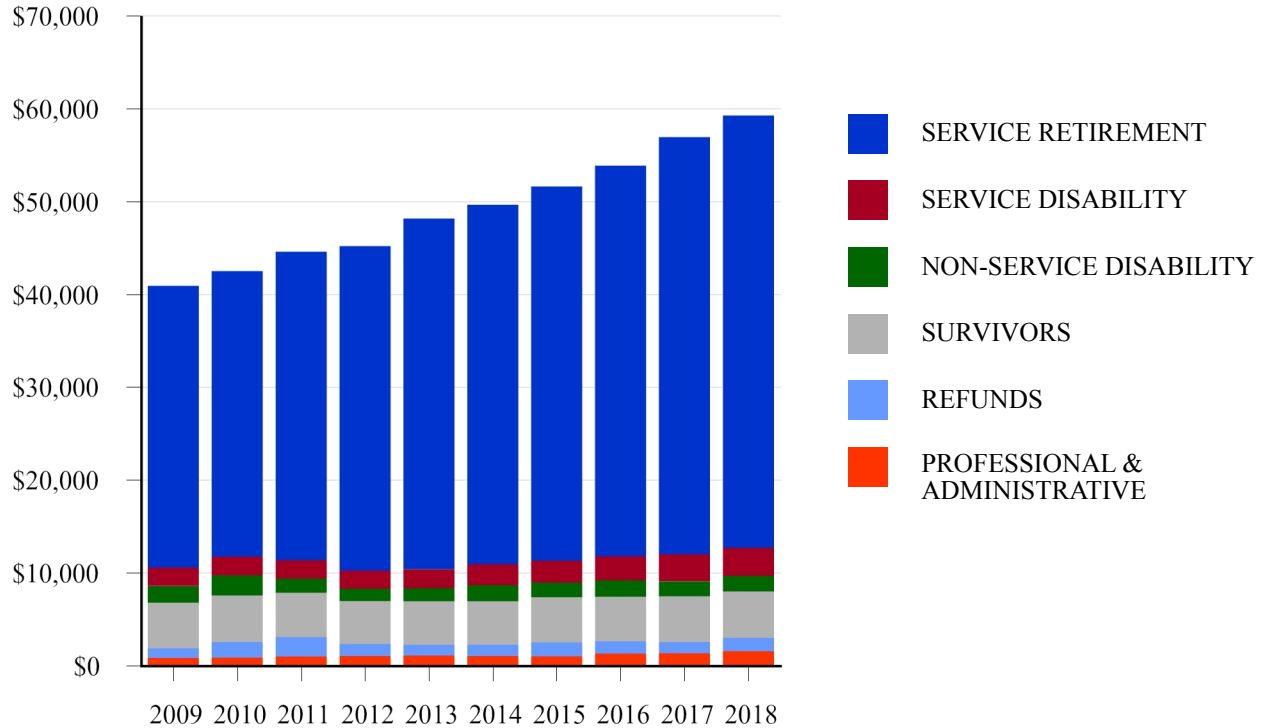
Last Ten Fiscal Years 2009 - 2018



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
EMPLOYER CONTRIBUTIONS	\$ 1,345	\$ 3,267	\$ 8,215	\$ 11,374	\$ 13,330	\$ 11,440	\$ 12,327	\$ 13,060	\$ 15,205	\$ 14,609
EMPLOYEE CONTRIBUTIONS	5,845	5,740	5,275	5,507	7,995	7,945	8,750	9,098	10,181	10,329
INVESTMENT INCOME (LOSS)	(199,694)	104,511	188,925	(5,620)	121,116	172,773	33,309	5,089	162,376	108,916
TOTAL	\$ (192,504)	\$ 113,518	\$ 202,415	\$ 11,261	\$ 142,441	\$ 192,158	\$ 54,386	\$ 27,247	\$ 187,762	\$ 133,854

Schedule and Graph of Deductions by Type (In Thousands)

Last Ten Fiscal Years 2009 - 2018



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SERVICE RETIREMENTS	\$ 30,336	\$ 30,751	\$ 33,193	\$ 34,944	\$ 37,748	\$ 38,677	\$ 40,261	\$ 42,031	\$ 44,883	\$ 46,548
SERVICE DISABILITY	1,989	2,014	1,997	1,940	2,042	2,286	2,358	2,625	2,915	3,027
NON-SERVICE DISABILITY	1,792	2,141	1,527	1,338	1,400	1,709	1,579	1,744	1,602	1,654
SURVIVORS	4,914	5,041	4,771	4,612	4,693	4,704	4,874	4,799	4,951	5,013
REFUNDS	1,022	1,651	2,092	1,313	1,157	1,204	1,474	1,330	1,199	1,424
PROFESSIONAL & ADMINISTRATIVE	894	929	1,029	1,087	1,138	1,086	1,071	1,346	1,389	1,619
TOTAL	\$ 40,947	\$ 42,527	\$ 44,609	\$ 45,234	\$ 48,178	\$ 49,666	\$ 51,617	\$ 53,875	\$ 56,939	\$ 59,285

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 7/1/17 to 6/30/18*							
Average Monthly Pension Benefits	\$ 822	\$ 1,492	\$ 1,777	\$ 2,820	\$ 2,462	\$ 3,560	\$ 2,156
Average Monthly DROP Payment	—	277	594	1,549	1,569	2,473	1,292
Average Final Average Salary	5,746	5,217	4,478	6,058	4,559	5,679	5,290
Number of New Retired Members	7	18	22	22	10	10	89
Period 7/1/16 to 6/30/17*							
Average Monthly Pension Benefits	\$ 976	\$ 1,446	\$ 2,448	\$ 2,624	\$ 2,851	\$ 3,648	\$ 2,332
Average Monthly DROP Payment	—	153	901	1,590	1,989	1,718	1,270
Average Final Average Salary	5,707	4,938	5,905	5,403	4,333	5,531	5,303
Number of New Retired Members	12	26	23	20	8	9	98
Period 7/1/15 to 6/30/16*							
Average Monthly Pension Benefits	\$ 938	\$ 1,567	\$ 1,847	\$ 2,606	\$ 2,596	\$ 2,402	\$ 1,993
Average Monthly DROP Payment	1,506	1,046	1,446	2,264	1,684	1,624	1,595
Average Final Average Salary	5,576	5,480	5,048	5,325	4,961	4,395	5,131
Number of New Retired Members	14	23	24	16	20	11	108
Period 7/1/14 to 6/30/15							
Average Monthly Pension Benefits	\$ 912	\$ 1,409	\$ 2,173	\$ 2,509	\$ 5,125	\$ 5,039	\$ 2,861
Number of New Retired Members	13	11	25	6	16	6	77
Period 7/1/13 to 6/30/14							
Average Monthly Pension Benefits	\$ 1,060	\$ 1,610	\$ 2,144	\$ 3,586	\$ 3,258	\$ 6,795	\$ 3,076
Number of New Retired Members	12	12	17	15	10	8	74
Period 7/1/12 to 6/30/13							
Average Monthly Pension Benefits	\$ 864	\$ 1,476	\$ 2,315	\$ 3,598	\$ 4,335	\$ 4,925	\$ 2,919
Number of New Retired Members	16	15	14	12	10	10	77
Period 7/1/11 to 6/30/12							
Average Monthly Pension Benefits	\$ 568	\$ 1,551	\$ 2,341	\$ 2,659	\$ 4,268	\$ 5,167	\$ 2,759
Number of New Retired Members	22	13	17	13	7	5	77
Period 7/1/10 to 6/30/11							
Average Monthly Pension Benefits	\$ 848	\$ 1,231	\$ 1,966	\$ 2,966	\$ 3,293	\$ 4,409	\$ 2,452
Number of New Retired Members	33	31	17	15	18	19	133
Period 7/1/09 to 6/30/10							
Average Monthly Pension Benefits	\$ 839	\$ 1,309	\$ 2,731	\$ 3,461	\$ 3,626	\$ 4,023	\$ 2,665
Number of New Retired Members	13	20	20	24	27	14	118
Period 7/1/08 to 6/30/09							
Average Monthly Pension Benefits	\$ 939	\$ 1,464	\$ 2,828	\$ 3,028	\$ 3,925	\$ 4,449	\$ 2,772
Number of New Retired Members	17	15	12	8	6	4	62

Data Source: PensionGold Administration System V3

*The Schedule of Average Benefit Payments above now includes information about the average final salary in accordance with GASB Statement No. 44 for the period July 1, 2015 to June 30, 2018. Fortunately, with the implementation of our new PensionGold Administration System, we are able to present a reasonably accurate calculation of the average final salary because we show the separate payment amount for members who participated in the Deferred Retirement Option Program (DROP). We are currently unable to provide this data for Fiscal Years 2009-2015 but plan to do so as soon as realistically achievable. DROP, which is not a separate plan, is an alternate method of receiving retirement benefits. Amounts credited to the Member's DROP account 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 to the DROP account at the adopted rate. Members that elect to participate in DROP have their retirement benefit calculated based upon their years of service and final average salary *as determined at the time they enter DROP* (potentially a full 10 years earlier than their actual retirement date) rather than at the time the member actually retires. When the member retires, they receive their monthly retirement benefit and included is a DROP payment. Since we are now able to provide the final average salary which created the monthly pension benefit payment, the appearance of disproportional benefits when viewed in relationship with the average final average salary is now eliminated.

Retirees by Type of Benefit

As of June 30, 2018

Amount of Monthly Benefit	Number of Retirees	Type of Retirement*		
		1	2	3
\$1 - \$1,000	375	271	2	102
\$1,001 - \$2,000	645	401	88	156
\$2,001 - \$3,000	438	351	39	48
\$3,001 - \$4,000	227	204	16	7
\$4,001 - \$5,000	137	131	3	3
\$5,001 - \$6,000	71	63	7	1
\$6,001 - \$7,000	35	35	—	—
> \$7,000	42	42	—	—
Total	1,970	1,498	155	317

*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	375	227	68	63	17
\$1,001 - \$2,000	645	320	163	124	38
\$2,001 - \$3,000	438	211	102	92	33
\$3,001 - \$4,000	227	104	50	56	17
\$4,001 - \$5,000	137	58	34	28	17
\$5,001 - \$6,000	71	38	14	14	5
\$6,001 - \$7,000	35	20	5	6	4
> \$7,000	42	11	10	16	5
Total	1,970	989	446	399	136

**Option Selected

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

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

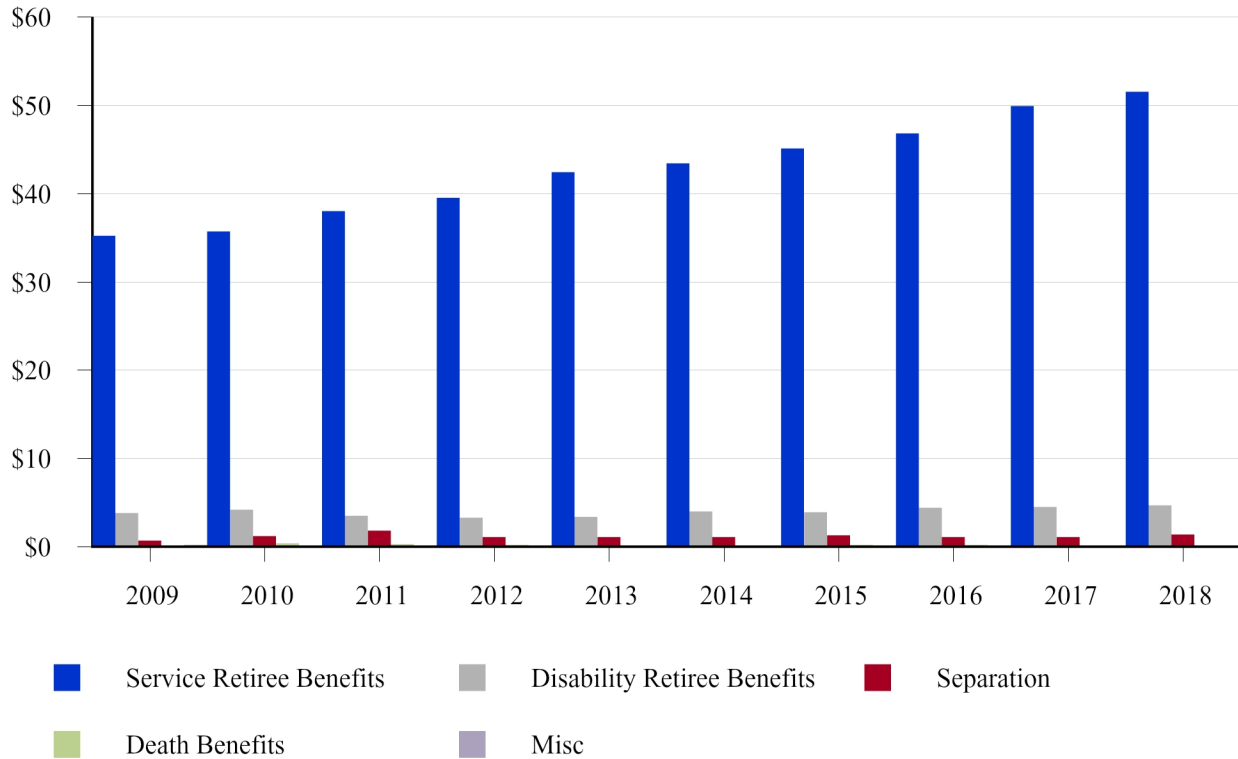
Option 2 - Beneficiary receives 100% of member's reduced monthly benefit

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 2009 - 2018

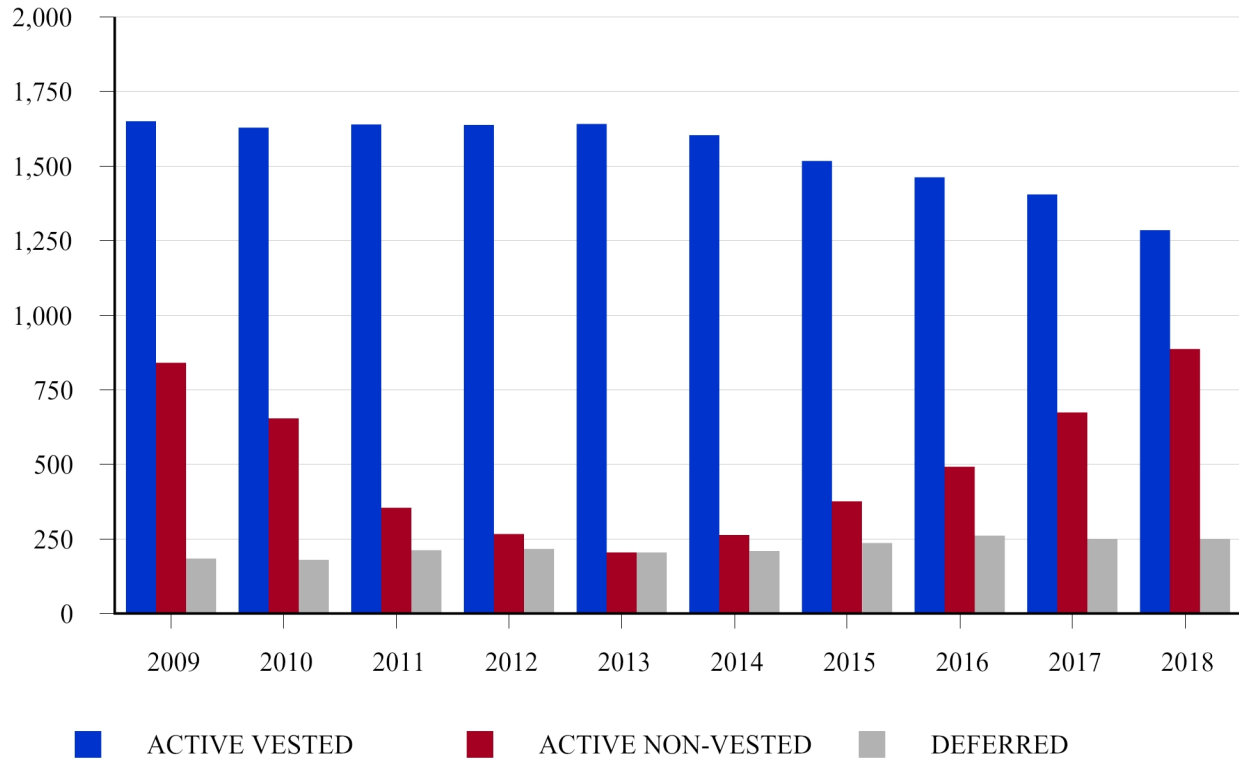
(Dollars in Millions)



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Service Retiree Benefits	\$35.2	\$35.7	\$38.0	\$39.5	\$42.4	\$43.4	\$45.1	\$46.8	\$49.9	\$51.5
Disability Retiree Benefits	3.8	4.2	3.5	3.3	3.4	4.0	3.9	4.4	4.5	4.7
Separation	0.7	1.2	1.8	1.1	1.1	1.1	1.3	1.1	1.1	1.4
Death Benefits	0.1	0.4	0.3	0.2	0.1	0.1	0.2	0.2	—	0.0
Misc	0.2	0.0	0.0	—	—	0.0	—	—	—	—
Total Benefit Deductions	\$40.0	\$41.5	\$43.6	\$44.1	\$47.0	\$48.6	\$50.5	\$52.5	\$55.5	\$57.6

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

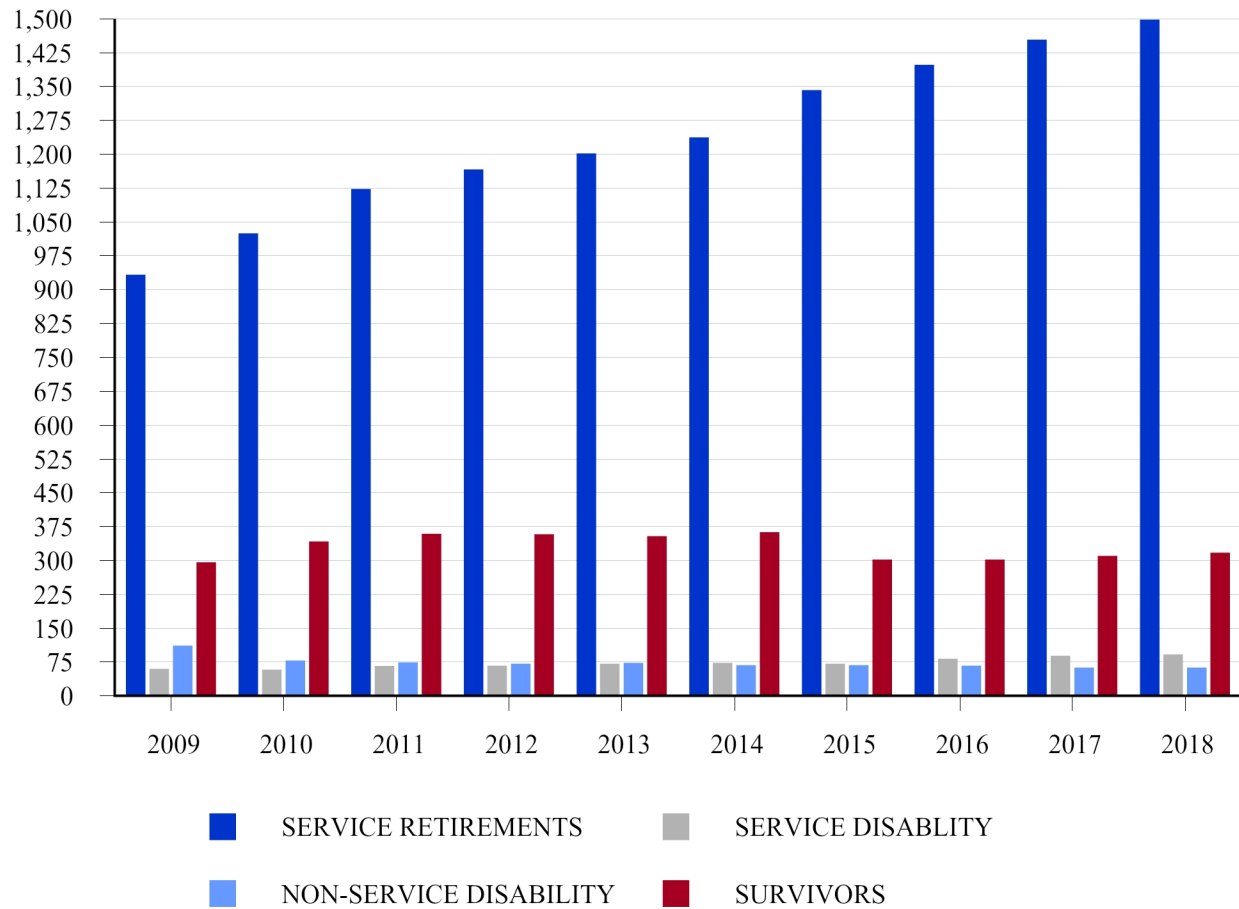
Last Ten Fiscal Years 2009 - 2018



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ACTIVE VESTED	1,650	1,629	1,639	1,638	1,641	1,604	1,517	1,462	1,405	1,285
ACTIVE NON-VESTED	840	654	354	267	205	263	376	492	674	887
DEFERRED	184	180	212	217	205	209	236	261	251	251
TOTAL	2,674	2,463	2,205	2,122	2,051	2,076	2,129	2,215	2,330	2,423

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

Last Ten Fiscal Years 2009 - 2018



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
SERVICE RETIREMENTS	933	1,025	1,123	1,166	1,202	1,237	1,342	1,398	1,454	1,498
SERVICE DISABLITY	60	58	66	67	71	73	71	82	89	92
NON-SERVICE DISABILITY	111	78	74	71	73	68	68	67	63	63
SURVIVORS	296	342	359	358	354	363	302	302	310	317
TOTAL	1,400	1,503	1,622	1,662	1,700	1,741	1,783	1,849	1,916	1,970

Summary of Active Participants

YEAR	NUMBER OF MEMBERS	PENSIONABLE PAYROLL	ANNUAL AVERAGE SALARY	NET CHANGE IN AVERAGE SALARY
2018	2,172	\$128,461,461	\$59,144	3.32%
2017	2,079	\$119,006,918	\$57,242	3.05%
2016	1,954	\$108,541,068	\$55,548	(0.63%)
2015	1,893	\$105,820,382	\$55,901	0.46%
2014	1,867	\$103,890,391	\$55,646	(2.64%)
2013	1,846	\$105,508,591	\$57,155	(1.46%)
2012	1,905	\$110,492,026	\$58,001	(3.07%)
2011	1,993	\$119,260,220	\$59,840	5.69%
2010	2,283	\$129,258,191	\$56,618	6.39%
2009	2,490	\$132,511,895	\$53,218	3.40%

Summary of Retirees

YEAR	NUMBER OF RETIREES	ANNUAL BENEFITS TO PARTICIPANTS	ANNUAL AVERAGE ALLOWANCE (INDIVIDUAL)	NET CHANGE IN BENEFITS TO PARTICIPANTS
2018	1,970	\$56,241,911	\$28,549	0.64%
2017	1,916	\$54,350,851	\$28,367	2.44%
2016	1,849	\$51,198,523	\$27,690	0.61%
2015	1,783	\$49,072,063	\$27,522	1.14%
2014	1,741	\$47,376,551	\$27,212	0.82%
2013	1,700	\$45,883,057	\$26,990	4.73%
2012	1,662	\$42,833,718	\$25,772	0.76%
2011	1,622	\$41,487,860	\$25,578	(3.76%)
2010	1,503	\$39,946,446	\$26,578	(4.67%)
2009	1,400	\$39,031,190	\$27,879	7.47%

Member and City Contribution Rates

Last Ten Fiscal Years 2009 - 2018

As of June 30 Fiscal Year Valuation Date		Member Rates			City Contribution Rates				
		Basic at Entry Age			Basic	COLA	Total City Rate	Less Prefunded Actuarial Accrued Liability (PAAL)	Net City Contribution Rate
20	25	30							
June 30, 2018	June 30, 2016	5.12%	6.05%	7.29%	9.18%	2.51%	11.69%	(0.3%)	11.39%
June 30, 2017	June 30, 2015	5.69%	6.69%	7.99%	9.5%	2.76%	12.26%	0.51%	12.77%
June 30, 2016	June 30, 2014	5.69%	6.68%	7.98%	9.31%	2.75%	12.06%	(0.02%)	12.04%
June 30, 2015	June 30, 2013	5.69%	6.68%	7.98%	9.02%	3.01%	12.03%	(0.38%)	11.65%
June 30, 2014	June 30, 2012	5.33%	6.28%	7.53%	8.63%	2.65%	11.28%	(0.27%)	11.01%
June 30, 2013	June 30, 2011	5.34%	6.29%	7.56%	8.75%	2.62%	11.37%	1.26%	12.63%
June 30, 2012	June 30, 2010	3.47%	4.09%	4.91%	8.2%	2.5%	10.70%	(0.49%)	10.21%
June 30, 2011	June 30, 2009	2.99%	3.59%	4.38%	8.48%	2.61%	11.09%	(4.42%)	6.67%
June 30, 2010	June 30, 2008	2.99%	3.59%	4.38%	8.09%	2.53%	10.62%	(10.62%)	0.00%
June 30, 2009	June 30, 2007	2.99%	3.59%	4.38%	8.02%	2.54%	10.56%	(10.56%)	0.00%

Data Source: Annual Actuarial Valuation Reports

Economic Assumptions and Funding Method

Last Ten Fiscal Years 2009 - 2018

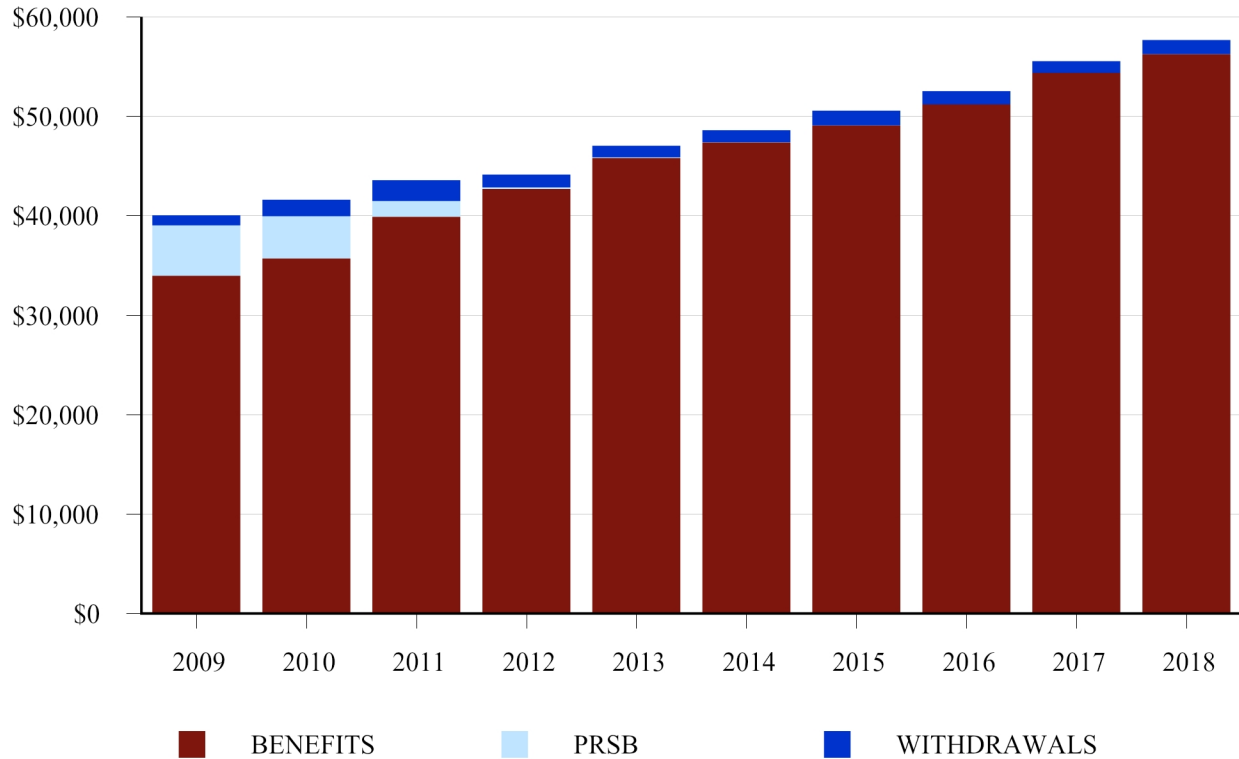
Valuation Date as of June 30	Interest	Salary Scale	Cost-of-Living (COLA)	Inflation Component	Funding Method
June 30, 2018	7.25%	.25 - 8.0%	3.00%	3.00%	Entry Age Normal
June 30, 2017	7.25%	.25 - 8.0%	3.00%	3.00%	Entry Age Normal
June 30, 2016	7.25%	.25 - 8.0%	3.00%	3.00%	Entry Age Normal
June 30, 2015	7.50%	.50 - 8.0%	3.25%	3.25%	Entry Age Normal
June 30, 2014	7.50%	.60 - 8.5%	3.25%	3.25%	Entry Age Normal
June 30, 2013	7.50%	.60 - 8.5%	3.25%	3.25%	Entry Age Normal
June 30, 2012	8.00%	.60 - 8.5%	3.50%	3.50%	Entry Age Normal
June 30, 2011	8.00%	.60 - 8.5%	3.50%	3.50%	Projected Unit Credit
June 30, 2010	8.00%	.60 - 8.5%	3.50%	3.50%	Projected Unit Credit
June 30, 2009	8.25%	4.8%	3.75%	3.75%	Projected Unit Credit

Source: The Segal Company June 30, 2018, Actuarial Valuation Report

Benefits and Withdrawals Paid

Last Ten Fiscal Years 2009 - 2018

(In Thousands)

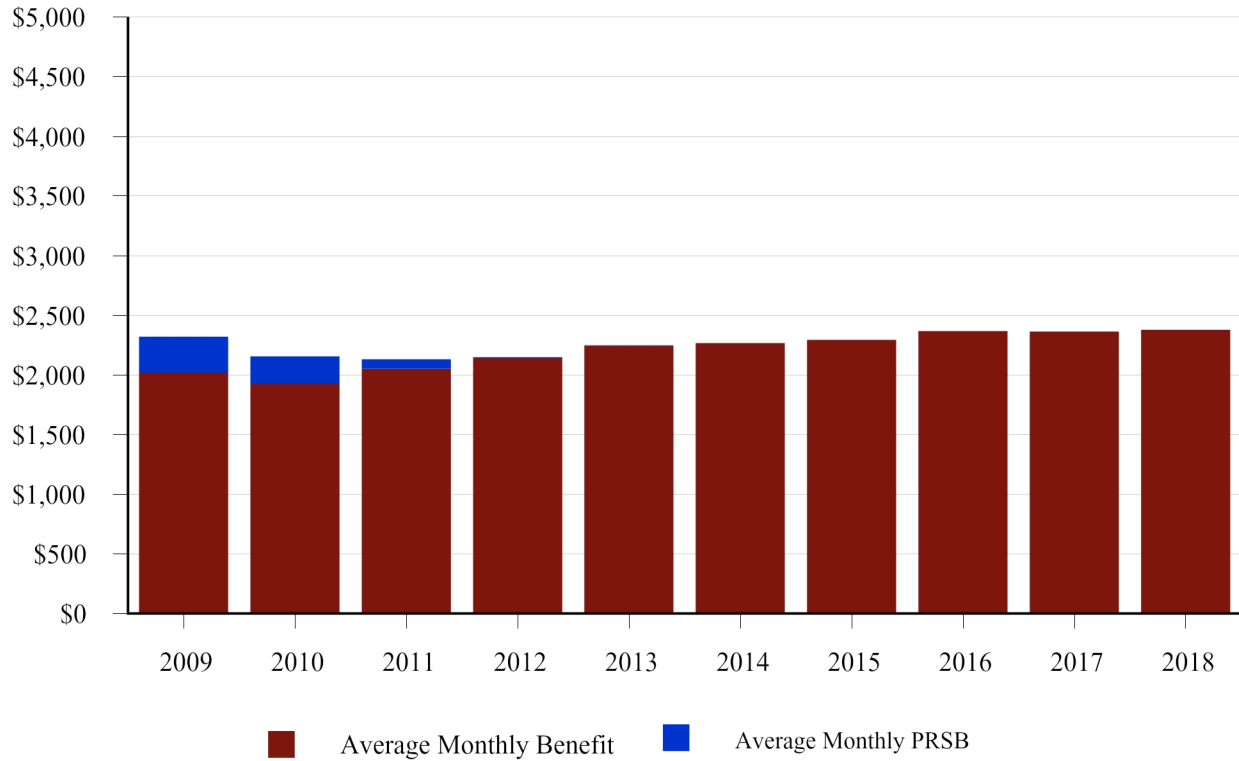


	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
BENEFITS	\$ 33,947	\$ 35,699	\$ 39,901	\$ 42,696	\$ 45,807	\$ 47,368	\$ 49,072	\$ 51,199	\$ 54,351	\$ 56,242
PRSB	5,084	4,248	1,587	138	76	9	—	—	—	—
WITHDRAWALS	1,022	1,651	2,092	1,313	1,157	1,204	1,474	1,330	1,199	1,424

Average Monthly Benefits to Retirees

Last Ten Fiscal Years 2009 - 2018

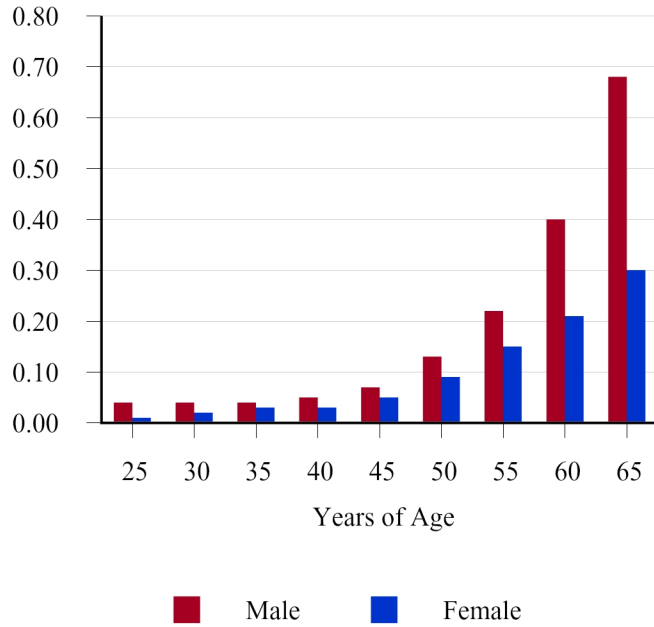
(In Thousands)



Average Monthly	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Benefit	\$2,018	\$1,927	\$2,050	\$2,141	\$2,245	\$2,267	\$2,294	\$2,367	\$2,363	\$2,379
PRSB	302	229	81	7	4	—	—	—	—	—
Total Average Monthly	\$2,320	\$2,156	\$2,131	\$2,148	\$2,249	\$2,267	\$2,294	\$2,367	\$2,363	\$2,379

EXPECTATION OF LIFE

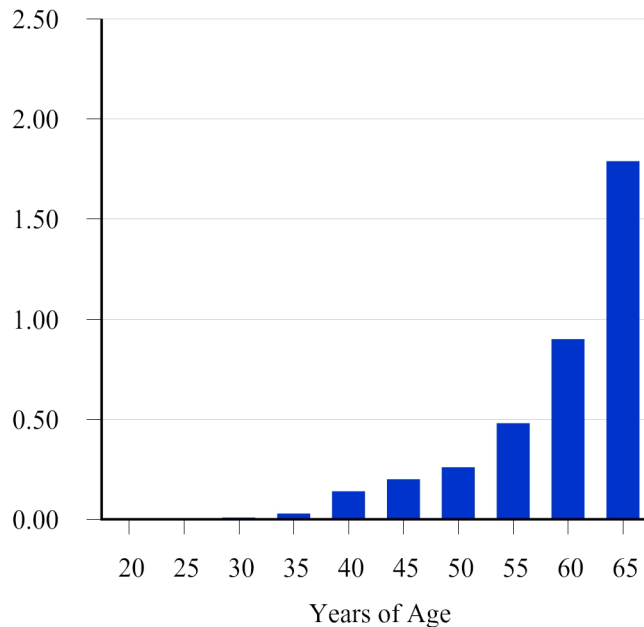
(Age and Service Retirees)



EXPECTATION OF LIFE Age and Service Retirees RP-2014 Healthy Annuitant Morality Table Male (x=0), Female (x+1)		
Age	Male	Female
25	0.04	0.01
30	0.04	0.02
35	0.04	0.03
40	0.05	0.03
45	0.07	0.05
50	0.13	0.09
55	0.22	0.15
60	0.40	0.21
65	0.68	0.30

EXPECTATION OF LIFE

(Disabled Retirees)



EXPECTATION OF LIFE Disabled Retirees RP-2014 Healthy Annuitant Morality Table (x+4)	
Age	Rate (%)
20	0.00
25	0.00
30	0.01
35	0.03
40	0.14
45	0.20
50	0.26
55	0.48
60	0.90
65	1.79

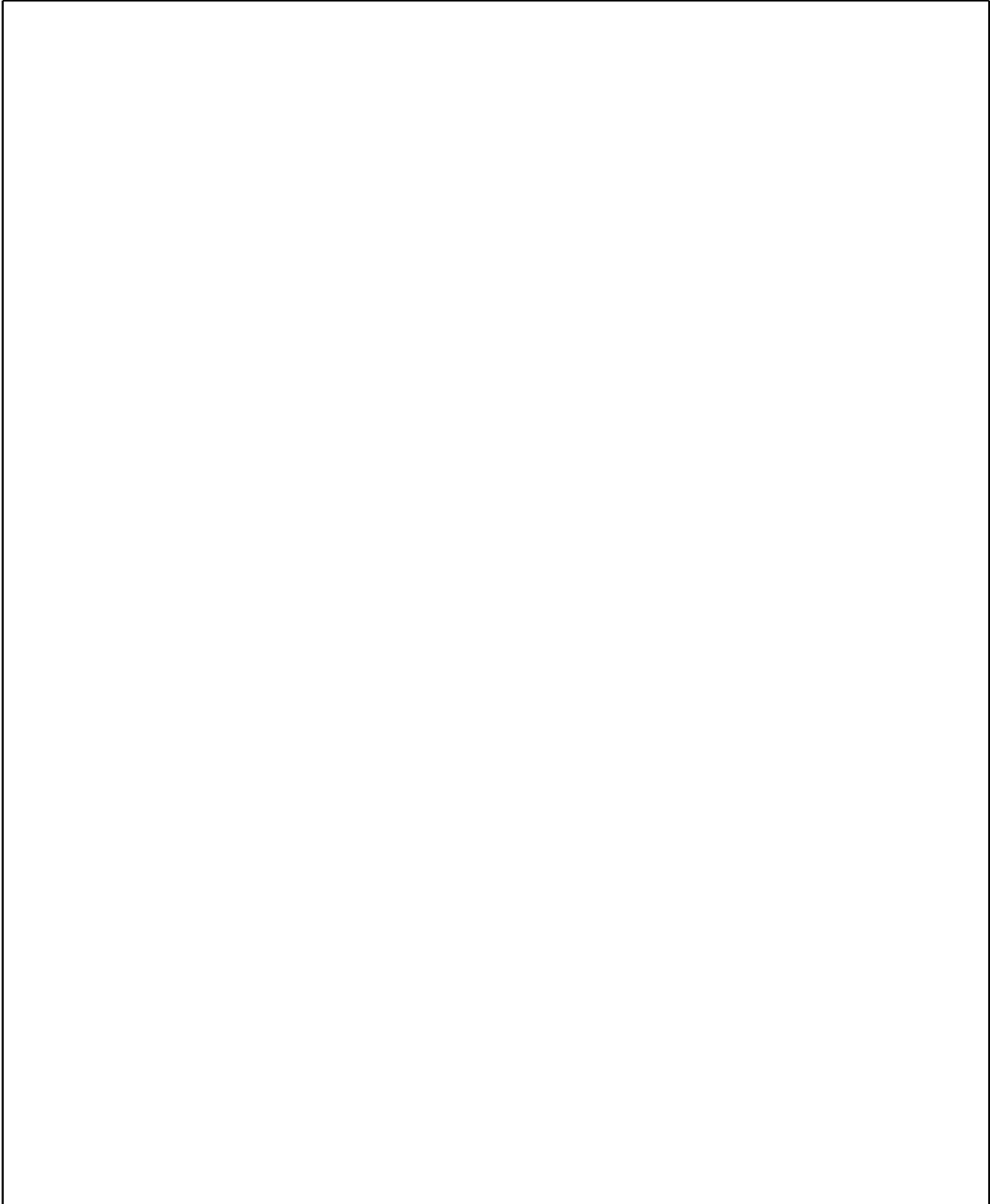
*To attract, develop and
retain competent and
professional staff.*

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

COMPLIANCE

- 103 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



Independent Auditor's Internal Control Letter Continued

