



CHARTING THE COURSE

A central graphic depicts a silhouette of a person standing in a bright, blue, futuristic light tunnel. The background within the tunnel shows a galaxy or nebula. The light radiates outwards from the person, creating a sense of depth and direction.

2021
ANNUAL COMPREHENSIVE FINANCIAL REPORT

For the Year Ended December 31, 2021
Orange County, California

A Pension and Other Postemployment Benefit Trust Funds, and Custodial Fund of the County of Orange

CHARTING THE COURSE



A close-up, low-angle shot of an astronaut in a white space suit, looking out from a large, clear helmet. The background is a deep blue space filled with stars and a bright, glowing light source on the right side, creating a lens flare effect. The astronaut's suit is detailed with various patches, straps, and equipment.

Orange County Employees Retirement System
**ANNUAL COMPREHENSIVE
FINANCIAL REPORT**
For the Year Ended December 31, 2021

Prepared by: The Finance Department of the
Orange County Employees Retirement System

Issued by: Steve Delaney, Chief Executive Officer
Brenda Shott, Assistant CEO of Finance and Internal Operations

Orange County Employees Retirement System
2223 East Wellington Avenue, Suite 100
Santa Ana, CA 92701-3161

Mailing Address:
P.O. Box 1229
Santa Ana, CA 92702

714.558.6200
www.ocers.org



Mission

We provide secure retirement and disability benefits with the highest standards of excellence.

Vision

To be a trusted partner providing premier pension administration, distinguished by consistent, quality member experiences and prudent financial stewardship.

Values

Open and Transparent

Commitment to Superior Service

Engaged and Dedicated Workforce

Reliable and Accurate

Secure and Sustainable

Table of Contents

Section 1 - Introductory

Letter of Transmittal	2
Members of the Board of Retirement	6
Organization of OCERS	7
Administrative Organization Chart	8
List of Professional Consultants	9
Certificate of Achievement for Excellence in Financial Reporting	10
Public Pension Standards Award for Funding and Administration	11

Section 2 - Financial

Independent Auditor's Report	14
Management's Discussion and Analysis	18

Basic Financial Statements

Statement of Fiduciary Net Position	28
Statement of Changes in Fiduciary Net Position	29
Notes to the Basic Financial Statements	30

Required Supplementary Information

Schedule of Changes in Net Pension Liability of Participating Employers	64
Schedule of Investment Returns	66
Schedule of Employer Contributions	66
Notes to the Required Supplementary Information	67
Significant Factors Affecting Trends in Actuarial Information – Pension Plan	68

Other Supplementary Information

Schedule of Contributions	72
Schedule of Administrative Expenses	73
Schedule of Investment Expenses	74
Schedule of Payments for Professional Services	75

Section 3 - Investments

Investment Consultant's Statement	78
Investment Returns	83
Statement of Investment Objectives and Policies	84
Asset Diversification	85
Growth of System Net Investments at Fair Value	86
Historical Asset Allocation	86
History of Performance - Net	87
Schedule of Commissions	88
Commission Recapture Program	88
Schedule of Investment Expenses and Investment Summary	89
Schedule of Largest Equity Holdings	90
Schedule of Largest Fixed Income Holdings	90
List of Investment Managers	91

Section 4 - Actuarial

Actuary's Certification Letter	94
Schedule of Funding Progress	98
History of Employer Contribution Rates	101
Summary of Active Membership	106
Summary of Retired Membership	107
Development of Actuarial and Valuation Value of Assets	108
Schedule of Funded Liabilities by Type	109
Actuarial Methods and Assumptions	110
Summary of Major Plan Provisions	120
Experience Analysis	129

Section 5 - Statistical

Statistical Section Review	132
Schedule of Changes in Fiduciary Net Position – Pension Trust Fund	132
Schedule of Changes in Fiduciary Net Position – Health Care Fund – County	133
Schedule of Changes in Fiduciary Net Position – Health Care Fund – OCFA	133
Schedule of Changes in Fiduciary Net Position – Custodial Fund – OCTA	134
Schedule and Graph of Fiduciary Revenues by Source	135
Schedule and Graph of Expenses by Type	136
Schedule and Graph of Benefit Expenses by Type	137
Schedule and Graph of Average Monthly Pension Check	138
Schedule of Average Pension Benefit Payments by Years of Service	139
Schedule of Pension Benefit Recipients by Type of Benefit	140
Schedule of Pension Benefit Recipients by Option Selected	141
Schedule and Graph of Pension Benefit Recipients	142
Schedule of Average Retirement Age	143
Schedule of Average Years of Service at Retirement	143
Schedule of Beneficiaries Receiving a Pension	143
Schedule of Active and Deferred Members	143
Schedule of Participating Employers – Pension Plan	144
History of Actuarial Assumption Rates	145

Section 6 - Glossary

Glossary of Terms	148
-------------------	-----

SECTION

1

INTRODUCTORY

PAPER FILES



COMPUTER FILES



PROTECTING MEMBERS' INFORMATION

OCERS is committed to protecting our members' personal information. The methods of protecting this information have evolved over the history of the system. In 1945, when the Retirement System was established, paper files were maintained and locked in file cabinets. Regular file cabinets were replaced with fireproof cabinets which protected information from fire and water damage.

Computer files have replaced paper files. Computer files must also be secured. These files are backed up to redundant systems to prevent the loss of valuable information. Access to the computer files is also protected from unauthorized users. The security of and the limited access to members' information is included as part of the business continuity and disaster recovery plan.

As OCERS looks to the future, additional methods of securing members' information could be through various biometric security identifiers or other multifactor identification methods.



MULTIFACTOR IDENTIFICATION

Letter of Transmittal



Active Participating Employers:

City of San Juan Capistrano

County of Orange

Orange County Cemetery
District

Orange County Children & Families
Commission

Orange County Employees
Retirement System

Orange County Fire Authority

Orange County In-Home
Supportive Services Public
Authority

Orange County Local Agency
Formation Commission

Orange County Public Law
Library

Orange County Sanitation
District

Orange County Transportation
Authority

Superior Court of California,
County of Orange

Transportation Corridor
Agencies

June 2, 2022

Members of the OCERS Board of Retirement:

We are pleased to present the Annual Comprehensive Financial Report (Annual Report) of the Orange County Employees Retirement System (OCERS or System) as of and for the year ended December 31, 2021. The information contained in this report is intended to provide a detailed overview of the System's financial and investment results for the year ended December 31, 2021. It also includes information from the current actuarial valuation as of December 31, 2020.

OCERS HISTORY, PARTICIPANTS, AND SERVICES

Established in 1945, OCERS is a public retirement system that has provided service retirement, disability, death and survivor benefits to its members for 76 years, administered in accordance with the County Employees Retirement Law of 1937 (CERL) and the California Public Employees' Pension Reform Act of 2013 (PEPRA).

Pursuant to certain provisions of CERL, OCERS is an independent governmental unit within the County of Orange, with a separate operating budget and professional staff. The California Constitution gives the Board of Retirement full authority over the administration of the System, which includes administering plan benefits for over 49,000 members, managing \$22.5 billion in net assets, and serving 13 active agencies. A complete listing of both active and inactive agencies as of December 31, 2021, can be found on page 30, Section 2 of the Annual Report, under Note 1: Plan Descriptions.

During 2021, OCERS entered its second year of navigating the ongoing COVID-19 pandemic and continued to meet the challenges of working remotely. The theme for this year's Annual Report is "Charting the Course" and highlights how OCERS continued to find innovative ways to safeguard assets and provide excellent service and support while maintaining operations during a global pandemic. We also share how we plan to chart the future by leveraging technology to attain the long-term strategic goal of 100% benefit accuracy.

MAJOR INITIATIVES AND SIGNIFICANT EVENTS

Coronavirus COVID-19 Update

It has been over two years since the World Health Organization declared Coronavirus COVID-19 a global pandemic, followed by the Stay-at-Home Order issued by California Governor Gavin Newsom in March 2020. During 2021, OCERS offices remained closed to the public and most staff continued to work remotely. OCERS focus remained on meeting the needs of its members and beneficiaries, and as COVID-19 cases began to decrease significantly and restrictions lifted throughout the world, plans were made to return staff to the office in March 2022 with the option to work a hybrid schedule consisting of both in office and remote work..

OCERS continued to conduct its Board and Committee meetings virtually, as allowed under the Governor's Executive Order which suspended certain provisions of the Brown Act. Virtual meetings have also continued to be used to facilitate meetings with investment managers, consultants, and OCERS' stakeholders, as well as internal meetings, including

Letter of Transmittal

(continued)

various department and all team meetings, to help keep OCERS employees connected. In addition to bringing staff back into the office, OCERS also made plans to re-open the headquarters building to the public and resume in-person Board and Committee meetings in May 2022.

Alameda Case

In late July 2020, the California Supreme Court issued an opinion in what is known as the “Alameda” case (Alameda County Deputy Sheriffs Association et al v. Alameda County Employees Retirement Association and Board of Retirement of ACERA (S247095)). This decision impacted how OCERS and other public pension systems in California pay benefits to members who receive certain pay items. OCERS has no authority or discretion to calculate pension benefits in a manner inconsistent with the Supreme Court decision. Although the decision impacts only a small number of OCERS’ retirees, the Board of Retirement took a measured approach to the implementation of the Alameda decision and recognized the impact this decision had on affected members. The Board of Retirement evaluated a list of certain pay items to be modified from “pensionable” to “non-pensionable” and adopted staff recommendations related to the resolution and implementation of the Alameda decision at the June 21, 2021 Board meeting. The Board also directed staff to undertake several crucial tasks including recalculating the retirement allowances of impacted retirees, and credit/refund overpaid employee contributions that are remaining after being offset against overpayments.

Vision 2030

OCERS is a complex system with many benefit calculations that require manual intervention. OCERS has a long-term strategic goal of 100% benefit accuracy to address this challenge. To help achieve this goal, OCERS developed an initiative, referred to as Vision 2030, and began exploring how to leverage technology using some form of Robotic Process Automation (RPA), Machine Learning (ML) and/or Artificial Intelligence (AI). The next phase of this initiative will be to use a consultant to look at both short and long-term needs and possibilities, including a new pension administration system that will allow for AI additions in future years.

Enterprise Resource Planning (ERP) System

During 2021, a consultant was selected to assist OCERS with procuring and implementing a new ERP System to replace its desktop accounting software with a cloud-based system. The new system includes automated electronic approval workflows, robust report writing capabilities, and significantly reduced the need to create and maintain hard copies of supporting documentation. The new system went live on January 1, 2022 and the next step of the project is implementing ACH payments instead of issuing checks for vendor payments and integrating an expense management software package that will automatically capture receipts and process expense reports. This phase of the project is anticipated to be completed in 2022.

Diversity, Equity, and Inclusion (DEI) Initiative

A diverse workforce that is valued and included in all decision processes helps create best of class services and procedures for our members. As part of its initiative to promote an inclusive workplace, OCERS worked with a DEI consultant to develop a DEI survey to identify areas that will allow OCERS to focus on retention and employee engagement and assist with avoiding turnover cost.

Next Level Leadership (NLL) Program

To assist OCERS with developing the next generation of supervisors and managers, NLL, an agency-wide program, was developed using OCERS internal talent. A rigorous application and interview process was used to select interested team members to participate in NLL. Participants learned key supervisory and managerial competencies and were given the opportunity to apply these competencies while in a temporary promotion with real-time experience in a supervisory role. The program gave all participants invaluable leadership experience and has already resulted in a promotional opportunity for one of the participants.

Board Member Updates

Mr. Richard Oates of the Orange County Deputy Sheriff’s Department was elected to replace long-time safety member Roger Hilton on May 18, 2021. Mr. Hilton served on the OCERS Board of Retirement since 2012 and chose not to pursue another term. Mr. Oates began serving his 3-year term on July 1, 2021. In addition, Mr. Wayne Lindholm completed his 3-year term on December 31, 2021 and was reconfirmed as an appointed member by the Orange County Board of Supervisors for another 3-year term beginning January 1, 2022.

Letter of Transmittal

(continued)

FINANCIAL INFORMATION

OCERS' management is responsible for the complete and fair presentation of the financial information in accordance with accounting principles generally accepted in the United States of America. To the best of our knowledge, the enclosed data is accurate in all material respects and is reported in a manner designed to fairly present the financial position and operating results of OCERS. Moss Adams LLP audited the accompanying basic financial statements and related disclosures and has issued an unmodified opinion in the independent auditor's report found on page 15, Section 2 of the Annual Report. The financial audit provides reasonable assurance that OCERS' financial statements are presented in conformity with GAAP and are free from material misstatement.

The Annual Report was prepared in accordance with GAAP and reporting guidelines set forth by the Governmental Accounting Standards Board (GASB) and CERL. GAAP requires that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of management's discussion and analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. OCERS' MD&A can be found immediately following the independent auditor's report.

OCERS' management is responsible for establishing a system of internal controls to safeguard assets, maintain accurate and reliable accounting records, protect member privacy, detect and prevent fraud, and provide a reasonable basis for asserting that financial statements are fairly presented. OCERS' internal controls are designed to provide reasonable, but not absolute, assurance these objectives are met. The concept of reasonable assurance recognizes that the cost of a control should not exceed the benefits likely to be derived and that the valuation of costs and benefits requires estimates and judgment by management. In addition, oversight of internal controls and operational efficiency is provided by OCERS' Audit Committee and supported by internal auditing staff.

INVESTMENT ACTIVITIES

The Board of Retirement (with the participation of the Investment Committee, OCERS' Investment Team, and Investment Consultants) has exclusive control of all investments of the System and is responsible for the establishment of investment objectives, strategies, and policies. OCERS' Investment Policy Statement helps guide decisions that impact OCERS' investment structure with the overall objective to invest the assets of the System solely for the benefit of its members while attempting to minimize employer contributions and investment and administration costs. The OCERS Investment Team completed implementing the asset allocation adopted in April 2020, which increased weights to public and private equity and reduced weights to fixed income, credit, and real assets. OCERS' Investment Team conducted 632 total meetings and calls with current and prospective investment managers with the vast majority of them being virtual due to the ongoing coronavirus pandemic.

During 2021, OCERS' Investment Team issued a RFP for investment consultants including: general and risk consultant, private equity consultant, real assets consultant, and real estate consultant. The OCERS Investment Team reviewed 25 RFP submissions and conducted 17 interviews across asset classes and finalized the RFP search in early 2022. OCERS' Investment Team also launched a new co-investment program within private equity in 2021 to participate in potentially profitable investments without paying the usual fee structure associated with private equity funds. The co-investments typically have low or no management fees or carried interest. Co-investments are sourced from existing managers in the private equity portfolio (up to 10% of annual private equity commitments and \$5 million - \$10 million per co-investment).

For the year ended December 31, 2021, OCERS' investment portfolio returned 16.6%, net of fees. The annualized net return over the last 20 years and 25 years was approximately 7.4% and 7.7%, respectively. As the historical average years of service for a new OCERS' retiree approximates 21 years for a general member and 22 years for a safety member, these net returns exceed our 7.00% long-term assumed earnings rate over the same period.

PENSION ACTUARIAL FUNDING STATUS

OCERS maintains a funding goal to establish contributions that fully fund the System's liabilities, and that, as a percentage of payroll, remain as level as possible for each generation of active members. It also ensures that contributions are sufficient for each generation of active members to avoid an intergenerational burden on future employees' contributions. Actuarial valuations are performed annually with actuarial experience investigations conducted triennially in accordance with state statute. The use of realistic assumptions is important in maintaining

Letter of Transmittal

(continued)

the necessary funding while paying promised benefits. Each year the actual experience of the System is compared to our assumptions and the differences are studied to determine whether changes in the contribution requirements are necessary. In addition, triennially, the actuarial experience investigation is undertaken to review the actuarial assumptions and compare the actual experience during the preceding three-year period with that expected under those assumptions. The latest experience investigation was completed during 2020 for plan years ending in 2017 through 2019. The Board adopted changes in several assumptions that were incorporated into the 2020 actuarial valuation, including lowering the inflation rate from 2.75% to 2.50% and maintaining the retiree cost-of-living assumption at 2.75%.

As of the most current actuarial valuation for the year ended December 31, 2020, OCERS' funding status was 76.5% on a valuation basis, versus 80.7% on a market value basis, with an Unfunded Actuarial Accrued Liability (UAAL) of \$5.4 billion. Average employer and employee contribution rates for the year ended December 31, 2020, were 41.2% and 12.2%, respectively.

BUDGET

The Board of Retirement approves OCERS' annual budget. The 1937 Act limits OCERS' annual administrative expenses, excluding the costs of administration for computer software and hardware and computer technology consulting services, to twenty-one hundredths of one percent (0.21%) of OCERS' actuarial accrued liability. OCERS' 2021 administrative expense of \$20.1 million was .08% of OCERS' actuarial accrued liability.

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 OCERS for its Annual Report for the year ended December 31, 2020. To be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized annual comprehensive financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current Annual 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.

OCERS was also the recipient of the Public Pension Coordinating Council (PPCC) Award in recognition of compliance with professional standards for plan funding and administration for the year ended December 31, 2020. This is awarded to a retirement system that meets the professional standards for plan design and administration as set forth in the Public Pension Standards, including a Comprehensive Benefit Program, Funding Adequacy, Actuarial Valuation, Independent Audit, Investments, and Communications. A Public Pension Standards Award is valid for a period of one year.

ACKNOWLEDGEMENTS

We would like to take this opportunity to thank the members of the System for their continued confidence in OCERS during the past year. Also, we would like to express our thanks to the Board of Retirement for its dedicated efforts in supporting the System throughout this past year. Finally, we would like to thank the staff and consultants for their commitment to OCERS and their diligent work to assure the System's continued success. We wish good health and safety to all.

Respectfully submitted,



Steve Delaney
Chief Executive Officer



Brenda Shott
Assistant Chief Executive Officer, Finance & Internal Operations

Members of the Board of Retirement

As of December 31, 2021



Shawn Dewane
Chair Person
Appointed by
the Board of Supervisors



Frank E. Eley
Vice Chair Person
Elected by
Retired Members



Shari L. Freidenrich
Treasurer-Tax Collector
County of Orange



Arthur Hidalgo
Appointed by
the Board of Supervisors



Wayne Lindholm
Appointed by
the Board of Supervisors



Richard Oates
Elected by
Safety Members



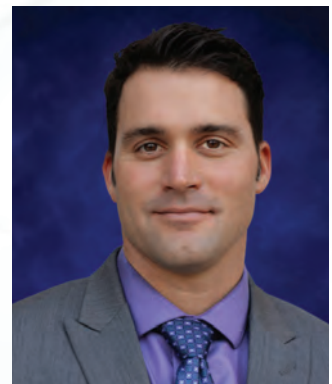
Charles E. Packard
Appointed by
the Board of Supervisors



Chris Prevatt
Elected by
General Members



Adele Tagaloa
Elected by
General Members



Jeremy Vallone
Alternate Elected by
Safety Members

Organization of OCERS

Board of Retirement

The Board of Retirement is responsible for establishing policies governing the administration of the retirement plan, disability determinations, assuring benefit payments, establishing investment policy for the System and monitoring execution of its policies. The Board of Retirement consists of nine members and one alternate. Four members of the Board of Retirement are appointed by the Board of Supervisors of the County; four members are elected by active members of the System, including two by the general members, two by the safety members, of which one is the alternate member; one member is elected by the retirees; and the Treasurer of the County, elected by registered voters in the County, serves as an Ex-Officio member.

Executive Division

This division consists of the Chief Executive Officer (CEO) who implements and executes policies promulgated by the Board of Retirement. Two Assistant CEOs, a Director of Internal Audit, a Chief Investment Officer and a General Counsel assist the CEO in the daily operations of the System.

Investment Division

This division is responsible for the administration and management of the investment program, in accordance with policies, regulations, and guidelines set forth by the Board of Retirement. It is responsible for the interface with investment managers, including hiring and termination of investment managers, monitoring investment performance objectives, adherence to investment guidelines, conducting due diligence visits to investment managers' sites, and interviewing prospective investment managers. This division is also responsible for the interface with outside investment consultants in reviewing and evaluating all investment managers' performance and investment manager fees. Refer to the Investment Section on pages 88 and 89 for the Schedule of Commissions and Schedule of Investment Expenses and Investment Summary.

External Operations Division

This division is comprised of the following departments: Member Services, Disabilities, and Communications.

The Member Services Department is responsible for providing all benefit services to the members of the System. This includes benefit calculations, preparation of data to support applications for retirement, preparation of the retiree payroll, processing contribution transmittals, membership counseling, and retirement seminars.

The Disabilities Department is responsible for reviewing claims and medical records of the members of the System; interviewing applicants and witnesses; preparing written reports of findings and recommendations; and making presentations to the Disability Committee and the Board of Retirement regarding the disposition of cases.

The Communications Department is responsible for developing and coordinating information for members and employers through publications, newsletters, seminars, video content, social media and publishing content to the website.

Internal Operations Division

This division is comprised of the following departments: Finance, Information Technology, Information Security, Human Resources, and Operations Support Services.

The Finance Department is responsible for all of the financial records and reports of OCERS. This includes the preparation of the Annual Comprehensive Financial Report, monthly and quarterly financial statements and the annual operating budget. The Finance Department also maintains OCERS' system of internal controls; processes and accounts for retirement payroll and refunds of contributions and interest to members; collects and accounts for employers' and members' contributions; reconciles investment portfolios; and pays costs incurred for goods received and services rendered.

The Information Technology Department is responsible for OCERS' network systems, personal computers, mobile devices, website and databases, as well as providing programming and technical support for the Pension Administration System. In addition, this department is responsible for administering all telecommunications and audio/visual services.

The Information Security Department is responsible for overseeing the security of OCERS' data and systems with a focus on protecting members' information and the systems, which are relied on for daily operations.

The Human Resources Department is responsible for providing human resources services including leading recruitment and on-boarding efforts, training and developing staff, supporting a high performing workforce, health and safety, maintaining intraoffice relationships, and other labor relations.

The Operations Support Services Department is responsible for procurement and contract administration, operational risk management, facilities management, building safety and security, and mailroom operations. In addition, this department is responsible for overseeing the business continuity/disaster recovery program.

Legal Division

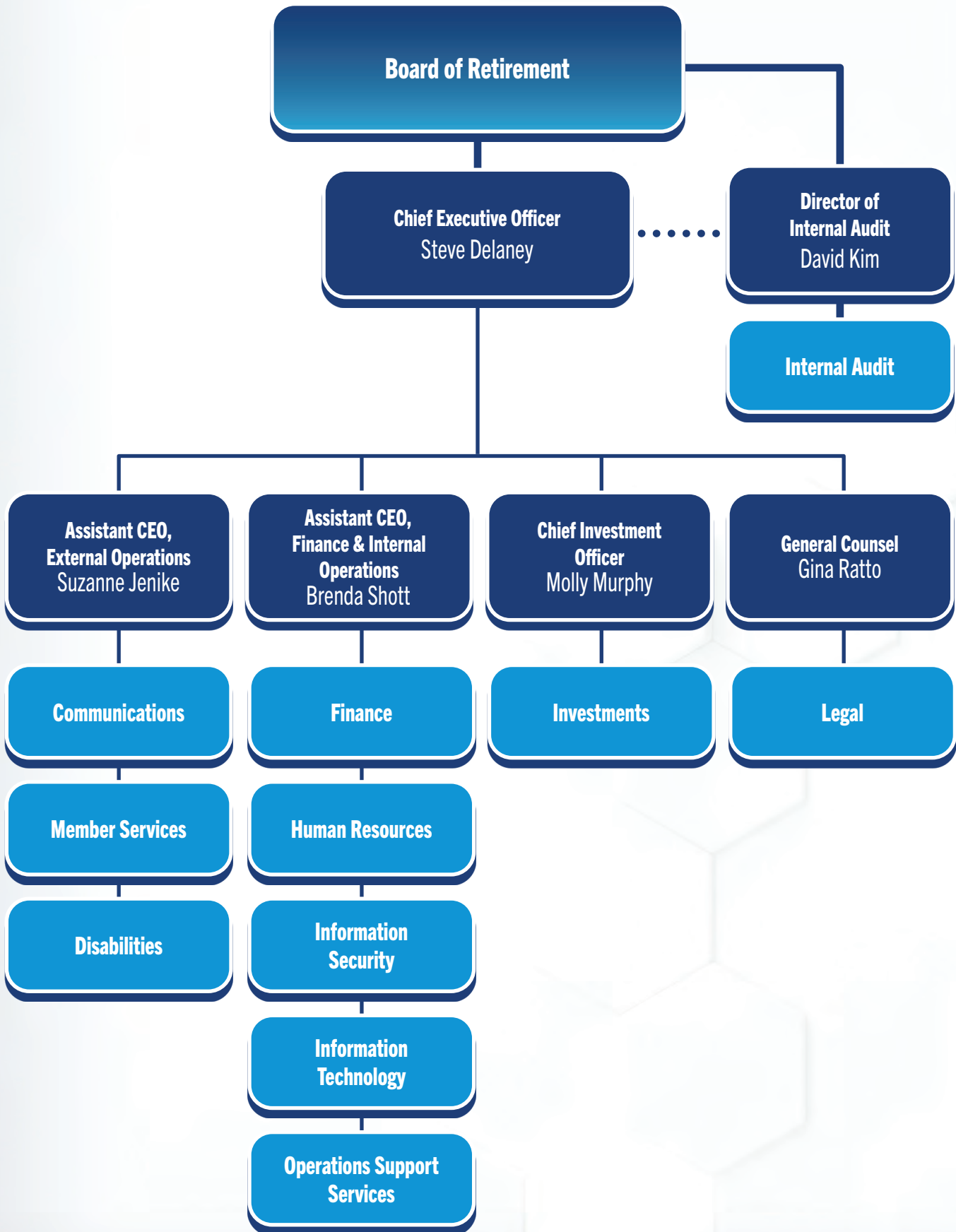
This division provides legal advice and representation to the Board of Retirement and OCERS on a wide variety of issues. Among other things, this includes issues involving pension benefits, disability retirements, investments, legislation and vendor contracts.

Internal Audit Department

This department is responsible for objectively assessing the organization's governance, risk management and internal control processes.

Administrative Organization Chart

As of December 31, 2021



List of Professional Consultants

As of December 31, 2021

Actuary

The Segal Company

Investment Consultant

Meketa Investment Group

Private Equity and Private Real Assets Consultant

Aksia TorreyCove Capital Partners LLC

Real Estate Consultant

The Townsend Group, an Aon Company

Independent Auditor

Moss Adams LLP

Investment Counsel

Foley and Lardner, LLP

Foster Garvey PC

K&L Gates LLP

Morgan, Lewis & Bockius LLP

Nossaman LLP

Fiduciary Counsel

Reed Smith, LLP

Tax Counsel

Reed Smith, LLP

Custodian

State Street Bank and Trust Company

Note: Schedule of Commissions, Schedule of Investment Expenses and Investment Summary and List of Investment Managers, can be found in the Investment Section on pages 88, 89, and 91, respectively.

Certificate of Achievement for Excellence in Financial Reporting



Public Pension Standards Award for Funding and Administration



Public Pension Coordinating Council

Public Pension Standards Award For Funding and Administration 2021

Presented to

Orange County Employees Retirement System

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

Presented by the Public Pension Coordinating Council, a confederation of

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

A handwritten signature in cursive script that reads "Alan H. Winkle".

Alan H. Winkle
Program Administrator

FINANCIAL



PAPER LEDGERS



COMPUTERS



ENTERPRISE RESOURCE PLANNING (ERP) SYSTEM

An Enterprise Resource Planning system provides a software application which automates many business processes and provides internal controls within the system. Additionally, the ERP system creates a central database for storing various documents in one place making the information readily available to the user.

OCERS began the implementation of a new cloud-based ERP system in 2021, which went live on January 1, 2022. The cloud-based system was designed based on the current and anticipated future needs of OCERS. The current modules of the ERP system are accounting-based, although other functional modules, such as human resources, are available to be added in the future.

The ERP system is maintained and updated regularly by the service provider. This process is seamless to OCERS as the user.

IN-HOUSE
SOFTWARE



CLOUD
COMPUTING



Independent Auditor's Report



MOSSADAMS

Report of Independent Auditors

The Board of Retirement
Orange County Employees Retirement System
Santa Ana, California

Report on the Audit of the Financial Statements

Opinion

We have audited the accompanying total funds column in the statement of fiduciary net position of Orange County Employees Retirement System (the System) as of December 31, 2021, and the related total funds column in the statement of changes in fiduciary net position for the year then ended, and the related notes to the financial statements.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the financial position of the System as of December 31, 2021, and the changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

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

Responsibilities of Management for the Financial Statements

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

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for 12 months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Independent Auditor's Report

(continued)

Auditor's Responsibilities for the Audit of the Financial Statements

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

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

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

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

2020 Financial Statements

The financial statements of Orange County Employees Retirement System as of and for the year ended December 31, 2020, were audited by other auditors, whose report thereon dated June 4, 2021, expressed an unmodified opinion on the presentation of those financial statements in accordance with accounting principles generally accepted in the United States of America.

Independent Auditor's Report

(continued)

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, the schedule of changes in net pension liability of participating employers, schedule of investment returns, schedule of employer contributions, notes to the required supplementary information and significant factors affecting trends in actuarial information – pension plan (collectively, the required supplementary information) be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

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

Other Information

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

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

Independent Auditor's Report

(continued)

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated June 2, 2022 on our consideration of the Orange County Employees Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

Mess Adams LLP

Irvine, California

June 2, 2022

Management's Discussion and Analysis

The Management's Discussion and Analysis (MD&A) of the Orange County Employees Retirement System (OCERS or System) presents the financial performance and provides a summary of OCERS' financial position and activities as of and for the year ended December 31, 2021. The narrative overview and analysis are presented in conjunction with the Letter of Transmittal, included in Section 1 – Introductory of this Annual Comprehensive Financial Report. The MD&A should be read in conjunction with OCERS' Basic Financial Statements as presented in this report. Amounts in this section have been grouped together to facilitate readability.

OCERS administers the OCERS pension plan—a cost-sharing multiple-employer defined benefit pension plan (the Plan) as well as acts as a trustee and custodian for retirement health benefit plan funds that are sponsored by participating employers. OCERS' financial information is comprised of four fiduciary funds: a defined benefit pension trust fund, two other postemployment benefit (OPEB) trust funds for retiree medical plans and a custodial fund held for the Orange County Transportation Authority (OCTA), a participating employer of OCERS.

Financial Highlights

- The net position restricted for pension, OPEB and employer as of December 31, 2021, totaled \$22.5 billion, an increase of \$3.2 billion or 16.7% from the prior year. The increase is primarily due to positive returns on investments during the year.
- Total additions to fiduciary net position increased 35.1% from \$3.2 billion in 2020 to \$4.3 billion in 2021.
 - Net investment income increased from \$2.2 billion in 2020 to approximately \$3.3 billion in 2021. The net year-to-date rate of return on investments on a fair value basis was approximately 16.6% in 2021 versus 11.4% in 2020.
 - Contributions received from employers and employees totaled \$1.0 billion in 2021, an increase of 4.6% compared to 2020 contributions received of \$983.3 million.
- Total deductions from fiduciary net position increased 7.2% from \$1.0 billion in 2020 to \$1.1 billion in 2021.
 - Member pension benefit payments surpassed \$1.0 billion for the first time in 2021, an increase of 7.2% compared to payments of \$960.8 million in 2020.
 - The number of retired members and beneficiaries receiving a benefit payment increased 2.1% from 19,419 payees at the end of 2020 to 19,826 payees as of December 31, 2021.
 - The average annual benefit paid to retired members and beneficiaries during 2021 was \$51,964, an increase of 5.0% over the average annual benefit payment of \$49,480 in 2020.
- The net pension liability of participating employers as calculated in the December 31, 2021, Governmental Accounting Standards Board (GASB) Statement No.67 Actuarial Valuation used for financial reporting purposes is \$2.1 billion, which as a percentage of covered payroll is 109.62%. The plan fiduciary net position of the pension trust fund of \$21.9 billion as a percentage of the total pension liability of \$24.0 billion is 91.5%.
- Based upon the most recent actuarial funding valuation dated as of December 31, 2020, the funding status for the pension plan, as measured by the ratio of the actuarial value of assets (which smooths market gains and losses over five years) to the actuarial value of accrued liabilities was 76.5% versus 80.7% if market gains and losses were recognized immediately.

Overview of the Financial Statements

The following discussion and analysis serve as an introduction and overview of the OCERS' Basic Financial Statements. The Basic Financial Statements and required disclosures are prepared in accordance with accounting principles and reporting guidelines as set forth by the Governmental Accounting Standards Board (GASB). These pronouncements require OCERS to make certain disclosures and to report using the full accrual method of accounting.

Management's Discussion and Analysis

(continued)

OCERS' Basic Financial Statements are comprised of the following:

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 year-end. The difference between assets and liabilities is reported as "Net Position Restricted for Pension, Other Postemployment Benefits and Employer," representing funds available to pay future benefits to plan participants. The Statement of Fiduciary Net Position includes prior year-end total balances for comparative purposes. Increases and decreases in Net Position Restricted for Pension, Other Postemployment Benefits and Employer, when analyzed over time, may serve as an indicator of whether OCERS' financial position is improving or deteriorating. Other factors, such as market conditions, should also be considered when measuring the overall financial health of the System.

The County of Orange (the County) and Orange County Fire Authority (OCFA) participate in irrevocable postemployment health care plan trusts (retiree medical plans) that are reported as other postemployment benefit trust funds in the Statement of Fiduciary Net Position as separate health care funds. OCERS serves as trustee for these trusts. Assets are commingled with pension trust assets for investment purposes and are used exclusively to pay health allowances. The County and OCFA have financial reporting responsibility of the retiree medical plans, including financial statement disclosures and required supplementary information regarding the retiree medical plans funded status and contributions, in accordance with GASB Statement No. 74, *Financial Reporting for Postemployment Benefits Plans Other than Pension Plans*.

The OCTA has revocable trust assets held by OCERS in an investment capacity that are reported as a separate custodial fund. The purpose of the employer's trust is to provide certain OPEB benefits to eligible retired OCTA members. Assets are not commingled with those of the pension plan and health care plan trusts.

Statement of Changes in Fiduciary Net Position

The Statement of Changes in Fiduciary Net Position provides information about the financial activities during the reporting period that increased and decreased Net Position Restricted for Pension, Other Postemployment Benefits and Employer. The trend of additions versus deductions to the Plan indicates the strength of OCERS' financial position over time. For comparative purposes, prior year-end total balances are also provided.

To distinguish the activities of the health care plan trusts and the employer trust from the pension plan, the health care plan trusts and employer trust are reported separately in the Statement of Changes in Fiduciary Net Position as health care funds and a custodial fund, respectively.

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 provided in the two statements discussed above. The notes include further discussion and details regarding OCERS' key policies, programs, investments and activities that occurred during the year.

Required Supplementary Information

The Required Supplementary Information (RSI) presents historical trend information related to the pension plan reported in the Basic Financial Statements. The pension plan includes a schedule of changes in net pension liability, a schedule of investment returns, a schedule of employer contributions and other required supplementary information as required by GASB Statement No. 67, *Financial Reporting for Pension Plans – an Amendment of GASB Statement No. 25* (GASB 67). The information contained in the schedules is based on the actuarial valuation prepared for the pension plan and includes additional actuarial information that contributes to the understanding of the changes in the net pension liability of participating employers in the pension plan. The actuarial information is based upon assumptions made regarding future events at the time the valuation was performed. Therefore, the amounts presented in the schedules are management's estimates. A summary of factors that affected the trends of the actuarial information is included in this section as well.

Management's Discussion and Analysis

(continued)

Other Supplementary Information

The Other Supplementary Information includes schedules pertaining to contributions by employers and members, OCERS' administrative expenses, investment expenses, and professional services.

Financial Analysis

Tables 1 and 2 compare and summarize OCERS' financial activity for the current and prior years.

Table 1 : Fiduciary Net Position

As of December 31, 2021 and 2020

(Dollars in Thousands)

	12/31/2021	12/31/2020	Increase / (Decrease)	Percentage Change
Assets				
Cash and Cash Equivalents	\$ 369,867	\$ 482,766	\$ (112,899)	-23.4%
Securities Lending Collateral	195,239	239,640	(44,401)	-18.5%
Receivables	113,005	128,148	(15,143)	-11.8%
Investments at Fair Value	22,538,086	19,166,893	3,371,193	17.6%
Capital Assets, Net	11,067	13,713	(2,646)	-19.3%
Total Assets	23,227,264	20,031,160	3,196,104	16.0%
Liabilities				
Obligations Under Securities Lending Program	195,239	239,640	(44,401)	-18.5%
Securities Purchased	123,165	118,326	4,839	4.1%
Other	419,433	398,595	20,838	5.2%
Total Liabilities	737,837	756,561	(18,724)	-2.5%
Net Position Restricted for Pension, Other Postemployment Benefits and Employer	\$ 22,489,427	\$ 19,274,599	\$ 3,214,828	16.7%

As of December 31, 2021, OCERS has a net position of \$22.5 billion restricted for pension, other postemployment benefits and employer. Net position increased \$3.2 billion, an increase of 16.7% over 2020. The increase in net position includes an increase in total assets of \$3.2 billion and a decrease in total liabilities of \$18.7 million.

The increase in total assets is primarily attributed to a \$3.4 billion increase in total investments at fair value, offset by a \$112.9 million decrease in cash and cash equivalents, a \$44.4 million decrease in securities lending collateral, and a \$15.1 million decrease in receivables. The increase in investments at fair value can be attributed to increases in net appreciation of investments at fair value, earnings from interest and dividends and the investment of proceeds received from prepaid employer contributions. The decrease in cash and cash equivalents is due to timing of investing redemptions, distributions, and contributions received near year-end. Securities lending collateral decreased \$44.4 million due to a decrease in lending activity in the securities lending program. Receivables decreased by \$15.1 million, primarily due to investment related receivables and the timing of investments for unsettled trades.

Management's Discussion and Analysis

(continued)

The decrease in total liabilities of \$18.7 million includes a decrease in the obligations under the securities lending program of \$44.4 million, which is directly related to the decrease in securities lending collateral as previously discussed. This decrease was offset by an increase of \$20.8 million in other liabilities, which includes unearned contributions from prepaid employer contributions, foreign currency forward contracts, retiree payroll payables and other miscellaneous liabilities, such as investment manager fees, as well as an increase in the timing of unsettled security purchases of \$4.8 million.

Table 2 : Changes in Fiduciary Net Position

For the Years Ended December 31, 2021 and 2020

(Dollars in Thousands)

	12/31/2021	12/31/2020	Increase / (Decrease)	Percentage Change
Additions				
Employer Pension Contributions	\$ 698,791	\$ 659,807	\$ 38,984	5.9%
Employer Health Care Contributions	57,822	43,535	14,287	32.8%
Employee Pension Contributions	271,334	279,384	(8,050)	-2.9%
Employer OPEB Contributions	605	613	(8)	-1.3%
Net Investment Income	<u>3,298,237</u>	<u>2,220,401</u>	<u>1,077,836</u>	48.5%
Total Additions	4,326,789	3,203,740	1,123,049	35.1%
Deductions				
Participant Benefits - Pension	1,030,234	960,846	69,388	7.2%
Participant Benefits - Health Care	43,261	42,323	938	2.2%
Death Benefits	1,055	932	123	13.2%
Member Withdrawals and Refunds	14,449	11,547	2,902	25.1%
Employer OPEB Payments	1,419	1,383	36	2.6%
Administrative Expenses - Pension	21,473	20,428	1,045	5.1%
Administrative Expenses - Health Care and Employer	<u>70</u>	<u>66</u>	<u>4</u>	6.1%
Total Deductions	<u>1,111,961</u>	<u>1,037,525</u>	<u>74,436</u>	7.2%
Increase in Net Position Restricted for Pension, Other Postemployment Benefits and Employer	3,214,828	2,166,215	1,048,613	48.4%
Net Position Restricted for Pension, Other Postemployment Benefits and Employer				
Beginning of the Year	<u>19,274,599</u>	<u>17,108,384</u>		
End of the Year	<u>\$ 22,489,427</u>	<u>\$ 19,274,599</u>		

Management's Discussion and Analysis

(continued)

Additions to Fiduciary Net Position

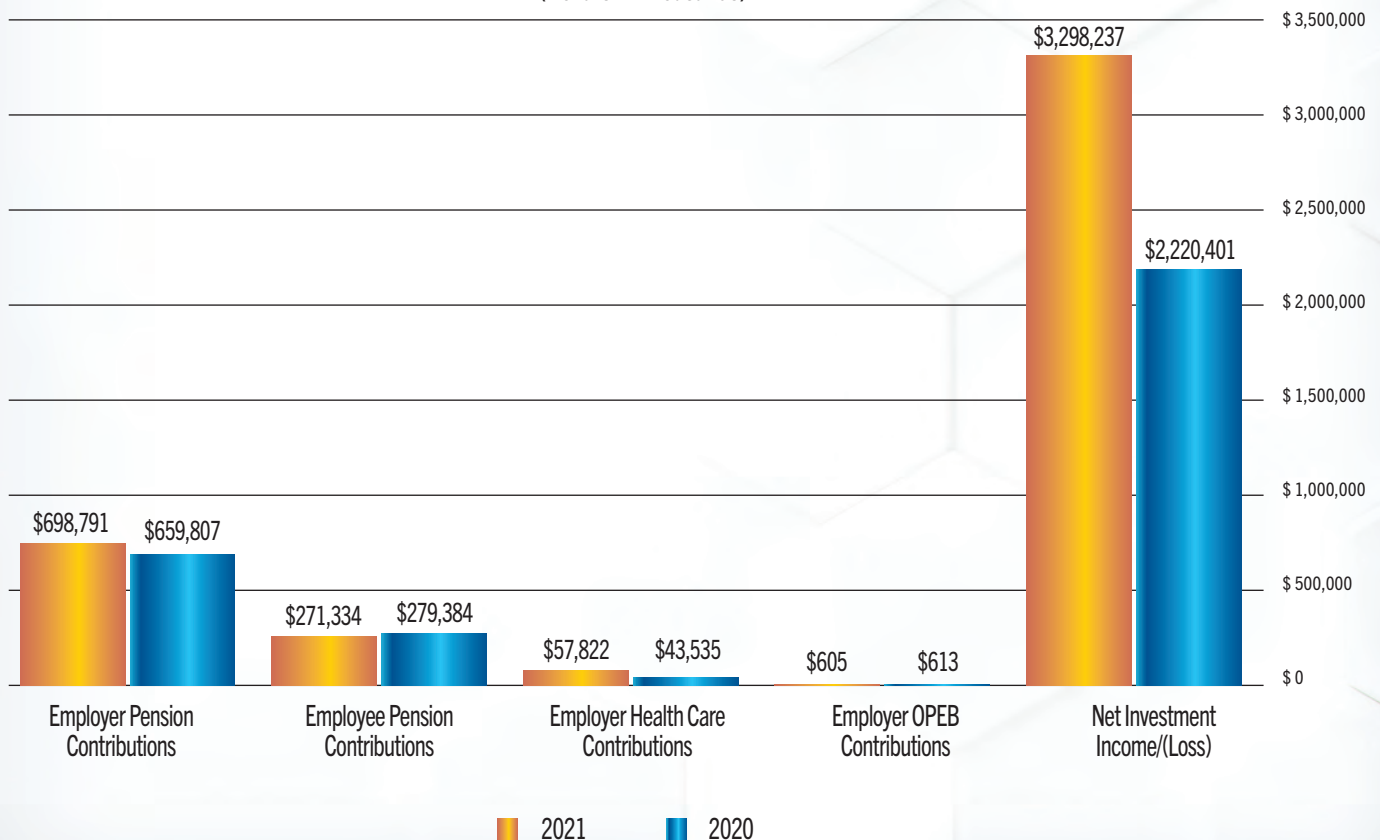
The primary funding sources of pension benefits are the collection of participating employer and member contributions and earnings on investments, net of investment expenses. Total additions for the year ended December 31, 2021 were \$4.3 billion compared to \$3.2 billion for the year ended December 31, 2020; the total increase of 35.1%, or \$1.1 billion, is comprised of an increase in investment income of \$1.1 billion and a net increase in total contributions of \$45.2 million.

Overall net investment returns for the year ended December 31, 2021 were 16.6% compared to 11.4% in 2020. As the world started to recover from the COVID-19 pandemic, many investment categories reported higher year-to-date returns in 2021 compared to 2020: private equities saw a year-to-date return of 50.2% as of December 2021 versus a year-to-date return of 16.2% in December 2020; real assets saw a year-to-date return of 19.1% for December 2021 versus a year-to-date loss of -6% in December 2020; and global public equities, although down from the prior year return of 19.1%, performed strongly in 2021 with a net return of 17.8%.

Total contributions increased \$45.2 million over the prior year mainly due to employer contributions which increased \$53.3 million over the prior year. This increase was offset by decreases of \$8.1 million in employee contributions to the pension plan. The decrease in employee contributions can be attributed to a decrease of nearly 4% of County of Orange's active employees due to the Voluntary Incentive Program Separation and Retirement Incentives Program offered by the County to eligible employees in the fall of 2020 to manage revenue reductions that occurred because of the COVID-19 pandemic. Although the County started rehiring for these vacancies towards the end of 2021, due to the timing of the voluntary incentive program and the subsequent rehiring of these positions, the average number of employees remained lower than the previous year, resulting in lower contributions. In addition, the decrease in employee contributions can also be attributed to the reduction and/or gradual phase-out of employee reverse pick-up rates for various OCEA represented employees, which were offset by an increase to employer contributions. Increases to employer contributions can also be attributed to an increase in employer contribution rates. Employer health care contributions increased due to more employer contributions received in the County health care fund.

Additions to Fiduciary Net Position

(Dollars in Thousands)



Management's Discussion and Analysis

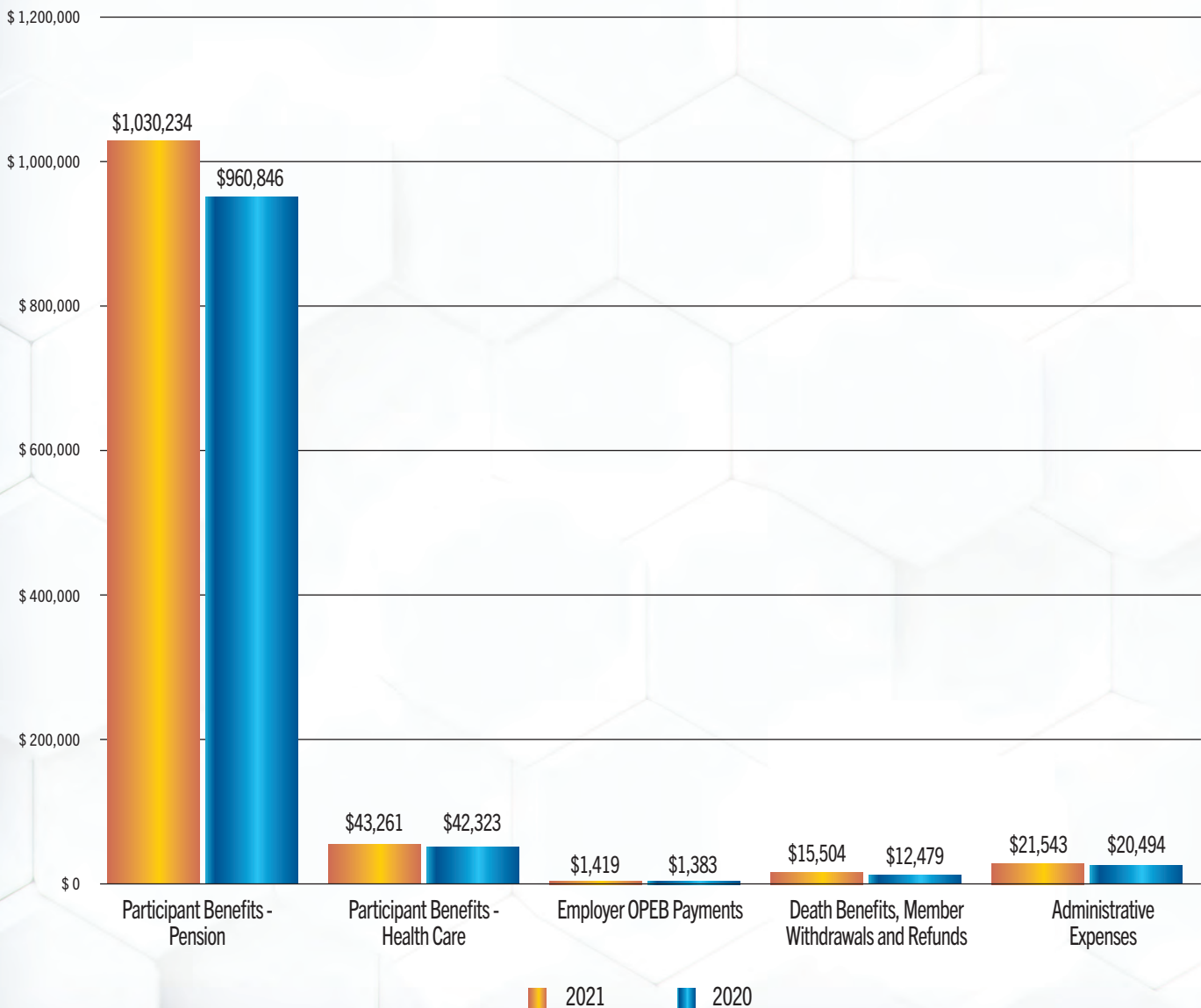
(continued)

Deductions from Fiduciary Net Position

Expenses incurred by OCERS include payments of benefits to members and their beneficiaries, refunds of contributions to terminated members and the costs of administering the plan. Deductions from fiduciary net position increased \$74.4 million or 7.2% compared to the prior year, primarily due to the continued and anticipated growth in member pension benefit payments, both in the total number of OCERS' retired members receiving a pension benefit and the average benefit received. Participant benefit payments for pension and health care have increased by \$69.4 million and \$0.9 million, respectively. Total benefit recipients increased by 407, from 19,419 to 19,826. The average annual pension benefit increased from \$49,480 to \$51,964 and total member pension benefit payments surpassed \$1.0 billion for the first time in 2021.

Deductions from Fiduciary Net Position

(Dollars in Thousands)



Management's Discussion and Analysis

(continued)

OCERS Membership

The table below provides comparative OCERS' membership data for the last two years.

Table 3: Membership Data

As of December 31, 2021 and 2020

	12/31/2021	12/31/2020	Increase/ (Decrease)	Percentage Change
Active Members	22,011	21,559	452	2.1%
Retired Members	19,826	19,419	407	2.1%
Deferred Members	7,238	6,818	420	6.2%
Total Membership	49,075	47,796	1,279	2.7%

Total OCERS' membership increased during 2021 by 1,279 members. The number of active members increased by 452 or 2.1% and the number of retirees increased by 407 or 2.1%, suggesting that during 2021 employers hired employees at a higher rate than members who left their employment for retirement or other opportunities. This can also be attributed to the County of Orange starting to fill positions towards the end of 2021 that were vacated due to the voluntary separation and retirement incentive program offered in the fall of 2020; over 500 active employees accepted the offer to separate or retire and the vacated positions were to be eliminated for at least one year. Although there were more active members as of December 31, 2021 compared to the prior year, the average number of active members was higher in 2020 compared to 2021 due to the timing of the voluntary incentive program and the subsequent rehiring of these positions.

Actuarial Valuations

To determine whether Net Position Restricted for Pension Benefits will be sufficient to meet future obligations, a calculation of the actuarial funded status is required. An actuarial valuation includes an appraisal of both the assets available to pay future benefits and the liabilities of the System, which represent the actuarial present value of all future benefits expected to be paid for each member. The purpose of the valuation is to determine the amount of future contributions by the employees and employers, which will be required to pay all expected future benefits. OCERS utilizes an independent actuarial firm, The Segal Company (Segal), to prepare an annual valuation. The most recent Annual Actuarial Valuation as of December 31, 2020 is included in the Actuarial Section of this report and contains a detailed discussion of the funding requirements. This valuation is used for funding purposes and establishing employer and employee contribution rates. Segal also prepared a Governmental Accounting Standards Board (GASB) Statement No.67 Actuarial Valuation as of December 31, 2021, used for financial reporting purposes.

To prepare the valuations, the actuary must use several assumptions with regards to OCERS' members such as their life expectancy, projected salary increases over time, and the age at which members will retire. The actuary must also utilize assumptions with regards to how the assets will perform over time. All assumptions used by the actuary are reviewed and adjusted, as required, on a triennial basis and adopted by the Board of Retirement. The most recent triennial study was adopted by the Board on August 17, 2020, for the three-year experience period ended December 31, 2019. As a result, the following assumptions were changed as of the December 31, 2020 valuation: inflation lowered from 2.75% to 2.50 (retiree cost-of-living assumption maintained at 2.75%); active member payroll increases lowered from 3.25% to 3.00%; and projected salary increases for general members lowered from a range of 4.25% to 12.25% to a range of 4.00% to 11.00% and for safety members, the range was changed from 4.75% to 17.25% to 4.60% to 15.00%. In addition, mortality rates apply Pub-2010 Benefit-Weighted mortality tables as a starting point ("base table"), projected generationally using the two-dimensional Scale MP-2019, with adjustments to reflect mortality trends specific to OCERS.

Management's Discussion and Analysis

(continued)

The GASB 67 valuation provides the calculation of the employers' pension liability. To accommodate the annual reporting requirements of our employers in a timely manner, the valuation was prepared using the December 31, 2020 valuation as the basis for calculating the total pension liability (TPL) and rolled forward to December 31, 2021. Based on this actuarial valuation, the TPL was \$24.0 billion compared to a fiduciary net position of \$21.9 billion, resulting in the employers' net pension liability (NPL) of \$2.1 billion and a fiduciary net position as a percentage of the TPL of 91.5%. The NPL as a percentage of covered payroll was 109.6%.

In the actuarial funding valuation for the pension plan as of December 31, 2020, the funding ratio of the valuation value of assets to actuarial accrued liabilities was 76.5%. The calculation of funding status takes into account OCERS' policy to smooth the impact of market volatility by spreading each year's gains or losses over five years. Using the market value of assets as of the valuation date, the funded status of OCERS' pension plan was 80.7% in 2020.

Investment Summary

The OCERS' portfolio returned 16.6% net of fees for calendar year 2021, significantly outpacing OCERS' actuarial assumed rate of return of 7.0%. OCERS' 2021 calendar year return ranked in the 32nd percentile (1st percentile being the best) versus peers (peer rankings are based on defined benefit public funds with over \$1 billion in assets). The OCERS' portfolio ended 2021 with a market value of \$22.5 billion, up from \$19.2 billion at the end of 2020. Over the trailing three, five, and ten years, OCERS has returned 14.1%, 10.8%, and 9.0% annualized net of fees, respectively. OCERS' 2021 portfolio return of 16.6% did lag the total plan benchmark of 17.1%, but the OCERS' portfolio has outperformed the total plan benchmark over three and five years.

As the world continued dealing with the COVID-19 pandemic throughout 2021, it was a positive year for risk assets as more and more vaccines were being distributed and global fiscal and monetary stimulus continued to aid economic growth. Global public equities in the OCERS' portfolio earned 17.8% for the year. U.S. equities outperformed non-U.S. equities in 2021. OCERS' U.S. equity portfolio returned 24.8% while non-U.S. developed market equities gained 10.4%. Large-cap stocks outperformed small-cap stocks in the U.S. OCERS' large-cap equities gained 26.3% during the year while the small-cap portfolio earned 11.8%. Emerging market equities gained 7.0% for the year, but lagged developed markets as China's economic growth experienced a slowdown.

Within fixed income markets, investment grade bonds were challenged during the year as the U.S. 10-year Treasury yield rose from 0.92% to 1.51%. OCERS' fixed income portfolio did produce a slightly positive return of 0.3% thanks to a 4.8% gain from its Treasury-Inflation Protected Securities (TIPS) portfolio. TIPS performed better than investment grade bonds in the higher inflationary environment.

It is customary to report private market performance on a quarterly lag. Therefore, OCERS' year-end performance will reflect returns as of the end of the third quarter for many private equity, private credit, and private real assets managers. OCERS' private equity portfolio did have the best performance in the portfolio, returning an impressive 50.2% during the year. OCERS' real estate portfolio gained 20.3% for the year with the industrial and multifamily sectors leading the way. After a very difficult 2020 due to a collapse in global demand during COVID, OCERS' energy portfolio rebounded in 2021 as global demand recovered. OCERS' energy portfolio returned 30.5% for the year.

Request for Financial Information

This Annual Comprehensive Financial Report is designed to provide the Board of Retirement, plan members, participating employers, taxpayers, investment managers and other interested parties with a general overview of OCERS' financial condition and to demonstrate OCERS' accountability for the funds under its stewardship.

Please address any questions about this report or requests for additional information to:

Orange County Employees Retirement System
P.O. Box 1229
Santa Ana, CA 92702

SECTION

2

FINANCIAL

BASIC FINANCIAL STATEMENTS



OFFICE

MOBILE DEVICES



WORKFORCE

The way in which we work continues to change. The idea that all team members need to be in the office to work together and connect is becoming the way of the past. Over 40 years ago, when car phones became available, team leaders could continue to connect with their teams when in route to or from a work location.

Fast forward 30 years, smart phones and other mobile devices allow employees to work from home or almost anywhere with an internet connection. The pandemic forced a live test of working from home. New tools and technology were created and provided to make working from home more efficient. Through 2021, the majority of the workforce continued to primarily work from home due to the continued pandemic. As the pandemic fades, the return to the office will be a hybrid schedule. Will this be the way of the workforce in the future?

WORK FROM HOME



HYBRID WORK FORCE
WORK FROM ANYWHERE

Statement of Fiduciary Net Position

As of December 31, 2021
(with summarized comparative amounts as of December 31, 2020)
(Dollars in Thousands)

	Pension Trust Fund	Health Care Fund-County	Health Care Fund-OCFA	Custodial Fund - OCTA	Total Funds	Comparative Totals 2020
Assets						
Cash and Short-Term Investments						
Cash and Cash Equivalents	\$ 360,440	\$ 7,956	\$ 977	\$ 494	\$ 369,867	\$ 482,766
Securities Lending Collateral	190,517	4,205	517	-	195,239	239,640
Total Cash and Short-Term Investments	550,957	12,161	1,494	494	565,106	722,406
Receivables						
Investment Income	14,570	322	40	-	14,932	19,813
Securities Sales	63,610	1,404	172	-	65,186	89,992
Contributions	25,981	-	-	-	25,981	13,354
Foreign Currency Forward Contracts	-	-	-	-	-	555
Other Receivables	6,739	149	18	-	6,906	4,434
Total Receivables	110,900	1,875	230	-	113,005	128,148
Investments at Fair Value						
Global Public Equity	10,435,722	230,050	28,264	14,932	10,708,968	8,982,043
Private Equity	3,288,265	72,488	8,906	-	3,369,659	2,353,755
Core Fixed Income	2,359,869	52,022	6,392	6,031	2,424,314	2,381,374
Credit	1,619,521	35,702	4,386	-	1,659,609	1,545,445
Real Assets	2,260,297	49,827	6,122	-	2,316,246	2,065,857
Risk Mitigation	1,934,502	42,645	5,239	-	1,982,386	1,782,656
Absolute Return	-	-	-	-	-	480
Unique Strategies	75,047	1,654	203	-	76,904	55,283
Total Investments at Fair Value	21,973,223	484,388	59,512	20,963	22,538,086	19,166,893
Capital Assets, Net	11,067	-	-	-	11,067	13,713
Total Assets	22,646,147	498,424	61,236	21,457	23,227,264	20,031,160
Liabilities						
Obligations Under Securities Lending Program	190,517	4,205	517	-	195,239	239,640
Securities Purchased	120,186	2,653	326	-	123,165	118,326
Unearned Contributions	304,504	-	-	-	304,504	293,948
Foreign Currency Forward Contracts	920	20	2	-	942	371
Retiree Payroll Payable	85,356	4,718	874	-	90,948	86,428
Other	22,482	496	61	-	23,039	17,848
Total Liabilities	723,965	12,092	1,780	-	737,837	756,561
Net Position Restricted for Pension, Other Postemployment Benefits and Employer	\$21,922,182	\$ 486,332	\$ 59,456	\$ 21,457	\$22,489,427	\$19,274,599

The accompanying notes are an integral part of these financial statements.

Statement of Changes in Fiduciary Net Position

For the Year Ended December 31, 2021
 (with summarized comparative amounts for the Year Ended December 31, 2020)
 (Dollars in Thousands)

	Pension Trust Fund	Health Care Fund- County	Health Care Fund- OCFA	Custodial Fund - OCTA	Total Funds	Comparative Totals 2020
Additions						
Contributions						
Employer	\$ 698,791	\$ 41,049	\$ 16,773	\$ -	\$ 756,613	\$ 703,342
Employee	271,334	-	-	-	271,334	279,384
Employer OPEB Contributions	-	-	-	605	605	613
Total Contributions	970,125	41,049	16,773	605	1,028,552	983,339
Investment Income						
Net Appreciation in Fair Value of Investments	2,993,615	61,673	6,130	2,051	3,063,469	2,089,332
Dividends, Interest, & Other Investment Income	356,056	7,849	964	667	365,536	238,581
Securities Lending Income						
Gross Earnings	1,160	26	3	-	1,189	1,770
Less: Borrower Rebates and Bank Charges	(227)	(5)	(1)	-	(233)	(904)
Net Securities Lending Income	933	21	2	-	956	866
Total Investment Income	3,350,604	69,543	7,096	2,718	3,429,961	2,328,779
Investment Fees and Expenses	(128,539)	(2,834)	(348)	(3)	(131,724)	(108,378)
Net Investment Income	3,222,065	66,709	6,748	2,715	3,298,237	2,220,401
Total Additions	4,192,190	107,758	23,521	3,320	4,326,789	3,203,740
Deductions						
Participant Benefits	1,030,234	37,262	5,999	-	1,073,495	1,003,169
Death Benefits	1,055	-	-	-	1,055	932
Member Withdrawals and Refunds	14,449	-	-	-	14,449	11,547
Employer OPEB Payments	-	-	-	1,419	1,419	1,383
Administrative Expenses	21,473	23	24	23	21,543	20,494
Total Deductions	1,067,211	37,285	6,023	1,442	1,111,961	1,037,525
Net Increase	3,124,979	70,473	17,498	1,878	3,214,828	2,166,215
Net Position Restricted For Pension, Other Postemployment Benefits and Employer, Beginning of Year	18,797,203	415,859	41,958	19,579	19,274,599	17,108,384
Ending Net Position Restricted For Pension, Other Postemployment Benefits and Employer	\$ 21,922,182	\$ 486,332	\$ 59,456	\$ 21,457	\$ 22,489,427	\$ 19,274,599

The accompanying notes are an integral part of these financial statements.

Notes to the Basic Financial Statements

NOTE 1 : Plan Descriptions

The Orange County Employees Retirement System (OCERS or System) was established in 1945 under the provisions of the County Employees Retirement Law of 1937 (CERL). OCERS is governed by a ten-member Board of Retirement, nine voting members and one alternate member. Board membership consists of four members appointed by the County of Orange Board of Supervisors, five members elected by the members of the System, including an alternate, two by the general members, one by the safety members, and one by the retired members. Safety members elect the alternate member. The County of Orange Treasurer Tax-Collector, elected by the voters registered in the County, serves as an Ex-Officio member.

OCERS operates as a cost-sharing multiple-employer defined benefit pension plan for the County of Orange, Orange County Superior Court of California, City of San Juan Capistrano, and ten special districts: Orange County Cemetery District, Children and Families Commission of Orange County, Orange County Employees Retirement System, Orange County Fire Authority, Orange County In-Home Supportive Services Public Authority, Orange County Local Agency Formation Commission (LAFCO), Orange County Public Law Library, Orange County Sanitation District, Orange County Transportation Authority and Transportation Corridor Agencies. Capistrano Beach Sanitary District, Cypress Recreation & Parks District, Orange County Mosquito and Vector Control District, City of Rancho Santa Margarita, the Orange County Department of Education and the University of California, Irvine Medical Center and Campus are no longer active employers, but retired members and their beneficiaries, as well as deferred members, remain in the System. OCERS is legally and fiscally independent of the County of Orange.

Pension Plan Membership

OCERS provides retirement, disability and death benefits to general and safety members. Safety membership includes those members serving in active law enforcement, fire suppression and as probation officers. General membership applies to all other occupations. Plan retirement benefits are tiered based upon date of OCERS membership. Tier I members were hired prior to September 21, 1979 and use their highest one-year average salary to determine their retirement allowance while Tier II members were hired on or after September 21, 1979 and use their highest three-year average salary to determine their retirement allowance. All Public Employees' Pension Reform Act (PEPRA) members hired on or after January 1, 2013 are Tier II and use their highest three-year average salary to determine their retirement allowance. Member rate groups are determined by employer, bargaining unit, and benefit plan (a description of the benefit plans can be found under Member Retirement Benefits). The benefit plan represents the benefit formula and tier that will be used in calculating a retirement benefit. All regular employees scheduled to work 20 hours or more per week become members of the plan upon commencing employment with one of OCERS' employers, with the exception of a provision adopted in 2014 that allows new members over the age of 60 to opt out of the plan if their employer has implemented the provision. Active members are categorized as vested in the following table upon accumulating five years of accredited service or attaining the age of 70. Additional information regarding the pension plan's benefit structure is included in the Summary Plan Description that is available on the web at <https://www.ocers.org/summary-plan-description>.

The following table is a summary of OCERS' general and safety membership as of December 31, 2021, consisting of active members, retired members or their beneficiaries, and deferred members who have terminated, but are not yet receiving benefits (further information regarding benefit eligibility for deferred members is described under the Deferred Members Benefits section):

Notes to the Basic Financial Statements

NOTE 1 : Plan Descriptions (continued)

OCERS Membership - General Members

As of December 31, 2021

Rate Group	Benefit Plan	Tier	Active Vested	Active Non-Vested	Retired Members & Beneficiaries	Deferred Members	Total
1	A	I	-	-	311	1	312
1	B	II	569	1	503	281	1,354
1	J	II	-	1	-	-	1
1	T	II-PEPRA Compliant	1	11	-	-	12
1	U	II-PEPRA	354	755	7	371	1,487
Rate Group 1 Total			924	768	821	653	3,166
2	A	I	-	-	2,623	8	2,631
2	B	II	-	-	1,879	593	2,472
2	I	I	14	-	1,130	-	1,144
2	J	II	7,575	98	7,113	2,322	17,108
2	P	II	163	6	12	93	274
2	S	II	12	1	2	8	23
2	T	II-PEPRA Compliant	2,062	3,813	10	1,770	7,655
2	U	II-PEPRA	107	227	3	77	414
2	W	II-PEPRA Alternative	1	-	-	-	1
Rate Group 2 Total			9,934	4,145	12,772	4,871	31,722
3	A	I	-	-	75	1	76
3	B	II	45	10	65	41	161
3	G	I	-	-	30	-	30
3	H	II	266	-	390	51	707
3	U	II-PEPRA	97	202	4	42	345
Rate Group 3 Total			408	212	564	135	1,319
4	H	II	-	-	1	-	1
Rate Group 4 Total			-	-	1	-	1
5	A	I	1	-	360	2	363
5	B	II	824	16	1,152	509	2,501
5	U	II-PEPRA	72	402	4	189	667
Rate Group 5 Total			897	418	1,516	700	3,531
9	A	I	-	-	4	-	4
9	B	II	-	-	10	12	22
9	N	II	23	1	44	41	109
9	U	II-PEPRA	13	24	1	20	58
Rate Group 9 Total			36	25	59	73	193
10	A	I	-	-	7	-	7
10	B	II	-	-	40	7	47
10	I	I	-	-	16	-	16
10	J	II	97	-	155	85	337
10	N	II	22	20	2	21	65
10	U	II-PEPRA	52	131	2	127	312
Rate Group 10 Total			171	151	222	240	784
11	A	I	-	-	3	-	3
11	B	II	-	-	3	-	3
11	N	II	14	-	6	3	23
11	U	II-PEPRA	4	7	-	2	13
Rate Group 11 Total			18	7	12	5	42
12	A	I	-	-	2	-	2
12	B	II	-	-	3	1	4
12	H	II	11	-	8	2	21
12	U	II-PEPRA	1	2	-	-	3
Rate Group 12 Total			12	2	13	3	30
Total General Members			12,400	5,728	15,980	6,680	40,788

Notes to the Basic Financial Statements

NOTE 1 : Plan Descriptions (continued)

OCERS Membership - Safety Members

As of December 31, 2021

Rate Group	Benefit Plan	Tier	Active Vested	Active Non-Vested	Retired Members & Beneficiaries	Deferred Members	Total
6	C	I	-	-	87	-	87
6	D	II	-	-	44	34	78
6	E	I	-	-	45	-	45
6	F	II	568	2	355	171	1,096
6	V	II-PEPRA	17	75	-	15	107
Rate Group 6 Total			585	77	531	220	1,413
7	C	I	-	-	442	-	442
7	D	II	-	-	278	34	312
7	E	I	-	-	279	-	279
7	F	II	832	-	1,437	91	2,360
7	R	II	369	26	9	39	443
7	V	II-PEPRA	303	505	12	58	878
Rate Group 7 Total			1,504	531	2,457	222	4,714
8	C	I	-	-	27	-	27
8	D	II	-	-	69	4	73
8	E	I	-	-	16	-	16
8	F	II	592	1	741	44	1,378
8	R	II	65	103	2	8	178
8	V	II-PEPRA	115	310	3	60	488
Rate Group 8 Total			772	414	858	116	2,160
Total Safety Members			2,861	1,022	3,846	558	8,287
Grand Total			<u>15,261</u>	<u>6,750</u>	<u>19,826</u>	<u>7,238</u>	<u>49,075</u>

Member Retirement Benefits

Members are entitled to receive a retirement allowance with ten or more years of service credit beginning at age 50 (5 years of service and age 52 for General PEPRA plans and 5 years of service and age 50 for Safety PEPRA, for all plans except those identified as PEPRA compliant and PEPRA alternative), at any age with thirty years of service credit (twenty years of service credit for safety members), or if a part-time employee at age 55 or older with five or more years of service credit and at least ten years of active employment with a sponsoring agency covered by OCERS. Members attaining age 70 are eligible to retire regardless of credited service. Benefits received are determined by plan formula, age, years of service and final average salary (see Section 2, Notes to the Required Supplementary Information, for any changes in benefit terms). Member rate groups and benefit plans as of December 31, 2021, are as follows:

Notes to the Basic Financial Statements

NOTE 1 : Plan Descriptions (continued)

Rate Groups and Benefit Plans

As of December 31, 2021

Rate Group	Plan Type	Benefit Plan	Benefit Formula per Year of Service	Sponsoring Agencies
#1	General	A	2.0% @ 57	County of Orange and OC In-Home Supportive Services Public Authority (OC Department of Education, UCI Medical Center and Campus, Capistrano Beach Sanitary District, Cypress Recreation & Parks District, and OC Mosquito and Vector Control District are no longer active employers)
		B	1.67% @ 57.5	
		J	2.7% @ 55	
		T	1.62% @ 65 PEPPRA Compliant	
		U	2.5% @ 67 PEPPRA	
#2	General	A	2.0% @ 57	County of Orange; City of San Juan Capistrano; Orange County LAFCO; OCERS; Orange County Superior Court of California; and Children and Families Commission of Orange County
		B	1.67% @ 57.5	
		I	2.7% @ 55	
		J	2.7% @ 55	
		P	1.62% @ 65	
		S	2.0% @ 57	
		T	1.62% @ 65 PEPPRA Compliant	
		U	2.5% @ 67 PEPPRA	
#3	General	A	2.0% @ 57	OC Sanitation District
		B	1.67% @ 57.5	
		G	2.5% @ 55	
		H	2.5% @ 55	
		U	2.5% @ 67 PEPPRA	
#4	General	H	2.5% @ 55	City of Rancho Santa Margarita (no longer an active employer)
#5	General	A	2.0% @ 57	OC Transportation Authority
		B	1.67% @ 57.5	
		U	2.5% @ 67 PEPPRA	
#6	Safety	C	2.0% @ 50	County of Orange (Probation)
		D	2.0% @ 50	
		E	3.0% @ 50	
		F	3.0% @ 50	
		V	2.7% @ 57 PEPPRA	
#7	Safety	C	2.0% @ 50	County of Orange (Law Enforcement)
		D	2.0% @ 50	
		E	3.0% @ 50	
		F	3.0% @ 50	
		R	3.0% @ 55	
		V	2.7% @ 57 PEPPRA	
#8	Safety	C	2.0% @ 50	OC Fire Authority
		D	2.0% @ 50	
		E	3.0% @ 50	
		F	3.0% @ 50	
		R	3.0% @ 55	
		V	2.7% @ 57 PEPPRA	

Notes to the Basic Financial Statements

NOTE 1 : Plan Descriptions (continued)

Rate Groups and Benefit Plans (continued)

As of December 31, 2021

Rate Group	Plan Type	Benefit Plan	Benefit Formula per Year of Service	Sponsoring Agencies
#9	General	A	2.0% @ 57	Transportation Corridor Agencies
		B	1.67% @ 57.5	
		N	2.0% @ 55	
		U	2.5% @ 67 PEPRA	
#10	General	A	2.0% @ 57	OC Fire Authority
		B	1.67% @ 57.5	
		I	2.7% @ 55	
		J	2.7% @ 55	
		N	2.0% @ 55	
		U	2.5% @ 67 PEPRA	
#11	General	A	2.0% @ 57	OC Cemetery District
		B	1.67% @ 57.5	
		N	2.0% @ 55	
		U	2.5% @ 67 PEPRA	
#12	General	A	2.0% @ 57	OC Law Library
		B	1.67% @ 57.5	
		H	2.5% @ 55	
		U	2.5% @ 67 PEPRA	

Public Employees' Pension Reform Act (PEPRA)

During 2012, the Public Employees Pension Reform Act (PEPRA) was signed into law, resulting in the creation of three new benefit formulas for employees entering OCERS on or after January 1, 2013: 1.62% @ 65 PEPRA - General; 2.5% @ 67 PEPRA - General; and 2.7% @ 57 PEPRA – Safety. New plan provisions include a cap on pensionable compensation at 120% of the social security taxable wage base limit, three year final average salary, and new cost-sharing requirements by members to pay at least 50% of the total normal cost of the plan.

Deferred Member Benefits

If a member terminates employment with a participating employer, the member is entitled to withdraw the employee contributions made, together with accumulated interest, unless the member enters a reciprocal retirement system within 180 days and leaves their accumulated contributions on deposit with OCERS and receives a deferred retirement allowance when eligible. There are different deferred retirement eligibility requirements for members with less than five years of service when terminating and leaving funds on deposit. It is possible for these members to earn a deferred retirement allowance upon attaining the age of 70, or upon accumulating reciprocal service. Members who terminate employment with a participating employer, and defer with five or more years of service may become eligible for a service retirement allowance when they would have accrued ten years of service and attain the age of 50 or greater (5 years of service and age 52 for PEPRA).

Notes to the Basic Financial Statements

NOTE 1 : Plan Descriptions (continued)

Disability Benefits

Members found by the Board of Retirement to be permanently incapacitated from the performance of their job are eligible for disability retirement benefits. A disability retirement benefit may either be service-connected or non-service-connected. Members applying for non-service-connected disability must have five or more years of eligible service credit. There are no service credit requirements for members applying for service-connected disability benefits, but the disabling condition must be a result of injury or disease arising out of or in the course of the member's employment.

Death Benefits

Death benefits are payable to eligible beneficiaries of OCERS members. Eligible beneficiaries of retired members may receive a percentage of a deceased member's retirement allowance based upon the retirement option selected by the member at the time of retirement. The beneficiary of a retired member will also receive a \$1,000 burial benefit.

Survivor benefits for members who die prior to retirement are dependent upon a number of factors including whether or not the member was eligible for a service retirement or disability retirement at the time of death, and whether the death was job related. The eligible beneficiary of a member who is not eligible for service retirement or disability retirement is eligible to receive the member's accumulated contributions plus one month's salary for each year of creditable service, subject to a maximum of six month's salary. The eligible beneficiary of a member who is entitled to receive a service retirement or disability retirement, in lieu of the benefit described above, may elect to receive a monthly retirement allowance equal to 60% of the monthly allowance the member would have received for a non-service connected disability as of the day after the date of death, or a monthly allowance equal to the higher of 50% of the member's monthly compensation and service retirement allowance if the death was found to be service-connected.

Survivor benefits for deferred members (with no reciprocity) consist of a refund to eligible beneficiaries of all contributions and interest accumulated by the member as of the date of death.

Cost-of-Living Adjustments

Retired member monthly allowances will be adjusted annually in accordance with changes in the cost-of-living, as determined by the average annual change in the Consumer Price Index (CPI) for the Los Angeles-Long Beach-Anaheim area for the prior calendar year. The cost-of-living adjustment is limited to a maximum increase or decrease of three percent per year as established by the Board of Retirement. The 2021 cost-of-living adjustment was 1.5%.

STAR COLA

Retired members and eligible beneficiaries who have lost more than 20% of their original retirement benefit's purchasing power due to inflation are eligible to receive the STAR COLA (Supplemental Targeted Adjustment for Retirees Cost-of-Living Adjustment). STAR COLA benefits are reviewed annually by the Board of Retirement and as of December 31, 2021, the Board has determined that presently only those members that retired on or before April 1, 1980 are eligible to receive the STAR COLA benefit.

Postemployment Health Care Plans

OCERS serves as trustee for the County of Orange (County) and Orange County Fire Authority (OCFA) postemployment health care plan trusts established under Internal Revenue Code section 401(h), which are reported as other postemployment benefit trust funds in OCERS basic financial statements. Health care assets for the 401(h) trusts are commingled with pension trust assets for investment purposes and are used exclusively to pay health allowances to eligible retired members of the County of Orange and participating special districts including OCERS and the OCFA.

Notes to the Basic Financial Statements

NOTE 1 : Plan Descriptions (continued)

In July 2007, the County of Orange established under Internal Revenue Code both a 115 trust and a 401(h) trust as funding sources of retiree health care benefits, including grants, for the County of Orange Retiree Medical Plan (the “Plan”). The County maintains control and custody of all the 115 trust assets, which acts as a conduit for collecting contributions and passing them through to the 401(h) trust at their discretion, as well as distributing lump sum health care grant payments as part of a termination program that is being phased-out. OCERS maintains custody of the assets in the 401(h) trust and pays all primary benefits of the Plan as directed by the County. The County has evaluated the structure of its plan and related roles and responsibilities and has determined that the County is the plan administrator. Therefore, the County has taken financial reporting responsibility of the plan including financial statement disclosures and required supplementary information regarding the plan’s funded status and contributions, in accordance with Governmental Accounting Standards Board (GASB) Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other than Pension Plans* (GASB 74). A publicly available financial report can be obtained from the County of Orange at 12 Civic Center Plaza, Santa Ana, California 92702 or their website at <http://ac.ocgov.com>.

As trustee of OCFA’s 401(h) Other Postemployment Benefit (OPEB) trust fund, the sole source of funding for OCFA’s postemployment health care plan, OCFA has evaluated the structure of its plan and related roles and responsibilities and has determined that OCFA is the plan administrator. Therefore, OCFA has taken financial reporting responsibility of the Plan including financial statement disclosures and required supplementary information regarding the plan’s funded status and contributions, in accordance with GASB 74. A publicly available financial report can be obtained from the Orange County Fire Authority at 1 Fire Authority, Irvine, California 92602 or their website at <http://ocfa.org>.

Assets are allocated on the Statement of Fiduciary Net Position between the pension plan and the two 401(h) health care trusts based upon pro-rata shares of the net position after balances and transactions specific to the respective trusts are assigned. Contributions and benefit payment information for the pension plan and individual health care trusts are readily identified; however, investment income must be allocated and is based upon the individual health care trusts’ pro-rata share of total fund assets.

Custodial Fund

In addition to serving as Trustee for the two 401(h) health care trusts, OCERS also provides investment advisory services to the Orange County Transportation Authority (OCTA) health care plan established in accordance with Internal Revenue Code section 115 (115 Plan). Investments in the 115 Plan are not commingled with those of the pension plan and 401(h) plan trusts, but rather are invested in separately managed index funds. OCTA’s 115 Plan assets held by OCERS in an investment capacity are reported as a Custodial Fund. Additional information regarding the OCTA 115 Plan is available by contacting OCTA at 550 S. Main Street, Orange, California 92868 or their website at <http://www.octa.net>.

NOTE 2 : Summary of Significant Accounting Policies

Basis of Accounting

The accompanying financial statements have been prepared on the accrual basis of accounting and in accordance with accounting principles generally accepted in the United States of America (GAAP). Employee and employer contributions are recognized in the period in which contributions are due pursuant to legal requirements, and benefits and refunds are recognized when currently due and payable in accordance with plan terms. Unearned contributions represent prepaid employer contributions that will be recognized as an addition to plan net position in future periods. Investment income is recognized as revenue when earned. The net appreciation/(depreciation) in the fair value of investments is recorded as an increase/(decrease) to investment income based upon investment valuations, which includes both realized and unrealized gains and losses on investments.

Notes to the Basic Financial Statements

NOTE 2 : Summary of Significant Accounting Policies (continued)

Investment Policy and Valuation

State Street Bank and Trust (State Street) maintains custody of the majority of OCERS' investments held as of December 31, 2021. The acquisition of investments is authorized by state statute and OCERS' Investment Policy Statement (refer to Note 3: Investments for further information). Investments are reported at fair value on a trade-date basis. The allocation of investment assets is approved by OCERS' Board of Retirement, as outlined in the Investment Policy Statement, and System assets are invested solely for the benefit of plan participants and beneficiaries while attempting to minimize employer contributions and investment and administration costs. The Investment Policy Statement calls for an asset allocation plan that seeks to optimize long-term returns for the level of risk that the Board of Retirement considers appropriate. The current asset allocation adopted by the Board of Retirement as of December 31, 2021, is detailed in Section 3 - Investments. The Board of Retirement conducts a periodic review of the asset allocation plan to maintain an optimal allocation, and may also revise the asset allocation in response to significantly changing market conditions that may affect valuations and forward-looking expected returns of asset classes.

Plan investments consist of global public equity securities, core fixed income, real assets, credit, risk mitigation, absolute return and unique strategies, and private equity. Investments are reported at fair value and the overall valuation process and information sources by major asset classification are as follows:

Cash and Short-Term Investments

Cash and short-term investments represent funds held in operating accounts with State Street, Wells Fargo Bank and deposits held in a pooled account with the County of Orange Treasurer. Short-term investments are expected to be utilized within 30-90 days and are reported at fair value. OCERS is a participant in the County Treasurer's Orange County Investment Pool (OCIP). The OCIP is an external investment pool, is not rated, and is not registered with the Securities and Exchange Commission. The County Treasury Oversight Committee conducts OCIP oversight. Cash on deposit in the OCIP is stated at fair value. The OCIP values participant shares on an amortized cost basis during the year and adjusts to fair value at year-end. Deposits held in the OCIP are invested in the Orange County Money Market Fund and the Extended Fund. At December 31, 2021, the OCIP had a weighted average maturity of 356 days. The Orange County Money Market Fund is rated AAAM by Standard & Poor's. The Extended Fund is not rated. For further information regarding the OCIP, refer to the County of Orange's most recently available Annual Comprehensive Financial Report.

Global Public Equity

The majority of OCERS' domestic, international and global securities, including those traded in emerging markets, consist of institutional funds that are valued based on the fair value of underlying investments using pricing models or other valuation methodologies that use pricing inputs that are either directly or indirectly observable on the valuation date for the securities or assets held in the fund. Other domestic, international and global securities are actively traded on major security exchanges, or over-the-counter. Fair value for exchange traded securities is determined as of the close of the trading date in the primary market or agreed upon exchange. The last known price is used for listed securities that did not trade on a particular date. Fair value is obtained from third-party pricing sources for securities traded over-the-counter.

Core Fixed Income

Actively traded debt instruments such as those securities issued by the U.S. Treasury, Federal Agencies and corporate issuers are reported at fair value as of the close of the trading date. Fair values of irregularly traded debt securities are obtained from pricing vendors who employ modeling techniques in determining security values. Inputs typically employed by pricing vendors include cash flows, maturity and credit rating.

Real Assets

OCERS invests in real assets, which include agriculture, energy, infrastructure, real estate and timber holdings. The fair value for real estate, timber, energy, infrastructure and agriculture are determined based on independent appraisals and/or estimates made in good faith by the general partner or management.

Notes to the Basic Financial Statements

NOTE 2 : Summary of Significant Accounting Policies (continued)

Real estate assets are in commingled real estate funds structured as either limited partnerships or trust funds. Properties held in commingled funds are based on the investment's net asset value (NAV) per share provided by the investment management firms/general partners, who perform regular internal appraisals and obtained at regular intervals independent third-party appraisals and are further supported by annual financial statements, which are audited by an independent third-party accountant. Primary determinants of fair value include market and property type specific information, which typically involve a degree of expert judgment.

Other real asset funds, agriculture, energy, and infrastructure, are held in limited partnerships. The investment's NAV per share are provided by the investment management firms/general partners, and are further supported by annual financial statements, which are audited by an independent third-party accountant. Primary determinants of fair value include market specific information, which involves a degree of expert judgment.

Other Investments

OCERS invests in a variety of different credit strategies, alternative strategies which include private equity, absolute return and unique strategies, and risk mitigation investments.

Credit is a global allocation that includes a number of diverse fixed-income related strategies. It represents an allocation that is diversified by region, by credit quality, and by sources of risk. The general shared characteristics of these strategies are a degree of illiquidity, and a focus on current yield as a principal source of expected return. Hedging of market and individual security risks and diversified risk-controlled tactical trading may be permitted.

Credit is a combination of liquid and illiquid credit strategies and the fair value depends on the nature of the investment. For credit funds structured as partnerships, the fair values are based on NAV. Credit included in Level 2 of the fair value hierarchy may be estimated by the underlying managers in the absence of observable market data or the general partner may estimate the fair value in good faith using the best information available, which may incorporate the general partner's own assumptions. The liquid strategies comprised of multi-strategies are actively traded and are generally reported at fair value as of the close of the trading date. The illiquid strategies comprised of mortgages, direct lending and energy-based credit funds are valued initially at cost as an approximation of fair value with subsequent adjustments to fair value as determined by the general partner. The factors considered include readily available market quotes, earnings-multiple analysis using comparable companies or discounted cash flow analysis.

Private equity, absolute return and unique strategies are alternative strategies. The fair value of these alternative investments depends upon the nature of the investment and the underlying business. Typically, alternative investments are less liquid and subject to redemption restrictions. Fair value is determined either quarterly or semi-annually with valuations conducted by general partners, management and valuation specialists. Valuation techniques vary by investment type and involve expert judgment or estimates made in good faith using the best information available, including the general partner's or management's own assumptions. Investments reported at NAV are based on audited financial statements.

Risk mitigation investments include generally liquid investments with shorter redemption periods. Risk mitigation funds included in Level 2 are short-term investment funds and NAV is determined daily; for risk mitigation funds structured as partnerships, the fair values are based on NAV. Risk mitigation investments are uncorrelated or negatively correlated to economic growth assets.

Capital Assets

Capital assets consist of furniture, equipment, intangible assets, including computer software, and building and improvements for the portion of the OCERS' headquarters building used for plan administration. Capital assets are defined by OCERS as assets with an initial, individual cost of more than \$25,000 and an estimated useful life in excess of one year. Such assets are recorded at cost. Capital assets are depreciated using the straight-line depreciation method over their estimated useful lives, ranging from five to fifteen years for furniture, equipment and building improvements; three years for purchased computer software; sixty years for buildings; and five years for the data center. Intangible assets are amortized over an estimated useful life of ten years.

Notes to the Basic Financial Statements

NOTE 2 : Summary of Significant Accounting Policies (continued)

Capital Assets

As of December 31, 2021
(Dollars in Thousands)

Building and Improvements	\$ 5,226
Computer Software - Pension Administration System	21,853
Data Center	1,234
Furniture and Equipment	<u>149</u>
Total Capital Assets (at cost)	28,462
Less: Accumulated Depreciation and Amortization	<u>(17,395)</u>
Total Capital Assets (Net of Depreciation and Amortization)	<u>\$ 11,067</u>

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect reported amounts of net position. Actual results could differ from those estimates.

Comparative Totals

The basic financial statements include certain prior-year summarized comparative information in total but not at the level of detail required for a presentation in conformity with GAAP. Accordingly, such information should be read in conjunction with OCERS' financial statements for the year ended December 31, 2020, from which the summarized information was derived.

NOTE 3 : Investments

OCERS may invest, in accordance with state statutes, in any form or type of investment deemed prudent by the Board of Retirement. Pension and 401(h) Health Care plan assets are restricted for the exclusive purposes of providing benefits to plan participants and defraying reasonable expenses of administering the plans. The Board of Retirement may invest, or delegate the authority to invest, the assets of the funds through the purchase, holding, or sale of any form or type of investment, financial instrument, or financial transaction. Custodial fund assets, restricted pursuant to section 115 of the Internal Revenue Code, are separately invested in domestic equity, international equity and domestic bond index funds in accordance with the respective OCTA Third-Party Administrative and Investment Management Agreement.

Notes to the Basic Financial Statements

NOTE 3 : Investments (continued)

The following table shows the Investment Allocation as of December 31, 2021:

Investment Allocation

As of December 31, 2021

Investment Category	Policy	Target Ranges	Actual
Global Public Equity	47%	40% - 54%	48%
Core Fixed Income	11%	6% - 16%	11%
Credit	7%	4% - 10%	7%
Real Assets	12%	8% - 16%	10%
Private Equity	13%	9% - 17%	14%
Risk Mitigation	10%	6% - 14%	9%
Unique Strategies	0%	0% - 5%	0%
Cash	0%	0% - 5%	1%
Total	<u>100%</u>		<u>100%</u>

During 2021, the allocation to the private equity category increased while the allocation to the credit, real assets and cash categories decreased.

Custodial Credit Risk

Custodial credit risk for deposits is the risk that in the event of a financial institution's failure, OCERS would not be able to recover its deposits. Deposits are exposed to custodial risk if they are not insured or not collateralized. As of December 31, 2021, OCERS' deposits with a financial institution are fully insured by Federal Deposit Insurance Corporation (FDIC) insurance up to \$250,000 with the remaining balance exposed to custodial credit risk as it is not insured; however, the financial institution does collateralize the deposit of monies in excess of the FDIC insurance amount with eligible securities held by the pledging financial institution, but not in OCERS' name, which approximates \$95.6 million. Deposits held by OCERS' custodial bank are not exposed to custodial credit risk as they are held in a qualified pool trust, separate from the custodial bank assets.

For an investment, custodial credit risk is the risk that, in the event of a counterparty failure, OCERS will not be able to recover the value of its investments or collateral securities that are in the possession of counterparties. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in OCERS' name or by other qualified third-party administrator trust accounts.

OCERS' investments and collateral received through securities lending are not exposed to custodial credit risk because all securities are held by OCERS' custodial bank in OCERS' name or by other qualified third-party administrator trust accounts. The risk is managed by the custodian bank by diversifying the number of counterparties, with periodic review of the credit quality of counterparties and by regularly posting/receiving margins. OCERS does not maintain any general policies regarding custodial credit risk.

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

Credit Risk

By definition, credit risk measures the risk that an issuer or counterparty will not fulfill its obligations. S&P Global defines investment grade as those fixed income securities with ratings between AAA and BBB. OCERS' investment policy permits, on an opportunistic basis, the investment in fixed income securities rated below investment grade. A rating of NR represents pooled funds and other securities that have not been rated by S&P Global and NA represents securities explicitly guaranteed by the U.S. Government that are not subject to the GASB Statement No. 40 disclosure requirements. The credit ratings for individual OCERS' fixed income portfolios are monitored regularly.

As of December 31, 2021, the S&P Global credit ratings of the OCERS' fixed income portfolio were as follows:

Credit Ratings

As of December 31, 2021

(Dollars in Thousands)

Rating	Pooled	U.S. Treasuries	Corporates	Mortgages	Asset- Backed	Municipals	Agencies	International	Swaps	Total
AAA	\$ -	\$ -	\$ -	\$ 11,587	\$ 12,101	\$ -	\$ -	\$ 7,044	\$ -	\$ 30,732
AA	-	-	8,825	247,521	14,327	9,702	-	4,627	-	285,002
A	-	-	42,583	944	1,682	14,745	-	30,944	-	90,898
BBB	-	-	234,754	747	6,215	2,211	-	124,159	-	368,086
BB	-	-	86,693	-	1,831	1,279	-	46,773	-	136,576
B	-	-	56,478	292	2,254	1,245	-	28,008	-	88,277
CCC	-	-	24,859	178	3,721	-	-	2,816	-	31,574
CC	-	-	387	-	-	-	-	-	-	387
D	-	-	-	-	1,214	-	-	-	-	1,214
NR	1,119,627	-	27,245	42,961	32,722	3,074	2,200	12,557	1,346	1,241,732
NA	-	382,393	-	5,621	-	-	-	-	-	388,014
Total	<u>\$1,119,627</u>	<u>\$382,393</u>	<u>\$ 481,824</u>	<u>\$ 309,851</u>	<u>\$ 76,067</u>	<u>\$ 32,256</u>	<u>\$ 2,200</u>	<u>\$ 256,928</u>	<u>\$1,346</u>	<u>\$2,662,492</u>

This schedule reflects credit ratings for OCERS' fixed income portfolio, which includes \$278 million of fixed income securities which are included in the Credit investment category and excludes \$39.8 million of non-fixed income securities that are included in the Core Fixed Income investment category on the Statement of Fiduciary Net Position.

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Duration is a measure of the price sensitivity of a fixed-income portfolio to changes in interest rates. It is calculated as the weighted average time to receive a bond's coupon and principal payments. The longer the duration of a portfolio, the greater its price sensitivity to changes in interest rates.

Interest rate risk is managed through OCERS' investment policies requiring that investment managers investing on behalf of OCERS have applicable investment guidelines and that the effective durations of fixed income portfolios remain within a defined range of the benchmark's effective duration. The primary benchmark for domestic fixed income is a blend of two indices, the Bloomberg US Universal (82%) and the Bloomberg US Treasury TIPS (18%). As of December 31, 2021, the durations of these indices are 6.46 years and 2.44 years, respectively for a blended duration of 5.74 years. All investment managers were in compliance within their defined range.

OCERS invests in a variety of fixed income instruments including asset-backed securities, corporate obligations and commercial mortgage-backed securities. The value, liquidity and income of these securities are sensitive to changes in overall economic conditions and the fair value of these securities may be affected by changes in interest rates, default rates and the value of the underlying securities.

The interest rate risk schedule presents the duration of fixed income securities by investment category as of December 31, 2021:

Interest Rate Risk Schedule

As of December 31, 2021
(Dollars in Thousands)

Category	Amount	Duration (in Years)	Percent
Pooled	\$ 1,119,627	4.58	42%
U.S. Treasuries	382,393	7.24	14%
Corporates	463,273	6.51	17%
Mortgages	303,167	4.26	11%
Asset-Backed	69,113	2.25	4%
Municipals	32,256	10.03	1%
Agencies	2,200	3.46	0%
International	256,768	5.78	10%
No Effective Duration:			
Corporates	18,551	N/A	1%
Mortgages	6,684	N/A	0%
Asset-Backed	6,954	N/A	0%
International	160	N/A	0%
Swaps	1,346	N/A	0%
Total	\$ 2,662,492	5.33	100%

This schedule reflects interest rate risk for OCERS' fixed income portfolio, which includes \$278 million of fixed income securities which are included in the Credit investment category and excludes \$39.8 million of non-fixed income securities that are included in the Core Fixed Income investment category on the Statement of Fiduciary Net Position.

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

Foreign Currency Risk

The value of deposits or investments denominated in foreign currency may be adversely affected by changes in currency exchange rates. OCERS' investment policy permits investment in international securities that includes investments in international equity securities, global equity securities, emerging markets equity securities and debt, public real estate securities, and real return. Investment managers monitor currency exposures daily.

The following schedule represents OCERS' net exposure to foreign currency risk in U.S. dollars as of December 31, 2021:

Foreign Currency Risk Schedule

As of December 31, 2021

(Dollars in Thousands)

Currency in U.S. Dollar	Cash	Equity	Fixed Income	Options	Forward Contracts	Swaps	Total
Australian Dollar	\$ 7	\$ 32,839	\$ -	\$ -	\$ (28)	\$ -	\$ 32,818
Brazilian Real	-	4,625	634	-	5	(173)	5,091
Canadian Dollar	1,780	25,134	158	-	384	(31)	27,425
Danish Krone	54	32,050	7,044	-	86	-	39,234
Euro Currency	(94)	339,705	2,809	(6)	(90)	430	342,754
Hong Kong Dollar	(16)	28,906	-	-	-	-	28,890
Iceland Krona	216	-	-	-	-	-	216
Indian Rupee	-	-	656	-	-	-	656
Japanese Yen	368	160,179	-	-	(252)	(11)	160,284
Mexican Peso	4	-	2,390	-	(2)	-	2,392
New Zealand Dollar	-	877	-	-	(121)	-	756
Norwegian Krone	-	7,433	-	-	6	-	7,439
Pound Sterling	59	118,868	5,117	-	(465)	416	123,995
Russian Ruble	-	2,896	-	-	(24)	-	2,872
Singapore Dollar	92	4,779	-	-	34	-	4,905
South African Rand	86	-	-	-	(52)	-	34
South Korean Won	-	9,967	-	-	-	-	9,967
Swedish Krona	52	47,288	-	-	(173)	(8)	47,159
Swiss Franc	44	58,514	-	-	(251)	205	58,512
Amount Exposed to Foreign Currency Risk	\$ 2,652	\$ 874,060	\$ 18,808	\$ (6)	\$ (943)	\$ 828	\$895,399

The foreign currency amounts above are included within the cash and cash equivalents, global public equity, credit and core fixed income categories on the Statement of Fiduciary Net Position as of December 31, 2021.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of OCERS' investment in a single issuer. By policy, OCERS did not hold investments in any one issuer that represented five percent (5%) or more of plan net position and net investments. Investments issued or explicitly guaranteed by the U.S. Government and pooled investments are excluded from this policy requirement.

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

Concentration of Investments

As of December 31, 2021, OCERS did not hold investments in any one organization that represented five percent (5%) or more of the plan's fiduciary net position. Investments issued or explicitly guaranteed by the U.S. Government and pooled investments are excluded from this requirement.

Derivative Instruments

As of December 31, 2021, all derivative instruments held by OCERS are considered investments and not hedges for accounting purposes. Any reference to the term hedging in these financial statements references an economic activity and not an accounting method. All gains and losses associated with these activities are recognized as incurred in the Statement of Changes in Fiduciary Net Position.

The table that follows presents the related net appreciation/(depreciation) in fair value, the fair value amounts and the notional amounts of derivative instruments outstanding at December 31, 2021.

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

Derivative Instruments

As of December 31, 2021
(Amounts in Thousands)

Derivative Instruments	Changes in Fair Value Net Appreciation/ (Depreciation) ⁴	Fair Value at December 31, 2021		Notional ³
		Amount ¹	Classification	
Commodity Futures Long	\$ 4,920	Cash	\$ -	\$ 822
Commodity Futures Short	(1,207)	Cash	-	-
Credit Default Swaps Written	64	Core Fixed Income	1,601	43,270
Fixed Income Futures Long	(1,453)	Cash / Core Fixed Income	-	54,812
Fixed Income Futures Short	768	Core Fixed Income	-	(41,800)
Fixed Income Options Bought	(146)	Core Fixed Income	201	4,200
Fixed Income Options Written	327	Core Fixed Income	(402)	(127,117)
Foreign Currency Futures Long	89	Cash	-	400
Futures Options Written	2	Core Fixed Income	-	-
FX Forwards	(4,128)	Foreign Currency Forward Contracts Receivables and Payables	(943)	284,979
Index Futures Long	55,152	Cash/Global Public Equity	-	1,230
Index Futures Short	(8,805)	Global Public Equity	-	(22)
Pay Fixed Interest Rate Swaps	921	Core Fixed Income	310	20,154
Receive Fixed Interest Rate Swaps	(1,114)	Core Fixed Income	(565)	23,853
Rights	48	Global Public Equity	-	-
Total Return Swaps Bond	(1,703)	Global Public Equity	(37)	6,001
Total Return Swaps Equity	<u>1,362</u>	Global Public Equity	<u>242</u>	(15,605)
Grand Totals	<u>\$ 45,097</u>		<u>\$ 407</u>	

¹ Negative values (in brackets) refer to losses

² Negative values refer to liabilities and are reported net of investments

³ Notional may be a dollar amount or size of underlying for futures and options, negative values refer to short positions

⁴ Excludes futures margin payments

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

Valuation of Derivative Instruments

Non-exchange traded instruments, such as swaps, are valued using similar methods as those described for debt securities.

Futures contracts are traded on exchanges and typically derive their value from underlying indices and are marked to market daily. All gains and losses associated with changes in the value of futures contracts also settle on a daily basis and result in the contracts themselves having no fair value at the end of any trading day, including December 31, 2021. Future variation margin accounts also settle daily and are recognized in the financial statements under net appreciation/(depreciation) in the fair value of the investments as incurred.

In general, option values are dependent upon a number of different factors, including the current market price of the underlying security, the strike price of the option, costs associated with holding a position in the underlying security including interest and dividends, the length of time until the option expires and an estimate of the future price volatility of the underlying security relative to the time period of the option.

Foreign currency forward contracts are agreements to buy or sell a currency at a specified exchange rate on a specified date. The fair value of a foreign currency forward is determined by the difference between the specified exchange rate and the closing exchange rate at December 31, 2021.

Custodial Credit Risk – Derivative Instruments

As of December 31, 2021, all investments in derivative instruments are held in OCERS' name and are not exposed to custodial credit risk as described in the previous discussion of custodial credit risk.

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

Counterparty Credit Risk – Derivative Instruments

A summary of counterparty credit ratings relating to non-exchange traded derivatives in asset positions as of December 31, 2021 is as follows:

Counterparty Credit Risk Schedule for Derivative Instruments

As of December 31, 2021

(Dollars in Thousands)

Counterparty Name	S&P Rating	Foreign Currency Forward Contracts	Swaps	Total Fair Value
Bank of America CME	A-	\$ -	\$ 45	\$ 45
Bank of America ICE	A-	-	1,485	1,485
Bank of America Merrill Lynch Securities Inc	A-	-	432	432
Bank of America, N.A.	A+	5	10	15
Barclays Bank PLC Wholesale	A	-	2	2
BNP Paribas SA	A+	14	3	17
Citibank N.A.	A+	581	-	581
Credit Suisse International	A+	13	-	13
Deutsche Bank AG	A-	6	-	6
HSBC Bank USA	A+	36	-	36
JPMorgan Chase Bank N.A.	A-	521	108	629
Morgan Stanley Co Incorporated	BBB+	-	254	254
Total Non-Exchange Traded Derivatives in Asset Position		\$ 1,176	\$ 2,339	\$ 3,515

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

Interest Rate Risk – Derivatives

At December 31, 2021, OCERS is exposed to interest rate risk on its investments in various swap arrangements based on daily interest rates for BRCDI (Brazilian Interbank Deposit Rate), CDOR (Canadian Dollar Offered Rate), LIBOR (London Interbank Offered Rate), CETIP (Latin America largest central depository), SONIA (Sterling Overnight Index Average), and European reference rates. The following table illustrates the maturity periods of these investments:

Interest Rate Risk - Schedules for Derivative Instruments

As of December 31, 2021
(Dollars in Thousands)

Investment Type	Fair Value	Investment Maturities (in years)			
		Less Than 1	1-5	6-10	More than 10
Credit Default Swaps Written	\$ 1,601	\$ 3	\$ 1,587	\$ -	\$ 11
Fixed Income Options Bought	201	-	201	-	-
Fixed Income Options Written	(402)	(141)	(261)	-	-
Pay Fixed Interest Rate Swaps	310	-	16	416	(122)
Receive Fixed Interest Rate Swaps	(565)	-	(608)	43	-
Total Return Swaps Bond	(37)	(37)	-	-	-
Total Return Swaps Equity	242	242	-	-	-
Total	\$ 1,350	\$ 67	\$ 935	\$ 459	\$ (111)

Derivative Instruments Highly Sensitive to Interest Rate Changes

As of December 31, 2021
(Dollars in Thousands)

Investment Type	Receive Rate	Payable Rate	Fair Value	Notional
Pay Fixed Interest Swaps	Variable 3-month LIBOR	Fixed 0.25%-1.15%	\$ (106)	\$ 5,120
Pay Fixed Interest Swaps	Variable 12-month SONIA	Fixed 0.08%-2.00%	416	15,034
Total Pay Fixed Interest Rate Swaps			\$ 310	
Received Fixed Interest Rate Swaps	Fixed 1.22%-1.29%	Variable 3-month CDOR	(31)	1,979
Received Fixed Interest Rate Swaps	Fixed 0.05%-1.80%	Variable 3-month LIBOR	(360)	16,000
Received Fixed Interest Rate Swaps	Fixed 7.52%-10.96%	Variable 0-month BRCDI	(173)	5,242
Received Fixed Interest Rate Swaps	Fixed 10.21%-10.83%	Variable 0-month CETIP	(1)	161
Total Receive Fixed Interest Rate Swaps			\$ (565)	
Total Interest Rate Swaps			\$ (255)	

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

Foreign Currency Risk – Derivatives

At December 31, 2021, OCERS is exposed to foreign currency risk on investments in swaps and forward currency contracts denominated in foreign currencies that may be adversely affected by changes in the currency exchange rates.

Foreign Currency Risk Schedule for Derivative Instruments

As of December 31, 2021

(Dollars in Thousands)

Currency Name	Rights	Currency Forward Contracts		Swaps	Total Exposure
		Net Receivables	Net Payables		
Australian Dollar	\$ -	\$ 290	\$ (318)	\$ -	\$ (28)
Brazilian Real	-	18	(13)	(173)	(168)
Canadian Dollar	-	390	(6)	(31)	353
Danish Krone	-	102	(16)	-	86
Euro Currency	(6)	58	(148)	430	334
Japanese Yen	-	9	(261)	(11)	(263)
Mexican Peso	-	2	(4)	-	(2)
New Israeli Sheqel	-	22	(22)	-	-
New Zealand Dollar	-	-	(121)	-	(121)
Norwegian Krone	-	52	(46)	-	6
Pound Sterling	-	117	(582)	416	(49)
Russian Ruble	-	12	(36)	-	(24)
Singapore Dollar	-	39	(5)	-	34
South African Rand	-	-	(52)	-	(52)
Swedish Krona	-	34	(207)	(8)	(181)
Swiss Franc	-	31	(282)	205	(46)
Total Foreign Currency	\$ (6)	\$ 1,176	\$ (2,119)	\$ 828	\$ (121)
U.S. Dollar	(195)	-	-	723	528
Total	\$ (201)	\$ 1,176	\$ (2,119)	\$ 1,551	\$ 407

Rate of Return

For the year ended December 31, 2021, the annual money-weighted rate of return on the assets of the plan, net of investment expense, was 16.67%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the timing of cash flows and the changing amounts actually invested.

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

Securities Lending

OCERS is authorized by investment policy and state law to lend its investment securities including global public equities, core fixed income, and credit to broker/dealers in exchange for collateral in the form of either cash or securities. Lent domestic and international securities are collateralized with an initial fair value of not less than 102% or 105% depending on the nature of the loaned securities and the collateral received, of fair value of the loaned securities. The lending agent receives cash and non-cash collateral for the securities on loan. There are no restrictions on the amount of securities that can be lent at one time. State Street Bank serves, in accordance with a Securities Lending Authorization Agreement, as OCERS' agent to loan domestic and international securities. State Street Bank does not have the ability to pledge or sell collateral securities delivered absent a borrower default.

Cash collateral received on loaned securities is invested together with the cash collateral of other qualified tax-exempt investors in a collective investment fund managed by State Street. The collective investment fund is not rated and comprised of two separate investment pools: 1) a liquidity pool and 2) a duration pool. As of December 31, 2021, the liquidity pool had an average duration of 108 days and a weighted average maturity (WAM) of 11 days. The duration pool had an average duration of 956 days and a WAM of 22 days. Because loans are terminable at will, the duration of the loans did not generally match the duration of the investments made with the cash collateral. The Securities Lending Authorization Agreement requires State Street to indemnify OCERS if the broker/dealer fails to return any borrowed securities. During 2021, there were no failures to return loaned securities or to pay distributions by the borrowers. Furthermore, there were no losses due to borrower defaults. The fair value of securities on loan and the total cash and non-cash collateral held as of December 31, 2021 was \$190.4 million and \$195.2 million, respectively. The following table shows fair values of securities on loan and cash collateral received by asset class:

Securities on Loan and Collateral Received

As of December 31, 2021
(Dollars in Thousands)

Security Lent for Cash Collateral	Fair Value of OCERS' Securities Lent	Cash Collateral Received	Collateral Investment Value
Global Public Equity	\$ 70,516	\$ 72,751	\$ 72,751
Core Fixed Income	92,800	94,679	94,679
Credit	27,114	27,809	27,809
Total	\$ 190,430	\$ 195,239	\$ 195,239

Investments – Fair Value Measurements

OCERS categorizes its fair value measurements of its investments based on the three level fair value hierarchy established by GAAP. The fair value hierarchy is based on the valuation inputs used to measure fair value of the asset or liability and gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 inputs) and the lowest priority to unobservable inputs (Level 3 inputs). Unobservable inputs are developed using the best information available about the assumptions that market participants would use when pricing an investment. The three levels of the fair value hierarchy are:

- Level 1 - Unadjusted quoted prices for identical instruments in active markets.
- Level 2 - Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.
- Level 3 - Valuations are derived from valuation techniques in which significant inputs are unobservable. Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

Notes to the Basic Financial Statements

NOTE 3: Investments (continued)

The following table represents the fair value measurements as of December 31, 2021:

Investments and Derivative Instruments Measured at Fair Value

As of December 31, 2021

(Dollars in Thousands)

	12/31/2021	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				
Fixed Income:				
U.S. Fixed Income:				
Pooled	\$ 1,119,627	\$ -	\$ 1,119,627	\$ -
U.S. Treasuries	382,393	-	382,393	-
Corporates	481,824	-	481,814	10
Mortgages	309,851	-	309,851	-
Asset-backed	76,067	-	76,067	-
Municipals	32,256	-	32,256	-
Agencies	2,200	-	2,200	-
International	256,928	-	256,928	-
Total Fixed Income	2,661,146	-	2,661,136	10
Global Public Equity Investments:				
Domestic Equity	6,493,625	612,546	5,881,079	-
International Equity	2,482,907	852,577	1,630,330	-
Emerging Markets Equity	477,661	-	477,661	-
Total Global Public Equity	9,454,193	1,465,123	7,989,070	-
Real Assets:				
Agriculture	69,698	-	-	69,698
Real Estate	11,260	-	-	11,260
Timber	8,494	-	-	8,494
Total Real Assets	89,452	-	-	89,452
Other Investments:				
Risk Mitigation	536,811	-	536,811	-
Total Other Investments	536,811	-	536,811	-
Total Investments by Fair Value Level	\$ 12,741,602	\$ 1,465,123	\$ 11,187,017	\$ 89,462

Notes to the Basic Financial Statements

NOTE 3 : Investments (continued)

Investments and Derivative Instruments Measured at Fair Value

As of December 31, 2021

(Dollars in Thousands)

(Continued)

	12/31/2021	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments Measured at the Net Asset Value (NAV)				
Global Public Equity Investments:				
International Equity	\$ 502,177			
Emerging Markets Equity	800,353			
Total Global Public Equity	1,302,530			
Real Assets:				
Energy	582,856			
Infrastructure	407,369			
Real Estate	1,236,569			
Total Real Assets	2,226,794			
Other Investments:				
Credit (includes private credit)	1,377,414			
Private Equity	3,365,917			
Risk Mitigation	1,445,575			
Unique Strategies	76,904			
Total Other Investments	6,265,810			
Total Investments Measured at the NAV	\$ 9,795,134			
Investments Derivative Instruments				
Swaps:				
Interest Rate Swaps	\$ (255)	\$ -	\$ (255)	\$ -
Credit Default Swaps	1,601	-	1,601	-
Total Return Swaps	205	-	205	-
Options	(201)	-	(201)	-
Total Investment Derivative Instruments	1,350	\$ -	\$ 1,350	\$ -
Total Investments Measured at Fair Value	\$ 22,538,086			

Core Fixed Income in the above schedule includes \$278 million of fixed income securities, which are included in the Credit investment category; and excludes \$39.8 million of non-fixed income securities and derivatives that are included in the Core Fixed Income investment category on the Statement of Fiduciary Net Position.

Notes to the Basic Financial Statements

NOTE 3 : Investments (continued)

Core fixed income include actively traded debt instruments such as those securities issued by the United States government, federal agencies, municipal obligations, foreign governments, and both U.S. and foreign corporate issuers. Core fixed income securities are reported at fair value as of the close of the trading date. Fair values for securities not traded on a regular basis are obtained from pricing vendors who employ modeling techniques, such as matrix pricing or discounted cash flow method, in determining security values. These inputs are observable, which supports the Level 2 fair value hierarchy. One fixed income mortgage security is leveled at Level 3 based on the investment manager's pricing policy.

Global public equity include U.S. and international equity securities, and emerging markets equity securities. Global public equity securities classified in Level 1 of the fair value hierarchy are primarily common and preferred stock or real estate investment trusts. Fair value for these exchange traded securities is determined as of the close of the trading date in the primary market or agreed upon exchange. The last known price is used for listed securities that did not trade on a particular date. Fair value is obtained from third-party pricing sources for securities traded over-the-counter. Global public equity securities classified in Level 2 of the fair value hierarchy consist of institutional funds that are valued based on the fair value of underlying investments using pricing models or other valuation methodologies that use pricing inputs that are either directly or indirectly observable on the valuation date for the securities or assets held in the fund.

Real assets investments at fair value include a variety of real return investments in agriculture, real estate and timber resources, which are held directly. Real estate assets held directly are appraised by independent third-party appraisers in accordance with the Uniform Standards of Professional Appraisal Practice. Independent appraisals use professional judgment, which is unobservable input, to determine the fair value of the asset; therefore these real estate investments are classified as Level 3. Agriculture and timber resources included in Level 3 are based on independent appraisals and/or the good faith estimates of management.

Other investments include two risk mitigation funds. These investments are classified in Level 2 of the fair value hierarchy and include primarily institutional mutual funds that are valued based on the fair value of underlying investments using pricing models or other valuation methodologies that use pricing inputs that are either directly or indirectly observable on the valuation date for the securities or assets held in the fund.

Derivative instruments classified as Level 2 are valued using a market approach with observable inputs from major indices as well as benchmark interest rates and foreign exchange rates.

Notes to the Basic Financial Statements

NOTE 3 : Investments (continued)

Investments Measured at NAV, Unfunded Commitments and Redemption Terms

As of December 31, 2021

(Dollars in Thousands)

The System uses the Net Asset Value (NAV) to determine the fair value of the underlying investments, when an investment does not have a readily determinable fair value, provided that the NAV is calculated and used as a practical expedient to estimate fair value in accordance with GAAP requirements.

	Fair Value Measured at NAV	Unfunded Commitments	Redemption Frequency (If Currently Eligible) ¹	Redemption Notice Period
Investments Measured at the Net Asset Value (NAV)				
Global Public Equity:				
International Equity	\$ 502,177	\$ -	W	7 days
Emerging Markets Equity	<u>800,353</u>	<u>-</u>	M	30 days
Total Equity Investments Measured at the NAV	<u>1,302,530</u>	<u>-</u>		
Real Assets:				
Agriculture	-	22,451	Q	60 days
Energy	582,856	454,819	N/A	N/A
Infrastructure	407,369	318,633	N/A	N/A
Real Estate	<u>1,236,569</u>	<u>446,146</u>	Q, N/A	7-90 days, N/A
Total Real Assets Measured at the NAV	<u>2,226,794</u>	<u>1,242,049</u>		
Other Investments:				
Credit (includes private credit)	1,377,414	539,546	M, Q, N/A	5-90 days, N/A
Private Equity	3,365,917	1,440,142	N/A	N/A
Risk Mitigation	1,445,575	-	D, W, M, Q	1-75 days
Unique Strategies	<u>76,904</u>	<u>99,400</u>	Q, N/A	60 days, N/A
Total Other Investments at the NAV	<u>6,265,810</u>	<u>2,079,088</u>		
Total Investments Measured at the NAV	<u>\$ 9,795,134</u>	<u>\$ 3,321,137</u>		

¹ D=Daily, W=Weekly, M=Monthly, Q=Quarterly, N/A = No redemption or frequency period

Notes to the Basic Financial Statements

NOTE 3 : Investments (continued)

The investment types listed in the above table were measured at the Net Asset Value (NAV) as explained below:

Global public equity includes five institutional funds. Two funds focus on international securities and three funds focus on emerging markets equities. The fair value of each fund has been determined using NAV per share or unit of the investments.

Real assets: Agriculture includes one fund that invests in a diversified portfolio of vegetable and permanent crop farmland in select major agricultural states. The fund is an open-end, infinite life, private REIT (real estate investment trust) subject to the redemption terms in the above schedule.

Real assets: Energy consists of eighteen limited partnerships that invest primarily in oil and gas related investments. There are no redemption terms for any of these partnerships. These investments are considered illiquid. During the life of the partnerships, distributions are received as underlying partnership investments are realized. The fair values of this investment type have been determined using estimates provided by the underlying partnerships and are at NAV. One of the partnerships is considered a going concern, and is included at a zero value.

Real assets: Infrastructure consists of nine limited partnerships that invest primarily in energy related renewable infrastructure. There are no redemption terms for any of these partnerships. These investments are considered illiquid. During the life of the partnerships, distributions are received as underlying partnership investments are realized. The fair values of this investment type have been determined using estimates provided by the underlying partnerships and are at NAV.

Real assets: Real estate investments include nineteen funds consisting of primarily trust funds and limited partnerships. The purpose of these funds is to acquire, own, invest in real estate and real estate related assets with the intention of achieving current income, capital appreciation or both. These investments are valued through independent appraisals and other unobservable methods. The majority of these funds are closed-end funds with structured investment periods, and considered illiquid investments. All other funds have no redemption restrictions other than the restrictions noted above.

Credit includes investments in twenty-two limited partnership funds. Sixteen of these funds are considered private credit investments, which are closed-end funds and are considered illiquid investments. These investments represent approximately 40% of the value. The remaining six funds allow for redemption based on the terms noted above. The fair value of these investments has been determined using NAV per share of the investments.

Private equity includes primarily investments in limited partnership funds, managed by various different investment managers. Generally, the partnership strategies are to maximize the return by participating in private equity and equity-related investments through a diversified portfolio of venture capital, growth equity, buyouts, special situation partnerships and other limited liability vehicles. Investments in these partnerships are typically for 10-12 years and are considered illiquid. Redemptions are restricted over the life of the partnership. During the life of the partnerships, distributions are received as underlying partnership investments are realized. The fair values of this investment type have been determined using NAV per share of the System's ownership interest in partners' capital.

Risk mitigation includes ten limited partnership funds, which allow redemption with proper notification. The funds assist in diversifying the portfolio and protecting in an economic downturn of growth assets. The strategies are uncorrelated or negatively correlated to economic growth assets. The fair value of these investments has been determined using NAV per share.

Unique strategies includes three limited partnership funds, one of the funds allows for redemptions and the other funds have no redemption terms and are considered illiquid investments. This asset class provides additional diversification which can be used to help mitigate risk and provide value to the OCERS portfolio. These investments are valued at NAV.

Notes to the Basic Financial Statements

NOTE 4 : Funding Policy - Pension Plan

Employer and employee/member pension plan contribution requirements are determined as a percentage of employer payrolls. In determining contributions, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. The projected total pensionable compensation for all OCERS' employers for the year ended December 31, 2021 was \$2 billion. Employer contribution rates are determined using the entry age normal actuarial cost method based upon a level percentage of payroll. The employer contributions provide for both normal cost and an amount to amortize any unfunded or overfunded actuarial accrued liabilities. By definition, the normal cost is the annual contribution rate that, if paid annually from a member's first year of membership through the year of retirement, would accumulate to the amount necessary to fully fund the member's retirement benefit if all underlying assumptions are met. The actuarial valuation report as of December 31, 2018 established the contribution rates for the first six months of calendar year 2021 (second half of fiscal year 2020-2021), and the actuarial valuation report as of December 31, 2019 established the contribution rates for the last six months of calendar year 2021 (first half of fiscal year 2021-2022). For the year ended December 31, 2021, employer contribution rates ranged from 11.93% of payroll to 67.55% depending upon the benefit plan type. Employer pension contributions were \$698.8 million for the year ended December 31, 2021 of which approximately \$511.3 million and \$95.5 million, net of prepayment discounts, were made by the County of Orange and the Orange County Fire Authority, respectively. Participating employers are required by Government Code sections 31453.5 and 31454 to contribute a percentage of covered salary to the Plan. The contribution requirements of participating active members and employers are established and may be amended by the OCERS' Board of Retirement. Participating employers may pay a portion of the participating active employees' contributions through negotiations and bargaining agreements. Employer contributions paid for by the employee through negotiated reverse pick-up arrangements are treated and reported as employee contributions. Employee contributions elected to be paid for by the employer under Section 31581.1 are treated and reported as employer contributions as these payments do not become part of the accumulated contributions of the employee and are immaterial. Employee contributions elected to be paid for by the employer under Section 31581.2 are treated and reported as employee contributions as these payments are credited to the employee account and become a part of their accumulated contributions.

Employee contributions are established by the OCERS' Board of Retirement and guided by state statute (Government Code sections 31621, 31621.5, 31621.8, 31639.25 and 31639.5) and vary based upon employee age at the time of entering OCERS membership. OCERS received \$271.3 million in employee pension contributions for the year ended December 31, 2021. Average employee contribution rates for the year ended December 31, 2021 ranged between 9.72% and 17.22%.

NOTE 5 : Plan Reserves

The OCERS Board of Retirement adopted the Reserves and Interest-Crediting Policy to identify all the reserves maintained by OCERS and how funds are distributed to and from the relevant reserve. Employer and employee contributions are deposited into various legally-required reserve accounts established on a book value basis. Set forth below are the descriptions of OCERS' various reserve accounts:

Pension Reserve

Pension reserve represents funding set aside for retirement payments derived from employer contributions. Additions include transfers from the employer contribution reserve and interest credited. Deductions include benefit payments made to retired members.

Employee Contribution Reserve

Employee contribution reserve represents the balance of member contributions. Additions include member contributions and interest credited. Deductions include member refunds and transfers to the annuity reserve fund retirement benefits.

Employer Contribution Reserve

Employer contribution reserve represents the balance of employer contributions for active member future retirement benefits. Additions include employer contributions and interest credited. Deductions include transfers to the pension reserves in order to fund retirement benefits, disability benefits and death benefits.

Annuity Reserve

Annuity reserve represents funding set aside for retirement payments derived from contributions made by members. Additions include transfers from the employee contribution reserve and interest credited. Deductions include benefit payments made to retired members.

Notes to the Basic Financial Statements

NOTE 5 : Plan Reserves (continued)

Contra Account

A positive balance in this account represents excess earnings. A credit balance in this account represents the amount of interest credited to the reserve accounts that has not been paid for out of current or excess earnings. Additions include net increases to the fiduciary net position, which are decreased by interest credited to the reserves account.

County Investment Account (POB Proceeds) Reserve

County investment account (POB Proceeds) reserve represents the remaining proceeds from the County of Orange's 1994 Pension Obligation Bond issuance. The remaining proceeds are utilized, in accordance with a long standing agreement between OCERS and the County of Orange, to offset a portion of the annual actuarially-determined contribution rates for the County of Orange. In 2021, \$15.1 million of the remaining proceeds were utilized to offset the actuarially determined contributions for the County of Orange.

OCSD UAAL Deferred Reserve

The Orange County Sanitation District (OCSD) Unfunded Actuarial Accrued Liability (UAAL) Reserve represents the payment made by OCSD for its deferred UAAL. OCERS shall make annual transfers from the OCSD reserve account into the OCERS' employer contribution reserve account in the amount necessary to satisfy the actual UAAL attributed to OCSD. The intent of this transfer is to provide that the OCSD's future annual employer contribution obligation to OCERS shall consist of either the normal cost portion only, or the normal cost and amortizing installments of only such amount of future actual UAAL that exceeds to the amount of funds remaining in the OCSD reserve account.

Actuarial Deferred Return

The actuarial deferred return represents the balance of deferred earnings created by a five-year smoothing of actual gains and losses compared to the assumed investment rate of return.

Health Care Plan Reserves

Health care plan reserves represent assets held to pay medical benefits for eligible retirees of the 401(h) health care plans. Additions include employer contributions and investment earnings. Deductions include medical payments and administrative expenses.

Custodial Fund Reserve

Custodial fund reserve represents custodial assets held by OCERS in an investment capacity for the Orange County Transportation Authority (OCTA) health care plan. Additions include other postemployment benefit contributions and investment earnings. Deductions include other postemployment benefits and administrative expenses.

Total Plan Reserves

As of December 31, 2021
(Dollars in Thousands)

Valuation Reserves	
Pension Reserve	\$ 11,361,687
Employee Contribution Reserve	3,715,463
Employer Contribution Reserve	3,114,767
Annuity Reserve	2,332,253
Contra Account	(1,035,409)
Non-Valuation Reserves	
County Investment Reserve	167,745
OCSD UAAL Deferred Reserve	15,643
Total Pension Fund Reserves (smoothed market actuarial value)	19,672,149
Actuarial Deferred Return	2,250,033
Net Position Restricted for Pensions including Non-Valuation Reserves	21,922,182
Health Care Plan Reserves	545,788
Custodial Fund Reserve	21,457
Net Position-Total Funds	\$ 22,489,427

Notes to the Basic Financial Statements

NOTE 6 : Administrative Expenses - Pension

As permitted by Government Code (Code) Section 31580.2, the Board of Retirement adopts an annual budget, financed from the System's assets, covering the entire expenses for the administration of OCERS. The Code provides that administrative expenses incurred in any year are to be charged against the earnings of the pension trust fund and are not to exceed twenty-one hundredths of one percent (0.21%) of OCERS' actuarial accrued liabilities, excluding investment related costs and expenditures for computer software, hardware and related technology consulting services. Administrative expenses incurred in calendar year 2021 were within the limits established by the Code. The following schedule represents the excess of the maximum allowed over actual administrative expenses for the year ended December 31, 2021.

Administrative Expense Compared to Actuarial Accrued Liability

For the Year Ended December 31, 2021
(Dollars in Thousands)

Actuarial Accrued Liability (AAL) as of December 31, 2021	\$ 24,016,073
Maximum Allowed for Administrative Expense (AAL * 0.21%)	50,434
Actual Administrative Expense ¹	<u>20,087</u>
Excess of Allowed Over Actual Expense	<u>\$ 30,347</u>
Actual Administrative Expense as a Percentage of Actuarial Accrued Liability as of December 31, 2021	0.08%
¹ Administrative Expense Reconciliation	
Administrative Expense per Statement of Changes in Fiduciary Net Position	\$ 21,473
Less: Administrative Expense Not Considered per CERL Section 31596.1	<u>(1,386)</u>
Administrative Expense Allowable Under CERL Section 31580.2	<u>\$ 20,087</u>

NOTE 7: Contingencies

At December 31, 2021, OCERS was involved in various litigation matters. In management's opinion, and after consultation with legal counsel, the outcome of these matters is not expected to have a material adverse effect on OCERS' financial position.

Notes to the Basic Financial Statements

NOTE 8 : Pension Disclosures

The net pension liability was measured as of December 31, 2021. The plan fiduciary net position was valued as of the measurement date while the total pension liability was determined based upon rolling forward the total pension liability from the actuarial valuation as of December 31, 2020. The components of the net pension liability as of December 31, 2021 are as follows:

Net Pension Liability

For the Year Ended December 31, 2021
(Dollars in Thousands)

Total Pension Liability	\$ 23,972,420
Less: Plan Fiduciary Net Position	<u>(21,922,182)</u>
Net Pension Liability	<u>\$ 2,050,238</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	91.45%

Actuarial Assumptions

Actuarial valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future. Examples include future salary increases and investment earnings, expected retirement age, life expectancy and other relevant factors. Actuarially determined amounts are subject to continual revision as results are compared to past expectations and new estimates are made about the future. OCERS' independent actuary and Board of Retirement review the economic and demographic assumptions every three years and the actuarially determined contributions annually.

In preparing the actuarial valuation, the actuary has complied with the parameters set forth in GASB Statement No.67, *Financial Reporting for Pension Plans – an Amendment of GASB Statement No. 25* (GASB 67), and employed generally accepted actuarial methods and assumptions to measure the total pension liability of employers. The actuary's calculations are based upon member data and financial information provided by the System. Projection of benefits for financial reporting purposes is based on all benefits estimated to be payable through the System to current active, retired and inactive employees as a result of their past service and their expected future service.

The total pension liability as of December 31, 2021 was determined by the actuarial valuation as of December 31, 2020. The actuarial assumptions used were based on the results of an experience study for the period from January 1, 2017 through December 31, 2019 and they are the same assumptions used in the December 31, 2021 funding valuations for OCERS. In particular, the following actuarial assumptions were applied in the measurement:

Inflation	2.50%
Salary Increases	General: 4.00% to 11.00% and Safety: 4.60% to 15.00%, vary by service, including inflation
Cost of Living Adjustments	2.75% of retirement income
	Retiree COLA increases of 2.75% per year. For members that have COLA banks, it is assumed they receive 3.00% COLA increases until their COLA banks are exhausted and 2.75% thereafter.
Investment Rate of Return	7.00%, net of pension plan investment expense, including inflation
Mortality Rates	Pub-2010 Amount Weighted Above-Median Mortality Table, projected generationally using two-dimensional MP-2019 scale, adjusted separately for healthy and disabled for both general and safety members.
Other Assumptions	Actuarial experience study during the period of January 1, 2017 through December 31, 2019

Notes to the Basic Financial Statements

NOTE 8 : Pension Disclosures (continued)

Long-Term Expected Real Rate of Return

The long-term expected rate of return on pension plan investments⁵ was determined using a building-block method in which expected future real rates of return (expected returns, net of inflation) are developed for each major asset class. These returns are 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, adding expected inflation and subtracting expected investment expenses and a risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation but before deducting investment expenses are shown in the following table. This information was used in the derivation of the long-term expected investment rate of return assumption for the December 31, 2021 actuarial valuation. This information will change every three years based on the actuarial experience study.

Long-Term Expected Real Rate of Return

For the Year Ended December 31, 2021

Asset Class	Target Allocation	Long-Term Expected Arithmetic Real Rate of Return
Large Cap Equity	23.10%	5.43%
Small Cap Equity	1.90%	6.21%
International Developed Equity	13.00%	6.67%
Emerging Markets Equity	9.00%	8.58%
Core Bonds	9.00%	1.10%
High Yield Bonds	1.50%	2.91%
TIPS	2.00%	0.65%
Emerging Market Debt	2.00%	3.25%
Corporate Credit	1.00%	0.53%
Long Duration Fixed Income	2.50%	1.44%
Real Estate	3.01%	4.42%
Private Equity	13.00%	9.41%
Value Added Real Estate	3.01%	7.42%
Opportunistic Real Estate	0.98%	10.18%
Energy	2.00%	9.68%
Infrastructure (Core Private)	1.50%	5.08%
Infrastructure (Non-Core Private)	1.50%	8.92%
CTA - Trend Following	2.50%	2.38%
Global Macro	2.50%	2.13%
Private Credit	2.50%	5.47%
Alternative Risk Premia	2.50%	2.50%
Total	<u>100%</u>	

⁵ The investment return assumption for funding purposes is developed net of both investment and administrative expenses; however, the same investment return assumption is used for financial reporting purposes, where it is considered gross of administrative expenses.

Notes to the Basic Financial Statements

NOTE 8 : Pension Disclosures (continued)

Discount Rate

The discount rate used to measure the total pension liability was 7.00% for the year ended December 31, 2021. 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 plan 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 pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability as of December 31, 2021.

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

The following table represents the net pension (asset) liability as of December 31, 2021, of participating employers calculated using the discount rate of 7.00%, as well as what the net pension (asset) liability would be if it were calculated using a discount rate that is 1.00% lower (6.00%) or 1.00% higher (8.00%) than the current rate:

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

As of December 31, 2021
(Dollars in Thousands)

1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
\$5,404,951	\$2,050,238	\$(684,164)

FINANCIAL

REQUIRED SUPPLEMENTARY INFORMATION



STAFF TRAINING

DEI TRAINING



TRAINING

Training is a very important aspect of OCERS. Many levels of training and methods of training are available to members of the Board of Retirement, the Executive Team and all other team members. Eureka is an online learning center available to all team members with a variety of topics from time management to preparing performance evaluations to learning more about the software tools used. There is something for everyone to learn and expand their knowledge.

One of the business initiatives in 2021 included expanding diversity, equity and inclusion (DEI) training. Building an inclusive culture and environment helps to build team engagement. An engaged team will assist to reduce employment turnover and improve the collaboration and understanding between team members. Inclusion creates a sense of belonging in the workplace for team members.

Training also includes looking to the future, and determining a succession plan. Succession training includes all levels, not just the executive level. During 2021, the Next Level Leadership program debuted. Participants of the program had the opportunity to learn valuable skills for future promotional opportunities.

SUCCESSION TRAINING



Schedule of Changes in Net Pension Liability of Participating Employers

For the Years Ended December 31, 2013 through 2021¹
(Dollars in Thousands)

	2021	2020	2019	2018
Total Pension Liability				
Service Cost	\$ 510,863	\$ 512,255	\$ 499,256	\$ 491,373
Interest	1,609,891	1,535,954	1,452,644	1,379,917
Differences Between Expected and Actual Experience	(113,046)	162,336	24,383	(118,124)
Changes of Assumptions	-	18,967	-	-
Benefit Payments, Including Refunds of Employee Contributions	(1,045,738)	(973,325)	(900,902)	(828,278)
Other	-	-	-	-
Net Change in Total Pension Liability	961,970	1,256,187	1,075,381	924,888
Total Pension Liability - Beginning	23,010,450	21,754,263	20,678,882	19,753,994
Total Pension Liability - Ending (a)	<u>\$ 23,972,420</u>	<u>\$ 23,010,450</u>	<u>\$ 21,754,263</u>	<u>\$ 20,678,882</u>
Plan Fiduciary Net Position				
Contributions - Employer ³	\$ 698,791	\$ 659,807	\$ 653,793	\$ 580,905 ⁵
Contributions - Employee	271,334	279,384	279,373	270,070
Net Investment Income/(Loss)	3,222,065	2,173,184	2,183,808	(324,628)
Benefit Payments, Including Refunds of Employee Contributions	(1,045,738)	(973,325)	(900,902)	(828,278)
Administrative Expense	(21,473)	(20,428)	(19,171)	(18,284)
Net Change in Plan Fiduciary Net Position	3,124,979	2,118,622	2,196,901	(320,215)
Plan Fiduciary Net Position - Beginning	18,797,203	16,678,581	14,481,680	14,801,895
Plan Fiduciary Net Position - Ending (b)	21,922,182	18,797,203	16,678,581	14,481,680
Net Pension Liability (a) - (b) = (c)	<u>\$ 2,050,238</u>	<u>\$ 4,213,247</u>	<u>\$ 5,075,682</u>	<u>\$ 6,197,202</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (b)/(a)	91.45%	81.69%	76.67%	70.03%
Covered Payroll (d) ⁶	\$ 1,870,387	\$ 1,909,268	\$ 1,783,054	\$ 1,718,798
Plan Net Pension Liability as a Percentage of Covered Payroll (c)/(d)	109.62%	220.67%	284.66%	360.55%

¹ Data for years prior to 2013 is not available. Information will be presented over ten years as it becomes available prospectively.

² Orange County Public Law Library was separated out from the Orange County Sanitation District in Rate Group #3 and put into their own Rate Group (Rate Group #12) after the valuation as of December 31, 2015. There was an adjustment to the UAAL for Rate Group #3 that was originally included in the December 31, 2015 valuation. There was a credit of \$509 given to the Orange County Public Law Library to reflect that their future service enhancement did not increase the UAAL.

³ Reduced by discount for prepaid contributions and transfers from County Investment Account.

⁴ A \$24,042 transfer from the Orange County Sanitation District Deferred UAAL Account which was required to offset a UAAL increase for the assumption changes has been excluded from this amount.

⁵ A \$14,589 transfer from the Orange County Sanitation District Deferred UAAL Account which was required to offset a UAAL increase for the actuarial losses as of December 31, 2018 has been excluded from this amount.

⁶ Covered payroll represents payroll on which contributions to the pension plan are based.

Schedule of Changes in Net Pension Liability of Participating Employers

For the Years Ended December 31, 2013 through 2021¹
(Dollars in Thousands)

(continued)

	2017	2016	2015	2014	2013
Total Pension Liability					
Service Cost	\$ 452,412	\$ 427,473	\$ 439,454	\$ 438,600	\$ 444,838
Interest	1,305,268	1,241,080	1,197,308	1,153,352	1,109,002
Differences Between Expected and Actual Experience	(66,964)	(323,566)	(205,463)	(327,402)	(295,483)
Changes of Assumptions	827,197	-	-	(127,729)	-
Benefit Payments, Including Refunds of Employee Contributions	(764,344)	(717,976)	(675,963)	(630,678)	(586,284)
Other	-	(509) ²	-	-	-
Net Change in Total Pension Liability	1,753,569	626,502	755,336	506,143	672,073
Total Pension Liability - Beginning	18,000,425	17,373,923	16,618,587	16,112,444	15,440,371
Total Pension Liability - Ending (a)	<u>\$ 19,753,994</u>	<u>\$ 18,000,425</u>	<u>\$ 17,373,923</u>	<u>\$ 16,618,587</u>	<u>\$ 16,112,444</u>
Plan Fiduciary Net Position					
Contributions - Employer ³	\$ 572,104 ⁴	\$ 567,196	\$ 571,298	\$ 625,520	\$ 427,095
Contributions - Employee	262,294	258,297	249,271	232,656	209,301
Net Investment Income/(Loss)	1,939,635	1,061,243	(10,873)	499,195	1,152,647
Benefit Payments, Including Refunds of Employee Contributions	(764,344)	(717,976)	(675,963)	(630,678)	(586,284)
Administrative Expense	(17,002)	(16,870)	(12,521)	(11,905)	(11,705)
Net Change in Plan Fiduciary Net Position	1,992,687	1,151,890	121,212	714,788	1,191,054
Plan Fiduciary Net Position - Beginning	12,809,208	11,657,318	11,536,106	10,821,318	9,630,264
Plan Fiduciary Net Position - Ending (b)	14,801,895	12,809,208	11,657,318	11,536,106	10,821,318
Net Pension Liability (a) - (b) = (c)	<u>\$ 4,952,099</u>	<u>\$ 5,191,217</u>	<u>\$ 5,716,605</u>	<u>\$ 5,082,481</u>	<u>\$ 5,291,126</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (b)/(a)	74.93%	71.16%	67.10%	69.42%	67.16%
Covered Payroll (d) ⁶	\$ 1,678,322	\$ 1,602,675	\$ 1,521,036	\$ 1,513,206	\$ 1,494,745
Plan Net Pension Liability as a Percentage of Covered Payroll (c)/(d)	295.06%	323.91%	375.84%	335.88%	353.98%

Schedule of Investment Returns

For the Years Ended December 31, 2014 Through 2021¹

Year Ended December 31	Annual Money Weighted Rate of Return, Net of Investment Expense
2014	4.64%
2015	-0.51%
2016	8.71%
2017	14.74%
2018	-1.31%
2019	14.81%
2020	11.22%
2021	16.67%

¹ Data for years prior to 2014 is not available. Information will be presented over ten years as it becomes available prospectively.

Schedule of Employer Contributions

For the Years Ended December 31, 2012 through 2021
(Dollars in Thousands)

Year Ended December 31	Actuarially Determined Contributions ^{1,2}	Actual Contributions ^{1,2}	Contribution Deficiency / (Excess)	Covered Payroll ³	Contributions as a % of Covered Payroll
2012	\$ 406,521	\$ 406,521	\$ -	\$ 1,497,475	27.15%
2013	426,020	427,095 ⁴	(1,075)	1,494,745	28.57%
2014	476,320	625,520 ⁴	(149,200)	1,513,206	41.34%
2015	502,886	571,298 ⁴	(68,412)	1,521,036	37.56%
2016	521,447	567,196 ⁴	(45,749)	1,602,675	35.40%
2017	536,726 ⁴	572,104 ^{4,5}	(35,378)	1,678,322	34.09%
2018	556,728 ⁵	580,905 ^{4,6}	(24,177)	1,718,798	33.80%
2019	583,057	653,793 ⁴	(70,733)	1,783,054	36.67%
2020	638,215	659,807 ⁴	(21,592)	1,909,268	34.56%
2021	684,142	698,791 ⁴	(14,649)	1,870,387	37.36%

¹ Excludes employer pickup of member contributions and transfers from County Investment Account (funded by pension obligation proceeds held by OCERS). Those transfers are as follows:

2012	\$ 5,500	2017	\$ -
2013	5,000	2018	-
2014	5,000	2019	-
2015	-	2020	5,000
2016	-	2021	15,077

² Reduced by discount for prepaid contributions

³ Covered payroll represents payroll on which contributions to the pension plan are based.

⁴ Includes additional contributions made by employers towards the reduction of their UAAL.

⁵ A \$24,042 transfer from the Orange County Sanitation District Deferred UAAL Account, which was required to offset a UAAL increase for the assumption changes has been excluded from both these amounts.

⁶ A \$14,589 transfer from the Orange County Sanitation District Deferred UAAL Account which was required to offset a UAAL increase for the actuarial losses as of December 31, 2018 has been excluded from both of these amounts.

Notes to the Required Supplementary Information

Actuarial Valuation Methods and Assumptions

The actuarial determined contribution rates in the schedule of employer contributions are calculated as of December 31. Rates are effective eighteen months after the valuation date for the fiscal year that begins July 1. The following actuarial methods and assumptions were used to calculate the actuarially determined contributions for the year ended December 31, 2021:

Valuation Date	Actuarially determined contribution rates for the first six months of calendar year 2021 or the second half of fiscal year 2020-2021 are calculated based on the December 31, 2018 valuation. Actuarially determined contribution rates for the last six months of calendar year 2021 or the first half of fiscal year 2021-2022 are calculated based on the December 31, 2019 valuation.
Actuarial Cost Method	Entry Age Actuarial Cost Method
Amortization Method	Level percent of payroll for total unfunded actuarial accrued liability
Remaining Amortization Period	Effective December 31, 2013, the outstanding balance of the UAAL from the December 31, 2012 valuation was combined and re-amortized over a declining 20-year period. Any changes in UAAL due to actuarial gains or losses or due to changes in assumptions or methods will be amortized over separate 20-year periods. Any changes in UAAL due to plan amendments will be amortized over separate 15-year periods and any change in UAAL due to early retirement incentive programs will be amortized over a separate period of up to 5 years.
Asset Valuation Method	The Actuarial Value of Assets is determined by recognizing any difference between the actual and the expected market return over a five-year period. The Valuation Value of Assets is the Actuarial Value of Assets reduced by the value of the non-valuation reserves.

Actuarial Assumptions:	
December 31, 2018 Valuation	
Investment Rate of Return	7.00% net of pension plan investment expense, including inflation
Inflation Rate	2.75%
Real Across-the-Board Salary Increase	0.50%
Projected Salary Increases	General: 4.25% to 12.25% and Safety: 4.75% to 17.25%, vary by service, including inflation
Cost of Living Adjustments	2.75% of retirement income Retiree COLA increases of 2.75% per year. For members that have COLA banks, it is assumed they receive 3.00% COLA increases until their COLA banks are exhausted and 2.75% thereafter.
Other Assumptions	Same as those used in the December 31, 2018 funding actuarial valuation
December 31, 2019 Valuation	
Investment Rate of Return	7.00% net of pension plan investment expense, including inflation
Inflation Rate	2.75%
Real Across-the-Board Salary Increase	0.50%
Projected Salary Increases	General: 4.25% to 12.25% and Safety: 4.75% to 17.25%, vary by service, including inflation
Cost of Living Adjustments	2.75% of retirement income Retiree COLA increases of 2.75% per year. For members that have COLA banks, it is assumed they receive 3.00% COLA increases until their COLA banks are exhausted and 2.75% thereafter
Other Assumptions	Same as those used in the December 31, 2019 funding actuarial valuation

Significant Factors Affecting Trends in Actuarial Information – Pension Plan

Changes in Benefit Terms

- 2016
- New employees hired by the City of San Juan Capistrano on and after July 1, 2016 will be offered a choice in retirement plan formulas; the PEPRA Plan U (2.5% at 67 PEPRA – General) or the alternate plan formula, Plan W (1.62% at 65 PEPRA – General).
 - Orange County Public Law Library was moved from Rate Group #3 into its own rate group, Rate Group #12.
- 2012
- With the exception of OCTA, members with membership date on or after January 1, 2013 will be placed in PEPRA tiers: Plan T (1.62% at 65 PEPRA – General); Plan U (2.5% at 67 PEPRA – General); or Plan V (2.7% at 57 PEPRA – Safety).

Significant Factors Affecting Trends in Actuarial Information – Pension Plan

(continued)

Changes in Assumptions

- 2020
- The inflation rate was reduced from 2.75% to 2.50% (retiree cost-of-living assumption maintained at 2.75%).
 - Projected salary increases for general members of 4.25% to 12.25% changed to 4.00% to 11.00% and safety members changed from 4.75% to 17.25% to 4.60% to 15.00%.
 - Mortality rate tables changed to Pub-2010 Amount Weighted Above-Median Mortality Table, projected generationally using two-dimensional MP-2019 scale, adjusted separately for healthy and disabled for both general and safety members.
 - The cost impact of assumption changes to employers is \$19 million.
- 2017
- The assumed rate of return was decreased from 7.25% to 7.00%.
 - The inflation rate was decreased from 3.00% to 2.75%.
 - Projected salary increases for general members of 4.25% to 13.50% changed to 4.25% to 12.25% and safety members changed from 5.00% to 17.50% to 4.75% to 17.25%.
 - Mortality rate tables changed to a Headcount-Weighted RP-2014 Healthy Annuitant Mortality Table, projected generationally using two-dimensional MP-2016 scale, adjusted separately for healthy and disabled for both general and safety members.
 - Impact due to assumption changes to be phased-in over three years.
- 2014
- The inflation rate was reduced from 3.25% to 3.00%
 - Total wage inflation and payroll growth was reduced from 3.75% to 3.50%.
 - Inclusion of additional cash-out assumptions in developing basic member contribution rates in the legacy plans.
 - Mortality rates for after service retirement were changed to reflect longer life expectancies for Safety members and shorter life expectancies for General members and longer life expectancies for both General and Safety members for after disability retirement. The cost impact to employer to be phased in over three years.
- 2013
- The outstanding balance of the December 31, 2012 UAAL was combined and re-amortized over a 20-year period.
- 2012
- The investment rate of return was decreased from 7.75% to 7.25%.
 - The inflation rate was decreased from 3.50% to 3.25%.
 - Projected salary increases for general members of 4.50% to 11.50% changed to 4.75% to 13.75% and safety members changed from 4.50% to 13.50% to 4.75% to 17.75%.

FINANCIAL

OTHER SUPPLEMENTARY INFORMATION



IN OFFICE

VIRTUAL



MEETINGS

Throughout 2021, board and committee meetings, staff meetings, and other meetings remained virtual due to the ongoing pandemic. As the pandemic waned, returning to in-person meetings is in the near future; meetings will have a new look going forward. Meetings may be in-person, some will be virtual and some will be a combination of the two.

Hybrid meetings allow an individual to attend the meeting which may not have been possible in person and increase the attendance of the meeting. The flexibility to attend in-person or virtually may be invaluable for the outcome of the meeting.

HYBRID



Schedule of Contributions

For the Year Ended December 31, 2021
(Dollars in Thousands)

	Employee	Employer
Pension Trust Fund Contributions		
County of Orange	\$ 204,560	\$ 538,486
Orange County Fire Authority	29,624	97,706 ¹
Orange County Superior Court of California	15,275	37,645
Orange County Transportation Authority	10,212	30,263
City of San Juan Capistrano	705	8,867 ²
Orange County Sanitation District	8,398	8,607
UCI Medical Center & Campus	-	3,276 ³
Orange County Employees Retirement System	1,155	3,301
Transportation Corridor Agencies	750	867
Orange County Department of Education	-	346 ³
Orange County Cemetery District	182	243
Orange County Children & Families Commission	137	199
Orange County Local Agency Formation Commission	48	197
Orange County In-Home Supportive Services Public Authority	129	174
Orange County Public Law Library	159	134
Contributions Before Prepaid Discount	271,334	730,311
Prepaid Employer Contribution Discount	-	(31,520)
Total Pension Trust Fund Contributions	271,334	698,791
Health Care Fund - County Contributions	-	41,049
Health Care Fund - OCFA Contributions	-	16,773⁴
Custodial Fund - OCTA Employer OPEB Contributions	-	605
Total Contributions	\$ 271,334	\$ 757,218

¹ Unfunded actuarial accrued liability payments were made for \$14.6 million by the Orange County Fire Authority.

² Unfunded actuarial accrued liability payments were made for \$6.5 million for the City of San Juan Capistrano.

³ Unfunded actuarial liability payments have been made in accordance with a separate 20-year level dollar payment schedule to include liabilities for employee benefits related to past service credit.

⁴ Unfunded actuarial accrued liability payments were made for \$14.3 million for the Orange County Fire Authority Health Care Fund.

Schedule of Administrative Expenses

For the Year Ended December 31, 2021
(Dollars in Thousands)

Pension Trust Fund Administrative Expenses	
Expenses Subject to the Statutory Limit	
Personnel Services	
Employee Salaries and Benefits	\$ 13,286
Board Members' Allowance	<u>15</u>
Total Personnel Services	<u>13,301</u>
Office Operating Expenses	
Depreciation/Amortization	2,577
Professional Services	2,037
General Office and Administrative Expenses	1,485
Rent/Leased Real Property	<u>687</u>
Total Office Operating Expenses	<u>6,786</u>
Total Expenses Subject to the Statutory Limit	<u>20,087</u>
Expenses Not Subject to the Statutory Limit	
Information Technology Professional Services	676
Actuarial Fees	275
Equipment / Software	303
Information Security Professional Services	<u>132</u>
Total Expenses Not Subject to the Statutory Limit	<u>1,386</u>
Total Pension Trust Fund Administrative Expenses	21,473
Health Care Fund - County Administrative Expenses	23
Health Care Fund - OCFA Administrative Expenses	24
Custodial Fund - OCTA Administrative Expenses	<u>23</u>
Total Administrative Expenses	<u>\$ 21,543</u>

Schedule of Investment Expenses

For the Year Ended December 31, 2021
(Dollars in Thousands)

Investment Management Fees*	
Global Public Equity	\$ 22,958
Core Fixed Income	2,647
Credit	11,603
Real Assets	26,724
Absolute Return	1
Private Equity	24,643
Risk Mitigation	12,843
Unique Strategies	1,308
Short-Term Investments	336
Total Investment Management Fees	103,063
Other Fund Expenses¹	22,656
Other Investment Expenses	
Consulting/Research Fees	2,162
Investment Department Expenses	2,773
Legal Services	468
Custodian Services	580
Investment Service Providers	19
Total Other Investment Expenses	6,002
Security Lending Activity	
Security Lending Fees	238
Rebate Fees	(5)
Total Security Lending Activity	233
Custodial Fund - OCTA Investment Fees and Expenses	3
Total Investment Expenses	\$ 131,957

* Does not include undisclosed fees deducted at source.

¹ These costs include, but are not limited to, foreign income tax and other indirect flow-through investment expenses such as organizational expenses in limited partnership structures.

Schedule of Payments for Professional Services

For the Year Ended December 31, 2021
(Dollars in Thousands)

Type of Services*	
Professional Expenses Subject to the Statutory Limit	
Medical/Disability Services	\$ 453
Information Technology Services	383
Legal Counsel	380
Other Consulting/Services	257
Operations Support Services	234
Audit Services	128
Other Legal Services	66
Human Resources Services	56
Finance Services	43
Information Security Services	37
Total Professional Expenses Subject to the Statutory Limit	<u>2,037</u>
Professional Expenses Not Subject to the Statutory Limit	
Consulting/Research Fees	2,162
Information Technology Consultants	676
Custodian Services	580
Investment Legal Services	468
Actuarial Services	275
Information Security Consultants	132
Investment Service Providers	19
Total Professional Expenses Not Subject to the Statutory Limit	<u>4,312</u>
Total Payments for Professional Expenses	<u>\$ 6,349</u>

* Detail for fees paid to investment professionals is presented in the Investment Section.

INVESTMENTS

THINK BEFORE
YOU CLICK



PHISHING TESTS

INFORMATION SECURITY AND INFORMATION TECHNOLOGY

Information security protects information and information systems from unauthorized access, use, disruption or destruction. OCERS has the responsibility to protect members' confidential information at all times.

Team members receive continual training related to information security. The training includes phishing tests, information security tips regarding the most current scams, and on-going information security training courses. Team members learn to "Think Before you Click", which is an important line of defense.

During 2021, the information technology team began the implementation of the cloud-based solution, Microsoft Office 365. The Microsoft 365 platform helps protect against threats to users, devices and infrastructure.

AUTHORIZED
DEVICES



CLOUD SYSTEM

Investment Consultant's Statement



5796 Armada Drive
Suite 110
Carlsbad, CA 92008

760.795.3450
Meketa.com

MEMORANDUM

TO: Board Members, Orange County Employees Retirement System
FROM: Stephen McCourt, Allan Emkin, Laura Wirick, Stephanie Sorg, Meketa Investment Group
DATE: April 27, 2022
RE: Investment Consultant's Statement for 2021 Annual Comprehensive Financial Report

This letter reviews the investment performance of the Orange County Employees Retirement System ("OCERS") portfolio for the fiscal year ending December 31, 2021.

OCERS' stated mission is to provide secure retirement and disability benefits with the highest standards of excellence. To this end, OCERS strives to align the portfolio's asset allocation, investments, and other related decisions with the goals of the overall System. This alignment is a fundamental part of the Investment Committee's regular meetings, where performance is examined (both on an overall portfolio basis and at the manager level), asset allocation is reviewed and modified to fit changes in expected return, strategic and tactical decisions are discussed, and the System's liabilities are reviewed. Meketa Investment Group, OCERS' general consultant, works to provide guidance to the Board (the System's fiduciary), and assist the Board with performance evaluation, asset allocation, manager selection, and other industry best practices.

State Street Bank and Trust Company, OCERS' custodian, independently prepared the performance data used in this report. Rates of return are represented using a time-weighted rate of return methodology based upon market values.

2021 Calendar Year in Review

We entered calendar year 2021 reflecting on a past year where the global population had their lives disrupted because of COVID-19, a novel coronavirus without an available playbook to address it. The year included global lockdowns, supply chain disruptions and declines in global economic growth. However, we entered calendar year 2021 with approved vaccines, inoculations that were developed in record time with considerable global cooperation. The combination of past negative economic growth, substantial global fiscal and monetary stimulus, and the first rounds of vaccine distribution, led to optimism around the globe for capital markets that were sure to have a better year than the first year of this pandemic.

In the US, fiscal stimulus was enacted in 2020 under the Trump administration, and an additional stimulus package was signed into law by President Biden in March 2021. Titled the American Rescue Plan Act ("ARPA") of 2021, the \$1.9 Trillion package was intended to speed up the economic recovery coming out of the pandemic and was similar in size to the CARES Act passed in 2020. The ARPA

BOSTON CHICAGO LONDON MIAMI NEW YORK PORTLAND SAN DIEGO

Investment Consultant's Statement

(continued)



April 27, 2022

legislation included an extension of unemployment benefits, direct payments to individuals and families, emergency paid leave, and grants to small businesses, among other items.

One of the goals of the ARPA act was to help drive unemployment down, and the legislation contributed to achieving that goal. At the beginning of the year, unemployment stood at 6.7% , down from over 14% during the peak of the pandemic. Outsized fiscal stimulus, relative to other developed nations, contributed to enthusiasm in the markets during the first quarter. The Russell 3000 increased by 6.3% during the first quarter of 2021, outpacing the MSCI EAFE and MSCI EM, which returned 3.5% and 2.3%, respectively.

As the year progressed, there was increased focus on ramping up production and distribution of vaccines on a global basis. Wealthy countries purchased vaccines for their population and then some, with the idea of distributing excess shots globally, as needed. As vaccines became readily available, many nations also faced another challenge: reluctance to take the shot. High transmission rates in many highly populated, less inoculated countries, gave rise to variants of the original virus strain. These variants of concern, named Beta, Delta and eventually Omicron, reminded global economies that the pandemic would continue, lockdowns would come and go and supply chain issues would not resolve as quickly as originally anticipated.

It was around this time that these supply chain issues started to show up in Consumer Price Index ("CPI") readings. At the beginning of 2021, CPI was at 1.4%, below long-term averages and the Federal Reserve's target. This reading had increased to 2.6% at the end of the first quarter and was at 5.4% by midyear. At the time, many market commentators and the Federal Reserve were labeling increases as "transitory," a result of pandemic-induced supply chain issues and accumulated savings over a year of stay-at-home orders. The Federal Reserve declined to act at the time, citing elevated unemployment levels and an incomplete recovery. Capital markets largely shrugged off the higher inflation concerns with all major asset classes, producing positive returns in the second quarter of 2021, with the notable inflation sensitive Bloomberg Commodity Index increasing 13.3%.

As the Delta variant began to take hold during the summer, many countries returned to some sort of lockdown. Travel slowed and manufacturing production faltered as factories, particularly those in Asia, shut down leading to further strain on supply chains and uneven economic growth across countries. Volatility increased in many asset classes, while investors fell back to their pandemic playbook; rotating from small cap stocks to large, a focus on growth, and the ability to capitalize on stay-at-home trends. Fiscal and monetary stimulus remained supportive, which coupled with stronger economic growth and better underlying economic fundamentals led to US stocks outperforming non-US stocks once again. Ultimately for the third quarter, US markets were slightly positive while developed markets outside the US were slightly negative (in US dollars), while the MSCI EM index declined -8.1% for the three months ending September 30, 2021. Rates stayed largely unchanged in the US as inflation leveled off though at historically elevated levels.

Investment Consultant's Statement

(continued)



April 27, 2022

As Delta began to subside, optimism again began to take hold. People were doing more traveling, businesses that previously operated on a remote basis started to invite employees back to office buildings, and schools in many places reopened to in-person learning. Corporate earnings were positive and expectations for an orderly monetary policy withdrawal all helped contribute to positive returns at the beginning of the fourth quarter. However, news of a new variant of concern, Omicron, were beginning to leak out of South Africa. Early reports were that this new variant was significantly more transmissible, and possibly less virulent. Depending on the region, restrictions were reintroduced, exacerbating supply chain issues. Additionally, high natural gas prices were threatening the economic recovery in Europe and troubles related to China's overleveraged property sector and crackdown on the technology sector began to rattle markets.

Ultimately, Omicron proved to be much less dangerous as measured by hospitalizations and death rates. In the US and other developed countries, new restrictions on travel were largely avoided, while China continued its "Zero Covid" approach, shutting down large cities when any new cases were detected.

Over the full year, US stocks outperformed other regions, with the S&P 500 returning 28.7% for the year, compared to the MSCI EAFE at 11.3%, and a decline of -2.5% for the MSCI EM index. The MSCI China index was a notable outlier with a full year return of -21.7%. Within fixed income, higher inflation led the Bloomberg TIPS index to increase 6.0% over the full year, while the Bloomberg Aggregate index declined by -1.5% on higher rates. Economic growth in the US registered at levels not seen in over 40 years at 5.7% over the year, while Europe's economic output increased 5.4% and China at 8.1%. Inflation remained stubbornly high, with CPI increasing 7.0% in the US over the year, the highest reading since 1981.

2022 Outlook

After a year in which economic growth rebounded around the world, the question moving into 2022 is: How do consumers, economies and central banks react to higher prices? There are signs that economic growth will slow while inflation remains elevated, exacerbated by Russia's invasion of Ukraine in February. Economic uncertainties abound. These include:

- 1) Central Banks find themselves behind the curve on inflation, with available tools that may be too blunt to reduce inflation without sending economies into a recession. There are three large, non-monetary, drivers of current inflation, two of which that may prove less sensitive to monetary policy tightening:
 - Decline in globalization: supply chain issues and geopolitical risks have placed a premium on supply chain stability relative to supply chain efficiency. Beginning in the 1990s and accelerating after the inclusion of China in the World Trade Organization in 2001, many companies globalized their sourcing and production and embraced lean manufacturing techniques in order to drive efficiency. But the move toward globalization, though greatly reducing costs, exposed companies to an abundance of supply chain risks, which trade disputes, the pandemic and

Investment Consultant's Statement

(continued)



April 27, 2022

Russian invasion of Ukraine laid bare. As a result, companies are focused on making supply chains more resilient and robust. This often entails the reshoring of large segments of the supply chain and an embrace of redundancies, including input and inventory stockpiling, and diversifying sourcing from nearshored, and/or reshored suppliers. Ultimately, with a focus on supplier reliability over cost. This transition is likely a secular change which could lead to pricing pressure for years to come, that is largely unaffected by monetary policy.

- 2) Unemployment levels are low, and back near levels consistent with full employment, but the labor participation levels have not recovered and there continues to be an imbalance between job openings and the available workers to fulfill them.
 - Potential for a wage-price spiral: early retirements and other trends associated with the pandemic and the "Great Resignation" have left millions more job openings than available workers in the US. The labor participation rate was at 63.4% in January of 2020, prior to the pandemic, and was still only at 61.9% at the end of 2021. As companies look to respond to increased demand as the economy reopens and economic growth rebounds, they have faced a distinct shortage in available workers. In response, some companies have been aggressively raising wages in order to fill vacancies. As companies look to offset the higher input costs, often they respond by raising the prices of the goods and services they sell, furthering pricing pressure. Which then can feedback into wage expectations and ultimately additional wage growth eventually leading to a cyclical feedback loop. Ultimately, such a condition can only exist during a strong economic expansion and ultra-tight labor markets. As a result, inflation arising from this process should be sensitive to monetary policy to the extent that the central bank is willing to slow economic growth to break the cycle.
 - Base input supply shock: Russia's invasion of Ukraine and the resulting sanctions have created a supply shock to many base inputs, notably energy and metals. Given the large role Russia and Ukraine play in the global export markets for oil, natural gas, grains, metals, and fertilizer, the war and subsequent sanctions are having a large disruptive impact on the price of many base inputs in supply chains. Since the supply shock is focused on the base inputs of many supply chains, the ripple effect and contagion can cause pricing pressure across an exceedingly wide swath of the economy. Inflation arising from supply shocks are only minimally influenced by monetary policy as it can do nothing to resolve the supply constraint and can only affect the demand component through a slowing of the economy. As such, stagflation is usually associated with a supply shock driven inflationary environment.
- 3) Persistently high inflation may start to affect consumer and business spending.
 - We have already begun to see some evidence that consumer spending is declining, and business spending may also decline due to higher prices.
- 4) The invasion of Ukraine by Russia evolves into a long-term conflict and threatens to pull in other nations to the fight.
 - This development increases the possibility of lower economic growth worldwide, and most likely causes prices to stay elevated for longer periods of time, versus the absence of global conflict.

Investment Consultant's Statement

(continued)



April 27, 2022

- 5) Another COVID-19 variant of concern emerges that may be more dangerous.
- The novel coronavirus is still out there, and as it continues to spread there is always a chance that a new, more virulent variant could emerge.

OCERS 2021 Performance

OCERS' portfolio returned 16.6% in 2021, compared to the Policy Index's trailing 12-month return of 17.1%. The portfolio return was more than double the System's 7.0% required actuarial rate of return. Private Equity (reported on a one quarter lag) had the strongest absolute performance of all asset classes, returning 50.2%, while the Emerging Market Debt asset class had the weakest 2021 performance of -7.6%, as expectations of a marked slowdown in Chinese economic growth sparked fear in investors.

Over the trailing three- and five-year periods, the OCERS portfolio returned 14.1% and 10.8% on average annually. For the trailing three years, OCERS ranked in the 65th percentile compared to peers¹, and over the trailing five years, OCERS was roughly in-line with the peer group median.

If you have any questions, please contact us at (760) 795-3450.

SPM/LBW/SBS/jls

¹Based on InvestorForce peer rankings: Defined Benefit Public Funds over \$1 billion in assets.

Investment Returns

The table below details the annualized rates of return for the different asset categories over various time periods ended December 31, 2021. The returns for each asset class represent the composite returns of all the manager portfolios within the asset class. All returns are net of fees, which is a change from the reporting in prior years when only indirect or at source fees were deducted from the returns being presented. The method of computation of investment returns is time-weighted approximation.

	1 Year	3 Year	5 Year
Global Public Equity (%)	17.81	21.20	14.94
<i>MSCI ACWI IMI⁽¹⁾ (%)</i>	<i>18.22</i>	<i>20.20</i>	<i>14.29</i>
Private Equity (%)	50.16	24.61	20.91
<i>Cambridge Private Equity Lagged (%)</i>	<i>47.06</i>	<i>21.43</i>	<i>19.97</i>
Core Fixed Income (%)	0.30	5.99	4.54
<i>Fixed Income Custom Index⁽²⁾ (%)</i>	<i>-0.15</i>	<i>5.72</i>	<i>4.06</i>
Credit (%)	3.65	5.43	5.16
<i>Credit Custom Index⁽³⁾ (%)</i>	<i>1.29</i>	<i>6.12</i>	<i>4.51</i>
Real Assets (%)	19.09	4.50	N/A
<i>Real Assets Custom Index⁽⁴⁾ (%)</i>	<i>21.82</i>	<i>4.53</i>	<i>N/A</i>
Risk Mitigation (%)	3.82	5.36	N/A
<i>Risk Mitigation Custom Index⁽⁵⁾ (%)</i>	<i>5.04</i>	<i>5.83</i>	<i>N/A</i>
Unique Strategies (%)	6.18	N/A	N/A
<i>Short Term Investments (%)</i>	<i>0.01</i>	<i>0.99</i>	<i>1.26</i>
Cash Overlay (%)	11.24	12.81	8.75
<i>91-day Treasury Bill (%)</i>	<i>0.05</i>	<i>0.99</i>	<i>1.14</i>
Total Fund (%)	16.56	14.10	10.83
Composite Policy Benchmark⁶ (%)	17.05	13.71	10.65

¹ 100% MSCI AC World Net USD Index through 12/31/2018, 100% MSCI ACWI IMI Net Index thereafter

² Fixed Income Custom Index = 100% Bloomberg Capital Universal Index through 12/31/2017, 60% Bloomberg U.S. Aggregate Index + 20% Bloomberg U.S. Universal Index + 20% Bloomberg U.S. TIPS Index through 6/30/2020, 18% Bloomberg U.S. TIPS Index + 82% Bloomberg U.S. Universal Index thereafter

³ Credit Custom Index = 50% Merrill Lynch High Yield Constrained Index + 50% Credit Suisse Levered Loan Index through 12/31/2017, 40% Bloomberg U.S. High Yield Index + 40% Credit Suisse Levered Loan Index + 13% JPMorgan GBI-EM Global Diversified Un-hedged Index + 7% JPMorgan EM Bond Index through 6/30/2020, 35% Bloomberg U.S. High Yield Index + 21.6% Credit Suisse Levered Loan Index + 14.4% Credit Suisse Western European Levered Loan Index + 14.5% JPMorgan GBI-EM Global Diversified Un-hedged Index + 14.5% JPMorgan EM Bond Index through 12/31/20, 35% Bloomberg U.S. High Yield Index + 22% Credit Suisse Levered Loan Index + 14% Credit Suisse Western European Levered Loan Index + 14.5% JPMorgan GBI-EM Global Diversified Un-hedged Index + 14.5% JPMorgan EM Bond Index thereafter

⁴ Real Assets Custom Index = 45% NCREIF ODCE Index + 36% Cambridge Private Equity Energy Lagged + 13% Cambridge Infrastructure Index + 6% NCREIF Farmland Index through 6/30/2020, 58% NCREIF ODCE Index + 17% Cambridge Private Equity Energy Lagged + 25% Cambridge Infrastructure Index thereafter

⁵ Risk Mitigation Custom Index = 50% HFRI Macro: Systematic Diversified CTA + 50% Bloomberg Long Term U.S. Treasury Index through 9/30/2019, 33.33% Bloomberg Long Term U.S. Treasury Index + 33.33% HFRI Macro: Systematic Diversified CTA + 33.33% SG Trend Index through 12/31/2019, 25% Bloomberg Long Term U.S. Treasury Index + 25% HFRI Macro: Systematic Diversified CTA + 25% SG Trend Index + 25% SG Multi Alternative Risk Premia through 6/30/2020, 25% Bloomberg Long Term U.S. Treasury Index + 25% HFRI Macro Total Index + 25% SG Trend Index + 25% SG Multi Alternative Risk Premia thereafter

⁶ Policy Benchmark = 48% MSCI ACWI IMI Index¹ + 15% Cambridge Private Equity 1-Quarter Lag Index + 11% Fixed Income Custom Index² + 7% Credit Custom Index³ + 10% Real Assets Custom Index⁴ + 9% Risk Mitigation Custom Index⁵

As of January 1, 2018, OCERS' Policy Benchmark changed from being policy target weighted to being weighted based on the monthly actual asset class weights.

N/A - Represents new investment category and custom index in 2017; data not available.

Statement of Investment Objectives and Policies

General

The primary goal of the Orange County Employees Retirement System's investment program is to provide Plan participants with retirement benefits as required by the County Employees Retirement Law of 1937. This goal is accomplished through Employers' and Plan participants' contributions and the implementation of a carefully planned and monitored long-term investment program. The Board of Retirement (with the participation of the Investment Committee, staff and advisors) has exclusive control of all investments of the Plan and is responsible for the establishment of investment objectives, strategies and policies.

The Board of Retirement is authorized to invest in any form or type of investment deemed prudent in the informed opinion of the Board. The Investment Committee has adopted an Investment Policy Statement that provides a frame work for the management of OCERS' investments. This purpose of the Investment Policy Statement is to assist the Investment Committee in effectively supervising, monitoring, and evaluating the investment of the System's assets.

Investment Objectives

OCERS' goal is to meet the promised retirement benefits due its members. OCERS invests the assets of the system solely for the benefit of plan participants and beneficiaries while minimizing employer contributions and investment and administration costs. The long-term performance objective for the portfolio is to exceed the actuarially assumed rate of return net of fees and expenses, with a secondary objective of exceeding the return on an appropriate designated benchmark over a complete economic cycle and relevant longer periods, also net of fees and expenses.

Strategic Asset Allocation Policy and Maintenance

A pension fund's strategic asset allocation policy, implemented in a consistent and timely manner, is generally recognized to have the most impact on a fund's investment performance. The asset allocation policy determines a fund's optimal long-term asset class mix (target allocation). This policy is expected to achieve a specific set of investment goals, such as risk and return objectives. The policy also established ranges for the targeted levels around which asset levels are permitted to fluctuate. Fluctuations outside the permitted range act as triggers for reallocating assets to ensure adherence to targeted weights.

Program Administration and Manager Structure

For each major asset class, the System shall diversify assets by employing managers with demonstrated skill in their particular areas of expertise. The System will retain managers who utilize varied investment approaches and allocate assets in a manner that is consistent with the overall investment plan. For example, the sum of all domestic equity managers should exhibit characteristics that are similar, but not necessarily identical, to the overall equity market. When asset fluctuation causes the asset class to exhibit characteristics that are dissimilar from the plan, Investment Team shall direct cash flows to or from the various managers so that actual characteristics are consistent with the plan.

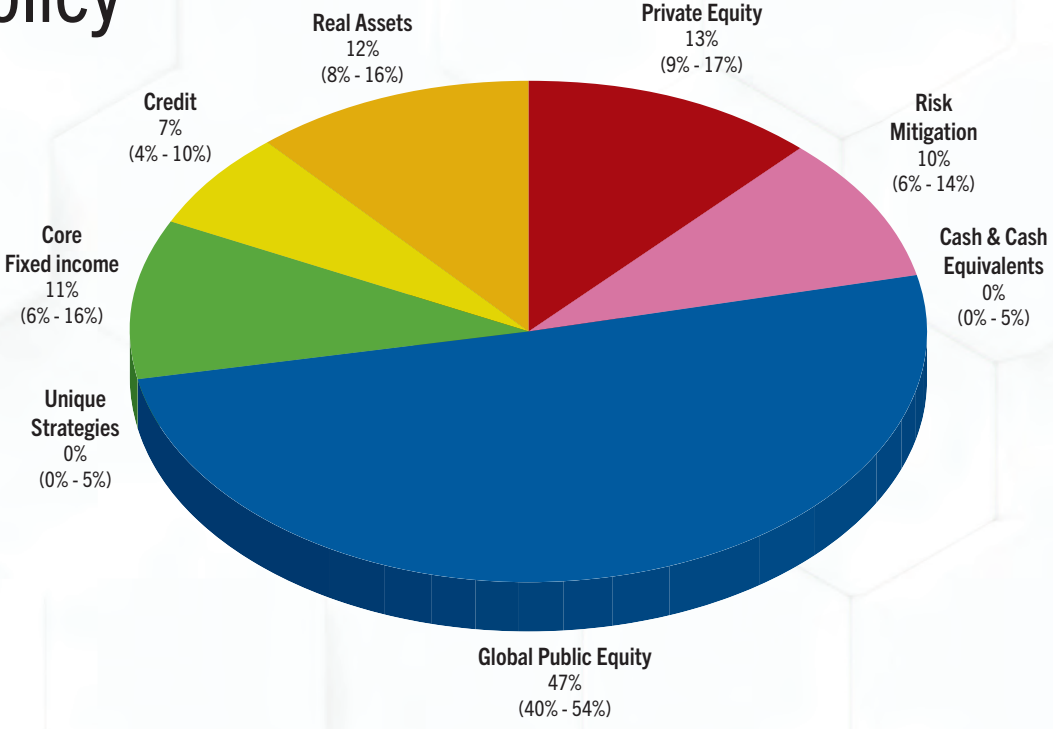
Use of Proxies

OCERS utilizes the services of Institutional Shareholder Services (ISS) to vote public equity proxies on OCERS' behalf. ISS is solely responsible for voting all proxies for securities, consistent with the ISS Benchmark Policy, as approved by the Investment Committee. If the ISS Benchmark Policy does not contain recommended voting guidelines for the subject of the proxy vote, ISS will contact OCERS for guidance prior to casting the vote to ensure proxy votes are in accordance with OCERS' guidelines to protect and enhance returns on behalf of plan participants.

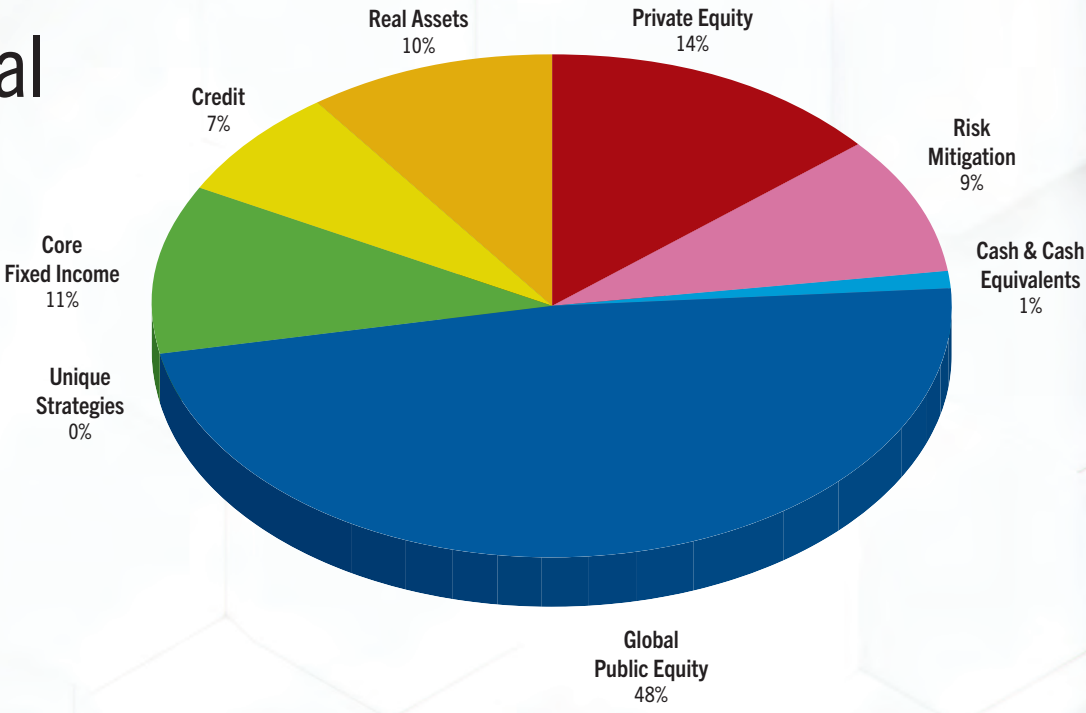
Asset Diversification

December 31, 2021

Policy

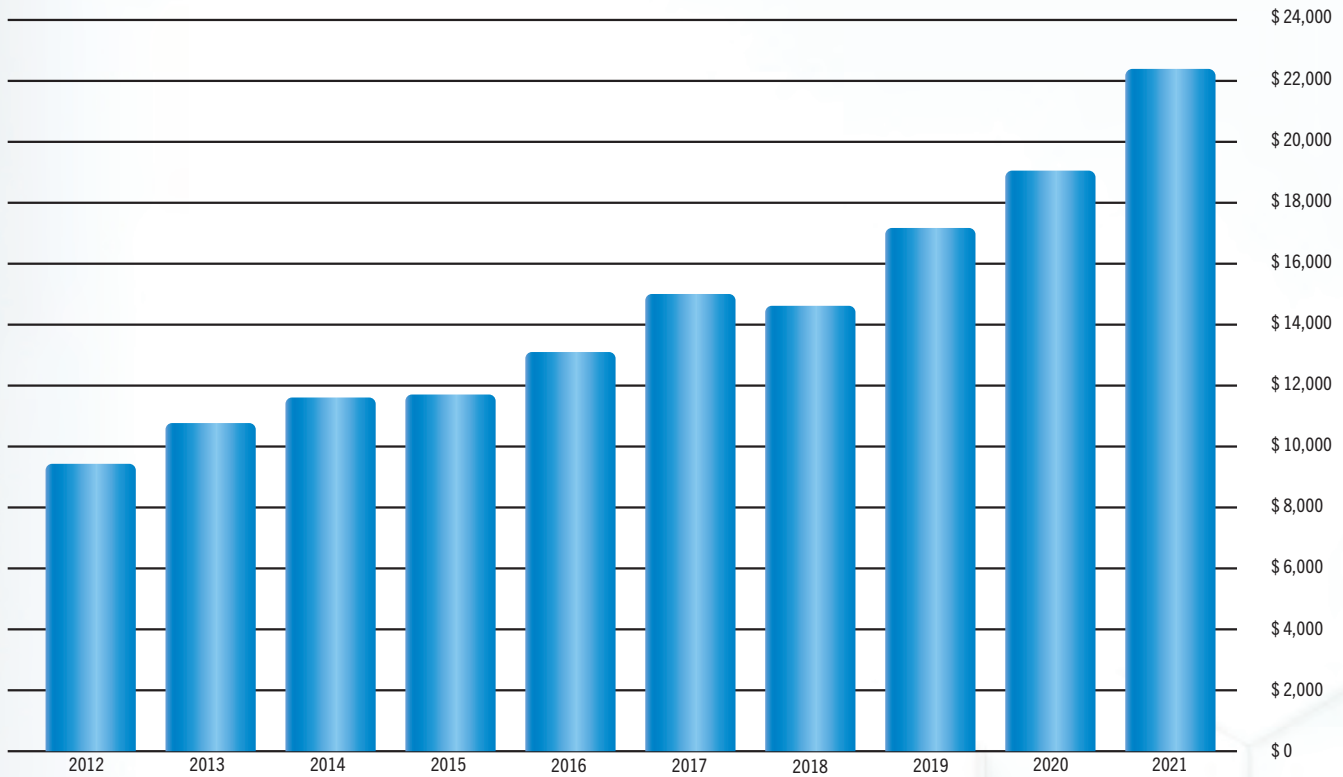


Actual



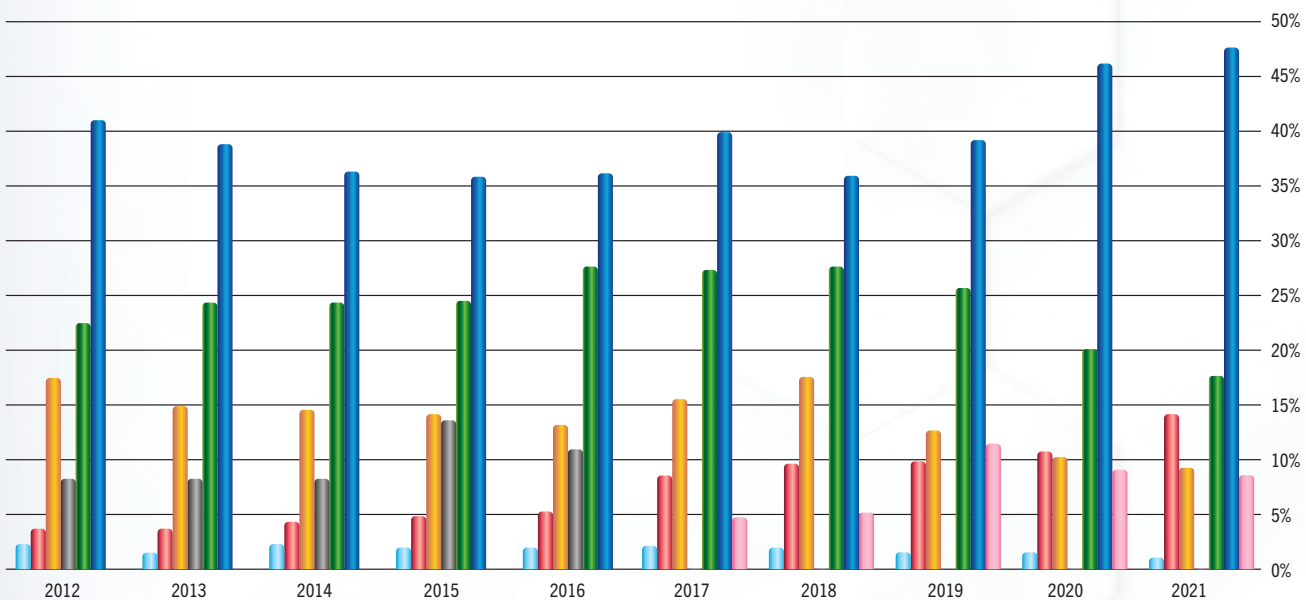
Growth of System Net Investments at Fair Value

For the Ten Years Ended December 31, 2021
(in Millions of Dollars)



Historical Asset Allocation

December 2012 - December 2021
(Actual)



- Cash & Cash Equivalents
- Private Equity
- Real Assets
- Absolute Return
- Core Fixed Income / Credit
- Equities
- Risk Mitigation
- Unique Strategies

History of Performance - Net

December 2012 - December 2021
(Actual)



As of 2016, all History of Performance rates of returns have been recalculated from the prior years' reporting to report net of all fees. In prior years, the rates of returns in the above schedule included indirect or at source fees, but excluded other direct fees.

Schedule of Commissions

For the Year Ended December 31, 2021
(Amounts in Thousands)

Broker Name	Number of Shares Traded	Commission per Share (in cents)	Total Commission
Banco Santander Central Hispano	941	0.11	\$ 1
Barclays Capital	915	0.66	6
BNP Paribas Securities	578	0.52	3
Citigroup Global Markets, Inc.	2,055	0.44	9
Credit Lyonnais Securities	1,599	0.50	8
Credit Suisse	14,278	0.23	33
Deutsche Bank	2,353	0.21	5
Goldman Sachs	11,380	0.56	64
HSBC	756	0.26	2
Instinet	8,743	0.62	54
ITG	844	0.71	6
J.P. Morgan Securities	16,971	0.24	40
Jefferies	2,023	1.48	30
Liquidnet	1,482	1.28	19
MacQuarie	3,123	0.42	13
Merrill Lynch	17,484	0.13	23
Morgan Stanley & Company, Inc.	15,524	0.24	37
National Financial Services Corp.	947	1.58	15
Peel Hunt, LLP.	866	0.12	1
Pershing	1,574	2.80	44
Raymond James	592	1.18	7
UBS	12,795	0.23	30
Virtu	1,583	1.14	18
Other*	6,464	1.52	98
Total	<u>125,870</u>	<u>0.45</u>	<u>\$ 566</u>

* Other includes 82 additional firms that comprise approximately 17% of total commissions and approximately 5% of the total number of shares traded. The average commission per share is 1.52 cents.

Commission Recapture Program

OCERS implemented a direct brokerage program where investment managers can trade with specific brokerage firms for the purpose of reducing trading commissions. The brokerage firms utilized for these services are Abel Noser, Capital Institutional Services, Cowen Execution Services Limited, and State Street Bank.

Schedule of Investment Expenses and Investment Summary

For the Year Ended December 31, 2021
(Dollars in Thousands)

Type of Investment Expenses	Assets Under Management at Fair Value	Percentage	Fees
Investment Management Fees*			
Investments at Fair Value:			
Global Public Equity	\$ 10,708,968	48%	\$ 22,958
Core Fixed Income	2,424,314	11%	2,647
Credit	1,659,609	7%	11,603
Real Assets	2,316,246	10%	26,724
Absolute Return	-	0%	1
Private Equity	3,369,659	15%	24,643
Risk Mitigation	1,982,386	9%	12,843
Unique Strategies	<u>76,904</u>	0%	<u>1,308</u>
Total Investments at Fair Value	22,538,086		102,727
Short-Term Investments ¹	<u>23,459</u>	<u>0%</u>	<u>336</u>
Total Investment Management Fees	<u>\$ 22,561,545</u>	<u>100%</u>	<u>103,063</u>
Other Fund Expenses ²			<u>22,656</u>
Other Investment Expenses			
Consulting/Research Fees			2,162
Investment Department Expenses			2,773
Legal Services			468
Custodian Services			580
Investment Service Providers			<u>19</u>
Total Other Investment Expenses			<u>6,002</u>
Securities Lending Activity			
Securities Lending Fees			238
Rebate Fees			<u>(5)</u>
Total Securities Lending Activity			<u>233</u>
Custodial Fund - OCTA Investment Fees and Expenses			<u>3</u>
Total Investment Expenses			<u>\$ 131,957</u>

¹ Short-Term Investments are categorized as Cash and Cash Equivalents in the Statement of Fiduciary Net Position.

² These costs include, but are not limited to, foreign income tax and other indirect flow-through investment expenses such as organizational expenses in limited partnership structures.

Schedule of Largest Equity Holdings

(by Fair Value)^{1, 2}

As of December 31, 2021
(Amounts in Thousands)

Common Stock	Shares	Fair Value
ASML HOLDING NV	32	\$ 25,519
OCADO GROUP PLC	581	13,196
EVOLUTION AB	90	12,840
NOVO NORDISK A/S B	97	10,920
LVMH MOET HENNESSY LOUIS VUI	13	10,629
FIRST CITIZENS BCSHS CL A	12	9,896
TOKYO ELECTRON LTD	15	8,346
NESTLE SA REG	57	7,903
QUAKER CHEMICAL CORPORATION	32	7,442
ENTEGRIS INC	53	7,367

Schedule of Largest Fixed Income Holdings

(by Fair Value)¹

As of December 31, 2021
(Amounts in Thousands)

Asset	CPN/ Maturity	Fair Value
FNMA TBA 30 YR 2.5	2.5%/02-11-2051	\$ 52,036
US TREASURY N/B	0.9%/11-15-2030	24,726
US TREASURY N/B	0.9%/06-30-2026	19,781
US TREASURY N/B	1.9%/08-31-2022	17,382
US TREASURY N/B	1.4%/10-31-2028	17,379
SWPC0KBZ4 CDS USD R F 1.00000	1.0%/12-20-2026	17,347
US TREASURY N/B	0.1%/03-31-2023	15,329
BWU01B1T8 IRS GBP R V 12MSONIA	1.0%/03-16-2027	15,034
US TREASURY N/B	0.1%/12-15-2023	14,343
US TREASURY N/B	0.1%/05-15-2023	13,258

¹ A complete list of portfolio holdings is available for review at the OCERS' office.

² The holding schedules pertain to holdings of individual securities; they do not reflect OCERS' investments in commingled funds.

List of Investment Managers

As of December 31, 2021

Absolute Return

Perry Capital

Cash Overlay

Parametric

Core Fixed Income

BlackRock Institutional Trust Company

Dodge & Cox

Longfellow Investment Management Co., LLC

Pacific Investment Management Company

Schroder Investment Management

Credit

Alcentra European Direct Lending

Arcmont Asset Management

Ashmore Investment Advisors

Beach Point Capital Management

Crayhill

Crescent Capital Group

Cross Ocean Partners

CarVal Investors

Hayfin Capital Management

Loomis, Sayles & Company, L.P.

Monroe Capital

NXT Capital

Owl Rock Technology Finance Corp

Pathlight Capital

Pacific Investment Management Company

Pharo Management

Silver Rock Financial

Strategic Value Partners

Tennenbaum Capital Partners

Wellington Trust Company, NA

Global Public Equity

Acadian Asset Management

AQR Capital Management, LLC

Artisan Partners

BlackRock Institutional Trust Company

Capital Group

City of London

Eagle Asset Management

Fidelity Institutional Asset Management

GQG Partners

Highfields Capital

Mondrian Investment Partners, Ltd.

Systematic Financial Management

William Blair & Co.

Private Equity

Abbott Capital

Accel-KKR

Adams Street Partners, LLC.

Advent International Corporation

Alcentra Clareant European Direct Lending

Altaris Health Partners

Cinven

Clearlake Capital Partners

DBL Partners

EQT

FSN Capital

General Catalyst

Genstar Capital

GGV Capital

Greenoaks Capital Partners

H.I.G. Capital

HarbourVest Partners, LLC

Harvest Partners

HealthQuest Venture Management III, LLC

Hellman & Friedman Capital Partners

Hg

Insight Partners

Mayfield

Mesirow

Monroe Capital

Oak HC/FT

One Rock Capital Partners

Orchard Landmark

Pantheon Ventures

Park Square Capital

Spark Capital

Stellex Capital Partners

Stone Point Capital

Thoma Bravo, LLC

Vista Equity Partners

Vitruvian Partners

WestCap

Real Assets

AEW Capital Management

Almanac Realty Investors

Angelo, Gordon & Co.

Argo Infrastructure Partners

BlackRock Institutional Trust Company

Blackstone

Brigade Capital Management

BTG Pactual

CB Richard Ellis Global Investors

Real Assets (cont.)

Cerberus Institutional Real Estate GP

Clarion Partners

DigitalBridge

EIG Management Company, LLC

EnCap

EnerVest, Ltd

EQT

Global Infrastructure Partners

Grain Management

ISQ Global Infrastructure

Jamestown

Kayne Anderson Capital Advisors

LBA Logistics

Manulife Investment Management

Morgan Stanley

Oaktree Capital Management

Principal Financial Group

Stonepeak Infrastructure Partners

Tennenbaum Capital Partners

True North Management Group

Warwick Group

Waterton Associates

Westbrook Partners

Risk Mitigation

Alpha Simplex Group, LLC

Alpstone Capital

AQR Capital Management, LLC

Brevan Howard - DG Partners

BlackRock Institutional Trust Company

Bridgewater Associates, Inc.

D.E. Shaw Group

Graham Capital Management, L.P.

Pacific Investment Management Company

Systematica Investments

Two Sigma Investments

Unique Strategies

Blackstone

Capital Constellation

Waterfront Capital Partners

ACTUARIAL

WHITEBOARD VIDEOS



How Do I?

- Home
- Members
- Retirees & Beneficiaries
- Employers & Partners
- Forms & Documents



Welcome to OCERS

Get Started



Calculate Your Benefit

myOCERS



Board Meetings

Get your first benefit
please
monthly

Are you registering for a myOCERS
Click here for support.

View answers to common questions

WEBSITE IMPROVEMENTS

OCERS website continues to expand and includes invaluable information to members and stakeholders. The home page tiled format is user-friendly. On the home page, interested parties will find OCERS News, how to attend a retirement seminar, Calculate Your Benefit, Board Meetings information, answers to common questions in our Video Library, and more.

The Video Library includes white board videos such as On the Move and How to Use OCERS' Benefits Calculator or video presentations by team members such as Get to Know Your Summary Plan Description and Beneficiary Designation Overview.

EDUCATIONAL RESOURCES FOR MEMBERS AND STAKEHOLDERS

Members

OCERS has two membership types, Safety and General, which are based on job classifications.

Additionally, members will fall into one of the three following categories based on their work or retirement status: Active Members, Deferred Members and Retired Members.

OCERS is a defined benefit retirement plan which provides a fixed, pre-established benefit for employees at retirement. The amount of your benefit is calculated by factors such as salary and length of service.

The website offers a wealth of information to learn more about your membership, including steps on how to plan for your transition into retirement.



Actuary's Certification Letter



Paul Angelo, FSA, MAAA, FCA, EA
Senior Vice President & Actuary
T 415.263.8273
pangelo@segalco.com
Andy Yeung, ASA, MAAA, FCA, EA
Vice President & Actuary
T 415.263.8283
ayeung@segalco.com

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

May 17, 2022

Board of Retirement
Orange County Employees Retirement System
2223 Wellington Avenue
Santa Ana, CA 92701-3101

**Re: Orange County Employees Retirement System (OCERS)
Certification for Pension Plan as of December 31, 2020**

Dear Members of the Board:

Segal prepared the December 31, 2020 annual actuarial valuation of the Orange County Employees Retirement System (OCERS or System). We certify that the valuation was performed in accordance with generally accepted actuarial principles and practices and OCERS' funding policy that was last reviewed and adopted by the Board in 2014 and reaffirmed in 2018. In particular, it is our understanding that the assumptions and methods used for funding purposes meet the parameters set by Actuarial Standards of Practice (ASOPs). A discussion of the assumptions and methods used in the separate December 31, 2021 actuarial valuation for financial reporting purposes under Governmental Accounting Standards Board (GASB) Statement No. 67 is presented at the end of this letter.

December 31, 2020 Actuarial Valuation for Funding Purposes

Actuarial valuations are performed on an annual basis with the last valuation completed as of December 31, 2020. The actuarial calculations presented in the valuation report have been made on a basis consistent with our understanding of the historical funding methods used in determination of the liability for statutory retirement benefits.

The December 31, 2020 actuarial valuation is based on the plan of benefits verified by OCERS and on participant and financial data provided by OCERS. Segal conducted an examination of all participant data for reasonableness and we concluded that it was reasonable and consistent with the prior year's data. Summaries of the employee data used in performing the actuarial valuations over the past several years are provided in our valuation report.

Actuary's Certification Letter

(Continued)

Board of Retirement
Orange County Employees Retirement System
May 17, 2022
Page 2

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 actual and expected return on market value over a five-year period. The development of the actuarial value as of December 31, 2020 is provided in the Development of Actuarial and Valuation Value of Assets.

One funding objective of the Plan is to establish 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 unfunded actuarial accrued liability (UAAL). One of the funding objectives of the System is to reduce that UAAL to zero over a declining period. Effective December 31, 2013, the outstanding balance of the UAAL from the December 31, 2012 valuation was combined and reamortized over a declining 20-year period. Any changes in UAAL due to actuarial gains or losses or due to changes in assumptions or methods will be amortized over separate 20-year periods. Any changes in UAAL due to plan amendments will be amortized over separate 15-year periods and any change in UAAL due to early retirement incentive programs will be amortized over a separate period of up to five years. The progress being made toward the realization of the funding objectives through December 31, 2020 is illustrated in the Schedule of Funding Progress.

Segal prepared all of the supporting schedules in the actuarial section of the System's Annual Comprehensive Financial Report (ACFR) based on the results of the December 31, 2020 actuarial valuation for funding purposes. A listing of the supporting schedules related to the statutory retirement plan benefits that Segal prepared for inclusion in the actuarial section of the System's ACFR is provided below. OCERS' staff prepared the remaining trend data schedules in the statistical section.

Actuarial Section (Based on December 31, 2020 Funding Valuation)

1. Schedule of Funding Progress
2. History of Employer Contribution Rates
3. Summary of Active Membership
4. Summary of Retired Membership
5. Development of Actuarial and Valuation Value of Assets
6. Schedule of Funded Liabilities by Type
7. Actuarial Methods and Assumptions
8. Summary of Major Plan Provisions
9. Experience Analysis

5722809v4/05794.001



Actuary's Certification Letter

(Continued)

Board of Retirement
Orange County Employees Retirement System
May 17, 2022
Page 3

The valuation assumptions used in this valuation were included in the Actuarial Section. The results of this valuation were prepared using the actuarial assumptions and methods developed in the triennial actuarial experience study as of December 31, 2019. All of the assumptions recommended in the study were adopted by the Board. Actuarial valuations are performed on an annual basis and the experience analysis is performed every three years. The next experience analysis is due to be performed as of December 31, 2022 and any changes in assumptions will be reflected in the December 31, 2023 valuation.

In the December 31, 2020 valuation, the ratio of the valuation value of assets to actuarial accrued liabilities increased from 73.2% to 76.5%. The aggregate employer rate (average of the County and all special districts rates combined) has changed from 41.35% of payroll to 41.16% of payroll. The aggregate member's rate has changed from 12.18% of payroll to 12.16% of payroll.

In the December 31, 2020 valuation, the actuarial value of assets excluded \$969.3 million in unrecognized investment gains, which represented 5.2% of the market value of assets. If these deferred investment gains were recognized immediately in the actuarial value of assets, the funded percentage would increase from 76.5% to 80.7% and the aggregate employer contribution rate, expressed as a percent of payroll would decrease from 41.2% to 37.6%.

To the best of our knowledge, the December 31, 2020 funding valuation report is complete and accurate and in our opinion presents the Plan's current funding information.

December 31, 2021 GASB Statement 67 Actuarial Valuation for Financial Reporting Purposes

Segal prepared the December 31, 2021 GASB Statement 67 actuarial valuation for financial reporting purposes. The valuation was performed in order to comply with GASB Statement 67 and we certify that the assumptions and methods used for financial reporting purposes meet the parameters set by ASOPs and our understanding of generally accepted accounting principles (GAAP) applicable in the United States of America as promulgated by GASB. The GASB rules only redefine pension liability and expense for financial reporting purposes, and do not apply to contribution amounts for pension funding purposes.

When measuring pension liability, GASB uses the same actuarial cost method (Entry Age method) and the same type of discount rate (expected return on assets) as OCERS uses for funding. The Net Pension Liabilities (NPLs) measured as of December 31, 2021 and December 31, 2020 have been determined by rolling forward the Total Pension Liabilities (TPLs) for the statutory Retirement Plan benefits as of December 31, 2020 and December 31, 2019, respectively. In addition, any changes in actuarial assumptions or plan provisions that occurred between the valuation date and the measurement date have been reflected.

5722809v4/05794.001



Actuary's Certification Letter

(Continued)

Board of Retirement
Orange County Employees Retirement System
May 17, 2022
Page 4

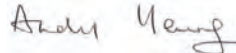
Note number 8 to the Basic Financial Statements and the Required Supplementary Information included in the Financial Section of the ACFR was prepared by the System based on the results of the GASB Statement No. 67 actuarial valuation as of December 31, 2021 prepared by Segal.

The undersigned are Members of the American Academy of Actuaries and meet the qualification requirements to render the actuarial opinion contained herein.

Sincerely,



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



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

JY/hy
Enclosures

Schedule of Funding Progress

(Dollars in Thousands)

Valuation Date	Actuarial Accrued Liability	Valuation Value of Assets	Unfunded Actuarial Accrued Liability	Ratio of Assets to Actuarial Accrued Liability	Projected Covered Payroll	Ratio of Unfunded Actuarial Accrued Liability to Projected Covered Payroll
12/31/11	\$ 13,522,978	\$ 9,064,355	\$ 4,458,623	67.03%	\$ 1,619,474	275.31%
12/31/12	15,144,888	9,469,208	5,675,680	62.52%	1,609,600	352.55%
12/31/13	15,785,042	10,417,125	5,367,917	65.99%	1,604,496	334.55%
12/31/14	16,413,124	11,449,911	4,963,213	69.76%	1,648,160	301.14%
12/31/15	17,050,357	12,228,009	4,822,348	71.72%	1,633,112	295.29%
12/31/16	17,933,461	13,102,978	4,830,483	73.06%	1,759,831	274.49%
12/31/17	19,635,427	14,197,125	5,438,302	72.30%	1,811,877	300.15%
12/31/18	20,703,349	14,994,420	5,708,929	72.43%	1,875,370	304.42%
12/31/19	21,916,730	16,036,869	5,879,861	73.17%	1,952,534	301.14%
12/31/20	22,904,975	17,525,117	5,379,858	76.51%	1,962,869	274.08%

Notes:

- **The 12/31/20 valuation included the following changes:**

Assumption Changes:

Changes in inflation, mortality, disability, termination, retirement, salary scale, and additional cash-out assumptions in the December 31, 2019 triennial experience study increased the UAAL by \$24 million.

Method Change:

A refinement to the Entry Age actuarial cost method was made. Before the refinement, Entry Age was calculated as the age of the member as of the valuation date minus years of employment, including non-OCERS reciprocal employers. After the refinement, only years of employment with OCERS employers are used.

Other Change:

The actual COLA granted by OCERS for the upcoming April 1st was reflected in the valuation.

- **There were no assumption or plan changes in the 12/31/19 valuation.**
- **There were no assumptions or plan changes in the 12/31/18 valuation.**
- **The 12/31/17 valuation included the following assumptions changes:**
Changes in investment return, inflation, mortality, disability, termination, retirement, salary scale, and additional cash-out assumptions in the December 31, 2016 triennial experience study increased the UAAL by \$854 million.

Schedule of Funding Progress

(continued)

- **The 12/31/16 valuation included the following change:**
O.C. Law Library was separated from O.C. Sanitation District in Rate Group #3 and put into their own Rate Group (Rate Group #12) after the valuation as of December 31, 2015.
- **The 12/31/15 valuation included the following benefit changes:**
City of San Juan Capistrano adopted an optional 1.62% of final average salary at age 65 for members hired on or after July 1, 2016.

Effective January 1, 2015, new OCTA members were placed in CalPEPRA Plan U (2.50% of final average salary at age 67).
- **The 12/31/14 valuation included the following changes:**
Assumption Changes:
Changes in inflation, mortality, disability, termination, retirement, salary scale, and additional cashout assumptions in the December 31, 2013 triennial experience study decreased the UAAL by \$122 million.

Method Change:
The cashout assumptions are now used in developing basic member contribution rates for employees in the legacy plans (impact is only on Normal Cost).
- **The 12/31/13 valuation included the following method change:**
The outstanding balance of the December 31, 2012 UAAL was combined and re-amortized over a 20-year period.
- **The 12/31/12 valuation included the following changes:**
Assumption Changes:
Changes in investment return, inflation, and across the board salary increase assumptions in the December 31, 2012 review of economic assumptions report increased the UAAL by \$935 million.

Benefit Changes:
Members with membership date on or after January 1, 2013 were placed in CalPEPRA tiers (1.62% of final average salary at age 65, 2.50% of final average salary at age 67 and 2.70% of final average salary at age 57).
- **The 12/31/11 valuation included the following changes:**
Assumption Changes:
Changes in mortality, disability, termination, retirement, salary scale, and additional cashout assumptions in the December 31, 2010 triennial experience study increased the UAAL by \$364 million.

Benefit Changes:
City of San Juan Capistrano adopted a 2.0% of final average salary at age 57 for members hired on or after July 1, 2012.

Certain employees previously employed at the City of Santa Ana became employees of OCFA General and OCFA Safety eligible for benefits under 2.0% of final average salary at age 55 and 3.0% of final average salary at age 50, respectively.

Schedule of Funding Progress

(continued)

The assets exclude amounts in the County Investment Account and prepaid employer contributions. For years ending December 31, 2016, December 31, 2017, December 31, 2019, and December 31, 2020, the assets also exclude amounts in the O.C. Sanitation District UAAL Deferred Account.

Valuation Date	Amount Excluded from Assets		
	County Investment Account	Prepaid Employer Contributions	O.C. Sanitation District UAAL Deferred Account
12/31/11	\$ 97,767,000	\$ 162,873,000	\$ -
12/31/12	103,261,000	177,632,000	-
12/31/13	109,254,000	172,348,000	-
12/31/14	109,103,000	207,829,000	-
12/31/15	108,789,000	227,166,000	-
12/31/16	117,723,000	222,524,000	34,067,000
12/31/17	134,417,000	244,552,000	14,871,000
12/31/18	131,890,000	246,133,000	-
12/31/19	150,416,000	259,285,000	12,057,000
12/31/20	160,378,000	293,948,000	13,433,000

For informational purposes only, we have also developed the funded ratio determined using the historical market value of assets after adjustment for amounts in the County Investment Account, prepaid employer contributions, amounts in the O.C. Sanitation District UAAL Deferred Account, unclaimed member reserve and Medicare Medical Insurance Reserve.

Valuation Date	Funded Ratio based on Net Market Value of Assets
12/31/11	62.60%
12/31/12	63.17%
12/31/13	67.65%
12/31/14	69.63%
12/31/15	67.73%
12/31/16	70.58%
12/31/17	74.62%
12/31/18	69.31%
12/31/19	75.36%
12/31/20	80.74%

History of Employer Contribution Rates

Employer Contribution Rate (% of pay)

Valuation Date	General (Non-OCTA, Non-OCSD)		General (1.62% @ 65, Non-OCTA)		General (2.7% @ 55)		General (2.0% @ 57)		General (OCTA)		General (2.5% @ 55, OCSD)	
12/31/11	NC	8.55%	NC	4.91%	NC	12.03%	NC	10.99%	NC	10.57%	NC	11.29%
	UAAL	10.39	UAAL	20.98	UAAL	20.98	UAAL	20.98	UAAL	13.08	UAAL	20.66
	Total	18.94%	Total	25.89%	Total	33.01%	Total	31.97%	Total	23.65%	Total	31.95%
12/31/12	NC	9.68%	NC	5.56%	NC	13.69%	NC	12.10%	NC	11.83%	NC	12.88%
	UAAL	12.91	UAAL	25.85	UAAL	25.85	UAAL	25.85	UAAL	16.48	UAAL	25.60
	Total	22.59%	Total	31.41%	Total	39.54%	Total	37.95%	Total	28.31%	Total	38.48%
With 2-Year Phase-In		21.04%		29.84%		37.45%		35.96%		26.62%		36.57%
12/31/13 ¹	NC	9.82%	NC	5.61%	NC	13.66%	NC	12.46%	NC	11.81%	NC	12.89%
	UAAL	11.34	UAAL	23.72	UAAL	23.72	UAAL	23.72	UAAL	15.22	UAAL ²	21.87
	Total	21.16%	Total	29.33%	Total	37.38%	Total	36.18%	Total	27.03%	Total	34.76%
12/31/14	NC	9.67%	NC	5.49%	NC	13.22%	NC	10.54%	NC	10.78%	NC	12.40%
	UAAL ⁴	8.62	UAAL	21.72	UAAL	21.72	UAAL	21.72	UAAL	14.40	UAAL ⁵	6.26
	Total	18.29%	Total	27.21%	Total	34.94%	Total	32.26%	Total	25.18%	Total	18.66%
With 3-Year Phase-In		N/A		N/A		N/A		N/A		N/A		N/A
12/31/15	NC	9.58%	NC	5.46%	NC	13.19%	NC	11.40%	NC	10.70%	NC	12.33%
	UAAL ⁶	9.22	UAAL	22.45	UAAL	22.45	UAAL	22.45	UAAL	15.52	UAAL ⁷	1.42
	Total	18.80%	Total	27.91%	Total	35.64%	Total	33.85%	Total	26.22%	Total	13.75%
With 3-Year Phase-In		N/A		N/A		N/A		N/A		N/A		N/A
12/31/16	NC	9.51%	NC	5.53%	NC	13.19%	NC	10.35%	NC	10.76%	NC	12.28%
	UAAL ⁹	7.25	UAAL	21.72	UAAL ¹⁰	21.72	UAAL	21.72	UAAL	14.76	UAAL	0.00
	Total	16.76%	Total	27.25%	Total	34.91%	Total	32.07%	Total	25.52%	Total	12.28%
12/31/17	NC	10.73%	NC	6.21%	NC	14.39%	NC	11.51%	NC	12.10%	NC	13.30%
	UAAL ¹²	9.58	UAAL	25.05	UAAL ¹³	25.05	UAAL	25.05	UAAL	18.26	UAAL	0.00
	Total	20.31%	Total	31.26%	Total	39.44%	Total	36.56%	Total	30.36%	Total	13.30%
With 3-Year Phase-In		18.62%		28.88%		37.06%		34.18%		28.04%		N/A
12/31/18	NC	10.73%	NC	6.23%	NC	14.36%	NC	12.13%	NC	12.03%	NC	13.24%
	UAAL ¹⁴	9.40	UAAL	26.24	UAAL ¹⁵	26.24	UAAL	26.24	UAAL	19.76	UAAL ¹⁶	0.86
	Total	20.13%	Total	32.47%	Total	40.60%	Total	38.37%	Total	31.79%	Total	14.10%
With 3-Year Phase-In		19.28%		31.28%		39.41%		37.18%		30.63%		N/A
12/31/19	NC	10.68%	NC	6.10%	NC	14.34%	NC	12.61%	NC	11.97%	NC	13.22%
	UAAL ¹⁸	5.16	UAAL	27.38	UAAL ¹⁹	27.38	UAAL	27.38	UAAL	19.54	UAAL	0.00
	Total	15.84%	Total	33.48%	Total	41.72%	Total	39.99%	Total	31.51%	Total	13.22%
12/31/20	NC	10.38%	NC	6.26%	NC	14.69%	NC	16.45%	NC	12.59%	NC	13.46%
	UAAL ¹⁸	5.03	UAAL	28.97	UAAL ²⁰	28.97	UAAL	28.97	UAAL	19.12	UAAL	0.00
	Total	15.41%	Total	35.23%	Total	43.66%	Total	45.42%	Total	31.71%	Total	13.46%

History of Employer Contribution Rates

(continued)

Employer Contribution Rate (% of pay)

Valuation Date	General (1.64% @ 57, OCSD)		General (2.0% @ 55, TCA)		General (2.0% @ 55, Cemetery, future service)		General (2.7% @ 55, OCFA)		General (2.0% @ 55, OCFA)		General (2.5% @ 55, Law Library)	
12/31/11	NC	10.11%	NC	13.11%	NC	10.80%	NC	12.18%	NC	14.35%	NC	11.29%
	UAAL	20.66	UAAL	9.11	UAAL	8.23	UAAL	20.43	UAAL	20.43	UAAL	20.66
	Total	30.77%	Total	22.22%	Total	19.03%	Total	32.61%	Total	34.78%	Total	31.95%
12/31/12	NC	11.02%	NC	14.20%	NC	12.34%	NC	13.92%	NC	14.01%	NC	12.88%
	UAAL	25.60	UAAL	12.97	UAAL	12.28	UAAL	24.76	UAAL	24.76	UAAL	25.60
	Total	36.62%	Total	27.17%	Total	24.62%	Total	38.68%	Total	38.77%	Total	38.48%
With 2-Year Phase-In		34.87%		25.71%		22.99%		36.70%		36.99%		36.57%
12/31/13 ¹	NC	10.53%	NC	14.13%	NC	12.33%	NC	14.06%	NC	14.15%	NC	12.89%
	UAAL ²	21.87	UAAL	12.28	UAAL ³	9.87	UAAL	23.34	UAAL	23.34	UAAL	21.87
	Total	32.40%	Total	26.41%	Total	22.20%	Total	37.40%	Total	37.49%	Total	34.76%
12/31/14	NC	10.30%	NC	13.59%	NC	11.79%	NC	13.53%	NC	12.47%	NC	12.40%
	UAAL ⁵	6.26	UAAL	12.78	UAAL	0.00	UAAL	20.28	UAAL	20.28	UAAL	20.21
	Total	16.56%	Total	26.37%	Total	11.79%	Total	33.81%	Total	32.75%	Total	32.61%
With 3-Year Phase-In		N/A		N/A		N/A		N/A		N/A		N/A
12/31/15	NC	10.30%	NC	13.44%	NC	11.33%	NC	13.44%	NC	12.72%	NC	12.33%
	UAAL ⁷	1.42	UAAL	13.79	UAAL	0.00	UAAL	20.53	UAAL	20.53	UAAL ⁸	22.08
	Total	11.72%	Total	27.23%	Total	11.33%	Total	33.97%	Total	33.25%	Total	34.41%
With 3-Year Phase-In		N/A		N/A		N/A		N/A		N/A		N/A
12/31/16	NC	10.21%	NC	13.30%	NC	11.09%	NC	13.61%	NC	12.64%	NC	13.32%
	UAAL	0.00	UAAL	11.46	UAAL	0.00	UAAL	18.35	UAAL	18.35	UAAL ¹¹	9.69
	Total	10.21%	Total	24.76%	Total	11.09%	Total	31.96%	Total	30.99%	Total	23.01%
12/31/17	NC	11.25%	NC	14.51%	NC	11.98%	NC	14.72%	NC	13.46%	NC	14.11%
	UAAL	0.00	UAAL	12.74	UAAL	1.44	UAAL	17.62	UAAL	17.62	UAAL	0.00
	Total	11.25%	Total	27.25%	Total	13.42%	Total	32.34%	Total	31.08%	Total	14.11%
With 3-Year Phase-In		N/A		26.00%		12.46%		30.46%		29.20%		N/A
12/31/18	NC	11.11%	NC	14.51%	NC	12.05%	NC	14.71%	NC	13.50%	NC	14.28%
	UAAL ¹⁶	0.86	UAAL ¹⁷	15.29	UAAL	0.22	UAAL	15.90	UAAL	15.90	UAAL	1.77
	Total	11.97%	Total	29.80%	Total	12.27%	Total	30.61%	Total	29.40%	Total	16.05%
With 3-Year Phase-In		N/A		29.17%		12.05%		29.67%		28.46%		N/A
12/31/19	NC	11.23%	NC	14.23%	NC	11.62%	NC	14.75%	NC	13.68%	NC	14.20%
	UAAL	0.00	UAAL	0.39	UAAL	3.01	UAAL	14.06	UAAL	14.06	UAAL	0.19
	Total	11.23%	Total	14.62%	Total	14.63%	Total	28.81%	Total	27.74%	Total	14.39%
12/31/20	NC	13.25%	NC	14.95%	NC	12.83%	NC	15.22%	NC	16.83%	NC	13.88%
	UAAL	0.00	UAAL	0.00	UAAL	2.85	UAAL	11.49	UAAL	11.49	UAAL	0.00
	Total	13.25%	Total	14.95%	Total	15.68%	Total	26.71%	Total	28.32%	Total	13.88%

History of Employer Contribution Rates

(continued)

Employer Contribution Rate (% of pay)

Valuation Date	Safety Law Enforcement (3% @ 50)		Safety Law Enforcement (3% @ 55)		Safety Fire Authority (3% @ 50)		Safety Fire Authority (3% @ 55)		Safety Probation	
	NC	UAAL	NC	UAAL	NC	UAAL	NC	UAAL	NC	UAAL
12/31/11	NC	21.48%	NC	21.47%	NC	23.49%	NC	18.58%	NC	19.31%
	UAAL	29.38	UAAL	29.38	UAAL	19.66	UAAL	19.66	UAAL	17.26
	Total	50.86%	Total	50.85%	Total	43.15%	Total	38.24%	Total	36.57%
12/31/12	NC	24.24%	NC	24.20%	NC	26.16%	NC	21.12%	NC	21.26%
	UAAL	36.71	UAAL	36.71	UAAL	26.84	UAAL	26.84	UAAL	21.91
	Total	60.95%	Total	60.91%	Total	53.00%	Total	47.96%	Total	43.17%
With 2-Year Phase-In		57.27%		57.37%		49.83%		44.85%		40.52%
12/31/13 ¹	NC	24.23%	NC	22.58%	NC	25.86%	NC	21.70%	NC	21.00%
	UAAL	32.47	UAAL	32.47	UAAL	24.14	UAAL	24.14	UAAL	19.72
	Total	56.70%	Total	55.05%	Total	50.00%	Total	45.84%	Total	40.72%
12/31/14	NC	25.79%	NC	23.55%	NC	27.05%	NC	22.38%	NC	22.17%
	UAAL	37.46	UAAL	37.46	UAAL	24.42	UAAL	24.42	UAAL	25.01
	Total	63.25%	Total	61.01%	Total	51.47%	Total	46.80%	Total	47.18%
With 3-Year Phase-In		58.92%		56.88%		48.60%		43.93%		42.84%
12/31/15	NC	25.56%	NC	23.24%	NC	26.87%	NC	22.10%	NC	21.92%
	UAAL	39.16	UAAL	39.16	UAAL	23.81	UAAL	23.81	UAAL	25.32
	Total	64.72%	Total	62.40%	Total	50.68%	Total	45.91%	Total	47.24%
With 3-Year Phase-In		62.55%		60.34%		49.24%		44.47%		45.07%
12/31/16	NC	25.63%	NC	23.00%	NC	26.84%	NC	21.86%	NC	21.87%
	UAAL	38.19	UAAL	38.19	UAAL	22.27	UAAL	22.27	UAAL	26.06
	Total	63.82%	Total	61.19%	Total	49.11%	Total	44.13%	Total	47.93%
12/31/17	NC	26.69%	NC	23.69%	NC	27.24%	NC	21.97%	NC	23.71%
	UAAL	41.07	UAAL	41.07	UAAL	23.09	UAAL	23.09	UAAL	33.00
	Total	67.76%	Total	64.76%	Total	50.33%	Total	45.06%	Total	56.71%
With 3-Year Phase-In		64.05%		61.05%		48.04%		42.77%		52.45%
12/31/18	NC	26.64%	NC	23.48%	NC	26.97%	NC	21.83%	NC	23.45%
	UAAL	42.56	UAAL	42.56	UAAL	24.99	UAAL	24.99	UAAL	34.41
	Total	69.20%	Total	66.04%	Total	51.96%	Total	46.82%	Total	57.86%
With 3-Year Phase-In		67.35%		64.19%		50.81%		45.67%		55.73%
12/31/19	NC	26.57%	NC	23.58%	NC	27.48%	NC	25.77%	NC	23.25%
	UAAL	43.65	UAAL	43.65	UAAL	23.79	UAAL	23.79	UAAL	36.92
	Total	70.22%	Total	67.23%	Total	51.27%	Total	49.56%	Total	60.17%
12/31/20	NC	26.66%	NC	24.23%	NC	27.31%	NC	27.25%	NC	23.39%
	UAAL	39.73	UAAL	39.73	UAAL	16.36	UAAL	16.36	UAAL	34.06
	Total	66.39%	Total	63.96%	Total	43.67%	Total	43.61%	Total	57.45%

History of Employer Contribution Rates

(continued)

Employer Contribution Rate (% of pay)

Valuation Date	CalPEPRA Rate Group #1 2.5% @ 67		CalPEPRA Rate Group #2 1.62% @ 65 (Plan T)		CalPEPRA Rate Group #2 2.5% @ 67		CalPEPRA Rate Group #2 1.62% @ 67 (Plan W)		CalPEPRA Rate Group #3 2.5% @ 67		CalPEPRA Rate Group #5 2.5% @ 67	
12/31/11	NC	8.06%	NC	6.20%	NC	8.26%	N/A		NC	8.70%	N/A	
	UAAL	10.39	UAAL	20.98	UAAL	20.98			UAAL	20.66		
	Total	18.45%	Total	27.18%	Total	29.24%			Total	29.36%		
12/31/12	NC	8.68%	NC	6.78%	NC	7.44%	N/A		NC	9.38%	N/A	
	UAAL	12.91	UAAL	25.85	UAAL	25.85			UAAL	25.60		
	Total	21.59%	Total	32.63%	Total	33.29%			Total	34.98%		
With 2-Year Phase-In		20.33%		31.10%		32.05%				33.52%		
12/31/13 ¹	NC	9.39%	NC	6.70%	NC	8.56%	N/A		NC	9.66%	N/A	
	UAAL	11.34	UAAL	23.72	UAAL	23.72			UAAL ²	21.87		
	Total	20.73%	Total	30.42%	Total	32.28%			Total	31.53%		
12/31/14	NC	8.87%	NC	6.61%	NC	8.33%	N/A		NC	9.00%	NC	10.04%
	UAAL ⁴	8.62	UAAL	21.72	UAAL	21.72			UAAL ⁵	6.26	UAAL	14.40
	Total	17.49%	Total	28.33%	Total	30.05%			Total	15.26%	Total	24.44%
With 3-Year Phase-In		N/A		N/A		N/A				N/A		N/A
12/31/15	NC	8.92%	NC	6.56%	NC	8.35%	NC	6.68%	NC	9.25%	NC	10.12%
	UAAL ⁶	9.22	UAAL	22.45	UAAL	22.45	UAAL	22.45	UAAL ⁷	1.42	UAAL	15.52
	Total	18.14%	Total	29.01%	Total	30.80%	Total	29.13%	Total	10.67%	Total	25.64%
With 3-Year Phase-In		N/A		N/A		N/A		N/A		N/A		N/A
12/31/16	NC	8.63%	NC	6.58%	NC	8.28%	NC	6.68%	NC	9.27%	NC	10.25%
	UAAL ⁹	7.25	UAAL	21.72	UAAL ¹⁰	21.72	UAAL	21.72	UAAL	0.00	UAAL	14.76
	Total	15.88%	Total	28.30%	Total	30.00%	Total	28.40%	Total	9.27%	Total	25.01%
12/31/17	NC	9.93%	NC	7.11%	NC	8.78%	NC	8.56%	NC	10.37%	NC	11.32%
	UAAL ¹²	9.58	UAAL	25.05	UAAL ¹³	25.05	UAAL	25.05	UAAL	0.00	UAAL	18.26
	Total	19.51%	Total	32.16%	Total	33.83%	Total	33.61%	Total	10.37%	Total	29.58%
With 3-Year Phase-In		17.82%		29.78%		31.45%		31.23%		N/A		27.26%
12/31/18	NC	9.93%	NC	7.12%	NC	8.78%	NC	8.73%	NC	10.02%	NC	11.32%
	UAAL ¹⁴	9.40	UAAL	26.24	UAAL ¹⁵	26.24	UAAL	26.24	UAAL ¹⁶	0.86	UAAL	19.76
	Total	19.33%	Total	33.36%	Total	35.02%	Total	34.97%	Total	10.88%	Total	31.08%
With 3-Year Phase-In		18.48%		32.17%		33.83%		33.78%		N/A		29.92%
12/31/19	NC	10.05%	NC	7.14%	NC	8.81%	NC	8.54%	NC	9.88%	NC	11.59%
	UAAL ¹⁸	5.16	UAAL	27.38	UAAL ¹⁹	27.38	UAAL	27.38	UAAL	0.00	UAAL	19.54
	Total	15.21%	Total	34.52%	Total	36.19%	Total	35.92%	Total	9.88%	Total	31.13%
12/31/20	NC	9.89%	NC	7.06%	NC	8.37%	NC	8.43%	NC	9.86%	NC	11.73%
	UAAL ¹⁸	5.03	UAAL	28.97	UAAL ²⁰	28.97	UAAL	28.97	UAAL	0.00	UAAL	19.12
	Total	14.92%	Total	36.03%	Total	37.34%	Total	37.40%	Total	9.86%	Total	30.85%

¹ The outstanding balance of the December 31, 2012 UAAL has been combined and re-amortized over a period of 20 years.

² This is the UAAL rate for O.C. Sanitation District for FY 15-16 before reflecting the additional UAAL contributions made during calendar year 2014.

³ This is the UAAL rate for O.C. Cemetery District for FY 15-16 before reflecting the additional UAAL contributions made during calendar year 2014.

⁴ The net UAAL contribution rates for County and O.C. IHSS Public Authority (i.e., excluding U.C.I and Department of Education) is 5.67% as of December 31, 2014.

⁵ This is the UAAL rate for O.C. Sanitation District for FY 16-17 before reflecting the additional UAAL contributions made during calendar year 2015.

⁶ The net UAAL contribution rates for County and O.C. IHSS Public Authority (i.e., excluding U.C.I and Department of Education) is 5.57% as of December 31, 2015.

⁷ This is the UAAL rate for O.C. Sanitation District for FY 17-18 before reflecting the additional UAAL contributions made during calendar year 2016.

⁸ The net UAAL contribution rates for County and O.C. IHSS Public Authority (i.e., excluding U.C.I and Department of Education) is 4.18% as of December 31, 2016.

⁹ This is the UAAL rate for O.C. Children and Families Commission for FY 18-19 before reflecting the additional UAAL contributions made during calendar year 2017.

¹⁰ This is the UAAL rate for Law Library for FY 17-18 before reflecting the additional UAAL contributions made during calendar year 2016.

¹¹ This is the UAAL rate for Law Library for FY 18-19 before reflecting the additional UAAL contributions made during calendar year 2017.

History of Employer Contribution Rates

(continued)

Employer Contribution Rate (% of pay)

Valuation Date	CalPEPRA Rate Group #9 2.5% @ 67		CalPEPRA Rate Group #10 2.5% @ 67		CalPEPRA Rate Group #11 2.5% @ 67		CalPEPRA Rate Group #12 2.5% @ 67		CalPEPRA Rate Group #6 2.7% @ 57		CalPEPRA Rate Group #7 2.7% @ 57		CalPEPRA Rate Group #8 2.7% @ 57	
12/31/11	NC	10.36%	NC	7.84%	NC	7.95%	NC	8.70%	NC	12.23%	NC	15.55%	NC	15.23%
	UAAL	9.11	UAAL	20.43	UAAL	8.23	UAAL	20.66	UAAL	17.26	UAAL	29.38	UAAL	19.66
	Total	19.47%	Total	28.27%	Total	16.18%	Total	29.36%	Total	29.49%	Total	44.93%	Total	34.89%
12/31/12	NC	10.97%	NC	8.50%	NC	8.66%	NC	9.38%	NC	13.91%	NC	17.05%	NC	16.41%
	UAAL	12.97	UAAL	24.76	UAAL	12.28	UAAL	25.60	UAAL	21.91	UAAL	36.71	UAAL	26.84
With 2-Year Phase-In	Total	23.94%	Total	33.26%	Total	20.94%	Total	34.98%	Total	35.82%	Total	53.76%	Total	43.25%
		22.87%		31.81%		19.63%		33.52%		33.40%		50.61%		40.96%
12/31/13 ¹	NC	11.40%	NC	9.71%	NC	8.66%	NC	9.66%	NC	13.95%	NC	19.17%	NC	16.85%
	UAAL	12.28	UAAL	23.34	UAAL ³	9.87	UAAL	21.87	UAAL	19.72	UAAL	32.47	UAAL	24.14
	Total	23.68%	Total	33.05%	Total	18.53%	Total	31.53%	Total	33.67%	Total	51.64%	Total	40.99%
12/31/14	NC	9.85%	NC	9.63%	NC	11.81%	NC	9.00%	NC	15.25%	NC	20.10%	NC	15.71%
	UAAL	12.78	UAAL	20.28	UAAL	0.00	UAAL	20.21	UAAL	25.01	UAAL	37.46	UAAL	24.42
With 3-Year Phase-In	Total	22.63%	Total	29.91%	Total	11.81%	Total	29.21%	Total	40.26%	Total	57.56%	Total	40.13%
		N/A		N/A		N/A		N/A		36.02%		54.01%		38.08%
12/31/15	NC	10.57%	NC	8.81%	NC	12.23%	NC	9.25%	NC	15.00%	NC	20.04%	NC	15.30%
	UAAL	13.79	UAAL	20.53	UAAL	0.00	UAAL ⁸	22.08	UAAL	25.32	UAAL	39.16	UAAL	23.81
With 3-Year Phase-In	Total	24.36%	Total	29.34%	Total	12.23%	Total	31.33%	Total	40.32%	Total	59.20%	Total	39.11%
		N/A		N/A		N/A		N/A		38.20%		57.42%		38.09%
12/31/16	NC	10.40%	NC	8.99%	NC	9.98%	NC	7.59%	NC	15.24%	NC	19.39%	NC	14.84%
	UAAL	11.46	UAAL	18.35	UAAL	0.00	UAAL ¹¹	9.69	UAAL	26.06	UAAL	38.19	UAAL	22.27
	Total	21.86%	Total	27.34%	Total	9.98%	Total	17.28%	Total	41.30%	Total	57.58%	Total	37.11%
12/31/17	NC	11.02%	NC	10.41%	NC	12.03%	NC	9.36%	NC	16.63%	NC	19.29%	NC	15.44%
	UAAL	12.74	UAAL	17.62	UAAL	1.44	UAAL	0.00	UAAL	33.00	UAAL	41.07	UAAL	23.09
With 3-Year Phase-In	Total	23.76%	Total	28.03%	Total	13.47%	Total	9.36%	Total	49.63%	Total	60.36%	Total	38.53%
		22.51%		26.15%		12.51%		N/A		45.37%		56.65%		36.24%
12/31/18	NC	11.13%	NC	10.16%	NC	12.33%	NC	10.32%	NC	16.76%	NC	19.04%	NC	15.27%
	UAAL ¹⁷	15.29	UAAL	15.90	UAAL	0.22	UAAL	1.77	UAAL	34.41	UAAL	42.56	UAAL	24.99
With 3-Year Phase-In	Total	26.42%	Total	26.06%	Total	12.55%	Total	12.09%	Total	51.17%	Total	61.60%	Total	40.26%
		25.79%		25.12%		12.33%		N/A		49.04%		59.75%		39.11%
12/31/19	NC	11.14%	NC	10.05%	NC	12.25%	NC	10.37%	NC	16.82%	NC	18.46%	NC	15.66%
	UAAL	0.39	UAAL	14.06	UAAL	3.01	UAAL	0.19	UAAL	36.92	UAAL	43.65	UAAL	23.79
	Total	11.53%	Total	24.11%	Total	15.26%	Total	10.56%	Total	53.74%	Total	62.11%	Total	39.45%
12/31/20	NC	10.98%	NC	9.82%	NC	11.80%	NC	10.51%	NC	16.26%	NC	17.73%	NC	15.11%
	UAAL	0.00	UAAL	11.49	UAAL	2.85	UAAL	0.00	UAAL	34.06	UAAL	39.73	UAAL	16.36
	Total	10.98%	Total	21.31%	Total	14.65%	Total	10.51%	Total	50.32%	Total	57.46%	Total	31.47%

¹² The net UAAL contribution rates for County and O.C. IHSS Public Authority (i.e., excluding U.C.I., Department of Education and Cypress Recreation and Parks) is 6.09% (or 4.61% after the three-year phase-in) as of December 31, 2017.

¹³ The net UAAL contribution rates for O.C. Children and Families Commission is 3.13% (or 1.04% after the three-year phase-in) as of December 31, 2017.

¹⁴ The net UAAL contribution rates for County and O.C. IHSS Public Authority (i.e., excluding U.C.I., Department of Education and Cypress Recreation and Parks) is 5.80% (or 5.06% after the three-year phase-in) as of December 31, 2018.

¹⁵ The net UAAL contribution rates for O.C. Children and Families Commission is 4.30% (or 3.26% after the three-year phase-in) as of December 31, 2018.

¹⁶ This is the UAAL rate for O.C. Sanitation District for FY 20-21 before reflecting the additional UAAL contributions made during calendar year 2019.

¹⁷ This is the UAAL rate for Transportation Corridor Agency for FY 20-21 before reflecting the additional UAAL contributions made during calendar year 2019.

¹⁸ This is the "net" UAAL contribution rate for County and IHSS Public Authority without reflecting the UAAL contributions required for Vector Control, Cypress Parks and Recreation, U.C.I. and DOE.

¹⁹ The net UAAL contribution rates for O.C. Children and Families Commission is 5.36% as of December 31, 2019.

²⁰ The net UAAL contribution rate for O.C. Children and Families Commission is 5.98% as of December 31, 2020.

Summary of Active Membership

Valuation Date	Number	Annual Salary	Annual Average Salary	Increase in Average Salary (%)
12/31/11				
General	17,717	\$ 1,249,064,000	\$ 70,501	3.84
Safety	3,704	370,410,000	100,003	3.50
Total	21,421	\$ 1,619,474,000	\$ 75,602	4.08
12/31/12				
General	17,529	\$ 1,238,958,000	\$ 70,680	0.25
Safety	3,727	370,643,000	99,448	-0.55
Total	21,256	\$ 1,609,601,000	\$ 75,725	0.16
12/31/13				
General	17,547	\$ 1,227,153,000	\$ 69,935	-1.05
Safety	3,821	377,343,000	98,755	-0.70
Total	21,368	\$ 1,604,496,000	\$ 75,089	-0.84
12/31/14				
General	17,705	\$ 1,267,582,000	\$ 71,595	2.37
Safety	3,754	380,578,000	101,379	2.66
Total	21,459	\$ 1,648,160,000	\$ 76,805	2.29
12/31/15				
General	17,839	\$ 1,254,521,000	\$ 70,325	-1.77
Safety	3,686	378,590,000	102,710	1.31
Total	21,525	\$ 1,633,111,000	\$ 75,870	-1.22
12/31/16				
General	18,072	\$ 1,353,363,000	\$ 74,887	6.49
Safety	3,674	406,470,000	110,634	7.71
Total	21,746	\$ 1,759,833,000	\$ 80,927	6.67
12/31/17				
General	17,941	\$ 1,385,356,000	\$ 77,217	3.11
Safety	3,780	426,523,000	112,837	1.99
Total	21,721	\$ 1,811,879,000	\$ 83,416	3.08
12/31/18				
General	18,150	\$ 1,432,041,000	\$ 78,900	2.18
Safety	3,779	443,331,000	117,314	3.97
Total	21,929	\$ 1,875,372,000	\$ 85,520	2.52
12/31/19				
General	18,356	\$ 1,481,966,000	\$ 80,735	2.33
Safety	3,901	470,568,000	120,628	2.82
Total	22,257	\$ 1,952,534,000	\$ 87,727	2.58
12/31/20				
General	17,733	\$ 1,479,418,000	\$ 83,427	3.33
Safety	3,826	483,451,000	126,359	4.75
Total	21,559	\$ 1,962,869,000	\$ 91,046	3.78

Excludes Deferred and Pending members.

Summary of Retired Membership

Plan Year Ending	At Beginning of Year	Added to Rolls		Removed from Rolls		At End of Year	Annual Allowance (in 000's)	% Increase in Annual Allowance	Average Monthly Allowance
		Number	Annual Allowance (in 000's) ¹	Number	Annual Allowance (in 000's)				
2011	12,762	888	\$ 45,913	(361)	\$ (9,371)	13,289	\$ 494,197	7.98	\$ 3,099
2012	13,289	1,026	58,344	(368)	(9,036)	13,947	543,505	9.98	3,247
2013	13,947	911	52,319	(353)	(9,958)	14,505	585,866	7.79	3,366
2014	14,505	995	52,838	(331)	(9,812)	15,169	628,892	7.34	3,455
2015	15,169	1,053	58,679	(412)	(12,077)	15,810	675,494	7.41	3,560
2016	15,810	989	51,759	(430)	(12,895)	16,369	714,358	5.75	3,637
2017	16,369	1,039	62,374	(461)	(15,155)	16,947	761,577	6.61	3,745
2018	16,947	1,155	82,438	(428)	(14,191)	17,674	829,824	8.96	3,913
2019	17,674	1,207	86,521	(461)	(15,215)	18,420	901,130	8.59	4,077
2020	18,420	1,449	104,439	(450)	(14,896)	19,419	990,673	9.94	4,251

Note: Annual allowances exclude RMBR and STAR COLA.

Development of Actuarial and Valuation Value of Assets

As of December 31, 2020

Plan Year Ending	Total Actual Market Return (net)	Expected Market Return (net)	Investment Gain/ (Loss)	Deferred Factor	Deferred Return
2016	\$ 1,010,548,000	\$ 840,469,000	\$ 170,079,000	0.0	\$ -
2017	1,878,172,000	920,426,000	957,746,000	0.2	191,549,000
2018	(361,321,000)	1,026,583,000	(1,387,904,000)	0.4	(555,162,000)
2019	2,123,258,000	1,004,779,000	1,118,479,000	0.6	671,087,000
2020	1,982,757,000	1,155,523,000	827,234,000	0.8	661,787,000

(1)	Total Deferred Return	\$ 969,261,000
(2)	Net Market Value of Assets (Excludes \$160,378,000 in County Investment Account, \$293,948,000 in Prepaid Employer Contributions and \$13,433,000 in O.C. Sanitation District UAAL Deferred Account)	\$ 18,494,462,000 ¹
(3)	Actuarial Value of Assets (2) – (1)	\$ 17,525,201,000 ²
(4)	Non-valuation Reserves	
	(a) Unclaimed member deposit	\$ -
	(b) Medicare medical insurance reserve	<u>84,000</u>
	(c) Subtotal	\$ 84,000
(5)	Valuation Value of Assets (3) – (4)(c)	\$ 17,525,117,000
(6)	Deferred Return Recognized in Each of the Next 4 Years	
	(a) Amount recognized on 12/31/2021	\$ 303,110,000
	(b) Amount recognized on 12/31/2022	111,562,000
	(c) Amount recognized on 12/31/2023	389,142,000
	(d) Amount recognized on 12/31/2024	<u>165,447,000</u>
	(e) Subtotal (may not total exactly due to rounding)	\$ 969,261,000

¹ Based on the preliminary unaudited financial statement provided by OCERS for the December 31, 2020 valuation. An updated financial statement was provided by OCERS on April 21, 2021 in which the market value of assets was increased by approximately \$129 million.

² Ratio of Actuarial Value of Assets to Net Market Value of Assets is 94.8% ((3) ÷ (2)).

Schedule of Funded Liabilities by Type

(Dollars in Thousands)

Valuation Date	(1) Active Member Contributions	(2) Liability for Inactive Participants	(3) Liability for Active Members (Employer Financed Portion)	Valuation Value of Assets	Portion of Accrued Liability Covered by Valuation Assets (%)		
					(1)	(2)	(3)
12/31/11	1,829,406	6,881,152	4,812,420	9,064,355	100	100	7.35
12/31/12	1,967,117	7,919,478	5,258,293	9,469,208	100	94.73	0.00
12/31/13	2,126,182	8,502,269	5,156,591	10,417,125	100	97.51	0.00
12/31/14	2,298,744	9,017,874	5,096,506	11,449,911	100	100	2.62
12/31/15	2,488,757	9,696,776	4,864,824	12,228,009	100	100	0.87
12/31/16	2,654,599	10,109,528	5,169,334	13,102,978	100	100	6.56
12/31/17	2,815,839	11,121,965	5,697,623	14,197,125	100	100	4.55
12/31/18	2,980,108	12,018,354	5,704,887	14,994,420	100	99.97	0.00
12/31/19	3,116,707	13,131,453	5,668,570	16,036,869	100	98.39	0.00
12/31/20	3,167,835	14,109,921	5,627,219	17,525,117	100	100	4.40

Actuarial Methods and Assumptions

Economic Assumptions

The information and analysis used in selecting each assumption that has a significant effect on this actuarial valuation is shown in the January 1, 2017 through December 31, 2019 Actuarial Experience Study dated August 6, 2020 and PowerPoint presentation dated August 17, 2020. Unless otherwise noted, all actuarial assumptions and methods shown below apply to members for all tiers. These assumptions were adopted by the Board.

Net Investment Return:	7.00%; net of investment expenses and administrative expenses.
Member Contribution Crediting Rate:	5.00%, compounded semi-annually.
Consumer Price Index:	Increase of 2.50% per year, retiree COLA increases of 2.75% per year subject to a 3.0% maximum change per year. The actual COLA granted by OCERS on April 1, 2021 has been reflected in the December 31, 2020 valuation.
Payroll Growth:	Inflation of 2.50% per year plus “across the board” real salary increases of 0.50% per year.
Increase in Section 7522.10 Compensation Limit:	Increase of 2.50% per year from the valuation date.
Individual Salary Increases:	Annual Rate of Compensation Increase (%)

Inflation: 2.50% per year, plus “across the board” real salary increases of 0.50% per year, plus the following merit and promotion increases:		
Years of Service	General	Safety
Less than 1	8.00	12.00
1-2	7.25	10.00
2-3	6.25	8.50
3-4	5.25	7.50
4-5	4.25	6.50
5-6	3.50	5.50
6-7	2.75	5.00
7-8	2.50	4.00
8-9	1.70	3.00
9-10	1.70	2.50
10-11	1.60	1.85
11-12	1.60	1.85
12-13	1.50	1.85
13-14	1.50	1.85
14-15	1.25	1.85
15-16	1.25	1.60
16-17	1.00	1.60
17-18	1.00	1.60
18-19	1.00	1.60
19-20	1.00	1.60
20 & over	1.00	1.60

In addition to the individual salary increase assumptions, we have applied an average of two hours of additional salary annually for leap-year salary adjustment.

Actuarial Methods and Assumptions

(continued)

Demographic Assumptions

Post-Retirement Mortality Rates:

Healthy:

For General Members: Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5%, projected generationally with the two-dimensional mortality improvement scale MP-2019.

For Safety Members: Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.

Disabled:

For General Members: Pub-2010 Non-Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females) with rates decreased by 5%, projected generationally with the two-dimensional mortality improvement scale MP-2019.

For Safety Members: Pub-2010 Safety Disabled Retiree Amount-Weighted Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.

All Beneficiaries:

Pub-2010 General Contingent Survivor Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5%, projected generationally with the two-dimensional mortality improvement scale MP-2019.

The Pub-2010 mortality tables and adjustments as shown above reflect the mortality experience as of the measurement date. The generational projection is a provision for future mortality improvement.

Employee Contribution Rates:

For General Members: Pub-2010 General Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females) with rates increased by 5%, projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP 2019, weighted 40% male and 60% female.

For Safety Members: Pub-2010 Safety Healthy Retiree Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected 30 years (from 2010) with the two-dimensional mortality improvement scale MP-2019, weighted 80% male and 20% female.

Pre-Retirement Mortality Rates:

For General Members: Pub-2010 General Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.

For Safety Members: Pub-2010 Safety Employee Amount-Weighted Above-Median Mortality Table (separate tables for males and females), projected generationally with the two-dimensional mortality improvement scale MP-2019.

Actuarial Methods and Assumptions

(continued)

Termination Rates Before Retirement

Mortality Rates

Age	Rate (%) ¹ Mortality			
	General		Safety	
	Male	Female	Male	Female
25	0.02	0.01	0.03	0.02
30	0.03	0.01	0.04	0.02
35	0.04	0.02	0.04	0.03
40	0.06	0.03	0.05	0.04
45	0.09	0.05	0.07	0.06
50	0.13	0.08	0.10	0.08
55	0.19	0.11	0.15	0.11
60	0.28	0.17	0.23	0.14
65	0.41	0.27	0.35	0.20
70	0.61	0.44	0.66	0.39

¹ Generational projections beyond the base year (2010) are not reflected in the above mortality rates.

All General pre-retirement deaths are assumed to be non-service connected. For Safety, 90% of pre-retirement deaths are assumed to be non-service connected. The other 10% are assumed to be service connected.

Disability Incidence Rates

Age	Rate (%) Disability			
	General All Other ¹	General OCTA ²	Safety - Law & Fire ³	Safety - Probation ⁴
20	0.00	0.00	0.00	0.00
25	0.00	0.00	0.01	0.03
30	0.01	0.03	0.07	0.08
35	0.03	0.20	0.19	0.10
40	0.08	0.39	0.31	0.13
45	0.14	0.48	0.44	0.21
50	0.20	0.53	1.10	0.28
55	0.27	0.70	2.70	0.42
60	0.33	1.22	5.00	0.20

¹ 65% of General All Other disabilities are assumed to be service connected disabilities. The other 35% are assumed to be non-service connected.

² 80% of General OCTA disabilities are assumed to be service connected disabilities. The other 20% are assumed to be non-service connected.

³ 100% of Safety Law Enforcement and Fire disabilities are assumed to be service connected disabilities.

⁴ 75% of Safety Probation disabilities are assumed to be service connected disabilities. The other 25% are assumed to be non-service connected.

Actuarial Methods and Assumptions

(continued)

Termination Rates Before Retirement

(continued)

Termination Rates

Years of Service	Rate (%) Termination			
	General All Other	General OCTA	Safety - Law & Fire	Safety - Probation
Less than 1	11.00	17.00	4.25	14.00
1-2	7.25	11.50	2.75	13.00
2-3	6.50	9.00	2.25	11.00
3-4	5.50	8.50	1.75	5.00
4-5	5.00	8.00	1.50	4.00
5-6	4.50	7.00	1.25	3.25
6-7	4.00	4.25	1.00	2.75
7-8	3.50	4.00	0.95	2.75
8-9	3.25	3.25	0.90	2.50
9-10	3.00	3.00	0.85	1.75
10-11	2.50	2.75	0.80	1.50
11-12	2.00	2.50	0.75	1.50
12-13	2.00	2.50	0.70	1.25
13-14	2.00	2.25	0.65	1.00
14-15	1.50	2.25	0.60	0.75
15-16	1.40	2.25	0.55	0.75
16-17	1.30	2.00	0.50	0.75
17-18	1.20	1.80	0.45	0.75
18-19	1.10	1.60	0.40	0.50
19-20	1.00	1.40	0.30	0.25
20 & over	0.75	1.20	0.15	0.15

Election for Withdrawal of Contributions Rates

Years of Service	Rate (%) Election for Withdrawal of Contributions			
	General All Other	General OCTA	Safety - Law & Fire	Safety - Probation
Less than 5	30.00	40.00	20.00	25.00
5-9	25.00	30.00	20.00	25.00
10-14	25.00	25.00	10.00	25.00
15 & over	17.50	15.00	10.00	15.00

Actuarial Methods and Assumptions

(continued)

Retirement Rates

Age	Rate (%) ¹ Retirement			
	General		General Non-Enhanced ²	
	Less than 30 Years of Service	Greater than 30 Years of Service	Less than 30 Years of Service	Greater than 30 Years of Service
49	0.00	30.00	0.00	25.00
50	2.00	4.00	3.00	3.00
51	2.00	4.00	3.00	3.00
52	2.50	5.00	2.00	2.00
53	2.50	5.00	3.50	3.50
54	7.00	14.00	2.75	2.75
55	12.00	30.00	3.25	3.25
56	9.00	19.00	3.50	3.50
57	9.00	18.00	5.00	5.00
58	9.00	18.00	5.50	5.50
59	10.00	20.00	6.50	6.50
60	11.00	20.00	9.00	13.50
61	11.00	20.00	9.00	13.50
62	13.00	20.00	9.00	18.00
63	13.00	22.00	9.50	19.00
64	16.00	24.00	10.00	20.00
65	24.00	28.00	22.00	26.40
66	24.00	30.00	25.00	30.00
67	24.00	30.00	25.00	30.00
68	22.00	27.50	30.00	27.50
69	22.00	27.50	30.00	27.50
70	25.00	27.50	20.00	27.50
71	25.00	27.50	20.00	27.50
72	25.00	27.50	20.00	27.50
73	20.00	27.50	20.00	27.50
74	20.00	27.50	20.00	27.50
75	100.00	100.00	100.00	100.00

¹ The retirement rates only apply to members that are eligible to retire at the age shown.

² These assumptions are also used for the CalPEPRA 1.62% @ 65 formula (Plan T and Plan W).

Actuarial Methods and Assumptions

(continued)

Retirement Rates

(continued)

Age	Rate (%) ¹ Retirement					
	Safety Law (31664.1)		Safety Law (31664.1)		Safety Probation (31664.1)	
	Less than 30 Years of Service	Greater than 30 Years of Service	Less than 30 Years of Service	Greater than 30 Years of Service	Less than 30 Years of Service	Greater than 30 Years of Service
45	1.00	16.00	2.00	10.00	3.00	5.00
46	1.00	16.00	2.00	10.00	3.00	5.00
47	1.00	16.00	2.00	10.00	3.00	5.00
48	1.00	16.00	2.00	10.00	3.00	5.00
49	11.00	16.00	2.00	10.00	3.00	5.00
50	16.00	16.00	4.00	10.00	9.00	12.00
51	16.00	16.00	4.00	10.00	7.00	10.00
52	17.00	16.00	4.00	10.00	5.00	9.00
53	19.00	30.00	9.00	20.00	7.00	9.00
54	24.00	30.00	12.00	25.00	7.00	12.00
55	24.00	30.00	12.00	25.00	12.00	30.00
56	22.00	30.00	12.00	25.00	18.00	30.00
57	22.00	30.00	18.00	25.00	25.00	30.00
58	22.00	40.00	18.00	30.00	25.00	30.00
59	22.00	40.00	18.00	30.00	18.00	30.00
60	30.00	40.00	18.00	30.00	20.00	40.00
61	30.00	40.00	18.00	30.00	20.00	40.00
62	30.00	40.00	18.00	35.00	20.00	40.00
63	30.00	40.00	18.00	35.00	20.00	40.00
64	30.00	40.00	18.00	35.00	20.00	40.00
65	100.00	100.00	100.00	100.00	100.00	100.00

¹The retirement rates only apply to members that are eligible to retire at the age shown.

Actuarial Methods and Assumptions

(continued)

Retirement Rates

(continued)

Age	Rate (%) ¹ Retirement		
	General SJC (31676.12)	Safety Law (31664.2)	Safety Probation (31664.1)
50	4.00	11.50	8.00
51	4.00	12.00	9.00
52	4.00	12.70	10.00
53	4.00	17.90	12.00
54	4.00	18.80	14.00
55	4.00	35.00	23.00
56	5.00	25.00	22.00
57	6.00	25.00	25.00
58	7.00	25.00	25.00
59	9.00	30.00	35.00
60	10.00	40.00	40.00
61	12.00	40.00	40.00
62	13.00	40.00	40.00
63	13.00	40.00	40.00
64	19.00	40.00	40.00
65	20.00	100.00	100.00
66	25.00	100.00	100.00
67	25.00	100.00	100.00
68	25.00	100.00	100.00
69	25.00	100.00	100.00
70	45.00	100.00	100.00
71	45.00	100.00	100.00
72	45.00	100.00	100.00
73	45.00	100.00	100.00
74	45.00	100.00	100.00
75	100.00	100.00	100.00

¹The retirement rates only apply to members that are eligible to retire at the age shown

Actuarial Methods and Assumptions

(continued)

Retirement Rates

(continued)

Age	Rate (%) ¹ Retirement			
	CalPEPRA 2.5% @ 57 General Formula	CalPEPRA 2.5% @ 57 Safety Formula Probation	CalPEPRA 2.5% @ 57 Safety Formula Law	CalPEPRA 2.5% @ 57 Safety Formula Fire
50	0.00	3.00	11.00	6.00
51	0.00	3.00	11.50	6.50
52	6.00	3.50	12.00	8.00
53	2.00	3.50	16.00	10.00
54	2.00	6.00	17.00	11.50
55	2.50	12.00	29.00	20.00
56	3.50	12.00	19.00	19.00
57	5.50	15.00	19.00	21.00
58	7.50	25.00	23.00	24.00
59	7.50	25.00	26.00	30.00
60	7.50	40.00	40.00	40.00
61	7.50	40.00	40.00	40.00
62	14.00	40.00	40.00	40.00
63	14.00	40.00	40.00	40.00
64	14.00	40.00	40.00	40.00
65	20.00	100.00	100.00	100.00
66	22.00	100.00	100.00	100.00
67	23.00	100.00	100.00	100.00
68	23.00	100.00	100.00	100.00
69	23.00	100.00	100.00	100.00
70	25.00	100.00	100.00	100.00
71	25.00	100.00	100.00	100.00
72	25.00	100.00	100.00	100.00
73	25.00	100.00	100.00	100.00
74	25.00	100.00	100.00	100.00
75	100.00	100.00	100.00	100.00

¹The retirement rates only apply to members that are eligible to retire at the age shown

Actuarial Methods and Assumptions

(continued)

Retirement Age and Benefit for Deferred Vested Members:	<p>For current and future deferred vested members, we make the following retirement age assumptions:</p> <p style="margin-left: 40px;">General Age: 59</p> <p style="margin-left: 40px;">Safety Age: 54</p> <p>Future deferred vested members who terminate with less than five years of service and are not vested are assumed to retire at age 70 for both General and Safety if they decide to leave their contributions on deposit.</p> <p>15% of future General and 20% of future Safety deferred vested members are assumed to continue to work for a reciprocal employer. For reciprocals, 4.00% and 4.60% compensation increases are assumed per annum for General and Safety, respectively.</p>
Liability Calculation for Current Deferred Vested Members:	<p>Liability for a current deferred vested member is calculated based on salary (adjusted with the additional cash out assumptions for non-CalPEPRA members), service, and eligibility for reciprocal benefit as provided by the Retirement System. For those members without salary information that have three or more years of service, we used an average salary. For those members without salary information that have less than three years of service or for those members without service information, we assumed a refund of account balance.</p>
Future Benefit Accruals:	<p>1.0 year of service per year of employment. There is no assumption to anticipate conversion of unused sick leave at retirement.</p>
Unknown Data for Members:	<p>Same as those exhibited by members with similar known characteristics. If not specified, members are assumed to be male.</p>
Percent Married:	<p>For all active and inactive members, 75% of male members and 55% of female members are assumed to be married at pre-retirement death or retirement.</p>
Age and Gender of Spouse:	<p>For all active and inactive members, male members are assumed to have a female spouse who is three years younger than the member and female members are assumed to have a male spouse who is two years older than the member.</p>
Additional Cashout Assumptions:	<p>Additional compensation amounts are expected to be received during a member's final average earnings period. The percentages used in this valuation are:</p>

Years of Service	Rate (%)	
	Final One Year Salary	Final Three Year Salary
General Non-CalPEPRA	3.00%	2.90%
Safety Probation Non-CalPEPRA	3.80%	3.40%
Safety Law Non-CalPEPRA	N/A	6.90%
Safety Fire Non-CalPEPRA	N/A	1.50%
General CalPEPRA	N/A	N/A
Safety Probation CalPEPRA	N/A	N/A
Safety Law CalPEPRA	N/A	N/A
Safety Fire CalPEPRA	N/A	N/A

The additional cashout assumptions are the same for service and disability retirements.

Actuarial Methods and Assumptions

(continued)

Actuarial Value of Assets: Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual and the expected return on a market value basis, and is recognized over a five-year period.

Valuation Value of Assets: The Valuation Value of Assets is the Actuarial Value of Assets reduced by the value of the non-valuation reserves.

Actuarial Cost Method: Entry Age Actuarial Cost Method. Entry Age is the age on the valuation date minus the lesser of years of employment or years of benefit service. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are based on costs allocated as a level percentage of compensation. The normal cost rate is calculated assuming their Entry Age is the date they entered service with OCERS.

Please note that for Probation members who have prior benefit service in another General OCERS plan, the normal cost rate for the current plan is calculated assuming their Entry Age is the date they entered service with their current plan.

Amortization Policy: Effective December 31, 2013, the outstanding balance of the UAAL from the December 31, 2012 valuation was combined and re-amortized over a declining 20-year period. Any changes in UAAL due to actuarial gains or losses or due to changes in assumptions or methods will be amortized over separate 20-year periods. Any changes in UAAL due to plan amendments will be amortized over separate 15-year periods and any change in UAAL due to early retirement incentive programs will be amortized over a separate period of up to 5 years.

Please note that for Probation members who have prior benefit service in another OCERS plan, the normal cost rate for the current plan is calculated assuming their Entry Age is the date they entered service with their current plan.

Summary of Major Plan Provisions

This section summarizes the major provisions of OCERS included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Membership Eligibility: Membership with OCERS begins with the day of employment in an eligible position by the County or a participating employer.

Non-CalPEPRA General Plans:

2.5% @ 55 Plans

(Orange County Sanitation District¹ and Law Library²)

Plan G

General members hired before September 21, 1979.

Plan H

General members hired on or after September 21, 1979.

¹ Sanitation District members within Supervisors and Professional unit hired on or after October 1, 2010 are in Plan B

² Improvement is prospective only for service after June 23, 2005.

2.7% @ 55 Plans

(City of San Juan Capistrano, Orange County Employees except bargaining unit AFSCME members, Orange County Superior Court, Orange County Local Agency Formation Commission³, Orange County Employees Retirement System⁴, Children and Family Commission⁵ and Orange County Fire Authority)

Plan I

General members hired before September 21, 1979.

Plan J

General members hired on or after September 21, 1979.

³ Improvement is prospective only for service after June 23, 2005.

⁴ Improvement for management employees is prospective only for service after June 30, 2005.

⁵ Improvement is prospective only for service after December 22, 2005.

2.0% @ 55 Plans

(Transportation Corridor Agency, Cemetery District⁶ and General OCFA employees effective July 1, 2011)

Plan M

General members hired before September 21, 1979.

Plan N

General members hired on or after September 21, 1979.

⁶ Improvement is prospective only for service after December 7, 2007.

1.62% @ 65 Plans

(Orange County Employees, Orange County Superior Court, Orange County Local Agency Formation Commission and Orange County Managers Unit)

Plan O

County OCEA members and Superior Court members rehired on or after May 7, 2010, LAFCO members rehired on or after July 1, 2010 and County Managers unit members rehired on or after August 17, 2010 and not electing to rejoin Plan I.

Plan P

County OCEA members and Superior Court members hired on or after May 7, 2010, LAFCO members hired on or after July 1, 2010 and County Managers unit members hired on or after August 17, 2010 and not electing Plan J.

2.0% @ 57 Plan

(City of San Juan Capistrano)

Plan S

General members hired on or after July 1, 2012.

All Other General Employers:

Plan A

General members hired before September 21, 1979.

Plan B

General members hired on or after September 21, 1979 and Sanitation District members within Supervisors and Professional unit hired on or after October 1, 2010.

Summary of Major Plan Provisions

(continued)

Membership Eligibility: (continued)

Non-CalPEPRA Safety Plans:

3% @ 50 Plans

(Law Enforcement, Fire Authority and Probation)

Plan E

Safety members hired before September 21, 1979.

Plan F

Safety members hired on or after September 21, 1979 and before April 9, 2010 for Law Enforcement, before July 1, 2011 for Safety employees of OCFA Executive Management, and before July 1, 2012 for other OCFA Safety employees.

3% @ 55 Plans

(Law Enforcement and Fire Authority)

Plan Q

Safety Law Enforcement members rehired on or after April 9, 2010, Safety employees of OCFA Executive Management rehired on or after July 1, 2011, and other OCFA Safety employees rehired on or after July 1, 2012 and previously in Plan E.

Plan R

Safety Law Enforcement members hired on or after April 9, 2010, Safety employees of OCFA Executive Management hired on or after July 1, 2011, and other OCFA Safety employees hired on or after July 1, 2012.

CalPEPRA General Plans:

1.62% @ 65 Plan

(Orange County Employees except County Attorneys, Orange County Employees Retirement System except Management Employees, Children and Family Commission, Local Agency Formation Commission, and Orange County Superior Court)

Plan T

General members with membership dates on or after January 1, 2013.

2.5% @ 67 Plan

(All Other General Employers, Orange County Attorneys, Orange County Employees Retirement System Management Employees)

Plan U

General Non-Orange County Transportation Authority members with membership dates on or after January 1, 2013 and Orange County Transportation Authority members with membership dates on or after January 1, 2015.

1.62% @ 65 Plan

(City of San Juan Capistrano)

Plan W

General members with membership dates on or after January 1, 2016 and not electing Plan U.

CalPEPRA Safety Plans:

2.7% @ 57 Plan

(Law Enforcement, Fire Authority and Probation Members)

Plan V

Safety members with membership dates on or after January 1, 2013.

Summary of Major Plan Provisions

(continued)

Final Compensation for Benefit Determination:

<i>Plans A, E, G, I, M, O and Q</i>	Highest consecutive twelve months of compensation earnable. (§31462.1) (FAS1)
<i>Plans B, F, H, J, N, P, R and S</i>	Highest consecutive thirty-six months of compensation earnable. (§31462) (FAS3)
<i>Plan T</i>	Highest consecutive thirty-six months of pensionable compensation. (§7522.32 and §7522.34) (FAS3)
<i>Plans U, V and W</i>	Highest consecutive thirty-six months of pensionable compensation. (§7522.10(c), §7522.32 and §7522.34) (FAS3)

Service:

Years of service. (Yrs)

Service Retirement Eligibility:

<i>Plans A, B, G, H, I, J, M, N, O, P, S, T, and W</i>	Age 50 with 10 years of service, or age 70 regardless of service, or after 30 years, regardless of age. (§31672)
	All part-time employees over age 55 with 10 years of employment may retire with 5 years of service.
<i>Plan U</i>	Age 52 with 5 years of service (§7522.20(a)) or age 70 regardless of service. (§31672.3)
<i>Plans E, F, Q and R</i>	Age 50 with 10 years of service, or after 20 years, regardless of age. (§31663.25)
	All part-time employees over age 55 with 10 years of employment may retire with 5 years of service.
<i>Plan V</i>	Age 50 with 5 years of service (§7522.20(d)) or age 70 regardless of service. (§31672.3)

Summary of Major Plan Provisions

(continued)

Benefit Formula: General Plans

General Plans	Retirement Age	Benefit Formula
2.5% @ 55		
<i>Plan G</i> (§31676.18) <i>Tier 1</i>	50	(2.00% x FAS1 x Yrs)
	55	(2.50% x FAS1 x Yrs)
	60	(2.50% x FAS1 x Yrs)
	62	(2.62% x FAS1 x Yrs) ¹
	65 or later	(2.62% x FAS1 x Yrs) ¹
<i>Plan H</i> (§31676.18) <i>Tier 2</i>	50	(2.00% x FAS3 x Yrs)
	55	(2.50% x FAS3 x Yrs)
	60	(2.50% x FAS3 x Yrs)
	62	(2.50% x FAS3 x Yrs)
	65 or later	(2.50% x FAS3 x Yrs)

¹ Reflects benefit factors from Plan A as they provide a better benefit than those under 2.5% @ 55.

2.7% @ 55		
<i>Plan I</i> (§31676.19) <i>Tier 1</i>	50	(2.00% x FAS1 x Yrs)
	55	(2.70% x FAS1 x Yrs)
	60	(2.70% x FAS1 x Yrs)
	62	(2.70% x FAS1 x Yrs)
	65 or later	(2.70% x FAS1 x Yrs)
<i>Plan J</i> (§31676.19) <i>Tier 2</i>	50	(2.00% x FAS3 x Yrs)
	55	(2.70% x FAS3 x Yrs)
	60	(2.70% x FAS3 x Yrs)
	62	(2.70% x FAS3 x Yrs)
	65 or later	(2.70% x FAS3 x Yrs)
2.0% @ 55		
<i>Plan M</i> (§31676.16) <i>Tier 1</i>	50	(1.43% x FAS1 x Yrs)
	55	(2.00% x FAS1 x Yrs)
	60	(2.34% x FAS1 x Yrs) ¹
	62	(2.62% x FAS1 x Yrs) ¹
	65 or later	(2.62% x FAS1 x Yrs) ¹
<i>Plan N</i> (§31676.16) <i>Tier 2</i>	50	(1.43% x FAS3 x Yrs)
	55	(2.00% x FAS3 x Yrs)
	60	(2.26% x FAS3 x Yrs)
	62	(2.37% x FAS3 x Yrs)
	65 or later	(2.43% x FAS3 x Yrs) ²

¹ Reflects benefit factors from Plan A as they provide a better benefit than those under 2.0% @ 55.

² Reflects benefit factors from Plan B as they provide a better benefit than those under 2.0% @ 55.

Summary of Major Plan Provisions

(continued)

Benefit Formula: General Plans (continued)

General Plans	Retirement Age	Benefit Formula
1.62% @ 65		
<i>Plan O (\$31676.01)</i> <i>Tier 1</i>	50	(0.79% x FAS1 x Yrs)
	55	(0.99% x FAS1 x Yrs)
	60	(1.28% x FAS1 x Yrs)
	62	(1.39% x FAS1 x Yrs)
	65 or later	(1.62% x FAS1 x Yrs)
<i>Plan P, Plan T and Plan W (\$31676.01)</i> <i>Tier 2</i>	50	(0.79% x FAS3 x Yrs)
	55	(0.99% x FAS3 x Yrs)
	60	(1.28% x FAS3 x Yrs)
	62	(1.39% x FAS3 x Yrs)
	65 or later	(1.62% x FAS3 x Yrs)
2.0% @ 57		
<i>Plan S (\$31676.12)</i> <i>Tier 2</i>	50	(1.34% x FAS3 x Yrs)
	55	(1.77% x FAS3 x Yrs)
	60	(2.34% x FAS3 x Yrs)
	62	(2.62% x FAS3 x Yrs)
	65 or later	(2.62% x FAS3 x Yrs)
<i>Plan A (\$31676.12)</i> <i>Tier 1</i>	50	(1.34% x FAS1 x Yrs)
	55	(1.77% x FAS1 x Yrs)
	60	(2.34% x FAS1 x Yrs)
	62	(2.62% x FAS1 x Yrs)
	65 or later	(2.62% x FAS1 x Yrs)
1.67% @ 57.5		
<i>Plan B (\$31676.1)</i> <i>Tier 2</i>	50	(1.18% x FAS3 x Yrs)
	55	(1.49% x FAS3 x Yrs)
	60	(1.92% x FAS3 x Yrs)
	62	(2.09% x FAS3 x Yrs)
	65 or later	(2.43% x FAS3 x Yrs)
2.5% @ 67		
<i>Plan U (\$7522.20(a))</i>	52	(1.00% x FAS3 x Yrs)
	55	(1.30% x FAS3 x Yrs)
	60	(1.80% x FAS3 x Yrs)
	62	(2.00% x FAS3 x Yrs)
	65	(2.30% x FAS3 x Yrs)
	67 or later	(2.50% x FAS3 x Yrs)

Summary of Major Plan Provisions

(continued)

Benefit Formula: Safety Plans

Safety Plans	Retirement Age	Benefit Formula
3% @ 50		
<i>Plan E (\$31664.1)</i> <i>Tier 1</i>	50	(3.00% x FAS1 x Yrs)
	55	(3.00% x FAS1 x Yrs)
	60 or later	(3.00% x FAS1 x Yrs)
<i>Plan F (\$31664.1)</i> <i>Tier 2</i>	50	(3.00% x FAS3 x Yrs)
	55	(3.00% x FAS3 x Yrs)
	60 or later	(3.00% x FAS3 x Yrs)
3% @ 55		
<i>Plan Q (\$31664.2)</i> <i>Tier 1</i>	50	(2.29% x FAS1 x Yrs)
	55	(3.00% x FAS1 x Yrs)
	60 or later	(3.00% x FAS1 x Yrs)
<i>Plan R (\$31664.2)</i> <i>Tier 2</i>	50	(2.29% x FAS3 x Yrs)
	55	(3.00% x FAS3 x Yrs)
	60 or later	(3.00% x FAS3 x Yrs)
2.7% @ 57		
<i>Plan V (\$7522.25(d))</i>	50	(2.00% x FAS3 x Yrs)
	55	(2.50% x FAS3 x Yrs)
	57 or later	(2.70% x FAS3 x Yrs)

Summary of Major Plan Provisions

(continued)

Maximum Benefit:

<i>Plans A, B, E, F, G, H, I, J, M, N, O, P, Q, R, S, T and W</i>	100% of Highest Average Compensation. (§31676.01, §31676.1, §31676.12, §31676.16, §31676.18, §31676.19, §31664.1, §31664.2)
<i>Plans U and V</i>	None

Ordinary Disability:

General Plans:

Plans A, B, G, H, I, J, M, N, O, P, S, T, U and W

<i>Eligibility</i>	Five years of service. (§31720)
<i>Benefit Formula</i>	<ul style="list-style-type: none">• Plans A, G, I, M, and O: 1.8% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 62, but the total benefit cannot be more than one-third of Final Compensation. (§31727.1)• Plans B, H, J, N, P, S, T, U and W: 1.5% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 65, but the total benefit cannot be more than one-third of Final Compensation. (§31727)

Safety Plans:

Plans E, F, Q, R and V

<i>Eligibility</i>	Five years of service. (§31720)
<i>Benefit Formula</i>	1.8% per year of service. If the benefit does not exceed one-third of Final Compensation, the service is projected to 55, but the total benefit cannot be more than one-third of Final Compensation (§31727.2)

For all members, 100% of the service retirement benefit will be paid, if greater.

Line-of-Duty Disability:

All Members:

<i>Eligibility</i>	No age or service requirements. (§31720)
<i>Benefit Formula</i>	50% of the Final Compensation or 100% of Service Retirement benefit, if greater. (§31727.4)

Pre-Retirement Death:

All Members:

<i>Eligibility</i>	None
<i>Benefit</i>	Refund of employee contributions with interest plus one month's compensation for each year of service to a maximum of six month's compensation. (§31781) A lump sum benefit in the amount of \$1,000 is payable upon death of a member (with 10 years of service) to his/her eligible beneficiary. (§31790)
<i>Death in line of duty</i>	50% of Final Compensation or 100% of Service Retirement benefit, if greater, payable to spouse or minor-children. (§31787) Or

Vested Members:

<i>Eligibility</i>	Five years of service.
<i>Benefit</i>	60% of the greater of Service or Ordinary Disability Retirement benefit payable to eligible surviving spouse (§31765.1, §31781.1), in lieu of §31781.

Summary of Major Plan Provisions

(continued)

Death After Retirement:

All Members:

<i>Service or Ordinary Disability Retirement</i>	60% of member's unmodified allowance continued to eligible spouse. (§31760.1) A lump sum benefit in the amount of \$1,000 is payable upon death of a member (with 10 years of service) to his/her eligible beneficiary. (§31790) An eligible spouse is a surviving spouse who was married to or registered with the member one year prior to the effective retirement date. Certain surviving spouses or domestic partners may also be eligible if marriage or domestic partnership was at least two years prior to the date of death and the surviving spouse or domestic partner has attained age 55. (§31760.1)
<i>Line-of-Duty Disability</i>	100% of member's allowance continued to eligible spouse. (§31786) A lump sum benefit in the amount of \$1,000 is payable upon death of a member (with 10 years of service) to his/her eligible beneficiary. (§31790)

Withdrawal Benefits:

<i>Less than Five Years of Service</i>	Refund of accumulated employee contributions with interest or earned benefit at age 70 (§31628). Effective January 1, 2003, a member may also elect to leave their contributions on deposit in the retirement fund. (§31629.5)
<i>Five or More Years of Service</i>	If contributions left on deposit, a member is entitled to earned benefits commencing at any time after eligible to retire. (§31700)

Post-Retirement Cost-of-Living Benefits:

Future changes based on Consumer Price Index to a maximum of 3% per year, excess "banked." (§31870.1)

Supplemental Benefit:

Non-vested supplemental COLA and medical benefits are also paid by the System to eligible retirees and survivors. These benefits have been excluded from this valuation.

Member Contributions:

Non-CalPEPRA General Plans:

<i>Plan A</i>	
<i>Basic</i>	Provide for an average annuity at age 60 equal to 1/200 of FAS1. (§31621.5)
<i>Cost-of-Living</i>	Provide for 50% of future Cost-of-Living costs.
<i>Plan B</i>	
<i>Basic</i>	Provide for an average annuity at age 60 equal to 1/120 of FAS3. (§31621)
<i>Cost-of-Living</i>	Provide for 50% of future Cost-of-Living costs.
<i>Plans G, H, I and J</i>	
<i>Basic</i>	Provide for an average annuity at age 55 equal to 1/100 of FAS3 (FAS1 for Plans G and I). (§31621.8)
<i>Cost-of-Living</i>	Provide for 50% of future Cost-of-Living costs.
<i>Plans M, N, O and P</i>	
<i>Basic</i>	Provide for an average annuity payable at age 60 equal to 1/120 of FAS3 (FAS1 for Plans M and O). (§31621)
<i>Cost-of-Living</i>	Provide for 50% of future Cost-of-Living costs.
<i>Plan S</i>	
<i>Basic</i>	Provide for an average annuity at age 60 equal to 1/100 of FAS3. (§31621.2)
<i>Cost-of-Living</i>	Provide for 50% of future Cost-of-Living costs.

Summary of Major Plan Provisions

(continued)

Member Contributions: (continued)

Non-CalPEPRA Safety Plans:

Plans E and Q

Basic Provide for an average annuity at age 50 equal to 1/200 FAS1. (\$31639.5)

Cost-of-Living Provide for 50% of future Cost-of-Living costs.

Plans F and R

Basic Provide for an average annuity at age 50 equal to 1/100 of FAS3. (\$31639.25)

Cost-of-Living Provide for 50% of future Cost-of-Living costs.

CalPEPRA Plans:

Plans T, U, V and W 50% of total Normal Cost rate.

Other Information: Non-CalPEPRA Safety members with 30 or more years of service are exempt from paying member contributions. The same applies for General members hired on or before March 7, 1973.

Note: The summary of major plan provisions is designed to outline principal plan benefits as interpreted for purposes of the actuarial valuation. If the System should find the plan summary not in accordance with the actual provisions, the System should alert the actuary so that both can be sure the proper provisions are valued.

Experience Analysis

(2011 - 2020)
(Dollars in Thousands)

Gains & Losses in Actuarial Accrued Liabilities During Years Ended December 31, Resulting from Differences Between Assumed Experience & Actual Experience					
Type of Activity	Gains (or Losses) Per Year				
	2011	2012	2013	2014	2015
Retirements	\$ -	\$ -	\$ -	\$ -	\$ (62,070)
Pay Increases	154,946	244,750	294,326	125,746	282,696
COLA Increases	-	-	-	153,484	119,367
Investment Income	(388,935)	(387,808)	176,930	9,570	(229,138)
Other	(38,159)	(19,979)	30,354	(4,476)	10,056
Gain (or Loss) During Year From Experience	\$ (272,148)	\$ (163,037)	\$ 501,610	\$ 284,324	\$ 120,911
Nonrecurring Items:					
Method and Procedure Changes	-	-	-	-	-
Plan Amendments and Assumption Changes	(363,842)	(934,619)	-	122,171	-
Composite Gain (or Loss) During Year	\$ (635,990)	\$ (1,097,656)	\$ 501,610	\$ 406,495	\$ 120,911

Gains & Losses in Actuarial Accrued Liabilities During Years Ended December 31, Resulting from Differences Between Assumed Experience & Actual Experience					
Type of Activity	Gains (or Losses) Per Year				
	2016	2017	2018	2019	2020
Retirements	\$ -	\$ -	\$ -	\$ -	\$ -
Pay Increases	(204,603)	66,399	71,908	52,716	62,291
COLA Increases	186,039	95,796	(24,279)	(131,220)	123,844 ¹
Investment Income	(113,103)	24,401	(255,908)	(50,514)	370,675
Other	(4,119)	5,316	(143,172)	(161,090)	(193,593)
Gain (or Loss) During Year From Experience	\$ (135,786)	\$ 191,912	\$ (351,451)	\$ (290,108)	\$ 363,217
Nonrecurring Items:					
Method and Procedure Changes	92,587 ²	-	-	-	37,783 ³
Plan Amendments and Assumption Changes	-	(853,538)	-	-	(24,273)
Composite Gain (or Loss) During Year	\$ (43,199)	\$ (661,626)	\$ (351,451)	\$ (290,108)	\$ 376,727

¹ Beginning with the December 31, 2020 valuation, the COLA for the upcoming April 1 is reflected in the valuation.

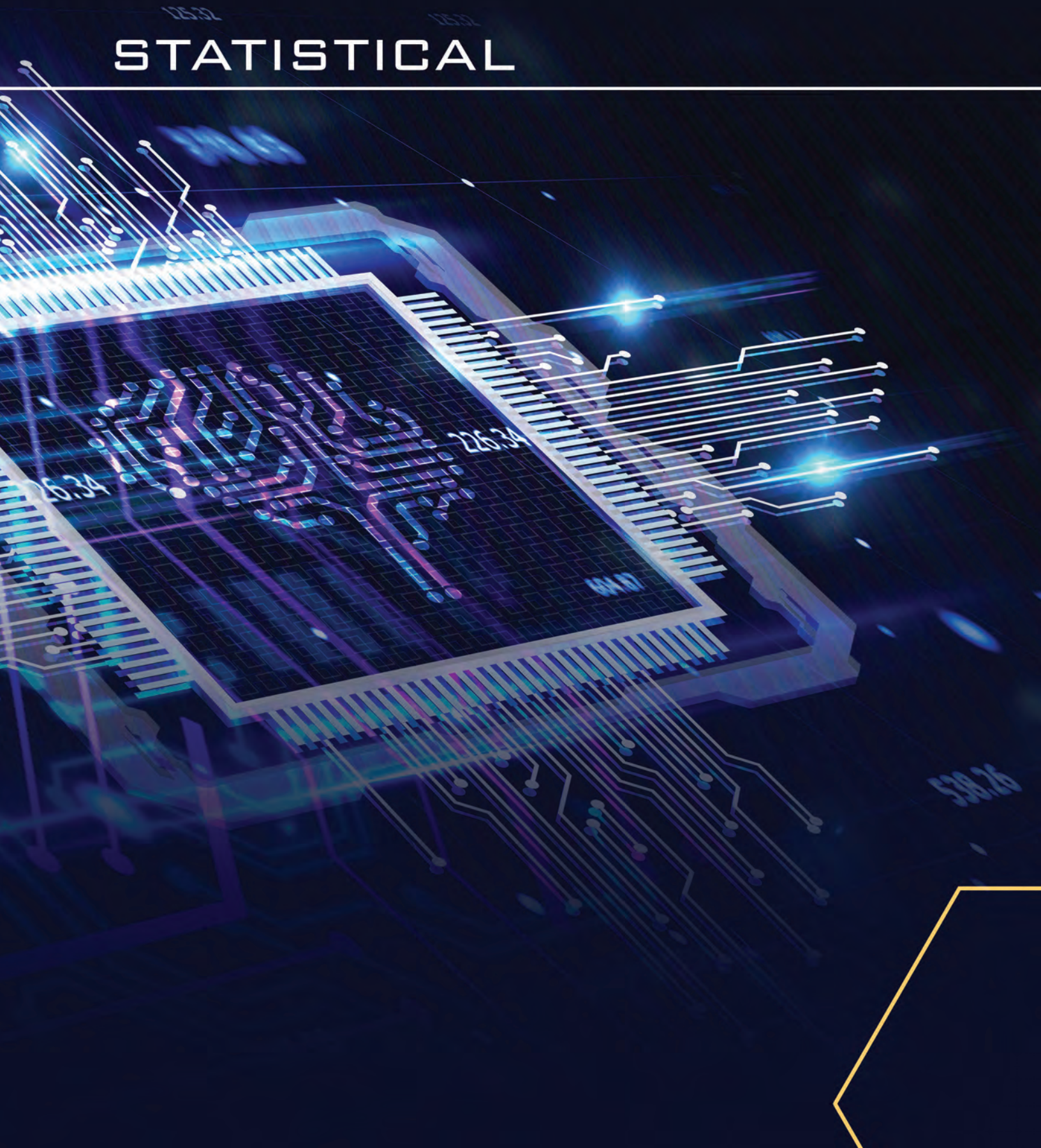
² Includes leap year salary adjustment, revised benefit and eligibility service credits from V3 pension administration system and automatic continuance benefit for child beneficiary.

³ Effect of reallocating present value benefits between NC and AAL.

SECTION

5

STATISTICAL



VISION 2030

New technologies and tools must be accepted or a system will remain stagnant. New technologies and tools are successful if the social need is strong, the resources are available to perform the function, and the users are receptive to the new technology and ideas. With the momentous advances in the techniques of recording and communication, artificial intelligence (AI) is being considered in the development of these new technologies to improve the accuracy and efficiencies of record keeping.

AI is a driver in the technology of analyzing big data which in the past has been performed by human intelligence. AI will continue to be innovative, increase productivity and through the acquisition of cumulative data, machine learning is made possible.

As we look into the future will the dilemma be an overdependence on technology?

A.I.



Statistical Section Review

The Statistical Section of the Annual Comprehensive Financial Report provides additional information in order to promote a more comprehensive understanding of the financial statements, note disclosures and supplemental information.

The Governmental Accounting Standards Board (GASB) established five categories of information to be provided in the Statistical Section: Financial Trends, Revenues, Expenses, Demographic and Economic, and Operating Information.

This section provides multi-year trend information to facilitate an understanding of how OCERS as an organization has changed over time.

Information of financial trends, revenues and expenses for the last ten years is presented in the Schedules of Changes in Fiduciary Net Position, Schedule and Graph of Fiduciary Revenue by Source, and Schedule and Graph of Expenses by Type.

Schedule of Changes in Fiduciary Net Position - Pension Trust Fund

2012 – 2021
(Dollars in Thousands)

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Additions										
Employer Contributions	\$ 406,805	\$ 427,095	\$ 625,520	\$ 571,298	\$ 567,196	\$ 572,104	\$ 580,905	\$ 653,793	\$ 659,807	\$ 698,791
Employee Contributions	191,215	209,301	232,656	249,271	258,297	262,294	270,070	279,373	279,384	271,334
Investment Income/(Loss)	1,002,763	1,151,193	497,760	(11,903)	1,060,040	1,938,025	(326,145)	2,182,666	2,172,339	3,221,132
Net Securities Lending	2,007	1,454	1,435	1,030	1,203	1,610	1,517	1,142	845	933
Total Additions	\$ 1,602,790	\$ 1,789,043	\$ 1,357,371	\$ 809,696	\$ 1,886,736	\$ 2,774,033	\$ 526,347	\$ 3,116,974	\$ 3,112,375	\$ 4,192,190
Deductions										
Benefits	\$ 541,154	\$ 586,284	\$ 630,678	\$ 675,963	\$ 717,976	\$ 764,344	\$ 828,278	\$ 900,902	\$ 973,325	\$ 1,045,738
Administrative Expenses	14,209	11,705	11,905	12,521	16,870	17,002	18,284	19,171	20,428	21,473
Total Deductions	\$ 555,363	\$ 597,989	\$ 642,583	\$ 688,484	\$ 734,846	\$ 781,346	\$ 846,562	\$ 920,073	\$ 993,753	\$ 1,067,211
Changes in Fiduciary Net Position	\$ 1,047,427	\$ 1,191,054	\$ 714,788	\$ 121,212	\$ 1,151,890	\$ 1,992,687	\$ (320,215)	\$ 2,196,901	\$ 2,118,622	\$ 3,124,979

Schedule of Changes in Fiduciary Net Position - Health Care Fund - County

2012 – 2021
(Dollars in Thousands)

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Additions										
Employer Contributions	\$ 27,395	\$ 66,057	\$ 64,852	\$ 36,557	\$ 42,411	\$ 59,864	\$ 52,520	\$ 54,788	\$ 41,559	\$ 41,049
Investment Income/(Loss)	10,308	13,702	7,374	(698)	16,902	34,087	(5,888)	43,523	40,706	66,688
Net Securities Lending	21	20	25	18	21	32	31	25	19	21
Total Additions	\$ 37,724	\$ 79,779	\$ 72,251	\$ 35,877	\$ 59,334	\$ 93,983	\$ 46,663	\$ 98,336	\$ 82,284	\$ 107,758
Deductions										
Benefits	\$ 27,089	\$ 28,293	\$ 29,299	\$ 30,107	\$ 30,818	\$ 32,042	\$ 33,290	\$ 35,012	\$ 36,784	\$ 37,262
Administrative Expenses	19	20	20	22	22	22	20	20	22	23
Total Deductions	\$ 27,108	\$ 28,313	\$ 29,319	\$ 30,129	\$ 30,840	\$ 32,064	\$ 33,310	\$ 35,032	\$ 36,806	\$ 37,285
Changes in Fiduciary Net Position	\$ 10,616	\$ 51,466	\$ 42,932	\$ 5,748	\$ 28,494	\$ 61,919	\$ 13,353	\$ 63,304	\$ 45,478	\$ 70,473

Schedule of Changes in Fiduciary Net Position - Health Care Fund - OCFA

2012 – 2021
(Dollars in Thousands)

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Additions										
Employer Contributions	\$ 3,590	\$ 18,349	\$ 2,667	\$ 2,624	\$ 2,414	\$ 2,380	\$ 4,536	\$ 2,111	\$ 1,976	\$ 16,773
Investment Income/(Loss)	1,736	1,963	1,583	(99)	2,845	5,113	(725)	5,288	4,140	6,746
Net Securities Lending	3	4	5	3	3	4	4	3	2	2
Total Additions	\$ 5,329	\$ 20,316	\$ 4,255	\$ 2,528	\$ 5,262	\$ 7,497	\$ 3,815	\$ 7,402	\$ 6,118	\$ 23,521
Deductions										
Benefits	\$ 2,804	\$ 2,550	\$ 3,138	\$ 3,448	\$ 3,867	\$ 3,978	\$ 5,077	\$ 5,018	\$ 5,539	\$ 5,999
Administrative Expenses	9	14	22	22	22	27	30	21	22	24
Total Deductions	\$ 2,813	\$ 2,564	\$ 3,160	\$ 3,470	\$ 3,889	\$ 4,005	\$ 5,107	\$ 5,039	\$ 5,561	\$ 6,023
Changes in Fiduciary Net Position	\$ 2,516	\$ 17,752	\$ 1,095	\$ (942)	\$ 1,373	\$ 3,492	\$ (1,292)	\$ 2,363	\$ 557	\$ 17,498

Schedule of Changes in Fiduciary Net Position - Custodial Fund - OCTA

2012 – 2021
(Dollars in Thousands)

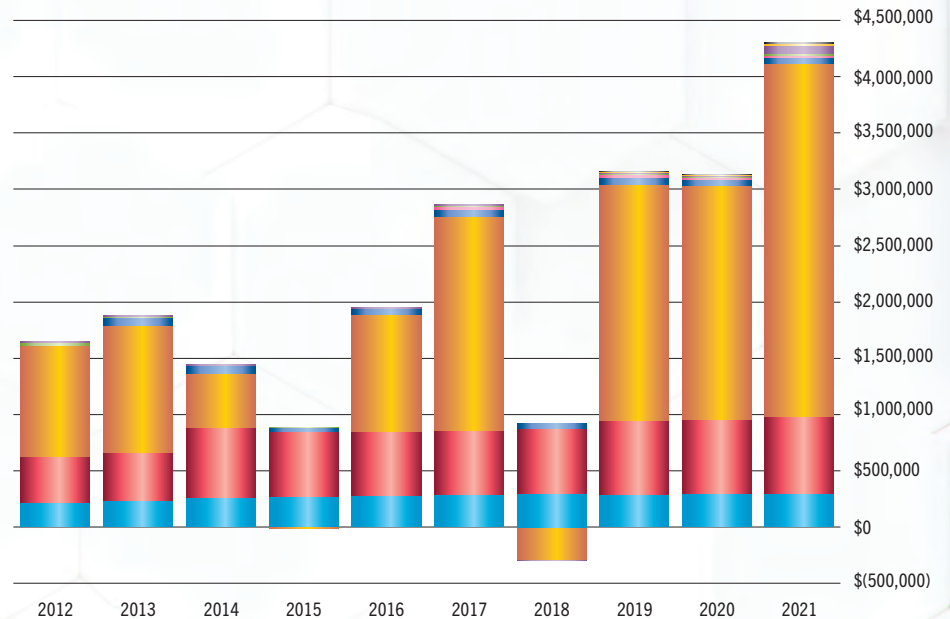
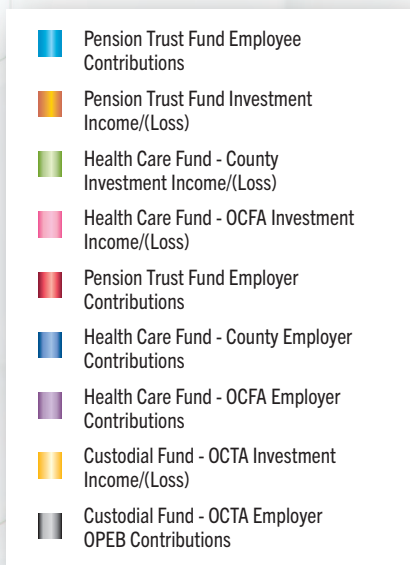
Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Additions										
Employer OPEB Contributions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$ 613	\$ 613	\$ 605
Investment Income/(Loss)	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>3,250</u>	<u>2,350</u>	<u>2,715</u>
Total Additions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,863	\$ 2,963	\$ 3,320
Deductions										
Employer OPEB Payments	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$ 1,318	\$ 1,383	\$ 1,419
Administrative Expenses	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>20</u>	<u>22</u>	<u>23</u>
Total Deductions	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,338	\$ 1,405	\$ 1,442
Changes in Fiduciary Net Position	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 2,525</u>	<u>\$ 1,558</u>	<u>\$ 1,878</u>

N/A: Detailed information not available. This is a 10-year schedule. Information in this schedule is not available prior to 2019 due to the implementation of GASB 84. Additional years will be added to this schedule in future fiscal years until 10 years of data is presented.

Schedule and Graph of Fiduciary Revenues by Source

2012 – 2021
(Dollars in Thousands)

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Pension Trust Fund										
Employee Contributions	\$ 191,215	\$ 209,301	\$ 232,656	\$ 249,271	\$ 258,297	\$ 262,294	\$ 270,070	\$ 279,373	\$ 279,384	\$ 271,334
Employer Contributions	406,805	427,095	625,520	571,298	567,196	572,104	580,905	653,793	659,807	698,791
Investment Income/(Loss) ^{1,2}	1,004,770	1,152,647	499,195	(10,873)	1,061,243	1,939,635	(324,628)	2,183,808	2,173,184	3,222,065
Health Care Fund - County										
Employer Contributions	27,395	66,057	64,852	36,557	42,411	59,864	52,520	54,788	41,559	41,049
Investment Income/(Loss) ^{1,2}	10,329	13,722	7,399	(680)	16,923	34,119	(5,857)	43,548	40,725	66,709
Health Care Fund - OCFA										
Employer Contributions	3,590	18,349	2,667	2,624	2,414	2,380	4,536	2,111	1,976	16,773
Investment Income/(Loss) ^{1,2}	1,739	1,967	1,588	(96)	2,848	5,117	(721)	5,291	4,142	6,748
Custodial Fund - OCTA										
Employer OPEB Contributions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	613	613	605
Investment Income/(Loss) ^{1,2}	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,250	2,350	2,715
Total	\$ 1,645,843	\$ 1,889,138	\$ 1,433,877	\$ 848,101	\$ 1,951,332	\$ 2,875,513	\$ 576,825	\$ 3,226,575	\$ 3,203,740	\$ 4,326,789



N/A: Detailed information not available.

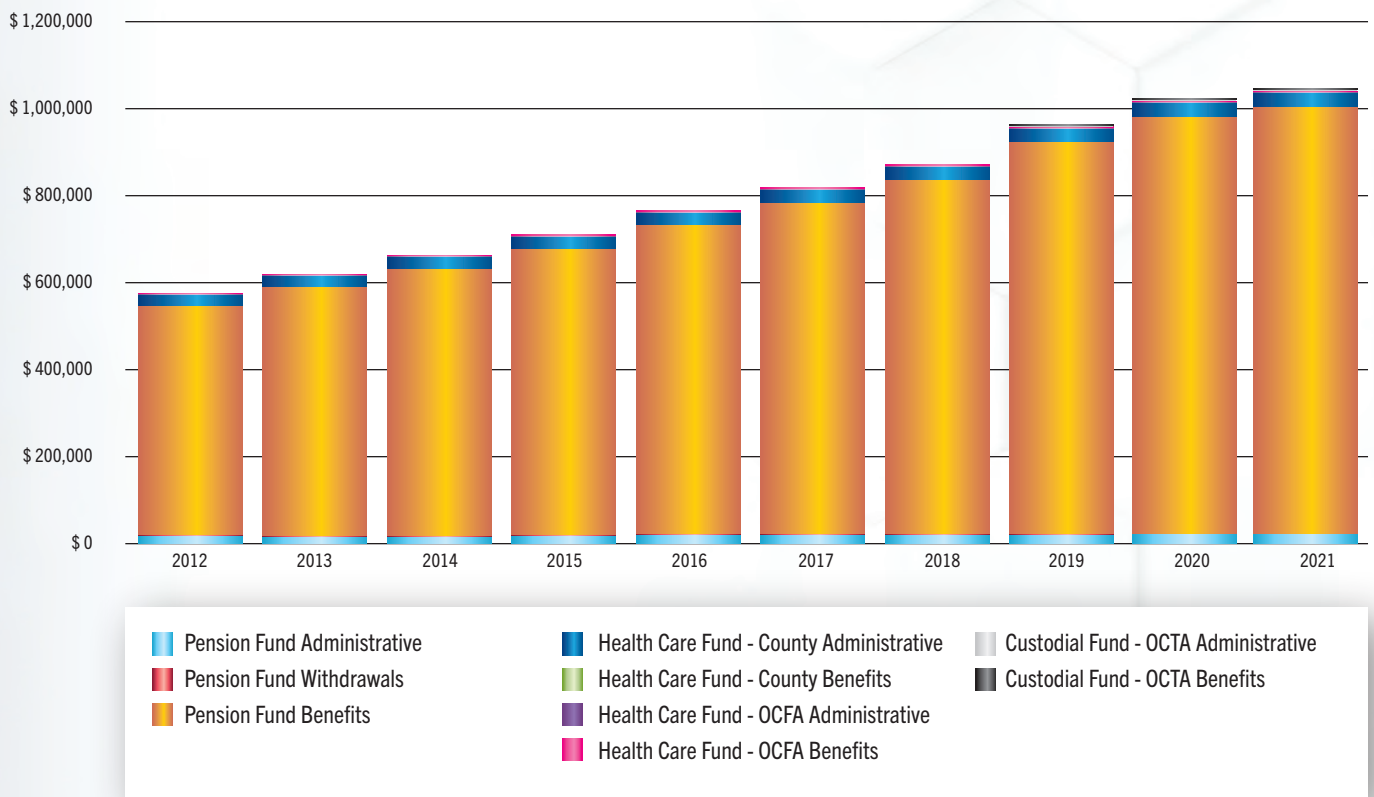
¹ Investment Income/(Loss) includes net appreciation/(depreciation) less investment manager fees, security lending fees and commission recapture.

² Beginning in 2013, Investment Income/(Loss) includes net appreciation/(depreciation) less investment manager fees, investment department expenses, security lending fees and commission recapture.

Schedule and Graph of Expenses by Type

2012 – 2021
(Dollars in Thousands)

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Pension Trust Fund										
Administrative	\$ 14,209	\$ 11,705	\$ 11,905	\$ 12,521	\$ 16,870	\$ 17,002	\$ 18,284	\$ 19,171	\$ 20,428	\$ 21,473
Withdrawals										
Separation	8,078	7,516	9,843	10,764	9,411	9,294	10,681	9,458	6,883	8,323
Death	2,019	2,348	1,887	1,093	4,232	4,572	3,252	3,791	4,664	6,126
Benefits	531,057	576,420	618,948	664,106	704,333	750,478	814,345	887,653	961,778	1,031,289
Health Care Fund - County										
Administrative	19	20	20	22	22	22	20	20	22	23
Benefits	27,089	28,293	29,299	30,107	30,818	32,042	33,290	35,012	36,784	37,262
Health Care Fund - OCFA										
Administrative	9	14	22	22	22	27	30	21	22	24
Benefits	2,804	2,550	3,138	3,448	3,867	3,978	5,077	5,018	5,539	5,999
Custodial Fund - OCTA										
Administrative	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20	22	23
Benefits	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,318	1,383	1,419
Total	\$ 585,284	\$ 628,866	\$ 675,062	\$ 722,083	\$ 769,575	\$ 817,415	\$ 884,979	\$ 961,482	\$ 1,037,525	\$ 1,111,961

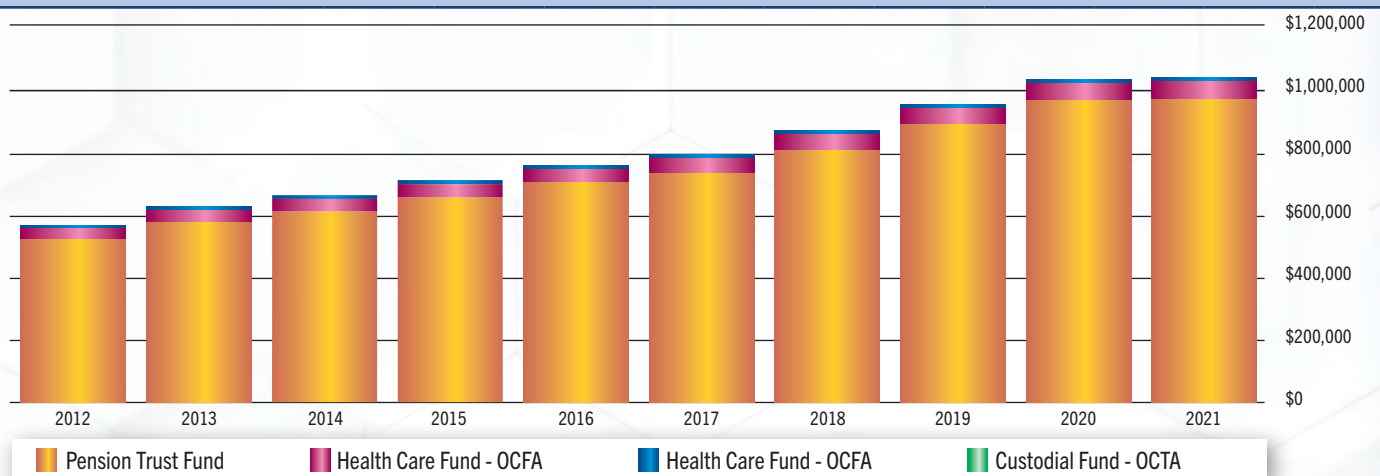


N/A: Detailed information not available.

Schedule and Graph of Benefit Expenses by Type

2012– 2021
(Dollars in Thousands)

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Pension Trust Fund										
Participant Benefits										
Service Retiree Payroll										
General	N/A	N/A	N/A	\$ 446,534	\$ 475,838	\$ 502,396	\$ 545,028	\$ 593,394	\$ 644,351	\$ 691,732
Safety	N/A	N/A	N/A	158,247	167,723	180,747	199,029	218,482	238,671	252,733
Service Retiree Payroll	N/A	N/A	N/A	604,781	643,561	683,143	744,057	811,876	883,022	944,465
Disability Retiree Payroll										
General	N/A	N/A	N/A	25,298	25,891	29,462	29,177	31,474	30,831	31,980
Safety	N/A	N/A	N/A	33,503	34,497	37,179	40,541	43,653	46,993	53,789
Disability Retiree Payroll	N/A	N/A	N/A	58,801	60,388	66,641	69,718	75,127	77,824	85,769
Total Participant Benefits										
General	N/A	N/A	N/A	471,832	501,729	531,858	574,205	624,868	675,182	723,712
Safety	N/A	N/A	N/A	191,750	202,220	217,926	239,570	262,135	285,664	306,522
Total Participant Benefits	\$ 530,269	\$ 575,633	\$ 618,233	663,582	703,949	749,784	813,775	887,003	960,846	1,030,234
Membership Withdrawals and Refunds										
General Membership	N/A	N/A	N/A	N/A	12,778	13,063	12,288	12,536	10,693	12,897
Safety Membership	N/A	N/A	N/A	N/A	865	803	1,645	713	854	1,552
Total Withdrawals and Refunds	10,097	9,864	11,730	11,857	13,643	13,866	13,933	13,249	11,547	14,449
Death Benefits										
Total Death Benefits	788	787	715	524	384	694	570	650	932	1,055
Total Pension Trust Fund	541,154	586,284	630,678	675,963	717,976	764,344	828,278	900,902	973,325	1,045,738
Health Care Fund - County										
Health Care	27,089	28,293	29,299	30,107	30,818	32,042	33,290	35,012	36,784	37,262
Health Care Fund - OCFA										
Health Care	2,804	2,550	3,138	3,448	3,867	3,978	5,077	5,018	5,539	5,999
Custodial Fund - OCTA										
Employer OPEB Payments	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1,318	1,383	1,419
Total	\$ 571,047	\$ 617,127	\$ 663,115	\$ 709,518	\$ 752,661	\$ 800,364	\$ 866,645	\$ 942,250	\$ 1,017,031	\$ 1,090,418

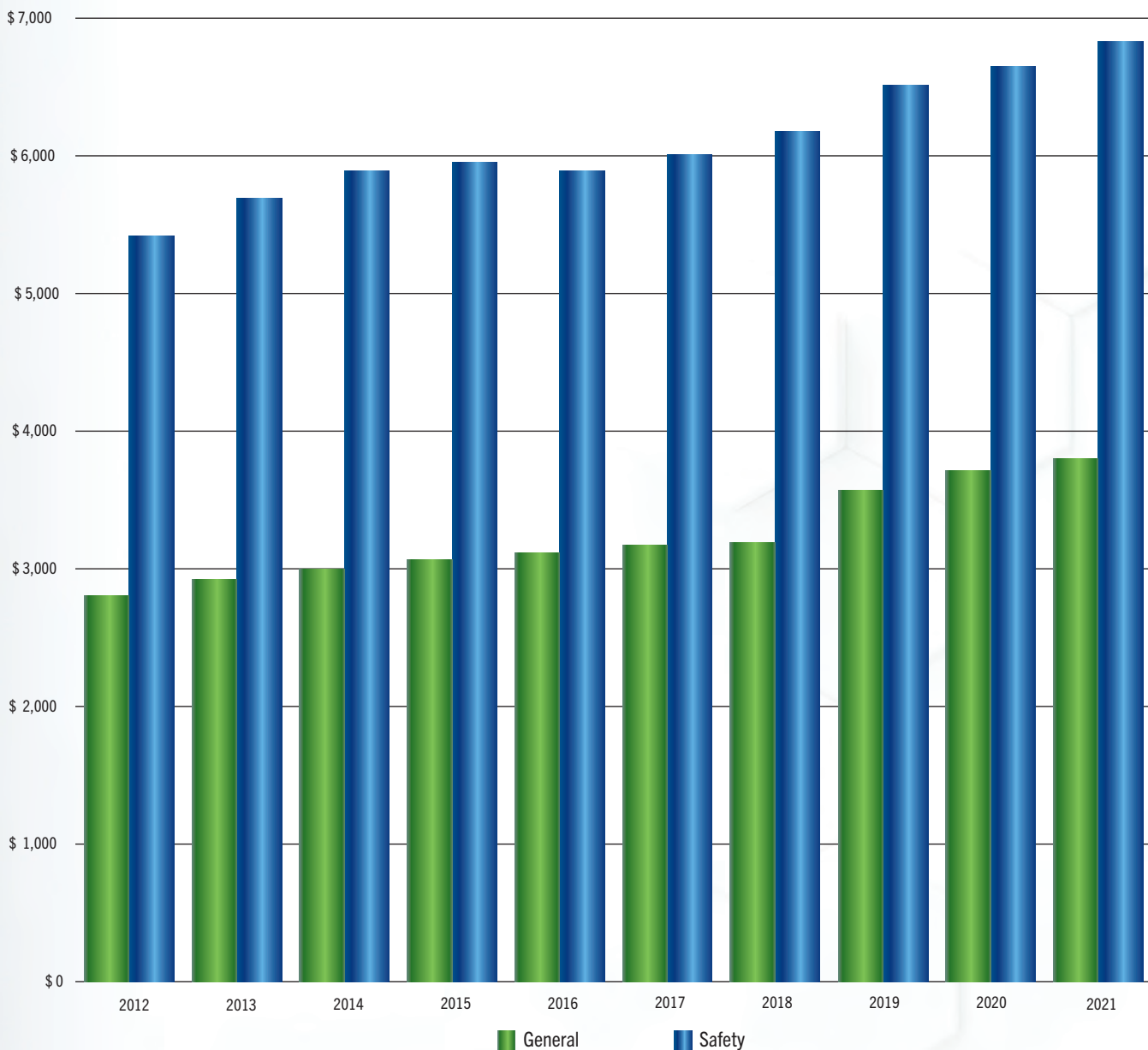


N/A: Detailed information not available.

Schedule and Graph of Average Monthly Pension Check

2012 – 2021

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
General	\$ 2,836	\$ 2,924	\$ 2,991	\$ 3,103	\$ 3,142	\$ 3,244	\$ 3,372	\$ 3,520	\$ 3,686	\$ 3,791
Safety	\$ 5,516	\$ 5,679	\$ 5,914	\$ 5,974	\$ 5,917	\$ 6,017	\$ 6,245	\$ 6,499	\$ 6,680	\$ 6,825



Source: OCERS' Pension Administration System Solution

Schedule of Average Pension Benefit Payments by Years of Service

Service Retirement Effective Dates	Years of Service						
	0-5	5-10	10-15	15-20	20-25	25-30	30 & Over
Period 1/1/12-12/31/12							
Average Monthly Pension Benefits	\$ 647	\$ 1,142	\$ 1,701	\$ 2,957	\$ 4,058	\$ 5,802	\$ 7,015
Monthly Final Average Salary	\$ 5,988	\$ 5,398	\$ 5,672	\$ 6,347	\$ 6,759	\$ 7,702	\$ 7,750
Number of Retired Members	20	71	128	88	187	145	172
Period 1/1/13-12/31/13							
Average Monthly Pension Benefits	\$ 435	\$ 1,166	\$ 2,039	\$ 2,946	\$ 3,794	\$ 6,409	\$ 7,732
Monthly Final Average Salary	\$ 8,199	\$ 6,347	\$ 6,458	\$ 6,492	\$ 6,431	\$ 8,432	\$ 8,482
Number of Retired Members	29	55	139	82	161	147	131
Period 1/1/14-12/31/14							
Average Monthly Pension Benefits	\$ 421	\$ 1,152	\$ 1,925	\$ 3,188	\$ 4,117	\$ 6,444	\$ 6,719
Monthly Final Average Salary	\$ 8,176	\$ 6,955	\$ 6,301	\$ 6,961	\$ 7,003	\$ 8,463	\$ 7,349
Number of Retired Members	23	45	146	96	143	192	138
Period 1/1/15-12/31/15							
Average Monthly Pension Benefits	\$ 582	\$ 1,263	\$ 1,755	\$ 2,850	\$ 3,895	\$ 5,679	\$ 7,235
Monthly Final Average Salary	\$ 8,802	\$ 6,888	\$ 5,970	\$ 6,673	\$ 6,800	\$ 7,893	\$ 8,352
Number of Retired Members	22	63	128	119	110	200	182
Period 1/1/16-12/31/16							
Average Monthly Pension Benefits	\$ 427	\$ 1,244	\$ 2,135	\$ 2,886	\$ 4,272	\$ 5,549	\$ 6,782
Monthly Final Average Salary	\$ 8,298	\$ 6,907	\$ 6,911	\$ 6,580	\$ 7,383	\$ 7,651	\$ 7,762
Number of Retired Members	24	56	121	120	113	195	163
Period 1/1/17-12/31/17							
Average Monthly Pension Benefits	\$ 541	\$ 1,215	\$ 2,073	\$ 3,062	\$ 4,513	\$ 5,851	\$ 7,069
Monthly Final Average Salary	\$ 7,952	\$ 6,800	\$ 6,844	\$ 6,810	\$ 7,743	\$ 7,975	\$ 7,931
Number of Retired Members	21	47	122	147	112	190	153
Period 1/1/18-12/31/18							
Average Monthly Pension Benefits	\$ 554	\$ 1,190	\$ 1,943	\$ 2,879	\$ 4,681	\$ 6,074	\$ 7,439
Monthly Final Average Salary	\$ 10,584	\$ 7,287	\$ 6,904	\$ 6,859	\$ 8,134	\$ 8,246	\$ 8,561
Number of Retired Members	23	62	125	144	127	205	208
Period 1/1/19-12/31/19							
Average Monthly Pension Benefits	\$ 367	\$ 1,424	\$ 2,332	\$ 3,073	\$ 4,831	\$ 6,475	\$ 7,324
Monthly Final Average Salary	\$ 7,568	\$ 8,243	\$ 7,509	\$ 6,985	\$ 8,088	\$ 8,591	\$ 8,249
Number of Retired Members	31	54	121	150	135	249	191
Period 1/1/20-12/31/20							
Average Monthly Pension Benefits	\$ 536	\$ 1,475	\$ 2,149	\$ 3,422	\$ 4,697	\$ 6,151	\$ 6,825
Monthly Final Average Salary	\$ 9,267	\$ 8,556	\$ 6,784	\$ 7,473	\$ 8,046	\$ 8,340	\$ 7,917
Number of Retired Members	29	59	128	166	237	281	288
Period 1/1/21-12/31/21							
Average Monthly Pension Benefits	\$ 540	\$ 1,524	\$ 2,361	\$ 3,532	\$ 5,406	\$ 6,602	\$ 7,219
Monthly Final Average Salary	\$ 9,897	\$ 8,823	\$ 7,781	\$ 7,749	\$ 9,348	\$ 8,941	\$ 8,377
Number of Retired Members	27	53	87	102	142	112	128

Schedule of Pension Benefit Recipients by Type of Benefit

December 31, 2021

Monthly Benefit	Normal Retirement for Age and Service	Survivor Payment - Normal Retirement	Service-Connected Disability Retirement	Nonservice-Connected Disability Retirement	Survivor Payment - Disability Retirement	DRO (Domestic Relations Order Payees)	Active Deaths	Total
\$1-500	551	115	3	2	14	85	11	781
\$501-1,000	937	241	1	14	29	120	64	1,406
\$1,001-1,500	1,198	215	4	45	32	111	76	1,681
\$1,501-2,000	1,164	165	57	73	27	83	59	1,628
\$2,001-2,500	1,103	129	136	36	19	68	28	1,519
\$2,501-3,000	1,137	121	237	16	36	37	20	1,604
\$3,001-3,500	1,045	95	182	22	35	42	5	1,426
\$3,501-4,000	958	82	96	6	14	26	6	1,188
\$4,001-4,500	839	52	92	7	16	17	8	1,031
\$4,501-5,000	748	51	107	1	19	5	6	937
\$5,001-5,500	747	44	66	2	12	8	5	884
\$5,501-6,000	647	40	44	1	8	8	2	750
\$6,001-6,500	578	22	44	2	5	2	4	657
\$6,501-7,000	498	20	27	1	4	1	-	551
Over \$7,000	3,457	59	237	-	23	3	4	3,783
Total	<u>15,607</u>	<u>1,451</u>	<u>1,333</u>	<u>228</u>	<u>293</u>	<u>616</u>	<u>298</u>	<u>19,826</u>

Definition of Terms

Eligible Spouse: A member's spouse is considered eligible if the member has been legally married for at least one year at the time of retirement and remains married throughout the member's retirement. Eligible Spouse also includes Qualified Domestic Partner registered in accordance with applicable Family Law provisions.

Eligible Child: An eligible child is an unmarried child under the age of 18, or under the age of 22 if a full-time student. This includes adopted children. Eligible Child can also include a stepchild living or domiciled with the member at the time of the member's death for purposes of an active member Nonservice-connected or Service-connected death benefit only.

Schedule of Pension Benefit Recipients by Option Selected

December 31, 2021

Monthly Benefit	UM	OP1	OP2	OP3	OP4	DB	UMC	O2C	O3C	O4C	SCDC	NSCDC	LSRC	AN	Total
\$1-500	513	1	25	2	4	84	113	8	8	-	1	9	1	12	781
\$501-1,000	893	1	54	2	2	120	245	19	4	2	7	41	16	-	1,406
\$1,001-1,500	1,201	-	41	3	2	111	237	11	-	2	2	62	9	-	1,681
\$1,501-2,000	1,251	1	37	3	2	83	181	14	3	-	-	49	4	-	1,628
\$2,001-2,500	1,232	1	31	3	8	68	136	15	2	1	1	16	5	-	1,519
\$2,501-3,000	1,357	-	26	2	5	37	148	12	-	-	2	14	1	-	1,604
\$3,001-3,500	1,217	-	24	3	5	42	124	5	1	-	2	3	-	-	1,426
\$3,501-4,000	1,030	1	18	2	9	26	84	13	-	1	1	2	1	-	1,188
\$4,001-4,500	911	1	12	2	12	17	64	8	-	-	1	1	2	-	1,031
\$4,501-5,000	833	-	18	-	5	5	68	6	-	-	1	1	-	-	937
\$5,001-5,500	790	-	15	2	8	8	52	6	-	-	1	2	-	-	884
\$5,501-6,000	670	-	15	2	5	8	42	6	1	-	-	1	-	-	750
\$6,001-6,500	613	-	7	-	4	2	27	3	-	-	1	-	-	-	657
\$6,501-7,000	506	1	7	-	12	1	19	5	-	-	-	-	-	-	551
Over \$7,000	<u>3,608</u>	<u>2</u>	<u>46</u>	<u>2</u>	<u>36</u>	<u>3</u>	<u>72</u>	<u>12</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>1</u>	<u>-</u>	<u>3,783</u>
Total	<u>16,625</u>	<u>9</u>	<u>376</u>	<u>28</u>	<u>119</u>	<u>615</u>	<u>1,612</u>	<u>143</u>	<u>19</u>	<u>6</u>	<u>20</u>	<u>202</u>	<u>40</u>	<u>12</u>	<u>19,826</u>

Definition of Options:

UM: Unmodified -- Maximum retirement allowance

OP1: Option 1 -- Reduced retirement allowance, at death of retiree beneficiary receives remaining balance on account

OP2: Option 2 -- Reduced retirement allowance

OP3: Option 3 -- Reduced retirement allowance

OP4: Option 4 -- Reduced retirement allowance

DB: DRO benefit -- Benefit as provided in Domestic Relations Order

UMC: Unmodified continuance -- Beneficiary receives 60% of maximum retirement allowance

O2C: Option 2 continuance -- Beneficiary receives same monthly allowance

O3C: Option 3 continuance -- Beneficiary receives 50% of monthly allowance

O4C: Option 4 continuance -- Multiple beneficiaries receive allowance as previously approved

SCDC: SCD continuance -- Service Connected Disability

NSCDC: NSCD continuance -- Non Service Connected Disability

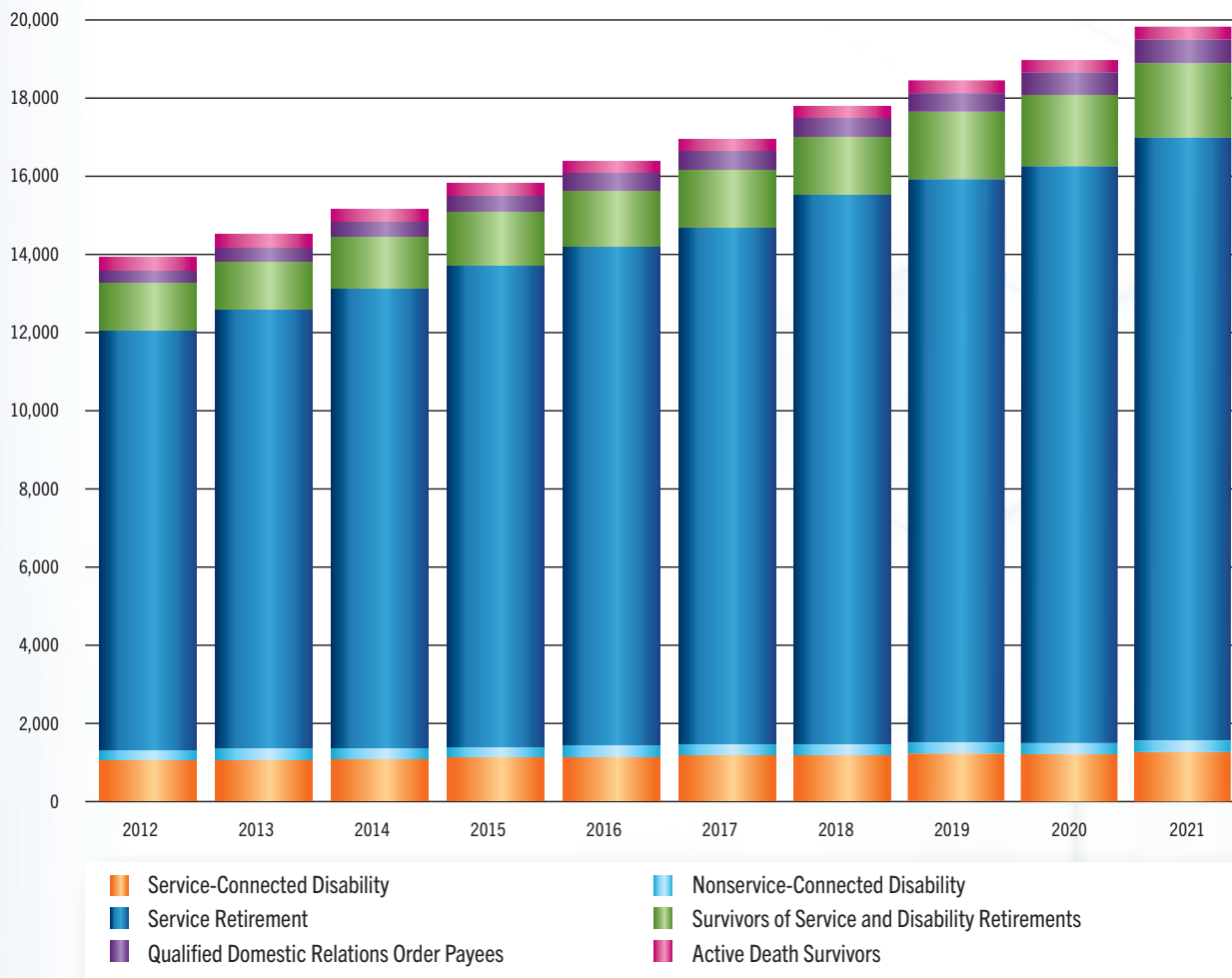
LSRC: Lump sum and reduced continuance

AN: Annuity

Schedule and Graph of Pension Benefit Recipients

2012 – 2021

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Service-Connected Disability	1,059	1,072	1,098	1,131	1,161	1,185	1,232	1,261	1,289	1,333
Nonservice-Connected Disability	260	263	265	271	257	261	250	244	236	228
Service Retirement	10,739	11,226	11,760	12,278	12,768	13,240	13,827	14,448	15,339	15,607
Survivors of Service and Disability Retirements	1,221	1,261	1,336	1,423	1,448	1,496	1,559	1,631	1,678	1,744
Qualified Domestic Relations Order Payees	314	340	366	399	426	455	495	530	573	616
Active Death Survivors	354	343	344	308	309	310	311	306	304	298
Total	<u>13,947</u>	<u>14,505</u>	<u>15,169</u>	<u>15,810</u>	<u>16,369</u>	<u>16,947</u>	<u>17,674</u>	<u>18,420</u>	<u>19,419</u>	<u>19,826</u>



Source: OCERS' Pension Administration System Solution

Schedule of Average Retirement Age

2012 – 2021

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
General	60.42	61.32	60.79	59.37	59.44	60.79	61.30	61.14	61.02	60.49
Safety	54.33	54.80	54.06	53.51	53.58	55.09	55.15	54.53	54.15	53.63

Schedule of Average Years of Service at Retirement

2012 – 2021

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
General	20.88	20.00	21.13	18.22	19.56	21.41	22.08	21.95	23.18	20.87
Safety	24.41	24.25	24.47	24.18	22.81	23.92	24.60	24.36	23.87	22.16

Schedule of Beneficiaries Receiving a Pension

2012 – 2021

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
General	1,398	1,503	1,457	1,498	1,514	1,540	1,593	1,652	1,685	1,728
Safety	177	187	223	233	243	266	277	285	297	314
Total	<u>1,575</u>	<u>1,690</u>	<u>1,680</u>	<u>1,731</u>	<u>1,757</u>	<u>1,806</u>	<u>1,870</u>	<u>1,937</u>	<u>1,982</u>	<u>2,042</u>

Schedule of Active and Deferred Members

2012 – 2021

Years Ended December 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
General										
Active	17,559	17,637	17,873	17,838	18,072	17,941	18,150	18,356	17,733	18,128
Deferred	3,980	4,205	4,380	4,668	4,940	5,341	5,547	6,004	6,280	6,680
Safety										
Active	3,730	3,731	3,587	3,687	3,674	3,780	3,779	3,901	3,826	3,883
Deferred	402	408	409	424	430	462	479	516	538	558
Total	<u>25,671</u>	<u>25,981</u>	<u>26,249</u>	<u>26,617</u>	<u>27,116</u>	<u>27,524</u>	<u>27,955</u>	<u>28,777</u>	<u>28,377</u>	<u>29,249</u>

Source: OCERS' Pension Administration System Solution

Schedule of Participating Employers - Pension Plan

2012 – 2021

Years Ended December 31	Total	Orange County	OCTA	OC Superior Court	OC Fire Authority	OC Sanitation District	City of San Juan Capistrano	Trans- portation Corridor Agencies	All Other Employers
2012									
Number of Covered Employees	21,289	16,118	1,509	1,569	1,195	596	80	74	148
Percentage to Total System	100.0%	75.70%	7.09%	7.37%	5.61%	2.80%	0.38%	0.35%	0.70%
2013									
Number of Covered Employees	21,368	16,281	1,519	1,492	1,185	587	81	77	146
Percentage to Total System	100%	76.19%	7.11%	6.98%	5.55%	2.75%	0.38%	0.36%	0.68%
2014									
Number of Covered Employees	21,460	16,453	1,454	1,460	1,213	594	80	65	141
Percentage to Total System	100%	76.67%	6.78%	6.80%	5.65%	2.77%	0.37%	0.30%	0.66%
2015									
Number of Covered Employees	21,525	16,574	1,409	1,462	1,224	572	75	63	146
Percentage to Total System	100%	77.00%	6.55%	6.79%	5.69%	2.66%	0.35%	0.29%	0.68%
2016									
Number of Covered Employees	21,746	16,756	1,372	1,486	1,263	578	80	68	143
Percentage to Total System	100%	77.05%	6.31%	6.83%	5.81%	2.66%	0.37%	0.31%	0.66%
2017									
Number of Covered Employees	21,721	16,778	1,313	1,455	1,288	592	81	64	150
Percentage to Total System	100%	77.24%	6.04%	6.70%	5.93%	2.73%	0.37%	0.29%	0.69%
2018									
Number of Covered Employees	21,929	17,048	1,279	1,419	1,262	616	78	62	165
Percentage to Total System	100%	77.75%	5.83%	6.47%	5.75%	2.81%	0.36%	0.28%	0.75%
2019									
Number of Covered Employees	22,257	17,160	1,350	1,419	1,416	608	76	61	167
Percentage to Total System	100%	77.10%	6.07%	6.38%	6.36%	2.73%	0.34%	0.27%	0.75%
2020									
Number of Covered Employees	21,559	16,474	1,322	1,399	1,457	618	67	54	168
Percentage to Total System	100%	76.42%	6.13%	6.48%	6.76%	2.87%	0.31%	0.25%	0.78%
2021									
Number of Covered Employees	22,011	16,899	1,315	1,384	1,508	620	51	61	173
Percentage to Total System	100%	76.78%	5.97%	6.28%	6.85%	2.82%	0.23%	0.28%	0.79%

Source: OCERS' Pension Administration System Solution

History of Actuarial Assumption Rates

For the Period January 1945 - December 2021

The table shown below is a comprehensive history of the change in interest rate assumption and the salary assumption rates corresponding to the Orange County Employees Retirement System since the inception of the System. These rates are adopted by the Retirement Board and used by the consulting actuary in the creation of the actuarial valuation of the System.

Specifically, the interest rate assumption estimates the rate at which the funds of the System's investment portfolio will realize earnings over many years into the future. The salary assumption rate estimates the relative increases in the salary of a member from the date of the valuation to the estimated date of separation of the member from active service.

Effective Date	Interest Rate	Salary Assumption Rate
1/1/45	2.50%	0.00%
7/1/62	3.50%	0.00%
12/31/65	4.00%	0.00%
7/1/69	4.50%	0.00%
6/30/70	5.00%	0.00%
8/31/73	5.75%	0.00%
7/1/75	6.00%	0.00%
7/1/81	7.25%	5.00%
7/1/89	7.50%	5.50%
7/1/91	8.00%	6.00%
7/1/96	8.00%	3.50%
7/1/00	8.00%	5.50%
7/1/03	7.50%	4.50%
12/31/04	7.75%	3.50% ¹
12/31/07	7.75%	3.50% ²
12/31/11	7.75%	3.50% ³
12/31/12	7.25%	3.25% ⁴
12/31/14	7.25%	3.25% ⁴
12/31/17	7.00%	3.25% ⁴
12/31/20	7.00%	3.00% ⁴

¹ Inflation per year plus merit and promotion increases ranging from 0.6% to 0.7%

² Inflation per year plus merit and promotion increases ranging from 1% to 10%

³ Inflation per year plus 0.25% across-the-board real salary increases plus merit and promotion increases ranging from 1% to 14%

⁴ Inflation per year plus 0.50% across-the-board real salary increase

Source: The Segal Company

SECTION

6

GLOSSARY

OXYGEN
GENERATION
EFFICIENCY

74%



2000
MY-89

67

Glossary of Terms

Accrual Basis

The recording of the financial effects on a government of transactions and other events and circumstances that have financial consequences for the government in the periods in which those transactions, events and circumstances occur, rather than only in the periods in which cash is received or paid by the government.

Accumulated Plan Benefits

Benefits attributable under the provisions of a pension plan to employees for services rendered to the benefit information date.

Actuarial Accrued Liability

The actuarial accrued liability, as determined by a particular cost method, equals the total present value of benefits that is attributable to past service credit.

Actuarial Assumptions

Assumptions used in the actuarial valuation process as to the occurrence of future events affecting pension costs, such as mortality, withdrawal, disablement and retirement; changes in compensation and national pension benefits; rates of investments earnings and asset appreciation or depreciation; procedures used to determine the actuarial value of assets; characteristics of future entrants for open group actuarial cost methods and other relevant items.

Actuarial Determined Contribution

A target or recommended contribution to a defined benefit pension plan for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

Actuarial Gain (Loss)

A measure of the difference between actuarial and expected experience based upon a set of actuarial assumptions. Examples include higher than expected salaries increases (loss) and a higher return on fund assets than anticipated (gain).

Actuarial Present Value

The discounted value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of actuarial assumptions.

Amortization

1. The portion of the cost of a limited-life or intangible asset charged as an expense during a particular period.
2. The reduction of debt by regular payments of principal and interest sufficient to retire the debt by maturity.

Annual Comprehensive Financial Report (Annual Report)

The Annual Report is the official annual report of a governmental entity. It includes the basic financial statements and their related notes prepared in conformity with GAAP. It also includes supporting schedules necessary to demonstrate compliance with finance-related legal and contractual provisions, required supplementary information, extensive introductory material and a detailed statistical section.

Cost-sharing Multiple-employer Defined Benefit Pension Plan (cost-sharing pension plan)

A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.

Discount Rate

The single rate of return that, when applied to all projected benefit payments, results in an actuarial present value of projected benefit payments equal to the total of the following:

1. The actuarial present value of benefit payments projected to be made in future periods in which (a) the amount of the pension plan's fiduciary net position is projected (under the requirements of GASB Statement No. 67) to be greater than the benefit payments that are projected to be made in that period and (b) pension plan assets up to that point are expected to be invested using a strategy to achieve the long-term expected rate of return, calculated using the long-term expected rate of return on pension plan investments.
2. The actuarial present value of projected benefit payments not included in (1), calculated using the municipal bond rate.

Glossary of Terms

(Continued)

Entry Age Actuarial Cost Method

A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on the level basis over the earnings or services of the individual between entry age and assumed exit age(s).

Generally Accepted Accounting Principles (GAAP)

Generally Accepted Accounting Principles (GAAP) are a collection of commonly followed accounting rules and standards for financial reporting. The purpose of GAAP is to ensure transparency and consistency for financial reporting.

Independent Auditor's Report

In the context of a financial audit, a statement by the auditor describing the scope of the audit and the auditing standards applied in the examination, and setting forth the auditor's opinion on the fairness of presentation of the basic financial statements in conformity with generally accepted accounting principles (GAAP).

Money-weighted Rate of Return

A method of calculating period-by-period returns on pension plan investments that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.

Net Pension Liability

The liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.

Normal Cost

The ongoing annual cost allocated to the system by a particular actuarial cost method for providing benefits (future cost). Normal cost payments are made during the working lifetime of the member.

Pension Contribution

The amount paid into a pension plan by an employer (and/or employee), pursuant to the terms of the plan, state law, actuarial calculations or some other basis for determinations.

Pension Trust Fund

A fund used to account for public employee retirement benefits. Pension trust funds use the accrual basis of accounting and have a capital maintenance focus.

Total Pension Liability

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service in conformity with the requirements of GASB Statement No. 67.

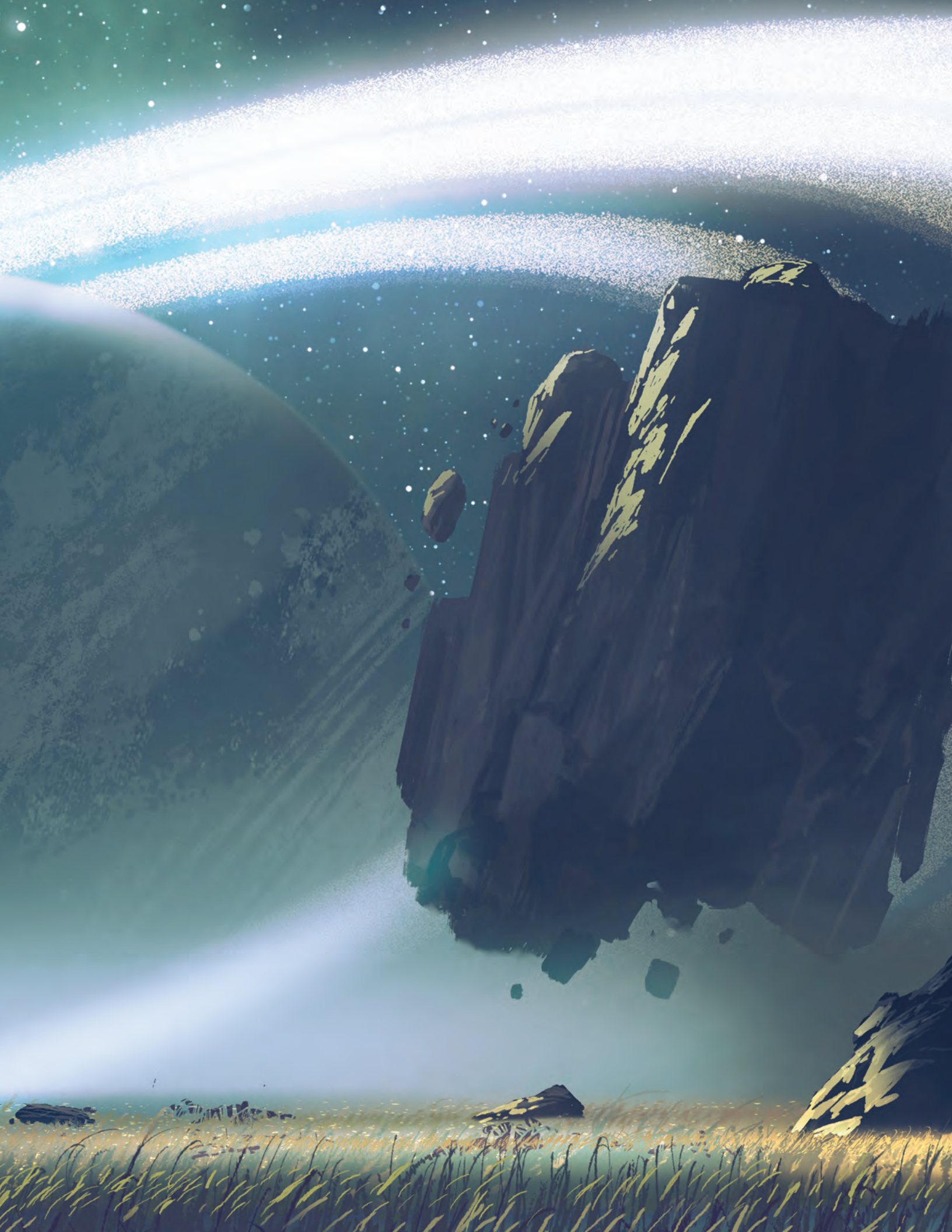
Unfunded Actuarial Accrued Liability (UAAL)


The excess of the actuarial accrued liability over the actuarial value of assets represents the unfunded actuarial accrued liability.

UAAL Amortization Payment

The UAAL amortization payment is the portion of pension contributions, which is designed to pay off (amortize) the UAAL in a systematic fashion. Equivalently, it is a series of periodic payments required to pay off a debt.





A dramatic space-themed image featuring a rocket launch. The rocket, with its boosters, is angled upwards from the bottom left, emitting a large plume of orange and yellow fire. In the upper right, a bright sun creates a lens flare effect. A satellite is visible in orbit in the upper center, and another satellite is partially visible on the right side. The background is a dark blue space filled with stars.

CHARTING THE COURSE

Orange County Employees Retirement System

P.O. Box 1229
Santa Ana, CA 92702

714.558.6200
www.ocers.org