

OKLAHOMA PUBLIC EMPLOYEES RETIREMENT SYSTEM

# PERSPECTIVE

Comprehensive Annual Financial Report  
for the Fiscal Years ended June 30, 2018 and June 30, 2017  
A Component Unit of the State of Oklahoma

# OKLAHOMA PUBLIC EMPLOYEES RETIREMENT SYSTEM

**PERSPECTIVE** “A particular attitude toward or way of regarding something; a point of view.”  
per·spec·tive

**noun** *Perspective* isn't just an art term. It's also the way we view what we do in an effort to gain a broader understanding of our mission.

The health and stability of this retirement plan and helping Oklahoma's public employees achieve a secure and lasting retirement is what guides our actions. Each opportunity to serve our members is done with the perspective of providing comprehensive, accountable and financially sound retirement services.

We are here to help people in their pursuit of a meaningful and well-earned retirement. This viewpoint motivates each interaction we have and is fundamental to our broader vision of ensuring all members are served in a professional, efficient and courteous manner.

The Comprehensive Annual Financial Report (CAFR) is published every year to provide transparency and inform our stakeholders on the health of this retirement system. This CAFR explores our retirement perspective by highlighting our values and behaviors and how they guide the way we serve others.



**This report was prepared by the staff of the Oklahoma Public Employees Retirement System.**

*This publication is issued by the Oklahoma Public Employees Retirement System as authorized by its Executive Director. Copies have not been printed but are available through the agency website. An electronic version of this publication has been deposited with the Publications Clearinghouse of the Oklahoma Department of Libraries.*

## 2018 Comprehensive Annual Financial Report

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# INTRODUCTION

## **HONESTY AND INTEGRITY**

We recognize our fiduciary responsibility as stewards to conduct our business under the highest ethical standards. We are committed to a culture of accountability and transparency and operating in a trustworthy manner to prove we are acting in the best interest of our members and their participating employers.

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# Letter of Transmittal

## Oklahoma Public Employees Retirement System

P.O. Box 53007  
Oklahoma City, Oklahoma 73152-3077

800.733.9008 toll-free  
405.848.5946 fax

November 30, 2018

To the Board of Trustees and Members of the Oklahoma Public Employees Retirement System:

State law requires that, after July 1 and before December 1 of each year, the Oklahoma Public Employees Retirement System (the System) publish an annual report that covers the operation of the System during the past fiscal year, including income, disbursements and the financial condition at the end of the fiscal year. This report is published, in part, to fulfill that requirement for the fiscal year ended June 30, 2018.

Management assumes full responsibility for the completeness and reliability of the information contained in this report, based upon a comprehensive framework of internal control that it has established for this purpose. Because the cost of internal control should not exceed anticipated benefits, the objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements.

Eide Bailly LLP, Certified Public Accountants, has issued an unmodified opinion on the Oklahoma Public Employees Retirement Plan's statement of fiduciary net position as of June 30, 2018, and the related statement of changes in fiduciary net position for the year then ended. The independent auditor's report is located at the front of the Financial Section of this report.

Management's discussion and analysis (MD&A) immediately follows the independent auditor's report and provides a narrative introduction, overview, and analysis of the basic financial statements. MD&A complements this letter of transmittal and should be read in conjunction with it.

### *Profile of the System*

The System is a multiple-employer, cost-sharing public employee retirement plan, which is a defined benefit pension plan. It covers substantially all employees of the State of Oklahoma (the State) except those covered by seven other plans sponsored by the State and also covers employees of participating counties and local agencies. Nearly all new state employees first employed by a System participating employer on or after November 1, 2015, will participate in the State's new defined contribution plan. Therefore, the System is closed to nearly all new State employees, but remains open to new employees of participating counties and local agencies. The employee and employer contribution rates for each member category are established by the Oklahoma Legislature after recommendation by the System's Board of Trustees based on an actuarial calculation which is performed to determine the adequacy of such contribution rates.

Members qualify for full retirement benefits at their specified normal retirement age or, depending upon when they became members, when the sum of the member's age and years of credited service equals 80 or 90. Generally, benefits for

## Letter of Transmittal (continued)

state, county, and local agency employees are determined at 2% of the average salary, as defined, multiplied by the number of years of credited service. Members may elect to pay an additional contribution rate to receive benefits using a 2.5% factor for each full year the additional contributions are made. Separate benefit calculations are in effect for elected officials and hazardous duty members.

The System also administers the Health Insurance Subsidy Plan (HISP), a cost-sharing multiple-employer defined benefit other post-employment benefit (OPEB) plan that provides OPEB covering the same categories of employees covered by the pension plan. HISP provides a health insurance premium subsidy for retirees of the System who elect to maintain health insurance with the Oklahoma Employees Group Insurance Division (EGID) or other qualified insurance plan provided by the employer. This subsidy continues until the retiree terminates health insurance coverage with EGID or other qualified plan, or until death. The subsidy is only for the retiree, not joint annuitants or beneficiaries.

The Board of Trustees of the System consists of fourteen appointed members, some by position and some by association. Those serving through position are a member of the Corporation Commission or the Commission's designee selected by the Commission, the Director of the Office of Management and Enterprise Services or the Director's designee, the State Insurance Commissioner or the Commissioner's designee, the Director of Human Capital Management of the Office of Management and Enterprise Services, a member of the Tax Commission selected by the Tax Commission, and the State Treasurer or the Treasurer's designee. Of the remaining members, three are appointed by the Governor, one is appointed by the Supreme Court, two are appointed by the Speaker of the House of Representatives and two are appointed by the President Pro Tempore of the Senate. Qualifications for certain of these appointees include a balance of individuals having experience in investment management, pension management, public fund management, the banking profession or a licensed attorney or a licensed accountant.

Each year, OPERS, along with other state agencies, is required to file a budget work program with the Office of Management and Enterprise Services. This work program, as approved by the Board of Trustees, must include a description of all funds available for expenditure and show spending by major program category. OPERS receives no state appropriations and is funded through employee and employer contributions and investment earnings.

Additionally in each even-numbered year, OPERS, along with other state agencies, must file a strategic plan covering five fiscal years beginning with the next odd-numbered fiscal year. The strategic plan includes a mission statement, the core values and behaviors inherent to operations, and a summary of goals and objectives to be achieved through specific projects outlined for the five-year period. The mission of the OPERS Board and staff is to provide and promote comprehensive, accountable and financially sound retirement services to Oklahoma's public servants in a professional, efficient and courteous manner. The core values and behaviors inherent to the agency's operations are honesty and integrity; excellence in customer experience; quality in service delivery; collaboration and community; and strategic perspective. The summary of goals and objectives outlined in the strategic plan are:

- Create an excellent customer experience for members
- Improve the stability, reliability and security of agency resources and data
- Empower employees and members through knowledge and resources
- Foster a culture of employee development and success

### *Investments*

The standard for OPERS in making investments is to exercise the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and unless under the circumstances it is clearly prudent not to do so. OPERS' funds are invested solely in the best interest of the members and their beneficiaries with a goal of keeping administrative expenses as low as possible. The Board has established an investment policy and guidelines that identify asset allocation as the key determinant of return and diversification, both by and within asset classes, as the primary risk

## Letter of Transmittal (continued)

control element. Passive fund portfolios are considered to be suitable investment strategies, especially in highly efficient markets.

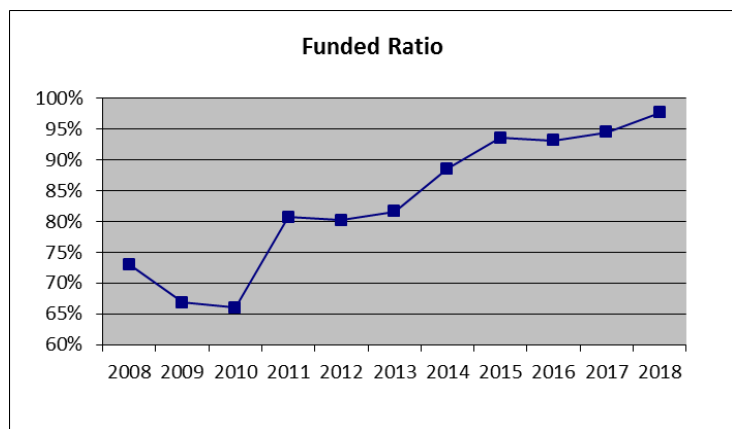
The Board engages outside investment managers to manage the various asset classes where OPERS has exposure. At fiscal year end, the investment portfolio of OPERS was actively managed by three fixed income managers, seven domestic equity managers and two international equity managers. OPERS' investment portfolio also consisted of passively managed index funds, including one fixed income index fund, one domestic equity index fund and two international equity index funds.

Included in the Investment Section of this report are a summary of the Investment Portfolio by Type and Manager and a comparison of the above amounts to the target allocations, as shown in the Asset Comparison chart. For fiscal year 2018 investments provided an 8.4 percent rate of return. The annualized rate of return for OPERS was 7.0 percent over the last three years and 8.3 percent over the last five years.

### *Funding*

A pension fund is well funded when it has enough money in reserve to meet all expected future obligations to participants. It must also have a revenue source sufficient to keep up with future obligations. The funding objective for OPERS is to meet long-term benefit promises through contributions that remain approximately level as a percent of member payroll. The greater the level of funding, the larger the ratio of assets accumulated to the actuarial accrued liability and the greater the level of investment potential. The advantage of a well-funded plan is that the participants can look at assets that are committed to the payment of benefits. The actuarial accrued liability and actuarial value of assets of OPERS as of July 1, 2018 amounted to \$9.9 billion and \$9.7 billion, respectively.

The OPERS funded status increased to 97.7 percent at July 1, 2018. The funded status had declined from 73.0 percent at July 1, 2008 to 66.0 percent at July 1, 2010 before significantly increasing to 80.7 percent at July 1, 2011 due to the removal of the cost-of-living-adjustment (COLA) assumption, and further increased to 93.6 percent at July 1, 2015. The Legislature addressed the need for increased funding by increasing the employer contribution rate by 1.5 percent effective July 1, 2005. The next year the rate was increased 1.0 percent for state agencies with the continuation of the 1.0 percent increase each year until it was 16.5 percent in fiscal year 2012. The state employee contribution rate has been 3.5 percent of salary since July 1, 2006. Non state agency employers also had a rate increase effective July 1, 2006. The combined employee and employer contribution rate was increased 1.0 percent annually until July 1, 2011 when it reached 20.0 percent where it has remained. The Legislature has provided a statutory requirement that retirement bills be analyzed for actuarial fiscal impact and contain adequate funding sources sufficient to pay the cost of the change. A detailed discussion of funding is provided in the Actuarial Section of this report.



### *Awards and Acknowledgements*

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Oklahoma Public Employees Retirement System for its comprehensive annual financial report (CAFR) for the fiscal year ended June 30, 2017. This was the twenty-first year OPERS has received this prestigious award. In order to be awarded a Certificate of Achievement, a government unit must publish

## Letter of Transmittal (continued)

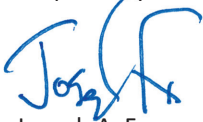
an easily readable and efficiently organized comprehensive annual financial report that satisfies both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe our current comprehensive annual financial report continues to conform to the Certificate of Achievement Program's requirements, and we are submitting it to the GFOA to determine its eligibility for another certificate.

In addition, the Oklahoma Public Employees Retirement System was awarded the Public Pension Standards Award by the Public Pension Coordinating Council, a confederation of the National Association of State Retirement Administrators, the National Conference on Public Employee Retirement Systems, and the National Council on Teacher Retirement. This award is in recognition of meeting professional standards for plan funding and administration as set forth in the Public Pension Standards.

The preparation of this report would not have been possible without the efficient and dedicated service of the entire staff of OPERS. We wish to express our appreciation to all staff members who assisted and contributed to the preparation of this report. Credit also must be given to the Board of Trustees for their unfailing support for maintaining the highest standards of professionalism in the financial management of the Oklahoma Public Employees Retirement System.

Respectfully submitted,



Joseph A. Fox  
Executive Director



Brian Wolf  
Chief Financial Officer and Director of Finance

# Chairman's Letter

## Oklahoma Public Employees Retirement System

P.O. Box 53007  
Oklahoma City, Oklahoma 73152-3007

800.733.7008 toll-free  
405.848.5946 fax

November 30, 2018

Dear OPERS Members:

On behalf of the Board of Trustees of the Oklahoma Public Employees Retirement System (OPERS), I am pleased to present the Comprehensive Annual Financial Report for the fiscal year ending June 30, 2018.

This report is designed to provide a detailed look at the financial, investment and actuarial aspects of OPERS, which continues to be a strong retirement system.

You are encouraged to carefully review this report, as it contains a wealth of information about your retirement system. If you have questions or comments, please feel free to contact us. We can be reached at P.O. Box 53007, Oklahoma City, Oklahoma 73152-3007. Our telephone number is 405-858-6737 (or toll-free 1-800-733-9008).

I also want to thank the OPERS staff for their diligent work in preparing this report and their commitment to continually improve the administrative operations of OPERS.

Sincerely,



DeWayne McAnally  
*Chairman*

## Board of Trustees



**DeWayne McAnally**  
Chair  
Appointee, Governor



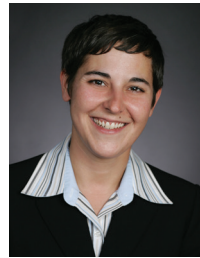
**Thomas E. Kemp, Jr.**  
Vice Chair  
Member of Tax  
Commission selected by  
Commission



**Bob Anthony**  
Corporation Commissioner



**Jari Askins**  
Appointee, Supreme Court



**Jill Geiger**  
Designee, State Finance  
Director



**James R. "Rusty" Hale**  
Appointee, Speaker of the  
House of Representatives



**Jan Harrison**  
Appointee, Speaker of the  
House of Representatives



**Steven Kaestner**  
Appointee, Governor



**Don Kilpatrick**  
Appointee, President Pro  
Tempore of the Senate



**Brian Maddy**  
Appointee, President Pro  
Tempore of the Senate



**Ken Miller**  
State Treasurer



**Pamela Slater**  
Appointee, Governor

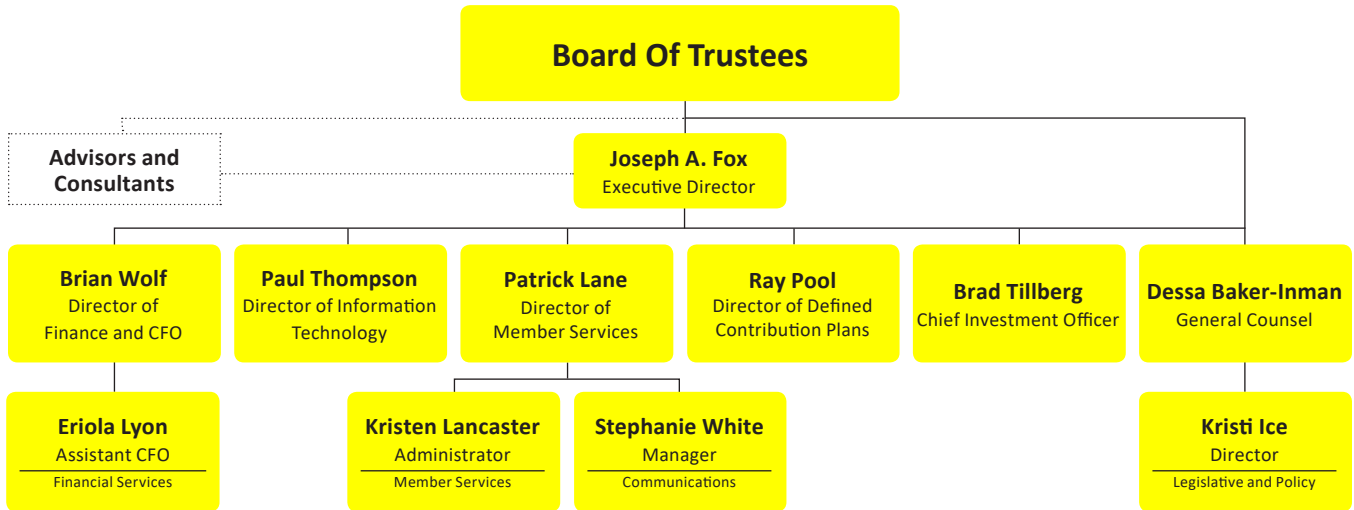


**Dana Webb**  
Administrator,  
Human Capital Management,  
Office of Management and  
Enterprise Services

*Tyler Laughlin, Designee, State Insurance Department*



# Organizational Structure



*Back Row (from left to right): Kristen Lancaster, Ray Pool, Eriola Lyon, Joe Fox, Stephanie White, and Patrick Lane*  
*Front Row (from left to right): Brad Tillberg, Kristi Ice, Brian Wolf, and Dessa Baker-Inman*  
*Not pictured: Paul Thompson*

## Advisors and Consultants\*

**Master Custodian**  
**The Northern Trust Company**  
 Chicago, Illinois

**Investment Consultant**  
 Verus Advisory, Inc.  
 Seattle, Washington

**Actuarial Consultant**  
 Cavanaugh Macdonald Consulting, LLC  
 Kennesaw, Georgia

**Independent Auditors**  
 Eide Bailly LLP  
 Oklahoma City, Oklahoma

**Internal Auditors**  
 Finley & Cook PLLC  
 Shawnee, Oklahoma

\*The Schedules of Investment Expenses and Professional/Consultant Fees (pages 54 and 56, respectively) in the Financial Section and the Schedule of Stock Brokerage Commissions Paid (page 71) in the Investment Section provide more information regarding advisors and consultants.



# 2018 Legislation

## **House Bill 1340** **One-Time Stipend Payment**

This bill provides a one-time stipend for members of OPERS who have been retired for five years as of October 1, 2018. The stipend is based on the funding level of the system. OPERS members will receive the lesser of 2% of their gross annual retirement amount or \$1,200. The bill also provides a minimum payment of \$350 for members with 20 years of service. This stipend will be paid in October 2018.

## **House Bill 2516** **Clarification of Certain System Provisions**

This bill clarifies certain System provisions related to billing employers for sick leave and early retirement for elected officials.

Billing Employers for Sick Leave – Prior language only allowed OPERS to bill employers when sick leave rounded an employee up to an additional year of service. Revised language allows OPERS to bill employers for actual months of sick leave after rounding was eliminated for members who joined the System on or after November 1, 2012.

Elected Officials – Prior language regarding early retirement for elected officials conflicted with the eligibility for normal retirement.

## **Senate Bill 527** **Defined Benefit Plan Eligibility for Elected Officials**

This bill states that a statewide elected official or legislator who is first elected or appointed on or after November 1, 2018, and who has participating service in the OPERS defined benefit plan prior to November 1, 2015, shall be a member of the defined benefit plan.



Government Finance Officers Association

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

Presented to

**Oklahoma Public Employees  
Retirement System**

For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**June 30, 2017**

*Christopher P. Morill*

Executive Director/CEO



Public Pension Coordinating Council

***Public Pension Standards Award  
For Funding and Administration  
2018***

Presented to

**Oklahoma Public 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 black ink that reads 'Alan H. Winkle'.

Alan H. Winkle  
Program Administrator

# FINANCIAL

## EXCELLENCE IN CUSTOMER SERVICE

We view our members as partners who rely on us as a trusted source to provide education and information to make sound retirement decisions. We are committed to creating remarkable experiences for our members and seek to exceed expectations in every interaction.

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## Independent Auditor's Report

To the Board of Trustees  
Oklahoma Public Employees Retirement System  
Oklahoma City, Oklahoma

### Report on the Financial Statements

We have audited the accompanying financial statements of the Oklahoma Public Employees Retirement System (the System), a component unit of the State of Oklahoma, which comprise the statements of fiduciary net position as of June 30, 2018 and 2017, and the related statements of changes in fiduciary net position, for the years then ended, and the related notes to the financial statements.

### Management's Responsibility for the Financial Statements

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

### Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

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

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

### Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Oklahoma Public Employees Retirement System, as of June 30, 2018 and 2017, and the respective statements of changes in fiduciary net position thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

**What inspires you, inspires us. | [eidebailly.com](http://eidebailly.com)**

621 N. Robinson Ave., Ste. 200 | Oklahoma City, OK 73102-6232 | T 405.594.2000 | F 405.594.2053 | EOE

### **Emphasis of Matter**

As discussed in Note 1, the financial statements of the Oklahoma Public Employees Retirement System, are intended to present the fiduciary net position, the changes in fiduciary net position of only that portion of the System. They do not purport to, and do not, present fairly the fiduciary net position of other Plans governed by the Oklahoma Public Employee Retirement System Board of Trustees, as of June 30, 2018 and 2017, the changes in its fiduciary net position, in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

### **Other Matters**

#### **Required Supplementary Information**

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the required supplementary information, as referenced within the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the 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.

#### **Other Information**

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements as a whole. The other supplementary information is presented for purposes of additional analysis and is not a required part of the financial statements.

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



October 12, 2018  
Oklahoma City, Oklahoma

# Management's Discussion and Analysis

## (Unaudited)

As management of the Oklahoma Public Employees Retirement System (the System), we offer readers of the System's financial statements this narrative overview and analysis of the financial activities of the System for the fiscal years ended June 30, 2018, 2017 and 2016.

### Financial Highlights

- The net position restricted for pension and health insurance subsidy plan (HISP) totaled approximately \$9.7 billion at June 30, 2018, compared to \$9.2 billion at June 30, 2017 and \$8.4 billion at June 30, 2016. The net position is available for payment of monthly retirement benefits and other qualified distributions to the System's participants. Equity markets performed well during fiscal year 2018, resulting in an increase in net investment income which led to an increase in net position restricted for pension/HISP benefits from June 30, 2016 to June 30, 2017 and from June 30, 2017 to June 30, 2018.
- At June 30, 2018, 2017 and 2016, the total number of members participating in the System decreased 2.3%, decreased 2.6% and decreased 1.2%, respectively. Membership was 77,613 at June 30, 2018, 79,403 at June 30, 2017 and 81,501 at June 30, 2016. The number of retirees increased by 2.0% as of June 30, 2018, increased by 2.5% as of June 30, 2017, and increased by 3.0% as of June 30, 2016. The total number of retirees was 35,260 at June 30, 2018, 34,579 at June 30, 2017, and 33,749 at June 30, 2016.
- During the year ended June 30, 2017, the beginning balance of the net position restricted for pension/HISP benefits was restated due to the implementation of GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, (GASB 74). This had no effect on the combined System ratio of fiduciary net position to the combined liabilities for pensions and HISP.

### Overview of the Financial Statements

The System is a multiple-employer, cost-sharing public employee retirement plan, which is a defined benefit pension plan. The System covers substantially all employees of the state of Oklahoma (the State) except those covered by seven other plans sponsored by the State. The System also covers employees of participating counties and local agencies.

Nearly all new state employees first employed by a System participating employer on or after November 1, 2015 are participating in the State's new defined contribution plan. Therefore, the System is closed to nearly all new State employees but remains open to new employees of participating counties and local agencies.

For most of the System's members, benefits are determined at 2% of the average highest thirty-six months' annual covered compensation multiplied by the number of years of credited service. Members qualify for full retirement benefits at their specified normal retirement age or, for any person who became a member prior to July 1, 1992, when the sum of the member's age and years of credited service equals or exceeds 80 (Rule of 80), and for any person who became a member after June 30, 1992, when the member's age and years of credited service equals or exceeds 90 (Rule of 90). Normal retirement age under the System is 62 or Rule of 80/90 if the participant became a member prior to November 1, 2011, or age 65 or Rule of 90 if the participant became a member on or after November 1, 2011. Members become eligible to vest fully upon termination of employment after attaining eight years of credited service, or the members' contributions may be withdrawn upon termination of employment.

The System also includes a multiple-employer, cost-sharing public employee other post-employment benefit plan, which is a defined benefit plan. This plan is called the Health Insurance Subsidy Plan (HISP), and it provides a health insurance premium subsidy for retirees of the System who elect to maintain health insurance with the Oklahoma Employees Group Insurance Division (EGID) or other qualified insurance plan provided by the employer. This subsidy continues until the

retiree terminates health insurance coverage with EGID or other qualified plan, or until death. The subsidy is only for the retiree, not joint annuitants or beneficiaries.

The System's financial statements are comprised of Statements of Fiduciary Net Position and Statements of Changes in Fiduciary Net Position for both pensions and HISP, and Notes to Financial Statements. Also included is certain required supplementary information and supplementary information for both pensions and HISP.

The System is administered by the Oklahoma Public Employees Retirement System, a component unit of the State, which together with other similar funds comprise the fiduciary-pension and HISP trust funds of the State.

The *Statements of Fiduciary Net Position* present information on the System's assets, liabilities and the resulting *net position restricted for pensions and net position restricted for HISP*. These statements reflect the System's investments, at fair value, along with cash and cash equivalents, receivables, and other assets and liabilities.

The *statements of changes in fiduciary net position* presents information showing how the System's net position restricted for pensions and HISP changed during the years ended June 30, 2018 and 2017. It reflects contributions by members and participating employers along with deductions for retirement benefits, refunds and withdrawals, and administrative expenses. Investment income during the period is also presented showing income from investing and securities lending activities.

On July 1, 2016, the System implemented Governmental Accounting Standards Board (GASB) Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pensions* (GASB 74). GASB 74 presents improved information about postemployment benefit plans other than pensions (OPEB). The System administers a health insurance subsidy plan (HISP), which is considered OPEB in accordance with the provisions of GASB 74. As a result of the implementation of GASB 74, the beginning balance of 2017 was restated.

The *notes to financial statements* provide additional information that is essential to a full understanding of the data provided in the financial statements.

The *required supplementary information* presents a schedule of changes in the net pension liability, schedule of changes in the net HISP liability, schedule of net pension liability, schedule of net HISP liability, schedule of pension employer contributions, schedule of HISP employer contributions and schedules of money-weighted rate of return on pension plan and HISP investments. Schedules of certain expenses and fees paid are presented as *supplementary information*.



## Financial Analysis

The following are the condensed Schedules of Fiduciary Net Position and Changes in Fiduciary Net Position for the Oklahoma Public Employees Retirement System for the fiscal years ended June 30, 2018, 2017 and 2016.

### Condensed Schedules of Fiduciary Net Position

(\$ millions)	2018			2017			2016*
	Pension	HISP	Combined	Pension	HISP	Combined	
<b>Assets:</b>							
Cash and cash equivalents	\$ 216.4	\$ 6.6	\$ 223.0	\$ 113.3	\$ 5.9	\$ 119.2	\$ 120.7
Receivables	223.6	8.1	231.7	340.9	11.8	352.7	283.1
Investments	9,403.9	344.1	9,748.0	9,042.9	318.3	9,361.2	8,449.8
Securities lending collateral	459.7	16.8	476.5	618.2	21.8	640.0	500.7
Property and equipment	0.2	-	0.2	0.4	-	0.4	0.5
Other assets	0.6	-	0.6	0.3	-	0.3	0.3
<b>Total assets</b>	<b>10,304.4</b>	<b>375.6</b>	<b>10,680.0</b>	<b>10,116.0</b>	<b>357.8</b>	<b>10,473.8</b>	<b>9,355.1</b>
<b>Liabilities:</b>							
Other liabilities	483.8	17.7	501.5	583.8	20.5	604.3	418.9
Securities lending collateral	459.7	16.8	476.5	618.2	21.8	640.0	500.7
<b>Total liabilities</b>	<b>943.5</b>	<b>34.5</b>	<b>978.0</b>	<b>1,202.0</b>	<b>42.3</b>	<b>1,244.3</b>	<b>919.6</b>
<b>Ending fiduciary net position</b>	<b>\$ 9,360.9</b>	<b>\$ 341.1</b>	<b>\$ 9,702.0</b>	<b>\$ 8,914.0</b>	<b>\$ 315.5</b>	<b>\$ 9,229.5</b>	<b>\$ 8,435.5</b>

### Condensed Schedules of Changes in Fiduciary Net Position

(\$ millions)	2018			2017			2016*
	Pension	HISP	Combined	Pension	HISP	Combined	
Member contributions	\$ 66.9	\$ -	\$ 66.9	\$ 70.3	\$ -	\$ 70.3	\$ 73.8
State and local agency contributions	258.9	19.1	278.0	269.5	18.9	288.4	296.2
Net investment income	735.0	25.5	760.5	1,013.9	35.7	1,049.6	15.6
<b>Total additions</b>	<b>1,060.8</b>	<b>44.6</b>	<b>1,105.4</b>	<b>1,353.7</b>	<b>54.6</b>	<b>1,408.3</b>	<b>385.6</b>
Retirement, death and survivor benefits	592.7	18.8	611.5	573.9	19.0	592.9	565.4
Refunds and withdrawals	16.0	-	16.0	16.0	-	16.0	15.9
Administrative expenses	5.1	0.2	5.3	5.2	0.2	5.4	5.2
<b>Total deductions</b>	<b>613.8</b>	<b>19.0</b>	<b>632.8</b>	<b>595.1</b>	<b>19.2</b>	<b>614.3</b>	<b>586.5</b>
<b>Net (decrease) increase in fiduciary net position</b>	<b>447.0</b>	<b>25.6</b>	<b>472.6</b>	<b>758.6</b>	<b>35.4</b>	<b>794.0</b>	<b>(200.9)</b>
<b>Beginning of year</b>	<b>8,914.0</b>	<b>315.5</b>	<b>9,229.5</b>	<b>8,155.4</b>	<b>280.1</b>	<b>8,435.5</b>	<b>8,636.4</b>
<b>End of year</b>	<b>\$ 9,361.0</b>	<b>\$ 341.1</b>	<b>\$ 9,702.1</b>	<b>\$ 8,914.0</b>	<b>\$ 315.5</b>	<b>\$ 9,229.5</b>	<b>\$ 8,435.5</b>

\*Prior year column for 2016 has not been restated for the effect of the adoption of GASB Statement No. 74

For the year ended June 30, 2018, fiduciary net position increased by \$472.6 million, or 5.1%, from June 30, 2017. Total assets increased \$206.2 million, or 2.0%, due to a 4.1% increase in investments and partially offset by a 25.5% decrease in securities lending collateral. The System achieved a money-weighted rate of return of 8.4% compared to the prior year of 12.6% resulting in the majority of the increase in fiduciary net position. Total liabilities decreased \$266.4 million, or 21.4%, due to a 17.0% decrease in pending purchases of securities and a 25.5% decrease in the securities lending collateral liability.

Fiscal year 2018 showed a \$302.9 million decrease in total additions and an \$18.5 million increase in total deductions. Compared to the prior year, the decrease in additions was primarily due to a decrease of \$303.2 million in the net appreciation of investments. Deductions increased 3.0% due to an \$18.6 million increase in retirement, death, and survivor benefits.

For the year ended June 30, 2017, fiduciary net position increased by \$794.0 million, or 9.4%, from June 30, 2016. Total assets increased \$1.1 billion, or 12.0%, due to a 10.8% increase in investments and a 27.8% increase in securities lending collateral. The System achieved a money-weighted rate of return of 12.6% compared to the prior year of 0.2% resulting in the majority of the increase in fiduciary net position. Total liabilities increased \$324.7 million, or 35.3%, due to a 44.3% increase in pending purchases of securities and a 27.8% increase in the securities lending collateral liability.

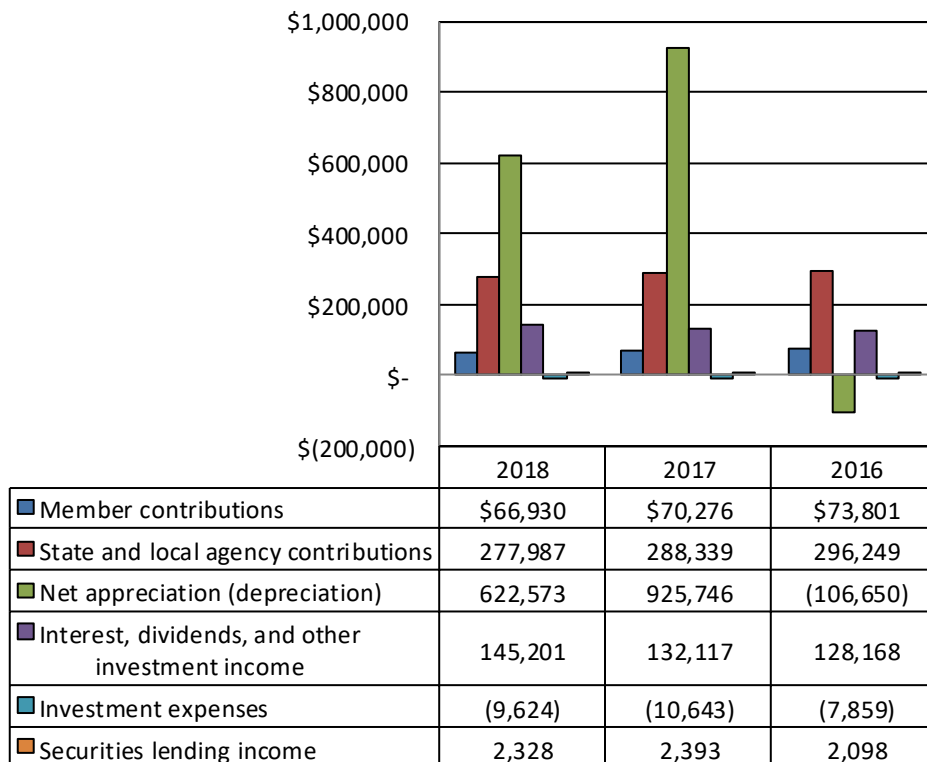
Fiscal year 2017 showed a \$1.0 billion increase in total additions and a \$27.9 million increase in total deductions. Compared to the prior year, the increase in additions was due to increases of \$1.0 billion in the net appreciation of assets. Deductions increased 4.7% due to a \$27.6 million increase in retirement, death, and survivor benefits.

**Additions to Fiduciary Net Position**

For the year ended June 30, 2018, total additions to fiduciary net position decreased \$302.9 million from the prior year. The net decrease in net appreciation of the fair value of investments of \$303.2 million was the result of a strong market that wasn't quite as strong as fiscal year 2017. Interest income increased \$8.7 million, or 12.7%, and dividend income increased \$4.5 million, or 7.1%. Securities lending net income decreased \$0.1 million, or 2.7%. Contributions were \$13.7 million, or 3.8%, lower than the prior year due to the closure of the defined benefit pension plan to new state employees. HISP remains open to new retirees.

**Additions to Fiduciary Net Position**

Comparative Data for Fiscal Years Ended June 30, 2018, 2017 and 2016  
 (\$ thousands)



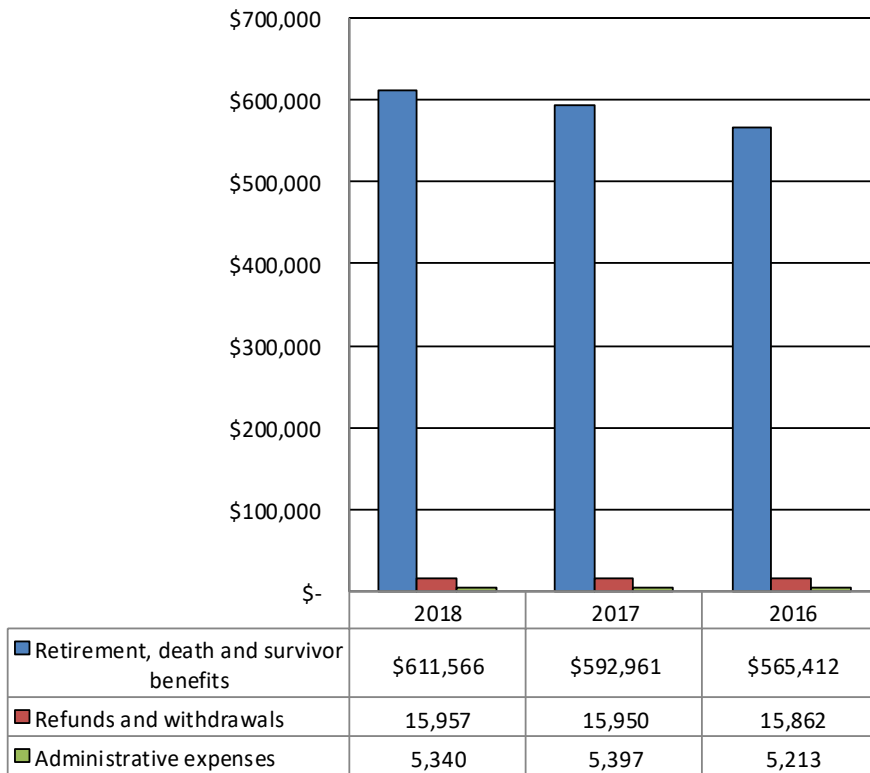
For the year ended June 30, 2017, total additions to fiduciary net position increased \$1.0 billion from the prior year. The net increase in net appreciation of the fair value of investments of \$1.0 billion was the result of an improving market, compared to fiscal year 2016. Interest income decreased \$0.7 million, or 1.1%, but dividend income increased \$4.9 million, or 8.3%. Securities lending net income increased \$0.3 million, or 14.0%. Contributions were \$11.4 million, or 3.1%, lower

than the prior year due to the closure of the defined benefit pension plan to new state employees. HISP remains open to new retirees.

**Deductions to Fiduciary Net Position**

For the year ended June 30, 2018, total deductions increased \$18.5 million, or 3.0%, from the prior year. Retirement, death, and survivor benefits increased \$18.6 million, or 3.1%, due to a 2.0% increase in the number of retirees at year end and a 1.3% increase in the average benefit. Refunds and withdrawals remained unchanged from prior year. The 1.1% decrease in administrative costs was primarily due to a decrease in professional services costs.

**Deductions to Fiduciary Net Position**  
 Comparative Data for Fiscal Years Ended June 30, 2018, 2017 and 2016  
 (\$ thousands)



For the year ended June 30, 2017, total deductions increased \$27.8 million, or 4.7%, from the prior year. Retirement, death, and survivor benefits increased \$27.5 million, or 4.9%, due to a 2.5% increase in the number of retirees at year end and a 1.6% increase in the average benefit. Refunds and withdrawals increased \$0.1 million, or 0.6%, as more participants withdrew contributions during fiscal 2017. The 3.5% increase in administrative costs was primarily due to the increase in personnel costs.

**Investments**

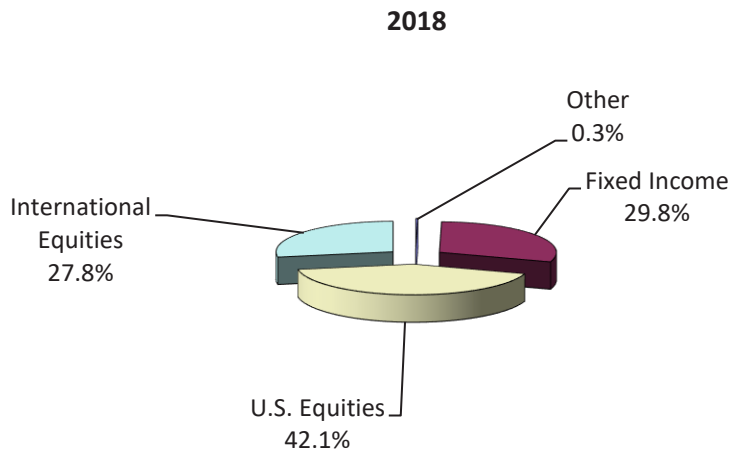
The investment portfolio is reported in the chart below by the asset class of the investment managers’ portfolios which includes the cash and cash equivalents in those portfolios. In April 2017, the System’s Board voted to modify the policy asset allocation to increase exposure to international equity and reduce exposure to U.S. equity. A summary of the System’s cash, cash equivalents, and investments for fiscal years ended June 30, 2018, 2017 and 2016 is as follows:

**Cash, Cash Equivalents, and Investment Portfolio**  
 (\$ millions)

	June 30,		
	2018	2017	2016
Fixed income	\$ 3,171.8	\$ 3,149.1	\$ 2,891.4
U.S. equities	4,073.6	3,762.8	3,790.3
International equities	2,691.5	2,532.8	1,852.9
Other	17.9	20.8	20.6
<b>Total managed investments</b>	<b>9,954.8</b>	<b>9,465.5</b>	<b>8,555.2</b>
Cash equivalents on deposit with State	3.6	2.8	2.4
Real estate	12.6	12.1	12.9
Securities lending collateral	476.5	640.0	500.7
<b>Total cash, cash equivalents, and investments</b>	<b>\$ 10,447.5</b>	<b>\$10,120.4</b>	<b>\$ 9,071.2</b>

The 2018 increase in the System’s managed investments is reflective of the increase in domestic and international equity markets for the year. The System’s overall return for the year ended June 30, 2018 was 8.4%. U.S. equities showed a return of 15.5% exceeding the market trend for the asset class, and international equities showed a return of 7.3%. Fixed income showed a return of 0.3%. An amount of \$256.5 million of U.S. equities and \$25.0 million of international equities was used to supplement the cash requirements of monthly retiree benefit payments. The change in securities lending collateral is dependent on the securities loaned by the System’s master custodian at year end.

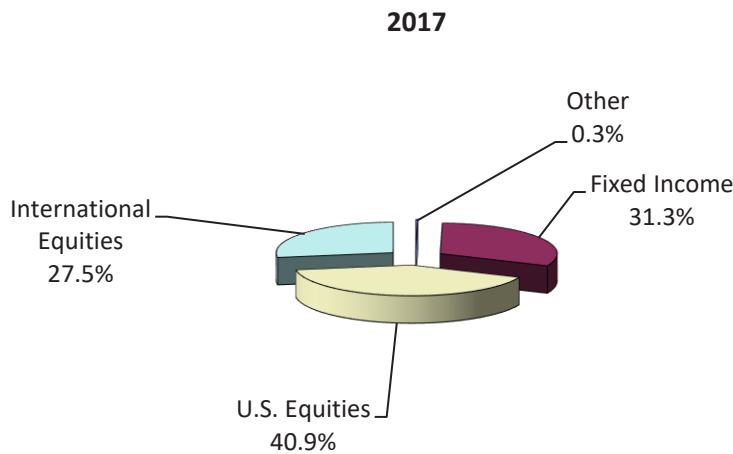
At June, 30, 2018, the distribution of the System’s investments including accrued income and pending trades was as follows:



The 2017 increase in the System’s managed investments is reflective of the increase in domestic and international equity markets for the year. The System’s overall return for the year ended June 30, 2017 was 12.8%. U.S. equities showed a return of 19.6% exceeding the market trend for the asset class, and international equities showed a return of 19.2%. Fixed income showed a return of -0.6%. Due to a rebalancing of the portfolio, international equities were increased \$330.0 million and fixed income was increased \$170.0 million during the year by reallocating \$480.0 million from large cap equities and \$20.0 million from small cap equities. An amount of \$251.0 million of U.S. equities was used to supplement the cash

requirements of monthly retiree benefit payments. The change in securities lending collateral is dependent on the securities loaned by the System’s master custodian at year end.

At June, 30, 2017, the distribution of the System’s investments including accrued income and pending trades was as follows:



**Economic Factors**

**Ratio of Fiduciary Net Position to Total Pension Liability and to Total HISP Liability**

The ratio of fiduciary net position to the total pension liability was as follows:

	June 30,	
	2018	2017
Total pension liability	\$ 9,555,990,069	\$ 9,454,641,808
Plan fiduciary net position	\$ 9,360,947,061	\$ 8,913,978,627
Ratio of fiduciary net position to total pension liability	97.96%	94.28%

\*Because GASB Statement 74 was adopted in the year ended June 30, 2017, there is no comparable data for the year ended June 30, 2016.

The ratio of fiduciary net position to the total HISP liability was as follows:

	June 30,	
	2018	2017
Total HISP liability	\$ 328,143,546	\$ 326,975,262
Plan fiduciary net position	\$ 341,084,506	\$ 315,521,246
Ratio of fiduciary net position to total HISP liability	103.94%	96.50%

\*Because GASB Statement 74 was adopted in the year ended June 30, 2017, there is no comparable data for the year ended June 30, 2016.

## **System Amendments**

System provision changes were enacted by the State Legislature during the session ended in May 2018. The changes include a one-time stipend for most retirees, the direction to include in the defined benefit plan all elected officials elected on or after November 1, 2018 with service in the defined benefit plan prior to November 1, 2015, and language to clarify certain plan provisions.

The System's actuary does not believe any of these amendments will have any significant financial impact to the System.

## **Other**

The actuarial assumptions used in the July 1, 2018, valuation are based on the results of the most recent actuarial experience study, which covered the three-year period ending June 30, 2016.

Other than changes in the fair value of System assets as may be impacted by the equity and bond markets, no other matters are known by management to have a significant impact on the operations or financial position of the System.

## **Requests for Information**

This financial report is designed to provide a general overview of the System's finances for all those with an interest. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the Financial Reporting Division, OPERS, P.O. Box 53007, Oklahoma City, Oklahoma 73152-3007.

## Statements of Fiduciary Net Position

As of June 30, 2018

	Pension Plan	Health Insurance Subsidy Plan	Combined
<b>Assets</b>			
Cash equivalents	\$ 216,378,231	\$ 6,637,184	\$ 223,015,415
Receivables:			
Member contributions	3,197,960	-	3,197,960
State and local agency contributions	11,237,746	411,148	11,648,894
Due from brokers for securities sold	188,026,907	6,879,178	194,906,085
Accrued interest and dividends	21,173,371	774,654	21,948,025
Total receivables	223,635,984	8,064,980	231,700,964
Investments, at fair value:			
Short-term investments	70,023,195	2,561,880	72,585,075
Government obligations	1,926,992,287	70,501,179	1,997,493,466
Corporate bonds	917,431,462	33,565,263	950,996,725
Domestic equities	3,871,466,724	141,641,929	4,013,108,653
International equities	2,605,843,543	95,337,716	2,701,181,259
Real estate	12,155,283	444,717	12,600,000
Securities lending collateral	459,653,458	16,816,941	476,470,399
Total investments	9,863,565,952	360,869,625	10,224,435,577
Property and equipment, at cost, net of accumulated depreciation of \$2,518,050 in 2018			
	205,690	7,527	213,217
Other assets	576,600	21,098	597,698
Total assets	10,304,362,457	375,600,414	10,679,962,871
<b>Liabilities</b>			
Due to brokers and investment managers	483,761,933	17,698,972	501,460,905
Securities lending collateral	459,653,463	16,816,936	476,470,399
Total liabilities	943,415,396	34,515,908	977,931,304
Net position restricted for pension/HISP benefits	\$ 9,360,947,061	\$ 341,084,506	\$ 9,702,031,567

See accompanying notes to financial statements.

## Statements of Fiduciary Net Position

As of June 30, 2017

	Pension Plan	Health Insurance Subsidy Plan	Combined
<b>Assets</b>			
Cash equivalents	\$ 113,313,456	\$ 5,882,243	\$ 119,195,699
Receivables:			
Member contributions	3,274,683	-	3,274,683
State and local agency contributions	11,587,503	407,842	11,995,345
Due from brokers for securities sold	307,390,955	10,819,143	318,210,098
Accrued interest and dividends	18,601,990	654,728	19,256,718
Total receivables	340,855,131	11,881,713	352,736,844
Investments, at fair value:			
Short-term investments	122,257,586	4,303,062	126,560,648
Government obligations	2,061,181,245	72,546,752	2,133,727,997
Corporate bonds	807,673,399	28,427,428	836,100,827
Domestic equities	3,586,931,470	126,248,106	3,713,179,576
International equities	2,453,161,345	86,343,153	2,539,504,498
Real estate	11,688,600	411,400	12,100,000
Securities lending collateral	618,225,490	21,759,489	639,984,979
Total investments	9,661,119,135	340,039,390	10,001,158,525
Property and equipment, at cost, net of accumulated depreciation of \$2,554,690 in 2017			
	366,044	12,884	378,928
Other assets	305,351	10,747	316,098
Total assets	10,115,959,117	357,826,977	10,473,786,094
<b>Liabilities</b>			
Due to brokers and investment managers	583,755,000	20,546,242	604,301,242
Securities lending collateral	618,225,490	21,759,489	639,984,979
Total liabilities	1,201,980,490	42,305,731	1,244,286,221
Net position restricted for pension/HISP benefits	\$ 8,913,978,627	\$ 315,521,246	\$ 9,229,499,873

See accompanying notes to financial statements.



## Statements of Changes in Fiduciary Net Position

For the Year Ended June 30, 2018

	Pension Plan	Health Insurance Subsidy Plan	Combined
<b>Additions</b>			
Contributions:			
Members	\$ 66,929,560	\$ -	\$ 66,929,560
State and local agencies	258,907,270	19,080,000	277,987,270
<b>Total contributions</b>	<b>325,836,830</b>	<b>19,080,000</b>	<b>344,916,830</b>
Investment income:			
From investing activities:			
Net appreciation in fair value of investments	601,761,578	20,811,063	622,572,641
Interest	74,735,617	2,668,344	77,403,961
Dividends	65,316,485	2,258,877	67,575,362
Real estate	214,497	7,418	221,915
<b>Total investment income</b>	<b>742,028,177</b>	<b>25,745,702</b>	<b>767,773,879</b>
Less – Investment expenses	(9,302,385)	(321,710)	(9,624,095)
<b>Income from investing activities</b>	<b>732,725,792</b>	<b>25,423,992</b>	<b>758,149,784</b>
From securities lending activities:			
Securities lending income	10,662,426	368,745	11,031,171
Securities lending expenses:			
Borrower rebates	(8,046,032)	(278,260)	(8,324,292)
Management fees	(366,011)	(12,658)	(378,669)
<b>Income from securities lending activities</b>	<b>2,250,383</b>	<b>77,827</b>	<b>2,328,210</b>
<b>Net investment income</b>	<b>734,976,175</b>	<b>25,501,819</b>	<b>760,477,994</b>
<b>Total additions</b>	<b>1,060,813,005</b>	<b>44,581,819</b>	<b>1,105,394,824</b>
<b>Deductions</b>			
Retirement, death and survivor benefits	592,725,826	18,840,056	611,565,882
Refunds and withdrawals	15,957,261	-	15,957,261
Administrative expenses	5,161,484	178,503	5,339,987
<b>Total deductions</b>	<b>613,844,571</b>	<b>19,018,559</b>	<b>632,863,130</b>
<b>Net increase in net position</b>	<b>446,968,434</b>	<b>25,563,260</b>	<b>472,531,694</b>
<b>Net position restricted for pension/HISP benefits</b>			
Beginning of year	8,913,978,627	315,521,246	9,229,499,873
End of year	\$ 9,360,947,061	\$ 341,084,506	\$ 9,702,031,567

See accompanying notes to financial statements.

## Statements of Changes in Fiduciary Net Position

For the Year Ended June 30, 2017

	Pension Plan	Health Insurance Subsidy Plan	Combined
<b>Additions</b>			
Contributions:			
Members	\$ 70,276,234	\$ -	\$ 70,276,234
State and local agencies	269,510,941	18,828,000	288,338,941
<b>Total contributions</b>	<b>339,787,175</b>	<b>18,828,000</b>	<b>358,615,175</b>
Investment income:			
From investing activities:			
Net appreciation in fair value of investments	894,271,036	31,475,378	925,746,414
Interest	66,287,438	2,394,891	68,682,329
Dividends	60,927,908	2,144,461	63,072,369
Real estate	350,935	12,352	363,287
<b>Total investment income</b>	<b>1,021,837,317</b>	<b>36,027,082</b>	<b>1,057,864,399</b>
Less – Investment expenses	(10,281,060)	(361,859)	(10,642,919)
<b>Income from investing activities</b>	<b>1,011,556,257</b>	<b>35,665,223</b>	<b>1,047,221,480</b>
From securities lending activities:			
Securities lending income	4,984,859	175,451	5,160,310
Securities lending expenses:			
Borrower rebates	(2,297,148)	(80,852)	(2,378,000)
Management fees	(376,046)	(13,236)	(389,282)
<b>Income from securities lending activities</b>	<b>2,311,665</b>	<b>81,363</b>	<b>2,393,028</b>
<b>Net investment income</b>	<b>1,013,867,922</b>	<b>35,746,586</b>	<b>1,049,614,508</b>
<b>Total additions</b>	<b>1,353,655,097</b>	<b>54,574,586</b>	<b>1,408,229,683</b>
<b>Deductions</b>			
Retirement, death and survivor benefits	573,962,256	18,999,021	592,961,277
Refunds and withdrawals	15,950,303	-	15,950,303
Administrative expenses	5,213,634	183,503	5,397,137
<b>Total deductions</b>	<b>595,126,193</b>	<b>19,182,524</b>	<b>614,308,717</b>
<b>Net increase in net position</b>	<b>758,528,904</b>	<b>35,392,062</b>	<b>793,920,966</b>
<b>Net position restricted for pension/HISP benefits</b>			
Beginning of year	8,155,449,723	280,129,184	8,435,578,907
End of year	\$ 8,913,978,627	\$ 315,521,246	\$ 9,229,499,873

See accompanying notes to financial statements.

# Notes to Financial Statements

June 30, 2018 and 2017

## **(1) Reporting Entity**

The Oklahoma Public Employees Retirement System (OPERS)(the System) is a defined benefit cost-sharing multiple employer plan consisting of a retirement plan and a cost-sharing multiple employer health insurance subsidy plan (HISP) both held in irrevocable trusts. The System, together with other similar fiduciary pension trust funds of the state of Oklahoma (the State), is a component unit of the State. The System is administered by the Oklahoma Public Employees Retirement System (OPERS). As set forth in Title 74, of the Oklahoma Statutes, at Section 921, administrative expenses are paid with funds provided by operations of the System.

## **(2) Summary of Significant Accounting Policies**

The following are the significant accounting policies followed by the System.

### **(a) Basis of Accounting**

The financial statements are prepared using the economic resources measurement focus and the accrual basis of accounting under which expenses are recorded when the liability is incurred, revenues are recorded in the accounting period in which they are earned and become measurable, and investment purchases and sales are recorded as of their trade dates. Member and employer contributions are established by statute as a percentage of salaries and are recognized when due, pursuant to legal requirements. Benefits and refunds are recognized when due and payable in accordance with the terms of the System.

### **(b) Investments**

The System is authorized to invest in eligible investments as approved by the Board of Trustees (the Board) as set forth in its investment policy.

System investments are reported at fair value, which is the price that would be received if the investments were sold in an orderly transaction between a willing buyer and a willing seller. Short-term investments include bills and notes, commercial paper, and international foreign currency contracts. Short-term investments, debt securities, and equity securities are reported at fair value, as determined by the System's custodial agent, using pricing services or prices quoted by independent brokers based on the latest reported sales prices at current exchange rates for securities traded on national or international exchanges. The fair value of the pro rata share of units owned by the System in equity index and commingled trust funds is determined by the respective fund trustee based on quoted sales prices of the underlying securities. The investment in real estate is valued using an annual third party appraisal.

Cash equivalents include investments in money market funds and investment pools and are reported at amortized cost.

Net investment income (loss) includes net appreciation (depreciation) in the fair value of investments, interest income, dividend income, securities lending income and expenses, and

## Notes to Financial Statements (continued)

investment expenses, which include investment management and custodial fees and all other significant investment related costs. Foreign currency translation gains and losses are reflected in the net appreciation (depreciation) in the fair value of investments.

The System's international investment managers may enter into forward foreign exchange contracts to protect against fluctuation in exchange rates between the trade date and the settlement date of foreign investment transactions. Any gains and losses on these contracts are included in income in the period in which the exchange rates change.

The System's investment policy provides for investments in combinations of stocks, bonds, fixed income securities, and other investment securities along with investments in commingled, mutual, and index funds. Investment securities and investment securities underlying commingled or mutual fund investments are exposed to various risks, such as interest rate and credit risks. Due to the risks associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities may occur in the near term, and those changes could materially affect the amounts reported in the statement of fiduciary net position.

### **(c) Property and Equipment**

Property and equipment with an initial cost of \$100 and an estimated useful life of at least three years are considered capital assets. Property and equipment are carried at cost, less accumulated depreciation. Costs of additions are capitalized, as are the costs of internally generated computer software. Maintenance and repairs are charged to expense as incurred. Depreciation is calculated using the straight-line method over the estimated useful lives of the related assets, as follows:

Furniture and equipment	10-15 years
Computer equipment	3-5 years

### **(d) Use of Estimates**

Management of the System has made a number of estimates and assumptions relating to the reporting of assets and liabilities and the disclosure of contingent assets and liabilities to prepare these financial statements in conformity with U.S. generally accepted accounting principles (GAAP), note disclosure and required supplementary information (RSI). Actual results could differ from these estimates.

### **(e) Risk and Uncertainties**

Contributions to the System and the actuarial information included in Note (6) Net Pension Liability, Net HISP Liability and Actuarial Information and the RSI are reported based on certain assumptions pertaining to interest rates, inflation rates, and employee compensation and demographics. Due to the changing nature of these assumptions, it is at least reasonably possible that changes in these assumptions may occur in the near term and, due to the uncertainties inherent in setting assumptions, that the effect of such changes could be material to the financial statements.

### **(f) Composition of Board of Trustees**

The Board of Trustees of OPERS consists of fourteen appointed members, some by position and some by association. Those serving through position are a member of the Corporation Commission as selected by the Commission, a member of the Tax Commission as selected by the Tax Commission, the Administrator of the Office of Personnel Management or designee, the State Insurance Commissioner or designee, the Director of State Finance or designee, and the State Treasurer or

## Notes to Financial Statements (continued)

designee. Of the remaining members, three are appointed by the Governor, one is appointed by the Supreme Court, two are appointed by the Speaker of the House of Representatives and two are appointed by the President Pro Tempore of the Senate. Qualifications for certain of these appointees include a balance of individuals having experience in investment management, pension management, public fund management, the banking profession or a licensed attorney or a licensed accountant.

### (3) System Description and Contribution Information

The following brief description of the System is provided for general information purposes only. Participants should refer to Title 74 of the Oklahoma Statutes, Sections 901 through 932 and 935, as amended, for more complete information.

#### (a) General

The System is a multiple-employer, cost-sharing public employee retirement plan, which is a defined benefit pension plan covering substantially all state employees except employees covered by seven other plans sponsored by the State. It also covers employees of participating county and local agencies. Nearly all new state employees first employed by a System participating employer on or after November 1, 2015, will participate in the State's new defined contribution plan. Therefore, the System is closed to nearly all new State employees, but remains open to new employees of participating counties and local agencies. Agencies and/or participants not included in the System are as follows: teachers, municipal police, municipal firefighters, judicial, wildlife, state law enforcement and nearly all State employees first employed on or after November 1, 2015.

The System also administers the Health Insurance Subsidy Plan, a cost-sharing multiple-employer defined benefit OPEB plan that provides OPEB covering the same categories of employees covered by the pension plan.

The supervisory authority for the management and operation of the System and HISP is the Board, which acts as a fiduciary for investment of the funds and the application of System interpretations.

At June 30, the System's membership consisted of:

	2018	2017
Inactive members or their beneficiaries currently receiving benefits	35,260	34,579
Inactive members entitled to but not yet receiving benefits	6,024	5,951
Active members	36,329	38,873
<b>Total</b>	<b>77,613</b>	<b>79,403</b>

Of the inactive members or their beneficiaries currently receiving benefits, 13,998 and 14,262 are retirees and beneficiaries in the HISP as of June 30, 2018 and 2017, respectively. The Plan also includes 53,406 and 52,126 nonvested terminated members entitled to a refund of their member contributions as of June 30, 2018 and 2017, respectively.

For purposes of the discussion on benefits and contributions, the members are described in the following categories: hazardous duty members, which includes certain employees of the Department of Corrections who are classified as correction officers, probation and parole officers, and fugitive apprehension agents along with Oklahoma Military Department firefighters; elected officials, which includes elected officials who serve the State and participating counties; and State, county, and local agency employees, which includes all other employees previously described. If the member category is not specifically identified, the attributes of the System discussed apply to all members.

## Notes to Financial Statements (continued)

### **(b) Benefits**

#### *Pensions*

Members qualify for full retirement benefits at their specified normal retirement age or, for any person who became a member prior to July 1, 1992, when the sum of the member's age and years of credited service equals or exceeds 80 (Rule of 80), and for any person who became a member after June 30, 1992, when the member's age and years of credited service equals or exceeds 90 (Rule of 90).

Normal retirement date is further qualified to require that all members employed on or after January 1, 1983 must have six or more years of full-time equivalent employment with a participating employer before being eligible to receive benefits. Credited service is the sum of participating and prior service. Prior service includes nonparticipating service before January 1, 1975, or the entry date of the employer and active wartime military service.

A member with a minimum of ten years of participating service may elect early retirement with reduced benefits beginning at age 55 if the participant became a member prior to November 1, 2011, or age 60 if the participant became a member on or after November 1, 2011.

Disability retirement benefits are available for members having eight years of credited service whose disability status has been certified as being within one year of the last day on the job by the Social Security Administration. Disability retirement benefits are determined in the same manner as retirement benefits, but payable immediately without an actuarial reduction.

#### *Health Insurance Subsidy Plan*

HISP provides a health insurance premium subsidy for retirees of the System who elect to maintain health insurance with the Oklahoma Employees Group Insurance Division (EGID) or other qualified insurance plan provided by the employer. This subsidy continues until the retiree terminates health insurance coverage with EGID or other qualified plan, or until death. The subsidy is only for the retiree, not joint annuitants or beneficiaries.

The following are various benefit attributes for each member category:

#### ***State, County, and Local Agency Employees***

Benefits are determined at 2% of the average annual salary received during the highest thirty-six months of the last ten years of participating service, but not to exceed the applicable annual salary cap, multiplied by the number of years of credited service. Members who join OPERS on or after July 1, 2013, will have their salary averaged over the highest 60 months of the last ten years. Normal retirement age under the System is 62 or Rule of 80/90 if the participant became a member prior to November 1, 2011, or age 65 or Rule of 90 if the participant became a member on or after November 1, 2011.

Members who elect to pay the additional contribution rate, which became available in January 2004, will receive benefits using a 2.5% computation factor for each full year the additional contributions are made. In 2004, legislation was enacted to provide an increased benefit to retiring members who were not yet eligible for Medicare. The Medicare Gap benefit option became available to members under age 65 who retired on or after May 1, 2006. Members may elect to receive a temporary increased benefit to cover the cost of health insurance premiums until the member is eligible to receive Medicare. After the member becomes eligible for Medicare, the retirement benefit will be permanently reduced by an actuarially determined amount. The option is irrevocable, must be chosen prior to retirement, and is structured to have a neutral actuarial cost to the System.

## Notes to Financial Statements (continued)

Members become eligible to vest fully upon termination of employment after attaining eight years of credited service, or the members' contributions may be withdrawn upon termination of employment.

### ***Elected Officials***

Benefits are determined as the greater of the calculation described in the preceding section or, based on the official's contribution election, either 1.9% or 4.0% of the highest annual covered compensation received as an elected official, but not to exceed the applicable annual salary cap, multiplied by the number of years of credited service. For members elected prior to November 1, 2011, normal retirement age under the System is 60 with six years of participation as an elected official or Rule of 80. For members elected on or after November 1, 2011, the normal retirement age is 62 with 10 years of participation as an elected official or 65 with eight years of participation as an elected official. Members elected prior to November 1, 2011 become eligible to vest fully upon termination of employment after attaining six years of participating service as an elected official. Members elected on or after November 1, 2011 become eligible to vest fully upon termination of employment after attaining eight years of participating service as an elected official. The members' contributions may be withdrawn upon termination of employment.

### ***Hazardous Duty Members***

Benefits are determined at (a) 2.5% of the final average compensation up to the applicable annual salary cap multiplied by the number of years of service as a hazardous duty member not to exceed 20 years and (b) 2.0% of the final average compensation multiplied by the number of years of service in excess of 20 years and any other years of service creditable. Normal retirement age under the System is 62 or at completion of 20 years of creditable service as a hazardous duty member or Rule of 80/90 if participant became a member prior to November 1, 2011, or age 65 or at completion of 20 years of creditable service as a hazardous duty member or Rule of 90 if participant became a member on or after November 1, 2011.

Military Department firefighters are not restricted to a maximum of 20 years of hazardous duty for the 2.5% computation.

However, members who contributed prior to July 1, 1990 but do not qualify for normal retirement as a hazardous duty member shall receive benefits computed at 2.5% of the final compensation for those full time years as a hazardous duty member after July 1, 1990, 2.25% before July 1, 1990, and 2.0% for all other years of credited service. Members become eligible to vest fully after 20 years of full time service as a hazardous duty member.

Upon the death of an active member, the accumulated contributions of the member are paid to the member's named beneficiary(ies) in a single lump sum payment. If a retired member elected a joint annuitant survivor option or an active member was eligible to retire with either reduced or unreduced benefits or eligible to vest the retirement benefit at the time of death, benefits can be paid in monthly payments over the life of the spouse if the spouse so elects.

Benefits are payable to the surviving spouse of an elected official only if the elected official had at least six years of participating elected service and was married at least three years immediately preceding death. Survivor benefits are terminated upon death of the named survivor and, for elected officials, remarriage of the surviving spouse. Upon the death of a retired member, with no survivor benefits payable, the member's beneficiary(ies) are paid the excess, if any, of the member's accumulated contributions over the sum of all retirement benefit payments made.

Upon the death of a retired member, the System will pay a \$5,000 death benefit to the member's beneficiary or estate of the member if there is no living beneficiary. The death benefit will be paid in

## Notes to Financial Statements (continued)

addition to any excess employee contributions or survivor benefits due to the beneficiary. Death benefits paid for the years ended June 30, 2018 and 2017 totaled approximately \$5,576,000 and \$5,493,000, respectively.

Legislation was enacted in 1999 which provided a limited additional benefit for certain terminated members eligible to vest as of July 1, 1998. This limited benefit is payable as an additional \$200 monthly benefit upon the member's retirement up to the total amount of certain excess contributions paid by the participant to the System. In April 2001, limited benefit payments began for qualified retired members. The estimated liability for future payments of the limited benefit of approximately \$0.4 million has been included in the calculation of the total pension liability of the System at June 30, 2018 and 2017.

Benefits are established and may be amended by the State Legislature from time to time.

### (c) **Contributions**

The contribution rates for each member category of the System are established by the Oklahoma Legislature after recommendation by the Board based on an actuarial calculation, which is performed to determine the adequacy of such contribution rates. An actuarially determined portion of the total contributions to the System are set aside to finance the cost of the benefits of the HISP in accordance with provisions of the Internal Revenue Code.

Each member participates based on their qualifying gross salary earned, excluding overtime. There is no cap on the qualifying gross salary earned, subject to Internal Revenue Service (IRS) limitations on compensation. Only employers contribute to the HISP.

The following contribution rates were in effect:

#### ***State, County, and Local Agency Employees***

For 2018 and 2017, *state agency employers* contributed 16.5% on all salary, and *state employees* contributed 3.5% on all salary.

For 2018 and 2017, contributions of *participating county and local agencies* totaled 20.0% of salary composed of a minimum employee contribution rate of 3.5% up to a maximum of 8.5% and a minimum employer contribution rate of 11.5% up to a maximum of 16.5%.

Members have the option to elect to increase the benefit computation factor for all future service from 2.0% to 2.5%. The election is irrevocable, binding for all future employment under OPERS, and applies only to full years of service. Those who make the election pay the standard contribution rate plus an additional contribution rate, 2.91% which is actuarially determined. The election is available for all state, county, and local government employees, except for elected officials and hazardous duty members.

#### ***Elected Officials***

Elected officials' employee contributions are based on the maximum compensation levels set for all members, and the participating employers are required to contribute on the elected officials' covered salary using the same percentage and limits as applicable for state agencies. Members elected prior to November 1, 2011 must select an employee contribution rate of 4.5%, 6.0%, 7.5%, 8.5%, 9.0% or 10.0%. Members elected on or after November 1, 2011 have a contribution rate of 3.5%.



## Notes to Financial Statements (continued)

Effective July 1, 1999, elected officials must affirmatively elect or decline participation in the System within 90 days after taking office. This decision is irrevocable, and failure of an elected official to decline to participate in the System will be deemed as an irrevocable election to participate and contribute at the highest rate (currently 3.5% for officials elected on or after November 1, 2011). All current elected officials who had not elected to participate in the System must have either elected, including selecting a contribution rate, or declined to participate in the System on or before December 1, 1999.

Elected officials who are first elected or appointed to an elected office between November 1, 2010 and October 31, 2011 may only select one of two benefit computation factors - 1.9% or 4.0% - with the respective employee contribution rates of 4.5% or 10.0%.

Effective November 1, 2011, elected officials who are first elected or appointed to an elected office participate with a benefit computation factor of 2.0% with an employee contribution rate of 3.5%.

### ***Hazardous Duty Members***

For 2018 and 2017, hazardous duty members contributed 8.0%, and their employer agencies contributed 16.5% on all salary.

### **(d) Participating Employers**

At June 30, the number of participating employers for the pension plan and the HISP plan was as follows:

	2018	2017
State agencies	117	118
County governments	75	75
Local government towns and cities	29	29
Other local governmental units	63	62
<b>Total</b>	<b>284</b>	<b>284</b>

### **(e) Defined Contribution System created for New Members**

House Bill 2630 and Senate Bill 2120 directed OPERS to establish a defined contribution retirement system for members first employed by a participating employer of the system on or after November 1, 2015, including statewide elected officials and legislators. The provisions of this bill are not applicable to hazardous duty members, district attorneys, assistant district attorneys or other employees of the district attorney's office who will continue to participate in the defined benefit plan. Also excluded are employees of a county, county elected officials, county hospital, city or town, conservation district, circuit engineering district, and any public or private trust in which a county, city or town participates and is the primary beneficiary.

This new defined contribution plan was created and implemented during the year ended June 30, 2016. Under this new plan, participating employees contribute a minimum of 4.5% of their compensation. Participating employers match employee contributions up to 7%. In addition to the matching contributions, participating employers are required to remit to OPERS the difference between the matching contributions for defined contribution plan members and the amount the participating employer would have contributed for a defined benefit plan member.

## Notes to Financial Statements (continued)

This new defined contribution plan is a separate and distinct plan that has its own set of financial statements and is therefore not included in the disclosures of the OPERS defined benefit plan and HISP plan.

### (4) Cash Equivalents

Cash and cash equivalents represent short-term investment funds held by the Office of the State Treasurer (State Treasurer) and the System’s custodial agent, and foreign currency.

At June 30, cash and cash equivalents were:

	2018	2017
Cash equivalents		
State Treasurer	\$ 3,550,103	\$ 2,779,741
Custodial agent	218,150,223	114,068,389
Foreign currency	1,315,089	2,347,569
<b>Total cash and cash equivalents</b>	<b>\$ 223,015,415</b>	<b>\$119,195,699</b>

Cash is deposited to *OK INVEST*, an internal investment pool of the State Treasurer with holdings limited to obligations of the U.S. Government, its agencies and instrumentalities, agency senior debt and mortgage-backed pass-through securities, tri-party repurchase agreements, money market mutual funds, collateralized certificates of deposit, commercial paper, obligations of state and local governments, and State of Israel Bonds. Participants are limited to qualifying agencies and funds within the State’s reporting entity, and each participant maintains an interest in the underlying investments of *OK INVEST* and shares the risk of loss on the fund in proportion to the respective investment in the fund. The custodial agent cash equivalents consist of temporary investments in commingled trust funds of the System’s custodial agent. The fund is composed of high-grade money market instruments with short maturities. Each participant in the fund shares the risk of loss on the fund in proportion to the respective investment in the fund.

Deposits are exposed to custodial credit risk if they are not covered by depository insurance and the deposits are uncollateralized, collateralized with securities held by the pledging financial institution, or collateralized with securities held by the pledging financial institution’s trust department or agency but not in the depositor-government’s name. At June 30, 2018 and 2017, the cash equivalents in *OK INVEST* and the System’s custodial agent cash equivalents were not exposed to custodial credit risk because their existence cannot be evidenced by securities that exist in physical or book entry form.

The System holds foreign currency in banks outside the United States as a result of transactions of international investment managers. The foreign currency is in accounts in the name of the System’s custodial agent and is uncollateralized, and the System is exposed to custodial credit risk. At June 30, 2018 and 2017, the foreign currency holdings were \$1,315,089 and \$2,347,569, respectively. The System’s exposure to foreign currency risk is detailed in the section entitled Investments, Foreign Currency Risk.

### (5) Investments

#### (a) General

Investments are pooled for administrative purposes and then allocated to the pension plan and HISP based on actuarial data, inflows and outflows. The OPERS Statement of Investment Policy states that the Board believes that System assets should be managed in a fashion that reflects the System’s unique liabilities and funding resources, incorporating accepted investment theory and reliable empirical evidence. Specifically, the Board has adopted the following principles:

- Asset allocation is the key determinant of return, and therefore, commitments to asset allocation targets will be maintained through a disciplined rebalancing program.

## Notes to Financial Statements (continued)

- Diversification, both by and within asset classes, is the primary risk control element.
- Passive fund portfolios are suitable investment strategies, especially in highly efficient markets. These index funds which are externally managed by professional investment management firms selected through due diligence of the Board are deemed to be actively managed accounts within the meaning of Section 909.1(D) of Title 74 of the Oklahoma Statutes.

The investment policy, guidelines, and objectives which govern the investment of System and HISP assets shall be developed and adopted by the Board of Trustees at a regularly scheduled public Board meeting, at least annually, prior to August 1 of each year. Changes to the investment policy may be made, as necessary, at any public meeting of the Board of Trustees, in compliance with the Open Meeting Act. During 2015, the investment policy was modified to allow investments in certain real estate-related assets.

The asset allocation guidelines established by policy at June 30, 2018 and 2017, were U.S. equities – 40%, international equities – 28% and domestic fixed income – 32%. The guidelines also establish minimum and maximum percentages for each asset class allocation, and when allocations move outside these limits, portfolios are rebalanced.

The fair value of investments held by the System at June 30 was as follows:

	<b>2018</b>	<b>2017</b>
U.S. Treasury notes/bonds	\$ 994,996,296	\$ 1,127,901,185
U.S. TIPS index fund	309,268,778	302,179,401
Government agencies	6,652,326	6,287,681
Government mortgage-backed securities	651,534,262	669,924,779
Foreign bonds	18,539,023	9,237,760
Municipal bonds	16,502,780	18,197,190
Corporate bonds	815,197,984	711,801,112
Asset-backed securities	137,825,864	156,956,304
Commercial mortgage-backed securities	49,162,460	71,016,975
Non government backed collateralized mortgage obligations	21,394,430	22,889,244
Domestic equities	2,360,696,629	2,163,658,371
U.S. equity index fund	1,652,412,024	1,549,521,205
International equities	952,492,471	896,202,932
International equity index funds	1,748,689,851	1,643,299,407
Real estate	12,600,000	12,100,000
Securities lending collateral	476,470,399	639,984,979
<b>Total investments</b>	<b>\$ 10,224,435,577</b>	<b>\$ 10,001,158,525</b>

The System participates in fixed income and international and domestic equity index funds managed by BlackRock Institutional Trust Company, N.A. (BTC). BTC, a subsidiary of BlackRock Inc., is a national banking association and operates as a limited purpose trust company. Its primary regulator is the Office of the Comptroller of the Currency (OCC), the agency of the U.S. Treasury Department that regulates United States national banks. Each fund is a collective fund which is a group trust and an entity separate from BTC, other funds, and the investing participants. BTC is trustee of each of the collective fund trusts and holds legal title to each trust's assets for the exclusive benefit of the System. The fair value of the System's position in the pool is the same as the value of the pool shares. As of June 30, 2018 and 2017, the System was invested in two domestic equity index funds, two international equity index funds, and a fixed income index fund. The System shares the risk of loss in these funds with other participants in proportion to its respective investment. Because the System does not own any specific identifiable investment securities of these funds, the risk associated with any derivative investments held in these funds is not apparent. The degree of risk depends on the underlying portfolios of the funds, which were selected by the System in accordance with its investment policy guidelines including risk assessment.

## Notes to Financial Statements (continued)

The international funds invest primarily in equity securities of entities outside the United States and may enter into forward contracts to purchase or sell securities at specified dates in the future at a guaranteed price in a foreign currency to protect against fluctuations in exchange rates of foreign currency.

### ***Securities Lending***

The System's investment policy provides for its participation in a securities lending program. The program is administered by the System's master custodian, and there are no restrictions on the amount of loans that can be made. During 2018 and 2017, the types of securities loaned were primarily U.S. Government and corporate bonds, domestic equity securities, and international equity securities. Certain securities of the System are loaned to participating brokers, who must provide collateral in the form of cash, U.S. Treasury or Government Agency securities, or letters of credit issued by approved banks.

Under the terms of the securities lending agreement, collateral is required to be provided in the amount of 102% of the fair value of U.S. securities loaned and 105% of the fair value of non-U.S. securities loaned. At June 30, 2018 and 2017, the System had no credit risk exposure to borrowers because the amounts the System owes the borrowers exceed the amounts the borrowers owe the System. The securities on loan at June 30, 2018 and 2017 collateralized by cash collateral were \$465,375,945 and \$625,686,133, respectively, and the cash collateral received for those securities on loan was \$476,470,399 and \$639,984,979, respectively. In addition, the securities on loan at June 30, 2018 and 2017 collateralized by non-cash collateral were \$160,267,183 and \$117,402,420, respectively, and the market value of the non-cash collateral for those securities on loan was \$164,860,108 and \$120,009,989, respectively. The master custodian provides for full indemnification to the System for any losses that might occur in the program due to the failure of a broker to return a security that was borrowed (and if the collateral is inadequate to replace the securities lent) or failure to pay the System for income of the securities while on loan. The System cannot pledge or sell collateral securities unless the borrower defaults. The loan premium paid by the borrower of the securities is apportioned between the System and its custodial agent in accordance with the securities lending agreement. All securities loans can be terminated on demand by either the lender or the borrower.

The securities lending agreement provides that cash collateral be invested in the custodial agent's short-term investment pool and sets forth credit quality standards, acceptable investments, diversification standards, and maturity and liquidity constraints for the investment fund. The System's investment guidelines do not require a matching of investment maturities with loan maturities but do establish minimum levels of liquidity and other investment restrictions designed to minimize the interest rate risk associated with not matching the maturities of the investments with the loans. At June 30, 2018 and 2017, the cash collateral investments had an average weighted maturity of 18 and 17 days, respectively, and the relationship between the maturities of the custodial agent's investment pool and the System's loans is affected by the maturities of the securities loans made by other entities that use the agent's pool, which the System cannot determine. The System's non-cash collateral is represented by its allocated share of a pool administered by the agent for the System and other pool participants.

### **(b) Credit Risk**

Credit risk is the risk that an issuer or other counterparty to an investment will default or will otherwise not fulfill its obligations.

The System's investment guidelines provide for the domestic fixed income managers to follow one of four investment styles and specifies quality guidelines for each style.

## Notes to Financial Statements (continued)

The *Constrained Core* manager will invest in a broadly diversified portfolio with characteristics similar to a broad fixed income market index, such as the Barclays Capital Aggregate Bond Index. The total portfolio minimum quality should be single-A as rated by a nationally recognized statistical rating organization (NRSRO). The portfolio should primarily consist of investment grade securities, with a minimum quality rating for any issue of triple-B minus rating by at least one NRSRO. In the event that a credit rating is downgraded below this minimum, the investment manager shall immediately notify OPERS staff and provide an evaluation and recommended course of action.

The *Core Plus* manager will invest in a broadly diversified portfolio with characteristics similar to the Constrained Core manager and will add a “plus” of limited exposure to high yield bonds. The total portfolio minimum quality should be single-A as rated by an NRSRO. No more than 20% of the portfolio shall consist of non-investment grade issues. The minimum quality rating for any issue is single-B rating by at least one NRSRO, and no more than 5% of a portfolio shall be invested in issues rated below double-B rating by at least one NRSRO. In the event that a credit rating is downgraded below this minimum, the investment manager shall immediately notify OPERS staff and provide an evaluation and recommended course of action.

The *Interest Rate Anticipator* manager follows a style that seeks to correctly forecast the long term trend in interest rates and adjust the portfolio duration accordingly. The total portfolio minimum quality should be single-A as rated by an NRSRO, and the portfolio should consist of investment grade securities only.

The *Passive* fixed income style consists of a Treasury Inflation-Protection Securities (TIPS) index fund. TIPS are securities issued by the U.S. Government that are designed to protect the purchasing power of the investor.

At June 30, 2018, the domestic fixed income portfolio consisted of a constrained core fixed income portfolio, a core plus fixed income portfolio, a rate anticipator portfolio, and a passive U.S. TIPS Index fund. All components met the stated policy restrictions except the core fixed income portfolio, which held \$24,257,591 in issues rated below triple-B minus, and the core plus fixed income portfolio, which held \$4,318,447 in issues rated below single-B. The System’s investment managers have advised retention of the securities after having assessed their risk/reward profiles. At June 30, 2017, the domestic fixed income portfolio consisted of a constrained core fixed income portfolio, a core plus fixed income portfolio, a rate anticipator portfolio, and a passive U.S. TIPS Index fund. All components met the stated policy restrictions except the core fixed income portfolio, which held \$1,992,698 in issues rated below triple-B minus, and the core plus fixed income portfolio, which held \$5,662,170 in issues rated below single-B. The System’s investment managers have advised retention of the securities after having assessed their risk/reward profiles.

Investments issued by or explicitly guaranteed by the U.S. Government are not considered to have credit risk. At June 30, 2018, the System held 34.4% of fixed income investments that were not considered to have credit risk and 10.2% in a U.S. TIPS index fund made up of explicitly guaranteed U.S. Treasury Inflation-Protected Securities. At June 30, 2017, the System held 38.6% of fixed income investments that were not considered to have credit risk and 9.8% in a U.S. TIPS index fund made up of explicitly guaranteed U.S. Treasury Inflation-Protected Securities. Implicitly guaranteed investments primarily refer to bonds issued by a government sponsored entity (GSE) which is a government chartered corporation. This government charter implies that the government is unlikely to allow a GSE to default on its bond payments.

## Notes to Financial Statements (continued)

The System's exposure to credit risk at June 30, 2018 is presented below, in thousands, by investment category as rated by an NRSRO.

	Triple-A	Double-A	Single-A	Triple-B	Double-B	Single-B	Triple-C	Not Rated or Rating Not Available	Total
Government agencies	\$ -	\$ 511	\$ -	\$ 681	\$ -	\$ -	\$ -	\$ -	\$ 1,192
Foreign bonds	-	761	-	17,778	-	-	-	-	18,539
Municipal bonds	3,375	8,343	1,942	2,843	-	-	-	-	16,503
Corporate bonds	19,262	28,052	314,189	343,791	44,946	3,938	-	61,020	815,198
Asset-backed securities	107,549	10,024	4,976	10,635	4,195	346	101	-	137,826
Commercial mortgage- backed securities	40,519	2,065	-	1,456	-	-	-	5,122	49,162
Non government backed collateralized mortgage obligations	9,681	2,842	749	7,207	149	-	34	732	21,394
Total fixed income securities exposed to credit risk	\$ 180,386	\$ 52,598	\$ 321,856	\$ 384,391	\$ 49,290	\$ 4,284	\$ 135	\$ 66,874	\$ 1,059,814
Percent of total fixed income portfolio	6.0%	1.7%	10.7%	12.7%	1.6%	0.1%	0.0%	2.2%	35.0%

The System's exposure to credit risk at June 30, 2017 is presented below, in thousands, by investment category as rated by an NRSRO.

	Triple-A	Double-A	Single-A	Triple-B	Double-B	Single-B	Triple-C	Not Rated or Rating Not Available	Total
Government agencies	\$ -	\$ -	\$ -	\$ 616	\$ -	\$ -	\$ -	\$ -	\$ 616
Foreign bonds	-	-	-	8,754	484	-	-	-	9,238
Municipal bonds	3,558	9,880	4,759	-	-	-	-	-	18,197
Corporate bonds	15,484	39,804	208,493	309,796	11,691	4,128	-	122,405	711,801
Asset-backed securities	100,463	25,436	17,274	4,363	2,206	3,160	1,424	2,630	156,956
Commercial mortgage- backed securities	56,619	5,325	-	2,304	-	-	-	6,769	71,017
Non government backed collateralized mortgage obligations	6,715	6,644	7,100	2,273	-	-	-	157	22,889
Total fixed income securities exposed to credit risk	\$ 182,839	\$ 87,089	\$ 237,626	\$ 328,106	\$ 14,381	\$ 7,288	\$ 1,424	\$ 131,961	\$ 990,714
Percent of total fixed income portfolio	5.9%	2.8%	7.7%	10.6%	0.5%	0.2%	0.0%	4.3%	32.0%

The exposure to credit risk of the underlying investments of the System's cash equivalents at June 30 is as follows:

Credit Rating	2018	2017
Triple-A	- %	0.1 %
Double-A	100.0	95.8
Single-A	-	4.1
	100.0 %	100.0 %

### (c) Concentration of Credit Risk

Investments can be exposed to concentration of credit risk if significant amounts are invested in any one issuer. The System's investment policy states that portfolios managed on behalf of the System should not hold more than 5% of the outstanding securities of any single issuer. As of June 30, 2018 and 2017, the System did not have 5% or more of its total investments in any single issuer.

## Notes to Financial Statements (continued)

### (d) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment or a deposit. Duration is a measure of a debt investment's exposure to fair value changes arising from changing interest rates based upon the present value of cash flows, weighted for those cash flows as a percentage of the investment's full price. Effective duration estimates the sensitivity of a bond's price to interest rate changes and makes assumptions regarding the most likely timing and amounts of variable cash flows arising from investments, such as callable bonds, collateralized mortgage obligations, and other mortgage-backed securities.

At June 30, the System's exposure to interest rate risk as measured by effective duration is listed below by investment category.

	2018		2017	
	Fair Value	Effective duration in years	Fair Value	Effective duration in years
U.S. Treasury notes/bonds	\$ 994,996,296	12.2	\$1,127,901,185	10.8
U.S. TIPS index fund	309,268,778	7.7	302,179,401	7.8
Government agencies	6,652,326	9.0	6,287,681	10.3
Government mortgage-backed securities	651,534,262	5.2	669,924,779	4.4
Foreign bonds	18,539,023	9.9	9,237,760	9.2
Municipal bonds	16,502,780	5.1	18,197,190	6.4
Corporate bonds	815,197,984	5.2	711,801,112	5.1
Asset-backed securities	137,825,864	1.0	156,956,304	1.0
Commercial mortgage-backed securities	49,162,460	3.8	71,016,975	3.9
Non government backed collateralized mortgage obligations	21,394,430	1.4	22,889,244	1.2
Total fixed income	\$ 3,021,074,203		\$3,096,391,631	
Portfolio duration		7.6		7.0

The System does not have a formal investment policy on interest rate risk. Interest rate risk is controlled through diversification of portfolio management styles.

Some investments' sensitivity to changing interest rates may derive from prepayment options embedded in an investment. Asset-backed securities, mortgage-backed securities, and collateralized mortgage obligations are pass-through securities that represent pooled debt obligations repackaged as securities that pass income and principal from debtors through the intermediary to investors.

Asset-backed securities are bonds or notes backed by loan paper or accounts receivable originated by banks, credit card companies, or other providers of credit and often enhanced by a bank letter of credit or by insurance coverage proved by an institution other than the issuer. At June 30, 2018 and 2017, the System held \$137,825,864 and \$156,956,304, respectively, in asset-backed securities.

Mortgage-backed securities are securities backed by mortgages issued by public and private institutions. At June 30, 2018 and 2017, the System held \$651,534,262 and \$669,924,779, respectively, in government mortgage-backed securities issued by the Federal Home Loan Mortgage Corporation (FHLMC), Government National Mortgage Association (GNMA), and Federal National Mortgage Association (FNMA) as well as \$49,162,460 and \$71,016,975, respectively, in commercial mortgage-backed securities.

## Notes to Financial Statements (continued)

Collateralized mortgage obligations (CMOs) are mortgage-backed bonds that allocate mortgage cash flows (interest and principal) into different maturity classes, called tranches. This is accomplished by dedicating mortgage cash flows to specific tranches and paying each tranche off in turn by prespecified rules. CMOs provide investors with increased security about the life of their investment compared to purchasing a pass-through mortgage-backed security. If mortgage rates drop (rise) sharply, prepayment rates will increase (decrease), and CMO tranches may be repaid before (after) the expected maturity. At June 30, 2018 and 2017, the System held \$21,394,430 and \$22,889,244, respectively, in non-government backed CMOs.

The exposure to interest rate risk of the underlying investments of the System's cash equivalents at June 30 is as follows:

<b>Maturities (in days)</b>	<b>2018</b>	<b>2017</b>
0 - 14	29.1 %	37.8 %
15 - 30	12.5	2.6
31 - 60	15.2	12.3
61 - 90	17.0	19.9
91 - 180	11.9	9.3
181 - 364	11.1	16.5
365 - 730	3.2	1.6
	<b>100.0 %</b>	<b>100.0 %</b>

**(e) Foreign Currency Risk**

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The OPERS Statement of Investment Policy addresses foreign currency risk by stating that the primary sources of value-added for international equity investment managers will be issue and country selection, with currency management focused on limiting losses due to fluctuations in currency values.



## Notes to Financial Statements (continued)

The System's exposure to foreign currency risk by asset class at June 30, 2018 is as follows:

Currency	Short-term			Total	Percent
	Equities	Investments	Cash		
Australian dollar	\$ 22,474,297	\$ -	\$ -	\$ 22,474,297	0.8 %
Brazilian real	15,881,829	77,330	-	15,959,159	0.6
British pound sterling	163,973,850	-	128,639	164,102,489	6.0
Canadian dollar	10,068,088	-	46,915	10,115,003	0.4
Danish krone	19,443,383	-	-	19,443,383	0.7
Euro	196,403,902	708,076	8,031	197,120,009	7.2
Hong Kong dollar	59,434,917	94,927	205,714	59,735,558	2.2
Indonesian rupiah	1,791,420	-	-	1,791,420	0.1
Japanese yen	136,974,338	66,273	643,334	137,683,945	5.0
Malaysian ringgit	9,441,752	-	107,128	9,548,880	0.3
Mexican peso	5,260,043	-	-	5,260,043	0.2
Philippine peso	2,422,953	-	-	2,422,953	0.1
Polish zloty	-	-	442	442	0.0
Qatari rial	2,435,879	-	-	2,435,879	0.1
Singapore dollar	32,443,791	-	171,383	32,615,174	1.2
South African rand	19,295,177	-	-	19,295,177	0.7
South Korean won	27,858,524	(4,811)	-	27,853,713	1.0
Swedish krona	35,674,224	-	-	35,674,224	1.3
Swiss franc	39,743,951	-	-	39,743,951	1.5
Thai baht	3,668,616	-	3,503	3,672,119	0.1
Turkish lira	3,387,052	-	-	3,387,052	0.1
United Arab Emirates dirham	2,642,343	-	-	2,642,343	0.1
International portfolio exposed to foreign currency risk	810,720,329	941,795	1,315,089	812,977,213	29.7
International portfolio in U.S. dollars	1,890,460,930	22,378,015	10,091,296	1,922,930,241	70.3
<b>Total international portfolio</b>	<b>\$ 2,701,181,259</b>	<b>\$ 23,319,810</b>	<b>\$ 11,406,385</b>	<b>\$ 2,735,907,454</b>	<b>100.0 %</b>

The System's exposure to foreign currency risk by asset class at June 30, 2017 is as follows:

Currency	Short-term			Total	Percent
	Equities	Investments	Cash		
Australian dollar	\$ 22,874,325	\$ -	\$ 143,003	\$ 23,017,328	0.9 %
Brazilian real	11,285,447	189,665	6	11,475,118	0.5
British pound sterling	145,944,637	238,242	380,836	146,563,715	5.8
Canadian dollar	5,426,988	-	154,454	5,581,442	0.2
Danish krone	19,879,680	-	-	19,879,680	0.8
Euro	181,698,391	-	20,101	181,718,492	7.1
Hong Kong dollar	33,655,533	625,581	215,522	34,496,636	1.4
Indonesian rupiah	2,062,054	-	-	2,062,054	0.1
Japanese yen	136,821,458	(637,117)	859,664	137,044,005	5.4
Malaysian ringgit	8,717,064	-	1	8,717,065	0.3
Mexican peso	7,234,175	-	246,444	7,480,619	0.3
Philippine peso	1,220,931	-	-	1,220,931	0.0
Polish zloty	-	-	446	446	0.0
Qatari rial	2,132,410	-	-	2,132,410	0.1
Singapore dollar	33,574,735	-	49,472	33,624,207	1.3
South African rand	20,613,284	79,151	133,653	20,826,088	0.8
South Korean won	24,049,386	(71,779)	83,693	24,061,300	0.9
Swedish krona	39,892,209	-	-	39,892,209	1.6
Swiss franc	65,726,044	-	-	65,726,044	2.6
Thai baht	3,427,638	-	-	3,427,638	0.1
Turkish lira	5,818,007	-	60,274	5,878,281	0.2
United Arab Emirates dirham	2,040,638	-	-	2,040,638	0.1
International portfolio exposed to foreign currency risk	774,095,034	423,743	2,347,569	776,866,346	30.5
International portfolio in U.S. dollars	1,765,409,464	(425,903)	5,291,979	1,770,275,540	69.5
<b>Total international portfolio</b>	<b>\$ 2,539,504,498</b>	<b>\$ (2,160)</b>	<b>\$ 7,639,548</b>	<b>\$ 2,547,141,886</b>	<b>100.0 %</b>

## Notes to Financial Statements (continued)

The System's actively-managed international equity securities are recorded at fair value, which includes foreign currency gains and losses attributable to fluctuations in the exchange rate between the foreign denominated currency of the investment and the U.S. dollar. This translation gain or loss is calculated based on month-end exchange rates. Cumulative unrealized translation losses at June 30, 2018 and 2017 were approximately \$50.0 and \$59.5 million, respectively.

**(f) Rate of Return**

For the year ended June 30, 2018 and 2017, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expenses, was 8.38% and 12.64%, respectively, and the annual money-weighted rate of return on HISP plan investments, net of HISP plan investment expenses, was 8.08% and 12.76%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

**(g) Fair Value Measurement**

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to quoted prices in active markets for identical assets (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). The inputs to the three levels of the fair value hierarchy are described as follows:

**Level 1:** Quoted prices in active markets for identical assets or liabilities

**Level 2:** Significant other observable inputs, including quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets in markets that are not active and other market corroborated inputs

**Level 3:** Significant unobservable inputs

Investments in equity securities classified in level 1 are valued directly from a predetermined primary external pricing vendor using published prices. Investments in debt securities classified as level 2 are obtained from using an alternative pricing source due to lack of information by the primary vendor. The investment in real estate is classified as level 3 due to lack of observable pricing inputs and is valued using annual appraisals.

## Notes to Financial Statements (continued)

Assets measured at fair value and net asset value at June 30, 2018 are as follows:

Investments by Fair Value Level	6/30/2018	Fair Value Measurements Using		
		Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Short-term investment fund	\$ 208,058,926	\$ -	\$ 208,058,926	\$ -
<b>Debt Securities</b>				
U.S. Treasury notes/bonds	\$ 994,996,296	\$ -	\$ 994,996,296	\$ -
Government agencies	6,652,326	-	6,652,326	-
Government mortgage-backed	651,534,262	-	651,534,262	-
Foreign bonds	18,539,023	-	18,539,023	-
Municipal bonds	16,502,780	-	16,502,780	-
Corporate bonds	815,197,984	-	815,197,984	-
Asset-backed securities	137,825,864	-	137,825,864	-
Commercial mortgage-backed	49,162,460	-	49,162,460	-
Non government backed collateralized mortgage obligations	21,394,430	-	21,394,430	-
Total Debt Securities	2,711,805,425	-	2,711,805,425	-
<b>Equity Securities</b>				
International equities	952,492,471	952,492,471	-	-
U.S. common and preferred stock	2,360,696,629	2,360,696,629	-	-
Total Equity Securities	3,313,189,100	3,313,189,100	-	-
<b>Real estate</b>				
Real estate	12,600,000	-	-	12,600,000
Total Investments by Fair Value Level	\$ 6,037,594,525	\$ 3,313,189,100	\$ 2,711,805,425	\$ 12,600,000
<b>Investments Measured at the Net Asset Value (NAV)</b>				
U.S. TIPS index fund	\$ 309,268,778			
International equity index funds	1,748,689,851			
U.S. equity index fund	1,652,412,024			
Total Investments Measured at NAV	3,710,370,653			
Securities lending collateral	476,470,399			
Total Investments	\$ 10,224,435,577			

## Notes to Financial Statements (continued)

Assets measured at fair value and net asset value at June 30, 2017 are as follows:

Investments by Fair Value Level	6/30/2017	Fair Value Measurements Using		
		Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Short-term investment fund	\$ 108,776,410	\$ -	\$ 108,776,410	\$ -
<b>Debt Securities</b>				
U.S. Treasury notes/bonds	\$ 1,127,901,185	\$ -	\$ 1,127,901,185	\$ -
Government agencies	6,287,681	-	6,287,681	-
Government mortgage-backed	669,924,779	-	669,924,779	-
Foreign bonds	9,237,760	-	9,237,760	-
Municipal bonds	18,197,190	-	18,197,190	-
Corporate bonds	711,801,112	-	711,801,112	-
Asset-backed securities	156,956,304	-	156,956,304	-
Commercial mortgage-backed	71,016,975	-	71,016,975	-
Non government backed collateralized mortgage obligations	22,889,244	-	22,889,244	-
Total Debt Securities	2,794,212,230	-	2,794,212,230	-
<b>Equity Securities</b>				
International equities	896,202,932	896,202,932	-	-
U.S. common and preferred stock	2,163,658,371	2,163,658,371	-	-
Total Equity Securities	3,059,861,303	3,059,861,303	-	-
<b>Real estate</b>				
Real estate	12,100,000	-	-	12,100,000
Total Investments by Fair Value Level	\$ 5,866,173,533	\$ 3,059,861,303	\$ 2,794,212,230	\$ 12,100,000
<b>Investments Measured at the Net Asset Value (NAV)</b>				
U.S. TIPS index fund	\$ 302,179,401			
International equity index funds	1,643,299,407			
U.S. equity index fund	1,549,521,205			
Total Investments Measured at NAV	3,495,000,013			
Securities lending collateral	639,984,979			
Total Investments	\$ 10,001,158,525			

There have been no significant changes in valuation techniques during the fiscal years ended June 30, 2018 and 2017.

Certain investments that do not have a readily determinable fair value are measured at NAV (or its equivalent), such as member units or an ownership interest. NAV per share is provided by the investment manager. The valuation method for investments measured at the NAV per share, or equivalent, is presented in the table below.

Investments Measured at the Net Asset Value	6/30/2018	6/30/2017	Redemption Frequency	Redemption Notice Period
U.S. TIPS index fund (1)	\$ 309,268,778	\$ 302,179,401	Daily	2 days
International equity index funds (2)	1,748,689,851	1,643,299,407	Daily	2 days
U.S. equity index fund (3)	1,652,412,024	1,549,521,205	Daily	1 day
	\$ 3,710,370,653	\$ 3,495,000,013		

<sup>(1)</sup> **U.S. TIPS index fund** – The US Treasury Inflation Protected Securities fund is an index fund that establishes an objective of delivering investment performance approximating the rate of return for outstanding US Treasury inflation protected securities with a maturity of one year

## Notes to Financial Statements (continued)

or greater. The investment is valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

<sup>(2)</sup> **International Equity Index Funds** – The International equity funds consist of index funds that are designed to track various segments of non-US equity markets. Those index funds include the ACWI ex-US Index Fund and the ACWI ex-US Growth Index Fund. The index funds are invested and reinvested in portfolios of non-US developed and emerging markets equity securities, with the objective of approximating the capitalization-weighted return of each respective market segment for publicly traded equity securities. The investment is valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

<sup>(3)</sup> **U.S. Equity Index Fund** – The US equity fund consist of an index fund that is designed to track various segments of US equity markets. That index fund is the Russell 1000 Index Fund. The index fund is invested and reinvested in portfolios of US equity securities, with the objective of approximating the capitalization-weighted return of each respective market segment for publicly traded equity securities. The investment is valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

The System had no unfunded commitments related to investments measured at NAV as of June 30, 2018 and 2017.

### (6) Net Pension Liability, Net HISP Liability and Actuarial Information

#### (a) Net Pension Liability and Net HISP Liability of Participating Agencies

The components of the net pension liability of the employers at June 30 were as follows:

	2018	2017
Total pension liability	\$ 9,555,990,069	\$ 9,454,641,808
Plan fiduciary net position	<u>\$ 9,360,947,061</u>	<u>\$ 8,913,978,627</u>
Employers' net pension liability	<u>\$ 195,043,008</u>	<u>\$ 540,663,181</u>
Plan fiduciary net position as a percentage of the total pension liability	97.96%	94.28%

The components of the net HISP liability of the employers at June 30 were as follows:

	2018	2017
Total HISP liability	\$ 328,143,546	\$ 326,975,262
HISP plan fiduciary net position	<u>\$ 341,084,506</u>	<u>\$ 315,521,246</u>
Employers' net HISP (asset) liability	<u>\$ (12,940,960)</u>	<u>\$ 11,454,016</u>
Plan fiduciary net position as a percentage of the total HISP liability	103.94%	96.50%

#### (b) Actuarial Methods and Assumptions

The total pension liability and total HISP liability, both as of June 30, 2018 and 2017, were determined based on actuarial valuations prepared as of July 1, 2018, using the following actuarial assumptions:

## Notes to Financial Statements (continued)

- Investment return – 7.00% compounded annually net of investment expense and including inflation
- Salary increases – 3.5% to 9.5% per year including inflation
- Mortality rates – active participants and nondisabled pensioners – RP-2014 Mortality Table projected to 2025 by Scale MP-2016 (disabled pensioners set forward 12 years)
- No annual post-retirement benefit increases
- Assumed inflation rate – 2.75%
- Payroll growth – 3.5%
- Actuarial cost method – Entry age
- Select period for the termination of employment assumptions – 10 years

The actuarial assumptions used in the July 1, 2018, valuation are based on the results of the most recent actuarial experience study, which covered the three-year period ending June 30, 2016. The experience study report is dated April 13, 2017.

The long-term expected rate of return on pension plan investments and HISP plan investments was determined using a log-normal distribution analysis in which best estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges 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 and by adding expected inflation. The HISP represents a subsidy that is capped at \$105 per month per retiree.

The target asset allocation and best estimates of geometric real rates of return for each major asset class as of June 30, 2018 and 2017, are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
U.S. Large Cap Equity	38.0%	5.3%
U.S. Small Cap Equity	6.0%	5.6%
U.S. Fixed Income	25.0%	0.7%
International Stock	18.0%	5.6%
Emerging Market Stock	6.0%	6.4%
TIPS	3.5%	0.7%
Rate Anticipation	3.5%	1.5%
<b>Total</b>	<b>100.0%</b>	

### (c) *Discount rate*

The discount rate used to measure the total pension liability and the total HISP liability was 7.00%, net of investment expenses, for 2018 and 2017. The projection of cash flows used to determine the discount rate assumed that contributions from System members and the employers will be made at the current contribution rate as set out in state statute. Based on those assumptions, the pension plan's fiduciary net position and the HISP's fiduciary net position were projected through 2114 to be available to make all projected future benefit payments of current System members. Therefore, the long-term expected rate of return on pension plan and HISP plan investments was applied to all periods of projected benefit payments to determine the total pension liability and total HISP liability. The discount rate determined does not use a municipal bond rate.

### **Sensitivity of the net pension liability and net HISP liability to changes in the discount rate**

The following presents the net pension liability of the employer calculated using the discount rate of 7.00% for 2018 and 2017, as well as what the System's net pension liability (asset) would be if it were

## Notes to Financial Statements (continued)

calculated using a discount rate that is one percentage point lower or one percentage point higher than the current rate:

	June 30, 2018			June 30, 2017		
	1% Decrease	Current	1% Increase	1% Decrease	Current	1% Increase
	(6.00%)	Discount Rate (7.00%)	(8.00%)	(6.00%)	Discount Rate (7.00%)	(8.00%)
Net pension liability (asset)	\$1,251,438,814	\$ 195,043,008	\$ (700,194,263)	\$1,597,952,521	\$ 540,663,181	\$ (354,612,797)

The following presents the net HISP liability of the employer calculated using the discount rate of 7.00% for 2018 and 2017, as well as what the System's net HISP liability (asset) would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current rate:

	June 30, 2018			June 30, 2017		
	1% Decrease	Current	1% Increase	1% Decrease	Current	1% Increase
	(6.00%)	Discount Rate (7.00%)	(8.00%)	(6.00%)	Discount Rate (7.00%)	(8.00%)
Net HISP liability (asset)	\$ 20,603,534	\$ (12,940,960)	\$ (41,793,057)	\$ 45,242,503	\$ 11,454,016	\$ (17,594,704)

Due to the structure of the HISP, healthcare cost trend rate sensitivity analysis is not meaningful.

### (7) Federal Income Tax Status

Pursuant to a determination by the IRS, the System is qualified under the Internal Revenue Code of 1986, as amended and, therefore, is exempt from federal income taxes. The latest determination letter is dated October 28, 2014 and was a favorable determination for the Oklahoma Public Employees Retirement Plan. The System has been amended since receiving the determination letter; however, the System administrator believes that the System is designed and is currently being operated in substantial compliance with the applicable requirements of the Internal Revenue Code and will retain its status as a qualified plan.

### (8) Plan Amendments

During 2018, the State Legislature enacted the following System provisions during the session ended in May 2018:

#### (a) *One-time Stipend Payment*

HB 1340 provides a one-time stipend for members of OPERS who have been retired for five years as of October 1, 2018. The stipend is based on the funding level of the system. OPERS members will receive the lesser of 2% of their gross annual retirement amount or \$1,200. The bill also provides a minimum payment of \$350 for members with 20 years of service. This stipend will be paid in October 2018.

#### (b) *Clarification of Certain System Provisions*

OPERS requested HB 2516 to clarify certain System provisions related to billing employers for sick leave and early retirement for elected officials.

**Billing Employers for Sick Leave** – Prior language only allowed OPERS to bill employers when sick leave rounded an employee up to an additional year of service. Revised language allows OPERS to bill employers for actual months of sick leave after rounding was eliminated for members who

## Notes to Financial Statements (continued)

joined the System on or after November 1, 2012.

**Elected Officials** – Prior language regarding early retirement for elected officials conflicted with the eligibility for normal retirement.

### (c) **Defined Benefit Plan Eligibility for Elected Officials**

SB 527 states that a statewide elected official or legislator who is first elected or appointed on or after November 1, 2018, and who has participating service in the OPERS defined benefit plan prior to November 1, 2015, shall be a member of the defined benefit plan.

## (9) **New Accounting Pronouncements**

The following GASB statements were implemented during the fiscal year:

For the fiscal year ended June 30, 2018, the System assisted employers of the State in their implementation of GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. GASB 75 requires employers to provide additional information regarding OPEB in their financial statements. This statement had no effect on the System.

GASB Statement No. 81, *Irrevocable Split-Interest Agreements* provides additional accounting and financial reporting information for circumstances when a government is a beneficiary or and administrator of such agreements. This statement had no effect on the System.

GASB Statement No. 85, *Omnibus 2017* addresses practice issues identified in the implementation and application of existing GASB Statements. The issues involve certain situations involving blending component units, goodwill, fair value measurement and application, pensions and OPEB. This statement had no effect on the System.

GASB Statement No. 86, *Certain Debt Extinguishment Issues* improves consistency in accounting and financial reporting for in-substance defeasance of debt by providing guidance for transactions in which cash and other monetary assets acquired only with existing resources – resources other than the proceeds of refunding debt – are placed in an irrevocable trust for the sole purpose of extinguishing debt. This statement had no effect on the System.

In addition, the following accounting pronouncements have been issued by the GASB, but not yet adopted:

### Fiscal Year Ended June 30, 2019:

GASB Statement No. 83, *Asset Retirement Obligations*, will require a liability to be recognized if a government is subjected to a law, regulation, court judgment or similar requiring a liability, or funding of a liability. It is unlikely the provisions of the Standard apply to the System.

GASB Statement No. 88, *Certain Disclosures Related to Debt, including Direct Borrowings and Direct Placements* redefines the word 'debt' for disclosure purposes and requires recognition of direct borrowings and direct placements. It is unlikely the provisions of the Standard will have a material effect on the System's current disclosure.

### Fiscal Year Ended June 30, 2020 (and beyond):

GASB Statement No. 84, *Fiduciary Activities*, clarifies fiduciary relationships and reporting. The System is analyzing the effect of this Statement.



## Notes to Financial Statements (continued)

GASB Statement No. 87, *Leases*, changes reporting of nearly all leasing arrangements for lessors and lessees. The System is analyzing the effect of this Statement.

GASB Statement No. 89, *Accounting for Interest Cost before the End of a Construction Period*, removes the GAAP related to capitalization of interest costs. The Standard will likely not apply as the System has not issued in the past, and currently does not issue debt for construction of capital assets.

GASB Statement No. 90, *Majority Equity Interests*, clarifies reporting of when a government has a majority equity position in another entity, which may result in the equity method of reporting or a component unit relationship. The System has analyzed this Statement and determined it not applicable.

## Required Supplementary Information

(Unaudited)

June 30, 2018

### Schedule 1

#### Schedule of Changes in the Net Pension Liability (\$ in Thousands)

Year Ended June 30,	2018	2017	2016	2015	2014
<b>Total Pension Liability</b>					
Service cost	\$ 170,490	\$ 177,082	\$ 178,523	\$ 175,809	\$ 184,835
Interest	640,881	639,266	653,306	635,975	621,990
Benefit changes	8,929	-	-	-	-
Difference between expected and actual experience	(110,269)	(117,283)	(52,745)	(11,228)	(89,172)
Changes of assumptions	-	238,225	233,874	-	15,413
Benefit payments	(592,726)	(573,962)	(565,412)	(542,488)	(520,641)
Refunds of contributions	(15,957)	(15,950)	(15,862)	(15,611)	(14,878)
<b>Net change in total pension liability</b>	<b>101,348</b>	<b>347,378</b>	<b>431,684</b>	<b>242,457</b>	<b>197,547</b>
<b>Total pension liability - beginning</b>	<b>9,454,642</b>	<b>9,427,810</b>	<b>8,996,126</b>	<b>8,753,669</b>	<b>8,556,122</b>
<b>Adoption of GASB 74</b>	<b>-</b>	<b>(320,546)</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total pension liability - ending (a)</b>	<b>\$ 9,555,990</b>	<b>\$ 9,454,642</b>	<b>\$ 9,427,810</b>	<b>\$ 8,996,126</b>	<b>\$ 8,753,669</b>
<b>Plan Fiduciary Net Position</b>					
Contributions - employer	\$ 258,907	\$ 269,511	\$ 296,249	\$ 292,185	\$ 280,047
Contributions - member	66,930	70,276	73,801	73,145	70,524
Net investment income	734,976	1,013,868	15,756	264,289	1,317,980
Benefit payments	(592,726)	(573,962)	(565,412)	(542,488)	(520,641)
Administrative expense	(5,162)	(5,214)	(5,395)	(5,183)	(4,709)
Refunds of contributions	(15,957)	(15,950)	(15,862)	(15,611)	(14,878)
<b>Net change in plan fiduciary net position</b>	<b>446,968</b>	<b>758,529</b>	<b>(200,863)</b>	<b>66,337</b>	<b>1,128,323</b>
<b>Plan fiduciary net position - beginning</b>	<b>8,913,979</b>	<b>8,435,579</b>	<b>8,636,442</b>	<b>8,570,105</b>	<b>7,441,782</b>
<b>Adoption of GASB 74</b>	<b>-</b>	<b>(280,129)</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Plan fiduciary net position - ending (b)</b>	<b>9,360,947</b>	<b>8,913,979</b>	<b>8,435,579</b>	<b>8,636,442</b>	<b>8,570,105</b>
<b>Net pension liability - ending (a) - (b)</b>	<b>\$ 195,043</b>	<b>\$ 540,663</b>	<b>\$ 992,231</b>	<b>\$ 359,684</b>	<b>\$ 183,564</b>

#### Schedule of the Net Pension Liability (\$ in Thousands)

Year Ended June 30,	2018	2017	2016	2015	2014
Total pension liability	\$ 9,555,990	\$ 9,454,642	\$ 9,427,810	\$ 8,996,126	\$ 8,753,669
Plan fiduciary net position	9,360,947	8,913,979	8,435,579	8,636,442	8,570,105
<b>Net pension liability</b>	<b>\$ 195,043</b>	<b>\$ 540,663</b>	<b>\$ 992,231</b>	<b>\$ 359,684</b>	<b>\$ 183,564</b>
Ratio of plan fiduciary net position to total pension liability	97.96%	94.28%	89.48%	96.00%	97.90%
Covered payroll	\$ 1,688,544	\$ 1,790,810	\$ 1,808,973	\$ 1,744,042	\$ 1,695,348
Net pension liability as a % of covered payroll	11.55%	30.19%	54.85%	20.62%	10.83%

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, the information included is for those years for which information is available.

**Required Supplementary Information**  
**Schedule of Pension Employer Contributions (\$ in Thousands)**  
(Unaudited)  
June 30, 2018  
**Schedule 2**

Year Ended June 30,	2018	2017	2016	2015	2014
Actuarially determined employer contribution	\$ 168,494	\$ 176,016	\$ 164,600	\$ 200,784	\$ 258,879
Actual employer contributions	258,907	269,511	296,249	292,185	280,047
Annul contribution deficiency (excess)	\$ (90,413)	\$ (93,495)	\$ (131,649)	\$ (91,401)	\$ (21,168)
Covered payroll*	\$ 1,688,544	\$ 1,790,810	\$ 1,808,973	\$ 1,744,042	\$ 1,695,348
Actual contributions as a percentage of covered payroll*	15.33%	15.05%	16.38%	16.75%	16.52%

\* Covered payroll beginning in 2017 is for the defined benefit plan members only although employer contributions toward the net pension liability are being received on behalf of defined contribution plan members. Note: 2017 was the first year to exclude the health insurance subsidy.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, the information included is for those years for which information is available.

**Notes to Schedule**

Valuation date:

Actuarially determined contributions are calculated as of the beginning of the fiscal year in which contributions are reported

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, closed
Remaining amortization period	9 years
Asset valuation method	5-year moving average
Inflation	2.75% for 2018 and 2017, 3.00% for 2016 and 2015
Salary increase	3.50 to 9.50 percent, including inflation
Investment rate of return	7.00% for 2018 and 2017, 7.25% for 2016 and 7.50% for 2015, compounded annually, net of investment expense and including inflation
Retirement age	Age 65 for all members hired on or after November 1, 2011, age 62 for members hired prior to November 1, 2011
Mortality	For 2018 and 2017, active participants and nondisabled pensioners – RP-2014 Mortality Table projected to 2025 by Scale MP-2016 (disabled pensioners set forward 12 years). For 2016, Active participants and nondisabled pensioners – RP-2000 Mortality Table projected to 2010 by Scale AA (disabled pensioners set forward 15 years)

Other information:

The plan has been amended by House Bill 2630 in 2014 which states that effective November 1, 2015, OPERS shall create a defined contribution plan for most people first employed by a participating employer. Exemptions from the new defined contribution plan include hazardous duty members and district attorneys, assistant district attorneys and employees of the district attorney's office. Each employer shall send to OPERS the difference between the required employer contribution to OPERS and the amount required to match the participating employee's contribution in the defined contribution plan.

Senate Bill 2120, also enacted in 2014, amends House Bill 2630 to further exempt from the new defined contribution plan county elected officials and employees of a county, county hospital, city or town, conservation district, circuit engineering district, and any public or private trust in which a county, city or town participates. Senate Bill 2120 also states that employees who participate in the defined contribution system are excluded from the \$105 health subsidy.

New employees specifically exempted from the defined contribution plan will participate in the existing defined benefit plan.

## Required Supplementary Information

### Schedule of Money-Weighted Rate of Return on Pension Plan Investments

(Unaudited)

June 30, 2018

#### Schedule 3

<b>Annual money-weighted rate of return, net of investment expense</b>	
Year Ended June 30, 2018	8.38%
Year Ended June 30, 2017	12.64%
Year Ended June 30, 2016	0.18%
Year Ended June 30, 2015	3.12%
Year Ended June 30, 2014	17.96%

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, the information included is for those years for which information is available.

## Required Supplementary Information

(Unaudited)

June 30, 2018

### Schedule 4

#### Schedule of Changes in the Net HISP Liability (\$ in Thousands)

Year Ended June 30,	2018	2017
<b>Total HISP Liability</b>		
Service cost	\$ 8,367	\$ 8,550
Interest	22,240	22,563
Difference between expected and actual experience	(10,599)	(16,757)
Changes of assumptions	-	11,073
Benefit payments	(18,840)	(18,999)
<b>Net change in total HISP liability</b>	<b>1,168</b>	<b>6,430</b>
<b>Total HISP liability - beginning</b>	<b>326,975</b>	<b>320,545</b>
<b>Total HISP liability - ending (a)</b>	<b>\$ 328,143</b>	<b>\$ 326,975</b>
<b>Plan Fiduciary Net Position</b>		
Contributions - employer	\$ 19,080	\$ 18,828
Net investment income	25,502	35,747
Benefit payments	(18,840)	(18,999)
Administrative expense	(179)	(184)
<b>Net change in plan fiduciary net position</b>	<b>25,563</b>	<b>35,392</b>
<b>Plan fiduciary net position - beginning</b>	<b>315,521</b>	<b>280,129</b>
<b>Plan fiduciary net position - ending (b)</b>	<b>341,084</b>	<b>315,521</b>
<b>Net HISP (asset) liability - ending (a) - (b)</b>	<b>\$ (12,941)</b>	<b>\$ 11,454</b>

#### Schedule of the Net HISP Liability (\$ in Thousands)

Year Ended June 30,	2018	2017
Total HISP liability	\$ 328,143	\$ 326,975
Plan fiduciary net position	341,084	315,521
Net HISP liability	\$ (12,941)	\$ 11,454
Ratio of plan fiduciary net position to total HISP liability	103.94%	96.50%
Covered payroll*	N/A	N/A
Net HISP liability as a percentage of covered payroll	N/A	N/A

\*Covered Payroll is not meaningful to formulate a ratio of net HISP liability as a percentage of covered payroll. Contributions are only received from employers.

Discount Rate as of June 30, 2018 and 2017 was 7.00%

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, the information included is for those years for which information is available.

**Required Supplementary Information**  
**Schedule of HISP Employer Contributions (\$ in Thousands)**  
 (Unaudited)  
 June 30, 2018  
**Schedule 5**

Year Ended June 30,	2018	2017
Actuarially determined employer contribution	\$ 5,786	\$ 6,087
Actual employer contributions	19,080	18,828
Annual contribution deficiency (excess)	\$ (13,294)	\$ (12,741)
Covered payroll*	N/A	N/A
Actual contributions as a % of covered payroll*	N/A	N/A

\*Covered Payroll is not meaningful to formulate a ratio of net HISP liability as a percentage of covered payroll. Contributions are only received from employers.

**Notes to Schedule**

Valuation date:

Actuarially determined contributions are calculated as of the beginning of the fiscal year in which contributions are reported

Methods and assumptions used to determine contribution rates:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, closed
Remaining amortization period	9 years
Asset valuation method	5-year moving average
Inflation	2.75%
Salary increase	4.50 to 8.40 percent, including inflation
Investment rate of return	7.00%, compounded annually, net of investment expense and including inflation
Retirement age	Age 65 for all members hired on or after November 1, 2011, age 62 for members hired prior to November 1, 2011
Mortality	Active participants and nondisabled pensioners – RP-2014 Mortality Table projected to 2025 by Scale MP-2016 (disabled pensioners set forward 12 years)

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, the information included is for those years for which information is available.

## Required Supplementary Information

### Schedule of Money-Weighted Rate of Return on HISP Investments

(Unaudited)

June 30, 2018

#### Schedule 6

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**Annual money-weighted rate of return, net of investment expense**

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Year Ended June 30, 2018	8.08%
Year Ended June 30, 2017	12.76%

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This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, the information included is for those years for which information is available.

## Supplementary Information

### Schedule of Investment Expenses

Year Ended June 30, 2018 and 2017

#### Schedule 7

	2018	2017
<b>Investment management fees</b>		
Fixed Income Managers:		
BlackRock Financial Management, Inc.	\$ 1,136,263	\$ 1,112,322
Hoisington Investment Management	448,370	414,437
Metropolitan West Asset Management, LLC	909,298	396,933
BlackRock Institutional Trust Company, N.A. - TIPS	32,210	30,106
U.S. Equity Managers:		
Aronson, Johnson, and Ortiz, LP	-	-
Barrow, Hanley, Mewhinney & Strauss, Inc.	1,123,376	1,074,775
BlackRock Institutional Trust Company, N.A.	121,726	142,842
DePrince Race & Zollo, Inc.	770,519	678,136
Mellon Capital Management	125,000	125,000
State Street Global Advisors	164,978	164,864
UBS Global Asset Management	321,620	299,228
Westfield Capital Management	307,739	1,295,414
International Equity Managers:		
Baillie Gifford Overseas Limited	668,439	1,890,828
BlackRock Institutional Trust Company, N.A.	787,118	623,069
Mondrian Investment Partners, Ltd	2,209,644	1,925,160
Total investment management fees	9,126,300	10,173,114
<b>Investment consultant fees</b>		
Verus Investment Advisory Group	246,470	246,655
<b>Investment custodial fees</b>		
Northern Trust Company	38,655	31,188
<b>Other investment related expenses</b>		
	212,670	191,962
Total investment expenses	\$ 9,624,095	\$ 10,642,919



**Supplementary Information**  
**Schedule of Administrative Expenses**  
Year Ended June 30, 2018 and 2017  
**Schedule 8**

	<b>2018</b>	<b>2017</b>
Staff salaries	\$ 3,192,021	\$ 3,093,225
Social Security	236,160	228,692
Retirement	536,864	522,155
Insurance	640,286	608,661
Temporary employees	26,482	82,809
Total personnel services	4,631,813	4,535,542
Actuarial	89,695	136,700
Audit	247,467	262,022
Legal	39,939	57,924
Total professional services	377,101	456,646
Printing	50,958	62,375
Telephone	30,063	26,588
Postage and mailing expenses	117,222	137,509
Travel	43,106	39,069
Total communication	241,349	265,541
Office space	228,540	249,364
Equipment leasing	37,927	51,958
Total rentals	266,467	301,322
Supplies	17,086	22,614
Maintenance	133,850	110,942
Depreciation	176,536	229,609
Other	248,921	239,900
Total miscellaneous	576,393	603,065
Total administrative expenses	6,093,123	6,162,116
Administrative expenses allocated		
Uniform Retirement System for Justices and Judges (URSJJ)	(161,247)	(159,595)
Oklahoma State Employees Deferred Compensation Plan (DCP)	(458,574)	(479,316)
Oklahoma State Employees Deferred Savings Incentive Plan (SIP)	(120,911)	(126,068)
Pathfinder 401(a) Defined Contribution Plan	(11,345)	-
Pathfinder 457 Defined Contribution Plan	(1,059)	-
Total administrative expenses allocated	(753,136)	(764,979)
Net administrative expenses	\$ 5,339,987	\$ 5,397,137

**Note to Schedule of Administrative Expenses**

Administrative overhead expenses, including personnel and other supporting services costs, which are paid for by the Plan, are allocated to three other retirement funds also administered by OPERS. The allocation is based on OPERS' estimate of the cost of service provided by the Plan to the other funds.

**Supplementary Information**  
**Schedule of Professional/Consultant Fees**  
 Year Ended June 30, 2018 and 2017  
**Schedule 9**

		<b>2018</b>	2017
<b>Professional/Consultant</b>	<b>Service</b>		
Cavanaugh Macdonald Consulting, Inc.	Actuarial	\$ 89,695	\$ 136,700
McGladrey LLP / RSM US LLP	External Auditor	-	100,000
Eide Bailly LLP	External Auditor	69,900	-
Arledge & Associates	External Auditor	35,250	15,000
Finley & Cook, PLLC	Internal Auditor	142,317	147,022
Ice Miller LLP	Legal	39,939	10,583
Phillips Murrah, P.C.	Legal	-	47,291
Michael Mitchelson	Hearings Examiner	-	50
<b>Total professional/consultant fees</b>		<b>\$ 377,101</b>	<b>\$ 456,646</b>

# INVESTMENT

## **QUALITY IN SERVICE DELIVERY**

We approach our work with consistency, efficiency, and sustainability to provide the highest quality service possible to our members. We embrace opportunities to change and improve ourselves and our services by being agile and adaptable.

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## Investment Consultant's Report

### Investment Objectives

The primary financial objective for Oklahoma Public Employees' Retirement System (OPERS) is to earn a long-term return sufficient to avoid deterioration in funded status. The System's actuary estimates this return requirement to be 7.00% while its investment consultant estimates the return requirement to be 6.35% for the fiscal year ended June 30, 2018. It is important to note that Verus uses a 10-year investment horizon whereas actuarial consultants use a much longer time horizon in developing forecasts, typically 30 years.

The secondary goals for OPERS are to outperform the asset allocation-weighted benchmark and to rank in the top fortieth percent of a universe of large public pension funds.

### Asset Allocation

The System's Investment Philosophy stresses the following key points:

1. Asset allocation is the key determinant of return. Therefore, commitments to asset allocation targets are maintained through a disciplined rebalancing program.
2. Diversification, both by and within asset classes, is the primary tool for risk control.
3. Passive instruments (index funds) are suitable strategies in highly efficient markets.

ASSET CLASS	6/30/18 ALLOCATION	LOW	TARGET	HIGH	% PASSIVE OR SEMI-PASSIVE
U.S. EQUITY	42.0%	34.4%	40.0%	45.6%	68.3%
FIXED INCOME	29.8%	27.5%	32.0%	36.5%	59.4%
INT'L EQUITY	27.8%	25.0%	28.0%	31.0%	64.9%
REAL ESTATE	0.1%	0.0%	0.0%	0.2%	0.0%
CASH	0.2%	0.0%	0.0%	0.0%	0.0%

## Review of Fiscal Year 2018 Investment Environment

Important events during fiscal year 2018 included significant U.S. corporate tax reform, the beginnings of an unwind of quantitative easing, and the potential for meaningful changes to U.S. trade policy. Gains in equities were impacted by historically strong earnings growth, driven by both net margin expansion due to corporate tax cuts and top-line revenue growth. U.S. equities posted strong returns over the 12-month period ending in June even after experiencing a 10% drawdown and corresponding spike in volatility in February. International equities underperformed domestic equities, particularly after the sell-off in February. Compared to the second half of 2017, a stronger U.S. dollar, more moderate economic and earnings growth, and uncertainty surrounding U.S. trade policy weighed on both international developed and emerging market equities in the first half of 2018. The European Central Bank signaled it will cut asset purchases to zero by year-end, but also communicated it plans on keeping interest rates unchanged until the latter half of 2019. Short-term Treasury yields rose steadily over the fiscal year and outpaced increases in long-term yields, resulting in a flattening of the yield curve. At the end of the period, the spread between the 10- and 2-year Treasury yields was 33 basis points. The Fed tightened monetary policy further with two rate hikes in March and June of 2018 along with the balance sheet unwind continuing as planned. Fed policy makers indicated the central bank will raise interest rates two more times this year.

The S&P 500 Index returned 14.4% over the period. Equity market appreciation continued to be fueled by growth and momentum factors based mainly in large technology companies, including Apple, Amazon, and Alphabet – the S&P 500 technology sector returned 31.3% over the year. The MSCI EAFE USD and MSCI Emerging Markets USD Indexes returned 6.8% (6.6% local currency) and 8.2% (10.9% local currency), respectively. USD strength during the first half of 2018 and concerns over potential changes to U.S. trade policy weighed on non-U.S. market returns. The BBgBarc U.S. Treasury Index returned -0.6% over the fiscal year as price declines more than offset income returns. Global ex U.S. sovereign yields remained relatively low and the spread between U.S. interest rates and the rest of the developed world widened.

## Portfolio Review

The Board adopted a new asset allocation in fiscal year 2017, pursuant to an asset/liability study. In fiscal year 2018, the Board maintained the strategic asset allocation that was created in the prior year.

## Performance Review

At quarterly intervals, the System reviews performance at the total fund, asset class and individual manager levels. At each level, returns are evaluated versus appropriate indexes and peers. Index comparisons have as return objectives various after-fee return premiums with risk (standard deviation) not exceeding 125%-150% of the underlying index. OPERS targets returns within the top fortieth percentile of peer comparisons over longer time periods.

Investment returns achieved through June 30, 2018 have been calculated using a time-weighted rate of return methodology based upon market values. As shown in the following table, for the 1, 3 and 5-year annualized time periods ended June 30, 2018; the U.S. Equity asset class performed above the benchmark for the 1-year period, below its respective blended benchmark

for the 3-year period and in line with the benchmark for the 5-year period. The Non-U.S. Equity asset class performed below the benchmark for the 1-year period and above its respective benchmark for the 3-year and 5-year annualized time periods. The Fixed Income asset class performed above the benchmark for the 1-year, 3-year, and 5-year annualized time periods ended June 30, 2018.

The Domestic Equity asset class was ranked in the second quartile for the 1-year, 3-year, and 5-year annualized time periods. The Non-U.S. Equity asset class was ranked in the third quartile of its universe for the 1, 3, and 5-year time periods. The Fixed Income asset class ranked in the second quartile of its universe for the 1-year period and in the third quartile of its peer group for the 3-year and 5-year annualized time periods ended June 30, 2018. OPERS' fixed income asset class structure is more conservative than many of its large plan peers.

The total OPERS Plan performed below its Policy Benchmark for the 3-year period and above the Policy Benchmark for the 1 and 5-year periods ending June 30, 2018. The total OPERS Plan ranked in line with its peers for 1 and 3-year time periods ended June 30, 2018 and ranked in the second quartile for the 5-year time period compared to the peer universe of Public Funds greater than \$1 Billion, with percentile rankings of 51%, 50%, and 39% respectively.

	ONE YEAR	THREE YEARS	FIVE YEARS
<b>PERIODS ENDED 6/30/18</b>			
<b>Domestic Equity</b>	15.5%	11.3%	13.3%
<i>85% Russell 1000 / 15% Russell 2000</i>	15.0%	11.6%	13.3%
Rank*	33	48	35
<b>Non-U.S. Equity</b>	7.3%	5.7%	6.6%
<i>MSCI ACWI ex-U.S.</i>	7.8%	5.6%	6.5%
Rank*	53	52	61
<b>Fixed Income</b>	0.3%	2.2%	2.8%
<i>78% BC Agg./11% Citi 20+ Year Tsy./11% BC U.S. TIPS</i>	-0.1%	2.0%	2.5%
Rank*	48	64	59
<b>Total Fund</b>	8.4%	7.0%	8.3%
<i>Policy Benchmark**</i>	8.1%	7.1%	8.2%
<i>Public Fund &gt; \$1 Billion Median*</i>	8.4%	7.0%	8.2%
Rank*	51	50	39

\* Ranking 1 is best, 100 is worst. Rankings source is InvestorForce.

\*\* Policy Benchmark is:

40% Custom Domestic Equity Benchmark (85% Russell 1000/ 15% Russell 2000)/

32% Custom Fixed Income Benchmark (78% BB U.S. Aggregate/ 11% Citi 20-Year+ Treasury/ 11% BC U.S. TIPS)/

28% MSCI ACWI ex-U.S. Index

In summary, Verus believes that OPERS is managed in a prudent and cost effective manner. The sound and disciplined policies implemented by OPERS are evidenced by its competitive performance compared to relevant benchmarks and its above median total Plan peer ranking over longer time periods.

Yours truly,



Margaret S. Jadallah  
Managing Director

# Chief Investment Officer's Report

## Oklahoma Public Employees Retirement System

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Oklahoma City, Oklahoma 73152-3077

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405.848.5946 fax

Dear Members:

The Fund's total return for fiscal year 2018 was comfortably ahead of the 7% long-term return target. The equity market in the U.S. again posted strong gains for the fiscal year, reaching new all-time highs during the period. Non-U.S. equity markets registered more modest returns in U.S. dollar terms for the period compared to last fiscal year. The fixed income markets lagged, but the fund managers produced an overall positive nominal return for the asset class. We endeavor to build a durable portfolio that will weather tumultuous market conditions. Maintaining diversification among asset classes and geographical regions is a critical component of that effort. We also de-emphasize active management in the portfolio, as demonstrated by our large holdings of index-related funds. This year's letter, which covers the 2018 fiscal year, will follow the same format as in years past. First, I will discuss the general economic environment and the performance of various markets throughout the fiscal year. Next, I will focus on the Fund by reviewing the investment performance and the asset allocation. Then, I will offer an investment outlook and discuss recent events at the Fund. Finally, I will review the Fund's investment philosophy and guiding principles, because both are critically important to the investment decision-making process.

### Economic Environment

GDP growth, the primary gauge for economic activity in the U.S., entered the tenth year of expansion since the Great Recession ended in 2009. U.S. GDP posted an annual growth rate of 4.1% in the second quarter. While this was the fastest growth rate since 2014, it was just below the consensus expectations of economists. GDP growth was up from an annual rate of 2.2% in the first quarter of 2018 (revised up from 2.0%). Spending by consumers on new cars, healthcare, housing and utilities, and food services drove economic growth. Consumer spending continued to be supported by an even tighter labor market, rising wealth from stock market gains, and favorable consumer sentiment. Business investment rose at a 7.3% annual rate, as spending on structures rose over 13% and spending on equipment and intellectual property remained strong. Housing remained a weak spot in the economy; residential investment contracted for the fourth time in the last five quarters. Economists expect the robust growth to slow in the coming year as the effects from the corporate tax cuts wane, and companies potentially reduce spending based on the expectation of higher tariffs. The U.S. dollar strengthened modestly relative to the rest of the developed world's currencies. Note that a stronger dollar makes U.S. exports more expensive in other countries. Jerome Powell became the new Chair of the Federal Reserve in February. The Federal Reserve raised the Fed Funds rate three times during the fiscal year, and signaled more increases to come as economic activity approached a "normal" level that allows the Fed to play a less active role in stimulating the economy.

Economic activity in the European Union slowed on a year-over-year and quarter-over-quarter basis during the fiscal year. GDP growth for the Eurozone was 0.4% for the second quarter of 2018. Eurozone GDP growth suffered on the potential for a global trade war and reduced exports. Germany was a particular bright spot, as consumer and government spending showed strong gains. The European Central Bank continued its stimulative measures, holding short-term rates at 0% and continuing to implement quantitative easing to lower long-term interest rates. However, The ECB announced its intention to end the quantitative easing program by the end of 2018. The United Kingdom showed weaker economic activity on Brexit uncertainty and a spike in inflation. Outside of Europe, economic activity was steady, but generally below expectations. Japan's GDP contracted at a 0.6% annual pace for the first quarter on a slowdown in factory output and



## Chief Investment Officer’s Report (continued)

exports, ending eight straight quarters of economic growth. In China, GDP growth was 6.7% annualized for the second quarter, which was just above the official target for GDP growth of 6.5%. The government is on a campaign to deleverage the economy and reign-in local government debt, which has resulted in a slowdown of growth in infrastructure spending and tighter monetary policy. Concerns exist of economic headwinds created by a potential trade war with the U.S. continue to build.

### U.S. and Global Stock Markets

The U.S. stock market, as measured by the Russell 3000 Index, continued to perform surprisingly well during the fiscal year. The Russell 3000 Index is one of the broadest equity indices available and a good proxy for the U.S. equity market as a whole. Surging profitability by companies in the U.S. and corporate tax cuts supported the equity market index returns for the period.

#### Change in the Russell 3000 Index during the fiscal year ended June 30, 2018

Value at 6/30/17 7,339.0  
Value at 6/30/18 8,423.6



Source: FTSE Russell

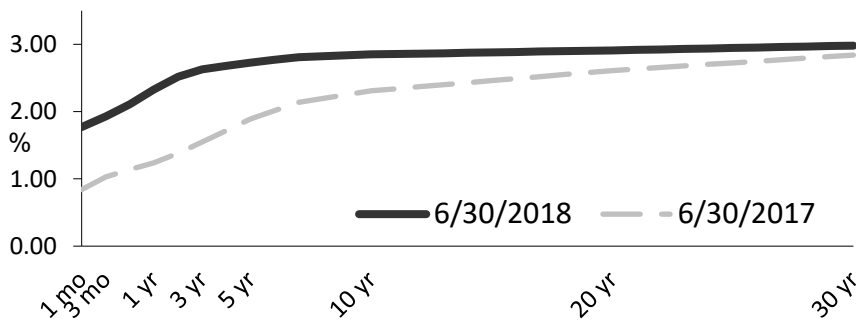
The Russell 3000 ended the one-year period through June 30, 2018 up 14.8%. Equity markets hit all-time highs during the period. The stock markets’ strong returns were buoyed by several factors. Corporate profitability growth remained strong. Inflation has ticked up somewhat but remains low and the Federal Reserve seems to have adequately set market expectations for future potential interest rate moves. Leading the U.S. equity market were the stocks within the technology sector, as companies like Apple, Amazon, and Alphabet (Google) drove the tech sector up over 31% for the fiscal year. Small capitalization stocks outperformed large capitalization stocks by almost 3% over the period. The market again rewarded risk-taking during the period. Shares in the most economically sensitive sectors of the economy performed the best for the period. The rest of the developed world registered more modest equity market gains on a U.S. dollar basis. The MSCI All Country World Index ex-U.S. (ACWI ex-U.S. Index), which includes developed and emerging markets, gained 7.3% in U.S. dollar terms for the fiscal year. The U.S. dollar strengthened modestly relative to many other foreign currencies, which detracted from gains experienced by U.S. dollar investors in foreign markets. Emerging market returns in U.S. dollar terms were comparable to non-U.S. developed market returns.

## Chief Investment Officer’s Report (continued)

### Interest Rates

The chart on the next page depicts the U.S. Treasury term structure of interest rates. The yield curve is a graphical representation of yield levels across the spectrum of bond maturities. As shown, interest rate yield levels rose across the curve over the period. The Federal Reserve continued on the path towards interest rate normalization and raised the Federal Funds Rate target by a quarter of a percentage point three times during the fiscal year. The Fed Funds Rate stood at a range of 1.75%- 2.0% at the end of the fiscal year. The yield curve flattened over the period, and concerns arose that an inversion of the yield curve (short-term rates are greater than long-term rates) could foreshadow an economic slowdown in the U.S. Jerome Powell succeeded Janet Yellen as Fed Chair in February 2018. Chairman Powell signaled continued Fed actions to normalize the Fed Funds rate, noting that the U.S. economy has been rising “at a solid rate.” Unemployment remained low (4.0% for June) and inflation ticked up to 2.1%. Wage growth, however, remained stagnant. Outside of the U.S., yields continued to be low, and even negative in Japan, as central banks continued policies designed to stimulate economic growth. The European Central Bank recently announced plans to curtail its quantitative easing program. However, recent trade tensions with the U.S. have Central Bank officials concerned.

**U.S. Treasury Yield Curve**



Source: U.S. Treasury

## Chief Investment Officer's Report (continued)

### Investment Returns Through June 30, 2018

U.S. Equity	Style	1 Year	3 Years	5 Years
Russell 3000	Broad U.S. Equity	14.78%	11.58%	13.29%
S&P 500	Large Cap Equity	14.37%	11.93%	13.42%
Russell 1000	Large Cap Equity	14.54%	11.64%	13.37%
Russell 1000 Growth	Large Cap Growth	22.51%	14.98%	16.36%
Russell 1000 Value	Large Cap Value	6.77%	8.26%	10.34%
Russell 2000	Small Cap Equity	17.57%	10.96%	12.46%
Russell 2000 Growth	Small Cap Growth	21.86%	10.60%	13.65%
Russell 2000 Value	Small Cap Value	13.10%	11.22%	1.18%
<b>Oklahoma Public Employees Retirement System</b>	<b>Broad U.S. Equity</b>	<b>15.54%</b>	<b>11.34%</b>	<b>13.33%</b>

U.S. Fixed Income	Style	1 Year	3 Years	5 Years
ML 3-Month T-Bill	Cash	1.29%	0.62%	0.38%
Barclays U.S. Aggregate	Core Bonds	-0.40%	1.72%	2.27%
Citigroup 20-year Treasury Average	Long Term Bonds	0.08%	3.67%	4.84%
Barclays Corporate High Yield	High Yield Bonds	0.40%	5.53%	5.51%
<b>Oklahoma Public Employees Retirement System</b>	<b>Domestic Fixed Income</b>	<b>0.26%</b>	<b>2.19%</b>	<b>2.84%</b>

International Equity	Style	1 Year	3 Years	5 Years
MSCI ACWI Ex-US	Broad Non-US Equity	7.28%	5.07%	5.99%
MSCI EAFE	Developed Non-US Equity	6.84%	4.90%	6.44%
MSCI Emerging Market	Emerging Non-US Equity	8.20%	5.60%	5.01%
<b>Oklahoma Public Employees Retirement System</b>	<b>Non-U.S. Equity</b>	<b>7.31%</b>	<b>5.67%</b>	<b>6.59%</b>

Oklahoma Public Employees Retirement System	Total Fund	8.39%	7.02%	8.35%
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Source: Various index providers, including FTSE Russell, S&P, Barclays, Citigroup, and MSCI. OPERS returns were calculated using the BAI iterative method (as such returns are time-weighted) and are gross of investment fees.

### Investment Performance

#### **Bull market continued**

The Fund produced a total return of 8.39% for the period gross of fees (8.26% net of fees) and out-performed the policy benchmark portfolio by 26 basis points for the period. The results from active management this year were mixed. The U.S. equity and fixed income portfolios benefited from their respective active management exposures, however, active results in the non-U.S. equity portion of the portfolio disappointed.

The Fund benefited from robust absolute returns from the U.S. market exposures, and good returns from the non-U.S. equity exposure. These two equity segments of the portfolio returned in excess of 12% for the period, and were the primary drivers of the Fund's overall favorable results. The fixed income asset class produced a small nominal gain that did not contribute meaningfully to overall returns.

#### **U.S. Equity**

The Fund used a mix of passive and active investment management within the domestic equity portfolio structure, with a high proportion of U.S. equity assets managed in a passive style. Active U.S. equity management though did enhance the Fund's overall performance for the fiscal year. The advisors added value to the Fund in the large cap, small cap, growth and

## Chief Investment Officer’s Report (continued)

value areas of the market. For the period, the small cap managers performed the best from a nominal return perspective. There was also very good contribution to returns from the large cap managers as well. The most success from active management on the large cap portion of the portfolio was associated with the value style, and on the small cap portion the success was had in both the value and growth styles. A modest overweight to small cap stocks in combination with value-added from active management resulted in enhanced returns compared to the U.S. equity benchmark.

### Fixed Income

The Fund’s bond portfolio did not contribute meaningfully to overall results for the fiscal year. As investors sought out the riskier areas of the markets (particularly equities) for enhanced return opportunities, the less risky parts of the markets sold off, including the bond market. Yields increased along the bond maturity curve, which depressed the nominal total returns of the asset class. The Fund’s inflation-sensitive portion of the fixed income portfolio produced the greatest nominal returns for the period, as inflation rose from a low level. The two advisors who focus on the broader bond market both outperformed the benchmark. Bonds are maintained in the portfolio for their diversified return pattern when compared with exposure to the equity markets. This fiscal year was once again a challenging performance year for bonds.

### Non-U.S. Equity

The non-U.S. equity portfolio contributed positively to the total return of the fund, having gained over 7% in U.S. dollar terms for the period. Much like the U.S. Equity portfolio, a high proportion of these Fund assets are managed in a passive style. Within this segment of the asset allocation, two active managers are used. One of the active managers emphasizes the value area of the international market, and the other manager emphasizes the growth area. Nominal returns were solid for both active managers, but the benchmark-relative results for both advisors disappointed. The manager who focuses on the international value area of the global equity markets had lower nominal returns and under-performed its benchmark. The advisor who emphasizes the growth style had higher nominal returns but also under-performed its benchmark. As such, the non-U.S. equity portion of the Fund underperformed its benchmark.

### Asset Allocation

#### Diversification Reduces Volatility

Diversification is the most effective defense against the risks associated with any one individual security or asset class. Risks are controlled by allocating the Fund’s assets across various asset classes and sectors within asset classes. There were no changes to the asset allocation during the fiscal year.

Asset Class	Min	6/30/2018	Target	Max
Cash and Real Estate	0.0%	0.3%	0.0%	0.0%
Domestic Fixed Income	27.5%	29.8%	32.0%	36.5%
U.S. Equity	34.4%	42.0%	40.0%	45.6%
Non-U.S. Equity	25.0%	27.8%	28.0%	31.0%
<b>Total Fund</b>		<b>100%</b>	<b>100%</b>	

### Outlook and Recent Events

#### Outlook

If you’ve read this report in previous years, you know that I begin this section on a cautionary note regarding the accuracy of forecasted market returns. Correctly and consistently forecasting the market’s behavior is impossible, and taking any forecast as fact is sheer folly. We build the Fund according to the tenets set forth in our Investment Policy while making diversification, with respect to different asset classes and within each asset class, a priority. We endeavor to structure the Fund so it may benefit from strong returns in relatively riskier asset classes, but are ever mindful to maintain a level of diversification to dampen the return volatility that can result.

## Chief Investment Officer's Report (continued)

The current global economic environment continues to be driven by economic activity in the U.S. and improvement in the European economies. We are seeing signs that the accommodative policies that many global central banks have implemented are bearing fruit. The Federal Reserve has moved away from actions designed to suppress interest rates by raising short-term rates. Geopolitical risk, especially as the U.K. moves to extricate itself from the European Union, will undoubtedly influence investor risk-taking appetite. More recently, trade tensions have the potential to add to economic uncertainty.

Our largest concern continues to be the prospect of generating and maintaining investment results that match or exceed the actuarial assumed rate of return of 7.00%. This will continue to be a challenging task going forward. Interest rates still remain low, which pressures the long-term return generating capacity of a diversified portfolio. Additionally, with the stock market hitting record levels, equity market valuation levels appear stretched, which reduces prospective returns in the equity markets.

### Fixed Income

**Over a long period of time**, the total return of the bond market **tends** to resemble the yield of years past. Over short periods, interest rate movements may have a profound impact on the capital gains (or losses) experienced by bond investors. The more quickly interest rates rise, the more pressure is exerted on the total return of the fixed income portfolio. Our medium-term expectation for the total return of the broad U.S. fixed income market going forward would more closely reflect current yields, which are around 2%-2.5%. But we could experience another year of poor returns if rates rise more quickly, with the decline in bond value offsetting the yield earned over the period.

### Equity

Equity markets are particularly difficult to predict with any type of precision. Over short periods of time, market sentiment and technical factors (buying and selling) have an overwhelming impact on returns experienced by investors. **Over a long period of time**, the real return from the equity markets can be attributable to three main sources: dividends on stocks, the growth rate of corporate earnings, and changes in the valuation ratios. Generally, the growth rate of earnings depends on the economic environment. The U.S. economy continues to exhibit relatively stable growth. Consumer spending, the biggest driver of the U.S. economy, remains stable as the outlook for employment is satisfactory but wage growth is stagnant. Market sentiment has been buttressed by strong corporate earnings and tax cuts. This year we have a renewed focus on Geopolitical risks, specifically in the form of trade tensions between the U.S. and rest of the world. Should these tensions escalate into full blown trade wars, economic activity will be negatively impacted. Market valuations are stretched, and unbridled optimism is a fuel that can quickly evaporate.

### Recent Events

There were no changes to the Fund structure or the managers within the Fund during the year.

### Investment Philosophy and Guiding Principles

The investment philosophy and the principles that guide the stewardship of the Fund have remained consistent and are listed below. A pension fund has the longest of investment horizons and, therefore, rightly focuses on factors impacting long-term results:

- Asset allocation is the key factor determining long-term results.
- Disciplined rebalancing toward the desired asset allocation maintains diversification and controls risk.
- Diversification within and across asset classes is the most effective tool for controlling risk.
- Passive investment management is commonly the most effective approach in efficient markets; active investment management can succeed in less efficient markets.

## Chief Investment Officer's Report (continued)

For a complete discussion of the investment portfolio and policies thereof, please see the Statement of Investment Policy. A copy of the policy is posted on the OPERS website, [www.OPERS.OK.gov/Investment](http://www.OPERS.OK.gov/Investment). If you have any questions about this report or the management of the Fund's investments, please contact me. Thank you.

Regards,

A handwritten signature in black ink, appearing to read "BTmg", is positioned above the typed name.

Brad Tillberg, CFA  
Chief Investment Officer

## Largest Holdings

The Plan's ten largest fixed income and stock holdings at June 30, 2018, are described in the following schedules. The Plan invests in various index and commingled funds which are separately presented.

### Ten Largest Fixed Income Holdings (By Fair Value):

Security	Par	Fair Value
U.S. Treasury Notes 2.625% due 6-30-2023	106,915,000	\$106,392,934
U.S. Treasury Bonds 2.5% due 2-15-2046	102,200,000	92,918,196
U.S. Treasury Notes 2.75% due 4-30-2023	75,745,000	75,819,003
U.S. Treasury Bonds 3.125% due 5-15-2048	73,275,000	75,310,067
U.S. Treasury Bonds 2.5% due 5-15-2046	80,560,000	73,202,616
U.S. Treasury Bonds 3.0% due 11-15-2045	64,000,000	64,225,024
U.S. Treasury Notes 2.625% due 3-31-2025	58,300,000	57,635,030
U.S. Treasury Notes 2.375% due 4-15-2021	50,780,000	50,454,703
U.S. Treasury Notes 2.875% due 5-15-2028	38,935,000	39,012,559
U.S. Treasury Bonds Strip Prin Pmt due 11-15-2045	38,020,000	37,714,053

### Ten Largest Stock Holdings (By Fair Value):

Security	Shares	Fair Value
Apple, Inc. Common Stock	300,850	\$55,690,344
Alphabet Inc. Common Stock	44,392	49,808,772
Amazon.com, Inc. Common Stock	26,185	44,509,263
Facebook, Inc. Class A Common Stock	213,766	41,539,009
Microsoft Corporation Common Stock	408,949	40,326,461
Johnson & Johnson Common Stock	268,109	32,532,346
JP Morgan Chase & Co. Common Stock	265,660	27,681,772
Bank of America Corporation Common Stock	945,394	26,650,657
Pfizer, Inc. Common Stock	623,654	22,626,167
Verizon Communications Common Stock	440,285	22,150,738

### Investments in Funds (By Fair Value):

Fund	Units	Fair Value
BlackRock Russell 1000 Index Fund	7,987,155	\$1,652,412,024
BlackRock ACWI ex-U.S. Index Fund	51,639,028	1,429,515,094
BlackRock ACWI ex-U.S. Growth Index Fund	18,490,222	319,174,756
BlackRock U.S. TIPS Index Fund	14,017,656	309,268,778

A complete list of portfolio holdings is available upon request from the OPERS Investment Accounting and Financial Reporting Department.

## Investment Portfolio by Type and Manager

At June 30, 2018, the investment portfolio of OPERS was allocated by type and style as follows:

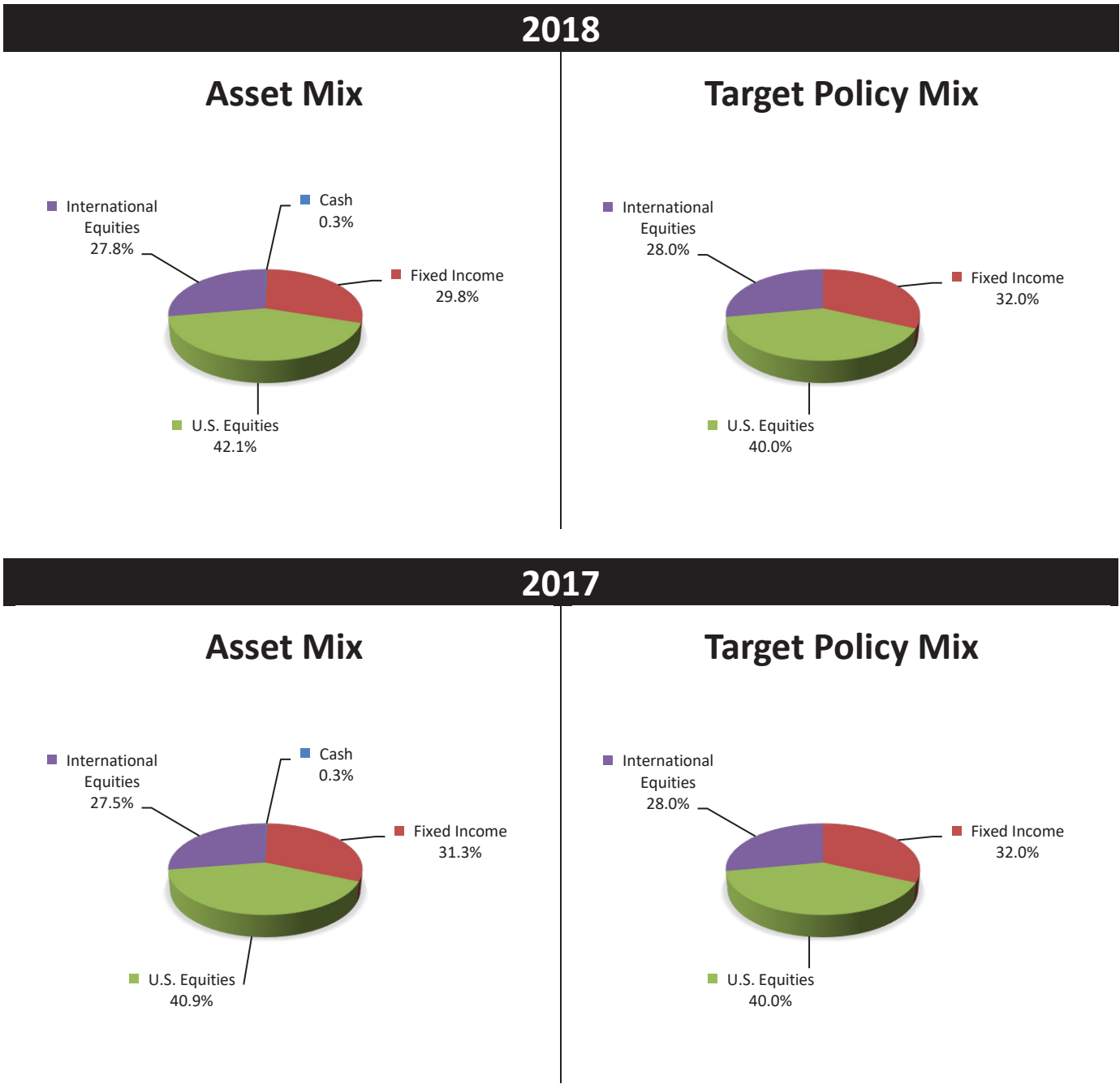
Investment Type and Manager	Style	Fair Value*	Percent of Total Fair Value
		(000's)	
Fixed Income:			
Blackrock Financial Management, Inc.	Constrained Core	\$ 1,507,626	15.1%
Hoisington Investment Management	Interest Rate Anticipation	318,230	3.2%
BlackRock Institutional Trust Company	Index Fund – U.S. TIPS	309,274	3.1%
Metropolitan West Asset Management	Core Plus	1,036,702	10.4%
Total Fixed Income		3,171,832	31.8%
U.S. Equities:			
BlackRock Institutional Trust Company	Index Fund – Russell 1000	1,652,412	16.5%
Mellon Capital Management	Large cap – Enhanced Index	554,060	5.6%
State Street Global Advisors	Large cap – Enhanced Index	572,694	5.8%
Westfield Capital Management	Large cap – Growth	324,672	3.3%
Aronson + Johnson + Ortiz	Large cap – Value	297,644	3.0%
UBS Global Asset Management	Small cap – Growth	224,700	2.3%
Barrow, Hanley, Mewhinney & Strauss, Inc.	Small cap – Value	224,467	2.3%
DePrince, Race & Zollo, Inc.	Small cap – Value	222,917	2.2%
Total U.S. Equities		4,073,566	41.0%
International Equities:			
Baillie Gifford Overseas Ltd.	International Growth	350,623	3.5%
Mondrian Investment Partners, Ltd.	International Value	592,244	5.9%
BlackRock Institutional Trust Company	Index Fund – ACWI ex-U.S. Growth	319,176	3.2%
BlackRock Institutional Trust Company	Index Fund – ACWI ex-U.S.	1,429,518	14.4%
Total International Equities		2,691,561	27.0%
Short-term Investment Funds	Operating Cash	17,872	0.2%
Total Managed Investments		9,954,831	100.0%
Real Estate		12,600	
Securities Lending Collateral		476,470	
Cash Equivalents on Deposit with State		3,550	
Total Investments and Cash Equivalents		\$ 10,447,451	
Statement of Fiduciary Net Position			
Cash Equivalents		223,015	
Investments		10,224,436	
Total Investments and Cash Equivalents		\$ 10,447,451	

\* Manager fair values include their respective cash and cash equivalents.



## Asset Comparison

A comparison of the actual investment distribution at June 30, 2018 and 2017, based on the net investment manager holdings, including accrued income, payables and receivables, compared to the target allocation for each year is as follows:



## Schedule of Stock Brokerage Commissions Paid

Year Ended June 30, 2018

Brokerage Firm	Shares Traded	Dollar Volume of Trades	Commission	
			Dollar Amount	Per Share
National Financial Services	8,223,768	\$ 328,237,582	\$ 93,310	0.011
Merrill Lynch	10,308,143	307,739,717	91,268	0.009
Citigroup	10,291,864	267,934,636	69,222	0.007
Instinet	5,916,721	243,337,232	65,304	0.011
Northern Trust Co.	5,646,028	221,434,929	177,425	0.031
J.P. Morgan	9,667,471	182,108,405	52,645	0.005
Credit Suisse	2,986,749	166,214,472	45,172	0.015
Sanford C. Bernstein and Co.	6,362,624	163,593,765	57,945	0.009
Liquidnet, Inc.	2,545,923	155,740,419	41,356	0.016
UBS	7,415,296	123,460,796	33,887	0.005
Barclays Capital	1,401,277	107,576,249	23,604	0.017
Morgan Stanley	3,804,052	87,237,808	39,579	0.010
Deutsche Bank	1,449,333	79,513,416	13,067	0.009
ITG, Inc.	1,145,153	78,542,296	11,880	0.010
Goldman Sachs	1,914,800	65,307,524	30,223	0.016
Rosenblatt	1,358,677	64,230,038	11,651	0.009
JonesTrading	2,510,014	59,417,923	92,109	0.037
Keybank Capital Markets	1,676,666	52,342,204	65,904	0.039
Stifel Nicolaus	1,527,340	44,675,494	59,816	0.039
Broadcourt Capital	1,608,245	44,301,435	35,350	0.022
Other	33,319,530	588,278,637	363,624	0.011
<b>Total</b>	<b>121,079,674</b>	<b>\$ 3,431,224,979</b>	<b>\$ 1,474,343</b>	<b>0.012</b>

# ACTUARIAL

## COLLABORATION AND COMMUNITY

We pride ourselves on being a community, working as one team with one purpose, and fostering an atmosphere of cooperation. We are committed to hiring people who have a passion for the work we do and the people we serve.

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November 12, 2018

Board of Trustees  
Oklahoma Public Employees Retirement System  
5400 N Grand Boulevard, Suite 400  
P.O. Box 53007  
Oklahoma City, OK 73112-5625

Members of the Board:

In this report are submitted the results of the annual valuation of the assets and liabilities of the State of Oklahoma Public Employees Retirement System (OPERS), prepared as of July 1, 2018.

The purpose of this report is to provide a summary of the funded status of the System as of July 1, 2018 and to provide the actuarially determined rate. While not verifying the data at the source, the actuary performed tests for consistency and reasonability. There have been no changes to the actuarial assumptions or methods since the last valuation.

The promised benefits of the System are included in the actuarially calculated contribution rates which are developed using the Entry Age Normal cost method. A five-year market related value of assets is used for actuarial valuation purposes. Gains and losses are reflected in the unfunded actuarial accrued liability (UAAL) that is being amortized by regular annual contributions as a level percentage of payroll, on the assumption that payroll will increase by 3.50% annually.

As in the last valuation, liabilities have been calculated without considering future cost of living adjustments (COLAs) in keeping with House Bill 2132 (2011). In addition, House Bill 2630 (2014) closes the plan to most new employees hired after November 1, 2015.

House Bill 1340 (2018) provides a stipend for members of each system who have been retired for five years as of October 1, 2018. The stipend amount is based on the funding level of the system and will be funded by the system. OPERS members will receive the lesser of 2% of the gross annual retirement amount or \$1,200. The bill also provides a minimum payment of \$350 for members with 20 years of service. The effective date of the stipend is October 1, 2018.

Should funding of future COLAs and/or stipends be provided by the System, the COLAs and/or stipends should be included in the actuarial valuation.

The actuary prepared the following supporting schedules for the Comprehensive Annual Financial Report:

*Actuarial Section*

Summary of Results  
Analysis of Financial Experience  
Solvency Test  
Summary of Membership Data

This is to certify that the independent consulting actuaries are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

Future actuarial results may differ significantly from the current results presented in this report due to factors such as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Because the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

We have also reviewed the supplemental medical benefits provided by the System under Section 401(h) of the Internal Revenue Code and have determined that these benefits are subordinate to the retirement benefits as required.

In our opinion, in order for the System to meet all the benefit obligations of the plan for current active and retired members, contributions equal to at least the actuarially determined rate are necessary for future fiscal years. Assuming these contributions are made to the System, from year to year in the future at the rates recommended on the basis of the successive actuarial valuations, the continued sufficiency of the retirement fund to provide the benefits called for under the System may be safely anticipated. Because the statutory contribution exceeds the actuarially determined rate in this valuation, we recommend the statutory contribution be used to pay the UAAL down faster than under the current schedule and to protect against future investment and experience losses.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,



Alisa Bennett, FSA, EA, FCA, MAAA  
Principal and Consulting Actuary



Brent Banister, PhD, FSA, EA, FCA, MAAA  
Chief Pension Actuary

# Summary of Results

	7/1/2018 Valuation	7/1/2017 Valuation	% Change
<b>1. PARTICIPANT DATA</b>			
Number of:			
Active Members	36,329	38,873	(6.5)
Retired and Disabled Members and Beneficiaries	35,260	34,579	2.0
Inactive Members	6,024	5,951	1.2
Total Members	77,613	79,403	(2.3)
Projected Annual Salaries of Active Members	\$ 1,601,074,591	\$ 1,688,543,856	(5.2)
Annual Retirement Payments for Retired Members and Beneficiaries	\$ 595,301,608	\$ 576,548,059	3.3
<b>2. ASSETS AND LIABILITIES</b>			
Total Actuarial Accrued Liability	\$ 9,884,133,615	\$ 9,781,617,070	1.0
Market Value of Assets	\$ 9,702,031,567	\$ 9,229,499,873	5.1
Actuarial Value of Assets	\$ 9,658,126,021	\$ 9,241,292,469	4.5
Unfunded Actuarial Accrued Liability	\$ 226,007,594	\$ 540,324,601	(58.2)
Funded Ratio	97.7%	94.5%	3.4
<b>3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL</b>			
Normal Cost Rate	10.27%	10.24%	
Amortization of Unfunded Actuarial Accrued Liability	1.66%	3.57%	
Budgeted Expenses	0.43%	0.40%	
Total Actuarially Determined Contribution Rate	12.36%	14.21%	
Less Estimated Member Contribution Rate	4.18%	4.14%	
Employer Actuarially Determined Contribution Rate	8.18%	10.07%	
Less Statutory State Employer Contribution Rate	16.50%	16.50%	
Contribution Shortfall/(Surplus)	(8.32%)	(6.43%)	

# Analysis of Financial Experience

## Gains & Losses in Actuarial Accrued Liability During the Year Ended June 30, 2018 Resulting from Differences Between Assumed Experience & Actual Experience

Type of Activity	(Gain) or Loss for Year End 2018
1. <b>Age &amp; Service Retirements.</b> Generally, if members retire at older ages or with smaller benefits than assumed, there is a gain. If they retire at younger ages or have higher average pays, a loss occurs.	\$ (4,100,000)
2. <b>Disability Retirements.</b> If disability claims are less than assumed, there is a gain. If more claims, a loss.	1,000,000
3. <b>Deaths.</b> If more deaths occur than assumed, there is a gain. If fewer, there is a loss.	(18,700,000)
4. <b>Withdrawal from Employment.</b> If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(11,700,000)
5. <b>Pay Increases.</b> If there are smaller pay increase than assumed, there is a gain. If greater increases, a loss.	(85,400,000)
6. <b>New Entrants.</b> All new entrants to the System create a loss.	16,400,000
7. <b>Other.</b> Miscellaneous gains and losses resulting from data adjustments, employee transfers, valuation methods, etc.	(18,400,000)
8. <b>(Gain) or Loss During Year From Financial Experience.</b>	<u>(67,800,000)</u>
9. <b>Composite (Gain) or Loss During Year.</b>	<u>\$ (188,700,000)</u>

# Solvency Test

The OPERS funding objective is to be able to pay long-term benefit promises through contributions that remain approximately level from year to year as a percent of salaries earned by members. In this way, members and employers in each year pay their fair share for retirement service accrued in that year by OPERS members.

If the retirement system follows level contribution rate financing principles, the system will pay all promised benefits when due – the ultimate test of financial soundness.

A short-term solvency test is one means of monitoring OPERS funding progress. In a short-term solvency test, the retirement System’s present valuation assets are compared with: 1) active member contributions on deposit, 2) the liabilities for future benefits to persons who have retired and the liabilities for terminated employees with vested benefits, and 3) the liabilities for service already rendered by active members. In a system that has been following the discipline of level contribution rate financing, the liabilities for member contributions on deposit (liability 1), the liabilities for future benefits to present retirees and the liabilities for future benefits for terminated employees (liability 2) will be fully covered by present assets, except in rare circumstances.

In addition, the liabilities for service already rendered by members (liability 3) will be partially covered by the remainder of present assets. Generally, if the system has been using level contribution rate financing, the funded portion of liability 3 will increase over time; however, a decrease generally occurs in those years when substantial benefit improvements are granted by the Legislature. It is unusual for liability 3 to be fully funded. The funded ratio of the System based on total actuarial accrued liabilities (1 + 2 + 3) provides an indication of how well the System is funded.

The schedule below illustrates the progress of funding the actuarial accrued liabilities of OPERS.

Date	Actuarial Accrued Liability and Valuation Assets (in thousands)					Portion of Actuarial Accrued Liability Covered by Reported Assets			
	Active Member Contributions (Liability 1)	Retirees, Beneficiaries and Terminated Vested Members (Liability 2)	Employer Financed Portion of Active Members (Liability 3)	Total Liability (1 + 2 + 3)	Reported Assets <sup>1</sup>	(1)	(2)	(3)	Funded Ratio of Total Accrued Actuarial Liability
July 1, 2009	\$466,880	\$4,913,032	\$3,911,546	\$9,291,458	\$6,208,245	100%	100%	21.2%	66.8%
July 1, 2010	487,980	5,252,862	3,881,786	9,622,628	6,348,416	100	100	15.8	66.0
July 1, 2011	488,418	4,677,760	3,013,590	8,179,768	6,598,628	100	100	47.5	80.7
July 1, 2012	505,373	4,832,068	2,997,197	8,334,638	6,682,200	100	100	44.9	80.2
July 1, 2013	517,653	5,032,769	3,005,700	8,556,122	6,978,873	100	100	47.5	81.6
July 1, 2014	534,081	5,184,818	3,034,770	8,753,669	7,759,258	100	100	67.2	88.6
July 1, 2015	537,046	5,417,604	3,041,476	8,996,126	8,420,307	100	100	81.1	93.6
July 1, 2016	545,020	5,757,019	3,125,771	9,427,810	8,790,886	100	100	79.6	93.2
July 1, 2017	549,211	6,131,997	3,100,409	9,781,617	9,241,292	100	100	82.6	94.5
July 1, 2018	550,806	6,312,792	3,020,536	9,884,134	9,658,126	100	100	92.5	97.7

<sup>1</sup>Actuarial value of assets based on the smoothing technique adopted by Board.



## Schedule of Active Member Valuation Data

Valuation Date	Number	Annual Payroll	Annual Average Pay	% Increase in Average Pay
July 1, 2018	36,329	\$1,601,074,591	\$44,072	1.46
July 1, 2017	38,873	1,688,543,856	43,437	1.40
July 1, 2016	41,806	1,790,809,603	42,836	3.82
July 1, 2015	43,843	1,808,972,785	41,260	3.97
July 1, 2014	43,947	1,744,041,536	39,685	1.29
July 1, 2013	43,273	1,695,347,809	39,178	2.08
July 1, 2012	42,569	1,633,837,374	38,381	(0.90)
July 1, 2011	40,551	1,570,500,148	38,729	1.06
July 1, 2010	43,934	1,683,697,139	38,323	1.01
July 1, 2009	45,683	1,732,975,532	37,935	1.72
July 1, 2008	45,120	1,682,663,413	37,293	2.50

## Schedule of Retirants, Disabled Retirants, and Beneficiaries Added to and Removed from Rolls

Year Ended	Added to Rolls		Removed from Rolls		Rolls – End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances		
June 30, 2018	1,692	\$31,763,873	1,011	\$ 13,010,324	35,260	\$ 595,301,608	3.25	\$16,883
June 30, 2017	1,846	35,653,217	1,016	12,736,245	34,579	576,548,059	4.14	16,673
June 30, 2016	1,986	37,356,248	991	12,505,069	33,749	553,631,087	4.70	16,404
June 30, 2015	1,898	35,731,879	977	11,895,298	32,754	528,779,908	4.72	16,144
June 30, 2014	1,667	28,477,713	969	11,707,809	31,833	504,943,327	3.44	15,862
June 30, 2013	1,767	31,633,122	895	10,184,240	31,135	488,173,423	4.60	15,679
June 30, 2012	1,703	29,234,998	858	10,430,214	30,263	466,724,541	4.20	15,422
June 30, 2011	2,232	40,890,700	823	9,670,100	29,418	447,919,757	7.49	15,226
June 30, 2010	1,867	32,394,848	807	9,942,962	28,009	416,699,157	5.69	14,877
June 30, 2009	1,595	27,216,987	679	9,117,210	26,949	394,247,271	4.81	14,629

# Summary of System Provisions

*Effective Date:* The System became effective January 1, 1964. The fiscal year is July 1 to June 30.

*Employees Included:* All permanent employees of the State of Oklahoma, and any other employer such as a county, county hospital, city or town, conservation districts, circuit engineering districts, and any trust in which a county, city, or town participates and is the primary beneficiary, are eligible to join if:

- the employee is not eligible for or participating in another retirement system authorized under Oklahoma law, is covered by Social Security and not participating in the U.S. Civil Service Retirement System,
- the employee is scheduled for 1,000 hours per year and salary is not less than the hourly rate of the monthly minimum wage for State employees (for employees of local government employers, not less than the hourly rate of the monthly minimum wage for such employees).

Membership is mandatory for new eligible employees on the first of the month following employment. Beginning November 1, 2015, most new state employees are excluded from participating in the defined benefit plan.

*Employee and Employer Contributions:* 3.5% of pay for most State employees and 16.5% for employers. Local employees, elected officials, members covered by the Department of Corrections Hazardous Duty provisions, and members who elect the step up provision contribute at varying rates.

*Final Average Compensation:* Generally the highest annual average of any thirty-six months within the last ten years of participating service. For members hired on or after July 1, 2013, the highest annual average of any sixty months within the last ten years of participating service.

*Retirement Date:*  
*Normal:* Age 62 (age 60 for elected officials), 80 age/service points if hired before July 1, 1992, 90 age/service points if hired on or after July 1, 1992.

For non-elected employees hired on or after November 1, 2011, the retirement age is age 65 or 90 age/service points if at least 60. For elected officials hired on or after November 1, 2011, age 65 with 8 years of service or 62 with 10 years of service.

## Summary of System Provisions (continued)

	20 years of service for certain members covered by the Department of Corrections Hazardous Duty provisions and certain Oklahoma Military Department Firefighters.
<i>Early:</i>	Age 55 with 10 years of service.
<i>Normal Retirement Benefit:</i>	General formula is 2% of final average compensation multiplied by years of credited service.
<i>Disability Benefit:</i>	After eight years of service, provided the member qualifies for disability benefits as certified either by the Social Security Administration or the Railroad Retirement Board. Benefit is determined by the normal retirement formula based on service and salary history at date of disability. The benefit is payable immediately without actuarial reduction.
<i>In-service Death Benefit:</i>	<p>If the deceased member was vested, the benefit that would have been paid the member had he retired and elected the joint and 100% survivor option (Option B).</p> <p>For elected officials, it is 50% of the benefit that would have been paid the member had he retired.</p>
<i>Postretirement Death Benefit:</i>	\$5,000 lump-sum.
<i>Forms of Payment:</i>	Life annuity, joint and 50% survivor, joint and 100% survivor annuity, life annuity with a minimum of 120 monthly payments, and Medicare Gap Benefit option.
<i>Supplemental Medical Insurance Premium:</i>	The System will contribute the lesser of \$105 per month or the Medicare Supplement Premium to the Office of Management and Enterprise Services, Employees Group Insurance Division (or other eligible employer health plans) for members receiving retirement benefits.

# Summary of Actuarial Assumptions and Methods

1. The investment return rate used in the valuation was 7.00 percent per year, net of investment expenses, compounded annually. This rate of return is not the assumed real rate of return. The real rate of return is the rate of return in excess of the inflation rate. Considering other financial assumptions, the 7.00 percent investment return rate translates to an assumed real rate of return of 4.25 percent.
2. The RP-2014 Mortality Table projected to 2025 using Scale MP-2016 with male rates multiplied by 95% under age 70 and 105% over age 70, while female rates are multiplied by 90% and 115%.
3. The probabilities of withdrawal from service, together with individual pay increase assumptions, are shown in Schedule 1.
4. The probabilities of retirement with an age and service allowance are shown in Schedules 2A, 2B and 2C.
5. Because of the passage of House Bill 2132, benefits are not assumed to increase due to future ad hoc cost-of-living increases.
6. The individual entry-age normal actuarial cost method of valuation was used in determining actuarial accrued liability and normal cost. Actuarial gains and losses reduce or increase the unfunded actuarial accrued liability and are amortized over the remaining amortization period (nine years as of July 1, 2018).
7. The actuarial value of assets is based on a five-year moving average of expected actuarial values and market values. A preliminary expected value is determined equal to the prior year's actuarial value of assets plus net cash flow for the year ending on the valuation date, assuming the valuation investment return. The expected actuarial asset value is equal to the preliminary expected actuarial value plus the unrecognized investment gains and losses as of the beginning of the previous fiscal year. Twenty percent (20%) of the gain/loss as measured by the difference between the expected actuarial value and the market value at the valuation date is added to the preliminary expected actuarial value plus twenty percent (20%) of the unrecognized gains or losses for the four preceding fiscal years. The final result is constrained to a value no less than 80% and no more than 120% of the market value at the valuation date.
8. The actuarial assumptions and methods used in the valuation were adopted by the Board based on System experience from July 1, 2013 through June 30, 2016.

Summary of Actuarial Assumptions and Methods (continued)

**Schedule 1**

**Withdrawal From Active Employment Before Age & Service Retirement and Individual Pay Increase Assumptions**

Sample Service Values	Withdrawal	Sample Ages	Percent Increase in Individual's Pay During Next Year
1	22.00%	25	7.80%
5	10.50	30	6.30
10	6.00	35	5.50
15	4.25	40	5.20
20	3.00	45	4.80
25	1.75	50	4.50
		55	4.30

**Schedule 2A**

**Percent of Eligible Regular Non-Elected Active Members Retiring Within Next Year**

**Those Eligible for Unreduced Retirement and Hired Before November 1, 2011**

Retirement Ages	Percent	Retirement Ages	Percent
50	15%	61	20%
51	15%	62	25%
52	15%	63	15%
53	15%	64	15%
54	15%	65	30%
55	10%	66	25%
56	10%	67	25%
57	11%	68	25%
58	12%	69	25%
59	13%	70	100%
60	14%		

Summary of Actuarial Assumptions and Methods (continued)

**Those Eligible for Unreduced Retirement and Hired on or after November 1, 2011**

Retirement	
Ages	Percent
60	*
61	*
62	*
63	*
64	*
65	*
66	20%
67	20%
68	20%
69	25%
70	100%

\*30% when first eligible and 15% thereafter.

**Schedule 2B**

**Percent of Eligible Non-Elected Active Members Retiring Within Next Year**

**Those Not Eligible for Unreduced Retirement or Department of Corrections Members With Less Than 20 Years of Service, hired before November 1, 2011**

Regular Employees		Department of Corrections			
Retirement		Retirement		Retirement	
Ages	Percent	Ages	Percent	Ages	Percent
55	3%	55	4%	63	22%
56	4%	56	5%	64	25%
57	4%	57	5%	65	40%
58	5%	58	5%	66	25%
59	6%	59	5%	67	25%
60	6%	60	5%	68	25%
61	15%	61	20%	69	25%
		62	40%	70	100%

Summary of Actuarial Assumptions and Methods (continued)

**Those Not Eligible for Unreduced Retirement and hired on or after November 1, 2011**

<b>Regular Employees</b>		<b>Department of Corrections</b>			
<b>Retirement</b>		<b>Retirement</b>		<b>Retirement</b>	
<b>Ages</b>	<b>Percent</b>	<b>Ages</b>	<b>Percent</b>	<b>Ages</b>	<b>Percent</b>
60	7%	60	7%	66	25%
61	7%	61	20%	67	23%
62	20%	62	20%	68	22%
63	15%	63	20%	69	21%
64	15%	64	20%	70	100%
		65	40%		

**Schedule 2C**

**Percent of Eligible Active Members Retiring Within Next Year  
 Department of Corrections Members With More Than 20 Years of Service**

<b>Service</b>	<b>Percent</b>
20	25%
21	25%
22	20%
23 - 24	15%
25 - 29	23%
30 - 34	25%
35	100%

# STATISTICAL

## STRATEGIC PERSPECTIVE

We are committed to a strategic planning process that embraces and drives change to benefit our members. We focus on the future and actively seek opportunities for innovation in the services we provide.

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**The Statistical Section** provides additional historical perspective, context, and detail to assist the reader in using the information in the financial statements, notes to financial statements and required supplementary information to understand and assess the economic condition of the Oklahoma Public Employees Retirement System (OPERS) on a combined basis, including both the Defined Benefit Pension Plan and the Health Insurance Subsidy Plan.

**Financial trend information** is intended to assist users in understanding and assessing the changes in the financial position over time. Schedules presenting financial trend information are *Schedule of Changes in Fiduciary Net Position, Schedule of Revenue by Source, Schedule of Expenses by Type, Schedule of Benefit Payments and Refunds by Type, and Funded Ratio Chart*.

**Revenue capacity information** is intended to assist users in understanding and assessing the factors affecting the ability of OPERS to generate own-source revenue, specifically investment income. The schedule presenting revenue capacity information is the *Rate of Return by Type of Investment*.

**Operating information** is intended to provide contextual information about the operations and resources of OPERS to assist readers in using financial statement information to understand and assess the economic condition. Schedules and charts presenting operating information are *Schedule of Retired Members by Type of Benefit, Schedule of Average Benefit Payments, Principal Participating Employer, Demographics Chart, Participating Employers, Member Statistics\**, *Distribution of Retirees and Beneficiaries\**, *Summary of Active Members\**.

Schedules and information are derived from OPERS internal sources unless otherwise noted.

\*Schedules and data are provided by actuarial consultant Cavanaugh McDonald, LLC.

## Schedule of Changes in Fiduciary Net Position

Year Ended June 30,	Additions			Deductions			Total Changes in Fiduciary Net Position
	Member Contributions	Employer Contributions	Investment Income (Loss)	Benefit Payments	Administrative Expenses	Refunds	
2018	\$ 66,929,560	\$ 277,987,270	\$ 760,477,994	\$ 611,565,882	\$ 5,339,987	\$ 15,957,261	\$ 472,531,694
2017	70,276,234	288,338,941	1,049,614,508	592,961,277	5,397,137	15,950,303	793,920,966
2016	73,800,890	296,249,191	15,756,524	565,412,267	5,394,992	15,862,423	(200,863,077)
2015	73,145,380	292,184,940	264,289,114	542,488,709	5,182,848	15,610,803	66,337,074
2014	70,523,854	280,047,664	1,317,980,271	520,641,175	4,708,895	14,878,427	1,128,323,292
2013	68,200,616	269,994,831	804,177,712	502,636,899	4,612,783	14,645,400	620,478,077
2012	66,299,570	262,710,009	154,692,436	484,309,893	4,758,636	14,331,714	(19,698,228)
2011	66,431,434	252,904,579	1,226,686,493	462,062,563	4,680,679	12,656,758	1,066,622,506
2010	69,041,436	259,779,236	716,895,081	429,260,056	4,555,833	11,058,379	600,841,485
2009	68,712,683	243,021,660	(967,248,484)	410,036,580	4,602,876	11,516,190	(1,081,669,787)

## Schedule of Revenue by Source

Year Ended June 30,	Member Contributions	Employer Contributions		Investment Income (Loss)	Total
		Dollars	% of Annual Covered Payroll		
2018	\$ 66,929,560	\$ 277,987,270	17.36 %	\$ 760,477,994	\$ 1,105,394,824
2017	70,276,234	288,338,941	17.08	1,049,614,508	1,408,229,683
2016	73,800,890	296,249,191	16.54	15,756,524	385,806,605
2015	73,145,380	292,184,940	16.15	264,289,114	629,619,434
2014	70,523,854	280,047,664	16.06	1,317,980,271	1,668,551,789
2013	68,200,616	269,994,831	15.93	804,177,712	1,142,373,159
2012	66,299,570	262,710,009	15.60	154,692,436	483,702,015
2011	66,431,434	252,904,579	15.02	1,226,686,493	1,546,022,506
2010	69,041,436	259,779,236	14.59	716,895,081	1,045,715,753
2009	68,712,683	243,021,660	14.44	(967,248,484)	(655,514,141)

## Schedule of Expenses by Type

Year Ended June 30,	Benefit Payments	Administrative Expenses		Withdrawals	Total
		Expenses	Withdrawals		
2018	\$ 611,565,882	\$ 5,339,987	\$ 15,957,261	\$ 632,863,130	
2017	592,961,277	5,397,137	15,950,303	614,308,717	
2016	565,412,267	5,394,992	15,862,423	586,669,682	
2015	542,488,709	5,182,848	15,610,803	563,282,360	
2014	520,641,175	4,708,895	14,878,427	540,228,497	
2013	502,636,899	4,612,783	14,645,400	521,895,082	
2012	484,309,893	4,758,636	14,331,714	503,400,243	
2011	462,062,563	4,680,679	12,656,758	479,400,000	
2010	429,260,056	4,555,833	11,058,379	444,874,268	
2009	410,036,580	4,602,876	11,516,190	426,155,646	

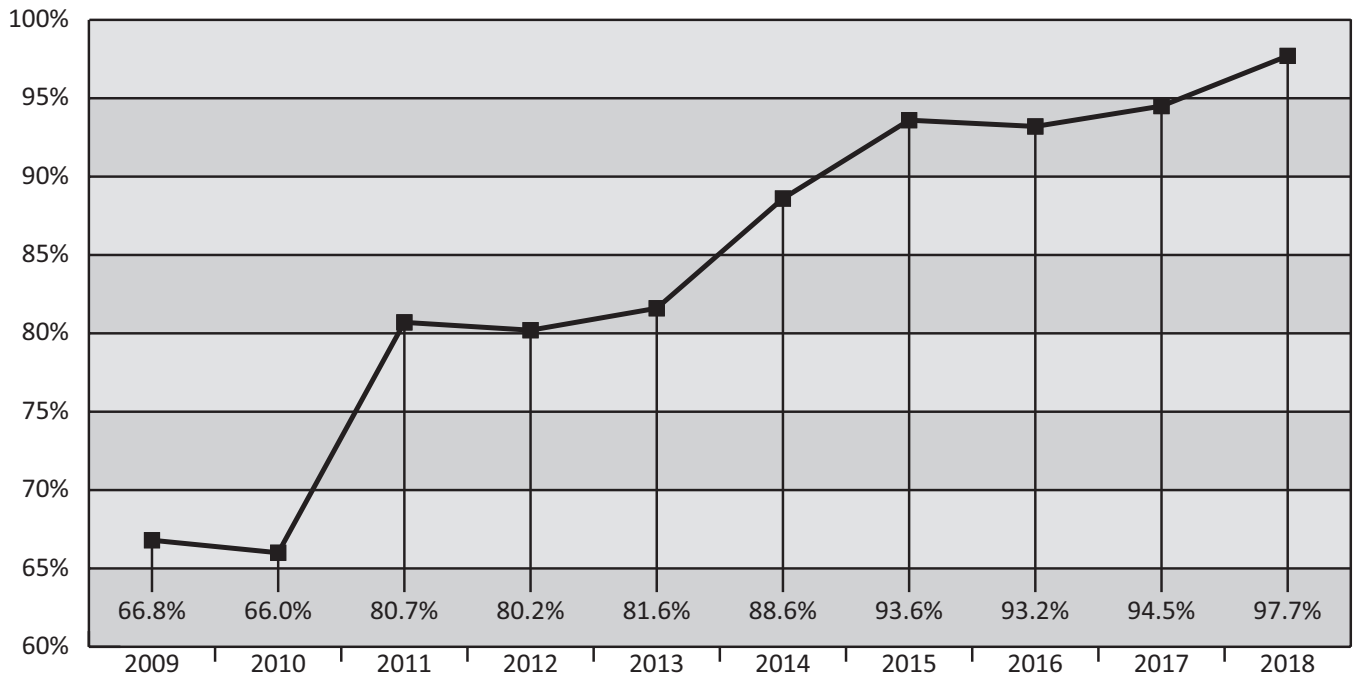
## Schedule of Benefit Payments and Refunds by Type

The following schedule provides information as to the type of benefit expenses incurred by the Plan as reflected in the “Benefit Payment” and “Refunds” columns of the **Schedule of Expenses by Type** included elsewhere in this Statistical Section.

Year Ended June 30,	Benefits			Refunds				Total Benefit Payments and Refunds
	Age and Service	Disability	Beneficiary Death	Withdrawals	Transfers to Other Systems	Member Death	Other	
2018	\$588,815,903	\$17,173,572	\$5,576,407	\$ 10,704,430	\$ 4,128,787	\$ 916,168	\$207,876	\$627,523,143
2017	569,870,507	17,597,316	5,493,454	11,827,836	3,219,022	746,849	156,596	608,911,580
2016	542,788,467	17,433,604	5,190,196	9,866,169	5,069,244	798,666	128,344	581,274,690
2015	522,513,529	14,775,998	5,199,181	10,562,956	3,988,925	897,939	160,984	558,099,512
2014	498,432,095	17,292,985	4,916,095	10,276,798	3,881,544	682,179	37,906	535,519,602
2013	480,885,816	17,325,263	4,425,820	10,423,136	3,191,104	897,727	133,433	517,282,299
2012	462,439,623	17,279,429	4,590,841	11,225,699	2,260,790	725,434	119,791	498,641,607
2011	441,043,149	16,590,662	4,428,752	9,043,642	2,716,718	807,918	88,480	474,719,321
2010	408,662,665	16,131,274	4,466,117	7,460,216	2,720,008	808,993	69,162	440,318,435
2009	389,166,873	16,151,439	4,718,268	7,657,424	3,047,569	701,543	109,654	421,552,770

## Funded Ratio Chart

As of July 1



## Rate of Return by Type of Investment

Year Ended June 30,	Fixed Income	U.S. Equity	International Equity	Total
2018	0.3 %	15.5 %	7.3 %	8.4 %
2017	(0.6)	19.6	19.2	12.8
2016	7.1	(0.2)	(7.7)	0.3
2015	2.5	7.9	(4.4)	3.2
2014	5.1	25.6	21.9	18.0
2013	(1.0)	22.7	13.9	12.0
2012	11.5	4.1	(12.5)	2.4
2011	4.6	32.2	30.0	21.2
2010	12.9	16.4	10.0	13.8
2009	4.6	(27.5)	(29.6)	(15.4)

## Schedule of Retired Members by Type of Benefit

June 30, 2018

Amount of Monthly Benefit	Number of Retirees	Type of Retirement					Option Selected			
		1	2	3	4	5	1	2	3	4
\$1 – 1,000	15,476	8,655	3,157	2,346	1,006	312	8,765	3,090	3,388	233
1,001 – 2,000	11,813	10,039	414	951	406	3	6,601	2,033	3,005	174
2,001 – 3,000	5,276	4,954	36	266	20	-	2,729	975	1,458	114
3,001 – 4,000	1,704	1,593	5	105	1	-	817	287	572	28
4,001 – 5,000	612	595	2	15	-	-	301	113	190	8
Over 5,000	379	370	1	8	-	-	189	51	135	4
<b>Totals</b>	<b>35,260</b>	<b>26,206</b>	<b>3,615</b>	<b>3,691</b>	<b>1,433</b>	<b>315</b>	<b>19,402</b>	<b>6,549</b>	<b>8,748</b>	<b>561</b>

### Type of Retirement

- Type 1 – *Normal retirement for age and service:* Eligible at (1) age 62 or (2) when the sum of the member’s age plus years of service equals 80 points for those who became members before July 1, 1992 and 90 points for those becoming members after that date.
- Type 2 – *Early retirement:* Eligible beginning at age 55 with ten (10) years of participating service.
- Type 3 – *Survivor payment:* Normal or early retirement.
- Type 4 – *Disability:* Eligible if member is qualified for payment of disability benefits as certified by the Social Security Administration, has eight (8) years of credited service, and has terminated employment.
- Type 5 – *Survivor payment:* Disability retirement.

### Option Selected

- Option 1 – *Single-life annuity:* The maximum benefit is paid for the member’s lifetime.
- Option 2 – *Option A – ½ Joint and Survivor Annuity:* The member will receive a reduced retirement benefit for life and ½ of the reduced retirement benefit will be paid to the surviving joint annuitant for their lifetime.
- Option 3 – *Option B – 100% Joint and Survivor Annuity:* A reduced benefit is paid to the member for life and the same benefit is paid to a surviving joint annuitant for their lifetime.
- Option 4 – *Option C – Single-life Annuity with a 10-Year Certain Period:* The member will receive a reduced benefit for their lifetime. If the member dies within ten years of when the benefit payments began, the monthly payment will be made to the beneficiary for the balance of the 10-year period.

### Deferred Members

At June 30, 2018, there are 6,024 former members with deferred future benefits.

## Schedule of Average Benefit Payments

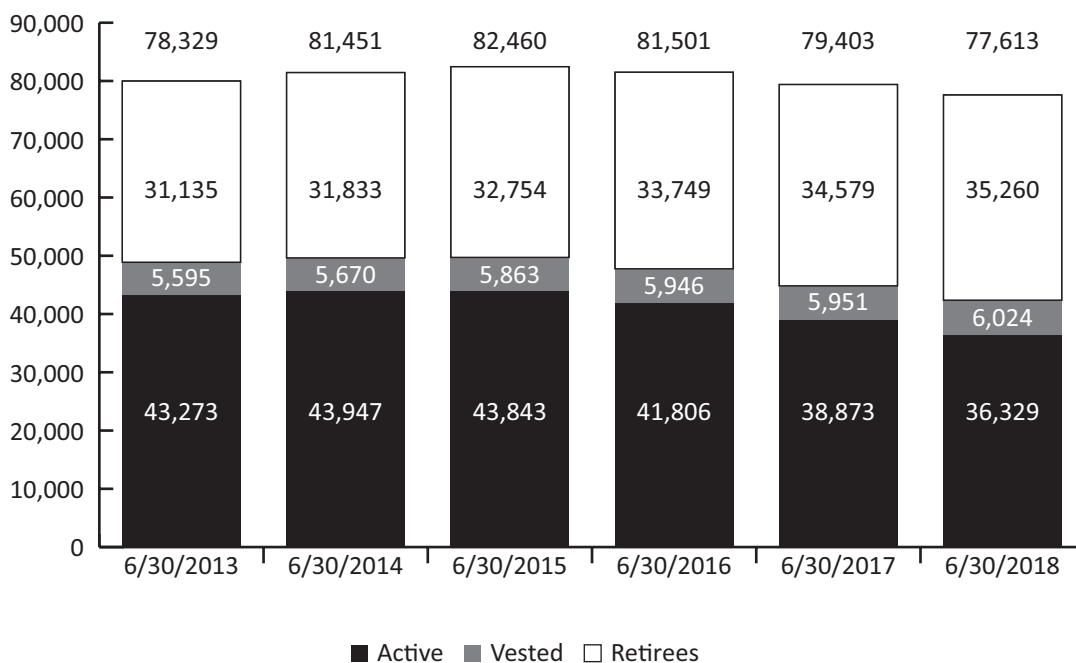
Retirement Effective Dates July 1, 2008 to June 30, 2018	Years of Credited Service						
	0 to 5	6 to 10	11 to 15	16 to 20	21 to 25	26 to 30	31+
Period 7/1/08 to 6/30/09							
Average Monthly Benefit	\$ 116	\$ 420	\$ 596	\$ 1,062	\$ 1,554	\$ 2,157	\$ 2,786
Average Final Average Salary	\$ 1,590	\$ 2,578	\$ 2,664	\$ 3,069	\$ 3,384	\$ 3,756	\$ 4,039
Number of Active Retirees	3	216	326	277	307	272	187
Period 7/1/09 to 6/30/10							
Average Monthly Benefit	\$ 153	\$ 431	\$ 649	\$ 1,075	\$ 1,572	\$ 2,057	\$ 2,773
Average Final Average Salary	\$ 1,699	\$ 2,693	\$ 2,822	\$ 3,190	\$ 3,466	\$ 3,780	\$ 4,058
Number of Active Retirees	3	223	308	292	343	340	291
Period 7/1/10 to 6/30/11							
Average Monthly Benefit	\$ 59	\$ 476	\$ 661	\$ 1,116	\$ 1,665	\$ 2,083	\$ 2,946
Average Final Average Salary	\$ 1,759	\$ 2,821	\$ 2,815	\$ 3,215	\$ 3,597	\$ 3,788	\$ 4,205
Number of Active Retirees	1	280	355	333	442	413	357
Period 7/1/11 to 6/30/12							
Average Monthly Benefit	\$ 95	\$ 456	\$ 671	\$ 1,023	\$ 1,612	\$ 2,126	\$ 2,866
Average Final Average Salary	\$ 1,590	\$ 2,824	\$ 3,006	\$ 3,078	\$ 3,854	\$ 3,869	\$ 4,218
Number of Active Retirees	1	252	286	297	291	281	273
Period 7/1/12 to 6/30/13							
Average Monthly Benefit	\$ 193	\$ 462	\$ 745	\$ 1,172	\$ 1,663	\$ 2,204	\$ 3,031
Average Final Average Salary	\$ 1,928	\$ 2,859	\$ 3,068	\$ 3,644	\$ 3,664	\$ 3,838	\$ 4,214
Number of Active Retirees	1	259	343	261	324	294	272
Period 7/1/13 to 6/30/14							
Average Monthly Benefit	\$ -	\$ 476	\$ 741	\$ 1,107	\$ 1,620	\$ 2,382	\$ 2,790
Average Final Average Salary	\$ -	\$ 3,060	\$ 3,069	\$ 3,325	\$ 3,579	\$ 4,176	\$ 4,202
Number of Active Retirees	-	292	331	243	295	245	256
Period 7/1/14 to 6/30/15							
Average Monthly Benefit	\$ 623	\$ 487	\$ 771	\$ 1,216	\$ 1,728	\$ 2,360	\$ 3,003
Average Final Average Salary	\$ 2,387	\$ 2,924	\$ 3,146	\$ 3,484	\$ 3,687	\$ 4,252	\$ 4,303
Number of Active Retirees	2	292	323	311	331	321	310
Period 7/1/15 to 6/30/16							
Average Monthly Benefit	\$ 159	\$ 491	\$ 772	\$ 1,163	\$ 1,586	\$ 2,196	\$ 3,100
Average Final Average Salary	\$ 1,900	\$ 3,121	\$ 3,253	\$ 3,410	\$ 3,506	\$ 3,949	\$ 4,505
Number of Active Retirees	5	300	342	308	301	358	370
Period 7/1/16 to 6/30/17							
Average Monthly Benefit	\$ 362	\$ 546	\$ 813	\$ 1,230	\$ 1,714	\$ 2,393	\$ 3,324
Average Final Average Salary	\$ 4,716	\$ 3,241	\$ 3,265	\$ 3,626	\$ 3,789	\$ 4,256	\$ 4,716
Number of Active Retirees	4	293	377	295	257	292	326
Period 7/1/17 to 6/30/18							
Average Monthly Benefit	\$ -	\$ 552	\$ 787	\$ 1,202	\$ 1,622	\$ 2,448	\$ 3,310
Average Final Average Salary	\$ -	\$ 3,225	\$ 3,328	\$ 3,493	\$ 3,657	\$ 4,406	\$ 4,787
Number of Active Retirees	-	260	335	324	237	256	281

## Principal Participating Employer

The Oklahoma Public Employees Retirement System is a multiple-employer cost-sharing public employee retirement plan. The Plan covers all state employees that are not covered by six other plans and employees of participating county and local agencies in the State. The State of Oklahoma is the principal participating employer. A list of participating state, county and local agencies is included elsewhere in this Statistical Section.

<b>Year Ended June 30,</b>	<b>Covered Employees of the State</b>	<b>Percent of Total System</b>
2018	25,594	70.5 %
2017	27,850	71.6
2016	30,776	73.6
2015	33,002	75.3
2014	33,242	75.6
2013	32,671	75.5
2012	32,403	76.1
2011	32,840	81.0
2010	34,086	77.6
2009	35,209	77.1

## Demographics Chart





## Participating Employers

### State Agencies

---

ABLE Commission  
Abstractors, Board of  
Accountancy, Board of Public  
Aeronautics Commission  
Agriculture, Department of  
Architects, Board of Governors  
Arts Council, State  
Attorney General's Office  
Auditor and Inspector  
Banking Department  
Behavioral Health Licensure, Board of  
Boll Weevil Eradication Organization  
Bond Advisor, Office of the State  
Children and Youth, Commission on  
Chiropractic Examiners, Board of  
Commerce, Department of  
Conservation Commission  
Construction Industries Board  
Consumer Credit, Department of  
Corporation Commission  
Corrections, Department of  
Cosmetology, Board of  
Council on Judicial Complaints  
Court of Criminal Appeals  
Davis Gun Museum  
Dentistry, Board of  
Disability Concerns, Office of  
District Attorneys' Council  
District Courts  
Educational Television Authority  
Election Board, State  
Emergency Management  
Employees Group Insurance Division  
Employment Security Commission  
Engineers and Surveyors, Board of  
Environmental Quality, Department of  
Ethics Commission  
Finance, State Office of  
Fire Marshall Commission, State  
Firefighters Pension and Retirement  
Board  
Funeral Board  
Governor's Office  
Grand River Dam Authority  
Health, Department of  
Health Care Authority  
Historical Society  
Horse Racing Commission  
House of Representatives  
Housing Finance Agency  
Human Services, Department of  
Indigent Defense System  
Industrial Finance Authority

Insurance Department, State  
Interstate Oil Compact Commission  
Investigation, State Bureau of  
Juvenile Affairs, Office of  
Labor, Department of  
Land Office, Commissioners of the  
Law Enforcement Education and  
Training, Council on  
Law Enforcement Retirement System  
Legislative Service Bureau  
Libraries, Department of  
Licensed Alcohol and Drug Counselors,  
Board of  
Licensed Social Workers, Registration  
Board of  
Lieutenant Governor, Office of  
Liquefied Petroleum Gas Administration  
Lottery Commission  
Marginally Producing Oil and Gas Wells,  
Commission on  
J.D. McCarty Center  
Medical Licensure Board  
Medicolegal Investigations, Board of  
Mental Health & Substance Abuse,  
Department of  
Merit Protection Commission  
Military Department  
Mines, Department of  
Motor Vehicle Commission  
Multiple Injury Trust Fund  
Municipal Power Authority  
Narcotics and Dangerous Drugs Control,  
Bureau of  
Nursing, Board of  
Nursing Home Administrators, Board of  
Examiners for  
Optometry Board  
Ordinance Works Authority  
Osteopathic Examiners, State Board of  
Pardon and Parole Board  
Pharmacy, Board of  
Physicians Manpower Training  
Commission  
Police Pension and Retirement  
Psychologists Examiners, Board of  
Public Employees Retirement System  
Public Safety, Department of  
Quartz Mountain Arts and Conference  
Center Nature Park  
Real Estate Commission  
Rehabilitation, Department of  
Science and Technology, Center for  
Advancement of  
Secretary of State, Office of the  
Securities Commission

Senate, State  
Space Industry Development Authority  
Speech Pathology and Audiology Board  
Supreme Court  
Tax Commission  
Test for Alcohol and Drug Influence  
Board  
Tobacco Settlement Trusts  
Tourism and Recreation Department  
Transportation, Department of  
Treasurer's Office, State  
Turnpike Authority  
Uniform Building Code Commission  
University Health Sciences Center  
University Hospitals Authority  
Used Motor Vehicles and Parts  
Commission  
Veterans Affairs, Department of  
Veterinary Medical Examiners,  
State Board of  
Waters Resources Board  
Wheat Commission  
Workers' Compensation Commission

### Counties and County Governmental Units

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Adair County  
Alfalfa County  
Alfalfa County Rural Water District  
Atoka County  
Atoka County Rural Water District #2  
Atoka County Rural Water District #4  
Beaver County  
Beaver County Memorial Hospital  
Beckham County  
Blaine County  
Bryan County  
Caddo County  
Canadian County  
Carter County  
Cherokee County  
Choctaw County  
Choctaw County Ambulance  
Cimarron County  
Cleveland County  
Coal County  
Comanche County  
Comanche County Facilities Authority  
Cotton County  
Craig County  
Creek County  
Creek County Rural Water District #3  
Creek County Rural Water District #5  
Custer County

## Participating Employers (continued)

Delaware County  
Delaware County E-911 Trust Authority  
Delaware County Solid Waste Trust Authority  
Dewey County  
Ellis County  
Garfield County  
Garfield County Fairgrounds Trust Auth.  
Garvin County  
Grady County  
Grady County Criminal Justice Authority  
Grady County EMS  
Grant County  
Greer County  
Greer County Special Ambulance Service  
Harmon County  
Harper County  
Haskell County  
Hughes County  
Jackson County  
Jefferson County  
Johnston County  
Johnston County Rural Water District  
Kay County  
Kay County Justice Facilities Authority  
Kingfisher County  
Kiowa County  
Latimer County  
LeFlore County  
LeFlore County EMS  
LeFlore County Rural Water and Sewer  
LeFlore County Rural Water District #3  
Lincoln County  
Lincoln County E-911 Trust Authority  
Logan County  
Love County  
Major County  
Major County EMS  
Marshall County  
Mayes County  
Mayes County Rural Water District #3  
Mayes Emergency Services Trust Authority  
McClain County  
McClain-Grady County EMS  
McCurtain County  
McCurtain County EMS  
McIntosh County  
Murray County  
Muskogee County  
Muskogee County EMS  
Noble County  
Nowata County  
Nowata Consolidated Rural Water District #1  
Okfuskee County

Okmulgee County  
Okmulgee County Criminal Justice Authority  
Osage County  
Ottawa County  
Ottawa County E-911 Authority  
Pawnee County  
Payne County  
Pittsburg County  
Pittsburg County Rural Water District #7  
Pontotoc County  
Pottawatomie County  
Pottawatomie County Public Safety Center  
Pushmataha County  
Roger Mills County  
Rogers County  
Seminole County  
Sequoyah County  
Sequoyah County 911 Trust Authority  
Sequoyah County Rural Water District #7  
Stephens County  
Texas County  
Tillman County  
Tillman County EMS  
Tillman County Rural Water District  
Wagoner County  
Washington County  
Washita County  
Woods County  
Woodward County

### **Towns, Cities and Municipal Governmental Units**

Anadarko Housing Authority  
Arnett, Town of  
Beaver, City of  
Bixby, City of  
Bixby Public Works  
Cheyenne, City of  
Commerce, City of  
Cyril, Town of  
Fairfax, Town of  
Fort Supply, Town of  
Grandfield, City of  
Grove, City of  
Grove Municipal Airport Managing Authority  
Heavener, City of  
Heavener Utility Authority  
Hinton, Town of  
Holdenville, City of  
Holdenville Housing Authority  
Hugo, City of  
Idabel Housing Authority

Indianola Rural Water District #18  
Ketchum, City of  
Ketchum Public Works  
Kingfisher, City of  
Mangum, City of  
Mountain View, City of  
Muskogee City-County 911 Trust Authority  
Okarche, City of  
Poteau Valley Improvement Authority  
Rush Springs, Town of  
Ryan, City of  
Sentinel, Town of  
Shattuck, City of  
Sportsmen Acres, Town of  
Stigler, City of  
Tahlequah, City of  
Vici, Town of  
Watonga Housing Authority  
Watts Public Works Authority  
Wewoka, City of  
Wilson, City of

### **Other Governmental Units**

Association of South Central Oklahoma Government  
Circuit Engineering District #4  
Circuit Engineering District #6  
Eastern Oklahoma Circuit Engineering District #2  
Eastern Oklahoma District Library  
Grand Gateway Economic Development Association  
Kiamichi Economical Development District of Oklahoma  
Midwestern Oklahoma Development Authority  
Northeast Oklahoma Enhanced 911 Trust Authority  
Northern Oklahoma Development Authority  
Northwestern Oklahoma Solid Waste Disposal Authority  
Oklahoma Environmental Management Authority  
Southeast Circuit Engineering District #3  
Southwestern Oklahoma Ambulance Authority  
Southwestern Oklahoma Developmental Authority  
Tri-County Rural Water District

## Member Statistics

Inactive members as of July 1, 2018	Number	Amount of Annual Benefit
<b>Members receiving benefits</b>		
Retired	29,824	\$ 519,277,463
Surviving spouses	4,003	42,659,911
Disabled	1,433	14,610,685
<b>Total</b>	<b>35,260</b>	<b>\$ 576,548,059</b>
<b>Members with deferred benefits</b>		
Vested terminated	2,943	\$ 29,922,483
Assumed deferred vested members (estimated benefits)	3,081	31,489,675
<b>Total</b>	<b>6,024</b>	<b>\$ 61,412,158</b>

Statistics for	Average			
	Number	Age	Service	Earnings
<b>Active members as of July 1, 2017</b>				
Continuing	35,651	47.4	11.4	\$ 42,885
New	3,222	37.6	1.9	25,565
<b>Total</b>	<b>38,873</b>	<b>46.6</b>	<b>10.3</b>	<b>\$ 41,450</b>
<b>Active members as of July 1, 2018</b>				
Continuing	33,182	48.0	12.0	\$ 43,689
New	3,147	37.4	1.9	25,105
<b>Total</b>	<b>36,329</b>	<b>47.0</b>	<b>11.1</b>	<b>\$ 42,079</b>

## Distribution of Retirees and Beneficiaries

Age	Number			Annual Benefits		
	Male	Female	Total	Male	Female	Total
<b>Under 50</b>	108	92	200	\$ 1,764,135	\$ 891,422	\$ 2,655,557
<b>50-55</b>	278	213	491	6,866,803	4,335,295	11,202,098
<b>55-60</b>	936	1,217	2,153	22,247,012	25,887,623	48,134,635
<b>60-65</b>	1,837	3,037	4,874	37,453,832	57,396,310	94,850,142
<b>65-70</b>	3,188	4,550	7,738	59,419,308	77,016,137	136,435,445
<b>70-75</b>	3,277	4,266	7,543	59,957,280	65,514,450	125,471,730
<b>75-80</b>	2,346	3,194	5,540	40,056,870	45,653,159	85,710,029
<b>80-85</b>	1,438	2,184	3,622	22,838,035	27,867,039	50,705,074
<b>85-90</b>	730	1,313	2,043	11,116,586	16,422,204	27,538,790
<b>90-95</b>	255	585	840	3,642,301	6,402,894	10,045,195
<b>95-100</b>	46	141	187	703,414	1,613,893	2,317,307
<b>Over 100</b>	2	27	29	25,377	210,229	235,606
<b>Total</b>	<b>14,441</b>	<b>20,819</b>	<b>35,260</b>	<b>\$ 266,090,953</b>	<b>\$ 329,210,655</b>	<b>\$ 595,301,608</b>

## Summary of Active Members

### Age and years of credited service

Earnings tabulated are average rates of pay as of July 1, 2018

Age	Years of Service									Total	
	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up		
<b>Under 25</b>	1,081	18									<b>1,099</b>
<b>Average Pay</b>	\$25,128	\$33,490									<b>\$25,265</b>
<b>25 to 29</b>	1,924	611	10								<b>2,545</b>
<b>Average Pay</b>	\$31,027	\$36,348	\$34,265								<b>\$32,317</b>
<b>30 to 34</b>	1,654	1,418	342	5							<b>3,419</b>
<b>Average Pay</b>	\$32,974	\$42,504	\$42,456	\$36,663							<b>\$37,880</b>
<b>35 to 39</b>	1,445	1,375	1,088	223	3						<b>4,134</b>
<b>Average Pay</b>	\$33,423	\$42,087	\$47,453	\$46,022	\$59,175						<b>\$40,695</b>
<b>40 to 44</b>	1,036	1,143	971	699	184	4					<b>4,037</b>
<b>Average Pay</b>	\$34,556	\$41,759	\$46,136	\$49,916	\$52,120	\$60,039					<b>\$42,866</b>
<b>45 to 49</b>	956	1,073	996	711	609	154	7				<b>4,506</b>
<b>Average Pay</b>	\$34,887	\$42,143	\$45,861	\$48,215	\$52,397	\$49,488	\$63,700				<b>\$44,054</b>
<b>50 to 54</b>	820	964	848	624	647	542	187	9			<b>4,641</b>
<b>Average Pay</b>	\$34,457	\$40,594	\$43,824	\$46,826	\$48,811	\$54,241	\$55,423	\$55,973			<b>\$44,304</b>
<b>55 to 59</b>	779	973	970	727	636	484	462	251	13		<b>5,295</b>
<b>Average Pay</b>	\$34,750	\$40,659	\$42,547	\$45,707	\$47,271	\$54,233	\$58,365	\$55,770	\$56,573		<b>\$45,164</b>
<b>60 to 64</b>	508	799	780	619	516	390	315	217	87		<b>4,231</b>
<b>Average Pay</b>	\$36,923	\$40,728	\$43,775	\$45,454	\$47,783	\$52,182	\$54,818	\$57,275	\$55,689		<b>\$45,646</b>
<b>65 to 69</b>	194	371	331	224	219	132	107	79	73		<b>1,730</b>
<b>Average Pay</b>	\$32,518	\$45,454	\$44,024	\$49,313	\$48,759	\$55,352	\$55,222	\$58,986	\$58,054		<b>\$47,157</b>
<b>70 &amp; up</b>	103	135	145	105	72	48	40	24	20		<b>692</b>
<b>Average Pay</b>	\$31,720	\$42,330	\$40,843	\$44,098	\$46,753	\$48,333	\$48,600	\$62,656	\$61,567		<b>\$43,207</b>
<b>Total</b>	<b>10,500</b>	<b>8,880</b>	<b>6,481</b>	<b>3,937</b>	<b>2,886</b>	<b>1,754</b>	<b>1,118</b>	<b>580</b>	<b>193</b>		<b>36,329</b>
<b>Average Pay</b>	<b>\$32,619</b>	<b>\$41,409</b>	<b>\$44,752</b>	<b>\$47,213</b>	<b>\$49,211</b>	<b>\$53,299</b>	<b>\$56,257</b>	<b>\$57,059</b>	<b>\$57,253</b>		<b>\$42,079</b>



**Oklahoma Public Employees Retirement System**

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