## Comprehensive Annual Financial Report



Oregon Public Employees Retirement System An Agency of the State of Oregon For the Fiscal Year Ended June 30, 2016

# Oregon Public Employees Retirement System An Agency of the State of Oregon 

# Comprehensive Annual Financial Report <br> For the Fiscal Year Ended June 30, 2016 

Steven Patrick Rodeman
Executive Director
Kyle J. Knoll
Chief Financial Officer

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## Introductory Section

Public Employees Retirement System<br>Headquarters: 11410 S.W. 68th Parkway, Tigard, OR<br>Mailing Address:<br>P.O. Box 23700<br>Tigard, OR 97281-3700<br>888-320-7377<br>TTY (503) 603-7766<br>http://oregon.gov/PERS/

December 1, 2016
Public Employees Retirement Board
Oregon Public Employees Retirement System
11410 SW 68th Parkway
Tigard, Oregon 97223
We are pleased to submit the Comprehensive Annual Financial Report (CAFR) of the Oregon Public Employees Retirement System (PERS or the System) for the fiscal year ended June 30, 2016. This report includes all funds over which the Public Employees Retirement Board (Board) exercises authority. These funds were established to provide retirement, death, and disability benefits to members; administer retiree health insurance programs; and oversee the state-sponsored deferred compensation program. As of June 30, 2016, PERS provided services to 906 employers and to over 354,000 active, inactive, and retired members and beneficiaries.

The CAFR is intended to fulfill the legal requirements of Oregon Revised Statute (ORS) 238.630. PERS management is responsible for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures.

Macias Gini \& O'Connell LLP (MGO) has audited the accompanying financial statements in accordance with generally accepted auditing standards, and the independent auditor's report is included in this report.

## Management's Discussion and Analysis

Management's Discussion and Analysis (MD\&A) provides a narrative introduction, overview, and analysis to accompany the basic financial statements. This letter of transmittal is designed to complement MD\&A and should be read in conjunction with it. We would like to direct your attention to MD\&A that begins on page 15 .

## Economic Condition and Major Initiatives

The economic condition of PERS is affected primarily by investment earnings. A comparative analysis of investment rates of return is presented on page 25 of this report.

## Major Initiatives

## Strategic Management System

PERS continues to evolve its outcome-based management system to improve operational performance and organizational alignment. This process-based system integrates problem solving and decision making with active engagement from the front-line staff who perform the daily work.

In 2015, the management system was reevaluated and confirmed as the foundation for PERS' 2015-2020 Strategic Plan. Four strategic priorities were identified, with several areas of focus and specific, achievable goals and objectives related to the focus areas:

1. Organizational Management and Development,
2. Member Services and Communications,
3. Data Reliability, and
4. Information Governance, Security, and Technology

For each of the four strategic priorities, PERS is using existing strategic and operational planning functions to prioritize and allocate resources for each of the strategies. Strategies will be executed with a variety of approaches, including problem solving, project management, breakthrough initiatives, and integration into core business practices. Specific performance metrics will be identified for tracking our progress as part of strategy initiation.

Supporting our goals are six core operating processes and six core supporting processes. Each process has an owner, sub processes, and outcome measures to monitor and document our progress. Quarterly target review meetings are held to review our progress and identify areas for improvement.

## System Modernization Goals

PERS is working to maintain and evolve its information technology systems to meet business demands and provide expected levels of service to members and employers. This will allow the agency to increase and improve member-focused communications, improve member data security and reliability, and provide access to member transactions online.

## Disaster Recovery Infrastructure

The agency is working to update its Disaster Recovery Plan. Activities include identifying high-risk areas needing immediate attention and establishing a discrete Business Continuity Program.

## In-house Individual Account Program (IAP) Administration

PERS continues to work on transitioning IAP administration from a third-party administer to an in-house function to enhance service delivery to members and reduce program administration costs.

## Oregon Supreme Court Decision: Moro

In 2015, the Oregon Supreme Court overturned some provisions of 2013 legislation that lowered the annual cost-of-living adjustment (COLA) for benefit recipients. PERS has restored the COLA for approximately 132,000 benefit recipients.

## Customer Satisfaction Survey

Our member and employer customer satisfaction surveys conducted in fiscal year 2016 show overall improvement from 2015, continuing the positive trend of year-to-year improvement over the 11 -year survey period. Over 92 percent of the member survey respondents and 88 percent of the employer survey respondents rated our overall customer service as "good" or "excellent."

## Changes in Accounting Standards

GASB Statement No. 72, Fair Value Measurement and Application provides guidance for determining a fair value measurement for financial reporting purposes, as well as guidance for applying fair value to certain investments and disclosures related to all fair value measurements. This Statement is effective for the fiscal year ending June 30, 2016.

## Assumed Rate of Return on Investments

One of the most significant issues addressed by the Board during the year was a reduction in the assumed rate of return on investments.

## Oregon Public Employees Retirement System

At its September 25, 2015 meeting, the Board directed its actuary to reduce the assumed rate of return on investments from 7.75 percent to 7.50 percent for the 2014 System valuation. The new assumed rate will become effective for Tier One earnings crediting in calendar year 2016 and will be used as the basis for updated actuarial equivalency factors effective January 1, 2016.

## Financial Information

The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America.

## Internal Controls

Management is responsible for establishing and maintaining a system of internal controls to protect PERS' assets from loss, theft, or misuse and to ensure that adequate accounting data is compiled for the preparation of financial statements in conformity with generally accepted accounting principles. There are inherent limitations in the effectiveness of any system of internal controls, including the possibility of human error and the circumvention or overriding of controls. Accordingly, even an effective internal control system may not prevent or detect misstatements and can only provide reasonable assurance with respect to financial statement preparation.

## Funding

Member contributions are set by statute at 6.0 percent, 7.0 percent for judges, of covered salary. Employer contributions are established by actuarial valuations conducted biennially in odd-numbered calendar years. PERS' funding objective is to meet long-term benefit promises through contributions that fund benefits as they accrue. An adequate contribution level, when combined with investment earnings, will result in the full funding of benefits as they come due. If the level of funding is adequate, the ratio of assets accumulated to total liabilities will increase, and more income will be available for investment. Prudent investment of assets and returns on those investments should increase the funding base and allow for a more stable employer contribution rate. As of the December 31, 2015 actuarial valuation, PERS has a funded ratio of 78.7 percent for the defined benefit pension plan it administers, including employer side accounts, and 71.3 percent excluding employer side accounts.

## Investments

The Oregon Investment Council (OIC) has statutory authority (ORS 293.701) to establish policies for the investment and reinvestment of PERS funds. The OIC's primary investment objective is to make PERS' investment funds as productive as possible. At the same time, the OIC acts as a prudent investor in managing the PERS portfolio.

An integral part of investment policy is the strategic asset allocation policy. The target investment portfolio mix at fair value as of June 30,2015 , is 37.5 percent public equity, 17.50 percent private equity, 20 percent debt securities, 12.5 percent real estate and 12.5 percent alternatives. In addition to approved asset classes, target asset allocation ranges, and rebalancing policies, other safeguards on investments include the use of an independent custodian, defined limits of delegated authority, and independent audits. The System's long-term investment outlook allows the portfolio to take advantage of the favorable risk-return characteristics of equities by placing more emphasis on this category. The OIC primarily uses external portfolio managers, employing both passive (indexed) and active strategies. The portfolio is broadly diversified among equities, debt securities, real estate, and private equities, with additional diversification achieved through domestic and international investing. PERS securities are held by a custodian, State Street Bank and Trust Company.

PERS' Regular Investment Portfolio (Portfolio) experienced weak gains in fiscal year 2016 with a rate of return of 1.2 percent. This compares with a rate of return of 4.3 percent for fiscal year 2015. The Portfolio's trailing 10year return was 6.7 percent, 0.8 percent lower than the System's current assumed rate of 7.50 percent. Descriptions of specific OIC policies regarding diversification, performance objectives, fees, and asset allocation are found on page 83 .

## Awards and Acknowledgements Certificate of Achievement

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to PERS for its Comprehensive Annual Financial Report (CAFR) for the fiscal year ended June 30, 2015. The Certificate of Achievement is a prestigious national award that recognizes conformance with the highest standards of preparation of state and local government financial reports.

To be awarded a Certificate of Achievement, a government unit must publish an easily readable and efficiently organized CAFR, whose contents conform to program standards. The CAFR must satisfy both generally accepted accounting principles and applicable legal requirements. A Certificate of Achievement is valid for one year only. PERS has received a Certificate of Achievement for the last 25 consecutive years. We believe our current report continues to conform to the Certificate of Achievement program requirements, and we are submitting it to the GFOA.

## Public Pension Standards Award

The Public Pension Coordinating Council (PPCC) awarded the 2016 Public Pension Standards Award to PERS for its plan design and administration.

The PPCC is a coalition of three associations representing public pension funds that cover the vast majority of public employees in the United States. The associations are: the National Association of State Retirement Administrators (NASRA), the National Conference on Public Employee Retirement Systems (NCPERS), and the National Council on Teacher Retirement (NCTR). Public pension standards are intended to reflect minimum expectations for public retirement system management and administration and to serve as benchmarks by which all defined benefit public plans are measured.

This is the fourteenth year the PPCC has offered the award to public retirement systems and the thirteenth consecutive year PERS has applied for and received the award.

## Acknowledgments

PERS strives to provide complete and reliable information as a basis for making management decisions, to demonstrate responsible stewardship of assets contributed by members and their employers, and to comply with legal provisions. The compilation of this report reflects the combined efforts of the PERS staff.

This report is available on the PERS website at http://oregon.gov/pers, and a link to this document will be emailed to all PERS employers. Summary financial information and the website link will be reported in the PERS newsletter, Perspectives, which is distributed to active and retired members.

The cooperation of PERS employers contributes significantly to PERS' success and is greatly appreciated. We would also like to express our gratitude to the PERS Board and staff, the OIC, the Office of the State Treasurer staff, our advisors and consultants, and the many other people who work diligently to ensure the successful operadion of PERS.

Respectfully submitted,


Steven Patrick Rodeman
Executive Director


Kyle J. Knoll
Chief Financial Officer

## Oregon Public Employees Retirement System

## Public Employees Retirement Board

The Oregon Legislature has delegated authority to the PERS Board of Trustees to administer the System. The Board is composed of five trustees who administer retirement (service and disability), death, and retiree health insurance benefits. PERS also administers the Oregon Savings Growth Plan, a deferred compensation program for state and local government employees.

All members of the Board are appointed by the governor and confirmed by the state Senate. The governor designates the chairperson. Statute specifies Board membership must be three people with experience in business management, pension management, or investing who are not members of the PERS system; one person who is either an employee of the state in a management position or a person who holds an elective office in the governing body of a participating public employer other than the state; and one person representing public employees and retirees.

As of June 30, 2016, the three Board members representing business management, pension management, or investing are Krystal Gema, John Thomas (board chair), and Stephan Buckley. Pat West (vice-chair) was appointed to represent public employees and retirees; Lawrence Furnstahl was appointed to represent public employers. Terms for each member begin and expire with staggered dates.

## John Thomas (chair)

John Thomas is the president and CEO of Financial Pathways Group, a fee-based retirement planning firm in Eugene, Oregon. Mr. Thomas co-founded Pacific Benefit Consultants Inc. in 1993 and served in the past capacity as president and manager of the Financial Services Division. John is vice-chair of Advantage Dental and is a past divisional vice-president and chair of the Finance Committee of MDRT, an international association of insurance and financial service professionals located in Chicago. Mr. Thomas previously served as chair of the McKenzie-Willamette Hospital Board of Trustees and was chair of the Lane County Planning Commission and the Lane County Boundary Commission. John is also the past president of the Springfield Area Chamber of Commerce. Mr. Thomas holds a B.A. from Willamette University and an M.S. in financial services from The American College in Bryn Mawr, Pennsylvania. Mr. Thomas holds professional designations of chartered life underwriter, chartered financial consultant, and certified financial planner.

## Pat West (vice-chair)

Pat West began his career as a Salem firefighter in 1975 and retired as a captain in 2001. Pat was also the legislative director of the Oregon State Firefighters Association from 1987 to 1998 and president from 1998 to 2008. He served on the Oregon Workers’ Compensation Management Labor Advisory Committee, the Governor’s Fire Policy Committee, PERS' Legislative Advisory Committee, and the Board of Oregon PERS Retirees, Inc. Pat is a graduate of South Salem High School and Chemeketa Community College. He attended Oregon State University and was in the U.S. Army from 1968 to 1970.

## Krystal Gema

During her six years with Portland General Electric's Credit Risk Management, Krystal Gema has actively managed credit exposures and safeguarded the firm's assets from the risk of credit loss in connection with energy trading. She draws on her analytical skills to monitor and analyze energy trading entities’ financial conditions for potential financial impacts. Her expertise includes stress testing the firm's trading portfolio, negotiating energy trading contracts and preparing SEC accounting disclosures. Prior to joining PGE, she worked with clients, investment managers, and consultants in Institutional Trust and Custody for US Bank. Gema holds a degree in business finance from Portland State University. She served as a board member for Step It Up, Inc. and is on the board of trustees for Legacy Health-Emanuel Medical Center Foundation. She is a member of the City Club of Portland, Portland Business Alliance, and Urban League of Portland.

## Lawrence Furnstahl

Lawrence J. Furnstahl has three decades experience in the strategic, financial, and operational management of complex organiza-tions-universities and academic health centers-including over 25 years as a CFO. Furnstahl is Executive Vice President and Chief Financial Officer of Oregon Health \& Science University, a $\$ 2.3$ billion Oregon public corporation with 2,500 faculty, 15,000 staff, 4,000 students and trainees, $\$ 350$ million of research, and the state's only major academic health center. Before joining OHSU in January 2011, Furnstahl served as chief financial and strategy officer for the University of Chicago Medical Center and Biological Sciences Division, and University vice president for financial planning for science; senior vice president and chief financial officer for UCSF Stanford Health Care; vice president and chief financial officer for the University of Chicago; and vice president and treasurer and senior executive, patient services for the University of Chicago Hospitals. Furnstahl is a member of the Visiting Committee to the Physical Sciences Division of the University of Chicago, and a board director and former chair of the Hyde Park Art Center. He is a 1983 graduate of the College of the University of Chicago, in economics.

## Stephen Buckley

Stephen Buckley is a partner in the Portland, Oregon, law firm Brownstein Rask, LLP. For more than 25 years, Buckley has served as legal counsel for boards of trustees of private sector health and welfare plans and defined benefit, defined contribution, and 401(k) pension plans in Washington, Oregon, and California. Buckley is a speaker at employee benefit conferences sponsored by the International Foundation of Employee Benefit Plans. Buckley is a graduate of Colorado State University and received his Juris Doctorate degree from Willamette University College of Law.

Public Employees Retirement System Organizational Chart
As of 6/30/2016


Oregon Public Employees Retirement System Consultants
\(\left.$$
\begin{array}{lll}\text { Actuary } & \text { Medical Advisor } & \begin{array}{l}\text { Strategic and Organizational Planning } \\
\text { Milliman, Inc. }\end{array}
$$ <br>

F. William Miller, MD\end{array}\right]\)| Investments |
| :--- |

# Certificate of <br> Achievement for Excellence in Financial <br> Reporting 

# Presented to <br> Oregon Public Employees Retirement System 

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended
June 30, 2015


Executive Director/CEO

# Pp C <br> Public Pension Coordinating Council <br> Public Pension Standards Award For Funding and Administration <br> 2016 

Presented to

## Oregon 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)


Alan H. Winkle
Program Administrator

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## Financial Section

# Oregon Public Employees Retirement System 

MGO

# Independent Auditor's Report 

| To the Honorable Kate Brown | Walnut Creek |
| :--- | ---: |
| Governor of Oregon | Woodland Hills |

To the Public Employees Retirement Board of the
Oregon Public Employees Retirement System
Tigard, Oregon

## Report on the Financial Statements

We have audited the accompanying financial statements of the fiduciary activities and proprietary activities of the Oregon Public Employees Retirement System (the System), an agency of the State of Oregon, as of and for the year ended June 30, 2016, and the related notes to the financial statements, which collectively comprise the System's financial statements as listed in the table of contents.

## Management's Responsibility for the Financial Statements

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

## Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the 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 System's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

## Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the fiduciary activities and proprietary activities of the Oregon Public Employees Retirement System as of June 30, 2016, and the respective changes in financial position, and where applicable, cash flows thereof for the fiscal year then ended in accordance with accounting principles generally accepted in the United States of America.

## Emphasis of Matters

As discussed in Note 1 to the financial statements, the System implemented the provisions of Governmental Accounting Standards Board Statement (GASBS) No. 72, Fair Value Measurement and Application, for the fiscal year ended June 30, 2016.

As discussed in Note 10 to the financial statements, the total pension liability for the Defined Benefit Pension Plan, based on the actuarial valuation as of December 31, 2014, rolled forward to June 30, 2016, exceeded the plan's fiduciary net position by $\$ 15.0$ billion. The actuarial valuation is very sensitive to the underlying assumptions, including a discount rate of 7.50 percent, which represents the long-term expected rate of return.

Also discussed in Note 11 to the financial statements, based on the most recent actuarial valuations for the post-employment healthcare benefit plans as of December 31, 2015, the System's third-party actuary determined that the value of the post-employment healthcare plans' actuarial accrued liabilities exceeded the actuarial value of their assets by $\$ 46.3$ million for the Retirement Health Insurance Account plan, and $\$ 56.6$ million for the Retiree Health Insurance Premium Account plan.

Our opinions are not modified with respect to these matters.

## Other Matters

## Prior-Year Comparative Information

The financial statements include partial prior-year comparative information. Such information does not include all of the information required to constitute a presentation in conformity with accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the System's financial statements for the fiscal year ended June 30, 2015, from which such partial information was derived.

We have previously audited the System's 2015 financial statements, and we expressed unmodified audit opinions on the respective financial statements of the fiduciary activities and the proprietary activities in our report dated December 1, 2015. In our opinion, the partial comparative information presented herein as of and for the fiscal year ended June 30, 2015, is consistent, in all material respects, with the audited financial statements from which it has been derived.

## Required Supplementary Information

Accounting principles generally accepted in the United States of America require that management's discussion and analysis, the schedule of changes in net pension liability/(asset) and related ratios, the schedule of investment returns, the schedule of defined benefit pension plan employer contributions, the schedules of funding progress - OPEB plans, the schedules of employer contributions - OPEB plans, and the schedule of claims development information - Standard Retiree Health Insurance Account, as listed in the table of contents, be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the 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 financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

## Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the System's financial statements. The other supplemental information, introductory, investment, actuarial, and statistical sections, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the financial statements.

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

The introductory, investment, actuarial and statistical sections have not been subjected to the auditing procedures applied in the audit of the financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

## Other Reporting Required by Government Auditing Standards

In accordance with Government Auditing Standards, we have also issued our report dated December 1, 2016 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with Government Auditing Standards in considering the System's internal control over financial reporting and compliance.

Macias Gin $\dot{E}$ O'Comell LDP
Sacramento, California
December 1, 2016

## MANAGEMENT'S DISCUSSION AND ANALYSIS

This section presents management's discussion and analysis of the Oregon Public Employees Retirement System's (PERS or the System) financial performance during the year ended June 30, 2016. It is a narrative overview and analysis that we present in conjunction with the Letter of Transmittal included in the Introductory Section of this Comprehensive Annual Financial Report (CAFR). It should also be read in conjunction with PERS' basic financial statements, as presented in this report.

PERS is primarily responsible for administering retirement benefits, health benefits, and supplemental retirement savings plans. PERS comprises six funds: a defined benefit pension plan, an account-based benefit plan, two other postemployment benefit plans, a deferred compensation plan, and a proprietary fund.

## OVERVIEW OF THE FINANCIAL STATEMENTS AND ACCOMPANYING INFORMATION

Management's discussion and analysis provides an introduction to and overview of the basic financial statements, which comprise the following components: Fund Financial Statements and Notes to the Basic Financial Statements. Collectively, this information presents the combined net position restricted for pension benefits, other postemployment benefits (OPEB), and deferred compensation, along with the unrestricted net position of the proprietary fund administered by PERS as of June 30, 2016. It also summarizes the combined changes in net position restricted for pension benefits and OPEB, the changes in unrestricted net position, and the cash flows of the proprietary fund for the year then ended, along with an actuarial measurement of the employers' total pension liability compared to the fiduciary net position of the defined benefit pension plan, and the funded status of the other postemployment benefit plans. The information available in each of these sections is briefly summarized below:

## Fund Financial Statements

At June 30, 2016, financial statements are presented for the two types of funds administered by PERS: fiduciary funds, where PERS acts in a fiduciary capacity as a trustee for others and is responsible for administering the assets placed under its control; and a proprietary fund, where fees are charged for services provided and the focus is on determining financial position, operating and non-operating income, cash flows and changes in net position.

Fiduciary Funds - include the Defined Benefit Pension Plan, Oregon Public Service Retirement Plan Individual Account Program (OPSRP IAP), the Retirement Health Insurance Account (RHIA), the Retiree Health Insurance Premium Account (RHIPA), and the Deferred Compensation Plan. Fiduciary funds are used to account for resources held for the benefit of PERS participants. A statement of fiduciary net position and a statement of changes in fiduciary net position are presented for the fiduciary funds as of and for the year ended June 30, 2016, along with comparative total information as of and for the year ended June 30, 2015. These financial statements reflect the resources available to pay benefits to retired members and other beneficiaries as of year-end, as well as the changes in those resources during the year.

Proprietary Fund - includes the Standard Retiree Health Insurance Account (SRHIA), an enterprise fund. A statement of net position, a statement of revenues, expenses, and changes in net position, and a statement of cash flows are presented for the proprietary fund as of and for the year ended June 30, 2016, along with comparative total information as of and for the year ended June 30, 2015. These financial statements reflect the net position, changes in net position, and cash flows resulting from PERS business-type activities.

## Oregon Public Employees Retirement System

## Notes to the Basic Financial Statements

Note 1 - provides a summary of significant accounting policies, including the basis of accounting for each of the fund types: investment accounting policies, management's use of estimates, and other significant accounting policies.

Note 2 - provides a general description of PERS as well as a description of each of the funds administered by PERS. Information regarding employer and member participation in the pension plans administered by PERS is also provided.

Note 3 - provides information on the System's account receivables and payables.
Note 4 - provides information on cash and cash equivalents. The note also describes investments, including the techniques and inputs used to determine fair value, investing authority, investment risk categorizations, and additional information about unfunded investment commitments, securities lending, and derivatives.

Note 5 - provides information about capital assets used in plan operations.
Note 6 - provides information about PERS' long-term debt.
Note 7 - provides information on reserves.
Note 8 - provides information on potential contingencies of PERS.
Note 9 - provides information on the estimated claims liability of the SRHIA.
Note 10 - provides information on the Employers' Net Pension Liability.
Note 11 - provides information about the funded status of other postemployment benefit plans administered by PERS.

## Required Supplementary Information

In addition to the financial statements and notes explained above, this CAFR includes six additional Required Supplementary Information schedules with historical trend information, as described below:

- The Schedule of Changes in Net Pension Liability/(Asset) and Related Ratios, page 68, presents the pension plan's total pension liability, fiduciary net position, net pension liability, the change in net pension liability, fiduciary net position as a percentage of the total pension liability, total covered payroll, and net pension liability as a percentage of covered payroll. This required 10 -year trend schedule will disclose future years prospectively.
- The Schedule of Investment Returns - Defined Benefit Pension Plan, page 68, presents for each fiscal year the annual money-weighted return (internal rate of return) on pension plan investments, net of pension plan investment expense. This required 10 -year trend schedule will disclose future years prospectively, beginning with fiscal year ended June 30, 2014.
- The Schedule of Defined Benefit Employer Pension Plan Contributions, on pages 69 - 70, contains a 10 -year schedule comparing the amount of actuarially determined contributions with the amount of contributions recognized in relation to the actuarially determined contributions, and showing whether there is a contribution deficiency or excess. The schedule also shows the amounts of contributions recognized by the pension plan in relation to the actuarially determined contributions as a percentage of covered payroll.
- The Schedules of Funding Progress - OPEB Plans, page 71, contain actuarial information about the status of the other postemployment plans from an ongoing, long-term perspective, showing whether there are sufficient assets to pay postemployment benefits when due. Valuation Assets in excess of Actuarial Liabilities would indicate that sufficient assets have been accumulated as of the valuation date to fund the future benefits of current members and retirees.
- The Schedules of Employer Contributions - OPEB Plans, page 72, contain historical trend information regarding the value of the total annual contributions employers must pay and the actual contributions made to meet this requirement.
- The Schedule of Claims Development Information for SRHIA, page 73, shows earned revenues and expenses over the past six years.


## Other Supplemental Information

In addition to the Required Supplementary Information, there are four Other Supplemental Information schedules, as described below:

- The Schedule of Fiduciary Net Position and Schedule of Changes in Fiduciary Net Position - Defined Benefit Pension Plan, pages 74 and 75, display the components of the defined benefit pension plan.
- The Schedule of Administrative Expenses and Schedule of Payments to Consultants and Contractors on pages 76 and 77 show the costs of managing the System.
- The Summary of Investment Fees, Commissions, and Expenses on page 78 provides the detail of in-vestment-related expenses included in the Investment Expense line item reported in the Statement of Changes in Fiduciary Net Position.


## FIDUCIARY FUNDS

- PERS' assets exceed its liabilities at the close of fiscal year 2016, with $\$ 71,331.6$ million restricted for pension, IAP, OPEB, and deferred compensation benefits.
- Fiduciary net position decreased by $\$ 2,533.5$ million, or 3.4 percent, during the fiscal year, as benefit payments exceeded contributions, as well as the decrease in value of investments.
- PERS' funding objective is to meet long-term benefit obligations. As of December 31, 2015, the date of the latest actuarial funding valuation, the funded ratio of the defined benefit pension plan, including side accounts, was 78.7 percent. In general, this means that for every dollar of pension benefits due, PERS has approximately $\$ 0.79$ available for payment.


## Oregon Public Employees Retirement System

- Revenues (additions to fiduciary net position), which include member and employer contributions of $\$ 1,720.8$ million and net income from investment activities totaling $\$ 493.0$ million, fell 51.4 percent to $\$ 2,218.9$ million, for fiscal year 2016, compared to $\$ 4,566.7$ in fiscal year 2015.
- Expenses (deductions from fiduciary net position) increased 7.3 percent to $\$ 4,752.4$ million during the fiscal year from $\$ 4,429.8$ million in fiscal year 2015, primarily due to increased benefit payments.


## FIDUCIARY NET POSITION

The condensed comparative summaries of Fiduciary Net Position below, and on page 19 demonstrate that the pension trust funds are primarily focused on investments and net position (reserves).

- The net position of the Defined Benefit Pension Plan decreased approximately $\$ 2,841.6$ million, or 4.4 percent, during the year ended June 30, 2016, primarily due to the 4.6 percent decline in the value of investments.
- The net position of the OPSRP IAP increased approximately $\$ 269.9$ million, or 3.9 percent, during the year ended June 30, 2016, as the value of investments grew slightly.
- The net position of the deferred compensation plan increased approximately $\$ 17.9$ million, or 1.2 percent, during the year ended June 30, 2016, due to a slight increase in the value of investments.
- The net position of the RHIA increased approximately $\$ 14.0$ million, or 3.3 percent, during the year ended June 30, 2016, as the value of investments grew 4.5 percent as employer contributions more than offset increases in healthcare premium subsidies.
- The net position of the RHIPA increased approximately $\$ 6.3$ million, or 71.3 percent, during the year ended June 30, 2016, as the value of investments grew 67.0 percent due to an increase in the employer contributions rate.

TABLE 1
FIDUCIARY NET POSITION, PENSION
(in thousands) As of June 30

|  |  | Defined Benefit Pension Plan |  |  | Individual Account Program |  |  |  | Deferred Compensation Plan |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2016 |  | 2015 |  | 2016 |  | 2015 |  | 2016 |  | 2015 |  |
| Cash and Receivables | \$ | 4,264,917 | \$ | 4,593,950 | \$ | 472,842 | \$ | 472,191 | \$ | 65,795 | \$ | 63,969 |
| Investments at Fair Value |  | 59,792,054 |  | 62,663,003 |  | 6,964,348 |  | 6,719,214 |  | 1,493,347 |  | 1,476,789 |
| Securities Lending Collateral |  | 1,332,772 |  | 1,502,082 |  | 156,920 |  | 163,078 |  | 11 |  | 11 |
| Other |  | 37,643 |  | 40,342 |  | 289 |  | 311 |  | - |  | - |
| Total Assets |  | 65,427,386 |  | 68,799,377 |  | 7,594,399 |  | 7,354,794 |  | 1,559,153 |  | 1,540,769 |
| Investment Purchases |  | 1,904,658 |  | 2,258,427 |  | 182,107 |  | 208,607 |  | 645 |  | 578 |
| Securities Lending Payable |  | 1,335,499 |  | 1,504,104 |  | 157,240 |  | 163,297 |  | 11 |  | 11 |
| Other Payables |  | 105,170 |  | 113,220 |  | 15,180 |  | 12,950 |  | 710 |  | 292 |
| Total Liabilities |  | 3,345,327 |  | 3,875,751 |  | 354,527 |  | 384,854 |  | 1,366 |  | 881 |
| Total Net Position | \$ | 62,082,059 | \$ | 64,923,626 | \$ | 7,239,872 | \$ | 6,969,940 | \$ | 1,557,787 | \$ | 1,539,888 |

TABLE 2
FIDUCIARY NET POSITION, OTHER POSTEMPLOYMENT BENEFITS (in thousands) As of June 30

|  |  | Retirement Health Insurance Account |  |  |  | Retiree Health Insurance Premium Account |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 2016 |  | 2015 |  | 2016 | 2015 |  |
| Cash and Receivables | \$ | 32,050 | \$ | 33,165 | \$ | 3,394 | \$ | 1,793 |
| Investments at Fair Value |  | 423,495 |  | 405,091 |  | 12,063 |  | 7,223 |
| Securities Lending Collateral |  | 9,548 |  | 9,845 |  | 277 |  | 179 |
| Other |  | 33 |  | 31 |  | 1 |  | 1 |
| Total Assets |  | 465,126 |  | 448,132 |  | 15,735 |  | 9,196 |
| Investment Purchases |  | 13,825 |  | 15,227 |  | 321 |  | 224 |
| Securities Lending Payable |  | 9,568 |  | 9,858 |  | 277 |  | 179 |
| Other Payables |  | 4,831 |  | 120 |  | 118 |  | 27 |
| Total Liabilities |  | 28,224 |  | 25,205 |  | 716 |  | 430 |
| Total Net Position | \$ | 436,902 | \$ | 422,927 | \$ | 15,019 | \$ | 8,766 |

## CHANGES IN FIDUCIARY NET POSITION

## Revenues - Additions to Fiduciary Net Position

Additions to Fiduciary Net Position needed to finance retirement benefits are accumulated through the collection of employer and member contributions and through investment income.

- Employer contributions to the defined benefit pension plan decreased by $\$ 145.9$ million, or 13.0 percent, in fiscal year 2016. This decrease was primarily due to the receipt of $\$ 175$ million in Unfunded Actuarial Liability (UAL) side account payments in fiscal year 2015 and none in fiscal year 2016. Adjusting for last year's side account payments, the net change was effectively an increase of $\$ 29.1$ million, or 3.1 percent. This increase in contributions is attributable to an increase in covered salaries in fiscal year 2016.
- Employer contributions to the RHIA decreased $\$ 9.0$ million to $\$ 44.6$ million in fiscal year 2016 compared to $\$ 53.6$ million in fiscal year 2015, a 16.9 percent decrease. This decrease was primarily due to a 10.2 percent decrease in the employer contribution rate.
- Employer contributions to the RHIPA were $\$ 11.0$ million in fiscal year 2016 compared to $\$ 6.9$ million in fiscal year 2015, an increase of $\$ 4.1$ million or 59.2 percent, due to a 63.0 percent increase in the contribution rate.
- Member contributions to the Defined Benefit Pension Plan increased by $\$ 428.9$ thousand, or 3.1 percent, in fiscal year 2016 due to an increase in service credit purchases. Member contributions to the defined benefit pension plan have been closed since 2004 except for judge members.
- Member contributions to the IAP increased slightly by $\$ 3.0$ million, or 0.5 percent, as covered salaries increased due to an increase in OPSRP members from fiscal year 2015 to fiscal year 2016, offset by a decline in Tier One/Tier Two members.
- Member contributions to the deferred compensation plan increased by $\$ 7.5$ million, or 7.5 percent, in fiscal year 2016. Active membership increased 4.6 percent from 22,243 to 23,269 during the year. Ad-


## Oregon Public Employees Retirement System

ditionally there were increased rollovers into the deferred compensation plan, as well as an increase in salary-based contributions.

- Net investment and other income decreased due to volatile financial markets:
$\diamond$ Defined benefit pension plan: $\$ 413.9$ million, a $\$ 1,950.6$ million, or 82.5 percent, decrease over the fiscal year 2015 gain of $\$ 2,364.5$ million
$\checkmark$ IAP: $\$ 76.5$ million in fiscal year 2016, a $\$ 200.4$ million, or 72.4 percent, decrease from the fiscal year 2015 gain of $\$ 276.9$ million.
$\diamond$ Retirement Health Insurance Account: $\$ 4.2$ million, a $\$ 11.4$ million, or 72.8 percent, decrease from the fiscal year 2015 gain of $\$ 15.6$ million.
$\diamond$ Retiree Health Insurance Premium Account: decreased \$38.9 thousand to \$228.1 thousand, a 14.6 percent decrease over the fiscal year 2015 gain of $\$ 266.9$ thousand.
$\diamond$ Deferred compensation plan: $\$ 3.2$ million, a $\$ 45.5$ million, or 93.5 percent, decrease from the fiscal year 2015 gain of $\$ 48.6$ million.


## Expenses - Deductions from Fiduciary Net Position

Benefit payments, refunds of contributions to members who terminate employment, health insurance premium subsidies, deferred compensation payments, and administrative costs comprise the System's expenses.

- Pension benefit and other payments from the defined benefit pension plan were $\$ 4,247.0$ million in fiscal year 2016, a $\$ 268.7$ million, or 6.8 percent, increase over fiscal year 2015 expenses of $\$ 3,979.4$ million, primarily due to the restoration of cost of living (COLA) payments to benefit recipients as a result of the Moro decision in April 2015, as well as the annual cost of living adjustment. The increase in benefit payments during the fiscal year produced a decrease in net position.
- IAP benefit and other payments increased by $\$ 45.5$ million, or 13.9 percent, during the year, from $\$ 327.5$ million in fiscal year 2015 to $\$ 373.0$ million in fiscal year 2016. Accounts withdrawn increased due to an increase in service retirements for the year.
- Deferred compensation benefits and other expenses increased by $\$ 7.4$ million, or 8.6 percent, from $\$ 85.2$ million in fiscal year 2015 to $\$ 92.6$ million in fiscal year 2016. Benefit payments were higher due to increased retirement activity.
- RHIA healthcare premium and other payments increased by $\$ 1.7$ million, or 5.0 percent, from $\$ 33.2$ million in fiscal year 2015 to $\$ 34.9$ million in fiscal year 2016 due to an increase in participants.
- RHIPA healthcare premium and other payments increased by $\$ 523$ thousand, or 11.8 percent, from $\$ 4.4$ million in fiscal year 2015 to $\$ 4.9$ million in fiscal year 2016, primarily due to increased Healthcare Premium Subsidies and subsidy tier allocation, which is based on the years of service.

The tables on page 21 show condensed comparative summaries of the changes in fiduciary net position and reflect the activities of the plans administered by the System.

TABLE 3
CHANGES IN FIDUCIARY NET POSITION, PENSION
(in thousands) For the Years Ending June 30:

|  |  | Defined Benefit Pension Plan |  |  | Individual Account Program |  |  |  | Deferred Compensation Plan |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2016 |  | 2015 |  | 2016 |  | 2015 |  | 2016 |  | 2015 |  |
| Additions: |  |  |  |  |  |  |  |  |  |  |  |  |
| Employer Contributions | \$ | 977,332 | \$ | 1,123,257 | \$ | - | \$ | - | \$ | - | \$ | - |
| Member Contributions |  | 14,214 |  | 13,785 |  | 566,450 |  | 563,418 |  | 107,286 |  | 99,797 |
| Net Investment and |  |  |  |  |  |  |  |  |  |  |  |  |
| Other Income |  | 413,916 |  | 2,364,479 |  | 76,509 |  | 276,949 |  | 3,167 |  | 48,617 |
| Total Additions |  | 1,405,462 |  | 3,501,521 |  | 642,959 |  | 840,367 |  | 110,453 |  | 148,414 |
| Deductions: |  |  |  |  |  |  |  |  |  |  |  |  |
| Pension Benefits |  | 4,193,308 |  | 3,927,167 |  | 364,549 |  | 319,979 |  | 91,351 |  | 84,178 |
| Other |  | 53,721 |  | 52,221 |  | 8,478 |  | 7,565 |  | 1,203 |  | 1,018 |
| Total Deductions |  | 4,247,029 |  | 3,979,388 |  | 373,027 |  | 327,544 |  | 92,554 |  | 85,196 |
| Net Increase (Decrease) |  | $(2,841,567)$ |  | $(477,867)$ |  | 269,932 |  | 512,823 |  | 17,899 |  | 63,218 |
| Net Position |  |  |  |  |  |  |  |  |  |  |  |  |
| Beginning of Year |  | 64,923,626 |  | 65,401,493 |  | 6,969,940 |  | 6,457,117 |  | 1,539,888 |  | 1,476,670 |
| End of Year | \$ | 62,082,059 | \$ | 64,923,626 | \$ | 7,239,872 | \$ | 6,969,940 | \$ | 1,557,787 | \$ | 1,539,888 |

TABLE 4
CHANGES IN FIDUCIARY NET POSITION, OTHER POSTEMPLOYMENT BENEFITS (in thousands) For the Years Ending June 30:

|  | Retirement Health Insurance Account |  |  |  | Retiree Health Insurance Premium Account |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2016 |  | 2015 |  | 2016 |  | 2015 |  |
| Additions: |  |  |  |  |  |  |  |  |
| Employer Contributions | \$ | 44,588 | \$ | 53,648 | \$ | 10,967 | \$ | 6,887 |
| Net Investment and Other Income |  | 4,247 |  | 15,607 |  | 228 |  | 267 |
| Total Additions |  | 48,835 |  | 69,255 |  | 11,195 |  | 7,154 |
| Deductions: |  |  |  |  |  |  |  |  |
| Healthcare Premium Subsidies |  | 33,603 |  | 31,923 |  | 4,683 |  | 4,231 |
| Other |  | 1,256 |  | 1,279 |  | 260 |  | 189 |
| Total Deductions |  | 34,859 |  | 33,202 |  | 4,943 |  | 4,420 |
| Net Increase |  | 13,976 |  | 36,053 |  | 6,252 |  | 2,734 |
| Net Position |  |  |  |  |  |  |  |  |
| Beginning of year |  | 422,926 |  | 386,874 |  | 8,767 |  | 6,032 |
| End of Year | \$ | 436,902 | \$ | 422,927 | \$ | 15,019 | \$ | 8,766 |

## PROPRIETARY FUND

Standard Retiree Health Insurance Account (SRHIA) uses an enterprise fund to account for the activities of PERS' healthcare program, a public entity risk pool.

## NET POSITION

- The net position of the SRHIA as of June 30, 2016, was $\$ 47,371$ million, a $\$ 7.4$ million, or 13.5 percent decrease over fiscal year 2015. This decrease was primarily due to a decrease in cash resulting from higher medical claims cost and prescription drug costs trending in the double digits, impacting the minimum premium funding arrangement.


## CHANGES IN NET POSITION

- SRHIA insurance premium and other revenue for the year ended June 30, 2016, was $\$ 197.9$ million, a $\$ 28.7$ million, or 12.7 percent, decrease from fiscal year 2015. This decrease is primarily due to the initial of recognition of $\$ 34.3$ million in reinsurance settlements in fiscal year 2015 compared to $\$ 29.0$ million in fiscal year 2016. This decrease can also be attributed to the Moda Advantage medical plan moving from a minimum premium funding arrangement to a conventionally insured plan in 2016.
- SRHIA healthcare and other payments for the year ended June 30, 2016, decreased $\$ 39.0$ million, or 16.0 percent, from $\$ 244.3$ million in fiscal year 2015 to $\$ 205.3$ million in fiscal year 2016 due primarily to the Moda Advantage plan moving from a minimum premium funding arrangement to a conventionally insured plan, as well as decreases in administrative and claims expense.

The tables below show the condensed summary of net position and the condensed summary of changes in revenues, expenses, and net position for SRHIA.

TABLE 5
NET POSITION, PROPRIETARY FUND
(in thousands) As of June 30

|  |  | Standard Retiree Health Insurance Account |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2016 |  | 2015 |  |
| Cash and Receivables | \$ | 63,621 | \$ | 72,908 |
| Net Pension Asset |  | - |  | 44 |
| Securities Lending Collateral |  | 660 |  | 2,802 |
| Total Assets |  | 64,281 |  | 75,754 |
| Deferred Outflow of Resources: Pensions |  | 29 |  | 16 |
| Claims Payable |  | 9,200 |  | 14,798 |
| Other Payables |  | 6,910 |  | 3,293 |
| Securities Lending Payable |  | 660 |  | 2,802 |
| Net Pension Liability |  | 114 |  | - |
| Other Liabilities |  | 28 |  | 28 |
| Total Liabilities |  | 16,912 |  | 20,921 |
| Deferred Inflow of Resources: Pensions |  | 28 |  | 85 |
| Total Net Position | \$ | 47,370 | \$ | 54,764 |

TABLE 6
REVENUES, EXPENSES, AND CHANGES IN NET POSITION, PROPRIETARY FUND (in thousands) For the Years Ending June 30:

|  |  | Standard Retiree Health Insurance Account |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2016 |  | 2015 |  |
| Revenues: |  |  |  |  |
| Insurance Premiums | \$ | 168,655 | \$ | 191,970 |
| Reinsurance Reimbursements |  | 29,008 |  | 34,259 |
| Investment Income |  | 259 |  | 358 |
| Other Income |  | - |  | 21 |
| Total Revenues |  | 197,922 |  | 226,608 |
| Expenses: |  |  |  |  |
| Claims |  | 184,613 |  | 211,904 |
| Change in Estimated Liabilities |  | $(5,598)$ |  | 306 |
| Administrative and Other Expense |  | 26,301 |  | 32,091 |
| Total Expenses |  | 205,316 |  | 244,301 |
| Net Decrease |  | $(7,394)$ |  | $(17,693)$ |
| Net Position |  |  |  |  |
| Beginning of Year |  | 54,764 |  | 72,457 |
| End of Year | \$ | 47,370 | \$ | 54,764 |

## PLAN MEMBERSHIP

The table below reflects the Defined Benefit Pension Plan membership as of the end of the fiscal years.

TABLE 7
CHANGES IN PLAN MEMBERSHIP
As of June 30:

|  | 2016 | 2015 | Percentage Change |
| :---: | :---: | :---: | :---: |
| Retirees and beneficiaries benefits: |  |  |  |
| General | 125,742 | 122,202 | 2.9 \% |
| Police and Fire | 10,693 | 10,304 | 3.8 |
| Total | 136,435 | 132,506 | 3.0 |

Current and terminated employees:
Vested:

| General | 198,055 | 194,588 | 1.8 |
| :---: | :---: | :---: | :---: |
| Police and Fire | 17,307 | 16,389 | 5.6 |
| onvested: |  |  |  |
| General | 2,141 | 2,293 | (6.6) |
| Police and Fire | 98 | 106 | (7.5) |
| tal | 217,601 | 213,376 | 2.0 \% |

## Oregon Public Employees Retirement System

## SERVICE RETIREMENTS

Service retirements increased by 5.7 percent in fiscal year 2016, primarily due to an increase in inactive members receiving benefits. Service retirements in fiscal year 2016 were 7,163 compared to 6,779 in fiscal year 2015.

TABLE 8
SERVICE RETIREMENTS
By Fiscal Year


## NET PENSION LIABILITY

The Employers' Net Pension Liability (NPL) as of June 30, 2016, was $\$ 15,012.3$, compared to a Net Pension Liability of $\$ 5,741.5$ as of June 30, 2015. The change was primarily the result of following factors:

- The total pension liability increased primarily due to changes in assumptions, including lowering the discount rate from 7.75 percent to 7.50 percent, and interest on the liability as current active members get closer to retirement.
- Fiduciary net position decreased as benefit payments exceeded contributions and net investment income.


## INVESTMENT ACTIVITIES

During fiscal year 2016, investments decreased by 3.6 percent over the prior fiscal year as markets continued to experience significant volatility. While most asset classes experienced negative investment returns, the Real Estate, Alternative, and Opportunity portfolios experienced increases. Public equity decreased approximately $\$ 3,209.3$ million, or 10.6 percent, as domestic exhibited modest returns, and international equity suffered investment losses. Investments in debt securities decreased by $\$ 941.0$ million, or 6.0 percent as a result of transactions made in accordance with the Oregon Investment Council's asset allocation policy. Private equity investments were down approximately $\$ 1,002.4$ million for the year. The Opportunity Portfolio increased approximately $\$ 290.2$ million during the fiscal year, and Alternative asset class increased by $\$ 1,450.6$, or 96.8 percent. The fair value of real estate investments increased by $\$ 826.0$ million due to gains in both real property and real estate investment trusts. One-year returns on asset classes and comparative benchmarks are presented in the table on the next page.

## Table 9 <br> Investment Results* Periods Ending June 30,

|  | 2016 | 2015 |
| :---: | :---: | :---: |
| Total Portfolio, Excluding Variable Account | 1.21 \% | 4.32 \% |
| Policy Benchmark ${ }^{1}$ | 1.62 | 5.47 |
| Variable Account | (3.43) | 1.15 |
| Benchmark: MSCI All Country World Investable Market Index Net | (3.87) | 0.81 |
| Domestic Stocks | (0.28) | 6.83 |
| Benchmark: Russell 3000 Index | 2.14 | 7.29 |
| International Stocks | (8.12) | (3.07) |
| Benchmark: MSCI All Country World ex-US Investable Market Index Net | (9.61) | (4.97) |
| Fixed Income Segment | 3.63 | 1.47 |
| Benchmark: Custom Index ${ }^{2}$ | 3.67 | 1.38 |
| Real Estate ${ }^{3}$ | 10.86 | 12.04 |
| Benchmark: NCREIF Property Index ${ }^{3}$ | 11.81 | 12.72 |
| Private Equity ${ }^{4}$ | 4.52 | 9.54 |
| Benchmark: Russell 3000 Index $+300 \mathrm{bps}^{3}$ | 2.65 | 15.71 |
| Alternative Equity | (0.79) | (1.99) |
| Benchmark: Consumer Price Index +400 bps | 5.04 | 4.13 |
| Opportunity Portfolio | 0.36 | (0.73) |
| Benchmark: Russell 3000 Index | 2.14 | 7.29 |

The rates of return reported in the Investment Section are based on a time-weighted rate of return methodology based upon market values, unless disclosed otherwise in the footnotes to the associated tables.

[^0]* Investment Results are based upon OIC asset classes as determined by each manager's primary investment type, not the financial statement classification of individual holdings.


## Oregon Public Employees Retirement System

## CURRENTLY KNOWN FACTS, CONDITIONS, OR DECISIONS

The following are currently known facts, conditions, or decisions that are expected to have a significant effect on the System's financial position or results of operations:

- The PERS Board lowered the assumed rate for PERS transactions to 7.50 percent at its September 25, 2015 meeting, effective January 1, 2016 for Tier One interest crediting and updated actuarial equivalency factors. This decision was based on data from the investment forecasts and review of the guiding principles presented by the actuaries. The Oregon Investment Council also supported a decrease in the assumed rate due to the collapse in bond yields and persistent downward pressures on interest rates.
- Effective with the December 31, 2014 actuarial valuation, issued in November 2015, assumptions were changed, which are expected to have a significant impact on future contribution rates. These changes include the lowering of assumed investment returns to 7.50 percent, the assumed inflation was lowered to 2.50 percent, the healthy mortality assumption was changed to reflect an updated mortality improvement scale for all groups, and updated assumptions for merit increases, unused sick leave, and vacation pay.


## CONTACTING THE SYSTEM'S FINANCIAL MANAGEMENT

This financial report is designed to provide plan participants, employers, citizens, taxpayers, and others with a general overview of the System's finances and to demonstrate the Board's oversight of the System. If you have questions about this report or need additional financial information, please contact the Financial and Administrative Services Division Administrator at P.O. Box 23700, Tigard, Oregon 97281-3700.

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## Oregon Public Employees Retirement System

Statement of Fiduciary Net Position

## Pension and Other Postemployment Plans

As of June 30, 2016, with Comparative Totals as of June 30, 2015

|  | Defined Benefit <br> Pension Plan |  | Oregon Public Service Retirement Plan Individual Account Program |  | Defined Benefit OPEB Plans |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Retirement <br> Health <br> Insurance <br> Account | Retiree Health <br> Insurance <br> Premium <br> Account |  |
| Assets: |  |  |  |  |  |  |  |  |  |  |
| Cash and Cash Equivalents | \$ | 2,386,926,315 | \$ | 310,376,185 | \$ | 20,800,162 | \$ | 1,560,687 |
| Receivables: |  |  |  |  |  |  |  |  |
| Employer |  | 54,904,880 |  | - |  | 1,952,195 |  | 1,482,397 |
| Plan Member |  | - |  | 14,415,424 |  | - |  | - |
| Interest and Dividends |  | 275,697,607 |  | 32,972,968 |  | 1,972,145 |  | 56,173 |
| Member Loans |  | - |  | - |  | - |  | - |
| Investment Sales and Other Receivables |  | 990,866,722 |  | 108,521,966 |  | 6,694,341 |  | 247,134 |
| Transitional Liability |  | 555,342,138 |  | - |  | - |  | - |
| Total Receivables |  | 1,876,811,347 |  | 155,910,358 |  | 10,618,681 |  | 1,785,704 |
| Due from Other Funds |  | 1,178,813 |  | 6,555,070 |  | 631,538 |  | 47,977 |
| Investments: |  |  |  |  |  |  |  |  |
| Debt Securities |  | 12,885,495,925 |  | 1,515,791,687 |  | 92,173,708 |  | 2,625,409 |
| Public Equity |  | 23,037,166,760 |  | 2,640,668,952 |  | 160,576,318 |  | 4,573,740 |
| Real Estate |  | 7,631,859,552 |  | 897,777,574 |  | 54,592,916 |  | 1,554,985 |
| Private Equity |  | 12,403,949,266 |  | 1,459,144,707 |  | 88,729,064 |  | 2,527,295 |
| Alternative Equity |  | 2,621,001,445 |  | 308,322,801 |  | 18,748,787 |  | 534,027 |
| Opportunity Portfolio |  | 1,212,581,250 |  | 142,642,595 |  | 8,673,947 |  | 247,062 |
| Total Investments |  | 59,792,054,198 |  | 6,964,348,316 |  | 423,494,740 |  | 12,062,518 |
| Securities Lending Collateral |  | 1,332,772,426 |  | 156,919,670 |  | 9,548,422 |  | 276,905 |
| Prepaid Expenses |  | 5,724,946 |  | - |  | 32,906 |  | 938 |
| Capital Assets at Cost, Net |  | 31,918,036 |  | 289,021 |  | - |  | - |
| Total Assets |  | $\mathbf{6 5 , 4 2 7 , 3 8 6 , 0 8 1}$ |  | 7,594,398,620 |  | 465,126,449 |  | 15,734,729 |
| Liabilities: |  |  |  |  |  |  |  |  |
| Investment Purchases and Accrued Expenses |  | 1,904,657,595 |  | 182,107,294 |  | 13,824,667 |  | 320,629 |
| Deposits and Other Liabilities |  | 97,268,525 |  | 14,376,420 |  | 3,585,678 |  | 61,355 |
| Due to Other Funds |  | 7,234,586 |  | 802,592 |  | 1,245,442 |  | 56,801 |
| Bonds Payable |  | 667,460 |  | - |  | - |  | - |
| Securities Lending Collateral Due Borrowers |  | 1,335,498,813 |  | 157,240,390 |  | 9,567,924 |  | 277,461 |
| Total Liabilities |  | 3,345,326,979 |  | 354,526,696 |  | 28,223,711 |  | 716,246 |
| Net Position Restricted for Pension and Other Postemployment Benefits | \$ | 62,082,059,102 | \$ | 7,239,871,924 | \$ | 436,902,738 | \$ | 15,018,483 |

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

|  | Deferred Compensation Plan |  | 2016 |  | 2015 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | 53,974,540 | \$ | 2,773,637,889 | \$ | 3,207,777,422 |
|  | - |  | 58,339,472 |  | 48,200,678 |
|  | - |  | 14,415,424 |  | 14,349,714 |
|  | 379,210 |  | 311,078,103 |  | 318,453,877 |
|  | 11,343,303 |  | 11,343,303 |  | 11,242,732 |
|  | 98,010 |  | 1,106,428,173 |  | 981,774,531 |
|  | - |  | 555,342,138 |  | 576,225,687 |
|  | 11,820,523 |  | 2,056,946,613 |  | 1,950,247,219 |
|  | - |  | 8,413,398 |  | 7,043,321 |
|  | 272,422,603 |  | 14,768,509,332 |  | 15,709,553,788 |
|  | 1,220,924,686 |  | 27,063,910,456 |  | 30,273,207,903 |
|  | - |  | 8,585,785,027 |  | 7,759,820,864 |
|  | - |  | 13,954,350,332 |  | 14,956,767,833 |
|  | - |  | 2,948,607,060 |  | 1,498,022,765 |
|  | - |  | 1,364,144,854 |  | 1,073,948,950 |
|  | 1,493,347,289 |  | 68,685,307,061 |  | 71,271,322,103 |
|  | 10,756 |  | 1,499,528,179 |  | 1,675,194,057 |
|  | - |  | 5,758,790 |  | 5,834,155 |
|  | - |  | 32,207,057 |  | 34,850,765 |
|  | 1,559,153,108 |  | 75,061,798,987 |  | 78,152,269,042 |
|  | 645,317 |  | 2,101,555,502 |  | 2,483,062,894 |
|  | 503,043 |  | 115,795,021 |  | 118,516,056 |
|  | 206,828 |  | 9,546,249 |  | 6,778,372 |
|  | - |  | 667,460 |  | 1,315,411 |
|  | 10,756 |  | 1,502,595,344 |  | 1,677,449,285 |
|  | 1,365,944 |  | 3,730,159,576 |  | 4,287,122,018 |
| \$ | 1,557,787,164 | \$ | 71,331,639,411 | \$ | 73,865,147,024 |

## Oregon Public Employees Retirement System

## Statement of Changes in Fiduciary Net Position

## Pension and Other Postemployment Plans

For the Year Ended June 30, 2016, with Comparative Totals for the Year Ended June 30, 2015


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


# Oregon Public Employees Retirement System 

## Statement of Net Position

## Proprietary Fund

As of June 30, 2016, with Comparative Totals as of June 30, 2015

|  |  | Enterprise Fund |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | Standard Retiree Health Insurance Account |  |  |
|  |  | 2016 |  | 2015 |
| Assets: |  |  |  |  |
| Current Assets |  |  |  |  |
| Cash and Cash Equivalents | \$ | 24,217,781 | \$ | 52,191,378 |
| Reinsurance Reimbursements and Rebate Receivables |  | 38,186,226 |  | 20,716,315 |
| Due from Other Funds |  | 1,217,146 |  | - |
| Securities Lending Collateral |  | 659,957 |  | 2,802,529 |
| Total Current Assets |  | 64,281,110 |  | 75,710,222 |
| Noncurrent Assets |  |  |  |  |
| Net Pension Asset |  | - |  | 43,819 |
| Total Noncurrent Assets |  | - |  | 43,819 |
| Total Assets |  | 64,281,110 |  | 75,754,041 |
| Deferred Outflow of Resources |  |  |  |  |
| Pensions |  | 29,294 |  | 16,218 |
| Total Deferred Inflow of Resources |  | 29,294 |  | 16,218 |
| Liabilities: |  |  |  |  |
| Current Liabilities |  |  |  |  |
| Estimated Insurance Claims Due |  | 9,200,000 |  | 14,798,000 |
| Accrued Expenses |  | 6,826,111 |  | 3,028,020 |
| Due to Other Funds |  | 84,295 |  | 264,950 |
| Securities Lending Collateral Due Borrowers |  | 659,957 |  | 2,802,529 |
| Total Current Liabilities |  | 16,770,363 |  | 20,893,499 |
| Noncurrent Liabilities |  |  |  |  |
| Other Liabilities |  | 28,119 |  | 27,859 |
| Net Pension Liability |  | 113,625 |  | - |
| Total Noncurrent Liabilities |  | 141,744 |  | 27,859 |
| Total Liabilities |  | 16,912,107 |  | 20,921,358 |
| Deferred Inflow of Resources |  |  |  |  |
| Pensions |  | 27,665 |  | 84,553 |
| Total Deferred Inflow of Resources |  | 27,665 |  | 84,553 |
| Total Unrestricted Net Position | \$ | 47,370,632 | \$ | 54,764,348 |

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

## Statement of Revenues, Expenses, and Changes in Net Position <br> Proprietary Fund

For the Year Ended June 30, 2016, with Comparative Totals for the Year Ended June 30, 2015

|  | Enterprise Fund |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Standard Retiree Health Insurance |  |  |  |
|  | 2016 |  | 2015 |  |
| Operating Revenues: |  |  |  |  |
| Insurance Premium Revenue | \$ | 168,655,173 | \$ | 191,970,498 |
| Reinsurance Reimbursements |  | 29,008,480 |  | 34,258,822 |
| Other Income |  | - |  | 21,841 |
| Total Operating Revenues |  | 197,663,653 |  | 226,251,161 |
| Operating Expenses: |  |  |  |  |
| Claims Expense |  | 184,612,618 |  | 211,904,113 |
| (Decrease)/Increase in Estimated Liabilities |  | $(5,598,000)$ |  | 306,000 |
| Administrative Expense |  | 26,301,560 |  | 32,090,976 |
| Total Operating Expenses |  | 205,316,178 |  | 244,301,089 |
| Operating Loss |  | $(7,652,525)$ |  | $(18,049,928)$ |
| Non-Operating Revenues: |  |  |  |  |
| Interest, Dividends, and Other Investment Income |  | 258,809 |  | 357,606 |
| Securities Lending Income |  | 7,374 |  | 4,794 |
| Less Securities Lending Expense |  | $(7,374)$ |  | $(4,794)$ |
| Net Securities Lending Income |  | - |  | - |
| Total Non-Operating Revenues |  | 258,809 |  | 357,606 |
| Change in Unrestricted Net Position |  | $(7,393,716)$ |  | $(17,692,322)$ |
| Total Unrestricted Net Position |  |  |  |  |
| Beginning of Year |  | 54,764,348 |  | 72,456,670 |
| End of Year | \$ | 47,370,632 | \$ | 54,764,348 |

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

# Oregon Public Employees Retirement System 

## Statement of Cash Flows

Proprietary Fund
For the Year Ended June 30, 2016, with Comparative Totals for the Year Ended June 30, 2015

|  | Enterprise Fund |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Standard Retiree Health Insurance Account 2016 <br> 2015 |  |  |  |
| Cash Flows from Operating Activities: |  |  |  |  |
| Insurance Premiums and Reinsurance Reimbursements | \$ | 178,976,596 | \$ | 205,513,005 |
| Claims Paid |  | $(184,612,618)$ |  | $(211,904,113)$ |
| Other Receipts |  | - |  | 21,841 |
| Other Payments |  | $(22,596,384)$ |  | $(39,382,636)$ |
| Net Cash Used for Operating Activities |  | $(28,232,406)$ |  | $(45,751,903)$ |
| Cash Flows from Investing Activities: |  |  |  |  |
| Interest and Dividends Received |  | 258,809 |  | 357,606 |
| Net Decrease in Cash and Cash Equivalents |  | $(27,973,597)$ |  | $(45,394,297)$ |
| Cash and Cash Equivalents Beginning of Year |  | 52,191,378 |  | 97,585,675 |
| Cash and Cash Equivalents End of Year | \$ | 24,217,781 | \$ | 52,191,378 |
| Reconciliation of Operating Loss to Net Cash Used for Operating Activities: |  |  |  |  |
|  |  |  |  |  |
| Operating Loss | \$ | $(7,652,525)$ | \$ | $(18,049,928)$ |
| Changes in assets, deferred inflows of resources, liabilities, and deferred outflows of resources: |  |  |  |  |
| Reinsurance Reimbursements and Rebate Receivables |  | $(17,469,911)$ |  | $(20,716,315)$ |
| Due from Other Funds |  | $(1,217,146)$ |  | - |
| Net Pension Asset/Liability |  | 157,444 |  | $(43,819)$ |
| Deferred Outflows of Resources |  | $(13,076)$ |  | $(16,218)$ |
| Estimated Insurance Claims Due |  | $(5,598,000)$ |  | 306,000 |
| Accrued Expenses |  | 3,798,091 |  | $(7,533,704)$ |
| Due to Other Funds |  | $(180,655)$ |  | 218,681 |
| Other Liabilities |  | 260 |  | $(1,153)$ |
| Deferred Inflows of Resources |  | $(56,888)$ |  | 84,553 |
| Net Cash Used for Operating Activities | \$ | $(28,232,406)$ | \$ | $(45,751,903)$ |

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

## Note 1 - Summary of Significant Accounting Policies

## A. Reporting Entity

The Oregon State Treasurer has statutory responsibility for custody and investment of PERS assets. As a result of this fiduciary responsibility, the Oregon Public employees Retirement System (PERS or the System) is included as part of the primary government in the State of Oregon Comprehensive Annual Financial Report.

## B. Basis of Presentation

The accompanying financial statements are prepared on the basis of a fiscal year ended June 30, 2016, in accordance with Governmental Accounting Standards Board (GASB) Statements and generally accepted accounting principles that apply to governmental accounting for fiduciary funds and enterprise funds. Fiduciary funds are used to account for assets held by a governmental unit in a trustee capacity (trust funds). Enterprise funds may be used to report any activity for which a fee is charged to external users for goods or services.

PERS' pension, other postemployment benefit, and deferred compensation activities are accounted for in five pension and other postemployment benefit trust funds:

- Defined Benefit Pension Plan, a cost-sharing multi-ple-employer plan, which includes the Variable Annuity Account
- Oregon Public Service Retirement Plan - Individual Account Program
- Retirement Health Insurance Account
- Retiree Health Insurance Premium Account
- Deferred Compensation Fund (Oregon Savings Growth Plan).

PERS' public entity risk pool activity is accounted for in a single enterprise fund:

- Standard Retiree Health Insurance Account


## C. Basis of Accounting

The accrual basis of accounting is used for all funds. Revenues are recognized when earned. Contributions are recognized when due, pursuant to legal (or statutory) requirements. Benefits and withdrawals are recognized when they are currently due and payable in accordance with the terms of the plan.

Proprietary funds distinguish operating revenues and expenses from non-operating items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a pro-
prietary fund's principal ongoing operations. The principal operating revenues are insurance premiums and reinsurance reimbursements, and operating expenses include claims and administrative expenses. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses. Deferred outflows of resources related to pensions resulting from contributions made subsequent to the measurement date will be recognized as a reduction of the net pension liability in the following year. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense for approximately each of the subsequent four years.

## D. Budgetary Data

Only administrative expenses are subject to biennial legislative budget control. The Legislature exercises this control at the agency level. Any unobligated balance lapses at the end of each biennium.

Encumbrance accounting is allowed only during the biennium. All encumbrances lapse at the end of the biennium except capital construction, capital improvements, and disputed claims.

Budgetary accounting is not consistent with generally accepted accounting principles (GAAP) because the measurement focus is on decreases in financial resources rather than changes in net position.

## E. Investments

Oregon Revised Statute (ORS) 293.706 established the Oregon Investment Council (OIC), which consists of five voting members. Four members of the council, who are qualified by training and experience in the field of investment or finance, are appointed by the governor subject to state Senate confirmation. The state treasurer serves as the council's remaining voting member. In addition, the executive director of the Public Employees Retirement System serves as a non-voting OIC member.

ORS 293.701 defines the investment funds over which OIC has responsibility. Included are the Oregon Public Employees Retirement Fund (OPERF), which is comprised of the Defined Benefit Pension Plan, the Individual Account Program, and the Other Postemployment Benefit plans, and the Deferred Compensation Fund. OIC establishes policies for the investment and reinvestment of moneys in the investment funds as well as the acquisition, retention, management, and disposition of investments in the investment funds. OIC is also responsible for providing an examination of the effectiveness of the investment program.

OIC ensures moneys in the investment funds are in-

## Oregon Public Employees Retirement System

vested and reinvested to achieve the investment objective of making the moneys as productive as possible. Furthermore, the investments of those funds are managed as a prudent investor would do under the prevailing circumstances and in light of the purposes, terms, distribution requirements, and laws governing each investment fund. This standard requires the exercise of reasonable care, skill, and caution and is applied to investments not in isolation, but in the context of each fund's portfolio as part of an overall investment strategy. The strategy should incorporate risk and return objectives reasonably suitable to the particular investment fund.

When implementing investment decisions, OIC has a duty to diversify the investments of the investment funds unless, under the circumstances, it is not prudent to do so. In addition, OIC must act with prudence when selecting agents and delegating authority.

Investments are recognized at fair value, the amount that could be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The fair value of publicly traded debt and equity securities in active markets is determined by the custodian's pricing agent using nationally recognized pricing services. The custodian's pricing agent values equity securities traded on a national or international exchange at the last reported sales price and generally values debt securities by using evaluated bid prices. For securities that do not have an active market, such as private placements or commingled investment vehicles, a market price is calculated by either the custodian's pricing agent or the investment manager. For example, a similar benchmark security may be used to derive the fair value. The benchmark will typically have a coupon rate and maturity date comparable to the debt security being valued, and its market risk will be similar, considering current market conditions. The fair value of real estate investment trust (REIT) securities is determined by the custodian's pricing agent using recognized pricing services.

Investments in real estate, other than publicly traded REITS, for which observable market prices in active markets do not exist, are reported at fair value as of June 30, 2016, as determined by management based on valuation information provided in good faith by the general partner. Direct investments in real estate are appraised every two to three years, and between appraisals, investment managers adjust values to reflect current and projected operating performance and financial transactions. In the absence of observable market prices, general partners determine the fair value of real estate partnerships using valuation methods considered most appropriate. A variety of factors are considered, including the nature of the investment, local
market conditions, trading values on public exchanges for comparable investments, current and projected operating performance, and financing transactions subsequent to the acquisition of the investment.

Investments in private equities are recorded at fair value as of June 30, 2016, as determined by management based on valuation information provided by the general partner. Investments in private equities representing publicly traded securities are stated at quoted market price. Where observable market inputs are not available, valuation models are applied. The general partner determines fair value based on the best information available and by reference to information including, but not limited to, the following: projected sales, net earnings, earnings before interest, taxes, depreciation and amortization, balance sheets, public and private transactions, valuations for publicly traded comparable companies, and/or other measures, and consideration of any other pertinent information including the types of securities held and the general partner's own assumptions regarding the investment. The methods used to determine the fair value of these investments typically include: (1) the market approach (whereby fair value is derived by reference to observable valuation measures for comparable companies or assets) and (2) the income approach (e.g., the discounted cash flow method).

Investments in the opportunity and alternatives portfolios are recorded at fair value as of June 30, 2016 by the respective general partner or account manager. Investments in the opportunity and alternatives portfolios representing publicly traded securities are stated at quoted market price. Where observable market inputs are not available, valuation models are applied. The general partner or account manager determines fair value based on the best information available and by reference to information including, but not limited to, the following: projected sales, net earnings, earnings before interest, taxes, depreciation, and amortization, balance sheets, public and private transactions, valuations for publicly traded comparable companies, and/or other measures, and consideration of any other pertinent information including the types of securities held and the general partner's own assumptions regarding the investment. The methods used to determine the fair value of these investments typically include: (1) the market approach (whereby fair value is derived by reference to observable valuation measures for comparable companies or assets); (2) the income approach (e.g. the discounted cash flow method).

Due to the inherent uncertainty and the degree of judgment involved in determining private equity, opportunity, alternatives, and real estate portfolio investment valuations, the fair values reflected in the accompanying financial statements may differ significantly from values
that would have been used had a readily determinable market value for the investments existed and the difference could be material. In addition, these investments are generally considered to be illiquid long-term investments, and the recorded fair values may materially differ from the amounts that eventually may be realized from the sale or other disposition of these investments.

OIC has approved the following asset classes for the OPERF: Short-Term Investments, Fixed Income, Real Estate, Public and Private Equities, and Alternative Investments. In addition, OPERF invests in the Opportunity Portfolio, which may be populated with investment approaches across a wide range of investment opportunities with no limitation as to asset classes or strategies. OIC must approve, in advance, the purchase of investments in a new asset class not described above.

Table 1 below displays the OIC approved asset allocation policy for fiscal years beginning in 2014. The previous allocation was amended to reduce debt securities and public equity holdings and to increase private equity, real estate and alternative equity holdings. See the Annual Money-Weighted Return table on page 68.

TABLE 1

| Asset Class | Target Allocation |
| :--- | :---: |
| Cash | $0.0 \%$ |
| Debt Securities | $20.0 \%$ |
| Public Equity | $37.5 \%$ |
| Private Equity | $17.5 \%$ |
| Real Estate | $12.5 \%$ |
| Alternative Equity | $12.5 \%$ |
| Opportunity Portfolio | $0.0 \%$ |
| Total | $\underline{\underline{100.0 \%}}$ |

See Geometric Return Table 31 on page 66

## F. Earnings Crediting

By law earnings are credited to member accounts on a calendar-year basis. Members in Tier One are currently guaranteed to receive at least the assumed earnings rate used in the most recent actuarial valuation. Members participating in the Variable Annuity Account, IAP members, and Tier Two members are credited actual earnings or losses, less deductions allowed by law.

## G. Administrative Costs

The System's administrative expenses are funded from investment earnings and administrative fees collected from members and are allocated to all plans and programs administered by the System. If investment earnings
and fees are insufficient for such purpose, the remaining expenses are paid from employer contributions.

## H. Use of Estimates in the Preparation of Financial Statements

The preparation of the System's financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain financial statement amounts and disclosures. Actual results could differ from those estimates.

## I. Comparative Totals

The basic financial statements include certain prior year summarized comparative information in total but not at the level of detail required for a presentation in conformity with the accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the System financial statements for the year ended June 30, 2015, from which the summarized information was derived.

## J. GASB Pronouncements

## Adoption of New GASB Pronouncements

During the fiscal year ended June 30, 2016, PERS evaluated the following GASB Pronouncements:

GASB Statement No. 72, Fair Value Measurement and Application, issued in February 2015. This Statement addresses accounting and financial reporting issues related to fair value measurements. The definition of fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. This Statement provides guidance for determining a fair value measurement for financial reporting purposes, as well as guidance for applying fair value to certain investments and disclosures related to all fair value measurements. This Statement is effective for the fiscal year ended June 30, 2016. PERS implemented this new pronouncement in the current year.

GASB Statement No. 73, Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68, issued in June 2015. This Statement establishes requirements for defined benefit pensions that are not within the scope of Statement No. 68, Accounting and Financial Reporting for Pensions, as well as for the assets accumulated for purposes of providing those pensions. It also amends certain provisions of Statement No. 67, Financial Reporting for Pension Plans, and Statement 68 for pension plans and pensions that are within their respective scopes. This

Statement is effective for the fiscal year ended June 30, 2016, although early implementation is encouraged.

PERS evaluated the requirements of GASB Statement No. 73 and determined the provisions applicable to PERS were limited to the amendments, or clarifications, of certain provisions of Statement No. 67, Financial Reporting for Pension Plans. As such, PERS has been compliant with the provisions of GASB Statement No. 73 since implementing GASB Statement No. 67 for fiscal year ended June 30, 2014.

GASB Statement No. 82, Pension Issues-an amendment of GASB Statements No. 67, No. 68, and No. 73, was issued March 2016. The objective of this Statement is to address certain issues that have been raised with respect to Statements No. 67, Financial Reporting for Pension Plans, No. 68, Accounting and Financial Reporting for Pensions, and No. 73, Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68. Specifically, this Statement addresses issues regarding (1) the presentation of payroll-related measures in required supplementary information, (2) the selection of assumptions and the treatment of deviations from the guidance in an Actuarial Standard of Practice for financial reporting purposes, and (3) the classification of payments made by employers to satisfy employee (plan member) contribution requirements. This Statement is effective for the fiscal year ended June 30, 2017; however, early application is encouraged. PERS implemented this pronouncement in the current year.

## Note 2 - Description of Plan

## A. Organization

PERS administers a cost-sharing, multiple-employer defined benefit pension plan for units of state government, political subdivisions, community colleges, and school districts, containing multiple actuarial pools. Plan assets may be used to pay the benefits of the employees of any employer that provides pensions through the Plan. Participation by state government units, school districts, and community colleges is mandatory. Participation by most political subdivisions is optional but irrevocable if elected. As of June 30, 2016, there were 906 participating employers.

PERS is administered in accordance with Oregon Revised Statutes (ORS) Chapter 238, Chapter 238A, and Internal Revenue Code Section 401(a). The Oregon Legislature has delegated authority to the Public Employees Retirement Board (Board) to administer and manage the System. All members of the Board are appointed by the governor and confirmed by the state Senate. The governor
designates the chairperson. One member must be a public employer manager or a local elected official, one member must be a union-represented public employee or retiree, and three members must have experience in business management, pension management, or investing.

## B. Plan Membership

Employer, retiree, active and inactive member data as of June 30, 2016, is shown in Table 2 on the next page.

The 1995 Legislature enacted Chapter 654, Section 3, Oregon Laws 1995, which has been codified into ORS 238.435. This legislation created a second tier of benefits for those who established membership on or after January 1, 1996. The second tier does not have the Tier One assumed earnings rate guarantee and has a higher normal retirement age of 60 , compared to 58 for Tier One. As of June 30, 2016, there were 28,605 active plan members, 121,585 inactive plan members or their beneficiaries currently receiving benefits, 15,106 inactive plan members entitled to but not yet receiving benefits, and 10 inactive plan members not eligible for refund or retirement, for a total of 165,306 Tier One members. As of June 30, 2016, there were 39,205 active plan members, 12,336 inactive plan members or their beneficiaries currently receiving benefits, 15,291 inactive plan members entitled to but not yet receiving benefits, and 718 inactive plan members not eligible for refund or retirement, for a total of 67,550 Tier Two members in the System.

The 2003 Legislature enacted HB 2020, codified as ORS 238A, which created the Oregon Public Service Retirement Plan (OPSRP). OPSRP consists of the Pension Program (defined benefit) and the Individual Account Program. Membership includes public employees hired on or after August 29, 2003. As of June 30, 2016, there were 103,866 active plan members, 2,514 inactive plan members or their beneficiaries currently receiving benefits, 4,775 inactive plan members entitled to but not yet receiving benefits, and 10,025 inactive plan members not eligible for refund or retirement, for a total of 121,180 OPSRP Pension Program members.

Beginning January 1, 2004, PERS active Tier One and Tier Two members became members of the Individual Account Program (IAP) of OPSRP. PERS members retain their existing Defined Benefit Plan accounts, but member contributions are now deposited into the member's IAP account, not into the member's Defined Benefit Plan account. Accounts are credited with earnings and losses net of administrative expenses. OPSRP is part of PERS and is administered by the Board. The PERS Board is directed to adopt any rules necessary to administer OPSRP, and such rules are to be considered part of the plan for IRS purposes.

TABLE 2

| Plan Membership as of June 30, 2016 | Employers | Defined Benefit Plan |  |  |  | Post-Employment Healthcare |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Tier 1 | Tier 2 | OPSRP | Total | RHIA | RHIPA |
| Employers |  |  |  |  |  |  |  |
| State Agencies | 108 |  |  |  |  |  |  |
| School Districts | 295 |  |  |  |  |  |  |
| Political Subdivisions | 486 |  |  |  |  |  |  |
| Community Colleges | 17 |  |  |  |  |  |  |
| Inactive Members - General Service |  |  |  |  |  |  |  |
| Retirees and beneficiaries currently receiving benefits |  | 111,635 | 9,559 | 2,363 | 123,557 | 43,117 | 1,148 |
| Alternate Payees currently receiving benefits |  | 575 | 1,607 | 3 | 2,185 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| Inactive members eligible for, but not yet receiving benefits |  | 9,784 | 6,605 | 4,637 | 21,026 | 15,151 | $\mathrm{n} / \mathrm{a}$ |
| Inactive members eligible for refund value of account only |  | 4,786 | 8,059 | $\mathrm{n} / \mathrm{a}^{1}$ | 12,845 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| Inactive members not eligible for refund or retirement |  | 8 | 695 | 9,568 | 10,271 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| Inactive Members - Police and Fire |  |  |  |  |  |  |  |
| Retirees and beneficiaries currently receiving benefits |  | 9,227 | 828 | 148 | 10,203 | 1,776 | 106 |
| Alternate Payees currently receiving benefits |  | 148 | 342 | 0 | 490 | n/a | $\mathrm{n} / \mathrm{a}$ |
| Inactive members eligible for, but not yet receiving benefits |  | 371 | 279 | 138 | 788 | 748 | $\mathrm{n} / \mathrm{a}$ |
| Inactive members eligible for refund value of account only |  | 165 | 348 | $\mathrm{n} / \mathrm{a}^{1}$ | 513 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| Inactive members not eligible for refund or retirement |  | 2 | 23 | 457 | 482 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ |
| Active Members - General Service |  |  |  |  |  |  |  |
| State Agencies |  | 7,110 | 8,385 | 25,907 | 41,402 | 15,338 | 15,338 |
| School Districts |  | 11,076 | 15,863 | 41,647 | 68,586 | 26,683 |  |
| Political Subdivisions |  | 6,413 | 8,617 | 22,976 | 38,006 | 14,904 |  |
| Community Colleges |  | 1,139 | 1,721 | 5,200 | 8,060 | 2,827 |  |
| Active Members - Police and Fire |  |  |  |  |  |  |  |
| State Agencies |  | 1,109 | 1,954 | 3,403 | 6,466 | 3,050 | 3,050 |
| School Districts |  | 14 | 21 | 27 | 62 | 35 |  |
| Political Subdivisions |  | 1,744 | 2,644 | 4,706 | 9,094 | 4,379 |  |

${ }^{1}$ Defined benefit only. No individual accounts are maintained.

## C. Plan Benefits

## a. PERS Pension (Chapter 238)

## 1. Pension Benefits

The PERS retirement allowance is payable monthly for life. It may be selected from 13 retirement benefit options.

These options include survivorship benefits and lump-sum refunds. The basic benefit is based on years of service and final average salary. A percentage ( 2.0 percent for police and fire employees, 1.67 percent for general service employees) is multiplied by the number of years of service and the final average salary. Benefits may also be calculated under either a formula plus annuity (for members who were contributing before August 21, 1981) or a money match computation if a greater benefit results. Monthly payments must be a minimum of $\$ 200$ per month or the member will receive a lump-sum payment of the actuarial equivalence of benefits to which he or she is entitled.

Police and fire members may purchase increased benefits that are payable between the date of retirement and age 65 .

A member is considered vested and will be eligible at minimum retirement age for a service retirement allowance if he or she has had a contribution in each of five calendar years or has reached at least 50 years of age before ceasing employment with a participating employer (age 45 for police and fire members). General service employees may retire after reaching age 55 . Police and fire members are eligible after reaching age 50 . Tier One general service employee benefits are reduced if retirement occurs prior to age 58 with fewer than 30 years of service. Police and fire member benefits are reduced if retirement occurs prior to age 55 with fewer than 25 years of service. Tier Two members are eligible for full benefits at age 60 . The ORS Chapter 238 Defined Benefit Pension Plan is closed to new members hired on or after August 29, 2003.

A judge member who has made contributions to PERS during each of five calendar years shall receive a retirement allowance, payable monthly, for life. Before reaching age 60 , judge members must choose the calculation formula under which they will retire. The election is irrevocable after the member attains age 60 . The two formulas, A and B , are described in the following paragraph.

The Plan A retirement allowance for judge members is computed by multiplying 2.8125 percent by the final aver-
age salary for the first 16 years of service and 1.67 percent of the final average salary multiplied by the number of years of service as a judge in excess of 16. For most judge members the maximum amount is limited to 65 percent of final average salary. The Plan B retirement allowance for judge members is computed by multiplying 3.75 percent by the final average salary for the first 16 years of service and 2.0 percent of the final average salary multiplied by the number of years of service as a judge in excess of 16 years of service. For most judge members the maximum amount is limited to 75 percent of final average salary. Plan B requires a judge to serve up to 35 days per year for a period of five years as a pro tem judge. There is no actuarial reduction for retirement before age 65 .

## 2. Death Benefits

Upon the death of a non-retired member, the beneficiary receives a lump-sum refund of the member's account balance (accumulated contributions and interest). In addition, the beneficiary will receive a lump-sum payment from employer funds equal to the account balance, provided one or more of the following conditions are met:

- the member was employed by a PERS employer at the time of death,
- the member died within 120 days after termination of PERS-covered employment,
- the member died as a result of injury sustained while employed in a PERS-covered job, or
- the member was on an official leave of absence from a PERS-covered job at the time of death.

A member's beneficiary may choose a monthly payment for life instead of the lump-sum or a combination of lump-sum and monthly payments, if eligible. The monthly payment must be a minimum of $\$ 30$ per month for deaths that occur July 30, 2003, and earlier; $\$ 200$ per month for deaths that occur after July 30, 2003.

## 3. Disability Benefits

A member with 10 or more years of creditable service who becomes disabled from other than duty-connected causes may receive a non-duty disability benefit. A disability resulting from a job-incurred injury or illness qualifies a member (including PERS judge members) for disability benefits regardless of the length of PERS-covered service. Upon qualifying for either a non-duty or duty disability, service time is computed to age 58 ( 55 for police and fire members) when determining the monthly benefit.

Judge members of PERS who have served a minimum of six consecutive years and who become physically or mentally incapacitated are entitled to benefits as provided in ORS 238.555.

## 4. Benefit Changes After Retirement

Members may choose to continue participation in a variable equities investment account after retiring and may experience annual benefit fluctuations due to changes in the market value of equity investments.

Under ORS 238.360 monthly benefits are adjusted annually through cost-of-living changes (COLA). The COLA is capped at 2.0 percent.

## b. OPSRP Pension Program (OPSRP DB)

## 1. Pension Benefits

This portion of OPSRP provides a life pension funded by employer contributions. Benefits are calculated with the following formula for members who attain normal retirement age:

Police and fire: 1.8 percent is multiplied by the number of years of service and the final average salary. Normal retirement age for police and fire members is age 60 or age 53 with 25 years of retirement credit. To be classified as a police and fire member, the individual must have been employed continuously as a police and fire member for at least five years immediately preceding retirement.

General service: 1.5 percent is multiplied by the number of years of service and the final average salary. Normal retirement age for general service members is age 65, or age 58 with 30 years of retirement credit.

A member of the pension program becomes vested on the earliest of the following dates: the date the member completes 600 hours of service in each of five calendar years, the date the member reaches normal retirement age, and, if the pension program is terminated, the date on which termination becomes effective.

## 2. Death Benefits

Upon the death of a non-retired member, the spouse or other person who is constitutionally required to be treated in the same manner as the spouse receives for life 50 percent of the pension that would otherwise have been paid to the deceased member. The surviving spouse or other person may elect to delay payment of the death benefit, but payment must commence no later than December 31 of the calendar year in which the member would have reached $701 / 2$ years.

## 3. Disability Benefits

A member who has accrued 10 or more years of retirement credits before the member becomes disabled or a member who becomes disabled due to job-related injury shall receive a disability benefit of 45 percent of the mem-
ber's salary determined as of the last full month of employment before the disability occurred.

## c. OPSRP Individual Account Program (OPSRP IAP)

## 1. Pension Benefits

An IAP member becomes vested on the date the employee account is established or on the date the rollover account was established. If the employer makes optional employer contributions for a member, the member becomes vested on the earliest of the following dates: the date the member completes 600 hours of service in each of five calendar years, the date the member reaches normal retirement age, the date the IAP is terminated, the date the active member becomes disabled, or the date the active member dies. The accounts fall under Internal Revenue Code Section 401(a).

Upon retirement, a member of the IAP may receive the amounts in his or her employee account, rollover account, and vested employer account as a lump-sum payment or in equal installments over a $5-, 10-, 15-, 20-$ year period or an anticipated life span option. Each distribution option has a $\$ 200$ minimum distribution limit.

## 2. Death Benefits

Upon the death of a non-retired member, the beneficiary receives in a lump sum the member's account balance, rollover account balance, and vested employer optional contribution account balance. If a retired member dies before the installment payments are completed, the beneficiary may receive the remaining installment payments or choose a lump-sum payment.

## 3. Recordkeeping

PERS contracts with Voya Financial to maintain IAP participant records.

## d. Other Postemployment Healthcare Benefits

ORS 238.420 established the Retirement Health Insurance Account (RHIA) and authorizes a payment of up to $\$ 60$ from RHIA toward the monthly cost of health insurance for eligible PERS members. RHIA is a cost-sharing, multiple-employer defined benefit OPEB plan for 906 participating employers. The plan was closed to new entrants hired on or after August 29, 2003.

To be eligible to receive this monthly payment toward the premium cost the member must: (1) have eight years or more of qualifying service in PERS at the time of retirement or receive a disability allowance as if the member had eight years or more of creditable service in PERS, (2) receive both Medicare Parts A and B coverage, and (3) enroll in a PERS-sponsored health plan.

A surviving spouse or dependent of a deceased PERS retiree who was eligible to receive the subsidy is eligible to receive the subsidy if he or she (1) is receiving a retirement benefit or allowance from PERS or (2) was insured at the time the member died and the member retired before May $1,1991$.

For the year ended June 30, 2016, PERS employers contributed 0.08 percent of PERS-covered salaries for Tier One and Tier Two members to fund the normal cost portion of RHIA benefits. PERS employers contributed 0.45 percent of all PERS-covered salaries to amortize the unfunded actuarial accrued liability over a fixed period with new unfunded actuarial accrued liabilities being amortized over 20 years. These rates were based on the

TABLE 3

| Contribution Rate Summary ${ }^{1}$ | Defined Benefit Pension |  |  |  |  |  |  | Postemployment Healthcare |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | PERS Defined Benefit Plan |  |  |  |  | OPSRP Pen | on Program | RHIA | RHIPA |
|  | Pooled Employers |  |  | Non-Pooled Employers |  | All Employers |  | All Employers | State Agencies |
|  | State <br> Agencies ${ }^{2}$ | tate and Local Government Rate $\mathrm{Pool}^{3}$ | School Pool ${ }^{3}$ | Political <br> Subdivisions ${ }^{3,4}$ | Judiciary | General <br> Service | Police and Fire |  |  |
| Employee IAP | 6.00 \% | 6.00 \% | 6.00 \% | 6.00 \% | 6.00 \% | 6.00 \% | 6.00 \% | 0.00 \% | $0.00 \%$ |
| Employee Normal Cost | 0.00 | 0.00 | 0.00 | 0.00 | 7.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Employer <br> Normal Cost | 13.66 | 13.66 | 11.94 | 14.24 | 14.99 | 7.33 | 11.44 | 0.08 | 0.09 |
| Unfunded Actuarial Liability | (1.43) | 4.57 | 9.25 | 3.27 | (0.93) | 0.61 | 0.61 | 0.45 | 0.35 |
| Total Employer Contributions | 12.23 \% | 18.23 \% | 21.19 \% | 17.51 \% | 14.06 \% | 7.94 \% | 12.05 \% | 0.53 \% | 0.44 \% |
| ${ }^{1}$ Group average rates shown were effective as of July $1,2015$. |  |  |  |  |  |  |  |  |  |
| ${ }^{2}$ A subcomponent of the State and Local Government Rate Pool; includes UAL payment rate offset. |  |  |  |  |  |  |  |  |  |
| ${ }^{3}$ Does not include UAL payment rate offsets. |  |  |  |  |  |  |  |  |  |
| ${ }^{4}$ Non-pooled Political Subdivisions are valued separately for the Defined Benefit Plan. |  |  |  |  |  |  |  |  |  |

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December 31, 2013 actuarial valuation. This is included in the employer contribution rates listed in Table 3 on the previous page.

Employer contributions are advance-funded on an actuarially determined basis. There is no inflation assumption for RHIA postemployment benefits because the payment amount is set by statute and is not adjusted for increases in healthcare costs. The number of active plan RHIA participants receiving benefits was 44,893 for the fiscal year ended June 30, 2016, and there were 67,216 active and 15,899 inactive members who meet the requirements to receive RHIA benefits when they retire.

ORS 238.415 established the Retiree Health Insurance Premium Account (RHIPA) and requires the Board on or before January 1 of each year to calculate the average difference between the health insurance premiums paid by retired state employees under contracts entered into by the Board and health insurance premiums paid by active state employees. ORS 238.415 authorizes payment of this average difference to qualified retired state employees. Retired state employees are qualified to receive this benefit if they had eight or more years of qualifying service with a state agency in the System at the time of retirement or are receiving a disability pension calculated as if they had eight or more years of qualifying service but are not eligible for federal Medicare coverage. RHIPA is a single-employer (the state as one employer) de-fined-benefit OPEB plan and was closed to new entrants hired on or after August 29, 2003.

A surviving spouse or dependent of a deceased retired state employee is eligible to receive the subsidy if he or she (1) is receiving a retirement benefit or allowance from PERS or (2) was insured at the time the member died, and the member retired on or after September 29, 1991.

For the year ended June 30, 2016, state agencies contributed 0.09 percent of PERS-covered salaries for Tier One and Tier Two members to fund the normal cost portion of RHIPA benefits. State agencies contributed 0.35 percent of all PERS-covered salaries to amortize the unfunded actuarial accrued liability over a fixed period with new unfunded actuarial accrued liabilities being amortized over 20 years. These rates were based on the December 31, 2013 actuarial valuation, which eliminated the tax remedy payments for benefit. This is included in the employer contribution rates listed in Table 3 on the previous page.

The number of active plan RHIPA participants receiving benefits was 1,254 for the fiscal year ended June 30, 2016. As of June 30, 2016, there were 18,388 active members who meet the requirements to receive RHIPA benefits when they retire. Inactive members are not eligi-
ble for these benefits. All subsidy payments from the RHIA and RHIPA are initially deposited in the Standard Retiree Health Insurance Account, as described on page 60, and subsequently remitted to the appropriate PERS health plan.

## e. Deferred Compensation Plan

Deferred compensation plans are authorized under Internal Revenue Code Section 457. The Oregon Legislature enacted Chapter 179, Oregon Laws 1997 that established the Deferred Compensation Fund. ORS 243.400 to 243.507 established and provided for PERS to administer the state deferred compensation plan, known as the Oregon Savings Growth Plan (OSGP). As of June 30, 2016, the fair value of investments was $\$ 1,493.3$ million.

The plan is a benefit available to all state employees. To participate, an employee executes an individual agreement with the state deferring current earnings to be paid at a future date. Participants in the plan are not required to pay federal and state income taxes on the deferred contributions and earnings until the funds are received. Participants or their beneficiaries cannot receive the funds until at least one of the following occurs: termination by reason of resignation, death, disability, or retirement; unforeseeable emergency; or by requesting a de minimis distribution from inactive accounts valued less than $\$ 5,000$. A loan program is also available for eligible participants. Member loans receivable at June 30, 2016, totaled $\$ 11.3$ million. Of that amount, $\$ 9.1$ million is not expected to be collected within one year.

PERS contracts with Voya Financial to maintain OSGP participant records. The Oregon State Treasury, as custodian of the assets, also contracts with State Street Bank and Trust Company to provide financial services. There are 21 investment options with varying degrees of market risk. Up to five financial institutions provide investment services in mutual funds for each investment option. A participant receives a blend of these mutual funds within the investment option. Participants direct the selection of investment options and also bear any market risk. The Oregon State Treasury has no liability for losses under the plan but does have the prudent investor responsibility of due care. Total membership as of June 30, 2016, was 23,269.

PERS may assess a charge to the participants not to exceed 2.0 percent on amounts deferred, both contributions and investment earnings, to cover costs incurred for administering the program. Actual charges to participants, including investment charges, for the year ended June 30, 2016, averaged 0.21 percent of amounts deferred.

Oregon Revised Statute 243.505 established a De-
ferred Compensation Advisory Committee to provide input to the PERS Board. This committee is composed of seven members who meet at least quarterly.

## f. Standard Retiree Health Insurance Account

ORS 238.410 established the Standard Retiree Health Insurance Account (SRHIA), a public entity risk pool. SRHIA is both a risk sharing and insurance purchasing pool. The Board contracts for medical and hospital insurance on behalf of retired members. Members and their dependents are eligible for PERS healthcare coverage if the member is receiving a retirement allowance or benefit under the System. A surviving spouse or dependent of a PERS retiree is eligible to participate if he or she was covered under the health plan at the time of the retiree's death. As of June 30, 2016, there are 59,983 retirees and their dependents participating in the health insurance program.

PERS has contracted with various carriers on an insurance purchasing basis and remits premiums collected from participating members to the carriers on a monthly basis. PERS has contracted with Moda Health for claims payment services for a minimum premium funding plan and also remits premiums monthly for stop-loss coverage. SRHIA is ultimately at risk for all amounts collected and on deposit with Moda Health and other health insurance service providers, which totaled approximately $\$ 7.6$ million as of June 30, 2016. Moda Health becomes responsible for claims in excess of $\$ 200$ thousand per year per individual and all claims in excess of contractually required reserves on deposit with Moda Health.

In fiscal year 2016, SRHIA recognized Reinsurance Reimbursement and Rebate receivables of approximately $\$ 38.2$ million. These receivables were primarily comprised of $\$ 29.0$ million in reinsurance settlements, $\$ 2.9$ million in outstanding drug rebates, and $\$ 2.2$ million in coverage gap discounts, which reflect changes in the prior year estimated receivables. The System, through MODA Health, provides a custom Medicare Part D prescription drug plan known as an Employer Group Waiver Plan (EGWP). EGWP subsidies can include direct subsidies, low income cost sharing subsidies, low income premium subsidies, reinsurance subsidies, and coverage gap discounts. Reinsurance subsidies are reported as operating revenues; coverage gap discounts along with pharmacy rebates are reported as an offset to claims expense.

The current estimate of Incurred But Not Reported (IBNR) insurance claims is $\$ 9.2$ million.

## D. Contributions

PERS' funding policy provides for periodic member and employer contributions at rates established by the

Board, subject to limits set in statute. The rates established for member and employer contributions were approved based on the recommendations of the System's third-party actuary.

## a. Member Contributions

Beginning January 1, 2004, all member contributions, except for contributions by judge members, were placed in the OPSRP Individual Account Program (IAP). Prior to that date, all member contributions were credited to the Defined Benefit Pension Plan. Member contributions are set by statute at 6.0 to 7.0 percent of salary and are remitted by participating employers, who may agree to make member contributions on the member's behalf. The contributions are either deducted from member salaries or paid by the employers. The Member Reserve, described in Note 7.A., represents accumulated member contributions and earnings allocations made prior to January 1, 2004, and subsequent earnings allocations less refunds and amounts transferred to reserves for retirements and disabilities. The IAP member accounts represent member contributions made on or after January 1, 2004, plus earnings allocations less disbursements for refunds, death benefits, and retirements.

## b. Employer Contributions

PERS funding policy provides for monthly employer contributions at actuarially determined rates. These contributions, expressed as a percentage of covered payroll, are intended to accumulate sufficient assets to pay benefits when due. This funding policy applies to the PERS Defined Benefit Plan and the Other Postemployment Benefit Plans.

Employer contribution rates during the period were based on the December 31, 2013 actuarial valuation, which became effective July 1, 2015. The state of Oregon and certain schools, community colleges, and political subdivisions have made unfunded actuarial liability payments, and their rates have been reduced. See the contribution rate summary provided in Table 3 on page 41.

## 1. PERS Defined Benefit Plan Contributions (ORS

238) 

Pension rates for the State and Local Government Rate Pool were 18.23 percent, schools 21.19 percent, and judiciary 14.06 percent of PERS-covered salaries, effective July 1, 2015. Political subdivisions that have not joined the State and Local Government Pool had an average pension rate of 17.51 percent.

Oregon Laws 2001, Chapter 945, Section 13 authorized the establishment of the State and Local Government Rate Pool. Local political subdivisions were given the op-

## Oregon Public Employees Retirement System

tion to join the state of Oregon and community colleges for the actuarial purpose of calculating employer rates. Participation by local political subdivisions in this pool was effective for the actuarial valuation period beginning January 1, 2002.

Based on the actuarial valuation as of December 31, 2013, the state agencies and political subdivisions had increases in employer contribution rates on July 1, 2015, while employer contribution rates for schools and the judiciary slightly decreased. These rate changes are measured against the actual average rates paid since July 1, 2013. The Board practice is to implement new employer contribution rates July 1 of each odd-numbered year based on the valuation of the previous odd-numbered year.

## 2. OPSRP Pension Program Contributions (ORS 238A)

PERS employers participating in the OPSRP Pension Program participate in the same rate sharing pool and therefore share the same contribution rate. The OPSRP Pension Program employer rates effective July 1, 2015, through June 30, 2017, were 7.94 percent of covered salaries for general service employees and 12.05 percent of covered salaries for police and fire employees. These rates increased from 6.42 percent of covered salaries for general service and 9.15 percent of covered salaries for police and fire employees for the period July 1, 2013, through June 30, 2015. Each of these rates includes a component related to disability benefits for general service and police and fire members.

## Note 3 - Receivables and Payables

## A. Receivables

Table 4 disaggregates receivable balances reported in the Statements of Fiduciary Net Position as Investment Sales and Other Receivables.

TABLE 4

| Accounts Receivable |  |  |
| :--- | ---: | ---: |
|  | June 30, 2016 |  |
| Broker Receivable | $\$$ | $1,043,451,752$ |
| Strunk and Eugene Accrual | $57,940,195$ |  |
| Overpaid Benefits | 121,054 |  |
| Other | $4,915,172$ |  |
| Total Accounts Receivable | $\mathbf{\$ 1 , 1 0 6 , 4 2 8 , 1 7 3}$ |  |

The Strunk and Eugene Accrual resulted from recalculating benefits for recipients who received overpayments based on the reallocation of 1999 earnings. Approximately 80.1 percent of these receivables, or $\$ 57.9$ million, is expected to be collected after June 30, 2016.

Additionally, there were $\$ 38.2$ million in Reinsurance Reimbursements and Rebate receivables reported in the Statement of Net Position - Proprietary Fund.

## B. Payables

Table 5 disaggregates payable balances reported in the Statements of Fiduciary Net Position as Investment Purchases and Accrued Expenses.

TABLE 5

| Accounts Payable |  |  |
| :--- | ---: | ---: |
|  | June 30, 2016 |  |
| Broker Payable | $\$$ | $1,704,610,773$ |
| Pension Roll | $337,479,310$ |  |
| Investment Fees | $30,782,206$ |  |
| Death Benefits | $20,756,106$ |  |
| Compensated Absences | $1,816,391$ |  |
| Services and Supplies | $1,073,279$ |  |
| Other | $5,037,435$ |  |
| Total Accounts Payable | $\mathbf{\$}$ | $\mathbf{2 , 1 0 1 , 5 5 5 , 5 0 0}$ |

## Note 4 - Investments

The Oregon State Treasury is the investment officer for the state of Oregon. Investment standards are established in ORS 293.726 and require funds to be managed as a prudent investor would do. The Oregon Investment Council (OIC) establishes policies for the investment and reinvestment of moneys in the Oregon Public Employees Retirement Fund. Policies are established based on the primary investment asset class of each investment manager and do not reflect the classifications of individual holdings as presented in the financial statements. Contracts with individual investment managers provide additional guidelines that vary from manager to manager.

## A. Deposits

PERS cash and cash equivalents consist of cash on hand, deposits in the Oregon Short Term Fund (OSTF), moneys held by external investment managers, and cash equivalents held by the health insurance provider. OSTF is a cash and investment pool that operates as a demand deposit account and is required for use by all state funds. See Table 6 below.

TABLE 6

| Depository Account | Bank Balance |  |
| :--- | ---: | ---: |
| Insured | $\$$ | 500,000 |
| Oregon Short Term Fund |  | $1,417,479,771$ |
| Health Insurance Claims Fund |  | $7,363,058$ |
| Uninsured and uncollateralized |  | $1,379,882,395$ |
| Total deposits | $\mathbf{\$}$ | $\mathbf{2 , 8 0 5 , 2 5 5 , 2 2 4}$ |

OSTF is separately audited by the Oregon Audits Division. The audited financial statements can be viewed at http://sos.oregon.gov/audits/Documents/2016-19.pdf.
OSTF investment risks are addressed in the notes to those financial statements.

Health Insurance Claims Fund of $\$ 7.6$ million was held at US Bank. The account is identified as Public Funds, therefore, any amount in the account above Federal Deposit Insurance Corporation (FDIC) was insured by Public Funds Collateralization Program.

## 1. Custodial Credit Risk

Custodial credit risk for deposits is the risk that in the event of a bank failure, PERS' deposits may not be recovered.

As noted above, the deposit and investment risks, including custodial risk, of the OSTF are outlined in the OSTF financial statements. As of June 30, 2016, the carrying amount of PERS' deposits in OSTF totaled $\$ 1,410.1$ million, and the corresponding bank balance was $\$ 1,417.5$ million.

Investment managers' deposits with custodian banks consist of cash and cash equivalents that represent buying reserves. As of June 30, 2016, there was $\$ 1,380.1$ million on deposit for the accounts of the OPERF investment managers.

## 2. Foreign Currency Risk

Foreign currency risk for deposits is the risk that changes in exchange rates will adversely affect the fair value of the deposits. Foreign currency risk is controlled via contractual agreements with the investment managers. As of June 30, 2016, $\$ 71.2$ million in cash and cash equivalents was exposed to foreign currency risk. The U.S. dollar balances of these deposits, organized by currency denomination, are presented in Table 12 on page 51.

## 3. Restricted Cash Equivalents

PERS' cash and cash equivalents at June 30, 2016, include collateral of $\$ 55.8$ million held by investment managers. Swap collateral is offset by a related liability with a net settlement feature. Collateral is restricted and is not available to pay current liabilities.

## B. Investments

Table 7 on the next page presents the fair value of investments held by the state of Oregon for PERS as of June 30, 2016.

## 1. Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Observable inputs are developed based on market data obtained from sources independent of the reporting entity. Unobservable inputs are developed based on the best information available about the assumptions market participants would use in pricing the asset.

The classification of securities within the fair value hierarchy is based upon the activity level in the market for the security type and the inputs used to determine their fair value. The three levels of the hierarchy are described below:

Level 1 - Unadjusted quoted prices for identical instruments in active markets.

Level 2 - Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.
Level 3 - Valuations derived from valuation techniques in which significant inputs are unobservable.

Inputs used to measure fair value might fall in different levels of the fair value hierarchy. Categorization within the hierarchy is based on the lowest level input that is significant to the fair value measurement.

Equity securities are generally valued based on quoted prices from an active market and are therefore categorized in level 1. In the absence of quoted market prices, such as equity securities that trade infrequently or not at all, valuations are based on the last traded price or a price provided by investment managers and are generally categorized in level 3.

Debt securities classified as level 2, including invested securities lending collateral, are valued using the latest bid prices or evaluated quotes from independent pricing vendors. The third-party vendors use a variety of methods when pricing these securities that incorporate relevant observable market data to arrive at an estimate of what a buyer in the marketplace would pay for a security under current market conditions. When independent price sources are not available, debt securities are priced based on the last traded price or a valuation provided by the investment manager and are categorized in level 3.

Funds priced using a net asset value (NAV) that is published daily and validated with a sufficient level of observable activity are categorized in level 1 . If observa-

TABLE 7

| Investments as of June 30, 2016 | Fair Value |
| :---: | :---: |
| US Treasury Obligations | \$ 5,951,947,963 |
| US Treasury Obligations - Strips | 34,980,235 |
| US Treasury Obligations - TIPS | 164,041,060 |
| US Federal Agency Mortgage Securities | 844,720,460 |
| US Federal Agency Mortgage TBAs | 396,477,755 |
| US Federal Agency Debt | 15,924,372 |
| US Federal Agency Strips | 45,489,284 |
| International Debt Securities | 932,101,682 |
| Non-Government Debt Securities | 102,097,212 |
| Corporate Bonds | 2,171,364,559 |
| Bank Loans | 1,936,695,980 |
| Municipal Bonds | 38,716,191 |
| Collateralized Mortgage Obligations | 828,250,169 |
| Asset-Backed Securities | 473,850,591 |
| Guaranteed Investment Contracts ${ }^{1}$ | 171,265,727 |
| Domestic Fixed Income Funds | 610,304,712 |
| International Fixed Income Funds | 50,281,380 |
| Total Debt Securities | 14,768,509,332 |
| Derivatives in Asset Positions | 13,813,635 |
| Domestic Equity Securities | 10,493,097,436 |
| International Equity Securities | 9,150,695,658 |
| Domestic Equity Funds | 2,665,179,334 |
| Global Equity Funds | 1,878,292,945 |
| International Equity Funds | 2,398,987,297 |
| Target Date Fund | 457,658,916 |
| Oregon Savings Growth Plan Self Directed | 6,185,235 |
| Total Public Equity | 27,063,910,456 |
| Real Estate and Real Estate Investment Trusts | 8,585,785,027 |
| Private Equity | 13,954,350,332 |
| Alternative Equity | 2,948,607,060 |
| Opportunity Portfolio | 1,364,144,854 |

Total PERS Investments - Fiduciary Funds
68,685,307,061
${ }^{1}$ Guranteed Investment Contracts are stated at contract value.
ble activity is limited, yet supports that the NAV represents an exit value of the security at the measurement date, the securities are categorized in level 2. Investments in nongovernmental entities that are measured at NAV as a practical expedient, such as most private equity, alternative, opportunity and real estate investments, are excluded from the fair value hierarchy if the NAV per share (or its equivalent) was calculated in a manner consistent with the Financial Accounting Standards Board's measurement principles for investment companies. Funds not meeting this criteria are categorized in level 3.

Exchange-traded derivatives, including futures, rights, and warrants, that are actively traded are valued using quoted prices are categorized in level 1. Derivative contract valuations, such as swaps and options, are modeled using observable pricing inputs and techniques that do not entail material subjectivity and are therefore categorized in
level 2. Level 3 derivatives include securities valued at a price that has been determined by the investment manager's valuation committee.

Investments in real estate, other than real estate investment trusts which are generally valued based on an active market price and are categorized in level 1, have been valued based on the NAV per share (or its equivalent), as provided by the general partner. This type includes 64 commingled real estate funds, structured as limited partnerships, where the funds have a finite term. Distributions from the funds will be received as the underlying investments of the funds are liquidated. Liquidation is expected to take place during the five year period following the termination of the investment period which extends to 2035. Investments in real estate also include 14 joint ventures where the investments are expected to be held for the long-term and generate cash flow that will represent a significant component of the total return.

Private Equity consists of approximately 230 funds, organized as limited partnerships and limited liability companies, participating in diversified strategies including leveraged-buyouts, venture capital, growth equity, fund-of-funds, co-investments and special situations. The fair values of the private equity investments have been determined using the NAV per share (or its equivalent) as provided by the general partner or managing member. These funds have a finite term. Distributions will be received as the underlying investments of the funds are liquidated, which is expected to occur over the next 12 to 14 years.

Alternative Equity investments seek to provide diversification and inflation hedging characteristics to the Fund and include investments with a focus on infrastructure and natural resources. Alternative Equity consists of 29 investments in commingled funds organized as limited partnerships and limited liability companies. The fair values of the investments have been determined using a NAV per share (or its equivalent) of the investments. For alternative real assets, which includes 26 of the 29 funds, the funds have a finite term. Distributions will be received as the underlying investments of the funds are liquidated, which is expected to occur over the next 8 to 12 years. Alternative diversifying strategies permit periodic redemption of shares, subject to certain requirements being met, and consist of two funds investing in diversifying hedge fund strategies and one direct investment in a holding company.

The Opportunity Portfolio includes strategies that fall outside of other asset classes and include 16 funds investing in a broad range of performing and distressed debt and debt-related securities as well as royalties and insurancebased investments. The fair values of the investments
have been determined using a NAV per share (or its equivalent) of the investments. For 11 of the 16 funds, the funds have a finite term. Distributions will be received as the underlying investments of the funds are liquidated, which is expected to occur over the next 7 to 10 years. The remaining five funds are open ended, permitting periodic redemption of shares. Approximately 20 percent of the value of investments of this type are subject to a restriction on exercising certain termination rights. That restriction will expire within 12 months of June 30, 2016.

PERS has the following recurring fair value measurements as of June 30, 2016 (See Table 8 below).

Disclosures regarding redemption and investments valued at the NAV per share (or its equivalent), including Unfunded

Commitments, are presented in Table 9 on the next page.

## 2. Rate of Return

For the year ended June 30, 2016, the annual moneyweighted rate of return on defined benefit pension plan investments, net of defined benefit pension plan investment expenses, was 1.62 percent. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the timing of cash flows and the changing amounts actually invested.

## 3. Investment Concentrations

As of June 30, 2016, there were no organizations that represent 5 percent or more of the pension plan's fiduciary net position, or total investments.

TABLE 8

| Investments and Derivative Instruments Measured at Fair Value |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

## Oregon Public Employees Retirement System

| TABLE 8 continuing from the previous page |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Investments Measured at the Net Asset Value (NAV) |  |  |  |  |  |  |  |  |
| Real Estate | \$ | 6,101,758,945 |  |  |  |  |  |  |
| Private Equity |  | 13,519,930,392 |  |  |  |  |  |  |
| Alternative Equity |  |  |  |  |  |  |  |  |
| Alternative Real Assets |  | 1,616,981,888 |  |  |  |  |  |  |
| Alternative Diversifying Strategies |  | 1,321,375,362 |  |  |  |  |  |  |
| Total Alternative Equity |  | 2,938,357,250 |  |  |  |  |  |  |
| Opportunity Portfolio |  |  |  |  |  |  |  |  |
| Opportunity Private Investments |  | 491,212,962 |  |  |  |  |  |  |
| Opportunity Open Ended Funds |  | 872,931,892 |  |  |  |  |  |  |
| Total Opportunity Portfolio |  | 1,364,144,854 |  |  |  |  |  |  |
| Total Investments Measured at the NAV |  | 23,924,191,441 |  |  |  |  |  |  |
| Total Investments Measured at Fair Value | \$ | 68,500,227,699 |  |  |  |  |  |  |
| Investments Derivative Instruments |  |  |  |  |  |  |  |  |
| Credit Default Swaps | \$ | 323,039 | \$ | - | \$ | 323,039 | \$ | - |
| Foreign Exchange Forwards |  | 54,157,062 |  | - |  | 54,157,062 |  | - |
| Interest Rate Swaps |  | 5,342,500 |  | - |  | 5,342,500 |  | - |
| Options |  | 2,438,383 |  | - |  | 2,438,383 |  | - |
| Rights and Warrants |  | 5,155,296 |  | 1,449,484 |  | 776,481 |  | 2,929,331 |
| Total Return Swaps |  | 554,417 |  | - |  | 554,417 |  | - |
| Total Assets |  | 67,970,697 |  | 1,449,484 |  | 63,591,882 |  | 2,929,331 |
| Credit Default Swaps |  | $(3,051,889)$ |  | - |  | $(3,051,889)$ |  | - |
| Foreign Exchange Forwards |  | $(26,801,491)$ |  | - |  | $(26,801,491)$ |  | - |
| Interest Rate Swaps |  | $(22,750,260)$ |  | - |  | $(22,750,260)$ |  | - |
| Options |  | $(3,857,326)$ |  | - |  | $(3,857,326)$ |  | - |
| Total Return Swaps |  | $(394,649)$ |  | - |  | $(394,649)$ |  | - |
| Total Liabilities |  | $(56,855,615)$ |  | - |  | (56,855,615) |  | - |
| Total Investments Derivative Instruments | \$ | 11,115,082 | \$ | 1,449,484 | \$ | 6,736,267 | \$ | 2,929,331 |
| Invested Securities Lending Collateral |  |  |  |  |  |  |  |  |
| Asset-Backed Securities | \$ | 182,730,523 | \$ | - | \$ | 182,730,523 | \$ | - |
| Certificates of Deposit |  | 140,016,704 |  | - |  | 140,016,704 |  | - |
| Commercial Paper |  | 144,273,191 |  | - |  | 144,273,191 |  | - |
| Corporate Bonds |  | 165,154,457 |  | - |  | 165,154,457 |  | - |
| Repurchase Agreements |  | 702,000,000 |  | - |  | 702,000,000 |  | - |
| U.S. Government \& Agencies |  | 114,004,319 |  | - |  | 114,004,319 |  | - |
| Total Invested Securities Lending Collateral ${ }^{2}$ | \$ | 1,448,179,194 | \$ | - | \$ | 1,448,179,194 | \$ | - |
| ${ }^{1}$ Guaranteed Investment Contracts are excluded from the table as these are stated at contracted value. |  |  |  |  |  |  |  | 19.pdf. |

TABLE 9
Investments Measured at the Net Asset Value

|  |  | Fair Value |  | Unfunded Commitments* | Redemption Frequency (If Currency Eligible) | Redemption Notice Period |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Real Estate | \$ | 6,101,758,945 | \$ | 2,603,056,651 | N/A | N/A |
| Private Equity |  | 13,519,930,392 |  | 7,146,528,461 | N/A | N/A |
| Alternative Equity |  |  |  |  |  |  |
| Alternative Real Assets |  | 1,616,981,888 |  | 2,561,209,765 | N/A | N/A |
| Alternative Diversifying Strategies |  | 1,321,375,362 |  | - | Monthly | 30-75 days |
| Opportunity Portfolio |  |  |  |  |  |  |
| Opportunity Private Investments |  | 491,212,962 |  | 376,627,790 | N/A | N/A |
| Opportunity Open Ended Funds |  | 872,931,892 |  | 291,643,392 | Monthly/Quarterly | 5-90 days |
| Total | \$ | 23,924,191,441 | \$ | 12,979,066,059 |  |  |

## 4. Credit Risk Debt Securities

It is OIC's policy that no more than 30 percent of the fixed income manager positions be below investment grade. Securities with a quality rating of below BBB- are considered below investment grade. There is no policy restriction on other investment managers who may hold debt securities. As of June 30, 2016, the fair value of below grade investments, excluding unrated securities, is $\$ 2,972.9$ million, or 35.5 percent, of total securities subject to credit risk and 20.1 percent of total debt securities. The weighted quality rating average is A. Unrated securities include $\$ 342.0$ million in bank loans, $\$ 831.9$ million in mutual funds and guaranteed investment contracts, and $\$ 258.2$ million in other debt securities. Table 10 on the next page details the quality ratings for credit risk debt securities as of June 30, 2016.

## 5. Custodial Credit Risk

Custodial credit risk for investments is the risk that in the event of a failure of the counterparty, PERS will not be ale to recover the value of the investments or collateral securities that are in the possession of an outside party. OIC has no formal policy regarding the holding of securities by a custodian or counterparty. As of June 30, 2016, no investments were exposed to custodial credit risk.

## 6. Concentrations of Credit Risk

OIC expects investment managers to maintain diversified portfolios. There is no limit on single issuer investments for domestic, global, and international equity fund managers. Policy states that the asset classes will be diversified across their respective markets. Additionally, both passive and active investing strategies are employed, and several external managers engage in active management. OIC provides the following limitations for fixed income manager positions:

- obligations issued or guaranteed by the U.S. government, U.S. agencies, or government-sponsored enterprises - no restriction;
- obligations of other national governments - no more than 10 percent of the debt investment portfolio per issuer;
- private mortgage-backed and asset-backed securities, unless collateral is credit independent of the issuer and the security's credit enhancement is generated internally - no more than 10 percent of the debt investment portfolio per issuer; 25 percent per issuer if the collateral exception is met; and
- other issuers, excluding investments in commingled vehicles - no more than 3 percent of the debt investment portfolio.

As of June 30, 2016, there were no single issuer debt investments that exceeded the above guidelines nor were there investments in any one issuer that represent 5 percent or more of total investments or total net position.

## 7. Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. This risk is managed within the portfolio using the effective duration methodology. Policies state that the fixed income manager positions will maintain a weighted average effective duration within plus or minus 20 percent of the benchmark's effective duration. There is no policy restriction for non-fixed income investment managers who may hold fixed income positions. As of June 30, 2016, the weighted average duration of PERS' fixed income portfolio was 5.27 years.

Effective duration is a measure of a fixed income investment's exposure to fair value changes arising from changes in interest rates. Effective duration makes assumptions regarding the most likely timing and amounts of variable cash flows. These assumptions take into consideration factors indicative of investments highly sensitive to interest rate changes, including callable options, prepayments, and other factors. These factors are reflected in the effective duration numbers provided herein.

No individual fixed income investment manager's portfolio was outside the policy guidelines at June 30, 2016. Table 11 on the next page shows the investments by type, amount, and effective weighted duration.

At June 30, 2016, PERS held approximately \$1,673.0 million in debt instruments backed by pooled mortgages, Collateralized Mortgage Obligations (CMOs), or fixedrate mortgages. These securities represent a stream of principal and interest payments from underlying mortgages. Assets with these characteristics are susceptible to prepayment by the mortgage holders, which may result in a decrease in total interest realized. The value of these securities can be volatile as interest rates fluctuate. Additionally, the risk of default exists and collateral held may potentially be insufficient to cover the principal due. PERS also held approximately $\$ 396.5$ million in To-Be-Announced (TBA) federal agency-issued mortgage pools. An additional $\$ 473.9$ million of debt instruments held are assetbacked securities backed primarily by automobiles, consumer credit receivables, heavy equipment leases, and student loan receivables.

## 8. 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. Policy states that no more than 25

## Oregon Public Employees Retirement System

TABLE 10

| Schedule of Credit Risk at June 30, 2016 |  |
| :--- | ---: | ---: |
| Quality Rating | Fair Value |
| AAA | $770,573,774$ |
| AA | $163,935,729$ |
| A | $588,060,113$ |
| BBB | $1,410,078,267$ |
| BB | $714,595,531$ |
| B | $1,684,165,609$ |
| CCC | $551,602,321$ |
| CC | $6,767,485$ |
| D | $15,745,869$ |
| Not Rated | $1,432,050,156$ |
| Not Rated ${ }^{1}$ | $1,029,691,521$ |
| Total Subject to Credit Risk | $\mathbf{8 , 3 6 7 , 2 6 6 , 3 7 5}$ |
| U.S. Government Guaranteed Securities | $6,401,242,957$ |
| Total Debt Securities | $\mathbf{1 4 , 7 6 8 , 5 0 9 , 3 3 2}$ |
| ${ }^{1}$ Federal Agency securities, which are not rated by the credit rating agencies as they carry an |  |
| implicit guarantee of the US Government. |  |

TABLE 11

| Investments |  | Fair Value | Effective Weighted Duration Rate (in years) |
| :---: | :---: | :---: | :---: |
| US Treasury Obligations | \$ | 5,951,947,963 | 6.78 |
| US Treasury Obligations - Strips |  | 34,980,235 | 0.23 |
| US Treasury Obligations - TIPS |  | 164,041,060 | 7.57 |
| US Federal Agency Mortgage Securities |  | 844,720,460 | 2.47 |
| US Federal Agency Mortgage TBAs |  | 396,477,755 | 2.71 |
| US Federal Agency Debt |  | 15,924,372 | 7.93 |
| US Federal Agency Strips |  | 45,489,284 | 2.45 |
| International Debt Securities |  | 649,094,039 | 3.44 |
| Non-US Government Debt Securities |  | 52,310,810 | 9.93 |
| Corporate Bonds |  | 2,151,402,993 | 6.07 |
| Municipal Bonds |  | 38,716,191 | 10.42 |
| Collateralized Mortgage Obligations |  | 828,250,169 | 1.69 |
| Asset-Backed Securities |  | 473,850,591 | 1.57 |
| Mutual Funds - Domestic Fixed Income |  | 610,304,712 | 2.28 |
| Mutual Funds - International Fixed Income |  | 50,281,380 | 3.49 |
| No Effective Duration: |  |  |  |
| International Debt Securities |  | 283,007,643 | N/A |
| Non-US Government Debt Securities |  | 49,786,402 | N/A |
| Corporate Bonds |  | 19,961,566 | N/A |
| Bank Loans |  | 1,936,695,980 | N/A |
| Guatanteed Investment Contracts |  | 171,265,727 | N/A |
| Total Debt Securities |  | 14,768,509,332 |  |
| Cash Equivalent - Mutual Funds - STIF |  | 1,242,946,468 | 24 Days ${ }^{1}$ |
| Cash Equivalent - Oregon Short Term Funds |  | 1,214,426,375 | 154 Days $^{1}$ |
| Total Subject to Interest Rate Risk | \$ | 17,225,882,175 |  |
| ${ }^{1}$ Weighted average maturity |  |  |  |

percent of the fixed income manager positions may be invested in non-dollar denominated securities. Policies for the non-fixed portion of PERS' portfolio are silent regarding this risk. As of June 30, 2016, approximately 0.6 percent of the debt investment portfolio was invested in non-dollar denominated securities. See Table 12 below.

## 9. Unfunded Commitments

OIC has entered into agreements that commit OPERF, upon request, to make additional investment purchases up to a predetermined amount. As of June 30, 2016, the OPERF had $\$ 9,838.5$ million in commitments to purchase private equity investments, which includes $\$ 3,117.1$ million in recallable distributions, $\$ 2,935.9$ million in commitments to purchase real estate investments, $\$ 2,597.0$ million in commitments to purchase alternative equity investments, which includes $\$ 143.7$
million in recallable distributions and $\$ 668.3$ million in commitments to purchase opportunity portfolio investments, which includes $\$ 140.9$ million in recallable distributions. These amounts are unfunded and are not recorded in the Statement of Fiduciary Net Position.

## C. Securities Lending

In accordance with state investment policies, OPERF participates in securities lending transactions. Through securities lending authorization agreements, the Oregon State Treasury has authorized its custodian, State Street Bank, to lend its securities pursuant to the terms and conditions of policy and applicable agreements. Both OPERF and the borrowers maintained the right to terminate all securities lending transactions on demand. There were no significant violations of the provisions of securities lending agreements during the period of these financial statements.

TABLE 12

| Currency Exposures by Asset Class in US Dollar Equivalents as of June 30, 2016 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Currency | Cash and Cash Equivalents |  | Debt Securities |  | Public Equity |  | Derivatives in Asset Positions |  | Real Estate |  | Private Equity |  | Total |  |
| Argentine peso | \$ | 22,331 | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ | 22,331 |
| Australian dollar |  | 2,669,461 |  | 2,248,055 |  | 299,842,268 |  | 1,972,364 |  | 74,728,345 |  | - |  | 381,460,493 |
| Bolivar fuerte |  | 43 |  | - |  | 1 |  | - |  | - |  | - |  | 44 |
| Brazilian real |  | 1,099,867 |  | 8,459,395 |  | 166,512,430 |  | - |  | 1,335,764 |  | - |  | 177,407,456 |
| Canadian dollar |  | 4,364,680 |  | 457,765 |  | 442,993,139 |  | - |  | 38,704,903 |  | - |  | 486,520,487 |
| Chilean peso |  | 7,552 |  | - |  | 5,765,855 |  | - |  | - |  | - |  | 5,773,407 |
| Chinese yuan |  | 1,361,970 |  | 5,172,346 |  | 29,584,136 |  | - |  | - |  | - |  | 36,118,452 |
| Colombian peso |  | - |  | - |  | 2,362,864 |  | - |  | - |  | - |  | 2,362,864 |
| Czech koruna |  | 76 |  | - |  | 7,880,860 |  | - |  | - |  | - |  | 7,880,936 |
| Danish krone |  | 412,731 |  | 3,088 |  | 106,869,190 |  | - |  | - |  | - |  | 107,285,009 |
| Egyptian pound |  | 345,405 |  | - |  | 15,013,134 |  | - |  | - |  | - |  | 15,358,539 |
| Euro |  | 20,359,335 |  | 39,240,279 |  | 1,691,300,299 |  | 372,593 |  | 98,024,915 |  | 246,409,056 |  | 2,095,706,477 |
| Hong Kong dollar |  | 5,125,424 |  | - |  | 490,626,680 |  | 554,742 |  | 99,019,979 |  | - |  | 595,326,825 |
| Hungarian forint |  | 776,658 |  | - |  | 15,730,182 |  | - |  | - |  | - |  | 16,506,840 |
| Indian rupee |  | 639,636 |  | - |  | 142,508,898 |  | - |  | - |  | - |  | 143,148,534 |
| Indonesian rupiah |  | 116,559 |  | - |  | 36,303,717 |  | - |  | - |  | - |  | 36,420,276 |
| Israeli shekel |  | 116,888 |  | - |  | 20,921,767 |  | - |  | 14,945 |  | - |  | 21,053,600 |
| Japanese yen |  | 11,079,732 |  | 8,386,320 |  | 1,422,055,855 |  | - |  | 125,294,342 |  | - |  | 1,566,816,249 |
| Kenya shilling |  | - |  | - |  | 5,094,072 |  | - |  | - |  | - |  | 5,094,072 |
| Malaysian ringgit |  | 74,702 |  | - |  | 29,397,788 |  | 790 |  | - |  | - |  | 29,473,280 |
| Mexican peso |  | 1,017,346 |  | 13,888,869 |  | 82,174,128 |  | - |  | 8,241,707 |  | - |  | 105,322,050 |
| Moroccan dirham |  | - |  | - |  | 1,511,230 |  | - |  | - |  | - |  | 1,511,230 |
| New Zealand dollar |  | 257,350 |  | - |  | 13,055,691 |  | - |  | - |  | - |  | 13,313,041 |
| Nigerian naira |  | 239,475 |  | - |  | 4,921,844 |  | - |  | - |  | - |  | 5,161,319 |
| Norwegian krone |  | 124,124 |  | - |  | 39,176,790 |  | 2,493,240 |  | 4,078,297 |  | - |  | 45,872,451 |
| Pakistani rupee |  | 758 |  | - |  | 7,319,001 |  | - |  | - |  | - |  | 7,319,759 |
| Peruvian nuevo sol |  | - |  | - |  | 721,115 |  | - |  | - |  | - |  | 721,115 |
| Philippine peso |  | 18,676 |  | - |  | 29,660,050 |  | - |  | - |  | - |  | 29,678,726 |
| Polish zloty |  | 119,653 |  | - |  | 13,087,522 |  | - |  | - |  | - |  | 13,207,175 |
| Pound sterling |  | 16,365,836 |  | 7,005,891 |  | 1,832,009,816 |  | 3,348,662 |  | 65,858,624 |  | - |  | 1,924,588,829 |
| Qatar riyal |  | - |  | - |  | 888,221 |  | - |  | - |  | - |  | 888,221 |
| Singapore dollar |  | 521,090 |  | - |  | 52,969,537 |  | 103,665 |  | 16,399,200 |  | - |  | 69,993,492 |
| South African rand |  | 1,650,357 |  | - |  | 167,436,950 |  | - |  | - |  | - |  | 169,087,307 |
| South Korean won |  | 414,463 |  | - |  | 385,493,784 |  | 334 |  | 880,323 |  | - |  | 386,788,904 |
| Swedish krona |  | 391,586 |  | - |  | 192,294,166 |  | - |  | 9,595,955 |  | - |  | 202,281,707 |
| Swiss franc |  | 439,518 |  | - |  | 441,114,052 |  | - |  | 7,597,333 |  | - |  | 449,150,903 |
| Taiwan dollar |  | 444,786 |  | - |  | 231,650,550 |  | - |  | - |  | - |  | 232,095,336 |
| Thai baht |  | 411,089 |  | - |  | 74,560,561 |  | - |  | - |  | - |  | 74,971,650 |
| Tunisia dinar |  | - |  | - |  | 1,216,048 |  | 10 |  | - |  | - |  | 1,216,058 |
| Turkish lira |  | 219,725 |  | - |  | 67,384,168 |  | - |  | 1,666,538 |  | - |  | 69,270,431 |
| United Arab Emirates dirham |  | 29,010 |  | - |  | 16,469,876 |  | - |  | - |  | - |  | 16,498,886 |
| Total Subject to Foreign Currency Risk | \$ | 71,237,892 | \$ | 84,862,008 | \$ | 8,585,878,235 | \$ | 8,846,400 | \$ | 551,441,170 | \$ | 246,409,056 | \$ | 9,548,674,761 |

## Oregon Public Employees Retirement System

The custodian had the authority to loan short-term, fixed income, and equity securities and to receive as collateral U.S. dollar and foreign currency cash, U.S. government and agency securities, letters of credit, and foreign sovereign debt of Organization of Economic Cooperation and Development (OECD) countries. Borrowers were required to deliver collateral for each loan equal to not less than 102 percent of the market value of loaned U.S. securities and international fixed income securities, or 105 percent in the case of international equity. The custodian did not have the ability to pledge or sell collateral securities absent a borrower default, and OPERF did not impose any restrictions during the fiscal year on the amount of the loans the custodian made on its behalf. OPERF is fully indemnified against losses due to borrower default by its current custodian. There were no losses during the year from the failure of borrowers to return loaned securities and no recoveries of amounts from prior losses.

Prior to July 1, 2010, OPERF was a participant in a securities lending collateral reinvestment pool managed by State Street Global Advisors ("SSgA"), a division of State Street Bank. On July 1, 2010, OPERF withdrew from this pool and directed SSgA to allocate its share of pool assets into a new legacy fund owned exclusively by OPERF. At the same time OPERF also directed SSgA to open a new securities lending collateral reinvestment fund for ongoing lending activities. The legacy fund will be maintained until all existing assets have matured or been sold, and proceeds will be invested in the new fund. Since the assets in the legacy and new funds are wholly owned by OPERF, the balances in the funds are stated at fair value in the Statements of Fiduciary Net Position as of June 30, 2016. Previous securities lending collateral reinvestment pool balances were stated at "constant value," which approximates fair value, since OPERF was a participant in a pool along with other qualified plans, due to the lending agent's practice of redeeming shares at $\$ 1.00$ per unit. The investments in the legacy and new funds are held by the custodian.

The maturities of investments made with cash collateral did not generally match the maturities of the securities loaned. Since the securities loaned are callable on demand by either the lender or borrower, the life of the loans at June 30, 2016, is effectively one day. On June 30, 2016, OPERF had no credit risk exposure to borrowers because the amounts OPERF owes borrowers exceeds the amounts borrowers owe OPERF.

On June 30, 2016, the fair value of cash collateral received and invested cash collateral were $\$ 1,495.4$ million and $\$ 1,492.4$ million, respectively. The cumulative unrealized loss in invested cash collateral of $\$ 3.1$ million has been recognized in securities lending income in the

Statements of Changes in Fiduciary Net Position in the period in which the gain or losses occurred. For the fiscal year ended June 30, 2016, total income from securities lending activity was $\$ 18.3$ million, and total expenses for the period were $\$ 6.0$ million for a net gain of $\$ 12.3$ million.

OSTF also participates in securities lending activity. OPERF receives an allocated portion of this activity based on its deposits in OSTF. As of June 30, 2016, OPERF's allocated portion of cash collateral received and invested cash collateral were $\$ 7.8$ million and $\$ 7.8$ million, respectively.

Cash collateral received for OSTF securities lent is invested in securities lending collateral pools and is not exposed to custodial risk. For more information on OSTF's participation in securities lending activity, refer to their audited financial statements at: http://sos.oregon.gov/audits/Documents/2016-19.pdf.

Table 13 on the next page shows the combined balances of the securities on loan, cash and securities collateral received, and investments of cash collateral held. Securities lending collateral subject to credit risk as of June 30, 2016, is shown in Table 14 on the next page. Securities lending collateral subject to interest rate risk as of June 30, 2016, is shown in Table 15, also on the next page.

## D. Derivatives

Oregon Investment Council policy allows, with some restrictions, for the use of derivative instruments in the prudent management of OPERF investments. Certain internally and externally managed accounts are allowed, through contract and policy, to invest in derivative instruments to carry out their investment management activities. Risks inherent with derivatives are managed through investment management's adherence to contractual and policy prescribed terms that are consistent with OPERF's investing objectives.

All derivative instruments held by OPERF are considered investments. The fair value of OPERF derivative investments is reported in the Investment Sales and Other Receivables, Investment Purchases and Accrued Expenses, and the Public Equity lines of the Statements of Fiduciary Net Position - Pension and Other Postemployment Plans on pages 28 and 29. Changes in fair value during the fiscal year are reported in the Net Appreciation in Fair Value of Investments line of the Statements of Changes in Fiduciary Net Position - Pension and Other Postemployment Plans on pages 30 and 31.

TABLE 13

| Securities Lending as of June 30, 2016 |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Investment Type | Securities on Loan <br> at Fair Value |  | Cash and Securities <br> Collateral Received |  | Investments of Cash <br> Collateral at Fair Value |  |
| U.S. Treasury Securities | \$ | 441,620,756 | \$ | 450,837,660 | \$ | 66,752,957 |
| U.S. Agency Securities |  | 4,583,643 |  | 4,661,028 |  | - |
| Domestic Equity Securities |  | 1,254,832,258 |  | 1,271,565,791 |  | 1,012,899,222 |
| Domestic Debt Securities |  | 142,138,470 |  | 144,992,973 |  | 92,759,986 |
| International Equity Securities |  | 872,946,019 |  | 911,856,708 |  | 314,853,804 |
| International Debt Securities |  | 5,037,649 |  | 5,125,723 |  | 5,115,210 |
| Allocation from Oregon Short Term Fund |  | 10,584,123 |  | 10,802,895 |  | 7,806,958 |
| Total | \$ | 2,731,742,918 | \$ | 2,799,842,778 | \$ | 1,500,188,137 |

TABLE 14

| Securities Lending Invested Cash Collateral Subject to Credit Risk as of June 30, 2016 |  |  |
| :--- | ---: | ---: |
| Quality Rating | Fair Value |  |
| AAA | $\$$ | $270,398,315$ |
| AA ${ }^{1}$ | $444,518,618$ |  |
| A | $141,039,030$ |  |
| B | $3,223,231$ |  |
| Total Subject to Credit Risk | $\mathbf{8 5 9 , 1 7 9 , 1 9 4}$ |  |
| U.S. Government Guaranteed Repurchase Agreements | $589,000,000$ |  |
| Allocation from Oregon Short Term Fund | $7,806,958$ |  |
| Cash and Receivables | $44,201,985$ |  |
| Total Securities Lending Invested Cash Collateral | $\mathbf{1 , 5 0 0 , 1 8 8 , 1 3 7}$ |  |

TABLE 15

| Securities Lending Invested Cash Collateral Subject to Interest Rate Risk as of June 30, 2016 |  |  |  |
| :---: | :---: | :---: | :---: |
| Security Type | Fair Value |  | Effective <br> Weighted <br> Duration Rate (in days) ${ }^{1}$ |
| Asset-Backed Securities | \$ | 182,730,523 | 13 |
| Certificates of Deposit |  | 140,016,704 | 96 |
| Commercial Paper |  | 144,273,191 | 124 |
| Corporate Bonds |  | 165,154,457 | 43 |
| Repurchase Agreements |  | 113,000,000 | 1 |
| U.S. Government \& Agencies |  | 114,004,319 | 17 |
| Total Subject to Interest Rate Risk |  | 859,179,194 | 50 |
| U.S. Government Guaranteed Repurchase Agreements |  | 589,000,000 |  |
| Allocation from Oregon Short Term Fund |  | 7,806,958 |  |
| Cash and Receivables |  | 44,201,985 |  |
| Total Securities Lending Invested Cash Collateral | \$ | 1,500,188,137 |  |
| ${ }^{1}$ Weighted average days to maturity or next reset date. |  |  |  |

TABLE 16
Derivative Instruments as of June 30, 2016

| Investment Derivatives |  | ciation/ tion) in vestments ${ }^{1,4}$ | Classification |  | ir Value ${ }^{2}$ |  | tional Value ${ }^{3}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Credit Default Swaps Bought | \$ | $(2,185,109)$ | Public Equity | \$ | (2,252,321) | \$ | 205,475,000 |
| Credit Default Swaps Written |  | $(961,313)$ | Public Equity |  | $(476,529)$ |  | 60,139,000 |
| Fixed Income Futures Long |  | 73,743,208 | Public Equity |  | - |  | 1,902,050,000 |
| Fixed Income Futures Short |  | $(45,839,382)$ | Public Equity |  | - |  | $(398,812,585)$ |
| Fixed Income Options Bought |  | $(499,071)$ | Public Equity |  | 2,193,916 |  | 14,080,000 |
| Fixed Income Options Written |  | 1,421,773 | Public Equity |  | $(3,748,998)$ |  | $(578,691,220)$ |
| Foreign Currency Options Bought |  | $(496,102)$ | Public Equity |  | 244,467 |  | 11,258,000 |
| Foreign Currency Options Written |  | 241,079 | Public Equity |  | - |  | - |
| Futures Options Bought |  | $(4,124,693)$ | Public Equity |  | - |  | - |
| Futures Options Written |  | 3,207,925 | Public Equity |  | $(108,328)$ |  | $(228,000)$ |
| Foreign Exchange Forwards |  | 58,996,945 | Receivables/Payables |  | 27,355,571 |  | 2,247,572,896 |
| Index Futures Long |  | $(15,404,584)$ | Public Equity |  | - |  | 7,150,655 |
| Index Futures Short |  | 15,564,655 | Public Equity |  | - |  | $(75,500)$ |
| Pay Fixed Interest Rate Swaps |  | $(24,971,777)$ | Public Equity |  | $(20,383,012)$ |  | 781,744,787 |
| Receive Fixed Interest Rate Swaps |  | 4,924,318 | Public Equity |  | 2,975,252 |  | 72,158,200 |
| Rights |  | $(1,310,246)$ | Public Equity |  | 847,544 |  | 18,399,106 |
| Total Return Swaps Bond |  | $(327,598)$ | Public Equity |  | $(391,947)$ |  | 9,028,090 |
| Total Return Swaps Equity |  | 675,652 | Public Equity |  | 551,715 |  | $(12,120,434)$ |
| Warrants |  | $(789,646)$ | Public Equity |  | 4,307,752 |  | 9,905,457 |
| Total | \$ | 61,866,034 |  | \$ | 11,115,082 | \$ | 4,349,033,452 |
| ${ }^{1}$ Negative values (in brackets) refer to losses. |  |  |  |  |  |  |  |
| ${ }^{2}$ Negative values refer to liabilities. |  |  |  |  |  |  |  |
| ${ }^{3}$ Notional may be a dollar amount or size of underlying for futures, rights, warrants, and options. Negative values refer to short positions. |  |  |  |  |  |  |  |

Table 16 above presents the related net appreciation/(depreciation) in fair value amounts and the notional amounts of derivative instruments outstanding as of June 30, 2016.

A forward foreign currency exchange contract is a forward contract that is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. The fair value of a foreign currency forward is determined by the difference between the contract exchange rate and the closing exchange rate, at the end of reporting period. Risks associated with such contracts include movement in the value of foreign currencies and the ability of the counterparty to perform.

A futures contract represents a commitment to purchase or sell an underlying asset at a future date and at a specified price. Futures contracts have standardized terms and are traded on exchanges. The counterparty credit risk for futures is generally less than for privately negotiated forward contracts, since the clearinghouse, which is the issuer or counterparty to each exchange-traded future, settles daily the net change in the futures contract's value in cash with the broker and results in the contract itself having no fair value at the end of any trading day.

A swap is an agreement that obligates two parties to exchange a series of cash flows or the net value of cash flows at specified intervals based upon, or calculated by, reference to changes in specified prices or rates for a specified amount of an underlying asset. Swaps are privately negotiated contracts with customized terms and are transacted in over-the-counter markets. OPERF held various types of swaps including credit default, interest rate, and total return swaps. The payment flows are usually netted against each other, with the difference being paid by one party or another. In addition, collateral may be pledged or received by OPERF in accordance with the terms of the respective swap agreements to provide value and recourse to OPERF or its counterparties. Swaps are subject to general market risk, liquidity risk, credit risk, interest rate risk and the risk that the counterparty may fail to perform.

An option is an instrument that gives one party the right, but not the obligation, to buy or sell an underlying asset from or to another party at a fixed price over a specified period of time. In writing an option, OPERF bears the market risk of an unfavorable change in the price of the underlying investment of the written option. Exercise of an option written by OPERF could result in OPERF selling or buying an asset at a price different from the current
market value. Options may be subject to interest rate risk, general market risk, liquidity risk, credit risk, foreign currency risk, and, for non-exchange traded options, the risk of the counterparty's ability to perform.

Rights are the right, but not the obligation, to purchase newly issued equity shares, often in proportion to the number of shares currently owned, in a specified company, at a pre-established price on or within a pre-determined date. A warrant provides the holder the right, but not the obligation, to purchase securities from the issuing entity at a specific price and within a certain time period. In the OPERF portfolio, rights and warrants are often obtained and held due to existing investments and are subject to general market risk and liquidity risk.

## Counterparty Credit Risk

Table 17 below presents a summary of counterparty
credit ratings relating to derivative instruments as of June 30, 2016.

## Interest Rate Risk

As of June 30, 2016, OPERF is exposed to interest rate risk on its various swap arrangements and options. Table 18 on the next page presents a segmented time schedule of those instruments, and Table 19, also on the next page, shows a schedule of derivative instruments that were highly sensitive to interest rate changes.

## Foreign Currency Risk

OPERF is exposed to foreign currency risk on its derivative instruments. Table 20 on page 57 presents a summary of derivative instruments subject to foreign currency risk as of June 30, 2016.

TABLE 17

| Derivative Instruments Subject to Counterparty Credit Risk as of June 30, 2016 |
| :--- | ---: | :---: | :---: | :---: |

## Oregon Public Employees Retirement System

TABLE 18

|  | Fair Value |  | Investment Maturities (in years) |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Investment Type |  |  | Less Than 1 |  | 1-5 |  | 6-10 |  | More than 10 |  |
| Credit Default Swaps Bought | \$ | $(2,252,321)$ | \$ | - | \$ | $(2,252,321)$ | \$ | - | \$ | - |
| Credit Default Swaps Written |  | $(476,529)$ |  | - |  | 260,472 |  | $(135,546)$ |  | $(601,455)$ |
| Fixed Income Options Bought |  | 2,193,916 |  | - |  | 2,193,916 |  | - |  | - |
| Fixed Income Options Written |  | $(3,748,998)$ |  | $(19,501)$ |  | $(3,729,497)$ |  | - |  | - |
| Pay Fixed Interest Rate Swaps |  | $(20,383,012)$ |  | $(282,404)$ |  | $(3,440,453)$ |  | $(13,735,020)$ |  | $(2,925,135)$ |
| Receive Fixed Interest Rate Swaps |  | 2,975,252 |  | - |  | 780,292 |  | 2,194,960 |  | - |
| Total Return Swaps Bond |  | $(391,947)$ |  | $(391,947)$ |  | - |  | - |  | - |
| Total Return Swaps Equity |  | 551,715 |  | 551,715 |  | - |  | - |  | - |
| Total |  | $(21,531,924)$ | \$ | $(142,137)$ | \$ | $(6,187,591)$ | \$ | $(11,675,606)$ | \$ | $(3,526,590)$ |

TABLE 19

| Investment Type | Reference Rate | Fair Value |  | Notional Value |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 2.0425\% | \$ | $(1,347,652)$ | \$ | 24,730,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 2.8885\% |  | $(1,754,723)$ |  | 14,340,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 2.817\% |  | $(1,236,258)$ |  | 10,200,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 2.247\% |  | $(368,212)$ |  | 6,020,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month Australian BBSW, Pay Fixed 2.14\% |  | $(109,099)$ |  | 64,653,616 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month Australian BBSW, Pay Fixed 2.2\% |  | $(173,305)$ |  | 56,783,194 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 2.488\% |  | $(449,065)$ |  | 4,520,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 2.72\% |  | $(2,925,135)$ |  | 15,840,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 1.897\% |  | $(2,475,038)$ |  | 52,000,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month Australian BBSW, Pay Fixed 1.915\% |  | 50,637 |  | 42,337,955 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 2.259\% |  | $(1,374,320)$ |  | 16,480,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 1.9\% |  | $(4,469,715)$ |  | 93,124,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 1.63375\% |  | $(222,355)$ |  | 9,095,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month Australian BBSW, Pay Fixed 2.2125\% |  | $(363,267)$ |  | 48,555,364 |
| Pay Fixed Interest Rate Swaps | Receive Variable 6-month Norwegian NIBOR, Pay Fixed 0.95375\% |  | $(70,012)$ |  | 103,077,814 |
| Pay Fixed Interest Rate Swaps | Receive Variable 6-month Norwegian NIBOR, Pay Fixed 1.007\% |  | $(53,041)$ |  | 34,317,844 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 1.39\% |  | $(2,636,558)$ |  | 151,450,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 1.58\% |  | $(405,894)$ |  | 24,200,000 |
| Pay Fixed Interest Rate Swaps | Receive Variable 3-month LIBOR, Pay Fixed 1.46\% |  | - |  | 10,020,000 |
| Subtotal - Pay Fixed Interest Rate Swaps |  |  | $(20,383,012)$ |  | 781,744,787 |
| Receive Fixed Interest Rate Swaps | Receive Fixed 2.6275\%, Pay Variable 3-month LIBOR |  | 614,936 |  | 5,850,000 |
| Receive Fixed Interest Rate Swaps | Receive Fixed 2.9725\%, Pay Variable 6-month Australian BBSW |  | 663,874 |  | 9,828,720 |
| Receive Fixed Interest Rate Swaps | Receive Fixed 3.384\%, Pay Variable 6-month Australian BBSW |  | 636,215 |  | 6,157,842 |
| Receive Fixed Interest Rate Swaps | Receive Fixed 1.6435\%, Pay Variable 6-month GBP LIBOR |  | 560,574 |  | 13,270,414 |
| Receive Fixed Interest Rate Swaps | Receive Fixed 1.556\%, Pay Variable 6-month Norwegian NIBOR |  | 279,935 |  | 12,801,224 |
| Receive Fixed Interest Rate Swaps | Receive Fixed 1.185\%, Pay Variable 3-month LIBOR |  | 219,718 |  | 24,250,000 |
| Subtotal - Receive Fixed Interest Rate Swaps |  |  | 2,975,252 |  | 72,158,200 |
| Total Interest Rate Swaps |  | \$ | $(17,407,760)$ | \$ | 853,902,987 |

TABLE 20

| Derivative Instruments Subject to Foreign Currency Risk as of June 30, 2016 |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Currency Name | Currency Forward Contracts |  |  |  | Options/Rights/ <br> Warrants |  | Swaps |  | Total Exposure |  |
|  | Net Receivables |  | Net Payables |  |  |  |  |  |  |  |
| Australian dollar | \$ | 1,171,575 | \$ | $(118,187)$ | \$ | 226,340 | \$ | 705,055 | \$ | 1,984,783 |
| Brazilian real |  | 98,516 |  | $(1,874,789)$ |  | - |  | - |  | $(1,776,273)$ |
| Canadian dollar |  | 50,332 |  | 80,374 |  | - |  | - |  | 130,706 |
| Danish krone |  | $(40,443)$ |  | 118,888 |  | - |  | - |  | 78,445 |
| Euro |  | 2,764,726 |  | 5,930,379 |  | 42,712 |  | - |  | 8,737,817 |
| Hong Kong dollar |  | $(161,731)$ |  | (565) |  | 326 |  | 551,715 |  | 389,745 |
| Hungarian forint |  | - |  | 51,355 |  | - |  | - |  | 51,355 |
| Indian rupee |  | $(14,124)$ |  | - |  | - |  | - |  | $(14,124)$ |
| Indonesian rupiah |  | $(1,106)$ |  | - |  | - |  | - |  | $(1,106)$ |
| Japanese yen |  | 11,877,589 |  | (6,230,047) |  | - |  | - |  | 5,647,542 |
| Malaysian ringgit |  | 71,046 |  | 205,875 |  | 790 |  | - |  | 277,711 |
| Mexican peso |  | 293,799 |  | 43,662 |  | - |  | - |  | 337,461 |
| New Israeli sheqel |  | 53,791 |  | (972) |  | - |  | - |  | 52,819 |
| New Taiwan dollar |  | - |  | $(144,091)$ |  | - |  | - |  | $(144,091)$ |
| New Zealand dollar |  | 3,062,172 |  | $(910,267)$ |  | - |  | - |  | 2,151,905 |
| Norwegian krone |  | $(578,300)$ |  | 169,618 |  | 150,758 |  | 156,883 |  | $(101,041)$ |
| Pound sterling |  | (8,093,847) |  | 20,877,905 |  | 2,929,321 |  | 560,574 |  | 16,273,953 |
| Singapore dollar |  | 289,436 |  | $(130,537)$ |  | 103,665 |  | - |  | 262,564 |
| South African rand |  | 67,669 |  | $(10,122)$ |  | - |  | - |  | 57,547 |
| South Korean won |  | - |  | $(403,392)$ |  | 334 |  | - |  | $(403,058)$ |
| Swedish krona |  | $(1,839,498)$ |  | 562,001 |  | - |  | - |  | $(1,277,497)$ |
| Swiss franc |  | 553,265 |  | $(593,906)$ |  | - |  | $(391,947)$ |  | $(432,588)$ |
| Tunisian dinar |  | - |  | - |  | 10 |  | - |  | 10 |
| Yuan renminbi |  | - |  | 107,522 |  | - |  | - |  | 107,522 |
| Total Subject to Foreign Currency Risk |  | 9,624,867 |  | 17,730,704 |  | 3,454,256 |  | 1,582,280 |  | 32,392,107 |
| U.S. dollar |  | - |  | - |  | 282,097 |  | $(21,559,122)$ |  | $(21,277,025)$ |
| Total | \$ | 9,624,867 | \$ | 17,730,704 | \$ | 3,736,353 | \$ | $(19,976,842)$ | \$ | 11,115,082 |

## Oregon Public Employees Retirement System

## Note 5 - Capital Assets Used in Plan Operations

Capital construction of PERS' headquarters in Tigard, Oregon, was completed May 31, 1997. The land, building, and improvements are recorded at cost. The depreciation of the building and improvements is computed on the straightline method over the estimated useful life of 40 years.

Data processing hardware, furniture, and equipment are recorded at cost. These are items that are not consumed in the normal course of operations, have a useful life of more than one year, and whose value is $\$ 5,000$ or more.

Depreciation is computed using the straight-line method over the assets' estimated useful lives. Useful lives range from three to 10 years.

Data processing software generated internally as part of the Oregon Retirement Information On-line Network (ORION) project is recorded at cost. The useful life is amortized using the straight-line method over 20 years. See Table 21 below.

## Note 6 - Long-Term Debt

In 1997 PERS completed construction on its retirement system headquarters building in Tigard, Oregon. The construction was financed by the sale of certificates of participation (COP), Series A. In March 2002, a new COP, Series B, was issued and used to refund the original Series A COP. In April 2012 an XI-Q general obligation bond, 2012 Series K, was issued to refund the 2002 Series B COP. The Series K bond amount outstanding at June 30, 2016, is $\$ 615,000$ and has a final repayment due May 1, 2017.

Table 22 on the next page summarizes all future PERS building bond payments of principal and interest for the next fiscal year ending June 30, 2017. The current portion of the PERS building debt is $\$ 615,000$.

Table 23 on the next page summarizes the changes in long-term debt for the year ended June 30, 2016.

TABLE 21

| Schedule of Capital Assets as of June 30, 2016 |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Beginning of Year | Increases |  | Decreases |  | End of Year |  |
| Capital Assets |  |  |  |  |  |  |  |
| Furniture and Equipment \$ | \$ 1,554,349 | \$ | 275,297 | \$ | $(390,337)$ | \$ | 1,439,309 |
| Data Processing Software | 40,331,423 |  | 40,740 |  | $(31,486)$ |  | 40,340,677 |
| Data Processing Hardware | 1,982,885 |  | - |  | $(36,443)$ |  | 1,946,442 |
| Building and Building Improvements | 8,617,633 |  | - |  | - |  | 8,617,633 |
| Land | 944,463 |  | - |  | - |  | 944,463 |
| Total Capital Assets | 53,430,753 |  | 316,037 |  | $(458,266)$ |  | 53,288,524 |
| Less Accumulated Depreciation |  |  |  |  |  |  |  |
| Furniture and Equipment | $(829,895)$ |  | $(319,782)$ |  | 293,894 |  | $(855,783)$ |
| Data Processing Software | $(13,453,608)$ |  | $(1,883,593)$ |  | - |  | $(15,337,201)$ |
| Data Processing Hardware | $(772,718)$ |  | $(324,069)$ |  | 11,106 |  | $(1,085,681)$ |
| Building and Building Improvements | $(3,523,767)$ |  | $(279,035)$ |  | - |  | $(3,802,802)$ |
| Total Accumulated Depreciation | $(18,579,989)$ |  | $(2,806,479)$ |  | 305,000 |  | $(21,081,467)$ |
| Capital Assets, Net \$ | \$ 34,850,765 | \$ | $(2,490,442)$ | \$ | $(153,266)$ | \$ | 32,207,057 |
| Depreciation Expense |  |  | Amount |  |  |  |  |
| Defined Benefit Pension Plan Depreciation |  | \$ | 2,784,247 |  |  |  |  |
| Oregon Public Service Retirement Plan |  |  |  |  |  |  |  |
| Individual Account Program Depreciation |  |  | 22,232 |  |  |  |  |
| Total Depreciation Expense |  | \$ | 2,806,479 |  |  |  |  |

TABLE 22

| PERS Building Debt Service Requirements to Maturity |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fiscal Year |  | Series "K" <br> Principal |  | Interest |  | Total |
| 2017 | \$ | 615,000 | \$ | 30,750 | \$ | 645,750 |
| Total | \$ | 615,000 | \$ | 30,750 | \$ | 645,750 |

TABLE 23

## Long-Term Debt Activity

|  | $\begin{gathered} \text { Balance } \\ \text { June 30, } 2015 \end{gathered}$ |  | Additions |  | Deductions |  | $\begin{gathered} \text { Balance } \\ \text { June 30, } 2016 \end{gathered}$ |  | Amounts Due Within One Year |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PERS Building Principal | \$ | 1,200,000 | \$ | - | \$ | $(585,000)$ | \$ | 615,000 | \$ | 615,000 |
| Plus: Premium (Net) |  | 115,411 |  | - |  | $(62,951)$ |  | 52,460 |  | 52,460 |
| Total Bonds Payable | \$ | 1,315,411 | \$ | - | \$ | $(647,951)$ |  | 667,460 | \$ | 667,460 |

## Note 7 - Reserves and Designations

In accordance with the following plan requirements, various funds have been established to account for reserves or designations held for future and current payments:

## Chapter 238 Defined Benefit Plan

Table 24 below details the amounts comprising the total Net Position Restricted for Pension Benefits.

## A. Member Reserve

The Member Reserve represents member contributions made through December 31, 2003, and earnings allocations less refunds and amounts transferred to reserves for retirements and disabilities.

## B. Employer Contribution Designation

The Employer Contribution Designation represents employer contributions and earnings allocations less amounts transferred to reserves for retirements and disabilities.

## C. Benefit Reserve

The Benefit Reserve is the amount set aside to pay future benefits. It includes funds transferred from the individual member and employer accounts and earnings allocations less amounts paid for retirements and disabilities.

## D. Tier One Rate Guarantee Reserve

The Tier One Rate Guarantee Reserve may be credited with investment earnings in excess of the required Tier One assumed earnings rate guarantee. ORS 238.255(1) requires regular accounts for Tier One members to be credited at the assumed rate of return on investments adopted by the Board for use in actuarial valuations.

TABLE 24

| Reserves and Designations | Defined Benefit <br> Pension Plan |  |
| :--- | ---: | ---: |
| Chapter 238 Defined Benefit Plan and Employee Benefit Plan |  |  |
| Member Reserve | $\$$ | $5,899,822,546$ |
| Employer Contribution Designation | $28,447,595,589$ |  |
| Benefit Reserve | $21,009,947,056$ |  |
| Tier One Rate Guarantee Reserve | $448,776,254$ |  |
| Contingency Reserve | $558,657,273$ |  |
| Employer Contingency Reserve | $25,000,000$ |  |
| Unallocated Earnings Allocation | $3,003,112,896$ |  |
| OPSRP Defined Benefit Program | $2,689,147,488$ |  |
| Net Position Restricted for Pension Benefits | $\mathbf{\$ 6 , 0 8 2 , 0 5 9 , 1 0 2}$ |  |

The regular account for Tier One members and alternate payees of those members cannot be credited with earnings in excess of the assumed interest rate until:
(a) the reserve is fully funded with amounts determined by the Board, after consultation with the actuary employed by the Board, necessary to ensure a zero balance in the reserve when all Tier One members and alternate payees of those members have retired; and
(b) the reserve has been fully funded as described in paragraph (a) of this subsection in each of the three immediately preceding calendar years.

## E. Contingency Reserve

The Contingency Reserve is to be maintained and used by the Board to prevent any deficit of moneys available for the payment of retirement allowances due to interest fluctuations, changes in mortality rates, or other unforeseen contingency.

## F. Employer Contingency Reserve

The Employer Contingency Reserve was established by the Board to prevent any deficit in the fund caused by the insolvency of an employer. Only earnings on employer contributions fund this reserve.

## G. Unallocated Earnings Designation

The Unallocated Earnings Designation represents January through June investment earnings or losses less administrative expenses, which will be credited on a calendar year basis. Crediting takes place in March of the following year after employer annual reports have been reconciled and contributions have been posted to individual member and employer accounts.

## H. OPSRP Defined Benefit Program

OPSRP Defined Benefit Program reserve represents the program's accumulation of employer contributions and investment earnings less benefits and administrative expenses.

## Other Postemployment Benefits Plans

## I. Retirement Health Insurance Account (RHIA)

The RHIA plan fiduciary net position balance represents the program's accumulation of employer contributions and investment earnings less premium subsidies and administrative expenses. As of June 30, 2016, the balance of this account was $\$ 436.9$ million. The Internal Revenue Code limits employer contributions to a 401(h) account to a maximum of 25 percent of the employer's normal cost contributions to the pension plan.

## J. Retiree Health Insurance Premium Account (RHIPA)

The RHIPA plan fiduciary net position balance represents the program's accumulation of employer contributions and investment earnings less premium subsidies and administrative expenses. As of June 30, 2016, the balance of this account was $\$ 15.0$ million. The Internal Revenue Code limits employer contributions to a $401(\mathrm{~h})$ account to a maximum of 25 percent of the employer's normal cost contributions to the pension plan.

## Other Plans

## K. Deferred Compensation Plan

The Deferred Compensation plan fiduciary net position balance represents the program's accumulation of plan member contributions and investment earnings less benefits paid and administrative expenses. As of June 30, 2016, the balance of this account was $\$ 1,557.8$ million. The Internal Revenue Code (IRC) limits plan member contributions to an IRC 457 account to a maximum of $\$ 18,000$ (for calendar year 2016), with optional catch up provisions available to members over age 50 .

## Enterprise Fund

## M. Standard Retiree Health Insurance Account (SRHIA)

The SRHIA net position balance represents the program's accumulation of retiree insurance premiums, reinsurance reimbursements, and interest earnings less insurance claims and administrative expenses. As of June 30, 2016, the balance of this account was $\$ 47.4$ million.

## Note 8 - Litigation

PERS is a defendant in various lawsuits. Although the outcome of these lawsuits is not presently determinable, in the opinion of the System's legal counsel, the resolution of these matters will not have a material adverse effect on the financial condition of the System.

## Note 9 - Standard Retiree Health Insurance Account

## A. Basis for Estimated Liabilities

The Standard Retiree Health Insurance Account (SRHIA) establishes claim liabilities based on estimates of the ultimate costs of claims (including future claim adjustment expenses) that have been reported but not settled and of claims that have been "incurred but not reported" (IBNR). The estimated claims liability was calculated by Butler, Partners, \& Associates, PERS' health insurance consultant, at June 30, 2016, using a variety of actuarial and statistical techniques and adjusted for actual experience to produce current estimates that reflect recent settle-
ments, claim frequency, and other economic and social factors. Adjustments to claims liabilities are charged or credited to expense in the periods in which they are made. The estimated claims liability of $\$ 9.2$ million is carried at its face amount, and no interest discount is assumed. The IBNR portion represents an estimate for claims that have been incurred prior to June 30, 2016, but have not been reported to the SRHIA. Table 25 below shows the changes in the aggregated estimated claims liabilities as of June 30, 2016 and 2015.

## B. Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

The state of Oregon participates in PERS' defined benefits plans, and PERS is an agency of the state. Pursuant to GASB Statement No. 68, Accounting and Financial Reporting for Pensions - an amendment of GASB Statement No. 27, a balance for a net pension liability has been allocated to the state of Oregon's proprietary funds, including SRHIA. At June 30, 2016, SRHIA reported an liability of $\$ 113,625$ for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2015, and the total pension liability used to
calculate the net pension liability was determined by an actuarial valuation as of December 31, 2013, rolled forward to June 30, 2015. SRHIA's proportion of the net pension liability was based on a projection of SRHIA's long-term share of contributions to the pension plan relative to the projected contributions of all participating entities, actuarially determined. At June 30, 2016, SRHIA's proportionate share of the statewide pension plan was 0.00777009 percent.

For the year ended June 30, 2016, SHRIA recognized a pension expense of $\$ 107,738$. Table 26 on the next page show the amounts SRHIA reported as deferred outflows of resources and deferred inflows of resources related to pensions at June 30, 2016.

The deferred outflows of resources totaling \$20,258 related to pensions resulting from SRHIA's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2016. Table 27 on the next page displays the other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions that will be recognized in pension expense.

TABLE 25

| Changes in the Aggregated Estimated Claims Liabilities of SRHIA |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| For the Year Ended June 30, |  |  |  |  |
|  | 2016 |  | 2015 |  |
| Total Estimated Claims at Beginning of Fiscal Year |  | 14,798,000 | \$ | 14,492,000 |
| Insured Claims and Claim Adjustment Expenses |  |  |  |  |
| Provision for Insured Events of Current Fiscal Year | Provision for Insured Events |  |  | 208,932,020 |
| Increase/(Decrease) in Provision for Insured Events of Prior Years |  | $(90,551)$ |  | 3,278,093 |
| Total Incurred Claims and Claim Adjustment Expenses |  | 179,014,618 |  | 212,210,113 |
| Payments |  |  |  |  |
| Claims and Claim Adjustment Expenses |  |  |  |  |
| Attributable to Insured Events of |  |  |  |  |
| Current Fiscal Year |  | 169,905,169 |  | 194,134,020 |
| Claims and Claim Adjustment Expenses |  |  |  |  |
| Attributable to Insured Events of |  |  |  |  |
| Prior Fiscal Year |  | 14,707,449 |  | 17,770,093 |
| Total Payments |  | 184,612,618 |  | 211,904,113 |
| Total Estimated Claims at End of Fiscal Year | \$ | 9,200,000 | \$ | 14,798,000 |

TABLE 26

| Deferred Outflow of Resources and Deferred Inflow of Resources |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| For the Year Ended June 30, 2016 | Deferred Outflow of Resources |  | Deferred Inflow of Resources |  |
|  |  |  |  |  |
| Differences between expected and actual experience | \$ | 6,127 | \$ | - |
| Changes in assumptions |  | - |  | - |
| Net difference between projected and actual earnings on investments |  | - |  | 23,818 |
| Changes in proportion and differences between fund contributions and proportionate share of contributions |  | 2,909 |  | 3,847 |
| Contributions susequent to the measurement date |  | 20,258 |  | - |
| Total | \$ | 29,294 | \$ | 27,665 |

TABLE 27

| Deferred Outflow of Resources and Deferred Inflow of Resources |  |  |
| :---: | :---: | :---: |
| Will be recognized in Pension Expenses as follows: |  |  |
| Year ended June 30: | Pension Expense |  |
| 2017 | \$ | $(10,156)$ |
| 2018 |  | $(10,156)$ |
| 2019 |  | $(10,155)$ |
| 2020 |  | 11,419 |
| 2021 |  | 419 |
| Thereafter |  | - |
| Total | \$ | $(18,629)$ |

TABLE 28

| Net Pension Liability (in Millions) |  |  |
| :---: | :---: | :---: |
| As of June 30, 2016 |  |  |
|  |  | 2016 |
| Total Pension Liability | \$ | 77,094.4 |
| Plan Fiduciary Net Position |  | 62,082.1 |
| Employers' Net Pension Liability | \$ | 15,012.3 |
| Plan net position as a percentage of total pension liability |  | 80.5 \% |

## Note 10 - Employers' Net Pension Liability

## Actuarial Cost Method and Assumptions

The components of the net pension liability of the defined benefit pension plan are shown in Table 28 on the previous page.

The actuarial valuation calculations are based on the benefits provided under the terms of the plan in effect at the time of each valuation and on the pattern of sharing of costs between the employer and plan members. The December 31, 2014 Actuarial Valuation was used to develop the GASB 67 financial reporting results for the Defined Benefits programs as of June 30, 2016.

Key actuarial methods and assumptions used to measure the total pension liability are illustrated in Table 29 on page 65.

## Discount Rate

The discount rate used to measure the total pension liability was 7.50 percent for the Defined Benefit Pension Plan. The projection of cash flows used to determine the discount rate assumed that contributions from plan members and those of the contributing employers are made at the contractually required rates, as actuarially determined. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments for the Defined Benefit Pension Plan was applied to all periods of projected benefit payments to determine the total pension liability.

Table 30 on page 65 presents the net pension liability calculated using the discount rate of 7.50 percent, as well as what the net pension liability would be if it were calculated using a discount rate that is one percent lower ( 6.50 percent) or one percent higher ( 8.50 percent) than the current rate. The results of actuarial valuations used for rate setting and the related Schedules of Funding Progress may be found in the Actuarial Section beginning on page 90 .

## Long-Term Expected Rate of Return

To develop an analytical basis for the selection of the long-term expected rate of return assumption, in July 2015 the PERS Board reviewed long-term assumptions developed by both Milliman's capital market assumptions team and the Oregon Investment Council's (OIC) investment advisors. Table 31 on page 66 shows Milliman's assumptions for each of the asset classes in which the plan was invested at that time based on the OIC long-term target asset allocation. The OIC's description of each asset class was used to map the target allocation to the asset
classes shown below. Each asset class assumption is based on a consistent set of underlying assumptions, and includes adjustment for the inflation assumption. These assumptions are not based on historical returns, but instead are based on a forward-looking capital market economic model.

## Depletion Date Projection

GASB 67 generally requires that a blended discount rate be used to measure the Total Pension Liability (the Actuarial Accrued Liability calculated using the Individual Entry Age Normal Cost Method). The long-term expected return on plan investments may be used to discount liabilities to the extent that the plan's Fiduciary Net Position (fair market value of assets) is projected to cover benefit payments and administrative expenses. A 20 -year high quality (AA/Aa or higher) municipal bond rate must be used for periods where the Fiduciary Net Position is not projected to cover benefit payments and administrative expenses. Determining the discount rate under GASB 67 will often require that the actuary perform complex projections of future benefit payments and asset values. GASB 67 (paragraph 43) does allow for alternative evaluations of projected solvency, if such evaluation can reliably be made. GASB does not contemplate a specific method for making an alternative evaluation of sufficiency; it is left to professional judgment.

The following circumstances justify an alternative evaluation of sufficiency for Oregon PERS:

- Oregon PERS has a formal written policy to calculate an Actuarially Determined Contribution (ADC), which is articulated in the actuarial valuation report.
- The ADC is based on a closed, layered amortization period, which means that payment of the full ADC each year will bring the plan to a 100 percent funded position by the end of the amortization period if future experience follows assumption.
- GASB 67 specifies that the projections regarding future solvency assume that plan assets earn the assumed rate of return and there are no future changes in the plan provisions or actuarial methods and assumptions, which means that the projections would not reflect any adverse future experience which might impact the plan's funded position.

Based on these circumstances, it is our independent actuary's opinion that the detailed depletion date projections outlined in GASB 67 would clearly indicate that the Fiduciary Net Position is always projected to be sufficient to cover benefit payments and administrative expenses.

## Oregon Public Employees Retirement System

## Note 11 - Postemployment Healthcare Plans

The funded status of each postemployment healthcare plan as of the most recent actuarial valuation date is illustrated in Table 32 on page 66. Actuarial methods and assumptions of each postemployment healthcare plan used in the actuarial valuation dated December 31, 2013, to determine contribution rates for the year ended June 30, 2016, and in the most recent actuarial valuation dated December 31, 2015, are illustrated in Table 33 on page 67.

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of events far into the future. Actuarially determined amounts are subject to continual revision as actual results are compared to past expectations and new estimates are made about the future. The required schedule of funding progress immediately following the notes to the financial statements presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

Actuarial calculations are based on the benefits provided under the terms of the substantive plan in effect at the time of each valuation and on the pattern of sharing of costs between the employer and plan members at that point.

TABLE 29


TABLE 30
Sensitivity of Net Pension Liability to Changes in the Discount Rate (in Millions) As of June 30, 2016

| Employers' Net Pension Liability | $\mathbf{1 \%}$ Decrease <br> $\mathbf{( 6 . 5 0} \%)$ | Current <br> Discount <br> Rate $\mathbf{( 7 . 5 0 \% )}$ | $\mathbf{1 \%}$ Increase <br> $\mathbf{( 8 . 5 0} \mathbf{\%})$ |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Defined Benefit Pension Plan | $\$ 24,239.9$ | $\$$ | $15,012.3$ | $\$$ | $7,299.7$ |

TABLE 31

|  | Target <br> Allocation* | Annual <br> Arithmetic <br> Return | Compound Annual <br> (Geometric) <br> Return | Standard <br> Deviation |
| :--- | :---: | :---: | :---: | :---: |
| Asset Class | $8.00 \%$ | $4.10 \%$ | $4.00 \%$ | $4.68 \%$ |
| Core Fixed Income | 8.00 | 3.65 | 3.61 | 2.74 |
| Short-Term Bonds | 3.00 | 5.69 | 5.42 | 7.82 |
| Bank/Leveraged Loans | 1.00 | 6.67 | 6.20 | 10.28 |
| High Yield Bonds | 15.75 | 7.96 | 6.70 | 17.07 |
| Large/Mid Cap US Equities | 1.31 | 8.93 | 6.99 | 21.35 |
| Small Cap US Equities | 1.31 | 9.37 | 7.01 | 23.72 |
| Micro Cap US Equities | 13.13 | 8.34 | 6.73 | 19.40 |
| Developed Foreign Equities | 4.12 | 10.56 | 7.25 | 28.45 |
| Emerging Market Equities | 1.88 | 9.01 | 7.22 | 20.55 |
| Non-US Small Cap Equities | 17.50 | 11.60 | 7.97 | 30.00 |
| Private Equity | 10.00 | 6.48 | 5.84 | 12.00 |
| Real Estate (Property) | 2.50 | 8.74 | 6.69 | 22.02 |
| Real Estate (REITS) | 2.50 | 4.94 | 4.64 | 8.09 |
| Hedge Fund of Funds - Diversified | 0.63 | 7.07 | 6.72 | 8.90 |
| Hedge Fund - Event-driven | 1.88 | 6.60 | 5.85 | 13.00 |
| Timber | 1.88 | 7.11 | 6.37 | 13.00 |
| Farmland | 3.75 | 8.31 | 7.13 | 16.50 |
| Infrastructure | 1.88 | 6.07 | 4.58 | 18.40 |
| Commodities |  |  | $2.50 \%$ | $1.85 \%$ |
| Assumed Inflation - Mean |  |  |  |  |
| * Based on the OIC Statement of Investment Objectives and Policy Framework for the Oregon Public Employees Retirement Fund, revised |  |  |  |  |
| as of December 3, 2014. The revised allocation was adopted at the June 3, 2015 oIC meeting. |  |  |  |  |

TABLE 32 (dollar amounts in millions)

| Funded Status - OPEB Plans ${ }^{1}$ |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Actuarial <br> Valuation <br> Date |  | Actuarial Value of Assets (a) |  | Actuarial <br> Liability <br> (AAL) <br> (b) |  | $\begin{aligned} & \text { Unfunded } \\ & \text { AAL } \\ & \text { (UAAL) } \\ & \text { (b-a) } \\ & \hline \end{aligned}$ | Funded <br> Ratio <br> (a/b) |  | Covered Payroll (c) | $\begin{aligned} & \text { UAAL as a \% } \\ & \text { of Covered } \\ & \text { Payroll } \\ & ((b-a) / \mathbf{c}) \\ & \hline \end{aligned}$ |
| RHIA |  |  |  |  |  |  |  |  |  |  |
| 12/31/2015 | \$ | 419.3 | \$ | 465.6 | \$ | 46.3 | 90.0 \% | \$ | 9,544.1 | 0.5 \% |
| RHIPA |  |  |  |  |  |  |  |  |  |  |
| 12/31/2015 |  | 11.2 |  | 67.8 |  | 56.6 | 16.5 |  | 2,831.8 | 2.0 |
| ${ }^{1}$ Note: discrepancies with the Actuarial Valuation are due to rounding differences. |  |  |  |  |  |  |  |  |  |  |

TABLE 33

## Actuarial Methods and Assumptions - OPEB Plans

| Contribution Rates Valuation | RHIA | RHIPA |
| :---: | :---: | :---: |
| Valuation date: | December 31, 2013 |  |
| Actuarial cost method: | Entry Age Normal |  |
| Amortization method: | Amortized as a level percentage of payroll; UAL (10 year) amortization is closed. |  |
| Equivalent single amortization period: | 3 years | 9 years |
|  | The Equivalent Single Amortization Period (ESAP) calculation is performed biennially with each rate-setting actuarial valuation. |  |
| Asset valuation method: | Market value of assets |  |
| Actuarial assumptions: |  |  |
| Investment rate of return | 7.75 percent |  |
| Payroll growth | 3.75 percent |  |
| Consumer price inflation | 2.75 percent |  |
| Health cost inflation | None. Statute stipulates $\$ 60$ monthly payment for healthcare insurance. | Graded from 6.1 percent in 2014 to 4.7 percent in 2083. |
| Annual Valuation | RHIA | RHIPA |
| Valuation date: | December 31, 2015 |  |
| Actuarial cost method: | Entry Age Normal |  |
| Amortization method: | Amortized as a level percentage of payroll; UAL (10 year) amortization is closed. |  |
| Equivalent single amortization period: | 1 years | 7 years |
|  | The Equivalent Single Amortization Period (ESAP) calculation is performed biennially with each rate-setting actuarial valuation. |  |
| Asset valuation method: | Market value of assets |  |
| Actuarial assumptions: |  |  |
| Investment rate of return | 7.50 percent |  |
| Payroll growth | 3.50 percent |  |
| Consumer price inflation | 2.50 percent |  |
| Health cost inflation | None. Statute stipulates $\$ 60$ monthly payment for healthcare insurance. | Graded from 6.3 percent in 2016 to 4.4 percent in 2094. |

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## Required Supplementary Information

## Schedule of Changes in Net Pension (Asset)/Liability and Related Ratios (Unaudited)

## Defined Benefit Pension Plan

For the Year Ended June 30,
(amounts in millions)

|  | 2016 |  | 2015 |  | 2014 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Total Pension Liability ${ }^{2}$ |  |  |  |  |  |  |
| Service Cost | \$ | 1,016.8 | \$ | 960.9 | \$ | 1,020.3 |
| Interest on Total Pension Liability |  | 5,355.3 |  | 4,779.5 |  | 4,819.4 |
| Changes in Benefit Terms |  | - |  | 5,353.5 |  | $(2,423.6)$ |
| Changes in Assumptions |  | 3,946.4 |  | - |  | - |
| Differences Between Expected and Actual Experience |  | 317.3 |  | 380.0 |  | - |
| Benefit Payments |  | $(4,206.5)$ |  | $(3,943.6)$ |  | $(3,863.4)$ |
| Net Change in Total Pension Liability |  | 6,429.3 |  | 7,530.3 |  | (447.3) |
| Total Pension Liability - Beginning |  | 70,665.1 |  | 63,134.8 |  | 63,582.1 |
| Total Pension Liability - Ending | \$ | 77,094.4 | \$ | 70,665.1 | \$ | 63,134.8 |
| Plan Fiduciary Net Position |  |  |  |  |  |  |
| Employer Contributions | \$ | 977.3 | \$ | 1,123.3 | \$ | 915.2 |
| Member Contributions |  | 14.2 |  | 13.8 |  | 15.3 |
| Net Investment and Other Income |  | 413.9 |  | 2,364.5 |  | 9,886.6 |
| Benefit Payments |  | $(4,193.3)$ |  | $(3,927.2)$ |  | $(3,837.8)$ |
| Refunds of Member Accounts |  | (13.1) |  | (16.5) |  | (25.6) |
| Administrative Expense |  | (40.5) |  | (35.7) |  | (31.2) |
| Net Change in Plan Fiduciary Net Position |  | $(2,841.5)$ |  | (477.8) |  | 6,922.5 |
| Plan Fiduciary Net Position - Beginning |  | 64,923.6 |  | 65,401.4 |  | 58,478.9 |
| Plan Fiduciary Net Position - Ending | \$ | 62,082.1 | \$ | 64,923.6 | \$ | 65,401.4 |
| Net Pension Liability/(Asset) |  | 15,012.3 |  | 5,741.5 |  | $(2,266.6)$ |
| Plan Fiduciary Net Position as a Percentage of the Total Pension Liability |  | 80.5 \% |  | 91.9 \% |  | 103.6 \% |
| Covered Payroll |  | 9,428.4 |  | 9,000.2 |  | 8,701.7 |
| Net Pension Liability/(Asset) as a Percentage of Covered Payroll |  | 159.2 \% |  | 63.8 \% |  | (26.0) \% |

${ }^{1} 10$-year trend information will be disclosed prospectively
${ }^{2}$ See Table 29 for Actuarial Methods and Assumptions
Changes in Benefit Terms and Assumptions:
Benefit Terms: The Oregon Supreme Court decision in Moro v. State of Oregon, issued on April 30, 2015, reversed a significant portion of the reductions the 2013 Oregon Legislature made to future System Cost of Living Adjustments (COLA) through Senate Bills 822 and 861 . This reversal increased the total pension liability as of June 30, 2015 compared to June 30, 2014 total pension liability.
Assumptions: The PERS Board adopted assumption changes that were used to measure the June 30, 2016 total pension liability. The changes include the lowering of the long-term expected rate of return to 7.50 percent and lowering of the assumed inflation to 2.50 percent. In addition, the healthy mortality assumption was changed to reflect an updated mortality improvement scale for all groups, and assumptions were updated for merit increases, unused sick leave, and vacation pay were updated.

## Required Supplementary Information

Schedule of Investment Returns (Unaudited)
Defined Benefit Pension Plan
For the Year Ended June 30 ${ }^{1}$

|  | $\mathbf{2 0 1 6}$ | $\mathbf{2 0 1 5}$ | $\mathbf{2 0 1 4}$ |
| :---: | :---: | :---: | :---: |
| Annual Money-Weighted Rate of Return <br> Net of Investment Expense | $1.6 \%$ | $3.7 \%$ | $17.2 \%$ |

[^1]
# Oregon Public Employees Retirement System 

## Required Supplementary Information

## Schedule of Defined Benefit Pension Plan Employer Contributions ${ }^{3}$ (Unaudited)

## Last 10 Fiscal Years

## (Dollar amounts in thousands)

|  | 2016 |  | 2015 |  | 2014 |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Actuarially determined contributions ${ }^{1}$ | \$ | 941,321 | \$ | 909,912 | \$ | 866,635 | \$ | 781,015 |
| Contributions in relation to the actuarially determined contributions ${ }^{2}$ |  | 941,321 |  | 909,912 |  | 866,635 |  | 781,015 |
| Contribution deficiency (excess) | \$ | - | \$ | - | \$ | - | \$ | - |
| Covered paroll | \$ | 9,428,447 | \$ | 9,000,246 | \$ | 8,701,657 | \$ | 8,280,731 |
| Contributions as a percentage of covered payroll |  | 9.98\% |  | 10.11\% |  | 9.96\% |  | 9.43\% |

## Notes:

${ }^{1}$ The actuarially determined contributions on this Schedule of Defined Benefit Pension Plan Contributions have been adjusted to remove amounts contributed to finance employer-specific liabilities and employer optional supplemental contributions.
${ }^{2}$ Employer contributions on the Statement of Changes in Fiduciary Net Position include interest related to employer-specific liabilities and employers' optional supplemental contributions.
${ }^{3}$ For Actuarial Assumptions and Methods, see table below.

## Actuarial Assumptions and Methods Used to Set the Actuarially Determined Contributions

| Actuarial Valuation: | December 31, 2013 | December 31, 2011 |
| :--- | :---: | :---: |
| Effective: | July 2015 - June 2017 | July 2013 - June 2015 |
| Actuarial cost method: | Entry Age Normal | Projected Unit Credit |
| Amortization method: | Level percentage of payroll | Level percentage of payroll |
| Asset valuation method: | Market value | Market value |
| Remaining amortization periods: | 20 years | N/A |
| Actuarial assumptions: |  |  |
| $\quad$ Inflation rate | 2.75 percent | 2.75 percent |
| Projected salary increases | 3.75 percent | 3.75 percent |
| Investment rate of return | 7.75 percent | 8.00 percent |


| 2012 |  | 2011 |  | 2010 |  | 2009 |  | 2008 |  | 2007 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | 774,461 | \$ | 361,655 | \$ | 377,778 | \$ | 592,546 | \$ | 552,242 | \$ | 540,796 |
|  | 774,461 |  | 361,655 |  | 377,778 |  | 592,546 |  | 552,242 |  | 540,796 |
| \$ | - | \$ | - | \$ | - | \$ | - | \$ | - | \$ | - |
| \$ | 8,650,799 | \$ | 8,618,636 | \$ | 8,451,349 | \$ | 8,281,261 | \$ | 7,733,970 | \$ | 7,325,161 |
|  | 8.95\% |  | 4.20\% |  | 4.47\% |  | 7.16\% |  | 7.14\% |  | 7.38\% |


| December 31, 2009 | December 31, 2007 | December 31, 2005 |
| :---: | :---: | :---: |
| July 2011 - June 2013 | July 2009 - June 2011 | July 2007 - June 2009 |
| Projected Unit Credit | Projected Unit Credit | Projected Unit Credit |
| Level percentage of payroll | Level percentage of payroll | Level percentage of payroll |
| Market value | Market value | Market value |
| N/A | 20 years | 22 years |
|  |  |  |
| 2.75 percent | 2.75 percent | 2.75 percent |
| 3.75 percent | 3.75 percent | 3.75 percent |
| 8.00 percent | 8.00 percent | 8.00 percent |

Oregon Public Employees Retirement System
Required Supplementary Information
Schedules of Funding Progress (Unaudited)
OPEB Plans
(dollar amounts in millions) ${ }^{1}$

| Actuarial <br> Valuation Date | Actuarial <br> Value of Assets <br> (a) | Actuarial <br> Accrued Liability (AAL) <br> (b) | $\begin{aligned} & \text { Unfunded AAL } \\ & \text { (UAAL) } \\ & \text { (b-a) } \end{aligned}$ | Funded Ratio (a/b) | Covered Payroll <br> (c) | UAAL as $\%$ of Cove Payroll ((b-a)/c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Postemployment Healthcare Benefits - Retirement Health Insurance Account |  |  |  |  |  |  |
| 12/31/2006 | \$ 221.3 | \$ 511.8 | \$ 290.5 | 43.2 \% | \$ 7,326.8 | 4.0 \% |
| 12/31/2007 | 250.8 | 499.6 | 248.8 | 50.2 | 7,721.8 | 3.2 |
| 12/31/2008 | 183.8 | 494.0 | 310.2 | 37.2 | 8,130.1 | 3.8 |
| 12/31/2009 | 214.1 | 511.2 | 297.1 | 41.9 | 8,512.2 | 3.5 |
| 12/31/2010 | 232.3 | 547.1 | 314.8 | 42.5 | 8,750.1 | 3.6 |
| 12/31/2011 | 239.6 | 461.1 | 221.5 | 52.0 | 8,550.5 | 2.6 |
| 12/31/2012 | 291.6 | 471.8 | 180.2 | 61.8 | 8,590.9 | 2.1 |
| 12/31/2013 | 353.5 | 473.6 | 120.1 | 74.7 | 8,671.8 | 1.4 |
| 12/31/2014 | 395.9 | 468.4 | 72.5 | 84.5 | 9,115.8 | 0.8 |
| 12/31/2015 | 419.3 | 465.6 | 46.3 | 90.0 | 9,544.1 | 0.5 |

Postemployment Healthcare Benefits - Retiree Health Insurance Premium Account

| $12 / 31 / 2006$ | $\$$ | 7.0 | $\$$ | 23.4 | $\$$ | 16.4 | 30.0 | $\%$ | $\$$ |
| :--- | ---: | ---: | ---: | ---: | :--- | :--- | :--- | :--- | :--- |
| $1,946.8$ | $0.8 \%$ |  |  |  |  |  |  |  |  |
| $12 / 31 / 2007$ |  | 7.8 |  | 23.3 |  | 15.5 | 33.6 |  | $2,080.2$ |
| $12 / 31 / 2008$ | 5.7 |  | 21.3 |  | 15.6 | 26.7 |  | $2,217.9$ | 0.7 |
| $12 / 31 / 2009$ | 6.4 |  | 24.5 |  | 18.2 | 25.9 |  | $2,371.8$ | 0.8 |
| $12 / 31 / 2010$ | 5.7 |  | 33.9 |  | 28.2 | 16.8 | $2,379.7$ | 1.2 |  |
| $12 / 31 / 2011$ | 4.5 |  | 34.4 |  | 29.9 | 13.2 | $2,376.9$ | 1.3 |  |
| $12 / 31 / 2012$ | 4.4 |  | 60.3 |  | 55.9 | 7.4 | $2,432.4$ | 2.3 |  |
| $12 / 31 / 2013$ | 5.2 |  | 61.2 |  | 56.0 | 8.6 | $2,531.5$ | 2.2 |  |
| $12 / 31 / 2014$ | 7.2 |  | 70.5 |  | 63.3 | 10.2 | $2,718.9$ | 2.3 |  |
| $12 / 31 / 2015$ | 11.2 |  | 67.8 |  | 56.6 | 16.5 | $2,831.8$ | 2.0 |  |

Notes:
${ }^{1}$ Discrepancies contained in this table are the result of rounding differences.

## Required Supplementary Information <br> Schedules of Employer Contributions (Unaudited) <br> OPEB Plans

(dollar amounts in millions)

| Actuarial <br> Valuation <br> Date | Annual <br> Required <br> Contribution | Percentage <br> Contributed |
| :---: | :---: | :---: |
| Postemployment Healthcare Plan - Retiree Health Insurance Account ${ }^{1}$ |  |  |
| $12 / 31 / 2010$ | $\$ 26.5$ | $83 \%$ |
| $12 / 31 / 2011$ | 37.0 | 88 |
| $12 / 31 / 2012$ | 47.5 | 101 |
| $12 / 31 / 2013$ | 47.1 | 101 |
| $12 / 31 / 2014$ | 49.0 | 101 |
| $12 / 31 / 2015$ | 48.7 | 100 |

Postemployment Healthcare Plan - Retiree Health Insurance Premium Account ${ }^{2}$

| $12 / 31 / 2010$ | $\$$ | 2.3 |
| :--- | ---: | ---: |
| $12 / 31 / 2011$ |  | 2.8 |
| $12 / 31 / 2012$ |  | 3.4 |
| $12 / 31 / 2013$ |  | 4.5 |
| $12 / 31 / 2014$ |  | 6.3 |

[^2]
## Oregon Public Employees Retirement System

## Required Supplementary Information

## Schedule of Claims Development Information (Unaudited)

## Standard Retiree Health Insurance Account

## Fiscal and Policy Year Ended (In Millions)

014
2015

2016

1. Net earned required contribution and investment revenues
2. Unallocated expenses
3. Estimated incurred claims and expense,
end of policy year
4. Paid (cumulative) as of:

End of policy year
One year later
Two years later
Three years later
Four years later
Five years later
Six years later Seven years later Eight years later Nine years later
5. Reestimated incurred claims and expense:
 One year later Two years later Three years later Four years later Five years later Six years later Seven years later Eight years later Nine years later
6. Increase (decrease) in estimated incurred claims and expense from end of policy year:
163.56
163.47
163.35
163.34
163.35
10.79
150.62
162.2
162.20
162.17 162.17
11.58
72.89
185.3
185.34
185.33
175.4
193.18
193.21
226.92
12.46
17.77

## Other Supplementary Information

Schedule of Fiduciary Plan Net Position
Defined Benefit Pension Plan
As of June 30, 2016

|  |  | Regular Account |  | n Public Service tirement Plan Pension Program |  | Variable Account |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Assets: |  |  |  |  |  |  |  |  |
| Cash and Cash Equivalents | \$ | 2,236,272,214 | \$ | 148,131,516 | \$ | 2,522,585 | \$ | 2,386,926,315 |
| Receivables: |  |  |  |  |  |  |  |  |
| Employer |  | 54,639,747 |  | 265,133 |  | - |  | 54,904,880 |
| Interest and Dividends |  | 263,839,230 |  | 11,858,377 |  | - |  | 275,697,607 |
| Investment Sales and Other Receivables |  | 945,048,992 |  | 39,817,730 |  | 6,000,000 |  | 990,866,722 |
| Transitional Liability |  | 555,342,138 |  | - |  | - |  | 555,342,138 |
| Total Receivables |  | 1,818,870,107 |  | 51,941,240 |  | 6,000,000 |  | 1,876,811,347 |
| Interaccount Receivables and Payables |  | $(8,077,771)$ |  | 6,973,138 |  | 1,104,633 |  | - |
| Due from Other Funds |  | 1,178,813 |  | - |  | - |  | 1,178,813 |
| Investments: |  |  |  |  |  |  |  |  |
| Debt Securities |  | 12,331,261,633 |  | 554,234,292 |  | - |  | 12,885,495,925 |
| Public Equity |  | 21,482,358,036 |  | 965,534,578 |  | 589,274,146 |  | 23,037,166,760 |
| Real Estate |  | 7,303,596,030 |  | 328,263,522 |  | - |  | 7,631,859,552 |
| Private Equity |  | 11,870,427,384 |  | 533,521,882 |  | - |  | 12,403,949,266 |
| Alternative Equity |  | 2,508,266,251 |  | 112,735,194 |  | - |  | 2,621,001,445 |
| Opportunity Portfolio |  | 1,160,425,391 |  | 52,155,859 |  | - |  | 1,212,581,250 |
| Total Investments |  | 56,656,334,725 |  | 2,546,445,327 |  | 589,274,146 |  | 59,792,054,198 |
| Securities Lending Cash Collateral |  | 1,275,241,459 |  | 57,518,097 |  | 12,870 |  | 1,332,772,426 |
| Prepaid Expenses |  | 5,527,082 |  | 197,864 |  | - |  | 5,724,946 |
| Capital Assets at Cost, Net |  | 29,579,596 |  | 2,338,440 |  | - |  | 31,918,036 |
| Total Assets |  | 62,014,926,225 |  | 2,813,545,622 |  | 598,914,234 |  | 65,427,386,081 |
| Liabilities: |  |  |  |  |  |  |  |  |
| Investment Purchases and Accrued Expenses |  | 1,834,556,238 |  | 66,427,644 |  | 3,673,713 |  | 1,904,657,595 |
| Deposits and Other Liabilities |  | 96,913,527 |  | 335,124 |  | 19,874 |  | 97,268,525 |
| Due to Other Funds |  | 7,234,586 |  | - |  | - |  | 7,234,586 |
| Bonds Payable |  | 667,460 |  | - |  | - |  | 667,460 |
| Securities Lending Cash Collateral Due Borrowers |  | 1,277,850,578 |  | 57,635,365 |  | 12,870 |  | 1,335,498,813 |
| Total Liabilities |  | 3,217,222,389 |  | 124,398,133 |  | 3,706,457 |  | 3,345,326,979 |
| Net Position Restricted for Pension Benefits | \$ | 58,797,703,836 | \$ | 2,689,147,489 | \$ | 595,207,777 | \$ | 62,082,059,102 |

## Oregon Public Employees Retirement System

## Other Supplementary Information <br> Schedule of Changes in Fiduciary Plan Net Position <br> Defined Benefit Pension Plan <br> For the Year Ended June 30, 2016

|  |  |  Oregon Public Service <br> Retirement Plan <br> Regular Pension <br> Account Program |  |  | Variable Account |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Additions: |  |  |  |  |  |  |  |  |
| Contributions: |  |  |  |  |  |  |  |  |
| Employer | \$ | 563,660,720 | \$ | 413,671,609 | \$ | - | \$ | 977,332,329 |
| Plan Member |  | 14,042,013 |  | - |  | 172,328 |  | 14,214,341 |
| Total Contributions |  | 577,702,733 |  | 413,671,609 |  | 172,328 |  | 991,546,670 |
| Investment Income: |  |  |  |  |  |  |  |  |
| Net Appreciation (Depreciation) |  |  |  |  |  |  |  |  |
| in Fair Value of Investments |  | $(489,876,200)$ |  | $(2,331,789)$ |  | $(26,601,813)$ |  | $(518,809,802)$ |
| Interest, Dividends and Other Investment Income |  | 1,341,967,398 |  | 64,679,013 |  | 97,267 |  | 1,406,743,678 |
| Total Investment Income |  | 852,091,198 |  | 62,347,224 |  | $(26,504,546)$ |  | 887,933,876 |
| Less Investment Expense |  | 465,812,065 |  | 22,047,305 |  | 440,290 |  | 488,299,660 |
| Net Investment Income |  | 386,279,133 |  | 40,299,919 |  | $(26,944,836)$ |  | 399,634,216 |
| Securities Lending Income: |  |  |  |  |  |  |  |  |
| Securities Lending Income |  | 15,684,874 |  | 626,927 |  | 52 |  | 16,311,853 |
| Less Securities Lending Expense |  | $(5,162,179)$ |  | $(213,480)$ |  | (52) |  | $(5,375,711)$ |
| Net Securities Lending Income |  | 10,522,695 |  | 413,447 |  | - |  | 10,936,142 |
| Other Income |  | 2,328,254 |  | 1,189 |  | 1,016,052 |  | 3,345,495 |
| Total Additions |  | 976,832,815 |  | 454,386,164 |  | $(25,756,456)$ |  | 1,405,462,523 |
| Deductions |  |  |  |  |  |  |  |  |
| Benefits |  | 4,131,660,628 |  | 15,589,073 |  | 36,132,865 |  | 4,183,382,566 |
| Death Benefits |  | 9,925,146 |  | - |  | - |  | 9,925,146 |
| Refunds of Contributions |  | 12,809,120 |  | - |  | 345,458 |  | 13,154,578 |
| Administrative Expense |  | 33,453,060 |  | 5,792,953 |  | 1,321,212 |  | 40,567,225 |
| Interaccount Transfers |  | $(66,497,197)$ |  | - |  | 66,497,197 |  | - |
| Total Deductions |  | 4,121,350,757 |  | 21,382,026 |  | 104,296,732 |  | 4,247,029,515 |
| Net Increase/(Decrease) |  | $(3,144,517,942)$ |  | 433,004,138 |  | $(130,053,188)$ |  | $(2,841,566,992)$ |
| Net Position Restricted for Pension Benefits |  |  |  |  |  |  |  |  |
| Beginning of Year |  | 61,942,221,778 |  | 2,256,143,351 |  | 725,260,965 |  | 64,923,626,094 |
| End of Year | \$ | 58,797,703,836 | \$ | 2,689,147,489 | \$ | 595,207,777 | \$ | 62,082,059,102 |

## Other Supplemental Information <br> Schedule of Administrative Expenses - All Funds <br> For the Year Ended June 30, 2016

## Personal Services:

| Staff Salaries | $\$$ | $20,185,978$ |
| :--- | ---: | ---: |
| Retirement | $4,411,992$ |  |
| Social Security | $1,519,784$ |  |
| Unemployment Compensation | 16,512 |  |
| Worker Compensation | 10,857 |  |
| Insurance | $5,289,414$ |  |
| Assessments | 128,823 |  |
| Total Personal Services | $31,563,360$ |  |

Professional Services:
Acturarial 499,484
Data Processing 15,324
Audit 515,905
Legal Counsel 426,268
Medical Consultants 131,188
Training and Recruitment 344,843
Contract Services 6,558,787
Healthcare Fees
Total Professional Services
26,268,671
34,760,470

## Communications:

| Printing | 53,236 |
| :--- | ---: |
| Telephone | 153,191 |
| Postage | 720,610 |
| Travel | 158,397 |
| Total Communication | $1,085,434$ |

## Rentals:

Office Space
535,684
Equipment
Total Rentals
7,031
542,715
Miscellaneous:
Central Government Charges
Supplies
Maintenance
Non-Capitalized Equipment
Depreciation
COP and Bond Amortization
Total Miscellaneous
Total Administrative Expenses

5,043,285
1,736,122
334,786
182,777
2,806,479
10,018
10,113,467
\$ 78,065,446

# Oregon Public Employees Retirement System 

Other Supplemental Information
Schedule of Payments to Consultants and Contractors
For the Year Ended June 30, 2016

|  | Commission/Fees | Nature of Service |
| :--- | ---: | :--- |
| Individual or Firm | $\$$ | 49,484 |
| Actuarial |  |  |
| Maciman Inc | 54,021 | Audit |
| Oregon Audits O'Connell LLP | 4,114 | Audit |
| CEM Benchmarking | 45,000 | Benchmarking |
| BenefitHelp Solutions | $3,791,982$ | Health Insurance |
| Butler Partners \& Associates LLC | 83,038 | Health Insurance |
| Moda Health | $22,466,371$ | Health Insurance |
| Voya | $2,261,191$ | IAP Administration |
| Arnerich Massena \& Associates Inc | 17,934 | Investment Firm |
| Department Of Justice | 277,966 | Legal |
| Ice Miller LLP | 12,903 | Legal |
| State Of Oregon Secreatary Of State | 375 | Legal |
| Cascade Centers Inc | 9,211 | Medical |
| Fred William Miller MD | 37,450 | Medical |
| Oregon Medical Evaluations Inc | 1,500 | Medical |
| Ronald N Turco MD | 7,800 | Medical |
| Heat Software USA Inc | 50,750 | Technology |
| HP Enterprise Services | 1,064 | Technology |
| LexisNexis Risk Data Management Inc | 5,955 | Technology |
| MMC Systems Inc | $2,415,610$ | Technology |
| Oregon State Treasury | 18,290 | Technology |
| Proposal Technologies Network Inc | 10,700 | Technology |
| Right System Inc | 179,500 | Technology |
| State Of Oregon Secreatary Of State | 4,114 | Technology |
| U Work Com Inc | 14,168 | Technology |
| Oregon Department of Human Services | 38,374 | Vital Records |


|  | 2016 |
| :---: | :---: |
| Debt Securities Managers |  |
| AllianceBernstein L.P. | 2,614,149 |
| BlackRock Asset Management | 2,649,072 |
| KKR Financial Credit Portfolio | 12,832,646 |
| Oak Hill Advisors | 8,480,797 |
| Wellington Management Company, LLP | 1,973,370 |
| Western Asset Management Company | 2,010,918 |
| Domestic Equity Fund Managers |  |
| Aronson+Johnson+Ortiz, LP | 2,199,657 |
| Dimensional Fund Advisors | 3,587,172 |
| EAM Investors, LLC | 1,185,939 |
| Hamilton Lane | 1,568,101 |
| The Boston Company Asset Management, LLC | 1,843,878 |
| Wanger Asset Management, LP | 2,547,247 |
| Wellington Management Company, LLP | 2,234,912 |
| Other Domestic Equity Fund Managers | 2,514,295 |
| International Equity Fund Managers |  |
| Acadian Asset Management, Inc. | 2,801,283 |
| AllianceBernstein International | 3,357,037 |
| $A Q R$ Capital Management | 3,775,778 |
| Arrowstreet Capital, LP | 8,546,303 |
| Brandes Investment Partners LLC | 3,144,586 |
| Dimensional Fund Advisors | 3,531,362 |
| Genesis Investment Management, Ltd. | 3,359,408 |
| Harris Associates | 2,390,841 |
| Lazard Asset Management | 3,960,663 |
| Pyramis Global Investors | 6,017,596 |
| TT International Co., Ltd. | 2,045,440 |
| Victory Capital Management | 1,834,579 |
| Walter Scott \& Partners Limited | 2,548,756 |
| Wells Capital Management | 1,998,284 |
| Westwood Global Investments | 1,476,514 |
| William Blair \& Company, LLC | 2,621,829 |
| Other International Equity Fund Managers | 1,061,299 |
| Real Estate Portfolio Managers |  |
| Alpha Asia Macro Trends Fund II | 2,496,000 |
| Amstar - OR Partners LLC / Ascentris | 1,637,625 |
| Blackstone Real Estate Partners VII, LP | 1,115,029 |
| Brazil Real Estate Opportunities II | 1,581,522 |
| Clarion | 1,305,417 |
| Clarion Columbia Office Prope | 3,007,988 |
| DivcoWest Fund IV ReIT, L.P. | 1,096,307 |
| Fortress Investment Fund V | 1,419,275 |
| GI Partners Fund III | 1,136,814 |
| Harrison Street Real Estate Partners V-A | 1,725,000 |
| LaSalle REIT | 2,633,002 |
| Lincoln | 2,768,205 |
| Lone Star Fund IX | 3,570,229 |
| Lone Star Real Estate Fund III | 1,154,028 |
| Lone Star Real Estate Fund IV | 2,250,704 |
| LORE One, L.P. (Core) | 1,108,863 |
| LORE One, L.P. (Value Add) | 2,171,508 |
| Madison Realty Debt III | 4,370,546 |
| Morgan Stanley Global REIT | 2,323,944 |
| OCH Ziff Real Estate Fund III | 1,250,000 |
| Regency Core | 1,232,917 |
| Regency II | 1,076,949 |
| Rockwood Capital RE Partners VII | 1,247,500 |
| Starwood Cap Hospitality Fd II Global LP | 1,305,903 |
| Talmage Separate Account/Gugggenheim | 2,053,873 |
| Waterton Residential Property Venture XI | 1,236,659 |
| Waterton Residential Property Venture XII | 1,250,000 |
| WCRF | 3,358,133 |
| Other Real Estate Portfolio Managers | 19,403,099 |
| Private Equity Portfolio Managers |  |
| Advent Latin American Private Equity VI-C | 1,504,032 |
| Apax VIII-B | 2,256,565 |
| Apollo Investment Fund VIII | 4,399,863 |
| Aquiline Financial Services Fund II | 1,319,604 |
| Aquiline Financial Services Fund III | 1,757,192 |
| Asia Opportunity Fund III | 1,286,831 |
| Baring Asia Private Equity Fund V | 1,351,481 |
| Baring Asia Private Equity Fund VI | 3,510,000 |
| BDCM Opportunity Fund II | 1,194,156 |
| BDCM Opportunity Fund IV | 2,903,994 |
| Blackstone Capital Partners VI | 2,643,036 |
| Blackstone Energy Partners II | 2,373,222 |
| Capital International Private Equity Fund VI | 1,212,462 |
| CDH Fund V | 1,784,300 |
| Centerbridge Capital Partners II | 1,369,849 |
| Centerbridge Capital Partners III | 2,027,790 |
| Coller International Partners VI | 1,284,714 |
| Court Square Capital Partners III | 1,125,000 |
| CVC Capital Partners VI | 2,505,696 |
| EnCap Energy Capital Fund X | 1,350,000 |


| Private Equity Portfolio Managers (continued) 2016 |  |
| :---: | :---: |
|  |  |
| Endeavour Capital Fund VI | 1,777,583 |
| Endeavour Capital Fund VII | 1,123,500 |
| Essex Woodlands Health Ventures Fund VIII | 1,401,705 |
| First Reserve Fund XI | 1,163,673 |
| First Reserve Fund XII | 1,907,074 |
| Fisher Lynch Co-Investment Partnership II | 4,250,005 |
| Francisco Partners III | 1,216,690 |
| Francisco Partners IV | 2,250,000 |
| General Atlantic Partners | 1,328,984 |
| GGV Capital IV | 1,087,702 |
| GGV Capital V | 1,250,000 |
| GI Partners Fund IV | 1,750,000 |
| Green Equity Investors VI | 1,235,881 |
| Hamilton Lane SMID Fund | 1,451,803 |
| KKR 2006 Fund | 3,276,746 |
| KKR European Fund III | 2,014,085 |
| KKR Millennium Fund | 1,025,836 |
| KSL Capital Partners III | 1,038,705 |
| KSL Capital Partners IV | 1,528,253 |
| Lion Capital Fund III | 1,264,641 |
| Littlejohn Fund IV | 1,181,253 |
| MHR Institutional Partners IV | 3,502,431 |
| North Haven Private Equity Asia IV | 1,500,000 |
| Northwest Emerging Ventures III | 1,000,000 |
| Oak Hill Capital Partners III | 1,116,152 |
| Oak Investment Partners XII | 1,031,250 |
| Oak Investment Partners XIII | 1,500,000 |
| Oaktree Opportunities Fund IX | 1,200,000 |
| Oaktree Principal Fund V | 1,068,064 |
| Orchid Asia VI | 1,500,000 |
| Palladium Equity Partners IV | 1,600,000 |
| Parthenon Investors IV | 1,500,000 |
| Pathway Private Equity Fund III-B | 2,794,439 |
| Pine Brook Capital Partners II | 1,749,052 |
| Providence Equity Partners VI | 1,149,250 |
| Providence Equity Partners VII | 2,250,000 |
| Public Pension Capital | 1,506,004 |
| Rhône Partners V | 3,998,160 |
| Riverside Capital Appreciation Fund VI | 1,500,000 |
| RRJ Capital Master Fund III | 1,962,043 |
| Sofinnova Venture Partners VIII | 1,153,800 |
| Tailwind Capital Partners II | 1,125,000 |
| TDR Capital III | 1,413,991 |
| TPG Growth III | 3,342,111 |
| TPG Partners VI | 3,552,382 |
| TPG Partners VII | 10,308,836 |
| Veritas Capital Fund V | 3,033,515 |
| Vestar Capital Partners VI | 1,125,000 |
| Vista Equity Partners Fund IV | 1,500,000 |
| Vista Equity Partners Fund V | 3,000,000 |
| Vista Foundation Fund II | 1,500,000 |
| Wellspring Capital Partners V | 1,797,202 |
| Other Private Equity Portfolio Managers | 58,130,559 |
| Alternatives Portfolio Managers |  |
| Alinda Infrastructure Partners II | 1,947,950 |
| Alterna Core Capital Assets Fund II | 1,500,000 |
| Appian Natural Resources Fund | 1,000,000 |
| Energy and Minerals Group Fund III | 2,530,769 |
| EnerVest Energy Institutional Fund XIV | 3,000,000 |
| Global Infrastructure Capital Solutions Fund | 2,687,763 |
| Global Infrastructure Partners II | 2,289,894 |
| Global Infrastructure Partners III | 2,187,978 |
| Highstar Capital Fund IV | 1,500,000 |
| LS Power Equity Partners III | 1,500,000 |
| NGP Natural Resources X | 1,218,167 |
| NGP Natural Resources XI | 1,585,780 |
| Orion Mine Finance Fund I | 1,312,500 |
| Sheridan Production Partners I-B | 1,250,000 |
| Sheridan Production Partners III-B | 3,750,000 |
| Taurus Mining Finance Fund | 1,250,000 |
| Warwick Partners III | 2,663,728 |
| Other Alternatives Portfolio Managers | 7,422,358 |
| Opportunity Portfolio Managers | 15,141,478 |
| Brokerage Commissions | 16,885,097 |
| Consultant Fees | 5,155,437 |
| State Street Bank: |  |
| Commission Expense - Option Future | 125,473 |
| Foreign Income Taxes | 12,255,507 |
| Operating Expenses ${ }^{1}$ | 72,229,944 |
| Other Expenses ${ }^{2}$ | 4,301,936 |
| State Treasury Fees | 9,821,505 |
| Deferred Compensation Investment Fees and Expenses | 3,212,093 |
| Other Investment Fees and Expenses | 904,373 |
| Total Investment Fees, Commissions and Expenses | \$ 553,723,627 |

[^3]${ }^{2}$ Expenses related to legal expenses, travel, consulting, and OIC directed expenditures.

1,000,000
,000,000
2,687,763
,187,978
500,000
$, 500,000$
,218,167
,312,500
,750,000
250,000
,422,358
,141,478

125,473
255,507

4,301,936
,821,505

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## Investment Section

John D. SkJervem Chief Investment Officer investment Division


State of Oregon Cl@FIcetterhe State Treasurer 16290 SW Upper Boones Ferry Road Tigard, Oregon 97224

November 2, 2016

Dear PERS Members:
The Investment Division of the Oregon State Treasury (OST) manages a large and complex investment portfolio. This portfolio is designed to generate investment returns which help fund many important State objectives including retirement security for public sector employees, academic support for Oregon schoolchildren and compensation claims for injured state workers. In aggregate, the Investment Division oversees a financial and real asset portfolio that exceeded $\$ 89.2$ billion as of June 30, 2016. This portfolio includes the Oregon Public Employee Retirement Fund (OPERF), the assets of which totaled $\$ 68.3$ billion at June 30, 2016 and comprised the Oregon Public Employee Retirement System Defined Benefit Pension Plan, the Individual Account Program of the Oregon Public Service Retirement Plan and other postemployment benefit plans.

Consistent with institutional investment standards, OPERF is broadly and deliberately diversified across several asset classes and multiple developed and emerging market geographies. Moreover, OPERF investment strategies have historically produced good results: average, annualized net returns for the 3-, 5and 10 -year periods ended June 30,2016 were $7.2 \%, 7.1 \%$ and $6.0 \%$, respectively ${ }^{1}$. According to state actuaries, this consistently positive investment performance has significantly reduced taxpayers' share of retiree benefit payments.

On behalf of all Oregon Public Employee Retirement System beneficiaries, OPERF assets are commingled, invested consistent with a common set of objectives and allocated among the following five, strategic investment categories: public equity; private equity; real estate; fixed income; and other "alternative" and "opportunistic" investments. Return expectations and target allocations for each of these five categories are developed between staff and external consultants; moreover, return forecasts contemplate a 20-year investment horizon. Importantly, equity-oriented investments represent OPERF's largest capital allocation. While improving the likelihood of generating an adequate, long-term return, this equity-biased approach also produces higher levels of short-term portfolio volatility.
For example, in bull market conditions (e.g., 2013), OPERF's equity-oriented portfolio will likely generate strong investment results, but during periods of market duress and/or outright asset price declines (e.g., 2008), OPERF's investment performance will lag long-term expectations and may even register negative returns. Accordingly, the Investment Division has broadly diversified OPERF's portfolio in an attempt to mitigate short-term asset price volatility and protect against a sharp and/or protracted downturn in any single market, geography or asset category.

The U.S. stock market (as measured by the Russell 3000 index) generated modest returns last fiscal year (FY 2016), advancing 2.1\% over the 12-month period ended June 30, 2016. With a minor, net loss of

[^4]Fiscal Year 2016 PERS Letter

## CIO Letter

$0.3 \%$, OPERF's U.S. public equity portfolio lagged the $2.1 \%$ return of its benchmark due to an emphasis on small capitalization stocks, a proxy for which (namely, the Russell 2000 index) registered a $6.7 \%$ decline in FY 2016. However, all domestic stocks compared favorably to foreign equities in FY 2016 as most international and emerging market indices recorded a second, consecutive year of decidedly negative results. OPERF managers investing abroad produced a collective $8.1 \%$ loss last fiscal year, disappointing but marginally better than the $9.6 \%$ decline in OPERF's non-U.S. public equity benchmark, the MSCI ACWI Ex-US IMI Net index.

With an estimated fiscal year-end value of $\$ 13.7$ billion, OPERF's private equity investments represented $20.1 \%$ of total OPERF assets at June 30, 2016, and generated a net gain of $4.5 \%$ in FY 2016. This result exceeded the private equity portfolio's $2.7 \%$ benchmark return, and average annual returns over the previous 10 -year period remain satisfactory at $9.9 \%$ vs. $10.5 \%$ for this same benchmark, the Russell 3000 (lagged one quarter) plus 300 basis points.

In real estate, OPERF capital is allocated across four property or security types: core; value-add; opportunistic; and publicly-traded real estate investment trusts (i.e., REITs). In FY 2016, OPERF's real estate investments generated a $10.9 \%$ net return, slightly behind the $11.8 \%$ return on OPERF's real estate benchmark, the NCREIF index, lagged one quarter. At fiscal year-end, these real estate investments were valued at $\$ 8.6$ billion, and represented $12.6 \%$ of total OPERF assets. For the ten-year period ended June 30, 2016, OPERF's real estate portfolio delivered an $6.1 \%$ net average annual return, shy of the benchmark's $7.6 \%$ average annual return during that same period.

Bond markets delivered modest but volatile results in FY 2016, driven primarily by the competing and at times opposing forces of persistently tepid economic growth and daily speculation regarding changes in U.S. Federal Reserve monetary policy. Investments in fixed income securities comprised $21.1 \%$ of total OPERF assets at June 30, 2016, and contributed a $3.6 \%$ net return in FY 2016, essentially matching the $3.7 \%$ return recorded by OPERF's custom fixed income benchmark.

Finally, OPERF investments in "alternative" assets and "opportunistic" strategies contributed mixed results in FY $2016(-0.8 \%$ and $0.4 \%$, respectively), an expected outcome given the highly heterogeneous nature of these two categories which include, among other things, investments in minerals and mining, timber, agriculture, infrastructure and select hedge funds. At June 30, 2016, these alternative asset and opportunistic strategies comprised only $6.4 \%$ of OPERF's total portfolio, but the Investment Division plans to continue expanding these strategies' combined OPERF allocation given their attractive return and diversification attributes.


## Oregon Public Employees Retirement System

## Investment Objectives

The function of PERS is to provide present and future retirement or survivor benefits for its members. The investment program comprising OPERF, which includes PERS' Defined Benefit Pension Plan, Oregon Public Service Retirement Plan - Individual Account Program, and Other Post Employment Benefit Plans, is managed to provide long-term financial security for PERS members while maintaining the Fund's stability and future productivity. The OIC has established policies that promote and guide investment strategies with the highest probability of achieving PERB's approved, actuarial discount rate at a corresponding risk level deemed acceptable for both active and retired PERS members.

## Description of Investment Policies

Oregon Revised Statute (ORS) 293.706 established the Oregon Investment Council (OIC), which consists of five voting members. Four members of the council, who are qualified by training and experience in the field of investment or finance, are appointed by the governor subject to state Senate confirmation. The state treasurer serves as the council's remaining voting member. In addition, the director of the Public Employees Retirement System serves as a non-voting OIC member.

ORS 293.701 defines the investment funds over which OIC has responsibility. Included are the Oregon Public Employees Retirement Fund (OPERF) and the Deferred Compensation Fund. OIC establishes policies for the investment and reinvestment of moneys in the investment funds as well as the acquisition, retention, management, and disposition of investments in the investment funds. OIC is also responsible for providing an examination of the effectiveness of the investment program.

OIC ensures moneys in the investment funds are invested and reinvested to achieve the investment objective of making the moneys as productive as possible. Furthermore, the investments of those funds are managed as a prudent investor would do under the prevailing circumstances and in light of the purposes, terms, distribution requirements, and laws governing each investment fund. This standard requires the exercise of reasonable care, skill, and caution and is applied to investments not in isolation, but in the context of each fund's portfolio as part of an overall investment strategy. The strategy should incorporate risk and return objectives reasonably suitable to the particular investment fund.

When implementing investment decisions, OIC has a duty to diversify the investments of the investment funds unless, under the circumstances, it is not prudent to do so. In addition, OIC must act with prudence when selecting agents and delegating authority. OIC has approved the following asset classes for OPERF: Short-Term Investing,

Fixed Income, Real Estate, Public and Private Equities, and Alternative Investments. In addition, OPERF invests in the Opportunity Portfolio, which may be populated with investment approaches across a wide range of investment opportunities with no limitation as to asset classes or strategies. OIC must approve, in advance, the purchase of investments in a new asset class not described above.

OIC has an open-door policy wherein investment officers employed by the Oregon State Treasury will hear and consider investment proposals and solicitations from any person, firm, or partnership that submits a proposal or solicitation in good faith. However, under no circumstance does this policy require that the Oregon State Treasury purchase the proposed investment.

OIC maintains an equal opportunity policy. When awarding contracts or agreements, OIC does not discriminate because of age, race, color, sex, religion, national origin, marital status, sexual orientation, or disability. Furthermore, OIC encourages firms doing or seeking to do business with OIC to have equal opportunity programs. OIC requires that all written contracts or agreements with OIC incorporate reference that affirms compliance with applicable nondiscrimination, equal opportunity, and contract compliance laws.

In compliance with ORS 192.630-660, OIC holds its meeting in a public forum. Public notice, including a meeting agenda, is provided to interested persons and news media that have requested notice. Written minutes and recordings are taken at all meetings.

OIC regularly reviews various aspects of investment policy, performance of investment managers and accounts, asset allocation, and a large number of investment proposals and recommendations. OIC's statement of Investment Objectives and Policy Framework is available on the Oregon State Treasury website at http://www.oregon.gov/ treasury/Divisions/Investment/Pages/Oregon-Investment-Council-(OIC).aspx.


The rates of return reported in the Investment Section are based on a time-weighted rate of return methodology based upon market values, unless disclosed otherwise in the footnotes to the associated tables.

[^5]* Investment Results are based upon OIC asset classes as determined by each manager's primary investment type, not the financial statement classification of individual holdings.


## Oregon Public Employees Retirement System

## OIC Target and Actual Investment Allocation as of June 30, 2016*

| $\frac{\text { Asset Class/Strategy }}{\text { Cash }}$ | OIC Policy Range |  | OIC Target Allocation |  | Asset Class/Strategy | Actual Allocation |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0.0 | 3.0 | \% | 0.0 \% | Cash | 3.9 \% |
| Debt Securities | 15.0 | - 25.0 |  | 20.0 | Debt Securities | 20.7 |
| Public Equity | 32.5 | - 42.5 |  | 37.5 | Public Equity | 37.9 |
| Real Estate | 9.5 | - 15.5 |  | 12.5 | Real Estate | 12.0 |
| Private Equity | 13.5 | - 21.5 |  | 17.5 | Private Equity | 19.5 |
| Alternative Equity | 0.0 | - 12.5 |  | 12.5 | Alternative Equity | 4.1 |
| Opportunity Portfolio ${ }^{1}$ | 0.0 | - 3.0 |  | 0.0 | Opportunity Portfolio | 1.9 |
| Total |  |  |  | 100.0 \% | Total | 100.0 \% |

Investment Mix by Asset Class/Strategy



* The OIC Target Allocations are based on OIC asset classes as determined by each manager's primary investment type, not the financial statement classification of individual holdings. The Target Allocation amounts do not include Deferred Compensation Plan investments. The Actual Investment Allocation is based on the financial statement investment classifications, including Deferred Compensation Plan investments.


## List of Largest Assets Held

## Largest Stock Holdings (by Fair Value)

June 30, 2016

## Description

Exxon Mobil Corporation
Apple Inc.
AT\&T Inc.
Johnson \& Johnson
Microsoft Corp.
JPMorgan Chase \& Co.
Pfizer Inc
Verizon Communications Inc.
Intel Corp.
Chevron Corporation

Shares

| $2,516,767$ | $\$$ | $235,921,739$ |
| ---: | ---: | ---: |
| $2,112,982$ |  | $202,001,079$ |
| $4,172,938$ |  | $180,312,651$ |
| $1,457,538$ |  | $176,799,359$ |
| $2,904,801$ |  | $148,638,667$ |
| $2,093,571$ |  | $130,094,502$ |
| $3,662,589$ |  | $128,959,759$ |
| $2,259,275$ |  | $126,157,916$ |
| $3,232,825$ |  | $106,036,660$ |
| 930,697 | $97,564,967$ |  |

## Largest Bond Holdings (by Fair Value)

June 30, 2016

## Description

US Treasury Note 1.500\%
Due February 28, 2023
US Treasury Note 1.375\%
Due April 30, 2021
US Treasury Note $0.875 \%$
Due May 31, 2018
US Treasury Note 1.875\%
Due September 30, 2017
US Treasury Note $0.875 \%$
Due March 31, 2018
US Treasury Note 2.000\%
Due July 31, 2020
US Treasury Note $0.625 \%$
Due June 30, 2018
US Treasury Note 2.125\%
Due June 30, 2022
US Treasury Note 2.250\%
Due November 15, 2024
US Treasury Note 3.000\%
Due November 15, 2044

| Par Value | Fair Value |  |
| :--- | :--- | :--- |
| $270,325,000$ | $\$$ | $274,253,093$ |
| $169,195,000$ |  | $172,116,321$ |
| $169,370,000$ |  | $170,289,679$ |
| $159,032,000$ |  | $161,634,877$ |
| $156,775,000$ |  | $157,540,532$ |
| $144,608,000$ |  | $150,917,681$ |
| $142,550,000$ | $142,616,856$ |  |
| $134,564,000$ | $141,880,918$ |  |
| $117,602,000$ | $125,448,288$ |  |
| $108,620,000$ | $124,887,583$ |  |

A complete list of portfolio holdings may be requested from the Oregon State Treasury, 350 Winter Street NE, Suite 100, Salem, OR 97301-3896.

## Oregon Public Employees Retirement System

## Schedule of Fees and Commissions

For the Fiscal Year Ended June 30, 2016

|  | Assets Under <br> Management |  | Fees | Percentage |
| :--- | ---: | ---: | ---: | ---: |
| Investment Managers' Fees: |  |  |  |  |
| Debt Securities Managers | $\$ 14,768,509,332$ | $\$$ | $30,560,952$ | $0.21 \%$ |
| Public Equity Managers | $27,063,910,456$ | $72,478,320$ | 0.27 |  |
| Real Estate Managers | $8,585,785,027$ | $72,287,039$ | 0.84 |  |
| Private Equity Managers | $13,954,350,332$ | $198,093,147$ | 1.42 |  |
| Alternative Equity Managers | $2,948,607,060$ | $40,596,887$ | 1.38 |  |
| Opportunity Portfolio Managers | $\underline{1,364,144,854}$ | $15,141,478$ | 1.11 |  |
| Total Assets Under Management | $\mathbf{\$ 1 , 6 8 5 , 3 0 7 , 0 6 1}$ |  |  |  |

Other Investment Service Fees:
Investment Consultants
5,155,437
Commissions and Other Fees
Total Investment Service and Managers' Fees
\$ 553,723,627

Schedule of Broker Commissions
For the Fiscal Year Ended June 30, 2016

| Broker's Name | Commission |  | Shares / Par | Commission per Share |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Goldman, Sachs \& Co. | \$ | 1,721,020 | 158,084,643 | \$ | 0.0109 |
| INSTINET |  | 1,143,617 | 626,259,130 |  | 0.0018 |
| UBS Securities Inc. |  | 1,053,720 | 250,714,825 |  | 0.0042 |
| J.P. Morgan Securities Inc. |  | 1,029,556 | 178,628,327 |  | 0.0058 |
| Barclays Capital, Inc. |  | 889,504 | 37,864,967 |  | 0.0235 |
| Credit Suisse First Boston |  | 876,154 | 190,627,870 |  | 0.0046 |
| Merrill Lynch \& Co., Incorporated |  | 846,175 | 255,232,670 |  | 0.0033 |
| Citigroup Global Markets Inc |  | 684,622 | 110,872,257 |  | 0.0062 |
| Morgan Stanley |  | 648,706 | 135,954,724 |  | 0.0048 |
| Jefferies \& Company, Inc. |  | 607,074 | 96,963,620 |  | 0.0063 |
| Deutsche Bank |  | 575,602 | 111,126,982 |  | 0.0052 |
| Investment Technology Group Inc. |  | 336,806 | 88,756,120 |  | 0.0038 |
| Société Générale |  | 257,456 | 153,659,668 |  | 0.0017 |
| Macquarie Securities |  | 255,523 | 110,232,031 |  | 0.0023 |
| Liquidnet, Inc. |  | 242,664 | 25,560,576 |  | 0.0095 |
| HSBC |  | 233,028 | 56,566,376 |  | 0.0041 |
| Royal Bank of Canada |  | 202,440 | 9,305,491 |  | 0.0218 |
| Broadcort Capital Corp. |  | 194,986 | 7,930,252 |  | 0.0246 |
| Merrill Lynch, Pierce, Fenner \& Smith Inc. |  | 181,647 | 20,250,327 |  | 0.0090 |
| Bloomberg Tradebook |  | 177,950 | 13,416,195 |  | 0.0133 |

Brokerage commissions on purchases and sales are too numerous to list; therefore, only the top 20 brokers by amount of commission paid are shown.

## Investment Summary

| Type of Investment | Fair Value as of June 30, 2016 |  | Percent of Total Fair Value ${ }^{1}$ |
| :---: | :---: | :---: | :---: |
| Debt Securities |  |  |  |
| US Government Securities | \$ | 6,150,969,258 | 8.96 \% |
| US Agency Securities |  | 1,302,611,871 | 1.90 |
| Corporate Bonds |  | 4,108,060,539 | 5.98 |
| Asset-Backed Securities |  | 1,302,100,760 | 1.90 |
| International Debt Securities |  | 932,101,682 | 1.36 |
| Non-US Government Debt Securities |  | 102,097,212 | 0.15 |
| Municipal Bonds |  | 38,716,191 | 0.06 |
| Guaranteed Investment Contracts ${ }^{2}$ |  | 171,265,727 | 0.25 |
| Domestic Fixed Income Funds |  | 610,304,712 | 0.89 |
| International Fixed Income Funds |  | 50,281,380 | 0.07 |
| Total Debt Securities |  | 14,768,509,332 | 21.52 |
| Public Equity |  |  |  |
| Domestic Equity Securities |  | 10,506,911,071 | 15.30 |
| International Equity Securities |  | 9,150,695,658 | 13.32 |
| Domestic Equity Funds |  | 2,665,179,334 | 3.88 |
| Global Equity Funds |  | 1,884,478,180 | 2.74 |
| International Equity Funds |  | 2,398,987,297 | 3.49 |
| Target Date Fund |  | 457,658,916 | 0.67 |
| Total Public Equity |  | 27,063,910,456 | 39.40 |
| Real Estate |  | 8,585,785,027 | 12.50 |
| Private Equity |  | 13,954,350,332 | 20.31 |
| Alternative Equity |  | 2,948,607,060 | 4.28 |
| Opportunity Portfolio |  | 1,364,144,854 | 1.99 |
| Total Fair Value | \$ | 68,685,307,061 | 100.00 \% |

[^6]This page is intentionally left blank.

Actuarial Section

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November 23, 2016

Public Employees Retirement Board Oregon Public Employees Retirement System

## Re: Actuarial Valuation as of December 31, 2015

Dear Members of the Board,
As part of our engagement with the Oregon Public Employees Retirement System ("PERS" or "the System"), we performed an actuarial valuation of PERS as of December 31, 2015. Our findings are set forth in the system-wide December 31, 2015 Actuarial Valuation, issued September 27, 2016. Previously, we published a system-wide December 31, 2014 Actuarial Valuation, which was issued November 12, 2015. Both reports reflect the current benefit provisions of the system, including the effects of the Oregon Supreme Court decision in Moro v. State of Oregon.

Both the December 31, 2015 Actuarial Valuation and the December 31, 2014 Actuarial Valuation are used to develop information provided in the Comprehensive Annual Financial Report (CAFR) for Oregon PERS. The December 31, 2015 Actuarial Valuation forms the basis for the Actuarial Section of the CAFR, and also provides information for the Other Postemployment Benefit Programs (OPEB) required by Governmental Accounting Standards Board Statements No. 43 that appears in the Notes to the Financial Statements and Required Supplementary information. The December 31, 2014 Actuarial Valuation is used to develop the financial reporting results required by Governmental Accounting Standards Board Statements No. 67 for the Tier $1 / \mathrm{Tier} 2$ and OPSRP programs.

## Actuarial Section of the CAFR

The material included in the Actuarial Section of CAFR for Oregon PERS is a subset of the results contained in the December 31, 2015 Actuarial Valuation. The descriptions in that report regarding the actuarial basis of the valuation and the material inputs and limitations of use of the valuation apply to the CAFR exhibits, and are incorporated herein by reference.

Actuarial valuations are performed annually, but only "rate-setting" valuations performed as of the end of each odd-numbered year are used to set actuarially determined biennial contribution rates. Those rates are then considered for adoption by the Public Employees Retirement Board ("PERB"). Interim valuations performed as of the end of each even-numbered year are only advisory in nature, and contribution rates developed in those valuations are not presented to the PERB for adoption.

The PERB has sole authority to determine the actuarial assumptions and methods used for the valuation. The actuarial assumptions and methods used in both the December 31, 2015 Actuarial Valuation and the December 31, 2014 Actuarial Valuation were adopted by the PERB

[^7]Public Employees Retirement Board Oregon Public Employees Retirement System
November 23, 2016
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based upon the results of the 2014 Experience Study conducted by Milliman, issued September 23, 2015. The assumptions and methods were selected in a manner consistent with current Actuarial Standards of Practice. The assumptions and methods used for setting the actuarially determined contribution rates for the OPEB plans do not always meet the calculation parameters set for Annual Required Contribution financial reporting disclosures by Govemmental Accounting Standards Board Statements No. 43. Where the actuarially determined OPEB contribution rate does not meet GASB No. 43 parameters, the Annual Required Contribution for financial reporting purposes has been adjusted to satisfy the GASB parameters.

Milliman prepared the following information that is presented in the Actuarial Section of the 2016 Comprehensive Annual Financial Report (CAFR) based on the December 31, 2015 Actuarial Valuation:

- Schedule of Active Member Valuation Data
- Schedule of Retirees and Beneficiaries Added to and Removed from Rolls
- Schedules of Funding Progress by Rate Pool
- Solvency Test
- Analysis of Financial Experience
- Schedules of Funding Progress
- Schedules of Employer Contributions
- Notes to Required Supplementary Schedules

We understand the Actuarial Section of the CAFR will also include summaries of the actuarial methods, actuarial assumptions, and plan provisions valued. These summaries are contained in the December 31, 2015 Actuarial Valuation.

## Financial Reporting Under GASB 67

Under GASB 67, the required financial reporting schedules present information using a Measurement Date of the System's fiscal year end. The Total Pension Liability for the June 30, 2016 fiscal year end was determined based on the results of the December 31, 2014 Actuarial Valuation. The liability calculated at the actuarial valuation date was then adjusted to the Measurement Date using standard actuarial roll-forward procedures. The Total Pension Liability is compared to the Fiduciary Net Position as of the Measurement Date, as provided by PERS and measured on a fair market value of assets basis, to determine the Net Pension Liability (Asset) under GASB 67.

Milliman prepared the following exhibits to assist PERS in completing the required Notes to the Financial Statements and Required Supplementary Information:

- Net Pension Liability (Asset)
- Changes in Net Pension Liability (Asset)
- Schedule of Changes in Net Pension Liability (Asset) and Related Ratios
- Long Term Expected Rate of Retum


## Oregon Public Employees Retirement System

Public Employees Retirement Board
Oregon Public Employees Retirement System
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These exhibits, along with a discussion of the actuarial basis underlying the results, are presented in our GASB 67 Reporting for Fiscal Year End 2016 letter dated November 22, 2016.

## Funding Policy

The funding policy selected by the PERB is to adopt biennial contribution rates in accordance with the results of a "rate-setting" actuarial valuation performed using the assumptions and methods described in the associated actuarial valuation report. For example, the rates developed in the December 31, 2015 Actuarial Valuation were adopted by the PERB and established employer contributions for the July 1, 2017 to June 30, 2019 biennium. Contribution rates include funding the cost associated with new benefit accruals as well as amortizing any unfunded actuarial liability, determined using the market value of assets, over closed, layered amortization periods that vary from 10 to 20 years, according to the benefit program. The contribution rate stabilization method (also known as the "rate collar") limits rate changes from one biennium to the next, in effect phasing in changes over multiple rate-setting periods if asset or liability experience causes a large movement in the actuarially calculated contribution rate prior to application of the rate collar.

All members hired prior to August 29, 2003, are covered under Chapter 238 and are collectively referred to as Tier 1 /Tier 2 members. Their benefit costs are calculated using two experience sharing pool valuations and some independent employer valuations. All school districts pool their Tier 1 /Tier 2 experience through the school district pool. State government and some local govemments pool their Tier $1 /$ Tier 2 experience through the State and Local Government Rate Pool (SLGRP). As of December 31, 2015, there are also 131 independent employers who do not pool their Tier 1 /Tier 2 experience with the other employers except through the Benefits in Force Reserve, which pools the experience of Tier $1 /$ Tier 2 members in payee status across all employers and all other Tier 1/Tier 2 pooling arrangements.

All members hired after August 28, 2003, are covered under Chapter 238A and are referred to as OPSRP members, except for those members who previously established membership under Chapter 238 and meet the statutory requirements to reinstate those benefits. Experience for Chapter 238A members is pooled across all employers regardless of their status under the Chapter 238 arrangements. Chapter 238 benefits and Chapter 238A benefits are parts of a single plan.

Finally, some employers made lump sum deposits in addition to their regularly scheduled contributions. These deposits are placed in a "side account" within the legally restricted pension trust and are used to offset a portion of future contribution requirements of the depositing employers via side account transfers. For financial reporting purposes, lump sum deposits are not considered as contributions in relation to the actuarially determined contribution. However, side accounts are included as assets in the Fiduciary Net Position. The Schedule of Funding Progress and Solvency Test also include side accounts as part of the Plan's assets.

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## Actuarial Basis

In preparing the valuation reports, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, System benefit provisions as defined by statute, member census data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting the System.

The valuation reports are only an estimate of the System's financial condition as of a single date. They can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of the System's actuarially calculated contributions. While the valuations are based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct.

Future actuarial measurements may differ significantly from the current measurements presented in these reports due to such factors as the following: System 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 System's funded status); and changes in System benefit provisions or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements. The PERB has the final decision regarding the appropriateness of the assumptions and adopted them as indicated herein at its September 2015 public meeting.

Some of the actuarial computations presented in the valuation reports are for purposes of determining contribution rates for System employers. Other actuarial computations presented in the reports under GASB Statements No. 43, 45, 67, and 68 are for purposes of assisting the System and participating employers in fulfilling their financial reporting requirements. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the reports have been made on a basis consistent with our understanding of the System's funding policy and goals, the System benefit provisions as summarized in the reports, and GASB Statements No. 43, 45, 67, and 68. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in these reports. Accordingly, additional determinations may be needed for other purposes.

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Milliman's work has been prepared exclusively for the Oregon Public Employees Retirement System for a specific and limited purpose. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. It is a complex, technical analysis that assumes a high level of knowledge concerning the System's operations, and uses the System's data, which Milliman has not audited. No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Sincerely,


Actuarial Methods and Assumptions Tier 1/Tier 2 (including Retiree Healthcare)

## Tier 1/Tier 2 (including Retiree Healthcare)

## Actuarial Methods and Valuation Procedures

In September 2015 the Board adopted the following actuarial methods and valuation procedures for the December 31, 2014 and 2015 actuarial valuations of PERS Tier 1/Tier 2 benefits.

| Actuarial cost method | Entry Age Normal. Under the Entry Age Normal (EAN) cost method, each active |
| :--- | :--- |
| member's entry age present value of projected benefits is allocated over the |  |
| member's service from the member's date of entry until their assumed date of exit, |  |
| taking into consideration expected future compensation increases. Thus, the total |  |
| pension to which each member is expected to become entitled at retirement is |  |
| broken down into units, each associated with a year of past or projected future |  |
| credited service. Typically, when this method is introduced, there will be an initial |  |
| liability for benefits credited for service prior to that date, and to the extent that the |  |
| liability is not covered by assets of the plan, there is an unfunded accrued liability to |  |
| be funded over a stipulated period in accordance with an amortization schedule. |  |
| A detailed description of the calculation follows: |  |
| - An individual member's entry age present value of projected benefits is the |  |
| sum of the present value of the benefit described under the plan at each possible |  |
| separation date, determined at the member's entry age using the projected |  |
| compensation and service at each separation date. |  |
| - An individual member's entry age present value of projected salaries is the |  |
| sum of the present value of the projected compensation over the member's |  |
| working career associated with each possible future separation date, determined |  |
| at the member's entry age. |  |
| - An individual member's present value of projected benefits is the sum of the |  |
| present value of the benefit described under the plan at each possible separation |  |
| date, determined at the valuation date using the projected compensation and |  |
| service at each separation date. |  |
| - An individual member's normal cost for a certain year is the member's entry |  |
| age present value of projected benefits divided by the member's entry age |  |
| present value of projected salaries and multiplied by the member's projected |  |
| compensation for the year following the valuation date. |  |
| - An individual member's actuarial accrued liability is the member's present |  |
| value of projected benefits less the sum of the present value of the member's |  |
| normal costs for each future year, determined at the valuation date using the |  |
| projected compensation and service at each future year. |  |
| - The plan's normal cost is the sum of the individual member normal costs, |  |
| and the plan's actuarial accrued liability is the sum of the individual member |  |
| accrued liabilities. |  |


| Retiree Healthcare UAL amortization | The UAL for Retiree Health Care as of December 31, 2007 is amortized as a level percentage of projected combined valuation payroll (Tier 1/Tier 2 plus OPSRP payroll) over a closed 10 year period. Gains and losses between subsequent oddyear valuations are amortized as a level percentage of combined valuation payroll over a closed 10 year period from the valuation in which they are first recognized. |
| :---: | :---: |
| Asset valuation method | The actuarial value of assets equals the market value of assets, excluding the Contingency and Capital Preservation Reserves, and the Rate Guarantee Reserve when it is in positive surplus status. <br> Market values are reported to Milliman by PERS. It is our understanding that select real estate and private equity investments are reported on a three-month lag basis. This valuation report does not attempt to quantify any effects of the reporting lag. |
| Contribution rate stabilization method | Contribution rates for a rate pool (e.g. Tier 1/Tier 2 SLGRP, Tier 1 /Tier 2 School Districts, OPSRP) are confined to a collared range based on the prior contribution rate (prior to application of side accounts, pre-SLGRP liabilities, and 6 percent Independent Employer minimum). The new contribution rate will generally not increase or decrease from the prior contribution rate by more than the greater of 3 percent of payroll or 20 percent of the prior contribution rate. If the funded percentage excluding side accounts drops below $60 \%$ or increases above $140 \%$, the size of the collar doubles. If the funded percentage excluding side accounts is between $60 \%$ and $70 \%$ or between $130 \%$ and $140 \%$, the size of the rate collar is increased on a graded scale. |
| Allocation of Liability for Service Segments | For active Tier 1/Tier 2 members who have worked for multiple PERS employers over their career, the calculated actuarial accrued liability is allocated among the employers based on a weighted average of the Money Match methodology, which uses account balance, and the Full Formula methodology, which uses service. The allocation is $25 \%$ ( $0 \%$ for police \& fire) based on account balance with each employer and $75 \%$ ( $100 \%$ for police \& fire) based on service with each employer. The entire normal cost is allocated to the current employer. |
| Allocation of Benefits-In-Force (BIF) Reserve | The BIF reserve is allocated to each rate pool in proportion to the retiree liability attributable to the rate pool. |

## Economic Assumptions

The Board adopted the following economic assumptions for the December 31, 2014 and 2015 actuarial valuations. All assumptions were reviewed and adopted in conjunction with the 2014 Experience Study, published in September 2015. The assumption selection process and rationale is described in detail in that report.


[^10]This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

## Demographic Assumptions

The Board adopted the following demographic assumptions for the December 31, 2014 and 2015 actuarial valuations. All assumptions were reviewed and adopted in conjunction with the 2014 Experience Study, published in September 2015. The study relied on data from an observation period of January 1, 2011 to December 31, 2014, with the exception of the merit scale assumption, which relied on data from 2006 through 2014. Assumptions selected from the study represent an estimate of future experience based on relevant recent experience and reasonable expectations about the future.

## Mortality

## Healthy Retired Members

The following healthy retired mortality tables were first adopted in the December 31 valuation of the years shown. The projection scale was first adopted in the December 31, 2014 valuation.

| Basic Table | RP 2000, Generational (Scale BB) Combined Active/Healthy Annuitant, Sex Distinct | Valuation <br> Year <br> Adopted |
| :---: | :---: | :---: |
| School District male | No collar, set back 24 months | 2012 |
| Other General Service male* | Blended $25 \%$ blue collar / $75 \%$ white collar, set back 12 months | 2010 |
| Police \& Fire male | Blended 25\% blue collar / 75\% white collar, set back 12 months | 2012 |
| School District female | No collar, set back 24 months | 2014 |
| Other female** | Blended $25 \%$ blue collar / $75 \%$ white collar, no set back | 2014 |

## Disabled Retired Members

The following disabled retiree mortality rates were first adopted for the December 31, 2014 actuarial valuation.

|  | RP 2000, Generational (Scale BB), Combined <br> Disabled, No Collar, Sex Distinct |
| :--- | :--- |
| Male | 70\% of Disabled table, but not less than the <br> corresponding healthy annuity rates <br> 95\% of Disabled table, but not less than the <br> corresponding healthy annuity rates |
| Female |  |

[^11]Actuarial Methods and Assumptions Tier 1/Tier 2 (including Retiree Healthcare)

## Non-Annuitant Members

The following mortality rates were first adopted for non-annuitant members for the December 31, 2014 actuarial valuation.

| Basic Table | Percent of Healthy Retired Mortality Tables |
| :--- | :---: |
| School District male | $60 \%$ |
| Other General Service male | $75 \%$ |
| Police \& Fire male | $75 \%$ |
| School District female | $55 \%$ |
| Other female | $60 \%$ |

## Retirement Assumptions

The retirement assumptions used in the actuarial valuation include the following:

- Retirement from active status/dormant status
- Probability a member will elect a lump sum option at retirement
- Percentage of members who elect to purchase credited service at retirement.


## Rates of Retirement from Active Status

The following retirement rate assumptions were first adopted in the December 31, 2014 valuation.

|  | Police \& Fire |  |  | General Service |  |  | School Districts |  |  | Judges |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | $<13 \mathrm{yrs}$ | 13-24 yrs | 25+ yrs | <15 yrs | 15-29 yrs | $\begin{aligned} & 30+ \\ & \text { yrs } \end{aligned}$ | <15 yrs | 15-29 yrs | 30+ yrs |  |
| Less than 50 |  |  |  |  |  | 15.00\% |  |  | 15.00\% |  |
| 50 | 1.50\% | 2.00\% | 24.00\% |  |  | 15.00\% |  |  | 15.00\% |  |
| 51 | 1.50\% | 2.00\% | 17.50\% |  |  | 15.00\% |  |  | 15.00\% |  |
| 52 | 1.50\% | 2.00\% | 17.50\% |  |  | 15.00\% |  |  | 25.00\% |  |
| 53 | 1.50\% | 2.00\% | 17.50\% |  |  | 17.50\% |  |  | 25.00\% |  |
| 54 | 1.50\% | 2.00\% | 17.50\% |  |  | 17.50\% |  |  | 25.00\% |  |
| 55 | 5.00\% | 8.00\% | 23.50\% | 1.50\% | 3.00\% | 17.50\% | 1.50\% | 4.50\% | 25.00\% |  |
| 56 | 5.00\% | 8.00\% | 23.50\% | 1.50\% | 3.00\% | 17.50\% | 1.50\% | 4.50\% | 25.00\% |  |
| 57 | 5.00\% | 8.00\% | 23.50\% | 1.50\% | 3.00\% | 20.00\% | 1.50\% | 4.50\% | 25.00\% |  |
| 58 | 5.00\% | 8.00\% | 23.50\% | 1.50\% | 10.00\% | 20.00\% | 2.50\% | 14.50\% | 32.00\% |  |
| 59 | 5.00\% | 8.00\% | 23.50\% | 3.50\% | 10.00\% | 20.00\% | 4.50\% | 14.50\% | 28.50\% |  |
| 60 | 5.00\% | 11.00\% | 23.50\% | 6.00\% | 10.00\% | 20.00\% | 6.50\% | 14.50\% | 28.50\% | 10.00\% |
| 61 | 5.00\% | 14.00\% | 23.50\% | 6.00\% | 10.00\% | 24.00\% | 8.00\% | 14.50\% | 28.50\% | 10.00\% |
| 62 | 15.00\% | 25.00\% | 38.00\% | 12.50\% | 19.50\% | 31.00\% | 15.00\% | 25.00\% | 34.00\% | 10.00\% |
| 63 | 7.00\% | 17.00\% | 38.00\% | 12.50\% | 16.50\% | 22.00\% | 13.00\% | 22.00\% | 26.50\% | 10.00\% |
| 64 | 7.00\% | 17.00\% | 17.00\% | 12.50\% | 16.50\% | 26.00\% | 13.00\% | 19.50\% | 31.50\% | 10.00\% |
| 65 | 100.00\% | 100.00\% | 100.00\% | 19.50\% | 28.00\% | 32.00\% | 25.50\% | 33.50\% | 38.00\% | 10.00\% |


|  | Police \& Fire |  |  | General Service |  |  | School Districts |  |  | Judges |
| :--- | :--- | :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 66 |  |  |  | $25.50 \%$ | $35.00 \%$ | $38.00 \%$ | $21.50 \%$ | $36.50 \%$ | $38.00 \%$ | $10.00 \%$ |
| 67 |  |  |  | $22.50 \%$ | $25.00 \%$ | $26.00 \%$ | $19.50 \%$ | $34.50 \%$ | $38.00 \%$ | $10.00 \%$ |
| 68 |  |  |  | $19.50 \%$ | $25.00 \%$ | $26.00 \%$ | $19.50 \%$ | $28.00 \%$ | $28.50 \%$ | $10.00 \%$ |
| 69 |  |  |  | $19.50 \%$ | $25.00 \%$ | $26.00 \%$ | $19.50 \%$ | $28.00 \%$ | $28.50 \%$ | $30.00 \%$ |
| 70 |  |  |  | $100.00 \%$ | $100.00 \%$ | $100.00 \%$ | $100.00 \%$ | $100.00 \%$ | $100.00 \%$ | $100.00 \%$ |

## Retirement from Dormant Status

Dormant members are assumed to retire at Normal Retirement Age (age 58 for Tier 1, age 60 for Tier 2, age 60 for Judges, and age 55 for Police \& Fire) or at the first unreduced retirement age ( 30 years of service, or age 50 with 25 years of service for Police \& Fire).

## Lump Sum Option at Retirement

Members retiring may elect to receive a full or partial lump sum at retirement. The probability that a retiring member will elect a lump sum at retirement is summarized in the table below. These rates were first adopted effective December 31, 2014.

## Lump Sum Option at Retirement

|  | Lump Sum Option at Retirement |
| :--- | :--- |
| Partial Lump Sum: | $4.5 \%$ for all years |
| Total Lump Sum: | $2.5 \%$ for 2016, declining by 0.5\% per year until reaching $0.0 \%$ |
| No Lump Sum: | $93.0 \%$ in 2015, increasing by $0.5 \%$ per year until reaching $95.5 \%$ |

## Purchase of Credited Service at Retirement

The following percentages of members are assumed to purchase credit for the six-month waiting period at retirement. These rates were first adopted effective December 31, 2010.


## Judge Member Plan Election

All judge members are assumed to elect to retire under the provisions of Plan B.

## Disability Assumptions

There are two disability assumptions used in the valuation - duty disability and ordinary disability. Duty Disability rates are separated between Police \& Fire and General Service, while ordinary disability is the same for all members. The rates for duty disability for General Service were first adopted effective December 31, 2014. The rates for duty disability for Police \& Fire were first adopted effective December 31, 2012. The rates for ordinary disability were first adopted effective December 31, 2010.

|  | Percentage of the 1985 <br> Disability Class 1 Rates |
| :--- | :---: |
| Duty Disability Police \& Fire | $20 \%$ |
| Duty Disability General Service | $0.9 \%$ |
| Ordinary Disability | $50 \%$ with $0.18 \%$ cap |

## Termination Assumptions

The termination assumptions were first adopted effective December 31, 2012, except for the Police \& Fire and General Service females which were adopted effective December 31, 2014.

## Termination Rates

Sample termination rates are shown for each group below:

| Duration from <br> Hire Date | School District <br> Male | School District <br> Female | General Service <br> Male | General Service <br> Female | Police \& Fire |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0 | $20.00 \%$ | $15.50 \%$ | $19.00 \%$ | $18.50 \%$ | $10.00 \%$ |
| 1 | $16.00 \%$ | $14.05 \%$ | $17.16 \%$ | $17.00 \%$ | $5.97 \%$ |
| 5 | $8.24 \%$ | $8.35 \%$ | $8.36 \%$ | $9.29 \%$ | $3.31 \%$ |
| 10 | $4.23 \%$ | $4.36 \%$ | $3.96 \%$ | $5.24 \%$ | $2.23 \%$ |
| 15 | $2.78 \%$ | $2.98 \%$ | $2.86 \%$ | $3.66 \%$ | $1.50 \%$ |
| 20 | $1.82 \%$ | $2.23 \%$ | $2.07 \%$ | $2.63 \%$ | $1.01 \%$ |
| 25 | $1.20 \%$ | $1.67 \%$ | $1.49 \%$ | $1.89 \%$ | $0.80 \%$ |
| $30+$ | $1.20 \%$ | $1.50 \%$ | $1.40 \%$ | $1.50 \%$ | $0.80 \%$ |

For a complete table of rates, please refer to the 2014 Experience Study report for the System, published in September 2015.

## Oregon Residency Post-Retirement

For purposes of determining eligibility for SB 656/HB 3349 benefit adjustments, $85 \%$ of retirees are assumed to remain Oregon residents after retirement.

## Salary Increase Assumptions

The salary increase assumptions reflected in the actuarial valuation include:

- Merit scale increases in addition to the payroll growth increase
- Unused Sick Leave adjustments
- Vacation Pay adjustments


## Merit Increases

Merit increases are based on duration of service for the following groups with sample rates shown in the following table. These rates were first adopted effective December 31, 2014.

| Duration | School District | Other General Service | Police \& Fire |
| :---: | :---: | :---: | :---: |
| 0 | $3.53 \%$ | $3.95 \%$ | $5.17 \%$ |
| 1 | $3.20 \%$ | $3.55 \%$ | $4.57 \%$ |
| 5 | $2.01 \%$ | $2.24 \%$ | $2.71 \%$ |
| 10 | $0.82 \%$ | $1.22 \%$ | $1.41 \%$ |
| 15 | $-0.07 \%$ | $0.71 \%$ | $0.90 \%$ |
| 20 | $-0.67 \%$ | $0.52 \%$ | $0.81 \%$ |
| 25 | $-0.91 \%$ | $0.45 \%$ | $0.76 \%$ |
| 30 | $-0.94 \%$ | $0.29 \%$ | $0.39 \%$ |
| $31+$ | $-0.94 \%$ | $0.00 \%$ | $0.00 \%$ |

The assumed merit increase for active judge members is $0.0 \%$.
For a complete table of rates, please refer to the 2014 Experience Study for the System, published in September 2015.

## Unused Sick Leave

Members covered by the provision allowing unused sick leave to be used to increase final average salary are assumed to receive increases in their final average salary in accordance with the table below. This adjustment is not applied to disability benefits. Local general service females, school district males, and dormant members were adopted effective December 31, 2014. The state general service male, state general service female and local police and fire rates were adopted effective December 31, 2010. All other rates were adopted effective December 31, 2012.

## Unused Sick Leave

## Actives

- State General Service Male
6.25\%
- State General Service Female 3.75\%
- School District Male
7.25\%
- School District Female
5.75\%
- Local General Service Male
4.75\%
- Local General Service Female
3.25\%
- State Police \& Fire
4.75\%
- Local Police \& Fire
7.50\%

Dormant Members

## Vacation Pay

Members eligible to receive a lump sum payment of unused vacation pay are assumed to receive increases in their final average salary in accordance with the table below. This adjustment is not applied to disability benefits. These rates were adopted December 31, 2014, except the school district rates which were adopted effective December 31, 2012.

| Vacation Pay |  |
| :--- | :--- |
| Tier 1 |  |
| - State General Service | $1.60 \%$ |
| - School District | $0.25 \%$ |
| - Local General Service | $2.20 \%$ |
| - State Police \& Fire | $1.80 \%$ |
| - Local Police \& Fire | $2.90 \%$ |
| Tier 2 | $0.00 \%$ |

## Retiree Healthcare Participation

The following percentages of eligible retiring members are assumed to elect RHIPA and RHIA coverage:

| Retiree Healthcare Participation |  |
| :--- | :--- |
| RHIPA |  |
| - 8-9 years of service | $10.0 \%$ |
| - $10-14$ years of service | $10.0 \%$ |
| - $15-19$ years of service | $18.0 \%$ |
| - $20-24$ years of service | $26.0 \%$ |
| - 25-29 years of service | $29.0 \%$ |
| - 30+ years of service | $38.0 \%$ |
| RHIA |  |
| - Healthy Retired | $38.0 \%$ |
| - Disabled Retired | $20.0 \%$ |

The RHIA disabled retired rate was first adopted December 31, 2008. The RHIPA rates up through 14 years of service were first adopted effective December 31, 2012. All other rates were first adopted effective December 31, 2014.

## OPSRP

Most of the methods and assumptions adopted for the OPSRP valuation are the same as those used for Tier 1/ Tier 2. The methods and assumptions that differ for OPSRP are summarized below. The Board adopted the following methods, procedures and assumptions for the December 31, 2014 and December 31, 2015 actuarial valuations.

## Actuarial Methods and Valuation Procedures

OPSRP UAL amortization The UAL as of December 31, 2007 is amortized as a level percentage of projected combined valuation payroll (Tier 1/ Tier 2 plus OPSRP payroll) over a closed period 16 year period. Gains and losses between subsequent odd-year valuations are amortized as a level percentage of combined valuation payroll over 16 years from the valuation in which they are first recognized.

Economic Assumptions
Administrative expenses
$\$ 5.5$ million per year is added to the normal cost.

## Demographic Assumptions

## Retirement Assumptions

Rates of Retirement from Active Status

|  | Police \& Fire |  |  | General Service |  |  | School Districts |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Age | < 13 yrs | 13-24 <br> yrs | $\mathbf{2 5 +}$ yrs | <15 yrs | $\mathbf{1 5 - 2 9}$ <br> yrs | $\mathbf{3 0 +}$ <br> yrs | <15 yrs | $\mathbf{1 5 - 2 9}$ <br> yrs | 30+ yrs |
| 50 | $1.00 \%$ | $1.50 \%$ | $5.50 \%$ |  |  |  |  |  |  |
| 51 | $1.00 \%$ | $1.50 \%$ | $5.50 \%$ |  |  |  |  |  |  |
| 52 | $1.00 \%$ | $1.50 \%$ | $5.50 \%$ |  |  |  |  |  |  |
| 53 | $1.00 \%$ | $1.50 \%$ | $25.00 \%$ |  |  |  |  |  |  |
| 54 | $1.00 \%$ | $1.50 \%$ | $17.50 \%$ |  |  |  |  |  |  |
| 55 | $4.00 \%$ | $5.00 \%$ | $23.50 \%$ | $1.00 \%$ | $2.50 \%$ | $5.00 \%$ | $1.00 \%$ | $2.50 \%$ | $5.00 \%$ |
| 56 | $4.00 \%$ | $5.00 \%$ | $23.50 \%$ | $1.00 \%$ | $2.50 \%$ | $5.00 \%$ | $1.00 \%$ | $2.50 \%$ | $5.00 \%$ |
| 57 | $4.00 \%$ | $5.00 \%$ | $23.50 \%$ | $1.00 \%$ | $2.50 \%$ | $7.50 \%$ | $1.00 \%$ | $2.50 \%$ | $7.50 \%$ |
| 58 | $4.00 \%$ | $5.00 \%$ | $23.50 \%$ | $1.00 \%$ | $3.00 \%$ | $30.00 \%$ | $1.00 \%$ | $3.00 \%$ | $30.00 \%$ |
| 59 | $4.00 \%$ | $5.00 \%$ | $23.50 \%$ | $1.50 \%$ | $3.00 \%$ | $25.00 \%$ | $1.50 \%$ | $3.00 \%$ | $25.00 \%$ |
| 60 | $4.00 \%$ | $15.00 \%$ | $23.50 \%$ | $3.00 \%$ | $3.75 \%$ | $20.00 \%$ | $3.00 \%$ | $3.75 \%$ | $20.00 \%$ |
| 61 | $4.00 \%$ | $8.50 \%$ | $23.50 \%$ | $3.00 \%$ | $5.00 \%$ | $20.00 \%$ | $3.00 \%$ | $5.00 \%$ | $20.00 \%$ |
| 62 | $12.00 \%$ | $25.00 \%$ | $38.00 \%$ | $8.00 \%$ | $12.00 \%$ | $30.00 \%$ | $6.00 \%$ | $12.00 \%$ | $30.00 \%$ |
| 63 | $7.00 \%$ | $17.00 \%$ | $38.00 \%$ | $7.00 \%$ | $10.00 \%$ | $20.00 \%$ | $6.00 \%$ | $10.00 \%$ | $20.00 \%$ |
| 64 | $7.00 \%$ | $17.00 \%$ | $17.00 \%$ | $6.00 \%$ | $10.00 \%$ | $20.00 \%$ | $6.00 \%$ | $10.00 \%$ | $20.00 \%$ |
| 65 | $100.00 \%$ | $100.00 \%$ | $100.00 \%$ | $13.00 \%$ | $35.00 \%$ | $20.00 \%$ | $12.00 \%$ | $35.00 \%$ | $20.00 \%$ |
| 66 |  |  |  | $15.50 \%$ | $33.00 \%$ | $20.00 \%$ | $14.00 \%$ | $33.00 \%$ | $20.00 \%$ |
| 67 |  |  |  | $15.50 \%$ | $22.00 \%$ | $30.00 \%$ | $11.00 \%$ | $22.00 \%$ | $30.00 \%$ |
| 68 |  |  |  | $13.00 \%$ | $17.00 \%$ | $20.00 \%$ | $9.00 \%$ | $17.00 \%$ | $20.00 \%$ |
| 69 |  |  |  | $13.00 \%$ | $17.00 \%$ | $20.00 \%$ | $9.00 \%$ | $17.00 \%$ | $20.00 \%$ |
| 70 |  |  |  | $100.00 \%$ | $100.00 \%$ | $100.00 \%$ | $100.00 \%$ | $100.00 \%$ | $100.00 \%$ |

Rates of Retirement from Dormant Status
Dormant members are assumed to retire at their Normal Retirement Age.
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purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not
intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman
recommends that third parties be aided by their own actuary or other qualified professional when
reviewing the Milliman work product.

## Changes in Actuarial Methods and Assumptions - Tier 1/ Tier 2 and OPSRP

A summary of key changes implemented since the December 31, 2014 valuation are described briefly below.

## Changes in Actuarial Methods and Allocation Procedures

There were no changes to actuarial methods and procedures since the December 31, 2014 valuation.

## Changes in Economic Assumptions

There were no changes to economic assumptions since the December 31, 2014 valuation.

## Changes in Demographic Assumptions

There were no changes to demographic assumptions since the December 31, 2014 valuation.

Oregon Public Employees Retirement System

## Schedule of Active Member Valuation Data

| Valuation Date | Count | Annual Payroll (in Thousands) |  |  | Annual <br> y | \% Increase in Average Pay | Number of Participating Employers ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 12/31/2006 | 163,261 | \$ | 7,326,798 | \$ | 44,878 | 3.4\% | 758 |
| 12/31/2007 | 167,023 | \$ | 7,721,819 | \$ | 46,232 | 3.0\% | 760 |
| 12/31/2008 | 170,569 | \$ | 8,130,136 | \$ | 47,665 | 3.1\% | 766 |
| 12/31/2009 | 178,606 | \$ | 8,512,192 | \$ | 47,659 | 0.0\% | 776 |
| 12/31/2010 | 193,569 | \$ | 8,750,064 | \$ | 45,204 | -5.2\% | 787 |
| 12/31/2011 | 170,972 | \$ | 8,550,511 | \$ | 50,011 | 10.6\% | 791 |
| 12/31/2012 | 167,103 | \$ | 8,590,879 | \$ | 51,411 | 2.8\% | 798 |
| 12/31/2013 | 162,185 | \$ | 8,671,835 | \$ | 53,469 | 4.0\% | 799 |
| 12/31/2014 | 164,859 | \$ | 9,115,767 | \$ | 55,294 | 3.4\% | 802 |
| 12/31/2015 | 168,177 | \$ | 9,544,132 | \$ | 56,751 | 2.6\% | 804 |

[^12]
## Schedule of Retirees and Beneficiaries Added to and Removed from Rolls

Annual Allowances are shown in thousands.

| Valuation Date |  | Added to Rolls |  |  | Removed from Rolls |  |  | Rolls - End of Year |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Count | Annual Allowances |  | Count | Annual Allowances |  | Count | Annual Allowances |  | \% Increase in Annual Allowances ${ }^{1}$ | Average Annual Allowance s |
| 12/31/2006 | 2 | 5,060 | \$ | 151,240 | 3,263 | \$ | 39,735 | 104,720 | \$ | 2,378,704 | 4.9\% | \$ 22,715 |
| 12/31/2007 | 2 | 5,385 | \$ | 183,232 | 3,304 | \$ | 40,590 | 106,801 | \$ | 2,521,345 | 6.0\% | \$ 23,608 |
| 12/31/2008 | 2 | 5,963 | \$ | 171,484 | 3,626 | \$ | 47,062 | 109,138 | \$ | 2,645,767 | 4.9\% | \$ 24,242 |
| 12/31/2009 | 2 | 6,377 | \$ | 226,713 | 3,374 | \$ | 46,228 | 112,141 | \$ | 2,826,252 | 6.8\% | \$ 25,203 |
| 12/31/2010 | 2 | 6,359 | \$ | 217,424 | 3,512 | \$ | 51,627 | 114,988 | \$ | 2,992,048 | 5.9\% | \$ 26,021 |
| 12/31/2011 | 2 | 8,715 | \$ | 282,098 | 3,679 | \$ | 55,633 | 120,024 | \$ | 3,218,514 | 7.6\% | \$ 26,816 |
| 12/31/2012 | 2 | 7,023 | \$ | 235,917 | 4,875 | \$ | 59,353 | 122,172 | \$ | 3,395,079 | 5.5\% | \$ 27,789 |
| 12/31/2013 |  | 9,724 | \$ | 307,551 | 3,644 | \$ | 66,607 | 128,252 | \$ | 3,636,023 | 7.1\% | \$ 28,351 |
| 12/31/2014 | 3 | 6,910 | \$ | 235,250 | 3,524 | \$ | 66,621 | 131,638 | \$ | 3,804,651 | 4.6\% | \$ 28,902 |
| 12/31/2015 | 3 | 8,566 | \$ | 304,818 | 3,781 | \$ | 73,305 | 136,423 | \$ | 4,036,165 | 6.1\% | \$ 29,586 |

[^13]
## Schedules of Funding Progress by Rate Pool

(dollar amounts in millions)

| Actuarial <br> Valuation Date | Actuarial Value of Assets ${ }^{1,2}$ <br> (a) | Actuarial Accrued Liability (AAL) ${ }^{2}$ (b) | Unfunded AAL <br> (UAAL) <br> (b-a) | Funded Ratio (a/b) | Covered Payroll ${ }^{3}$ <br> (c) | UAAL as a \% of Covered Payroll ((b-a)/c) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Tier 1/Tier 2 State \& Local Government Rate Pool |  |  |  |  |  |  |
| 12/31/2010 | \$ 26,499.5 | \$ 30,285.0 | \$ 3,785.4 | 87.5\% | \$ 3,333.1 | 113.6\% |
| 12/31/2011 4 | \$ 25,679.2 | \$ 31,109.1 | \$ 5,429.9 | 82.5\% | \$ 3,179.3 | 170.8\% |
| 12/31/2012 | \$ 28,022.3 | \$ 30,601.9 | \$ 2,579.5 | 91.6\% | \$ 3,043.7 | 84.7\% |
| 12/31/2013 | \$ 30,590.2 | \$ 31,738.8 | \$ 1,148.6 | 96.4\% | \$ 2,915.9 | 39.4\% |
| 12/31/2014 | \$ 31,162.6 | \$ 37,169.9 | \$ 6,007.3 | 83.8\% | \$ 2,827.9 | 212.4\% |
| 12/31/2015 | \$ 30,185.3 | \$ 38,396.8 | \$ 8,211.5 | 78.6\% | \$ 2,691.8 | 305.1\% |
| Tier 1/Tier 2 School District Rate Pool |  |  |  |  |  |  |
| 12/31/2010 | \$ 20,343.5 | \$ 23,303.3 | \$ 2,959.8 | 87.3\% | \$ 2,027.5 | 146.0\% |
| 12/31/2011 | \$ 19,668.2 | \$ 23,973.7 | \$ 4,305.5 | 82.0\% | \$ 1,880.7 | 228.9\% |
| 12/31/2012 5 | \$ 21,202.1 | \$ 22,908.0 | \$ 1,705.8 | 92.6\% | \$ 1,769.0 | 96.4\% |
| 12/31/2013 | \$ 23,063.3 | \$ 23,392.6 | \$ 329.4 | 98.6\% | \$ 1,663.0 | 19.8\% |
| 12/31/2014 6 | \$ 23,361.2 | \$ 27,059.9 | \$ 3,698.7 | 86.3\% | \$ 1,626.0 | 227.5\% |
| 12/31/2015 | \$ 22,728.9 | \$ 27,670.7 | \$ 4,941.8 | 82.1\% | \$ 1,578.8 | 313.0\% |
| Tier 1/Tier 2 Independent Employers and Judiciary |  |  |  |  |  |  |
| 12/31/2010 | \$ 4,189.4 | \$ 4,913.1 | \$ 723.7 | 85.3\% | \$ 569.7 | 127.0\% |
| 12/31/2011 | \$ 4,083.2 | \$ 5,069.8 | \$ 986.6 | 80.5\% | \$ 547.9 | 180.1\% |
| 12/31/2012 | \$ 4,479.4 | \$ 5,043.4 | \$ 564.0 | 88.8\% | \$ 529.0 | 106.6\% |
| 12/31/2013 | \$ 4,851.0 | \$ 5,164.3 | \$ 313.3 | 93.9\% | \$ 494.8 | 63.3\% |
| 12/31/2014 | \$ 4,967.4 | \$ 6,104.9 | \$ 1,137.4 | 81.4\% | \$ 479.2 | 237.4\% |
| 12/31/2015 | \$ 4,807.6 | \$ 6,327.1 | \$ 1,519.5 | 76.0\% | \$ 460.3 | 330.1\% |
| OPSRP Rate Pool |  |  |  |  |  |  |
| 12/31/2010 | \$ 659.0 | \$ 767.6 | \$ 108.6 | 85.8\% | \$ 2,819.8 | 3.9\% |
| 12/31/2011 | \$ 840.5 | \$ 986.4 | \$ 145.9 | 85.2\% | \$ 2,942.6 | 5.0\% |
| 12/31/2012 | \$ 1,190.0 | \$ 1,795.6 | \$ 605.5 | 66.3\% | \$ 3,249.2 | 18.6\% |
| 12/31/2013 | \$ 1,630.2 | \$ 2,243.3 | \$ 613.2 | 72.7\% | \$ 3,598.1 | 17.0\% |
| 12/31/2014 | \$ 2,024.6 | \$ 3,064.1 | \$ 1,039.5 | 66.1\% | \$ 4,182.7 | 24.9\% |
| 12/31/2015 | \$ 2,389.1 | \$ 3,742.5 | \$ 1,353.5 | 63.8\% | \$ 4,813.3 | 28.1\% |
| Postemployment Healthcare Benefits - Retirement Health Insurance Account |  |  |  |  |  |  |
| 12/31/2010 | \$ 232.3 | \$ 547.1 | \$ 314.8 | 42.5\% | \$ 5,930.3 | 5.3\% |
| 12/31/2011 | \$ 239.6 | \$ 461.1 | \$ 221.5 | 52.0\% | \$ 5,607.9 | 3.9\% |
| 12/31/2012 | \$ 291.6 | \$ 471.8 | \$ 180.2 | 61.8\% | \$ 5,341.7 | 3.4\% |
| 12/31/2013 | \$ 353.5 | \$ 473.6 | \$ 120.0 | 74.7\% | \$ 5,073.7 | 2.4\% |
| 12/31/2014 | \$ 395.9 | \$ 468.4 | \$ 72.5 | 84.5\% | \$ 4,933.1 | 1.5\% |
| 12/31/2015 | \$ 419.3 | \$ 465.6 | \$ 46.3 | 90.0\% | \$ 4,730.8 | 1.0\% |
| Postemployment Healthcare Benefits - Retiree Health Insurance Premium Account |  |  |  |  |  |  |
| 12/31/2010 | \$ 5.7 | \$ 33.9 | \$ 28.2 | 16.8\% | \$ 1,603.3 | 1.8\% |
| 12/31/2011 | \$ 4.5 | \$ 34.4 | \$ 29.9 | 13.2\% | \$ 1,539.5 | 1.9\% |
| 12/31/2012 | \$ 4.4 | \$ 60.3 | \$ 55.9 | 7.4\% | \$ 1,478.4 | 3.8\% |
| 12/31/2013 | \$ 5.2 | \$ 61.2 | \$ 55.9 | 8.6\% | \$ 1,434.5 | 3.9\% |
| 12/31/2014 | \$ 7.2 | \$ 70.5 | \$ 63.3 | 10.2\% | \$ 1,406.3 | 4.5\% |
| 12/31/2015 | \$ 11.2 | \$ 67.8 | \$ 56.6 | 16.5\% | \$ 1,339.4 | 4.2\% |

## Notes:

[^14]
## Oregon Public Employees Retirement System

## Analysis of Financial Experience

| Tier 1/Tier 2 Pension Program | \$ Gain (or Loss) for Year |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
| Type of Activity |  |  |  |  |
| Retirements from Active Status | \$ | (65.5) | \$ | 18.3 |
| Active Mortality and Withdrawal |  | (25.3) |  | (40.9) |
| Pay Increases |  | (48.3) |  | (37.3) |
| Contributions |  | 46.1 |  | 59.8 |
| Interest Crediting Experience |  | 53.5 |  | 18.6 |
| Investment Income |  | $(2,510.3)$ |  | (186.3) |
| Retirement, Mortality and Lump Sums from Dormant Status |  | (0.2) |  | 0.9 |
| Retiree and Beneficiary Mortality |  | (114.4) |  | (148.4) |
| New Entrants |  | (0.0) |  | (0.7) |
| Other |  | (42.4) |  | (34.7) |
| Gain (or Loss) During Year From Financial Experience | \$ | $(2,706.8)$ | \$ | (350.8) |
| Non-Recurring Items |  |  |  |  |
| Assumption Changes |  | 0.0 |  | $(3,468.0)$ |
| Plan Changes |  | 0.0 |  | $(5,027.0)$ |
| Composite Gain (or Loss) During Year | \$ | $(2,706.8)$ | \$ | $(8,845.8)$ |


| OPSRP Pension Program | \$ Gain (or Loss) for Year |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 2015 |  | 2014 |  |
| Retirements from Active Status | \$ | 7.3 | \$ | 3.8 |
| Active Mortality and Withdrawal |  | (19.7) |  | (11.8) |
| Pay Increases |  | (20.7) |  | (32.9) |
| Contributions |  | 0.8 |  | 22.3 |
| Investment Income |  | (115.2) |  | 2.6 |
| Retirement, Mortality and Lump Sums from Dormant Status |  | 3.0 |  | 2.4 |
| Retiree and Beneficiary Mortality |  | 0.8 |  | (0.4) |
| New Entrants |  | (82.5) |  | (74.5) |
| Other |  | 17.3 |  | 0.4 |
| Gain (or Loss) During Year From Financial Experience | \$ | (208.8) | \$ | (88.1) |
| Non-Recurring Items |  |  |  |  |
| Assumption Changes |  | 0.0 |  | (188.7) |
| Plan Changes |  | 0.0 |  | (70.7) |
| Composite Gain (or Loss) During Year | \$ | (208.8) | \$ | (347.5) |

Oregon Public Employees Retirement System

| Retiree Healthcare Programs | \$ Gain (or Loss) for Year |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | RHIA |  |  |  | RHIPA |  |  |  |
|  | 2015 |  | 2014 |  | 2015 |  | 2014 |  |
| Contributions |  | 1.6 |  | 2.0 | \$ | 0.2 | \$ | 0.3 |
| Investment Income |  | (22.3) |  | (2.3) |  | (0.6) |  | (0.1) |
| Other |  | 8.1 |  | 7.7 |  | 4.9 |  | 3.5 |
| Gain (or Loss) During Year From Financial Experience |  | (12.6) |  | 7.4 |  | 4.5 |  | 3.7 |
| Non-Recurring Items |  |  |  |  |  |  |  |  |
| Assumption Changes |  | 0.0 |  | 5.4 |  | 0.0 |  | (11.5) |
| Composite Gain (or Loss) During Year | \$ | (12.6) | \$ | 12.8 | \$ | 4.5 | \$ | (7.8) |

## Oregon Public Employees Retirement System

## Solvency Test

Tier 1/Tier 2 Pension

| Valuation Date | Active Member Contributions <br> (1) |  |  | crued Lia |  |  | Valuation Assets | Portion of Actuarial Accrued Liabilities Covered by Assets |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | tired ers and iciaries (2) | Other Members(3) |  |  |  |  |  |
| 12/31/2010 | \$ | 8,407.9 | \$ | 34,000.0 | \$ | 16,154.0 | \$ 50,924.5 | 100\% | 100\% | 53\% |
| 12/31/2011 ${ }^{1}$ | \$ | 7,779.7 | \$ | 37,001.1 | \$ | 15,431.2 | \$ 49,327.7 | 100\% | 100\% | 29\% |
| 12/31/2012 ${ }^{2}$ | \$ | 7,704.9 | \$ | 36,377.3 | \$ | 14,527.4 | \$ 53,594.0 | 100\% | 100\% | 65\% |
| 12/31/2013 ${ }^{1}$ | \$ | 7,120.1 | \$ | 39,116.2 | \$ | 14,114.1 | \$ 58,384.0 | 100\% | 100\% | 86\% |
| 12/31/2014 ${ }^{3}$ | \$ | 6,950.4 | \$ | 46,113.5 | \$ | 17,331.0 | \$ 59,370.6 | 100\% | 100\% | 36\% |
| 12/31/2015 ${ }^{1}$ | \$ | 6,476.8 | \$ | 48,641.5 | \$ | 17,335.7 | \$ 57,611.0 | 100\% | 100\% | 14\% |

${ }^{1}$ Reflects the transfer in assets and liabilities for new employers that joined the SLGRP effective January 1 following the valuation date.
${ }^{2}$ The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861 , as well as a change in cost method to Entry Age Normal.
${ }^{3}$ The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in Moro v. State of Oregon, which overturned portions of Senate Bills 822 and 861 .

OPSRP Pension

| Actuarial Accrued Liability |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Valuation Date | Active Member Contributions <br> (1) |  | Retired Members and Beneficiaries(2) |  | Other Members <br> (3) |  | Valuation Assets |  | Portion of Actuarial Accrued Liabilities Covered by Assets |  |  |
|  |  |  | (1) | (2) |  |  | (3) |
| 12/31/2010 | \$ | 0.0 |  |  | \$ | 5.7 |  |  | \$ | 762.0 | \$ | 659.0 | 100\% | 100\% | 86\% |
| 12/31/2011 | \$ | 0.0 | \$ | 15.2 | \$ | 971.3 | \$ | 840.5 | 100\% | 100\% | 85\% |
| 12/31/2012 ${ }^{1}$ | \$ | 0.0 | \$ | 28.6 | \$ | 1,766.9 |  | 1,190.0 | 100\% | 100\% | 66\% |
| 12/31/2013 | \$ | 0.0 | \$ | 51.2 | \$ | 2,192.1 |  | 1,630.2 | 100\% | 100\% | 72\% |
| 12/31/2014 ${ }^{2}$ | \$ | 0.0 | \$ | 92.4 | \$ | 2,971.6 |  | 2,024.6 | 100\% | 100\% | 65\% |
| 12/31/2015 | \$ | 0.0 | \$ | 144.6 | \$ | 3,597.9 | \$ | 2,389.1 | 100\% | 100\% | 62\% |

[^15]
## Solvency Test

| Retiree Health Insurance Account (RHIA) |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Valuation Date |  | Active Member Contributions <br> (1) |  | Retired Members and Beneficiaries (2) |  | Other Members <br> (3) |  | Valuation Assets |  | Portion of Actuarial Accrued Liabilities Covered by Assets $\qquad$ <br> (1) <br> (2) <br> (3) |  |  |
| 12/31/2010 |  | \$ | 0.0 | \$ | 415.0 | \$ | 132.1 | \$ | 232.3 | 0\% | 56\% | 0\% |
| 12/31/2011 |  | \$ | 0.0 | \$ | 332.5 | \$ | 128.6 | \$ | 239.6 | 0\% | 72\% | 0\% |
| 12/31/2012 |  | \$ | 0.0 | \$ | 338.3 | \$ | 133.5 | \$ | 291.6 | 0\% | 86\% | 0\% |
| 12/31/2013 |  | \$ | 0.0 | \$ | 348.0 | \$ | 125.6 | \$ | 353.5 | 0\% | 100\% | 4\% |
| 12/31/2014 |  | \$ | 0.0 | \$ | 355.1 | \$ | 113.3 | \$ | 395.9 | 0\% | 100\% | 36\% |
| 12/31/2015 |  | \$ | 0.0 | \$ | 357.7 | \$ | 107.9 | \$ | 419.3 | 0\% | 100\% | 57\% |

${ }^{1}$ The 12/31/2012 valuation reflects a change in cost method to Entry Age Normal.

| Retiree Health Insurance Premium Account (RHIPA) Actuarial Accrued Liability |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Valuation Date |  | Active Member Contributions <br> (1) |  | Retired Members and Beneficiaries (2) |  | Other Members <br> (3) |  | Valuation Assets |  | Portion of Actuarial Accrued Liabilities Covered by Assets |  |  |
| 12/31/2010 |  | \$ | 0.0 | \$ | 11.8 | \$ | 22.2 | \$ | 5.7 | 0\% | 48\% | 0\% |
| 12/31/2011 |  | \$ | 0.0 | \$ | 13.6 | \$ | 20.8 | \$ | 4.5 | 0\% | 33\% | 0\% |
| 12/31/2012 |  | \$ | 0.0 | \$ | 15.1 | \$ | 45.3 | \$ | 4.4 | 0\% | 29\% | 0\% |
| 12/31/2013 |  | \$ | 0.0 | \$ | 16.1 | \$ | 45.1 | \$ | 5.2 | 0\% | 33\% | 0\% |
| 12/31/2014 |  | \$ | 0.0 | \$ | 15.7 | \$ | 54.9 | \$ | 7.2 | 0\% | 46\% | 0\% |
| 12/31/2015 |  | \$ | 0.0 | \$ | 14.9 | \$ | 52.9 | \$ | 11.2 | 0\% | 75\% | 0\% |

[^16]
## Oregon Public Employees Retirement System

Milliman Actuarial Valuation

## Summary of Plan Provisions

## Summary of Plan Provisions

The following section summarizes the plan provisions considered in the actuarial valuation. A more detailed description of plan provisions is available from PERS.

| Membership | All employees of public employers participating in this System who are in qualifying <br> positions become members of the System after completing six months of service except <br> those who are eligible for and have elected to participate in an optional retirement plan. <br> Different benefit provisions of the plan apply based on date of hire. |  |
| :--- | :--- | :--- |
|  | Tier 1 | Hired prior to 1996 |

## Summary of Chapter 238 Provisions - Tier 1/Tier 2 and Judges



| Early <br> Retirement Eligibility | Police and Fire Judges <br> General Service | 50 or 30 years of service |
| :---: | :---: | :---: |
|  |  | Age 6 |
|  |  | e Age 55 or 30 years of service |
| Early Retirement Allowance | Normal retirement allowance, actuarially reduced to early retirement age. However, there is no reduction applied if a member has completed 30 years of service ( 25 years for police \& fire members) or for judges in Plan B. |  |
| Vesting | Contributions made in any part of five calendar years or attainment of age 50 ( 45 for police \& fire) while working in a qualifying position. |  |
| Termination Benefits | Non-Vested Payment of member's account balance. <br> Vested Same as normal (or early) retirement allowance, but commencement is <br> deferred to normal (or early) retirement date. |  |
|  |  |  |
| Optional Forms of Retirement Allowance | The normal form of benefit is a cash refund annuity (joint and two-thirds survivor contingent annuity for a married judge). All optional amounts are adjusted to be actuarially equivalent. <br> Options Available <br> - Life annuity <br> - Cash refund annuity <br> - Life annuity guaranteed 15 years <br> - Joint and $50 \%$ or $100 \%$ survivor contingent annuity, with or without pop-up feature <br> - Partial Lump Sum: Refund of member contribution account balance plus a pension (under any optional form) of employer-paid portion of the Full Formula or Money Match annuity. <br> - Total Lump Sum: Refund of member contribution account plus a matching employer amount. |  |
|  |  |  |
| Preretirement Death Benefit Eligibility | Judges <br> All others | $x$ or more years of service |
|  |  | Death occurring while the member is an employee of a participating employer or within 120 days of termination provided the employee does not withdraw the account balance or retire, or a result of injuries received while in the service of a participating employer. |
| Preretirement Death Benefit | Judges | The spouse shall receive a life pension equal to two-thirds of the service retirement allowance. The beneficiary of an unmarried judge shall receive the member's accumulated contributions with interest. |
|  | All others | The member's account balance plus a matching employer amount. |
| Additional Police \& Fire Death Benefits | Upon the death of a retired police officer or firefighter, the surviving spouse or dependent children under age 18 will receive a monthly benefit based on $25 \%$ of the cash refund retirement allowance due to police and fire service. |  |
| Disability Benefit Eligibility | Duty | Disablement occurring as a direct result of a job-related injury or illness, regardless of length of service. |
|  | Non-Duty | Disablement occurring after ten years of service (six years, if a judge), but prior to normal retirement eligibility. |

Disability The normal retirement allowance calculated based on the service credit that would have Benefits been earned if the member had continued working to age 58 (age 55 for police and fire, age 65 for judge members) payable commencing immediately.
Fire and Police Members' Alternative
In lieu of the above, firefighters and police officers who qualify for duty disability may elect to receive a benefit of $50 \%$ of final average monthly salary at the time of disablement.

## Minimum Monthly Retirement Allowance

Judges
All others $\qquad$
$45 \%$ of final average monthly salary.
$\$ 100$ for a member with at least 15 years of creditable service, actuarially reduced if an optional form of benefit is chosen.

## Reduction of Benefits

Whenever a disabled employee's disability benefit and earned income for any month exceed the monthly salary received at the time of disablement or $\$ 400$, if greater, the disability benefit will be reduced by the excess.
For Tier Two members, the disability benefit may not exceed the member's salary at the time of disablement.


Blended COLA after Moro decision

The Supreme Court decision in Moro requires that members "will be entitled to receive during retirement a blended COLA rate that reflects the different COLA provisions applicable to benefits earned at different times." The Supreme Court did not articulate a specific methodology for determining the blended COLA. For purposes of this valuation, we have determined the blend based on creditable service earned before and after October 2013.
This approach is consistent with OAR 459-005-0510 adopted by the PERS Board in September 2015.

Ad $H \circ$ From time to time, as granted by the Legislature, retired members and beneficiaries have
Adjustments

| Variable Annuity Contributions | Prior to January 1, 2004, a member could elect to have 25,50 or |
| :--- | :--- |
| Program | 75 percent of his or her contributions invested in the variable |
|  | account. |


|  | Benefit | At retirement, a member may elect to receive a variable annuity <br> with the funds accumulated in his or her variable account. <br> Alternatively, a member may elect to have all or a portion of the <br> funds in his or her variable account transferred back to the <br> regular account and receive an annuity from the System as <br> though no variable annuity program existed. <br> The employer-provided benefit, however, is based on the <br> earnings the member would have received in the regular <br> account. |
| :--- | :--- | :--- |
| Interest Credit <br> on Member <br> Accounts | Tier 1 Regular | Actuarially assumed rate of return until the rate guarantee <br> reserve has been fully funded for three consecutive years and <br> the Board elects to credit additional interest. |
| Tier 2 Regular | Amount determined by the Board based on actual investment <br> earnings of the regular account. |  |
| Vetiree | Retiree Eligibility | Actual earnings in variable account. |

(a) Currently receiving a retirement allowance from the System,
(b) Covered for eight years before retirement,
(c) Enrolled in a PERS-sponsored health plan, and
(d) Enrolled in both Medicare Part A and Part B.

A surviving spouse or dependent of a deceased RHIA-eligible retiree is eligible for RHIA benefits if they are enrolled in both Medicare Part A and Part B, and either of the following criteria are met:
(a) Currently receiving a retirement allowance from the System, or
(b) The surviving spouse or dependent was covered under the eligible retiree's PERS-sponsored health insurance at the time of the retiree's death and the deceased retiree retired before May 1, 1991.

|  | Benefit Amount | A monthly contribution of up to $\$ 60$ per retiree is applied to PERS-sponsored Medicare supplemental insurance costs. |  |
| :---: | :---: | :---: | :---: |
| Retiree <br> Healthcare Under Age 65 | Retiree Eligibility | Retired PERS members who were state employees at the time of retirement, are enrolled in a PERS-sponsored health plan, and are not eligible for Medicare. |  |
| (RHIPA) | Surviving Spouse or Dependent Eligibility | A surviving spouse or depende retiree is eligible for RHIPA ben Medicare, and either of the follo <br> (a) Currently receiving a retire or <br> (b) The surviving spouse or de eligible retiree's PERS-spo the retiree's death and the after September 29, 1991. | deceased RHIPA-eligible they are not yet eligible for riteria are met: allowance from the System, <br> ent was covered under the d health plan at the time of sed retiree retired on or |
|  | Benefit | A percentage (as shown in the table below) of the maximum monthly subsidy based on years of service. The maximum monthly subsidy is calculated annually as the average difference between the health insurance premiums paid by active state employees and the premium retirees would pay if they were rated separately from active state employees. <br> The maximum monthly subsidy for 2016 is $\$ 326.94$ per month. |  |
|  |  | Years of Service with State Employer | Subsidized Amount |
|  |  | Under 8 | 0\% |
|  |  | 8-9 | 50\% |
|  |  | 10-14 | 60\% |
|  |  | 15-19 | 70\% |
|  |  | 20-24 | 80\% |
|  |  | 25-29 | 90\% |
|  |  | 30 \& Over | 100\% |
| Changes in Plan Provisions | There were no changes in the Tier $1 /$ Tier 2 benefit provisions reflected since the December 31, 2014 actuarial valuation. |  |  |

## Summary of Chapter 238A Provisions - OPSRP

| Normal <br> Retirement Date | Police \& Fire Age 60 or age 53 with 25 years of retirement credit <br> General Service Age 65 or age 58 with 30 years of retirement credit <br> School Districts Age 65 or age 58 with 30 calendar years of active membership |
| :---: | :---: |
| Normal Retirement Allowance | A single life annuity equal to final average salary times years of retirement credit attributable to service as fire and police times $1.8 \%$ plus final average salary times all other years of retirement credit times $1.5 \%$ |
| Final Average Salary | The greater of: <br> - Average salary earned during the three calendar years in which the member was paid the highest salary, even if one of those years is less than a full calendar year. <br> - Total salary earned over the last 36 months of employment divided by the actual months of service during that 36 month period. <br> Covered salary for this purpose includes base pay, plus overtime up to an average amount, plus bonuses, plus member contributions paid by the employer on a salary reduction basis. Excludes payments of unused vacation or accumulated sick leave at retirement, and member contributions "assumed and paid" by the employer. |
| Early Retirement Eligibility | Police \& Fire Age 50 and 5 years of vesting service <br> General Service Age 55 and 5 years of vesting service |
| Early Retirement Allowance | Normal retirement allowance, actuarially reduced to early retirement age. |
| Vesting | Five years or attainment of normal retirement age. |
| Vested <br> Termination <br> Benefit | Same as normal (or early) retirement allowance, but commencement is deferred to normal (or early) retirement date. |
| Optional Forms of Retirement Benefit | The normal form of benefit is a life annuity. All optional amounts are adjusted to be actuarially equivalent. <br> Options Available <br> - Life annuity <br> - Joint and $50 \%$ or $100 \%$ survivor contingent benefit, with or without pop-up feature <br> - Lump sum if monthly normal retirement benefit is less than $\$ 200$ or if lump sum value is less than $\$ 5,000$. |
| Preretirement Death Benefit Eligibility | Death of a vested member before retirement benefits begin. |
| Preretirement Death Benefit | If member was eligible for early retirement, the actuarial equivalent of $50 \%$ of the early retirement benefit the participant was eligible to receive at date of death. If member was not eligible for early retirement, the actuarial equivalent of $50 \%$ of the early retirement benefit the participant would have been eligible to receive if he terminated employment on his date of death and retired at the earliest possible date. |


| Disability Benefit Eligibility | Duty | Disablement occurring as a direct result of a job-related injury or illness, regardless of length of service. |
| :---: | :---: | :---: |
|  | Non-Duty | Disablement occurring after ten years of service, but prior to normal retirement eligibility. |
| Disability Benefit Amounts | Preretirement <br> Benefit | $45 \%$ of salary during last full month of employment before disability, reduced if the total benefit exceeds $75 \%$ of salary. Benefit is payable monthly until normal retirement age. |
|  | Retirement <br> Benefit | Same formula as Normal Retirement Benefit, except: <br> Final average salary is adjusted to reflect cost-of-living increases from date of disability to normal retirement age, and |
|  |  | Retirement credits continue to accrue from date of disability to normal retirement age. |
| Postretirement Adjustments | All monthly pension and annuity benefits except unit purchases are eligible for postretirement adjustments. As a result of the Senate Bills 822 and 861 and the Oregon Supreme Court decision in Moro v. State of Oregon, automatic postretirement adjustments are based on a blended COLA as described below. |  |
|  | Automatic COLA <br> prior to SB 822 <br> and SB 861 | Benefits were adjusted annually to reflect the increase or decrease in the Consumer Price Index (Portland area - all items) as published by the Bureau of Labor Statistics. |
|  |  | The maximum adjustment to be made for any year was $2 \%$ of the previous year's benefit. Any CPI change in excess of the limit was accumulated for future benefit adjustments which would otherwise be less than the limit. No benefit was decreased below its original amount. |
|  | Automatic <br> Adjustments <br> Provided by <br> Senate Bills 822 <br> and 861 | This legislation, passed in 2013, provided for that benefits would be increased annually based on a marginal rate schedule. The increase is calculated as $1.25 \%$ on the first $\$ 60,000$ of annual benefit and $0.15 \%$ on amounts above $\$ 60,000$ of annual benefit. |
| Changes in Plan Provisions | There were no changes in the OPSRP benefit provisions reflected since the December 31, 2014 actuarial valuation. |  |

Statistical Section

## Oregon Public Employees Retirement System

## Statistical Notes

The statistical section of the Oregon Public Employees Retirement System (PERS or the System) CAFR presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information says about the System's overall financial health. The data presented was extracted from the PERS' information systems.

## Financial Trends

These schedules contain trend information to help the reader understand how the System's financial performance and well being have changed over time. Financial information is presented on an accrual basis.

The Schedules of Revenues by Source, Expenses by Type, and Changes in Fiduciary Net Position are presented on both a fiscal and calendar year basis. The System prepares its financial statements on a fiscal-year basis but has its actuarial valuations performed on a calendar-year basis.

The Schedule of Benefit Expenses by Type provides additional detail of benefit expense for fiscal years reported in the aggregate in the Schedules of Expenses by Type.

The Schedule of Earnings and Crediting at December 31 shows earnings available for crediting net of administrative expenses and the rates approved by the Board for the programs it administers.

## Operating Information

These schedules contain data to help illustrate how the information in the System's financial reports relates to the services the System provides and the activities it performs.

The Schedule of Average OPEB Benefits for Retirement Health Insurance Account and Schedule of Average OPEB Benefits for Retiree Health Insurance Premium Account show the average monthly other postemployment healthcare benefits, and the number of retirees receiving benefits under each plan.

The Schedule of Average Defined Benefit Pension Payments presents average monthly benefits, final average salary, and number of retirees still receiving benefits, by year of retirement.

The Schedule of Benefit Recipients by Benefit Type shows retired members by benefit level, benefit type, and payment option selected.

The Schedule of Retirement System Membership shows demographics of membership over a period of time. The fiscal year schedule shows membership over the last six years. The calendar-year schedule is in five-year increments going back to 1985.

The Schedule of Principal Participating Employers shows the 10 employers with the largest number of current employees, along with aggregate information for the remaining employers with current employees.

The Schedule of Participating Employers lists all employers as of June 30, 2016, to show public employers of the state of Oregon participating in PERS.

## Additions by Source - Retirement Programs <br> For the Last Ten Years Ended June 30:

Defined Benefit Pension Plan

| Fiscal Year | Member Contributions |  | Employer Contributions |  |  | Net Investment and Other Income |  | Total ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Dollars ${ }^{1}$ | Percent of Annual Covered Payroll |  |  |  |  |
| 2007 | \$ | 13,680,980 | \$ | 597,372,229 | 8.70 \% | \$ | 10,589,123,834 | \$ | 11,200,177,043 |
| 2008 |  | 11,937,362 |  | 763,164,823 | 10.30 |  | $(2,804,736,029)$ |  | $(2,029,633,844)$ |
| 2009 |  | 8,452,030 |  | 649,706,891 | 7.88 |  | $(12,903,220,545)$ |  | $(12,245,061,624)$ |
| 2010 |  | 13,600,476 |  | 433,268,434 | 4.88 |  | 7,279,890,664 |  | 7,726,759,574 |
| 2011 |  | 14,024,484 |  | 424,101,414 | 5.30 |  | 10,931,390,952 |  | 11,369,516,850 |
| 2012 |  | 16,534,650 |  | 1,455,729,689 | 9.69 |  | 380,749,755 |  | 1,853,014,094 |
| 2013 |  | 16,985,722 |  | 834,161,587 | 10.26 |  | 6,949,742,064 |  | 7,800,889,373 |
| 2014 |  | 15,319,270 |  | 915,236,878 | 10.54 |  | 9,886,700,639 |  | 10,817,256,787 |
| 2015 |  | 13,785,439 |  | 1,123,256,703 | 12.25 |  | 2,364,479,372 |  | 3,501,521,514 |
| 2016 |  | 14,214,341 |  | 977,332,329 | 10.37 |  | 413,915,853 |  | 1,405,462,523 |

Oregon Public Service Retirement Plan ${ }^{1}$
Individual Account Program

| Fiscal Year | Member Contributions |  | Employer Contributions |  |  | Net Investment and Other Income |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Dollars | Percent of Annual Covered Payroll |  |  |  |  |
| 2007 | \$ | 439,720,328 | \$ | N/A | N/A \% | \$ | 309,126,786 | \$ | 748,847,114 |
| 2008 |  | 465,517,744 |  | N/A | N/A |  | $(54,596,058)$ |  | 410,921,686 |
| 2009 |  | 495,933,952 |  | N/A | N/A |  | $(553,146,972)$ |  | $(57,213,020)$ |
| 2010 |  | 505,922,492 |  | N/A | N/A |  | 393,651,362 |  | 899,573,854 |
| 2011 |  | 513,715,949 |  | N/A | N/A |  | 735,695,057 |  | 1,249,411,006 |
| 2012 |  | 516,174,983 |  | N/A | N/A |  | 71,535,911 |  | 587,710,894 |
| 2013 |  | 510,796,006 |  | N/A | N/A |  | 635,350,054 |  | 1,146,146,060 |
| 2014 |  | 527,303,202 |  | N/A | N/A |  | 977,439,367 |  | 1,504,742,569 |
| 2015 |  | 563,417,649 |  | N/A | N/A |  | 276,949,224 |  | 840,366,873 |
| 2016 |  | 566,450,233 |  | N/A | N/A |  | 76,509,002 |  | 642,959,235 |

## Deferred Compensation Plan

| Fiscal Year | Member Contributions |  | Employer Contributions |  |  | Net Investment and Other Income |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Dollars | Percent of Annual Covered Payroll |  |  |  |  |
| 2007 | \$ | 66,152,631 | \$ | N/A | N/A \% | \$ | 129,511,435 | \$ | 195,664,066 |
| 2008 |  | 70,448,534 |  | N/A | N/A |  | $(74,030,166)$ |  | $(3,581,632)$ |
| 2009 |  | 66,727,977 |  | N/A | N/A |  | $(142,099,959)$ |  | $(75,371,982)$ |
| 2010 |  | 66,708,970 |  | N/A | N/A |  | 84,417,201 |  | 151,126,171 |
| 2011 |  | 73,291,691 |  | N/A | N/A |  | 176,999,516 |  | 250,291,207 |
| 2012 |  | 80,632,698 |  | N/A | N/A |  | 9,841,830 |  | 90,474,528 |
| 2013 |  | 74,248,188 |  | N/A | N/A |  | 135,572,819 |  | 209,821,007 |
| 2014 |  | 92,174,335 |  | N/A | N/A |  | 203,181,598 |  | 295,355,933 |
| 2015 |  | 99,796,739 |  | N/A | N/A |  | 48,617,428 |  | 148,414,167 |
| 2016 |  | 107,286,636 |  | N/A | N/A |  | 3,166,856 |  | 110,453,492 |

${ }^{1}$ Balances restated for fiscal years 2012 due to prior period adjustments.

# Oregon Public Employees Retirement System 

Deductions by Type - Retirement Programs
For the Last Ten Years Ended June 30:

Defined Benefit Pension Plan

| Fiscal <br> Year | Administrative <br> Expenses $^{\mathbf{1}}$ |  |  |  |  |  |
| :---: | :--- | :--- | :--- | ---: | ---: | ---: |
| 2007 | $\$$ | $2,574,588,942$ | $\$$ | $29,214,866$ | $\$$ | Refunds |

Oregon Public Service Retirement Plan
Individual Account Program

| Fiscal <br> Year | Benefits | Administrative <br> Expenses | Refunds | Total |  |  |
| :---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 2007 | $\$$ | $36,379,230$ | $\$$ | $7,291,683$ | $\$$ | N/A |
| 2008 | $55,478,104$ |  | $7,871,419$ | N/A | $43,670,913$ |  |
| 2009 | $49,534,423$ | $8,413,392$ | $\mathrm{~N} / \mathrm{A}$ | $63,349,523$ |  |  |
| 2010 | $72,802,216$ | $7,673,682$ | $\mathrm{~N} / \mathrm{A}$ | $57,947,815$ |  |  |
| 2011 | $133,970,603$ | $6,810,487$ | $\mathrm{~N} / \mathrm{A}$ | $80,475,898$ |  |  |
| 2012 | $224,729,644$ | $7,698,098$ | $\mathrm{~N} / \mathrm{A}$ | $140,781,090$ |  |  |
| 2013 | $241,326,511$ | $7,093,871$ | $\mathrm{~N} / \mathrm{A}$ | $232,427,742$ |  |  |
| 2014 | $330,535,801$ | $6,934,980$ | $\mathrm{~N} / \mathrm{A}$ | $248,420,382$ |  |  |
| 2015 | $319,978,740$ | $7,565,611$ | $\mathrm{~N} / \mathrm{A}$ | $337,470,781$ |  |  |
| 2016 | $364,549,091$ | $8,478,008$ | $\mathrm{~N} / \mathrm{A}$ | $327,544,351$ |  |  |
|  |  |  |  | $373,027,099$ |  |  |

Deferred Compensation Plan

| Fiscal Year |  | nefits | Administrative Expenses |  | Refunds |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2007 | \$ | 49,835,260 | \$ | 606,410 | \$ | N/A | \$ | 50,441,670 |
| 2008 |  | 50,366,273 |  | 800,668 |  | N/A |  | 51,166,941 |
| 2009 |  | 38,858,335 |  | 816,033 |  | N/A |  | 39,674,368 |
| 2010 |  | 45,901,913 |  | 889,647 |  | N/A |  | 46,791,560 |
| 2011 |  | 55,929,452 |  | 1,326,224 |  | N/A |  | 57,255,676 |
| 2012 |  | 61,465,377 |  | 417,776 |  | N/A |  | 61,883,153 |
| 2013 |  | 70,550,942 |  | 874,584 |  | N/A |  | 71,425,526 |
| 2014 |  | 89,652,030 |  | 997,202 |  | N/A |  | 90,649,232 |
| 2015 |  | 84,177,564 |  | 1,018,468 |  | N/A |  | 85,196,032 |
| 2016 |  | 91,351,490 |  | 1,202,786 |  | N/A |  | 92,554,276 |

${ }^{1}$ Balances are restated for fiscal years 2007 to 2009 due to prior period adjustments.

## Changes in Fiduciary Net Position - Retirement Programs <br> For the Last Ten Years Ended June 30:

## Defined Benefit Pension Plan

| Fiscal <br> Year |  |  |  |  | Net Position |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Additions | Deductions | Net Change | Beginning of Year | End of Year |  |
| 2007 | $\$$ | $11,200,177,043$ | $\$ 2,645,026,343$ | $\$$ | $8,555,150,700$ | $\$$ |
| 2008 | $(2,029,633,844)$ | $2,846,027,119$ | $(4,875,660,963)$ |  | $62,346,563,551$ | $\$ 62,901,714,251$ |
| 2009 | $(12,245,061,624)$ | $2,852,963,103$ | $(15,098,024,727)$ | $58,026,053,281$ | $58,026,053,288$ |  |
| 2010 | $7,726,759,574$ | $2,969,773,548$ | $4,756,986,026$ | $42,928,028,561$ | $47,685,014,587$ |  |
| 2011 | $11,369,516,850$ | $3,259,682,742$ | $8,109,834,108$ |  | $47,685,014,587$ | $55,794,848,695$ |
| 2012 | $1,853,014,094$ | $3,362,832,935$ | $(1,509,818,841)$ | $55,794,848,695$ | $54,285,029,854$ |  |
| 2013 | $7,800,889,373$ | $3,607,005,495$ | $4,193,883,878$ | $54,285,029,854$ | $58,478,913,732$ |  |
| 2014 | $10,817,256,787$ | $3,894,677,855$ | $6,922,578,932$ | $58,478,913,732$ | $65,401,492,664$ |  |
| 2015 | $3,501,521,514$ | $3,979,388,084$ | $(477,866,570)$ | $65,401,492,664$ | $64,923,626,094$ |  |
| 2016 | $1,405,462,523$ | $4,247,029,515$ | $(2,841,566,992)$ | $64,923,626,094$ | $62,082,059,102$ |  |

## Oregon Public Service Retirement Plan ${ }^{2}$ <br> Individual Account Program

| Fiscal <br> Year |  |  |  |  | Net Position |  |  |
| :---: | :---: | :---: | :---: | :---: | ---: | :---: | :---: |
|  | Additions | Deductions | Net Change | Beginning of Year | End of Year |  |  |
| 2007 | $\$$ | $748,847,114$ | $\$$ | $43,670,913$ | $\$$ | $705,176,201$ | $\$$ |
| 2008 | $410,921,686$ | $63,349,523$ |  | $347,572,163$ |  | $1,876,521,247$ | $\$ 1,876,697,448$ |
| 2009 | $(57,213,020)$ | $57,947,815$ | $(115,160,835)$ | $2,224,269,611$ | $2,109,108,776$ |  |  |
| 2010 | $899,573,854$ | $80,475,898$ | $819,097,956$ | $2,109,108,776$ | $2,928,206,732$ |  |  |
| 2011 | $1,249,411,006$ | $140,781,090$ | $1,108,629,916$ | $2,928,206,732$ | $4,036,836,648$ |  |  |
| 2012 | $587,710,894$ | $232,427,742$ | $355,283,152$ | $4,036,836,648$ | $4,392,119,800$ |  |  |
| 2013 | $1,146,146,060$ | $248,420,382$ | $897,725,678$ | $4,392,119,800$ | $5,289,845,478$ |  |  |
| 2014 | $1,504,742,569$ | $337,470,781$ | $1,167,271,788$ | $5,289,845,478$ | $6,457,117,266$ |  |  |
| 2015 | $840,366,873$ | $327,544,351$ | $512,822,522$ | $6,457,117,266$ | $6,969,939,788$ |  |  |
| 2016 | $642,959,235$ | $373,027,099$ | $269,932,136$ | $6,969,939,788$ | $7,239,871,924$ |  |  |

## Deferred Compensation Plan

| Fiscal <br> Year |  | Additions | Deductions |  | Net Change |  |  |
| ---: | :---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | Beginning of Year Position | End of Year |  |  |  |  |  |
| 2007 | $\$$ | $195,664,066$ | $\$$ | $50,441,670$ | $\$$ | $145,222,396$ | $\$$ |
| 2008 | $(3,581,632)$ | $51,166,941$ | $(54,748,573)$ | $832,178,641$ | $\$$ | $977,401,037$ |  |
| 2009 | $(75,371,982)$ | $39,674,368$ | $(115,046,350)$ | $977,401,037$ | $922,652,464$ |  |  |
| 2010 | $151,126,171$ | $46,791,560$ | $104,334,611$ | $922,652,464$ | $807,606,114$ |  |  |
| 2011 | $250,291,207$ | $57,255,676$ | $193,035,531$ | $807,606,114$ | $911,940,725$ |  |  |
| 2012 | $90,474,528$ | $61,883,153$ | $28,591,375$ | $911,940,725$ | $1,104,976,256$ |  |  |
| 2013 | $209,821,007$ | $71,425,526$ | $138,395,481$ | $1,104,976,256$ | $1,133,567,631$ |  |  |
| 2014 | $295,355,933$ | $90,649,232$ | $204,706,701$ | $1,133,567,631$ | $1,271,963,112$ |  |  |
| 2015 | $148,414,167$ | $85,196,032$ | $63,218,135$ | $1,271,963,112$ | $1,476,669,813$ |  |  |
| 2016 | $110,453,492$ | $92,554,276$ | $17,899,216$ | $1,476,669,813$ | $1,539,887,948$ |  |  |
|  |  |  |  | $1,539,887,948$ | $1,557,787,164$ |  |  |

${ }^{1}$ Balances are restated for fiscal years 2007 to 2009 and 2012 due to prior period adjustments.

## Oregon Public Employees Retirement System

## Additions by Source - OPEB

For the Last Ten Years Ended June 30:

## Retirement Health Insurance Account

| Emplover Contributions |  |  | Employer Contributions |  |  | Net Investment and Other Income |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fiscal Year | Member <br> Contributions |  |  | Dollars | Percent of Annual Covered Payroll |  |  |  |  |
| 2007 | \$ | N/A | \$ | 41,171,759 | 0.59 \% | \$ | 39,609,224 | \$ | 80,780,983 |
| 2008 |  | N/A |  | 27,783,093 | 0.37 |  | $(10,246,057)$ |  | 17,537,036 |
| 2009 |  | N/A |  | 28,812,705 | 0.37 |  | $(52,278,868)$ |  | $(23,466,163)$ |
| 2010 |  | N/A |  | 22,351,240 | 0.29 |  | 31,145,418 |  | 53,496,658 |
| 2011 |  | N/A |  | 22,176,966 | 0.29 |  | 47,359,659 |  | 69,536,625 |
| 2012 |  | N/A |  | 46,464,958 | 0.54 |  | 3,023,553 |  | 49,488,511 |
| 2013 |  | N/A |  | 47,294,060 | 0.57 |  | 35,636,711 |  | 82,930,771 |
| 2014 |  | N/A |  | 48,253,398 | 0.56 |  | 56,194,217 |  | 104,447,615 |
| 2015 |  | N/A |  | 53,648,437 | 0.59 |  | 15,606,876 |  | 69,255,313 |
| 2016 |  | N/A |  | 44,587,963 | 0.47 |  | 4,246,552 |  | 48,834,515 |

Retiree Health Insurance Premium Account

| Emplover Contributions |  |  | Employer Contributions |  |  | Net Investment and Other Income |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Fiscal Year | Member Contributions |  |  | Dollars | Percent of Annual Covered Payroll |  |  |  |  |
| 2007 | \$ | N/A | \$ | 2,399,843 | 0.13 \% | \$ | 1,301,049 | \$ | 3,700,892 |
| 2008 |  | N/A |  | 1,791,179 | 0.10 |  | $(312,725)$ |  | 1,478,454 |
| 2009 |  | N/A |  | 2,005,173 | 0.10 |  | $(1,578,384)$ |  | 426,789 |
| 2010 |  | N/A |  | 1,496,640 | 0.08 |  | 939,274 |  | 2,435,914 |
| 2011 |  | N/A |  | 1,428,453 | 0.08 |  | 1,135,114 |  | 2,563,567 |
| 2012 |  | N/A |  | 3,378,230 | 0.13 |  | 16,723 |  | 3,394,953 |
| 2013 |  | N/A |  | 3,443,805 | 0.14 |  | 499,279 |  | 3,943,084 |
| 2014 |  | N/A |  | 6,149,608 | 0.24 |  | 739,056 |  | 6,888,664 |
| 2015 |  | N/A |  | 6,887,258 | 0.25 |  | 266,949 |  | 7,154,207 |
| 2016 |  | N/A |  | 10,966,837 | 0.39 |  | 228,057 |  | 11,194,894 |

## Deductions by Type - OPEB

For the Last Ten Years Ended June 30:

## Retirement Health Insurance Account

| Fiscal <br> Year | Benefits | Administrative <br> Expenses | Refunds | Total |  |  |
| :---: | :---: | ---: | ---: | ---: | ---: | :---: |
| 2007 | $\$$ | $26,887,060$ | $\$$ | 876,363 | $\$$ | N/A |
| 2008 |  | $27,624,361$ | 899,601 | N/A | $27,763,423$ |  |
| 2009 | $28,262,580$ | 958,311 | N/A | $28,523,962$ |  |  |
| 2010 | $28,821,539$ | 974,988 | $\mathrm{~N} / \mathrm{A}$ | $29,220,891$ |  |  |
| 2011 | $29,251,771$ | $1,039,603$ | $\mathrm{~N} / \mathrm{A}$ | $29,796,527$ |  |  |
| 2012 | $29,935,920$ | 963,843 | $\mathrm{~N} / \mathrm{A}$ | $30,291,374$ |  |  |
| 2013 | $30,777,470$ | $1,149,475$ | $\mathrm{~N} / \mathrm{A}$ | $30,899,763$ |  |  |
| 2014 | $34,112,567$ | $1,044,937$ | $\mathrm{~N} / \mathrm{A}$ | $31,926,945$ |  |  |
| 2015 | $31,922,820$ | $1,279,427$ | $\mathrm{~N} / \mathrm{A}$ | $35,157,504$ |  |  |
| 2016 | $33,602,540$ | $1,256,017$ | $\mathrm{~N} / \mathrm{A}$ | $33,202,247$ |  |  |
|  |  |  |  |  | $34,858,557$ |  |

## Retiree Health Insurance Premium Account

| Fiscal <br> Year | Benefits | Administrative <br> Expenses | Refunds | Total |  |  |
| :---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 2007 | $\$$ | $2,047,322$ | $\$$ | 119,875 | $\$$ | $\mathrm{~N} / \mathrm{A}$ |
| 2008 |  | $1,906,431$ | 104,880 | $\mathrm{~N} / \mathrm{A}$ |  | $2,167,197$ |
| 2009 | $1,926,236$ | 115,770 | $\mathrm{~N} / \mathrm{A}$ | $2,011,311$ |  |  |
| 2010 | $2,307,058$ | 103,645 | $\mathrm{~N} / \mathrm{A}$ | $2,042,006$ |  |  |
| 2011 | $3,024,382$ | 161,559 | $\mathrm{~N} / \mathrm{A}$ | $2,410,703$ |  |  |
| 2012 | $3,885,769$ | 71,981 | $\mathrm{~N} / \mathrm{A}$ | $3,185,941$ |  |  |
| 2013 | $4,093,736$ | 169,137 | $\mathrm{~N} / \mathrm{A}$ | $3,957,750$ |  |  |
| 2014 | $4,925,743$ | 170,901 | $\mathrm{~N} / \mathrm{A}$ | $4,262,873$ |  |  |
| 2015 | $4,230,808$ | 188,598 | $\mathrm{~N} / \mathrm{A}$ | $5,096,644$ |  |  |
| 2016 | $4,682,975$ | 259,850 | $\mathrm{~N} / \mathrm{A}$ | $4,419,406$ |  |  |
|  |  |  |  | $4,942,825$ |  |  |

# Oregon Public Employees Retirement System 

## Changes in Plan Net Assets - OPEB <br> For the Last Ten Years Ended June 30:

## Retirement Health Insurance Account

| Fiscal <br> Year | Additions |  | Deductions |  | Net Change |  | Net Position |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | nning of Year |  |  |  | End of Year |
| 2007 | \$ | 80,780,983 |  |  | \$ | 27,763,423 | \$ | 53,017,560 | \$ | 195,702,067 | \$ | 248,719,627 |
| 2008 |  | 17,537,036 |  | 28,523,962 |  | (10,986,926) |  | 248,719,627 |  | 237,732,701 |
| 2009 |  | $(23,466,163)$ |  | 29,220,891 |  | (52,687,054) |  | 237,732,701 |  | 185,045,647 |
| 2010 |  | 53,496,658 |  | 29,796,527 |  | 23,700,131 |  | 185,045,647 |  | 208,745,778 |
| 2011 |  | 69,536,625 |  | 30,291,374 |  | 39,245,251 |  | 208,745,778 |  | 247,991,029 |
| 2012 |  | 49,488,511 |  | 30,899,763 |  | 18,588,748 |  | 247,991,029 |  | 266,579,777 |
| 2013 |  | 82,930,771 |  | 31,926,945 |  | 51,003,826 |  | 266,579,777 |  | 317,583,603 |
| 2014 |  | 104,447,615 |  | 35,157,504 |  | 69,290,111 |  | 317,583,603 |  | 386,873,714 |
| 2015 |  | 69,255,313 |  | 33,202,247 |  | 36,053,066 |  | 386,873,714 |  | 422,926,780 |
| 2016 |  | 48,834,515 |  | 34,858,557 |  | 13,975,958 |  | 422,926,780 |  | 436,902,738 |

Retiree Health Insurance Premium Account

| Fiscal <br> Year |  |  |  | Net Position |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
|  | Additions | Deductions | Net Change | Beginning of Year | End of Year |  |
| 2007 | $\$$ | $3,700,892$ | $\$$ | $2,167,197$ | $\$$ | $1,533,695$ |
| 2008 | $1,478,454$ | $2,011,311$ | $(532,857)$ | $6,333,721$ | $\$$ | $7,867,416$ |
| 2009 | 426,789 | $2,042,006$ | $(1,615,217)$ | $7,867,416$ | $7,334,559$ |  |
| 2010 | $2,435,914$ | $2,410,703$ | 25,211 | $7,334,559$ | $5,719,342$ |  |
| 2011 | $2,563,567$ | $3,185,941$ | $(622,374)$ | $5,719,342$ | $5,744,553$ |  |
| 2012 | $3,394,953$ | $3,957,750$ | $(562,797)$ | $5,744,553$ | $5,122,179$ |  |
| 2013 | $3,943,084$ | $4,262,873$ | $(319,789)$ | $5,122,179$ | $4,559,382$ |  |
| 2014 | $6,888,664$ | $5,096,644$ | $1,792,020$ | $4,559,382$ | $4,239,593$ |  |
| 2015 | $7,154,207$ | $4,419,406$ | $2,734,801$ | $4,239,593$ | $6,031,613$ |  |
| 2016 | $11,194,894$ | $4,942,825$ | $6,252,069$ | $6,031,613$ | $8,766,414$ |  |
|  |  |  |  | $8,766,414$ | $15,018,483$ |  |

## Additions by Source - Retirement Programs

For the Last Ten Years Ended December 31 ${ }^{1}$ :

Defined Benefit Pension Plan

| CalendarYear | Member Contributions |  | Employer Contributions |  |  | Net Investment and Other Income |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Percent of Annual Covered Payroll |  |  |  |  |
| 2006 | \$ | 10,751,524 | \$ | 605,587,796 | 8.27 \% | \$ | 7,920,833,371 | \$ | 8,537,172,691 |
| 2007 |  | 16,130,758 |  | 744,532,532 | 10.47 |  | 5,587,420,758 |  | 6,348,084,048 |
| 2008 |  | 7,316,509 |  | 639,128,268 | 7.86 |  | $(16,483,601,895)$ |  | $(15,837,157,118)$ |
| 2009 |  | 11,209,060 |  | 561,305,422 | 6.59 |  | 8,054,309,024 |  | 8,626,823,506 |
| 2010 |  | 14,327,206 |  | 411,590,742 | 4.61 |  | 6,018,828,853 |  | 6,444,746,801 |
| 2011 |  | 15,771,376 |  | 593,451,757 | 6.85 |  | 1,189,044,156 |  | 1,798,267,289 |
| 2012 |  | 14,148,372 |  | 862,934,319 | 10.99 |  | 7,201,022,711 |  | 8,078,105,402 |
| 2013 |  | 18,664,061 |  | 1,496,033,607 | 17.68 |  | 8,595,803,270 |  | 10,110,500,938 |
| 2014 |  | 13,200,528 |  | 937,788,619 | 10.48 |  | 4,342,718,450 |  | 5,293,707,597 |
| 2015 |  | 14,362,049 |  | 1,127,799,421 | 12.25 |  | 1,232,493,098 |  | 2,374,654,568 |

Oregon Public Service Retirement Plan
Individual Account Program

| Calendar Year | Member Contributions |  | Employer Contributions |  |  | Net Investment and Other Income |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Dollars | Percent of Annual Covered Payroll |  |  |  |  |
| 2006 | \$ | 444,988,910 | \$ | N/A | N/A \% | \$ | 212,183,144 | \$ | 657,172,054 |
| 2007 |  | 451,403,761 |  | N/A | N/A |  | 197,649,097 |  | 649,052,858 |
| 2008 |  | 476,238,379 |  | N/A | N/A |  | $(681,055,059)$ |  | $(204,816,680)$ |
| 2009 |  | 504,209,955 |  | N/A | N/A |  | 435,988,065 |  | 940,198,020 |
| 2010 |  | 502,322,036 |  | N/A | N/A |  | 400,883,000 |  | 903,205,036 |
| 2011 |  | 518,199,449 |  | N/A | N/A |  | 96,058,972 |  | 614,258,421 |
| 2012 |  | 499,094,923 |  | N/A | N/A |  | 623,896,684 |  | 1,122,991,607 |
| 2013 |  | 542,566,655 |  | N/A | N/A |  | 814,928,040 |  | 1,357,494,695 |
| 2014 |  | 511,048,423 |  | N/A | N/A |  | 450,087,155 |  | 961,135,578 |
| 2015 |  | 596,936,756 |  | N/A | N/A |  | 140,226,970 |  | 737,163,726 |

Deferred Compensation Plan

|  |  | Employer Contributions |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Calendar <br> Year | Member <br> Contributions | Dollars | Percent of Annual <br> Covered Payroll | Net Investment <br> and Other Income | Total |  |
| 2006 | $\$$ | $63,268,289$ | $\$$ | N/A | N/A $\%$ | $\$$ |
| 2007 | $67,874,937$ | N/A | N/A | $90,212,220$ | $\$$ | $153,480,509$ |
| 2008 | $72,316,124$ | N/A | N/A | $65,816,348$ | $133,691,285$ |  |
| 2009 | $63,087,307$ | N/A | N/A | $(268,310,470)$ | $(195,994,346)$ |  |
| 2010 | $67,994,065$ | N/A | N/A | $147,674,587$ | $210,761,894$ |  |
| 2011 | $75,619,604$ | N/A | N/A | $82,812,783$ | $150,806,848$ |  |
| 2012 | $78,115,678$ | N/A | N/A | $35,406,816$ | $111,026,420$ |  |
| 2013 | $88,901,454$ | N/A | N/A | $105,067,553$ | $183,183,231$ |  |
| 2014 | $92,495,435$ | N/A | N/A | $207,310,080$ | $296,211,534$ |  |
| 2015 | $97,373,493$ | N/A | N/A | $102,188,822$ | $194,684,257$ |  |
|  |  |  | $15,087,160$ | $112,460,653$ |  |  |

[^17]
## Oregon Public Employees Retirement System

## Deductions by Type - Retirement Programs

For the Last Ten Years Ended December 31 ${ }^{\mathbf{1}}$ :

## Defined Benefit Pension Plan

| Calendar <br> Year | Benefits | Administrative <br> Expenses $^{2}$ | Refunds | Total |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2006 | $\$$ | $2,514,479,244$ | $\$$ | $24,438,769$ | $\$$ | $61,059,360$ |
| 2007 | $2,630,279,015$ | $31,358,911$ |  | $38,197,392$ | $2,699,835,37818$ |  |
| 2008 | $2,784,164,757$ | $24,645,591$ | $27,117,003$ | $2,835,927,351$ |  |  |
| 2009 | $2,823,723,754$ | $26,011,412$ | $18,269,906$ | $2,868,005,072$ |  |  |
| 2010 | $3,053,863,566$ | $29,126,521$ | $17,996,148$ | $3,100,986,235$ |  |  |
| 2011 | $3,351,517,947$ | $29,244,166$ | $38,369,101$ | $3,419,131,214$ |  |  |
| 2012 | $3,351,430,408$ | $31,807,897$ | $17,970,250$ | $3,401,208,555$ |  |  |
| 2013 | $3,708,827,767$ | $34,271,919$ | $25,529,913$ | $3,768,629,599$ |  |  |
| 2014 | $3,888,166,333$ | $35,187,183$ | $17,850,587$ | $3,941,204,103$ |  |  |
| 2015 | $4,068,416,728$ | $37,333,754$ | $15,932,985$ | $4,121,683,467$ |  |  |

Oregon Public Service Retirement Plan Individual Account Program

| Calendar <br> Year | Benefits | Administrative <br> Expenses | Refunds | Total |  |
| :---: | ---: | ---: | ---: | ---: | ---: |
| 2006 | $\$$ | $30,051,229$ | $\$$ | $8,061,455$ | $\$$ |
| 2007 | $47,529,077$ | $7,583,898$ | $\mathrm{~N} / \mathrm{A}$ | $\$$ | $38,112,684$ |
| 2008 | $58,765,223$ | $8,183,279$ | $\mathrm{~N} / \mathrm{A}$ |  | $55,112,975$ |
| 2009 | $53,171,640$ | $7,905,631$ | $\mathrm{~N} / \mathrm{A}$ | $66,948,502$ |  |
| 2010 | $95,293,228$ | $7,822,430$ | $\mathrm{~N} / \mathrm{A}$ | $61,077,271$ |  |
| 2011 | $196,350,366$ | $8,363,154$ | $\mathrm{~N} / \mathrm{A}$ | $103,115,658$ |  |
| 2012 | $218,180,975$ | $5,528,973$ | $\mathrm{~N} / \mathrm{A}$ | $204,713,520$ |  |
| 2013 | $301,297,929$ | $7,164,598$ | $\mathrm{~N} / \mathrm{A}$ | $223,709,948$ |  |
| 2014 | $332,722,945$ | $7,315,352$ | $\mathrm{~N} / \mathrm{A}$ | $308,462,527$ |  |
| 2015 | $343,688,428$ | $7,746,075$ | $\mathrm{~N} / \mathrm{A}$ | $340,038,297$ |  |
|  |  |  |  | $351,434,503$ |  |

## Deferred Compensation Plan

| Calendar <br> Year | Benefits | Administrative <br> Expenses | Refunds | Total |  |
| :---: | :---: | ---: | :---: | :---: | :---: |
| 2006 | $\$$ | $40,706,739$ | $\$$ | 684,991 | $\$$ |
| 2007 | $50,697,210$ | 763,382 | $\mathrm{~N} / \mathrm{A}$ | $\$$ | $41,391,730$ |
| 2008 | $47,955,641$ | 795,233 | $\mathrm{~N} / \mathrm{A}$ |  | $51,460,592$ |
| 2009 | $37,366,503$ | 863,699 | $\mathrm{~N} / \mathrm{A}$ | $48,750,874$ |  |
| 2010 | $46,759,679$ | 804,345 | $\mathrm{~N} / \mathrm{A}$ | $38,230,202$ |  |
| 2011 | $60,816,774$ | 963,874 | $\mathrm{~N} / \mathrm{A}$ | $47,564,024$ |  |
| 2012 | $65,498,582$ | 783,755 | $\mathrm{~N} / \mathrm{A}$ | $61,780,648$ |  |
| 2013 | $79,075,903$ | 982,625 | $\mathrm{~N} / \mathrm{A}$ | $66,282,337$ |  |
| 2014 | $92,995,075$ | 998,023 | $\mathrm{~N} / \mathrm{A}$ | $80,058,528$ |  |
| 2015 | $82,398,740$ | $1,050,769$ | $\mathrm{~N} / \mathrm{A}$ | $93,993,098$ |  |
|  |  |  |  | $83,449,509$ |  |

[^18]
## Changes in Fiduciary Net Position - Retirement Programs <br> For the Last Ten Years Ended December 31 ${ }^{1,4}$ :

Defined Benefit Pension Plan ${ }^{2,5}$

| Calendar Year |  | Additions | Deductions |  | Net Change |  | Net Position |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Beginning of Year |  | End of Year |
| 2006 | \$ |  | 8,537,172,691 | \$ |  |  | 2,599,977,373 | \$ | 5,937,195,318 | \$ | 52,750,575,483 | \$ | 58,687,770,801 |
| 2007 |  | 6,348,084,048 |  | 2,699,835,318 |  | 3,648,248,730 |  | 58,687,770,801 |  | 62,336,019,531 |
| 2008 |  | $(15,837,157,118)$ |  | 2,835,927,351 |  | $(18,673,084,469)$ |  | 62,336,019,531 |  | 43,662,935,062 |
| 2009 |  | 8,626,823,506 |  | 2,868,005,072 |  | 5,758,818,434 |  | 43,662,935,062 |  | 49,421,753,496 |
| 2010 |  | 6,444,746,801 |  | 3,100,986,235 |  | 3,343,760,566 |  | 49,421,753,496 |  | 52,765,514,062 |
| 2011 |  | 1,798,267,289 |  | 3,419,131,214 |  | $(1,620,863,925)$ |  | 52,765,514,062 |  | 51,144,650,137 |
| 2012 |  | 8,078,105,402 |  | 3,401,208,555 |  | 4,676,896,847 |  | 51,144,650,137 |  | 55,821,546,984 |
| 2013 |  | 10,110,500,938 |  | 3,768,629,598 |  | 6,341,871,340 |  | 55,821,546,984 |  | 62,163,418,324 |
| 2014 |  | 5,293,707,597 |  | 3,941,204,103 |  | 1,352,503,494 |  | 62,163,400,642 |  | 63,515,904,136 |
| 2015 |  | 2,374,654,568 |  | 4,116,424,013 |  | $(1,741,769,445)$ |  | 63,515,904,136 |  | 61,774,134,691 |

Oregon Public Service Retirement Plan ${ }^{3}$
Individual Account Program

| Calendar Year | Additions | Deductions |  | Net Change |  | Net Position |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | ginning of Year |  | End of Year |
| 2006 \$ | 657,172,054 | \$ | 38,112,684 |  |  | \$ | 619,059,370 | \$ | 935,410,609 | \$ | 1,554,469,979 |
| 2007 | 649,052,858 |  | 55,112,975 |  | 593,939,883 |  | 1,554,469,979 |  | 2,148,409,862 |
| 2008 | $(204,816,680)$ |  | 66,948,502 |  | $(271,765,182)$ |  | 2,148,409,862 |  | 1,876,644,680 |
| 2009 | 940,198,020 |  | 61,077,271 |  | 879,120,749 |  | 1,876,644,680 |  | 2,755,765,429 |
| 2010 | 903,205,036 |  | 103,115,658 |  | 800,089,378 |  | 2,755,765,429 |  | 3,555,854,807 |
| 2011 | 614,258,421 |  | 204,713,520 |  | 409,544,901 |  | 3,555,854,807 |  | 3,965,399,708 |
| 2012 | 1,122,991,607 |  | 223,709,948 |  | 899,281,659 |  | 3,965,399,708 |  | 4,864,681,367 |
| 2013 | 1,357,494,695 |  | 308,462,527 |  | 1,049,032,168 |  | 4,864,681,367 |  | 5,913,713,535 |
| 2014 | 961,135,579 |  | 340,038,297 |  | 621,097,282 |  | 5,913,713,535 |  | 6,534,810,817 |
| 2015 | 737,163,726 |  | 351,434,503 |  | 385,729,223 |  | 6,534,810,817 |  | 6,920,540,040 |

## Deferred Compensation Plan

| $\begin{aligned} & \text { Calendar } \\ & \text { Year } \\ & \hline \end{aligned}$ |  | Additions | Deductions |  | Net Change |  | Net Position |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | ginning of Yea |  | End of Year |
| 2006 | \$ | 153,480,509 | \$ | 41,391,730 |  |  | \$ | 112,088,779 | \$ | 794,596,532 | \$ | 906,685,311 |
| 2007 |  | 133,691,285 |  | 51,460,592 |  | 82,230,693 |  | 906,685,311 |  | 988,916,004 |
| 2008 |  | (195,994,346) |  | 48,750,874 |  | $(244,745,220)$ |  | 988,916,004 |  | 744,170,784 |
| 2009 |  | 210,761,894 |  | 38,230,202 |  | 172,531,692 |  | 744,170,784 |  | 916,702,476 |
| 2010 |  | 150,806,848 |  | 47,564,024 |  | 103,242,824 |  | 916,702,476 |  | 1,019,945,300 |
| 2011 |  | 111,026,420 |  | 61,780,648 |  | 49,245,772 |  | 1,019,945,300 |  | 1,069,191,072 |
| 2012 |  | 183,183,231 |  | 66,282,337 |  | 116,900,894 |  | 1,069,191,072 |  | 1,186,091,966 |
| 2013 |  | 296,211,534 |  | 80,058,528 |  | 216,153,006 |  | 1,186,091,967 |  | 1,402,244,973 |
| 2014 |  | 194,684,257 |  | 93,993,098 |  | 100,691,159 |  | 1,402,244,973 |  | 1,502,936,132 |
| 2015 |  | 112,460,653 |  | 83,449,509 |  | 29,011,144 |  | 1,502,936,132 |  | 1,531,947,276 |

[^19]Oregon Public Employees Retirement System

## Additions by Source - OPEB

## For the Last Ten Years Ended December 31 ${ }^{1}$ :

## Retirement Health Insurance Account

|  |  | Employer Contributions |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Calendar <br> Year | Member <br> Contributions | Dollars | Percent of Annual <br> Covered Payroll | Net Investment <br> and Other Income | Total |  |
| 2006 | $\$$ | N/A | $\$$ | $39,481,902$ | $0.54 \%$ | $\$$ |
| $28,532,583$ | $\$$ | $68,014,485$ |  |  |  |  |
| 2007 | N/A | $35,457,965$ | 0.45 | $22,089,579$ | $57,547,544$ |  |
| 2008 | N/A | $28,043,517$ | 0.34 | $(66,077,417)$ | $(38,033,900)$ |  |
| 2009 | N/A | $25,863,178$ | 0.31 | $33,958,964$ | $59,822,142$ |  |
| 2010 | N/A | $22,156,216$ | 0.25 | $26,075,309$ | $48,231,525$ |  |
| 2011 | N/A | $32,610,644$ | 0.38 | $5,474,204$ | $38,084,848$ |  |
| 2012 | N/A | $48,118,569$ | 0.59 | $35,088,054$ | $83,206,623$ |  |
| 2013 | N/A | $47,729,940$ | 0.56 | $46,420,994$ | $94,150,934$ |  |
| 2014 | N/A | $49,466,294$ | 0.55 | $25,754,870$ | $75,221,164$ |  |
| 2015 | N/A | $48,846,297$ | 0.59 |  | $7,995,269$ | $56,841,566$ |

## Retiree Health Insurance Premium Account

|  |  | Employer Contributions |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Calendar <br> Year | Member <br> Contributions | Dollars | Percent of Annual <br> Covered Payroll | Net Investment <br> and Other Income | Total |  |
| 2006 | $\$$ | N/A | $\$$ | $2,284,194$ | 0.14 | $\$$ |
| 920,910 | $\$$ | $3,205,104$ |  |  |  |  |
| 2007 | N/A | $2,148,731$ | 0.03 | 688,777 | $2,837,508$ |  |
| 2008 | N/A | $1,867,402$ | 0.08 | $(2,004,488)$ | $(137,086)$ |  |
| 2009 | N/A | $1,796,343$ | 0.08 | $1,016,811$ | $2,813,154$ |  |
| 2010 | N/A | $1,458,105$ | 0.06 | 659,794 | $2,117,899$ |  |
| 2011 | N/A | $2,347,710$ | 0.10 | 158,742 | $2,506,452$ |  |
| 2012 | N/A | $3,450,509$ | 0.15 | 557,438 | $4,007,947$ |  |
| 2013 | N/A | $4,708,305$ | 0.19 | 588,465 | $5,296,770$ |  |
| 2014 | N/A | $6,378,015$ | 0.24 | 361,915 | $6,739,930$ |  |
| 2015 | N/A | $8,747,711$ | 0.25 | 131,852 | $8,879,563$ |  |

[^20]
## Deductions by Type - OPEB

## For the Last Ten Years Ended December 31 ${ }^{1}$ :

## Retirement Health Insurance Account

| Calendar Year | Benefits | Administrative Expenses |  | Refunds |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2006 | \$ 26,552,598 | \$ | 978,785 | \$ | N/A | \$ | 27,531,383 |
| 2007 | 27,244,840 |  | 888,308 |  | N/A |  | 28,133,148 |
| 2008 | 27,976,500 |  | 918,244 |  | N/A |  | 28,894,744 |
| 2009 | 28,537,920 |  | 974,580 |  | N/A |  | 29,512,500 |
| 2010 | 29,066,220 |  | 973,329 |  | N/A |  | 30,039,549 |
| 2011 | 29,524,122 |  | 1,283,144 |  | N/A |  | 30,807,266 |
| 2012 | 30,375,640 |  | 837,282 |  | N/A |  | 31,212,922 |
| 2013 | 31,132,920 |  | 1,095,853 |  | N/A |  | 32,228,773 |
| 2014 | 31,636,379 |  | 1,167,459 |  | N/A |  | 32,803,838 |
| 2015 | 32,273,928 |  | 1,223,215 |  | N/A |  | 33,497,143 |

## Retiree Health Insurance Premium Account

| Calendar Year |  | Benefits | Administrative Expenses |  | Refunds |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2006 | \$ | 2,158,432 | \$ | 140,794 | \$ | N/A | \$ | 2,299,226 |
| 2007 |  | 1,923,159 |  | 111,240 |  | N/A |  | 2,034,399 |
| 2008 |  | 1,902,292 |  | 101,664 |  | N/A |  | 2,003,956 |
| 2009 |  | 2,020,198 |  | 113,096 |  | N/A |  | 2,133,294 |
| 2010 |  | 2,664,123 |  | 106,791 |  | N/A |  | 2,770,914 |
| 2011 |  | 3,547,400 |  | 124,769 |  | N/A |  | 3,672,169 |
| 2012 |  | 3,968,267 |  | 134,246 |  | N/A |  | 4,102,513 |
| 2013 |  | 4,323,159 |  | 172,485 |  | N/A |  | 4,495,644 |
| 2014 |  | 4,615,612 |  | 180,524 |  | N/A |  | 4,796,136 |
| 2015 |  | 4,680,196 |  | 214,500 |  | N/A |  | 4,894,696 |

[^21]
## Oregon Public Employees Retirement System

## Change in Fiduciary Net Position - OPEB

## For the Last Ten Years Ended December 31 ${ }^{1}$ :

## Retirement Health Insurance Account

| Calendar <br> Year | Additions | Deductions | Net Change | Net Position |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | ---: |
| 2006 | $\$$ | $68,014,485$ | $\$$ | $27,531,383$ | $\$$ | $40,483,102$ |
| Beginning of Year | End of Year |  |  |  |  |  |
| 2007 | $57,547,544$ | $28,133,148$ | $29,414,396$ | $180,862,460$ | $\$$ | $221,345,562$ |
| 2008 | $(38,033,900)$ | $28,894,744$ | $(66,928,644)$ | $250,759,562$ | $250,759,958$ | $183,831,314$ |
| 2009 | $59,822,142$ | $29,512,500$ | $30,309,642$ | $183,831,314$ | $214,140,956$ |  |
| 2010 | $48,231,525$ | $30,039,549$ | $18,191,976$ | $214,140,956$ | $232,332,932$ |  |
| 2011 | $38,084,848$ | $30,807,266$ | $7,277,582$ | $232,332,932$ | $239,610,514$ |  |
| 2012 | $83,206,623$ | $31,212,922$ | $51,993,701$ | $239,610,514$ | $291,604,215$ |  |
| 2013 | $94,150,934$ | $32,228,773$ | $61,922,161$ | $291,604,215$ | $353,526,376$ |  |
| 2014 | $75,221,164$ | $32,803,838$ | $42,417,326$ | $353,526,376$ | $395,943,702$ |  |
| 2015 | $56,841,566$ | $33,497,143$ | $23,344,423$ | $395,943,702$ | $419,288,125$ |  |

## Retiree Health Insurance Premium Account

| CalendarYear | Additions |  | Deductions |  | Net Change |  | Net Position |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Beginning of Year | End of Year |  |  |
| 2006 | \$ | 3,205,104 |  |  | \$ | 2,299,226 | \$ | 905,878 | \$ | 6,110,328 | \$ | 7,016,206 |
| 2007 |  | 2,837,508 |  | 2,034,399 |  | 803,109 |  | 7,016,206 |  | 7,819,315 |
| 2008 |  | $(137,086)$ |  | 2,003,956 |  | $(2,141,042)$ |  | 7,819,315 |  | 5,678,273 |
| 2009 |  | 2,813,154 |  | 2,133,294 |  | 679,860 |  | 5,678,273 |  | 6,358,133 |
| 2010 |  | 2,117,899 |  | 2,770,914 |  | $(653,015)$ |  | 6,358,133 |  | 5,705,118 |
| 2011 |  | 2,506,452 |  | 3,672,169 |  | $(1,165,717)$ |  | 5,705,118 |  | 4,539,401 |
| 2012 |  | 4,007,946 |  | 4,102,513 |  | $(94,567)$ |  | 4,539,401 |  | 4,444,834 |
| 2013 |  | 5,296,770 |  | 4,495,644 |  | 801,126 |  | 4,444,834 |  | 5,245,960 |
| 2014 |  | 6,739,930 |  | 4,796,136 |  | 1,943,794 |  | 5,245,960 |  | 7,189,754 |
| 2015 |  | 8,879,563 |  | 4,894,696 |  | 3,984,867 |  | 7,189,754 |  | 11,174,621 |

[^22]
## Schedule of Benefit Expenses By Type -

Defined Benefit Pension Plan
For the Years Ended June 30:

| Fiscal <br> Year | Service <br> Benefits |  | Disability Benefits |  |  |  | Retirement Benefit Totals | Death <br> Benefits |  | Refunds ${ }^{1}$ |  |  |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Duty |  | Non-Duty |  |  |  |  | Normal |  | Death |  |  |
| 2006 | \$ | 2,264,988,154 | \$ | 11,371,883 | \$ | 89,310,558 | \$ 2,365,670,595 | \$ | 5,957,975 | \$ | 33,172,837 | \$ | N/A | \$ | 2,404,801,407 |
| 2007 |  | 2,462,885,953 |  | 12,113,128 |  | 93,493,033 | 2,568,492,114 |  | 6,096,828 |  | 41,222,535 |  | N/A |  | 2,615,811,477 |
| 2008 |  | 2,646,746,186 |  | 13,363,139 |  | 96,763,796 | 2,756,873,121 |  | 11,432,179 |  | 50,660,781 |  | N/A |  | 2,818,966,081 |
| 2009 |  | 2,672,728,881 |  | 14,270,486 |  | 100,050,006 | 2,787,049,373 |  | 3,169,091 |  | 36,548,963 |  | N/A |  | 2,826,767,427 |
| 2010 |  | 2,795,098,921 |  | 15,188,097 |  | 101,866,823 | 2,912,153,841 |  | 3,414,960 |  | 25,692,404 |  | N/A |  | 2,941,261,205 |
| 2011 |  | 3,074,390,373 |  | 15,967,087 |  | 105,974,442 | 3,196,331,902 |  | 7,606,867 |  | 17,203,318 |  | 9,283,908 |  | 3,230,425,995 |
| 2012 |  | 3,166,918,154 |  | 16,449,589 |  | 108,423,907 | 3,291,791,650 |  | 3,918,168 |  | 27,966,120 |  | 6,054,330 |  | 3,329,730,268 |
| 2013 |  | 3,422,618,167 |  | 17,242,718 |  | 111,616,337 | 3,551,477,222 |  | 4,582,777 |  | 10,074,038 |  | 7,365,530 |  | 3,573,499,567 |
| 2014 |  | 3,701,010,685 |  | 17,739,646 |  | 113,317,283 | 3,832,067,614 |  | 5,802,797 |  | 13,614,833 |  | 11,945,261 |  | 3,863,430,505 |
| 2015 |  | 3,790,050,384 |  | 17,943,338 |  | 113,129,130 | 3,921,122,852 |  | 6,044,180 |  | 7,283,720 |  | 9,197,495 |  | 3,943,648,247 |
| 2016 |  | 4,045,951,252 |  | 18,896,881 |  | 118,534,433 | 4,183,382,566 |  | 9,925,146 |  | 6,342,385 |  | 6,812,193 |  | 4,206,462,290 |

${ }^{1}$ Prior to fiscal year 2011 information to present refunds by type was not available and was combined in Normal Refunds.

Schedule of Earnings and Crediting at December 31 ${ }^{1}$ :

| CalendarYear | Tier One Earnings/(Loss) Available for Crediting | Credited |  | Variable Earnings/ (Loss) Credited | Individual Account Program ${ }^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Tier One | Tier Two |  |  |
| 2006 | 15.57 \% | 8.00 \% | 15.45 \% | 15.61 \% | 14.98 \% |
| 2007 | 10.22 | 7.97 | 9.47 | 1.75 | 9.46 |
| 2008 | (27.18) | 8.00 | (27.18) | (43.71) | (26.75) |
| 2009 | 19.12 | 8.00 | 19.12 | 37.57 | 18.47 |
| 2010 | 12.65 | 8.00 | 12.44 | 15.17 | 12.13 |
| 2011 | 2.21 | 8.00 | 2.21 | (7.80) | 2.15 |
| 2012 | 14.53 | 8.00 | 14.68 | 18.43 | 14.09 |
| 2013 | 15.76 | 8.00 | 15.62 | 25.74 | 15.59 |
| 2014 | 7.24 | 7.75 | 7.24 | 4.29 | 7.05 |
| 2015 | 1.87 | 7.75 | 1.87 | (1.61) | 1.85 |

${ }^{1}$ Calendar year-end information is provided because earnings are credited as of December 31.
${ }^{2}$ The Individual Account Program began in 2004 and was remediated in 2006 to reflect annual earnings credited for 200§
${ }^{3}$ Earnings rate includes allocation from settlement of Murray v. PERB litigation.
${ }^{4}$ Earnings rate includes allocation from settlement of White, et al. v. PERB litigation.

## Schedule of Average OPEB Benefits for Retirement Health Insurance Account ${ }^{1}$ <br> For the Year Ended June 30, 2016:

| Years Credited Service | $8+$ |
| :--- | ---: |
| Average Monthly Benefit | $\$ 60.00$ |
| Final Average Salary | N/A |
| Number of Active Retirees | 45,060 |

## Schedule of Average OPEB Benefits for Retiree Health Insurance Premium Account ${ }^{1}$ For the Year Ended June 30, 2016:

|  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | Years Credited Service |  |  |  |  |  |  |  |  |  |  |
|  | $8-9$ | $10-14$ | $15-19$ | $20-24$ | $25-29$ | $30+$ | Total |  |  |  |  |
|  | $\$ 163$ | $\$$ | 196 | $\$$ | 229 | $\$$ | 262 | $\$$ | 294 | $\$$ | 327 |
| Average Monthly Benefit | $\$$ | 163 | 300 |  |  |  |  |  |  |  |  |
| Final Average Salary | N/A | N/A | N/A | N/A | N/A | N/A | N/A |  |  |  |  |
| Number of Active Retirees |  | 4 | 41 | 97 | 142 | 276 | 678 | 1,238 |  |  |  |

[^23]
## Oregon Public Employees Retirement System

## Schedule of Average Defined Benefit Pension Payments

| Retirement Effective Dates July 1, 2006 to June 30, 2016 | Years Credited Service |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-5 | 6-10 | 11-15 | 16-20 | 21-25 | 26-30 | 31+ | Total |
| 2007 Average Monthly Benefit | \$795 | \$929 | \$1,335 | \$1,982 | \$2,847 | \$4,318 | \$4,811 | \$2,606 |
| Final Average Salary | \$3,240 | \$3,413 | \$3,716 | \$4,278 | \$4,657 | \$5,161 | \$5,433 | \$4,389 |
| Number of Active Retirees | 227 | 573 | 620 | 729 | 598 | 1,002 | 343 | 4,092 |
| 2008 Average Monthly Benefit | \$750 | \$934 | \$1,386 | \$1,814 | \$2,671 | \$4,238 | \$5,030 | \$2,638 |
| Final Average Salary | \$2,951 | \$3,281 | \$3,857 | \$4,222 | \$4,505 | \$5,175 | \$5,618 | \$4,413 |
| Number of Active Retirees | 206 | 552 | 647 | 835 | 656 | 1,122 | 423 | 4,441 |
| 2009 Average Monthly Benefit | \$771 | \$973 | \$1,322 | \$1,884 | \$2,659 | \$4,125 | \$5,202 | \$2,658 |
| Final Average Salary | \$3,416 | \$3,458 | \$3,830 | \$4,368 | \$4,747 | \$5,274 | \$5,756 | \$4,559 |
| Number of Active Retirees | 216 | 574 | 623 | 761 | 694 | 1,018 | 511 | 4,397 |
| 2010 Average Monthly Benefit | \$681 | \$1,019 | \$1,281 | \$1,887 | \$2,607 | \$4,091 | \$5,138 | \$2,619 |
| Final Average Salary | \$3,333 | \$3,696 | \$3,905 | \$4,512 | \$5,000 | \$5,448 | \$5,817 | \$4,717 |
| Number of Active Retirees | 236 | 635 | 696 | 914 | 882 | 1,143 | 556 | 5,062 |
| 2011 Average Monthly Benefit | \$652 | \$975 | \$1,355 | \$1,827 | \$2,568 | \$3,915 | \$5,354 | \$2,584 |
| Final Average Salary | \$3,386 | \$3,669 | \$4,101 | \$4,630 | \$5,189 | \$5,790 | \$6,188 | \$4,898 |
| Number of Active Retirees | 292 | 773 | 951 | 1,075 | 1,130 | 1,245 | 776 | 6,242 |
| 2012 Average Monthly Benefit | \$633 | \$992 | \$1,378 | \$1,800 | \$2,502 | \$3,748 | \$5,166 | \$2,495 |
| Final Average Salary | \$3,503 | \$3,901 | \$4,368 | \$4,878 | \$5,675 | \$6,274 | \$6,988 | \$5,275 |
| Number of Active Retirees | 325 | 893 | 1,033 | 1,056 | 1,240 | 1,209 | 865 | 6,621 |
| 2013 Average Monthly Benefit | \$697 | \$1,030 | \$1,419 | \$1,871 | \$2,489 | \$3,748 | \$5,323 | \$2,505 |
| Final Average Salary | \$3,537 | \$3,820 | \$4,413 | \$5,034 | \$5,923 | \$6,647 | \$6,985 | \$5,378 |
| Number of Active Retirees | 378 | 961 | 1,119 | 1,122 | 1,347 | 1,153 | 928 | 7,008 |
| 2014 Average Monthly Benefit | \$737 | \$1,029 | \$1,352 | \$1,738 | \$2,416 | \$3,490 | \$5,089 | \$2,369 |
| Final Average Salary | \$3,575 | \$3,634 | \$4,340 | \$5,021 | \$5,894 | \$6,397 | \$6,980 | \$5,287 |
| Number of Active Retirees | 399 | 1,039 | 1,153 | 1,233 | 1,449 | 1,237 | 934 | 7,444 |
| 2015 Average Monthly Benefit | \$621 | \$790 | \$1,208 | \$1,705 | \$2,270 | \$3,364 | \$5,004 | \$2,178 |
| Final Average Salary | \$3,852 | \$3,804 | \$4,491 | \$5,177 | \$5,788 | \$6,546 | \$7,365 | \$5,379 |
| Number of Active Retirees | 312 | 849 | 1,039 | 1,105 | 1,153 | 1,094 | 635 | 6,187 |
| 2016 Average Monthly Benefit | \$695 | \$842 | \$1,207 | \$1,700 | \$2,261 | \$3,328 | \$5,034 | \$2,282 |
| Final Average Salary | \$3,600 | \$3,863 | \$4,516 | \$5,294 | \$5,859 | \$6,782 | \$7,417 | \$5,543 |
| Number of Active Retirees | 324 | 840 | 989 | 1,112 | 1,208 | 1,254 | 781 | 6,508 |

## Schedule of Benefit Recipients by Benefit Type

For the Year Ended June 30, 2016

|  | Monthly Benefit | Number of | Type of Retirement * |  |  |  |  | Refund | Annuity Options ** |  |  |  | Lump-Sum Options ** |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Amount | Retirees | 1 | 2 | 3 | 4 | 5 | Annuity | 1 | 2 | 3 | 4 | 1 | 2 | 3 |
| \$ | 1-500 | 18,232 | 14,537 | 88 | 152 | 3,023 | 432 | 1,767 | 5,281 | 4,534 | 1,103 | 787 | 2,504 | 1,819 | 437 |
|  | 501-1000 | 20,005 | 16,407 | 120 | 626 | 2,225 | 627 | 2,325 | 6,549 | 5,915 | 1,902 | 976 | 1,121 | 958 | 259 |
|  | 1001-1500 | 16,921 | 14,097 | 85 | 659 | 1,593 | 487 | 1,771 | 5,270 | 5,543 | 1,807 | 766 | 774 | 768 | 222 |
|  | 1501-2000 | 14,145 | 11,864 | 77 | 607 | 1,201 | 396 | 1,484 | 4,038 | 4,921 | 1,604 | 595 | 633 | 685 | 185 |
|  | 2001-2500 | 12,115 | 10,425 | 76 | 480 | 856 | 278 | 1,204 | 3,371 | 4,201 | 1,452 | 473 | 539 | 731 | 144 |
|  | 2501-3000 | 10,099 | 8,860 | 56 | 373 | 601 | 209 | 1,031 | 2,775 | 3,614 | 1,218 | 346 | 429 | 561 | 125 |
|  | 3001-3500 | 8,688 | 7,801 | 57 | 220 | 503 | 107 | 846 | 2,378 | 3,222 | 1,205 | 335 | 263 | 351 | 88 |
|  | 3501-4000 | 7,522 | 6,941 | 36 | 159 | 335 | 51 | 703 | 1,977 | 3,110 | 1,073 | 258 | 149 | 200 | 52 |
|  | 4001-4500 | 6,719 | 6,277 | 25 | 113 | 270 | 34 | 521 | 1,781 | 2,875 | 1,047 | 256 | 89 | 109 | 41 |
|  | 4501-5000 | 5,822 | 5,521 | 18 | 59 | 207 | 17 | 452 | 1,461 | 2,648 | 910 | 204 | 41 | 81 | 25 |
|  | 5001-5500 | 4,667 | 4,434 | 13 | 40 | 168 | 12 | 355 | 1,172 | 2,141 | 768 | 141 | 22 | 53 | 15 |
|  | 5501-6000 | 3,367 | 3,199 | 8 | 26 | 123 | 11 | 237 | 876 | 1,494 | 607 | 111 | 15 | 21 | 6 |
|  | $6000+$ | 8,133 | 7,745 | 15 | 42 | 317 | 14 | 440 | 1,649 | 4,002 | 1,694 | 225 | 33 | 73 | 17 |
|  | Totals | 136,435 | 118,108 | 674 | 3,556 | 11,422 | 2,675 | 13,136 | 38,578 | 48,220 | 16,390 | 5,473 | 6,612 | 6,410 | 1,616 |
| * Type of Retirement |  |  |  |  |  |  |  |  | ** Annuity and Lump-Sum Options |  |  |  |  |  |  |
|  | Normal | ity isability ment yee |  |  |  |  |  |  |  | - No ben | it for be ary recei recei crain | iciary same half the | y benef | or life <br> for li |  |

## Schedule of Retirement System Membership

 at December 31:|  | 1985 | 1990 | 1995 | 2000 | 2005 | 2010 | 2015 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| State Agencies | 37,824 | 46,187 | 45,068 | 42,434 | 38,076 | 48,018 | 47,331 |
| School Districts | 47,590 | 48,144 | 55,734 | 63,133 | 56,756 | 79,798 | 66,184 |
| Political Subdivisions | 26,238 | 33,177 | 40,638 | 53,291 | 50,085 | 65,332 | 54,662 |
| Inactive Members | 15,920 | 23,225 | 32,033 | 44,830 | 47,289 | 40,481 | 42,849 |
| Total Non-Retired | 127,572 | 150,733 | 173,470 | 203,688 | 192,206 | 233,629 | 211,026 |
| Retired Members |  |  |  |  |  |  |  |
| and Beneficiaries | 46,181 | 55,540 | 64,796 | 82,355 | 101,213 | 110,573 | 136,298 |
| Total Membership | 173,753 | 206,273 | 238,266 | 286,043 | 293,419 | 344,202 | 347,324 |
| Administrative Expense ${ }^{1}$ | \$2,905,072 | \$8,901,091 | \$13,500,677 | \$24,358,550 | \$40,056,600 | \$38,029,071 | \$47,934,435 |
| Pension Roll (one month) | \$18,083,614 | \$33,175,888 | \$58,457,531 | \$122,467,087 | \$202,633,214 | \$265,490,496 | \$333,044,107 |

${ }^{1}$ Fiduciary Funds only.

## Schedule of Retirement System Membership at June 30:

|  | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| State Agencies | 46,739 | 45,953 | 45,019 | 45,774 | 47,620 | 47,868 |
| School Districts | 75,915 | 67,172 | 63,297 | 64,824 | 66,434 | 68,648 |
| Political Subdivisions | 60,695 | 56,656 | 54,943 | 54,376 | 54,536 | 55,160 |
| Inactive Members | 41,832 | 42,286 | 44,819 | 43,646 | 44,786 | 45,925 |
| Total Non-Retired | 225,181 | 212,067 | 208,078 | 208,620 | 213,376 | 217,601 |
| Retired Members |  |  |  |  |  |  |
| and Beneficiaries | 114,252 | 119,346 | 123,827 | 129,138 | 132,506 | 136,435 |
| Total Membership | 339,433 | 331,413 | 331,905 | 337,758 | 345,882 | $\underline{354,036}$ |
| Administrative Expense ${ }^{1}$ | \$38,594,620 | \$42,254,365 | \$42,792,995 | \$40,395,370 | \$45,791,942 | \$52,775,646 |
| Pension Roll (one month) | \$270,111,478 | \$284,236,712 | \$299,997,147 | \$303,834,899 | \$317,090,746 | \$337,405,252 |

[^24]
## Oregon Public Employees Retirement System

## Schedule of Principal Participating Employers

## Current Fiscal Year and Nine Years Ago

|  | 2016 |  |  | 2007 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number of Current Employees | Rank | Percent of Total System | Number of Current Employees | Rank | Percent of Total System |
| State of Oregon | 47,868 | 1 | 27.88 \% | 42,906 | 1 | 26.08 \% |
| Portland Public Schools | 5,685 | 2 | 3.31 | 5,554 | 3 | 3.38 |
| Salem-Keizer Public Schools | 4,949 | 3 | 2.88 | 4,660 | 4 | 2.83 |
| Multnomah County | 4,918 | 4 | 2.86 | 4,428 | 5 | 2.69 |
| City of Portland | 4,759 | 5 | 2.77 | 4,001 | 7 | 2.43 |
| Oregon Health \& Science University | 4,554 | 6 | 2.65 | 5,781 | 2 | 3.51 |
| Beaverton School District | 3,905 | 7 | 2.27 | 4,243 | 6 | 2.58 |
| Portland Community College | 2,469 | 8 | 1.44 | 2,309 | 8 | 1.4 |
| Hillsboro School District 1J | 2,370 | 9 | 1.38 | 2,059 | 10 | 1.25 |
| Clackamas County | 1,950 | 10 | 1.14 | - |  | - |
| Eugene School District 4J | - |  | - | 2,136 | 9 | 1.3 |
| All Others* | 88,249 |  | 51.40 | 86,471 |  | 52.55 |
| Total | 171,676 |  | 100.00 \% | 164,548 |  | 100.00 \% |

* "All Others" consisted of:

| Counties | 10,864 |
| :--- | ---: |
| Municipalities | 12,469 |
| School Districts | 50,991 |
| Community Colleges | 5,690 |
| Other Political Subdivisions | 8,235 |
|  | 88,249 |


| $6.33 \%$ | 13,369 | $8.12 \%$ |
| :---: | ---: | ---: |
| 7.26 | 12,350 | 7.51 |
| 29.70 | 47,262 | 28.72 |
| 3.31 | 6,250 | 3.80 |
| 4.80 | 7,240 | 4.40 |
| $\%$ | 86,471 |  |
|  |  |  |

## Schedule of Participating Employers (906)

## State (107)

Appraiser Certification and Licensure Board

Board of Accountancy
Board of Architect Examiners
Board of Chiropractic Examiners
Board of Examiners for Engineering and Land Surveying
Board of Geologists Examiners
Board of Optometry
Board of Parole and Post-Prison Supervision
Board of Pharmacy
Board of Psychologist Examiners
Bureau of Labor and Industries
Commission on Indian Services
Commission on Judicial Fitness and Disability
Construction Contractors Board
Department of Administrative Services
Department of Agriculture
Department of Aviation
Department of Consumer and Business Services
Department of Corrections
Department of Education
Department of Energy
Department of Environmental Quality
Department of Human Services
Department of Justice
Department of Land Conservation and Development
Department of Revenue
Department of State Lands
Department of State Police
Department of Transportation
Department of Veterans' Affairs
Department Of Education Coordinating Commission
District Attorneys Department
Eastern Oregon University
Employment Department
Employment Relations Board
Forestry Department
Geology and Mineral Industries
Health Related Licensing Boards
Judicial Department
Land Use Board of Appeals
Landscape Contractors Board
Legislative Administration Board (Committee)
Legislative Assembly
Legislative Committees
Legislative Fiscal Office
Long Term Care Ombudsman
Military Department

Office of Legislative Counsel
Office of the Governor
Office of the State Treasurer
Oregon Advocacy Commission Office
Oregon Beef Council
Oregon Board of Dentistry
Oregon Board of Licensed Professional
Counselors and Therapists
Oregon Board of Massage Therapists
Oregon Board of Medical Examiners
Oregon Business Development Department
Oregon Commission for the Blind
Oregon Corrections Enterprises
Oregon Criminal Justice Commission
Oregon Dairy Products Commission
Oregon Department of Fish and Wildlife
Oregon Dungeness Crab Commission
Oregon Education Investment Board
Oregon Film and Video
Oregon Forest Resources Institute
Oregon Government Ethics Commission
Oregon Health Authority
Oregon Hop Commission
Oregon Housing and Community Services
Oregon Institute of Technology
Oregon Liquor Control Commission
Oregon Parks and Recreation Department
Oregon Patient Safety Commission
Oregon Potato Commission
Oregon Racing Commission
Oregon Salmon Commission
Oregon State Bar
Oregon State Bar Professional Liability Fund
Oregon State Board of Nursing
Oregon State Library
Oregon State University
Oregon Tourism Commission
Oregon Trawl Commission
Oregon Watershed Enhancement Board
Oregon Wheat Commission
Oregon Youth Authority
Physical Therapist Licensing Board
Portland State University
Psychiatric Security Review Board
Public Defense Services Commission
Public Employees Retirement System
Public Safety Standards and Training
Public Utility Commission
Real Estate Agency
Secretary of State
Southern Oregon University
State Accident Insurance Fund
State Board of Clinical Social Workers
State Board of Tax Practitioners
State Lottery Commission

State Marine Board
Teacher Standards and Practices Commission
Travel Information Council
University of Oregon
Water Resources Department
Western Oregon University

Political Subdivisions (487)
Adair Village, City of
Albany, City of
Amity Fire District
Amity, City of
Applegate Valley RFPD 9
Arch Cape Service District
Ashland Parks Commission
Ashland, City of
Astoria, City of
Athena, City of
Aumsville RFPD
Aumsville, City of
Aurora RFPD
Aurora, City of
Baker County
Baker County Library District
Baker Valley Irrigation District
Baker, City of
Bandon, City of
Banks Fire District 13
Banks, City of
Bay City, City of
Beaverton, City of
Bend Metropolitan Park and Recreation District
Bend, City of
Benton County
Black Butte Ranch RFPD
Black Butte Ranch Service District
Boardman RFPD
Boardman, City of
Brookings, City of
Brownsville RFPD
Burns, City of
Burnt River Irrigation District
Butte Falls, Town of
Canby FPD 62
Canby Utility Board
Canby, City of
Cannon Beach RFPD
Cannon Beach, City of
Canyon City, Town of
Canyonville, City of
Carlton, City of
Cascade Locks, City of
Cave Junction, City of
Central Oregon Coast Fire and Rescue District

## Oregon Public Employees Retirement System

Central Oregon Intergovernmental Council
Central Oregon Irrigation District
Central Oregon Regional Housing Authority
Central Point, City of
Charleston RFPD
Chetco Community Public Library Board
Chiloquin, City of
Chiloquin-Agency Lake RFPD
City County Insurance Services
City of Forest Grove
Clackamas County
Clackamas County Fair
Clackamas County Fire District 1
Clackamas County Vector Control District
Clackamas River Water
Clackamas River Water Providers
Clatskanie Library District
Clatskanie People's Utility District
Clatskanie RFPD
Clatskanie, City of
Clatsop County
Clean Water Services
Cloverdale RFPD
Coburg RFPD
Coburg, City of
Colton RFPD 70
Columbia City, City of
Columbia County
Columbia County 911 Communications District
Columbia Drainage Vector Control District
Columbia River Fire and Rescue
Columbia River PUD
Community Services Consortium
Condon, City of
Coos Bay, City of
Coos County
Coos County Airport District
Coquille, City of
Corbett Water District
Cornelius, City of
Corvallis, City of
Cottage Grove, City of
Crescent RFPD
Creswell, City of
Crook County
Crook County RFPD 1
Crooked River Ranch RFPD
Crystal Springs Water District
Culver, City of
Curry County
Curry Public Library District
Dallas, City of
Dayton, City of

Depoe Bay RFPD
Depoe Bay, City of
Deschutes County
Deschutes County RFPD 2
Deschutes Public Library District
Deschutes Valley Water District
Dexter RFPD
Douglas County
Douglas County RFPD 2
Douglas County Soil and Water Conservation District
Drain, City of
Dufur, City of
Dundee, City of
Durham, City of
Eagle Point, City of
East Fork Irrigation District
East Umatilla County RFPD
Echo, City of
Elgin, City of
Elkton, City of
Enterprise, City of
Estacada Cemetery Maintenance District
Estacada RFD 69
Estacada, City of
Eugene Water and Electric Board
Eugene, City of
Fairview Water District
Fairview, City of
Falls City, City of
Farmers Irrigation District
Fern Ridge Community Library
Florence, City of
Fossil, City of
Garibaldi, City of
Gaston RFPD
Gaston, City of
Gearhart, City of
Gervais, City of
Gilliam County
Gladstone, City of
Glide RFPD
Gold Beach, City of
Gold Hill, City of
Goshen RFPD
Grant County
Grants Pass Irrigation District
Grants Pass, City of
Greater St. Helens Parks and Recreation District
Green Sanitary District
Gresham, City of
Halsey, City of
Halsey-Shedd RFPD

Happy Valley, City of
Harbor Water PUD
Harney County
Harney Health District
Harrisburg Fire and Rescue
Harrisburg, City of
Helix, City of
Heppner, City of
Hermiston RFPD
Hermiston, City of
High Desert Park and Recreation District
Hillsboro, City of
Hines, City of
Hood River County
Hood River, City of
Hoodland RFD 74
Horsefly Irrigation District
Housing Authority of Clackamas County
Housing Authority of Jackson County
Housing Authority of Portland
Hubbard RFPD
Hubbard, City of
Huntington, City of
Ice Fountain Water District
Idanha-Detroit Rural Fire Protection District
Illinois Valley RFPD
Imbler RFPD
Independence, City of
Irrigon, City of
Jackson County
Jackson County Fire District 3
Jackson County Fire District 4
Jackson County Fire District 5
Jackson County Fire District 6
Jackson County Vector Control District
Jacksonville, City of
Jefferson County
Jefferson County EMS District
Jefferson County Library District
Jefferson County RFPD 1
Jefferson County SWCD
Jefferson RFPD
Jefferson, City of
John Day, City of
Jordan Valley, City of
Joseph, City of
Josephine County
Judges PERS
Junction City RFPD
Junction City, City of
Juntura Road District \#4
Keizer RFPD
Keizer, City of
Keno RFPD

King City, City of
Klamath County
Klamath County Emergency Communications District
Klamath County Fire District 1
Klamath Falls, City of
Klamath Housing Authority
Klamath Vector Control District
Knappa Svensen Burnside RFPD
La Grande Rural Fire Protection District
La Grande, City of
La Pine RFPD
Lafayette, City of
Lake Chinook Fire And Rescue District
Lake County
Lake County Library District
Lake Oswego, City of
Lakeside Water District
Lakeside, City of
Lakeview, Town of
Lane Council of Governments
Lane County
Lane Fire Authority
League of Oregon Cities
Lebanon Aquatic District
Lebanon RFPD
Lebanon, City of
Lincoln City, City of
Lincoln County
Linn County
Linn-Benton Housing Authority
Local Government Personnel Institute
Lowell, City of
Lyons RFPD
Lyons, City of
Madras, City of
Malheur County
Malin, City of
Manzanita, City of
Mapleton Water District
Marion County
Marion County Fire District 1
Marion County Housing Authority
Maupin, City of
McKenzie RFPD
McMinnville Water and Light Department
McMinnville, City of
Medford Irrigation District
Medford Water Commission
Medford, City of
Merrill, City of
Metolius, City of
METRO
Metropolitan Area Communication Commission

Mid-Columbia Center for Living
Mid-Columbia Fire And Rescue
Mill City RFPD
Mill City, City of
Millersburg, City of
Millington RFPD
Milton-Freewater, City of
Milwaukie, City of
Mist-Birkenfeld RFPD
Mohawk Valley RFD
Molalla RFPD 73
Molalla, City of
Monmouth, City of
Monroe RFPD
Monroe, City of
Moro, City of
Mosier Fire District
Mt. Angel Fire District
Mt. Angel, City of
Mt. Vernon, City of
Mulino Water District 23
Multnomah County
Multnomah County Drainage District 1
Multnomah County RFPD 14
Myrtle Creek, City of
Myrtle Point, City of
Nehalem Bay Fire and Rescue
Nehalem Bay Health District
Nehalem Bay Wastewater Agency
Nesika Beach - Ophir Water District
Neskowin Regional Sanitary Authority
Neskowin Regional Water District
Nestucca RFPD
Netarts Water District
Netarts-Oceanside RFPD
Netarts-Oceanside Sanitary District
Newberg, City of
Newport, City of
North Bend City Housing Authority
North Bend, City of
North Central Public Health District
North Clackamas County Water Commission
North Douglas County Fire and EMS
North Lincoln Fire \& Rescue District 1
North Marion County Communications
North Morrow Vector Control District
North Plains, City of
North Powder, City of
North Wasco County Parks \& Recreation District
Northeast Oregon Housing Authority
Northern Oregon Corrections
Northwest Senior and Disability Services
Nyssa Road Assessment District 2

Nyssa, City of
Oak Lodge Sanitary District
Oak Lodge Water District
Oakland, City of
Oakridge, City of
Ochoco Irrigation District
Odell Sanitary District
Ontario, City of
Oregon Cascades West COG
Oregon City, City of
Oregon Community College Association
Oregon Consortium, The
Oregon Health \& Science University
Oregon Municipal Electric Utilities
Association
Oregon School Boards Association
Oregon Trail Library District
Owyhee Irrigation District
Parkdale RFPD
Pendleton, City of
Philomath Fire and Rescue
Philomath, City of
Phoenix, City of
Pilot Rock, City of
Pleasant Hill RFPD
Polk County
Polk County Fire District 1
Polk Soil and Water Conservation District
Port of Astoria
Port of Cascade Locks
Port of Coos Bay, International
Port of Garibaldi
Port of Hood River
Port of Newport
Port of Portland
Port of St. Helens
Port of The Dalles
Port of Tillamook Bay
Port of Umatilla
Port Orford Public Library
Port Orford, City of
Portland Development Commission
Portland, City of
Powers, City of
Prairie City, City of
Prineville, City of
Rainbow Water District
Rainier Cemetery District
Rainier, City of
Redmond Area Park and Recreation District
Redmond Fire and Rescue
Redmond, City of
Reedsport, City of
Riddle, City of

## Oregon Public Employees Retirement System

Rockaway Beach, City of
Rockwood Water PUD
Rogue River RFPD
Rogue River Valley Irrigation District
Rogue River, City of
Roseburg Urban Sanitary Authority
Roseburg, City of
Rural Road Assessment District 3
Salem Housing Authority
Salem, City of
Salmon Harbor and Douglas County
Sandy RFPD 72
Sandy, City of
Santa Clara RFPD
Scappoose Public Library District
Scappoose RFPD
Scappoose, City of
Scio RFPD
Seal Rock RFPD
Seal Rock Water District
Shady Cove, City of
Sheridan Fire District
Sheridan, City of
Sherman County
Sherwood, City of
Siletz Rural Fire Protection District
Silver Falls Library District
Silverton RFPD 2
Silverton, City of
Sisters and Camp Sherman RFPD
Sisters, City of
Siuslaw Public Library District
Siuslaw RFPD 1
South Fork Water Board
South Lane County Fire and Rescue
South Suburban Sanitary District
Southwest Lincoln County Water District
Southwest Polk County RFPD
Springfield Utility Board
Springfield, City of
St. Helens, City of
Stanfield Fire District 7-402
Stanfield, City of
Stayton RFPD
Stayton, City of
Sublimity RFPD
Suburban East Salem Water District
Sunrise Water Authority
Sunriver Service District
Sutherlin Water Control District
Sutherlin, City of
Sweet Home Cemetery Maintenance District
Sweet Home Fire and Ambulance District
Sweet Home, City of

Talent Irrigation District
Talent, City of
Tangent RFPD
Tigard, City of
Tillamook County Emergency
Communications District
Tillamook County Soil and Water
Conservation District
Tillamook Fire District
Tillamook People's Utility District
Tillamook, City of
Toledo, City of
Tri-City Water and Sanitary Authority
Tri-County Cooperative Weed Management Area
Troutdale, City of
Tualatin Valley Fire and Rescue
Tualatin Valley Irrigation District
Tualatin Valley Water District
Tualatin, City of
Turner, City of
Umatilla County
Umatilla County Soil and Water District
Umatilla County Special Library District
Umatilla RFPD 7-405
Umatilla, City of
Umatilla-Morrow Radio and Data District
Vale, City of
Valley View Cemetery Maintenance District
Veneta, City of
Vernonia RFPD
Vernonia, City of
Waldport, City of
Wallowa County
Wallowa, City of
Warrenton, City of
Wasco County
Wasco County Soil and Water Conservation District
Washington County
Washington County Consolidated
Communications Agency
Washington County Fire District 2
West Extension Irrigation District
West Linn, City of
West Multnomah Soil and Water Conservation District
West Side Fire District
West Slope Water District
West Valley Fire District
West Valley Housing Authority
Western Lane Ambulance District
Westfir, City of
Weston Cemetery District

Weston, City of
Wheeler, City of
Wiard Memorial Park District
Wickiup Water District
Willamina, City of
Wilsonville, City of
Winchester Bay Sanitary District
Winston, City of
Winston-Dillard Fire District
Winston-Dillard Water District
Wood Village, City of
Woodburn Fire District
Woodburn, City of
Wy'East Fire District
Yachats RFPD
Yachats, City of
Yamhill Communications Agency
Yamhill County
Yamhill Fire Protection District
Yamhill, City of
Yoncolla, City of

## Community Colleges (17)

Blue Mountain Community College
Central Oregon Community College
Chemeketa Community College
Clackamas Community College
Clatsop Community College
Columbia Gorge Community College
Klamath Community College
Lane Community College
Linn-Benton Community College
Mt. Hood Community College
Oregon Coast Community College
Portland Community College
Rogue Community College
Southwestern Oregon Community College
Tillamook Bay Community College
Treasure Valley Community College
Umpqua Community College

## School Districts (295)

Alliance Charter Academy
Arco Iris Spanish Immersion Charter School
Armadillo Technical Institute
Baker CSD 16J
Baker CSD 30 J
Baker CSD 5J
Baker CSD 61
Baker Web Academy
Ballston Community School
Beaverton School District 48J
Bend International School
Bennett Pearson Academy Charter School

Benton CSD 17J
Benton CSD 1J
Benton CSD 509J
Benton CSD 7J
Cascade Heights Public Charter School
Center For Advanced Learning
Central Curry School District 1
City View Charter School
Clackamas Charter Alliance 1
Clackamas Charter Alliance 2
Clackamas County ESD
Clackamas CSD 108
Clackamas CSD 115
Clackamas CSD 12
Clackamas CSD 3
Clackamas CSD 35
Clackamas CSD 46
Clackamas CSD 53
Clackamas CSD 62
Clackamas CSD 7J
Clackamas CSD 86
Clatskanie School District 6J
Clatsop CSD 10
Clatsop CSD 1C
Clatsop CSD 30
Clatsop CSD 4
Clatsop CSD 8
Coburg Community Charter School
Columbia CSD 13
Columbia CSD 47 J
Columbia CSD 502
Columbia Gorge Education Service District
Condon Admin. School District 25J
Coos CSD 13
Coos CSD 31
Coos CSD 41
Coos CSD 54
Coos CSD 8
Coos CSD 9
Crater Lake Charter Academy
Crook CSD
Curry CSD 17C
Curry CSD 2CJ
Dallas Community School
Dayton School District 8
Deschutes CSD 1
Deschutes CSD 2J
Deschutes CSD 6
Douglas County ESD
Douglas CSD 1
Douglas CSD 105
Douglas CSD 116
Douglas CSD 12
Douglas CSD 130

Douglas CSD 15
Douglas CSD 19
Douglas CSD 21
Douglas CSD 22
Douglas CSD 32
Douglas CSD 34
Douglas CSD 4
Douglas CSD 70
Douglas CSD 77
EagleRidge High School
Eddyville Charter School
Estacada Web and Early College Academy 1
Forest Grove Community School
Fossil School District 21J
Four Rivers Community School
Gilliam CSD 3
Grant County ESD
Grant CSD 16J
Grant CSD 17
Grant CSD 4
Grant CSD 8
Grant School District 3
Greater Albany Public Schools 8J
Gresham Barlow Web Academy Public
Charter School
Harney CSD 10
Harney CSD 13
Harney CSD 16
Harney CSD 28
Harney CSD 3
Harney CSD 4
Harney CSD 5
Harney CSD 7
Harney CSD UH1J
Harney ESD Region 17
Harrisburg School District 7
High Desert Education Service District
Hillsboro School District 1J
Hood River CSD
Hope Chinese Charter School
Howard Street Charter School, Inc.
Inavale Community Partners
Insight School Of Oregon Charter
Ione School District
Jackson CSD 35
Jackson CSD 4
Jackson CSD 5
Jackson CSD 549C
Jackson CSD 59
Jackson CSD 6
Jackson CSD 9
Jackson CSD 91
Jackson CSD 94
Jefferson County ESD

Jefferson CSD 4
Jefferson CSD 41
Jefferson CSD 509J
Jefferson CSD 8
Jordan Valley School District 3
Josephine County UJ School District
Josephine CSD 7
Kairos PDX
Kings Valley Charter School
Klamath CSD CU
Klamath Falls City Schools
Knova Learning Oregon
Lake County ESD
Lake CSD 11C
Lake CSD 14
Lake CSD 18
Lake CSD 21
Lake CSD 7
Lane County ESD
Lane CSD 1
Lane CSD 19
Lane CSD 28J
Lane CSD 32
Lane CSD 40
Lane CSD 45J3
Lane CSD 4J
Lane CSD 52
Lane CSD 66
Lane CSD 68
Lane CSD 69
Lane CSD 71
Lane CSD 76
Lane CSD 79J
Lane CSD 90
Lane CSD 97J
Le Monde Immersion Charter School
Lewis and Clark Montessori Charter School
Lincoln CSD
Linn Benton Lincoln ESD
Linn CSD 129J
Linn CSD 55
Linn CSD 552C
Linn CSD 9
Linn CSD 95C
Logos Public Charter School
Lourdes Charter School
Luckiamute Valley Charter School
Madrone Trail Public Charter School
Malheur CSD 12
Malheur CSD 26C
Malheur CSD 29
Malheur CSD 61
Malheur CSD 66
Malheur CSD 81

## Oregon Public Employees Retirement System

Malheur CSD 84
Malheur CSD 8C
Malheur ESD Region 14
Marion CSD 1
Marion CSD 103C
Marion CSD 14CJ
Marion CSD 15
Marion CSD 24J
Marion CSD 45
Marion CSD 4J
Marion CSD 5
Marion CSD 91
Mastery Learning Institute
Molalla River Academy
Morrow CSD
Mosier Community School
Mosier Middle School
Mountain View Academy
Multisensory Institute Teaching Children
Multisensory Learning Academy
Multnomah County ESD
Multnomah CSD 1
Multnomah CSD 10
Multnomah CSD 28-302 JT
Multnomah CSD 3
Multnomah CSD 39
Multnomah CSD 51JT
Multnomah CSD 7
Multnomah CSD R-40
Nixyaawii Community School
North Central ESD
North Powder School District
North Santiam School District 29J
North Wasco CSD 21
Northwest Regional ESD
Opal School
Oregon Building Congress Academy for
Architecture, Construction and Engineering
Oregon Connections Academy
Oregon Virtual Academy
Oregon Virtual Education East
Oregon Virtual Education West
Personalized Learning, Inc.
Phoenix School, The
Polk CSD 13J
Polk CSD 2
Polk CSD 21
Polk CSD 57
Portland Village School
Powell Butte Community Charter School
Renaissance Public Academy
Ridgeline Montessori Public Charter School
River's Edge Academy Charter School
Sage Community School

Sand Ridge Charter School
Sauvie Island Academy
Scappoose School District 1J
Self-Enhancement Inc.
Sheridan AllPrep Academy
Sheridan Japanese School Foundation
Sherman CSD
Sherwood Charter School
Siletz Valley Early College Academy
Siletz Valley School
Sisters Web and Early College Academy \#3
South Coast ESD Region 7
South Columbia Family School
South Harney School District 33
South Wasco County School District 1
Southern Oregon ESD
Southwest Charter School
Springfield Academy Of Arts \& Academics
Springwater Environmental Sciences School
Sunny Wolf Charter School
Sweet Home Charter School
The Emerson School
The Ivy School
The Lighthouse School
The Valley School of Southern Oregon
The Village School
Three Rivers Charter School
Tillamook CSD 101
Tillamook CSD 56
Tillamook CSD 9
Trillium Charter School
Umatilla County Administrative School District 1R
Umatilla CSD 16R
Umatilla CSD 29RJ
Umatilla CSD 2R
Umatilla CSD 5
Umatilla CSD 61R
Umatilla CSD 6R
Umatilla CSD 7
Umatilla CSD 80R
Umatilla CSD 8R
Umatilla Morrow ESD
Union CSD 1
Union CSD 11
Union CSD 15
Union CSD 23
Union CSD 5
Wallowa County Region 18 ESD
Wallowa CSD 12
Wallowa CSD 21
Wallowa CSD 54
Wallowa CSD 6
Wasco CSD 29
Washington CSD 13

Washington CSD 15
Washington CSD 23J
Washington CSD 511JT
Washington CSD 88J
West Lane Technical Learning Center
Wheeler CSD 1
Wheeler CSD 55U
Willamette ESD
Woodland Charter School
Yamhill CSD 1
Yamhill CSD 29JT
Yamhill CSD 30-44-63J
Yamhill CSD 40
Yamhill CSD 48J
Yamhill CSD 4J

This Fiscal Year 2016 CAFR is dedicated to Rick Howitt, who produced Oregon PERS CAFRs that received GFOA Certificates of Achievement for 25 consecutive years.


[^0]:    ${ }^{1}$ Prior to October 1, 2013, policy benchmark was $46 \%$ Morgan Stanley Capital International All Country World Index (MSCI ACWI) Net, 27\% Custom Fixed Income (FI) Benchmark, $16 \%$ Russell $3000+300 \mathrm{bps}$, and $11 \%$ National Council of Real Estate Investment Fiduciaries (NCREIF) Property Index.
    From October 1, 2013 through March 31, 2016, policy benchmark was 41.50\% MSCI ACWI Net, $23.50 \%$ Custom FI Benchmark, $20 \%$ Russell $3000+300 \mathrm{bps}, 12.50 \%$ NCREIF Property, and $2.50 \%$ Consumer Price Index +400 bps . From April 1, 2016 to current, policy benchmark is $41.50 \%$ MSCI ACWI Net, $23.50 \%$ Custom FI Benchmark, $20 \%$ Russell $3000+300 \mathrm{bps}$, and $2.50 \%$ Consumer Price Index +400 bps .
    ${ }^{2}$ Prior to February 28, 2011, index was Oregon Custom FI 90/10 Benchmark. ( $90 \%$ Barclays Capital (BC) U.S. Universal Index and $10 \%$ Solomon Smith Barney Inc. Non-US World Gov't Bond Hedged Index).
    From March 1, 2011 to December 31, 2013, index was $60 \%$ BC U.S. Universal Index, 20\% S\&P/LSTA Leveraged Loan Index, 10\% JP Morgan Emerging Market Bond Index Global Index, and 10\% Bank of America Merrill Lynch (BofA ML) High Yield Master II Index.
    From January 1, 2014 to February 29, 2016, index was $40 \%$ BC U.S. Aggregate Bond, $40 \%$ BC U.S. 1-3 Year Government/Credit Bond Index, $15 \%$ S\&P LSTA Leveraged Loan Index, and 5\% BofA ML High Yield Master II Index.
    From March 1, 2016 to present, index is 46\% Barclays Aggregate Bond, 37\% Barclays Treasury, 13\% S\&P LSTA and 4\% BofA ML High Yield Master II.
    ${ }^{3}$ Time-weighted returns are calculated using quarterly basis based on the quarter lagged market values that are cash flow adjusted.
    ${ }^{4}$ Beginning in April 2010, the return combines the estimated return using the internal rate of return for the most recent lagged quarter with a revision component that trues up the past two quarters' reported returns with the past two quarters' revised and final returns.

[^1]:    ${ }^{1} 10$-year trend information will be disclosed prospectively

[^2]:    ${ }^{1}$ The Retirement Health Insurance Account provides postemployment healthcare benefits for eligible members for all participating employers.
    ${ }^{2}$ The Retiree Health Insurance Premium Account provides postemployment healthcare benefits only for eligible members who retired from state of Oregon employers.

[^3]:    ${ }^{1}$ Start up fee for new private equity fund and improvement made to real estate property.

[^4]:    ${ }^{1}$ All performance figures cited throughout this letter are based on time-weighted return calculations based upon market values.

[^5]:    ${ }^{1}$ Prior to October 1, 2013, policy benchmark was $46 \%$ Morgan Stanley Capital International All Country World Index (MSCI ACWI) Net, 27\% Custom Fixed Income (FI) Benchmark, $16 \%$ Russell $3000+300 \mathrm{bps}$, and $11 \%$ National Council of Real Estate Investment Fiduciaries (NCREIF) Property Index.
     and $2.50 \%$ Consumer Price Index +400 bps .
    
    ${ }^{2}$ Prior to February 28, 2011, index was Oregon Custom FI 90/10 Benchmark. (90\% Barclays Capital (BC) U.S. Universal Index and $10 \%$ Solomon Smith Barney Inc. Non-US World Gov't Bond Hedged Index).
     and $10 \%$ Bank of America Merrill Lynch (BofA ML) High Yield Master II Index.
     and 5\% BofA ML High Yield Master II Index.
    From March 1, 2016 to present, index is 46\% Barclays Aggregate Bond, 37\% Barclays Treasury, 13\% S\&P LSTA and 4\% BofA ML High Yield Master II.
    ${ }^{3}$ Time-weighted returns are calculated using quarterly basis based on the quarter lagged market values that are cash flow adjusted.
    ${ }^{4}$ Beginning in April 2010, the return combines the estimated return using the internal rate of return for the most recent lagged quarter with a revision component that trues up the past two quarters' reported returns with the past two quarters' revised and final returns.

[^6]:    ${ }^{1}$ These percentages do not include cash and cash equivalents.
    ${ }^{2}$ Guaranteed Investment Contacts are stated at contract value

[^7]:    $\square$ Milliman

[^8]:    This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

[^9]:    This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when revieving the Milliman work product.

[^10]:    For valuation purposes, the health cost trend rates are assumed to be applied at the beginning of the plan year.

[^11]:    This work product was prepared solely for Oregon Public Employees Retirement System for the purposes stated herein, and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

[^12]:    ${ }^{1}$ Effective in 2006, participating employers are defined for this purpose as any employer with covered payroll during the prior year. In prior years, employers with liabilities but without covered payroll were included as well.
    ${ }^{2}$ Effective in 2001, the Annual Payroll excludes the member pick-up, if any.
    ${ }^{3}$ Effective with the 12/31/2005 valuation, OPSRP members and payroll are included.

[^13]:    Since last valuation date.
    Annual allowances reflect estimated adjustments to retiree benefits due to the implementation of the Strunk v. PERB, et al. and City of Eugene v. State of Oregon, PERB, et al. decisions.

    Annual allowances reflect estimated adjustments to retiree benefits for the Moro v. State of Oregon decision for records that were not already adjusted in the data provided.

[^14]:    ${ }^{1}$ Side account assets are included with Tier 1/Tier 2 assets.
    ${ }^{2}$ Excludes effect of Multnomah Fire District (net UAAL of $\$ 170$ million as of $12 / 31 / 2015$ ).
    ${ }^{3}$ Covered payroll shown is payroll for members of the rate pool benefiting from the specified program. For example, Tier 1/Tier 2 School District payroll is only payroll for Tier 1/Tier 2 members and excludes OPSRP. However, UAL is amortized using combined
    ${ }^{4}$ Reflects the transfer in assets and liabilities for new employers that joined the SLGRP effective January 1 following the valuation date.
    ${ }^{5}$ The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861 , as well as a change in cost method to Entry Age Normal.
    ${ }^{6}$ The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in Moro v. State of Oregon, which overturned portions of Senate Bills 822 and 861.

[^15]:    The 12/31/2012 valuation reflects the benefit changes enacted by the 2013 Oregon Legislature in Senate Bills 822 and 861, as well as a change in cost method to Entry Age Normal.
    ${ }^{2}$ The 12/31/2014 valuation reflects benefit changes from the Oregon Supreme Court's ruling in Moro v. State of Oregon, which overturned portions of Senate Bills 822 and 861.

[^16]:    ${ }^{1}$ The 12/31/2012 valuation reflects a change in cost method to Entry Age Normal.

[^17]:    'Calendar year-end information is provided because earnings are distributed as of December 31.

[^18]:    Calendar year-end information is provided because earnings are distributed as of December 31.
    ${ }^{2}$ Balances are restated for fiscal years 2006 to 2009 due to prior period adjustments.

[^19]:    ${ }^{1}$ Calendar year-end information is provided because earnings are distributed as of December 31 .
    ${ }^{2}$ House Bill 3262, enacted by the 2005 Oregon Legislature, combined the OPSRP Pension Program with the existing defined benefit plan. Activity since 2004 includes activity of the OPSRP Pension Program.
    ${ }^{3}$ The Oregon Public Service Retirement Plan was added to the System in January 2004.
    ${ }^{4}$ Balances are restated for fiscal years 2005 to 2009 due to prior period adjustments.
    ${ }^{5}$ Balances restated for fiscal years 2013 and 2014 to correct amounts.

[^20]:    ${ }^{1}$ Calendar year-end information is provided because earnings are distributed as of December 31.

[^21]:    ${ }^{1}$ Calendar year-end information is provided because earnings are distributed as of December 31.

[^22]:    ${ }^{1}$ Calendar year-end information is provided because earnings are distributed as of December 31.

[^23]:    ${ }^{1}$ Effective years of retirement and final average salary are not available for OPEB.

[^24]:    ${ }^{1}$ Fiduciary Funds only.

