## ARIZONA STATE RETIREMENT SYSTEM

A Component Unit of the State of Arizona

## YOUR FUTURE MOTIVATES EVERYTHING WE DO!



## 2014 COMPREHENSIVE ANNUAL FINANCIAL REPORT

FOR FISCAL YEAR ENDED JUNE 30, 2014

## DELIVERING SERVICE WITH... <br> P

## OUR VISION

For the benefit of our members... the Arizona State Retirement System will be a leading state benefit plan administrator in the areas of:

- Core Member Services
- Investment Performance
- Funded Status
- Operational Effectiveness

This will be accomplished while keeping program benefits and associated costs relatively aligned and maintaining actuarial and fiscal integrity.

Professionalism.
A highly capable workforce will promote a professional and respectful environment and lead the organization.

## Results.

A results-oriented approach to operations will energize the organization.

## Improvement.

A climate of continuous quality improvement and enhanced efficiencies will drive the organization.

## Diversity.

Engagement of diversity by the appreciation, recognition and support for all people will propel the organization to ever greater achievement.

## Excellence.

A commitment to service excellence will permeate the organization.

# Arizona State Retirement System 

A Component Unit of the State of Arizona


Mr. Thomas Manos, Chair Mr. Michael Smarik, Vice Chair

Report Prepared by the Staff of the Arizona State Retirement System

Paul Matson, Director


Comprehensive Annual Financial Report for Fiscal Year Ended June 30, 2014

## I. Introductory Section

Certificate of Achievement for Excellence in Financial Reporting ..... 2
Public Pension Standards Award ..... 3
Letter of Transmittal ..... 4
Administrative Organization
Organization Chart ..... 10
ASRS Board of Trustees ..... 11
Executive Staff ..... 12
Outside Professional Consultants ..... 13
II. Financial Section
Independent Auditors' Report ..... 16
Management's Discussion and Analysis ..... 18
Basic Financial Statements
Combined Statements of Fiduciary Net Position ..... 23
Combined Statements of Changes in Fiduciary Net Position ..... 24
Notes to the Basic Financial Statements ..... 25
Required Supplementary Information
Schedule of Funding Progress - HBS and LTD - Last 3 Years. ..... 43
Schedule of Contributions from Employer and Other Contributing Entities - HBS and LTD - Last 3 Years ..... 43
Schedule of Changes in the Net Pension Liability ..... 44
Schedule of Net Pension Liability ..... 44
Schedule of Contributions from Employer - Retirement - Last 10 Years ..... 45
Schedule of Investment Returns ..... 45
Notes to Required Supplementary Information ..... 46
Additional Supplementary Information
Combining Schedule of Retirement Fiduciary Net Position ..... 50
Combining Schedule of Changes in Retirement Fiduciary Net Position ..... 51
Schedule of Administrative Expenses ..... 52
Schedule of Professional Consultant Fees ..... 53
Schedule of Investment Expenses ..... 54
Schedule of Internal Investment Activity Expenses ..... 58

## III. Investment Section

Chief Investment Officer's Report. ..... 60
Asset Allocation ..... 67
Investment Results
Performance Accounting / Computation Standards. ..... 68
Annualized Rates of Return ..... 68
Historical Rates of Return ..... 69
Ten Year Review of Investment Income ..... 70
Net Income from Investments ..... 70
Asset Allocation
Schedule of Investment Portfolios by Asset Class ..... 71
Equity Portfolio Profile
Equity Sub-Sector Allocation ..... 72
Ten Largest Domestic Equity Holdings. ..... 72
Distribution by Market Sector ..... 73
Ten Largest International Equity Holdings ..... 73
Summary of Broker Commissions ..... 73
Fixed Income Portfolio Profile
Distribution by Sector. ..... 74
Distribution by Maturity ..... 74
Distribution by Coupon ..... 74
Ten Largest Domestic Fixed Income Holdings. ..... 74
Private Investment Portfolio Profile
Ten Largest Real Estate Managers ..... 75
Ten Largest Private Equity Managers ..... 76
Opportunistic Equity Managers ..... 76
Opportunistic Debt Managers ..... 77
Private Debt Managers ..... 77
Farmland and Timber Managers. ..... 77
Schedule of Broker Commissions
Domestic Equity Trades ..... 78
Foreign Equity Trades ..... 80
Schedule of Investment Fees ..... 81
Fixed Income. ..... 84
Real Estate ..... 85
Commodities ..... 87
Global Tactical Asset Allocation ..... 87
Other Investments ..... 87

## IV. Actuarial Section

## Retirement and HBS

Actuarial Certification Statement, ..... 90
Independent Review of 2013 Actuarial Valuations ..... 98
General Actuarial Information ..... 99
Summary of the Benefit Provisions ..... 101
Statement of Actuarial Methods and Assumptions ..... 107
Retirement and HBS Schedules
Schedule of Active Member Valuation Data - Last 10 Years. ..... 113
Schedule of Retirement Retirees Added to and Removed from Rolls - Last 10 Years ..... 113
Schedule of HBS Retirees Added to and Removed from Rolls - Last 5 Years ..... 114
Schedule of Funding Progress - Retirement and HBS - Last 10 Years ..... 114
Solvency Test - Retirement - Last 10 Years ..... 115
Solvency Test - HBS - Last 10 Years, ..... 115
Analysis of Financial Experience for Retirement - Last 10 Years. ..... 116
Analysis of Financial Experience for HBS - Last 10 Years ..... 116
LTD
Actuarial Certification Statement. ..... 117
General Actuarial Information. ..... 120
Summary of Benefit Provisions ..... 121
Statement of Actuarial Methods and Assumptions ..... 123
LTD Schedules
Schedule of Benefit Recipients Added to and Removed from Rolls - Last 10 Years. ..... 125
Schedule of Funding Progress - Last 10 Years. ..... 126
Solvency Test - Last 10 Years. ..... 126
Analysis of Financial Experience for LTD. ..... 127
Legislative Plan Changes
Summary of Legislative Plan Changes ..... 130

## Table of Contents (continued)

## V. Statistical Section

This part of the Arizona State Retirement System's Comprehensive Annual Financial Report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required summary information says about the ASRS's overall financial health.

## Financial Trends

These schedules contain trend information to help the reader understand how the ASRS's Financial Performance has changed over the past 10 years.
Fiduciary Net Position - Last 10 Years. ..... 132
Changes in Fiduciary Net Position - Last 10 Years. ..... 134

## Revenues

These schedules contain information to help the reader understand the ASRS's funding over the last 10 years.
$\qquad$
Actual Contribution Rates - Last 10 Years 138

## Operations

These schedules contain information about the ASRS's Operations.
Members by Type of Benefit.................................................................................................................. 139
Average Benefit Payments - Retirement - Last 10 Years.......................................................................... 140
Average Benefit Payments - HBS - Last 9 Years..................................................................................... 141
Average Benefit Payments - LTD - Last 9 Years..................................................................................... 142
Principal Participating Employers - Current Year and Nine Years Ago..................................................... 143

Schedules and information is derived from ASRS internal sources unless otherwise noted.

## ROAD TO RETIREMENT

## NAVIGATE YOUR FUTURE



You're on your journey to retirement!
Feel like you need a GPS? We have one for you - a Guide to Pre-Retirement Services linking you to specific resources that will help navigate your future.

## www.azasrs.gov



## INTRODUCTORY

## SECTION

## I. Introductory Section

Certificate of Achievement for Excellence in Financial Reporting ..... 2
Public Pension Standards Award ..... 3
Letter of Transmittal ..... 4
Administrative Organization
Organization Chart. ..... 10
ASRS Board of Trustees ..... 11
Executive Staff ..... 12
Outside Professional Consultants ..... 13

## Certificate of Achievement for Excellence in Financial Reporting



The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Arizona State Retirement System for its comprehensive annual financial report for the fiscal year ended June 30, 2013. This was the $25^{\text {th }}$ consecutive year that the Arizona State Retirement System has achieved this prestigious award.


The National Association of State Retirement Administrators (NASRA), National Conference on Public Employee Retirement Systems (NCPERS) and the National Council on Teacher Retirement (NCTR) awarded a Public Pension Standards Award to the Arizona State Retirement System for plan design and administration as set forth in the Public Pension Standards for 2014. The Public Pension Standards are intended to reflect minimum expectations for public retirement system management and administration, as well as serve as a benchmark by which all defined benefit public plans should be measured. This is the 10th consecutive year that the Arizona State Retirement System has received this prestigious award.

## ARIZONA STATE RETIREMENT SySTEM

3300 North Central Avenue • PO Box 33910 • Phoenix, AZ 85067-3910 • Phone (602) 240-2000
7660 EAST BROADWAY BOULEVARD • SUITE 108 • TUCSON, AZ 85710-3776 • PHONE (520) 239-3100
Toll Free Outside Metro Phoenix and Tucson 1 (800) 621-3778
Paul Matson Director

November 7, 2014

## To: The Arizona State Retirement System Board of Trustees

We are pleased to present, on behalf of the ASRS staff, the sixty-first Comprehensive Annual Financial Report (CAFR) of the Arizona State Retirements System (ASRS), a component unit of the State of Arizona, for the fiscal year ended June 30, 2014. This year's CAFR theme features the interactive, multi-media tool called the Guide to Pre-Retirement Services (GPS), launched in 2014, to assist members with navigating the retirement process and understanding their benefits.

Title 38 of the Arizona Revised Statutes requires the ASRS Board of Trustees (ASRS Board) to submit an annual report to the Governor and the Legislature within eight months of the close of each fiscal year. This report complies with the legal requirements governing the preparation and content of annual reports.

Responsibility for both the accuracy of the data, and the completeness and fairness of the presentation, rests with the ASRS management. Management relies on a comprehensive framework of internal controls to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements. Cost/benefit considerations, the risk of management override, and the risk of collusion are inherent limitations on any system of internal control.

CliftonLarsonAllen LLP has issued an unmodified ("clean") opinion on the ASRS financial statements for the year ended June 30, 2014. The Independent Auditors' Report is located at the front of the financial section of this report.

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

## History and Overview

The ASRS was created in 1953 to provide defined contribution retirement benefits to employees of the State of Arizona, Arizona universities, and political subdivisions. During calendar year 1954, Arizona teachers voted to join the ASRS effective January 1, 1955. In 1970, the State legislature authorized the creation of a defined benefit plan, contingent upon the election to transfer a minimum $70 \%$ of the ASRS membership. More than $80 \%$ voted to transfer to the defined benefit plan, which became effective July 1, 1971.

At June 30, 2014, total ASRS membership, including active, inactive, disabled and retired members was 551,296. There are 585 employer units participating in the ASRS, including school districts, charter schools, state colleges and universities, and local, county and state government.

In addition to pension benefits, the ASRS provides a health insurance premium benefit and sponsors medical and dental coverage for retired and disabled members and their eligible dependents and children. Active members also receive long-term disability insurance coverage equal to two-thirds of pay at the time of disablement.

Active non-state employees are also eligible to participate in an ASRS sponsored Supplemental Salary Deferral Plan (SSDP) and/or Supplemental Retirement Savings Plan (SRSP). The SSDP is a supplemental defined contribution plan qualified under 403 (b) and 457 (b) of the Internal Revenue Code. In addition, the SRSP is a supplemental defined contribution plan qualified under 401 (a) of the Internal Revenue Code.

During fiscal year 2014, more than 127,881 retired annuitants, their survivors, and 4,313 disabled members received in excess of $\$ 2.7$ billion in benefits. As of June 30, 2014, there were 47,111 retired members and their families enrolled in the ASRS-sponsored medical program and 47,354 retired members and their families enrolled in dental plans through the ASRS.

## Major Initiatives for Fiscal Year 2014

## Investments:

- Implemented ASRS Strategic Asset Allocation Policy: Continued to restructure the portfolio consistent with new asset classes and tactical investment opportunities, which are expected to collectively achieve ASRS investment performance objectives.
- Developed and Implemented Private Market Investment Information System: Provides a closer to real time state-of-the art information tool that more quickly assesses portfolio information, generates quantitative fund metrics and provides rates of return estimates, which assists in investment decision-making.
- Awarded Investment Consulting Services Contracts: Issued an RFP and awarded contracts to the ASRS General Investment Consultant and a list of Project Investment Consultants.
- Established a Series of Investment Forums: ASRS IMD Staff hosted investment forums intended to foster engagement and discussion with participations by IC Trustees, Director, CIO, ASRS Investment Staff, ASRS Investment Consultants and select external parties who are knowledgeable of and can share perspectives on the specific subject matter. Forum topics included emerging markets, energy, U.S. home construction industry and the management of the Federal Reserve Balance Sheet.


## Benefits Processing:

- Online return to work application: The paper return to work process for members and employers was converted to an online application. The new application was created to educate current and future retirees about the rules that must be followed when returning to work for an ASRS employer after retirement. The new application is expected to increase member and employer understanding about return to work statutes and reduce errors associated with the process.
- Qualified Domestic Relations Order (QDRO) processing: A workflow was implemented for the receipt and processing of QDRO documentation, including the storing of data required for future calculations and disbursements. This process is expected to make the process more efficient and reduce the risk of error.


## Administration:

- Online enrollment enhancements: The enrollment process was simplified and made more efficient by adding the ability for members to register for secure account access and elect a beneficiary at the time of enrollment.
- Public Web Site enhancements: The overall look, feel and navigation of the public website was improved and new content was added.
- Interactive Pre-Retirement Guide (GPS): The agency implemented an interactive, multi-media tool, called the Guide to Pre-Retirement Services (GPS) to help members understand ASRS benefits and services.
- New employer file format: The ASRS is working with employers to transition to a new payroll file format that will allow the ASRS to collect additional information from members. The agency anticipates that the collection of the additional information included in the new file layout will, over the long term, improve the ability of the ASRS to monitor membership eligibility and research and monitor changes in salary that may be attributable to salary spiking.


## Annualized Rates of Return (Net of Fees)

(Retirement \& Health Benefit Supplement)

|  | 1 Year | 3 Year | 5 Year | $\mathbf{1 0}$ Year | Inception <br> (June 30,1975) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ASRS Total Fund | $18.6 \%$ | $10.8 \%$ | $14.2 \%$ | $7.5 \%$ | $10.1 \%$ |

The ASRS has investment guidelines for its internal and external investment managers and a set of policies, procedures, compliance requirements, and oversight of internal investment management to ensure that investment assets are prudently managed. Both internally and externally generated compliance procedures are in place. Details of ASRS investment policies and investments are contained in the Investment Section of this report.

## Funding

Any excess of additions, which include contributions and investment earnings, over deductions, which include benefits and administrative expenses, is accumulated by the ASRS in order to meet future benefit obligations due to retirees and beneficiaries. State statutes require the ASRS to conduct an annual actuarial valuation of its plan assets and liabilities.

The funding objective of the ASRS is to maintain reasonably stable contribution rates and to achieve an ultimate funded status of 100 percent. According to the ASRS' most recently available actuarial valuation, dated June 30, 2013, the actuarial value of total plan assets (pension and health benefit supplement) was $\$ 31.4^{1}$ billion and the actuarial accrued liability was $\$ 41.4^{1}$ billion. The unfunded actuarial accrued liability of $\$ 10.0$ billion results in an actuarial funding ratio of $75.9 \%^{1}$ for the total plan, which is a slight increase from $75.7 \%^{1}$ at June 30, 2012.

Funding status and progress for the ASRS based on the most currently available valuation is presented in the Notes to the Financial Statements. A detailed discussion of funding is provided in the Actuarial Section of this report.
${ }^{1}$ Results include System liabilities and assets for members who retired or will retire on or after July 1. 1981

## Funded Status and Contribution Rate Projections

Although the ASRS funds are a well-diversified and professionally managed portfolio of investments, they incurred significant losses in fiscal years 2008 and 2009. As a result of this and significant prior benefit increases, the combined pension and health benefit supplement contribution rate has risen significantly. The contribution rate in now expected to level off, and gradually begin to fall in the next several years.

## ASRS Cost Saving Initiatives

In order to increase the funded status of the plans, mitigate future increases in contribution rates, and ensure plan sustainability, the ASRS has engaged in significant policy and program review since 2003. While this is an on-going process, the program policy and legislative initiatives that have been implemented are estimated to reduce total contributions to the ASRS (including non-ASRS initiated legislation) by approximately $\$ 364$ million per year, which is equivalent to approximately $\$ 5.4$ billion in liability savings for the group of all current employees, or approximately $\$ 10.7$ billion in liability savings for the group of all current and future employees. Over the long term, these very significant savings will reduce future increases in contribution rates for both employee and employers by an average of approximately $4.01 \%$ in total each year.

Please see chart on next page.

## Estimated Impact of ASRS Cost Reduction Initiatives

As of June 30, 2013 Valuation Date (Amount in Millions of Dollars)

| Action | Reduction in Total Contribution Rate | Annual Reduction in Total Contribution Amount |  | Present Value of Savings on Closed Group Basis |  | Present Value of Savings on Open Group (No Growth) Basis |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| COST SAVINGS INITIATIVES CONTAINED IN CURRENT <br> VALUATION \& REFLECTED IN LOWER CURRENT CONTRIBUTION RATE |  |  |  |  |  |  |  |
| Change basis for service purchases from normal cost to actuarial present value (APV) | 0.60\% | \$ | 52.51 | \$ | 1,033.58 | \$ | 1,808.92 |
| Correction of Permanent Benefit Increase (PBI) reserve | 0.04\% |  | 3.50 |  | 68.71 |  | 68.71 |
| Decrease interest credited on withdrawn contributions from 8\% to 4\% | 0.27\% |  | 23.63 |  | 514.74 |  | 863.65 |
| Decrease interest credited on withdrawn contributions from 4\% to 2\% | 0.44\% |  | 38.51 |  | 309.13 |  | 877.75 |
| Redesign non-retired survivor benefits | 0.02\% |  | 1.75 |  | 14.04 |  | 39.88 |
| Sub-Total, Savings in Current Valuation | 1.37\% | \$ | 119.90 | \$ | 1,940.20 | \$ | 3,658.91 |
| COST SAVINGS INITIATIVES CONTAINED IN FUTURE EXPERIENCE |  |  |  |  |  |  |  |
| Long Term Disability (LTD) program design changes | 0.02\% | \$ | 1.75 | \$ | 38.72 | \$ | 64.56 |
| Reimbursements for early retirement incentives | 0.18\% |  | 15.75 |  | 342.91 |  | 575.47 |
| Increase interest rate on payroll deduction agreements (PDAs) from 0\% to $8 \%$ | 0.16\% |  | 14.00 |  | 305.25 |  | 511.97 |
| Pop-up restrictions | 0.41\% |  | 37.51 |  | 677.25 |  | 1,231.10 |
| Rescinding modified Deferred Retirement Option Plan (mDROP) | 0.50\% |  | 43.72 |  | 804.57 |  | 1,450.11 |
| LTD changes to offsets and pre-existing condition period | 0.15\% |  | 13.13 |  | 219.59 |  | 413.46 |
| Recapture of unclaimed monies | 0.01\% |  | 0.56 |  | 9.50 |  | 17.76 |
| Eliminate 80\% cap on retirement benefits | 0.04\% |  | 3.50 |  | 42.54 |  | 94.22 |
| Require 20/20 Rule for dual employment situations | 0.04\% |  | 3.25 |  | 39.43 |  | 87.42 |
| Eliminate enhanced refunds | 0.16\% |  | 14.07 |  | 129.31 |  | 337.06 |
| Replace Rule of 80 with Rule of 85 | 0.30\% |  | 26.38 |  | 242.43 |  | 631.95 |
| Replace 36-month average salary with 60-month average | 0.25\% |  | 21.99 |  | 202.08 |  | 526.77 |
| Apply Alternative Contribution Rate (ACR) to return-to-work | 0.25\% |  | 21.99 |  | 202.08 |  | 526.77 |
| Compute service purchases with 6\% discount rate | 0.08\% |  | 7.08 |  | 56.83 |  | 161.37 |
| Eliminate service purchases through partial lump sumes | 0.07\% |  | 5.74 |  | 46.08 |  | 130.83 |
| Eliminate Permanent Benefit Increases for future members | 0.11\% |  | 9.63 |  | 77.31 |  | 219.50 |
| Sub-Total, Savings Emerging in Experience | 2.73\% | \$ | 240.05 | \$ | 3,435.88 | \$ | 6,980.32 |
| NON-ASRS INITIATIVES |  |  |  |  |  |  |  |
| Replace Rule of 85 with 55 \& 30 or 60 \& 25 | 0.00\% | \$ | 0.60 | \$ | 5.48 | \$ | 14.34 |
| Change pre-retirement death benefit to sum of employee and employer balances (ASRS Initiative) | 0.04\% |  | 3.22 |  | 29.58 |  | 77.13 |
| Adopt 6-month delay in contributions from state members | -0.13\% |  | - |  | - |  | - |
| Prospective cost-shift of 6-month delay (not included in totals) | N/A |  | (11.63) |  | (106.56) |  | (278.22) |
| Sub-Total, Saving Emerging in Experience from Non-ASRS Initiatives | -0.09\% | \$ | 3.82 | \$ | 35.06 | \$ | 91.47 |
| GRAND TOTAL | 4.01\% | \$ | 363.77 | \$ | 5,411.14 | \$ | 10,730.70 |

## Budget Savings

The ASRS regularly implements strategies to reduce agency expenditures. As a result, the ASRS realized reductions to the operating budget totaling $\$ 486,000$ for fiscal year 2014 and $\$ 4.4$ million over the past six years.

## Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the ASRS for its CAFR for the fiscal year ended June 30, 2013. The ASRS has received this prestigious award in each of the last 25 years.

To be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized CAFR that satisfies both accounting principles generally accepted in the United States of America and applicable legal requirements. A Certificate of Achievement is valid for one year only. We believe this report continues to conform to the Certificate of Achievement Program requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

The GFOA also awarded the ASRS the Award for Outstanding Achievement for its June 30, 2013 Popular Annual Financial Report (PAFR). PAFR's must be readily accessible and easily understandable to the general public and other interested parties without a background in public finance. This was the third time the ASRS has published a PAFR. To be awarded the Award for Outstanding Achievement, a government must have received the Certificate of Achievement for Excellence for its CAFR for the previous year or current year.

In addition, the Public Pension Coordinating Council awarded a Pension Standards Award for 2014 to the ASRS for meeting professional standards and plan design and administration. To be awarded the Pension Standards Award, a public employee retirement system must certify that it meets requirements in six areas of assessment. The areas assessed are comprehensive benefits program, funding adequacy, actuarial, audit, investments and communications. The Pension Standards Award is valid for one year. This is the tenth year the ASRS has received this award.

## Acknowledgements

This report represents the culmination of hours of hard work by the ASRS General Accounting and Investment Management Division staff. It is intended to provide complete and reliable information for decision making, to ensure compliance with legal requirements, and is a means of measuring the responsible stewardship of the assets of the ASRS.

We would like to express our gratitude to the ASRS Board for its support for and leadership in planning and conducting the financial affairs of the ASRS in a responsible and progressive manner. The ASRS Board, along with the ASRS Executive and Senior Management and the entire staff of the ASRS has been instrumental in maintaining the high quality of service and performance, which has become the standard for the ASRS.

Respectfully submitted,

Paul Matson, Executive Director

Nancy Bennett, Chief Financial Officer

## Organizational Chart



## ASRS Board of Trustees




Brian C. McNeil Member At Large


Jeff Tyne Political Subdivisions


Dr. Richard Jacob
Educators


As of June 30, 2014

## Executive Staff



## ACTUARY

Buck Consultants
Phoenix, AZ

## LONG TERM DISABILITY BENEFITS

Sedgwick Claims Management Services Company
Calabasas, CA

## CUSTODIAL BANK

State Street Bank and Trust Co.
Boston, MA

## PENSION DISBURSEMENT SERVICES

State Street Retiree Services
Jacksonville, FL
INDEPENDENT AUDITORS
CliftonLarsonAllen, LLP
Baltimore, MD

## GENERAL INVESTMENT CONSULTANT

New England Pension Consultants, LLC
Cambridge, MA

## PRIVATE REAL ESTATE CONSULTANT

Robert Charles Lessor and Co., LLC
Bethesda, MD

## PRIVATE EQUITY CONSULTANT

Meketa Investment Group
Boston, MA

## INVESTMENT MANAGERS

Investment Managers are listed in the Schedule of Investment Fees See Page 81-87

## URIV ROAD TO RETIREMENT

## NAVIGATE YOUR FUTURE

## YOUR CAREER: EARLY - ZERO TO FIVE YEARS



The greatest journey starts with good planning.
$\checkmark$ Travel Center: Let us be your trip planner Fueling Station: Get started and fuel up
Bank: Open 24/7 for your convenience

$\checkmark$ Library: You don't need a library card to check out these resources!
$\checkmark$ Court House: Resources that will help smooth out bumps for an easier ride
See you at the next highway marker!

## FINANCIAL

## II. Financial Section

Independent Auditors' Report ..... 16
Management's Discussion and Analysis ..... 18
Basic Financial Statements
Combined Statements of Fiduciary Net Position ..... 23
Combined Statements of Changes in Fiduciary Net Position ..... 24
Notes to the Basic Financial Statements ..... 25
Required Supplementary Information
Schedule of Funding Progress - HBS and LTD - Last 3 Years. ..... 43
Schedule of Contributions from Employer and Other Contributing Entities - HBS and LTD - Last 3 Years ..... 43
Schedule of Changes in the Net Pension Liability ..... 44
Schedule of Net Pension Liability ..... 44
Schedule of Contributions from Employer - Retirement - Last 10 Years ..... 45
Schedule of Investment Returns ..... 45
Notes to Required Supplementary Information ..... 46
Additional Supplementary Information
Combining Schedule of Retirement Fiduciary Net Position ..... 50
Combining Schedule of Changes in Retirement Fiduciary Net Position ..... 51
Schedule of Administrative Expenses ..... 52
Schedule of Professional Consultant Fees ..... 53
Schedule of Investment Expenses ..... 54
Schedule of Internal Investment Activity Expenses ..... 58

Independent Auditors' Report

The Honorable Janice K. Brewer, Governor
State of Arizona and
Board of Trustees
Arizona State Retirement System

## Report on the Financial Statements

We have audited the financial statements of the Arizona State Retirement System (ASRS), a component unit of the State of Arizona, which comprise the Combined Statements of Fiduciary Net Position as of June 30, 2014, and the related Combined Statements of Changes in Fiduciary Net Position for the year then ended, and the related Notes to the Basic Financial Statements, as listed in the table of contents.

## Management's Responsibility for the Financial Statements

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

## Auditors' Responsibility

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

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

## Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the net position of the ASRS as of June 30, 2014, and the respective changes in its net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

## Other Matters

## Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and the Schedules of Funding Progress, Contributions from the Employer and Other Contributing Entities, Changes in the Net Pension Liability, Net Pension Liability, Contributions from Employer, and Investment Returns, and related Notes, 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 an opinion on the ASRS' financial statements. The Additional Supplementary Information, as listed in the table of contents, is presented for purposes of additional analysis and is not a required part of the financial statements.

The Additional Supplementary Information, as listed in the table of contents, 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 Additional Supplementary Information is fairly stated, in all material respects, in relation to the financial statements as a whole.

The Introductory, Investment, Actuarial and Statistical sections, as listed in the table of contents, 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 it.

## Other Reporting Required by Government Auditing Standards

In accordance with Government Auditing Standards, we have also issued our report dated November 7, 2014 on our consideration of the ASRS' 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 ASRS' internal control over financial reporting and compliance.


Baltimore, Maryland
November 7, 2014

## Management's Discussion and Analysis

This section presents Management's Discussion and Analysis (MD\&A) of the Arizona State Retirement System's (ASRS) fiduciary net position and changes in fiduciary net position for the fiscal year ended June 30, 2014. It is presented as a narrative overview and analysis. The discussion and analysis should be read in conjunction with the Letter of Transmittal included in the Introductory Section of the ASRS' Comprehensive Annual Financial Report (CAFR), and the basic financial statements and notes to the basic financial statements presented in the Financial Section of the CAFR.

## Financial Highlights

During fiscal year 2014, the ASRS assets increased primarily as the result of strong market conditions.

- At June 30, 2014, the ASRS held investments of $\$ 35.6$ billion, an increase of $\$ 4.9$ billion from fiscal year 2013 .
- The combined investment portfolio experienced a return of $18.6 \%$ compared to $13.1 \%$ in fiscal year 2013.


## Overview of the Financial Statements

The MD\&A is intended to serve as an introduction and overview of the ASRS financial section of the CAFR, which is comprised of the following components: 1) basic financial statements, 2) notes to the basic financial statements, 3) required supplementary information and 4) additional supplementary schedules. Collectively, this information presents the combined fiduciary net position held in trust for pension benefits, which includes health benefit supplements and long term disability for each of the funds administered by the ASRS as of June 30, 2014. This financial information also summarizes the combined changes in fiduciary net position held in trust for benefits for the year then ended. The information available in each of these sections is briefly summarized as follows:

1) Basic financial statements - For the fiscal year ended June 30, 2014, financial statements are presented for the funds administered by the ASRS. These fiduciary funds are held in trust for the benefit of the

ASRS members.

- The Combined Statements of Fiduciary Net Position is presented as of June 30, 2014. This financial statement reflects the resources available to pay benefits to members, including retirees and beneficiaries, at the end of the fiscal year.
- The Combined Statements of Changes in Fiduciary Net Position is presented for the year ended June 30, 2014. This statement reflects the changes in resources available to pay benefits to retirees and other beneficiaries for the year.

2) Notes to the Basic Financial Statements - The notes to the basic financial statements provide additional information, which is essential to a full understanding of the data provided in the basic financial statements. The notes to the basic financial statements can be found on pages 25-42 of this report.
3) Required Supplementary Information - The required supplementary information consists of six schedules and related notes concerning, funded progress, required contributions, changes in the net pension liability, the net pension liability and investment returns of the defined benefit pension systems administered by the ASRS.
4) Additional Supplementary Schedules - These schedules include Combining Schedules of Fiduciary Net Position and Changes in Fiduciary Net Position for the ASRS Plan and System retirement programs. Detailed information about administrative expenses, consultant fees and investment expenses by manager are also included in this section. The ASRS Plan, a defined benefit plan, and the System, a defined contribution plan with guaranteed benefits, are separate components administered within the same pension plan and trust.

## Financial Analysis of the ASRS Funds

The ASRS administers retirement, health and long term disability benefits for teachers, state, county and other public municipal employees. ASRS benefits are funded by member and employer contributions and by earnings on investments. The ASRS has three funds, Retirement, Health Benefit Supplement (HBS) and Long Term Disability (LTD), to which the contributions are distributed according to actuarially determined contribution rates.

Fiduciary Net Position - ASRS's total fiduciary net position held in trust for benefits at June 30, 2014 was $\$ 35.5$ billion, a $16.0 \%$ increase from $\$ 30.6$ billion at June 30 , 2013. The retirement fund's fiduciary net position was $\$ 33.7$ billion compared to $\$ 29.0$ billion last year, a $16.1 \%$ increase. The HBS's fund net position was $\$ 1.6$ billion at year end compared to the same $\$ 1.3$ billion at fiscal year 2013, a $16.5 \%$ increase. The LTD fund's fiduciary net position was $\$ 286$ million at year end compared to $\$ 263$ million last year, an $8.7 \%$ increase. The increase in the ASRS' total fiduciary net position and the fiduciary net position of its individual funds is primarily due to investment returns of $18.6 \%$ for fiscal year 2014.

Changes in Fiduciary Net Position - For the 2014 fiscal year, contributions totaled $\$ 2.1$ billion, compared to the 2013 fiscal year contributions of $\$ 2.0$ billion. The increase is due to a $0.4 \%$ increase in contribution rates for retirement and HBS from 10.9\% in fiscal year 2013 to $11.3 \%$ in fiscal year 2014. LTD contribution rates re-
mained the same. For employers, the alternate contribution rate increased from $8.64 \%$ in 2013 to $9.20 \%$ in 2014.

For fiscal year 2014, the ASRS recognized net investment income of $\$ 5.8$ billion, which compares to net investment income of $\$ 3.6$ billion in the previous year. This $62.5 \%$ increase is primarily due to strong performance in U.S. and international equities, as well as opportunistic, debt, equity, and real estate.

Deductions from the ASRS's net position held in trust for benefits consist primarily of pension, disability, health insurance, survivor benefits, member refunds and administrative expenses. For the 2014 fiscal year, pension, disability, health insurance and survivor benefits totaled $\$ 2.7$ billion, an increase of $4.8 \%$ over the $\$ 2.6$ billion paid during fiscal year 2013. The $4.8 \%$ increase is explained by an increase in total retirees from 122,257 in fiscal year 2013 , to 127,881 in fiscal year 2014. Refunds and transfers to other plans totaled $\$ 247$ million in fiscal year 2014, a $12.7 \%$ increase from the $\$ 219$ million paid out in fiscal year 2013. In fiscal year 2014, the cost of administering the ASRS benefits totaled $\$ 31$ million, a decrease of $24.4 \%$ from the $\$ 41$ million paid in fiscal year 2013. Investment expenses totaling $\$ 8.2$ million are reported under investing activity expense, which were previously included in administrative expense.

The following tables show the principal ASRS net assets and changes in net assets for fiscal years 2014 and 2013, in thousands of dollars:

| Fiduciary Net Position | 2014 | 2013 |  | Change | \% Change |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ASSETS |  |  |  |  |  |
| Cash, receivables and prepaids | \$ 661,021 | \$ 1,145,516 | \$ | $(484,495)$ | -42.3\% |
| Investments at fair value | 35,636,475 | 30,779,999 |  | 4,856,476 | 15.8\% |
| Securities lending | 15,427 | 15,460 |  | (33) | -0.2\% |
| Total assets | 36,312,923 | 31,940,975 |  | 4,371,948 | 13.7\% |
| LIABILITIES |  |  |  |  |  |
| Payables and other liabilities | 762,033 | 1,302,131 |  | $(540,098)$ | -41.5\% |
| Securities lending | 15,427 | 15,460 |  | (33) | -0.2\% |
| Total Liabilities | 777,460 | 1,317,591 |  | $(540,131)$ | -41.0\% |
| NET POSITION RESTRICTED FOR PENSION/OPEB BENEFITS | \$35,535,463 | \$30,623,384 | \$ | 4,912,079 | 16.0\% |
| Change in Fiduciary Net Position | 2014 | 2013 |  | Change | \% Change |
| ADDITIONS |  |  |  |  |  |
| Member contributions | \$ 1,016,435 | \$ 968,885 | \$ | 47,550 | 4.9\% |
| Employer contributions | 1,041,002 | 989,790 |  | 51,212 | 5.2\% |
| Other income | 29,848 | 25,826 |  | 4,022 | 15.6\% |
| Service credit purchase and transfers in | 33,485 | 72,023 |  | $(38,538)$ | -53.5\% |
| Investment and security lending income | 5,949,616 | 3,748,774 |  | 2,200,842 | 58.7\% |
| Investment and security lending expense | $(149,882)$ | $(178,898)$ |  | 29,016 | 16.2\% |
| Total additions | 7,920,504 | 5,626,400 |  | 2,294,104 | 40.8\% |
| DEDUCTIONS |  |  |  |  |  |
| Retirement and disability benefits | 2,690,828 | 2,566,275 |  | 124,553 | 4.9\% |
| Survivor benefits | 39,334 | 38,442 |  | 892 | 2.3\% |
| Refunds and transfers | 247,116 | 219,332 |  | 27,784 | 12.7\% |
| Administration and other | 31,147 | 41,203 |  | $(10,056)$ | -24.4\% |
| Total deductions | 3,008,425 | 2,865,252 |  | 143,173 | 5.0\% |
| NET CHANGE | 4,912,079 | 2,761,148 |  | 2,150,931 | 77.9\% |
| NET POSITION RESTRICTED FOR PENSION/OPEB BENEFITS |  |  |  |  |  |
| Net position beginning of year | 30,623,384 | 27,862,236 |  | 2,761,148 | 9.9\% |
| Net position end of year | \$35,535,463 | \$30,623,384 | \$ | 4,912,079 | 16.0\% |



Funded Status - The Governmental Accounting Standards Board (GASB) has issued Statement Number 67, Financial Reporting for Pension Plans (GASB 67), which amends GASB Statement No. 25. GASB 67 is effective for ASRS for the June 30, 2014 reporting period. Under GASB 67, the methodology for determining the net pension liability disclosed in the Notes to the Basic Financial Statements has shifted from a funding perspective to an accounting perspective. Under GASB 67, the actuarial costing methodology for financial reporting purposes specifies entry age normal; however, the actuarial costing methodology utilized by ASRS for funding purposes is the projected unit cost (PUC) method. In addition, under the accounting methodology plan assets are valued at fair market value, rather than actuarial value, which smooth investment gains and losses over a period of time.

Under the accounting methodology for determining the funded status, the ASRS uses the most recently available actuarial valuation, dated June 30, 2013, which was rolled forward to June 30, 2014. Total retirement plan assets
were $\$ 33.7$ billion and the total pension liability was $\$ 48.5$ billion, which results in a net pension liability of $\$ 14.8$ billion. The plan fiduciary net position as a percentage of the total pension liability was $69.5 \%$. The fiduciary net position of the health benefit supplement was $\$ 1.6$ billion and the long term disability fiduciary net position was $\$ 286$ million.

Funding status and progress for the ASRS based on the most currently available valuation is presented in the Notes to the Basic Financial Statements. A detailed discussion of funding is provided in the Actuarial Section of this report.

Investments - During the fiscal year 2014, the ASRS investments were broadly diversified in domestic and international equities, domestic fixed income, real estate, private equity, opportunistic, commodities and cash equivalent instruments. A few highlights of the year are as follows:

- As of June 30, 2014, the fund held investments of $\$ 35.6$ billion, an increase of $\$ 4.9$ billion over prior year.
- The combined investment portfolio generated approximately $\$ 5.8$ billion in net investment earnings during the year.
- The combined investment portfolio experienced a return of $18.6 \%$ compared to the Interim Total Fund Benchmark return of $17.8 \%$.
- The increase in investments during the year is primarily due to strong performance in U.S. and international equities, as well as opportunistic equity, opportunistic debt and real estate.

A detailed discussion of investments is provided in the Notes to the Basic Financial Statements and the Investment Section of this report.

Request for Information - This financial report is designed to provide a general overview of the system's finances. Questions concerning any of the information provided in this report or requests for additional information should be addressed to:

ASRS Financial Services Division
3300 North Central Avenue
Phoenix, AZ 85012

## Combined Statements of Fiduciary Net Position

As of June 30, 2014
(Dollars in Thousands)

|  | Retirement Fund |  | Health Benefit Supplement Fund |  | Long Term Disability Fund |  | Combined |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ASSETS |  |  |  |  |  |  |  |  |
| Cash | \$ | 2,365 | \$ | 87 | \$ | 250 | \$ | 2,702 |
| RECEIVABLES |  |  |  |  |  |  |  |  |
| Accrued interest and dividends |  | 60,474 |  | 2,641 |  | - |  | 63,115 |
| Securities sold |  | 40,792 |  | 1,731 |  | - |  | 42,523 |
| Forward contracts |  | 419,880 |  | 18,308 |  | - |  | 438,188 |
| Contributions |  | 69,136 |  | 1,087 |  | 869 |  | 71,092 |
| Due from other funds |  | 612 |  | 6,647 |  | 2,501 |  | 9,760 |
| Other |  | 545 |  | 29,852 |  | 3,244 |  | 33,641 |
| Total receivables |  | 591,439 |  | 60,266 |  | 6,614 |  | 658,319 |
| INVESTMENTS AT FAIR VALUE |  |  |  |  |  |  |  |  |
| Short-term investments |  | 1,621,617 |  | 125,339 |  | 2,835 |  | 1,749,791 |
| Securities lending collateral |  | 14,784 |  | 643 |  | - |  | 15,427 |
| Equity |  | 20,122,143 |  | 874,875 |  | 186,242 |  | 21,183,260 |
| Fixed income |  | 6,671,668 |  | 291,584 |  | 60,162 |  | 7,023,414 |
| Real estate |  | 1,985,698 |  | 87,405 |  | 22,382 |  | 2,095,485 |
| Commodities |  | - |  | - |  | 7,311 |  | 7,311 |
| Global tactical asset allocation |  | 3,327,760 |  | 143,613 |  | - |  | 3,471,373 |
| Other |  | 101,399 |  | 4,442 |  | - |  | 105,841 |
| Total investments |  | 33,845,069 |  | 1,527,901 |  | 278,932 |  | 35,651,902 |
| TOTAL ASSETS |  | 34,438,873 |  | 1,588,254 |  | 285,796 |  | 36,312,923 |
| LIABILITIES |  |  |  |  |  |  |  |  |
| Securities purchased |  | 293,994 |  | 12,676 |  | - |  | 306,670 |
| Securities lending collateral |  | 14,784 |  | 643 |  | - |  | 15,427 |
| Forward contracts |  | 399,465 |  | 17,419 |  | - |  | 416,884 |
| Due to other funds |  | 9,760 |  | - |  | - |  | 9,760 |
| Other |  | 27,165 |  | 1,274 |  | 280 |  | 28,719 |
| TOTAL LIABILITIES |  | 745,168 |  | 32,012 |  | 280 |  | 777,460 |
| NET POSITION RESTRICTED |  |  |  |  |  |  |  |  |
| FOR PENSION/OPEB BENEFITS | \$ | 33,693,705 | \$ | 1,556,242 | \$ | 285,516 | \$ | 35,535,463 |

The accompanying notes are an integral part of these statements.

## Combined Statements of Changes in Fiduciary Net Position

For the Year Ended June 30, 2014
(Dollars in Thousands)

|  | Retirement Fund |  | Health Benefit Supplement Fund |  | Long Term Disability Fund |  | Combined |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ADDITIONS |  |  |  |  |  |  |  |  |
| CONTRIBUTIONS |  |  |  |  |  |  |  |  |
| Member contributions | \$ | 995,284 | \$ | - | \$ | 21,151 | \$ | 1,016,435 |
| Employer contributions |  | 965,969 |  | 53,405 |  | 21,628 |  | 1,041,002 |
| Transfers from other plans |  | 1,044 |  | - |  | - |  | 1,044 |
| Purchased Service |  | 32,441 |  | - |  | - |  | 32,441 |
| Total Contributions |  | 1,994,738 |  | 53,405 |  | 42,779 |  | 2,090,922 |
| INVESTING ACTIVITY INCOME |  |  |  |  |  |  |  |  |
| Net appreciation in fair value of investments |  | 5,114,686 |  | 223,003 |  | 45,231 |  | 5,382,920 |
| Interest |  | 185,226 |  | 8,040 |  | - |  | 193,266 |
| Dividends |  | 338,194 |  | 14,703 |  | - |  | 352,897 |
| Other income |  | 17,949 |  | 779 |  | - |  | 18,728 |
| Total investing activity income |  | 5,656,055 |  | 246,525 |  | 45,231 |  | 5,947,811 |
| INVESTMENT ACTIVITY EXPENSE |  |  |  |  |  |  |  |  |
| Management fees |  | $(135,748)$ |  | $(5,844)$ |  | (281) |  | $(141,873)$ |
| Custody fees |  | $(1,160)$ |  | (50) |  | - |  | $(1,210)$ |
| Consultant and legal fees |  | $(3,664)$ |  | (39) |  | - |  | $(3,703)$ |
| Internal investment activity expense |  | $(3,159)$ |  | (138) |  | - |  | $(3,297)$ |
| Total investment activity expenses |  | $(143,731)$ |  | $(6,071)$ |  | (281) |  | $(150,083)$ |
| Net income from investing activities |  | 5,512,324 |  | 240,454 |  | 44,950 |  | 5,797,728 |
| FROM SECURITIES LENDING ACTIVITIES |  |  |  |  |  |  |  |  |
| Securities lending income |  | 1,644 |  | 71 |  | - |  | 1,715 |
| Unrealized gain on securities lending |  | 86 |  | 4 |  | - |  | 90 |
| Total securities lending activity income |  | 1,730 |  | 75 |  | - |  | 1,805 |
| Security lending expense: |  |  |  |  |  |  |  |  |
| Interest rebate |  | 466 |  | 20 |  | - |  | 486 |
| Management fees |  | (274) |  | (11) |  | - |  | (285) |
| Total securities lending activity expense |  | 192 |  | 9 |  | - |  | 201 |
| Net income from securities lending activities |  | 1,922 |  | 84 |  | - |  | 2,006 |
| Total net investment income |  | 5,514,246 |  | 240,538 |  | 44,950 |  | 5,799,734 |
| Other Income |  | - |  | 29,848 |  | - |  | 29,848 |
| TOTAL ADDITIONS |  | 7,508,984 |  | 323,791 |  | 87,729 |  | 7,920,504 |
| DEDUCTIONS |  |  |  |  |  |  |  |  |
| Retirement and disability benefits |  | 2,527,038 |  | 101,746 |  | 62,044 |  | 2,690,828 |
| Survivor benefits |  | 39,334 |  | - |  | - |  | 39,334 |
| Refunds to withdrawing members, including interest |  | 246,201 |  | - |  | - |  | 246,201 |
| Administrative expenses |  | 26,107 |  | 1,137 |  | 2,542 |  | 29,786 |
| Transfers to other plans |  | 915 |  | - |  | - |  | 915 |
| Other |  | 1,114 |  | - |  | 247 |  | 1,361 |
| TOTAL DEDUCTIONS |  | 2,840,709 |  | 102,883 |  | 64,833 |  | 3,008,425 |
| NET INCREASE IN NET POSITION |  | 4,668,275 |  | 220,908 |  | 22,896 |  | 4,912,079 |
| NET POSITION RESTRICTED |  |  |  |  |  |  |  |  |
| FOR PENSION/OPEB BENEFITS |  |  |  |  |  |  |  |  |
| Beginning of year |  | 29,025,430 |  | 1,335,334 |  | 262,620 |  | 30,623,384 |
| End of year | \$ | 33,693,705 | \$ | 1,556,242 | \$ | \$ 285,516 | \$ | 35,535,463 |

The accompanying notes are an integral part of these statements.

## 1. Plan Description

Organization - The Arizona State Retirement System (ASRS) is a component unit of the State of Arizona. The ASRS is a cost-sharing, multiple-employer, pension plan established by the State of Arizona to provide pension benefits for employees of the State and employees of participating political subdivisions and school districts. The ASRS is administered in accordance with Title 38, Chapter 5, Article 2 of the Arizona Revised Statutes (A.R.S.). The Long Term Disability Program is administered in accordance with Title 38, Chapter 5, Article 2.1.

The ASRS is a qualified governmental pension plan pursuant to I.R.C. §414. The ASRS plan has two components, the Plan and the System (closed plan). The ASRS's accumulated plan assets are utilized to pay benefits to members of either component. The Plan is a defined benefit plan and the System is a defined contribution plan, with guaranteed benefits. These plans are administered through a trust. The System was established by the Arizona Legislature in 1953 to provide retirement and other benefits for state employees, teachers, and employees of political subdivisions that elected coverage. In 1943, the Legislature established the Arizona Teachers' Retirement System (the Teachers' System) to provide benefits for teachers. After the establishment of the ASRS, teachers who were, or later became, eligible through employment covered by the ASRS were transferred to the System. The Teachers' System then became inactive, except for continuation of retirement benefits already being paid and obligations to teacher members who did not become eligible for the ASRS.

The Plan, enacted by the Legislature in 1970, became effective July 1, 1971. Effective July 1, 1981, all nonretired members of the System became members of the Plan, as prescribed by Laws of 1980, Chapter 238.
A.R.S. §38-783 and A.R.S. §38-797 require separate accounts be established for health insurance premium benefits and long term disability benefits, respectively. Effective July 1, 1995, the ASRS established an account for each benefit program and has reported those funds in the basic financial statements. Both the Health Benefit Supplement Fund (HBS) and the Long Term Disability Fund (LTD) are cost-sharing, multiple-employer post-
employment benefit plans. Although the investments of the HBS Fund are commingled with investments of the Retirement Fund, the HBS Fund's assets may be utilized solely for the payment of HBS eligible member benefits. The LTD fund is administered in through a trust separate from the trust related to the administration of the pension funds.

Plan Administration - The operation and administration of the ASRS is vested with the ASRS Board of Trustees, which is comprised of nine members, whom are appointed by the Governor and confirmed by the Arizona Senate pursuant to A.R.S. §38-211. The Board of Trustees is responsible for establishing and maintaining the funding policy. The composition of the ASRS Board, their qualifications and term are defined in A.R.S. §38-713. Five of the trustees must be ASRS members each representing one of the following member groups; an educator, an employee of a political subdivision, a retired member, an employee of the State and an at large member who may represent any ASRS member group. Each trustee representing an ASRS member group must have no less than five years of administrative management experience. Additionally, four trustees, who are not ASRS members are appointed to represent the public. Four trustees of the ASRS Board must have a minimum of 10 years of investment experience. There is no limit on the number of terms an ASRS Board trustee may serve.

Reporting Entity - The financial statements of the ASRS include the financial activities of all the above funds. The ASRS is considered a component unit of the State of Arizona reporting entity and is included in the State's financial reports as a pension trust fund.

Plan Membership - at June 30, 2014 pension plan membership and employer units consisted of the following:


Benefits - The ASRS provides benefits under formulas and provisions described in Arizona State law. Benefits and administrative expenses are paid from funds contributed by members and employers and from earnings on investments. The ASRS provides for retirement, disability, health insurance premium supplemental benefits and survivor benefits.

Retirement benefits are calculated on the basis of age, total credited service and average monthly compensation, which is established on a fiscal year basis (July 1 to June $30)$.

Members with an initial membership date before July 1, 2011, are eligible for full retirement benefits upon the earliest of attaining:

- Age 65;
- Age 62 with 10 years of credited service;
- Age plus credited service equaling 80 or more

Members with initial membership dates on or after July 1, 2011, are eligible for full retirement benefits upon the earliest of attaining:

- Age 65 ;
- Age 62 with 10 years of credited service;
- Age 60 with 25 years of credited service;
- Age 55 with 30 years of credited service

Average monthly compensation is determined by a $60-$ month or 36 -month calculation depending on when a member began contributing to the ASRS.

The 60-month calculation is an option for members who began contributing to the ASRS before January, 1, 1984. To determine a member's benefit using this formula, the ASRS averages the highest 60 consecutive months of salary within the last 120 months of service. This calculation includes base salary, additional contracts, overtime and any other form of compensation. Termination payments may include sick pay (except for state and county employees), vacation pay, compensation time pay, retirement incentive pay (excludes payments made after retirement begins, such as VIP or ESP), or any other payments paid at the time of retirement. The average monthly compensation for members who began contributing before January 1, 1984 is automatically based on
whichever calculation provides the greater benefit.

The 36 -month calculation is required for members who began contributing to the ASRS on or after January 1, 1984. To determine a member's benefit using this formula, the ASRS averages the highest 36 consecutive months of salary within the last 120 months of service. This calculation excludes any termination payments the member received upon retirement.

For members who began contributing to the ASRS on or after July 1, 2011, the average monthly compensation used in a retiring member's retirement benefit calculation is the average of the highest consecutive 60 months in the last 120 months. Unlike the pre-1984 60 month calculation, the 60 month calculation enacted in 2011 does not include termination pay such as sick leave, annual leave etc.

The graded multiplier is a percentage set by Arizona State statute. It is the percentage of the average monthly compensation members will receive for each year of credited service they have accrued at retirement. This percentage is based on their total years of service at retirement based on the following graded multiplier schedule:

| Years of Service | Multiplier |
| :--- | ---: |
| $0.00-19.99$ years | $2.10 \%$ |
| $20.00-24.99$ years | $2.15 \%$ |
| $25.00-29.99$ years | $2.20 \%$ |
| 30.00 or more years | $2.30 \%$ |

Permanent Benefit Increase (PBI) - Retired members who have been retired one year and members receiving LTD benefits are eligible for a benefit increase adjustment up to a maximum of $4 \%$.

Retired members with at least 10 years of service who have been retired five or more years are eligible for an enhanced permanent benefit increase (EPBI). For each complete five-year period the member has been retired, an incremental benefit is paid if monies to pay the benefit are available. This benefit is funded by an interest credit of $8 \%$ of the reserve for future PBIs.

The PBI is paid from a reserve of excess investment earn-
ings. Funds are reserved when total actuarial investment returns for each fiscal year are $8 \%$ or greater. If there are no excess investment earnings in the reserve, then no additional benefit increase is paid. As of June 30, 2014, there is a zero balance in the reserve for future PBIs.

Due to legislation enacted in the 2013 legislative session, PBIs and EPBIs will not be awarded to members hired after September 13, 2013.

For a more detailed summary of benefits, refer to the Summary of Plan Provisions in the Actuarial Section of this report.

Contributions - Per Arizona Revised Statutes, contribution requirements for active plan members and their participating employers are established and may be amended by the ASRS Board. Contribution rates are actuarially determined and are expected to finance the costs of benefits earned by plan members during the year and any unfunded accrued liability. Cost of administering the plan is financed through employer contributions, member contributions and investment earnings.

Employers are also required to pay an Alternate Contribution Rate (ACR), for retired members who return to work. ACR contributions totaling $\$ 24.4$ million were received in FY14 and are included in Employer Contributions on the Statement of Changes in Fiduciary Net Position.

Employers' contractually required contribution rates as a percentage of covered payroll and the employees' matching contributions were as follows for fiscal year 2014:

| Contribution Rates | Employer | Member |
| :--- | ---: | ---: |
| Retirement | $10.70 \%$ | $11.30 \%$ |
| Health benefit supplement | $0.60 \%$ | $0.00 \%$ |
| Long-term disability | $0.24 \%$ | $0.24 \%$ |
| Total required | $11.54 \%$ | $11.54 \%$ |
| Alternate contribution rate | $9.20 \%$ | $0.00 \%$ |

State statutes allow the purchase of eligible service credit for which no benefit can be paid by another qualified plan. Purchasable services include leave of absence, military service, other public service employment and previously forfeited service under the ASRS. Statutes also allow pur-
chase of military service regardless of whether a benefit may be paid.

Termination of Employment - Upon termination of employment, members may elect to receive their contributions made to the Plan, plus accrued interest.

Members with an initial membership date before July 1, 2011, may receive a percentage of employer contributions to the plan based on years of service as follows:

| Years of Service | Vesting |
| :--- | ---: |
| 5 to 5.9 | $25 \%$ |
| 6 to 6.9 | $40 \%$ |
| 7 to 7.9 | $55 \%$ |
| 8 to 8.9 | $70 \%$ |
| 9 to 9.9 | $85 \%$ |
| 10 or more | $100 \%$ |

Members with an initial membership date on or after July 1,2011 will not receive any portion of the employer contributions if they withdraw their account balance prior to retirement. This does not apply to terminations due to an employer reduction in force or position elimination, in which case the above ASRS vesting schedule will apply.

Withdrawal of accumulated contributions results in forfeiture of the member's accrued benefits in the Plan; however, state law provides for reinstatement of a member's forfeited service upon repayment of the accumulated contributions, plus interest if a former member returns to covered service.

## 2. Summary of Significant Accounting Policies

Basis of Accounting - The financial statements of the Arizona State Retirement System are prepared using the accrual basis of accounting. The accompanying financial statements are prepared in accordance with accounting principles generally accepted in the United States of America that apply to government accounting of fiduciary funds including the Governmental Accounting Standards Board (GASB) Statements 28, 34, 37, 40, 43, 53, 63 and 67.

Contributions are recognized as revenues when due, pursuant to statutory and contractual requirements. Benefits and refunds are recognized when due and payable and expenses are recorded when the corresponding liabilities are incurred, regardless of when contributions are received or payment is made. Investment income derived from publicly traded investments is recognized when earned. Investment and other administrative expenses are recognized when incurred.

New Accounting Pronouncements - GASB Statement No. 67, Financial Reporting for Pension Plans, was issued and is effective for periods beginning after June 15 , 2013. This Statement establishes standards of financial reporting for separately issued financial reports and specifies the required approach to measuring the pension liability of employers and non-employer contributing entities for benefits provided through the pension plan (the net pension liability). This Statement also details the note disclosure requirements. The ASRS implemented GASB 67 for fiscal year ended June 30, 2014.

Investments - Publicly traded investments are reported at fair values determined by the custodial agent. The agents' determination of fair values includes, among other things, utilization of pricing services or prices quoted by independent brokers at current exchange rates.

ASRS' derivative instruments which consist of futures, forward contracts, options, swaps, rights and warrants, are measured at fair value and reported on the Statement of Fiduciary Net Position. Changes in fair values of derivative instruments are reported as net appreciation of fair value on the Statement of Changes in Fiduciary Net Position.

The fair value of limited partnership investments are based on estimated current values and accepted industry practice. Fair value is based on estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values.

Short-term investments are reported at cost plus accrued interest, which approximates fair value. For investments where no readily ascertainable fair value exists, manage-
ment, in consultation with their investment advisors, has determined the fair values for the individual investments based on anticipated maturity dates and current interest rates commensurate with the investment's degree of risk.

Net appreciation (depreciation) in the fair value of investment assets is determined by calculating the change in the fair value of investments between the end of the year and the beginning of the year, less purchases of investments at cost, plus sales of investments at fair value. Interest income is recorded on the accrual basis and dividends are recorded on the ex-dividend date.

Security transactions and any resulting gains or losses are accounted for on a trade date basis.

Retirement and HBS investments are pooled. However, investments for each fund are allocated daily via a fluctuating dollar unitization methodology. Realized and unrealized gains are allocated daily using the same methodology.

Capital Assets - Capitalization thresholds have been established as follows:

| Capitalizable Assets | Threshold |
| :--- | ---: |
| Furniture and fixtures | $\$ 1,000,000$ |
| Computers and other equipment | $\$ 1,000,000$ |
| Internally developed computer software | $\$ 10,000,000$ |
| Externally purchased software | $\$ 1,000,000$ |
| Websites | $\$ 1,000,000$ |

As of June 30, 2014, there were no capitalizable expenditures at or above the stated thresholds.

Federal Income Tax Status - During the year ended June 30, 2014, the ASRS qualified under Section 401(a) of the Internal Revenue Code (IRC) and was exempt from federal income taxes under Section 501(a) of the IRC.

Actuarial Valuation - The information included in the required supplemental schedules is based on the actuarial valuations performed as of June 30, 2013, which is the latest available information for the HBS and LTD funds. The information presented for the retirement fund is based on the June 30, 2013 actuarial valuation, which was rolled
forward to June 30, 2014. Significant actuarial assumptions used in the valuations are included in the notes to the required supplemental schedules.

Use of Estimates - The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and changes therein, disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

## 3. Cash and Investments

Cash - Cash deposits are subject to custodial risk. Custodial risk is the risk that in the event of a bank failure, ASRS' deposits may not be returned to it. Arizona State statutes do not require ASRS deposits to be collateralized. The board has not adopted a more restrictive policy. In addition, the FDIC insures ASRS cash deposits up to $\$ 250,000$ per member based on the ratio of the member's account balance to the ASRS net assets.

Investments - Statutes enacted by the Arizona State Legislature (the Statutes) authorize the ASRS to make investments in accordance with the "Prudent Person" rule. Section 38-718 (E) of the Arizona Revised Statutes interprets the rule to be that investment management shall discharge the duties of their position with the care, skill, prudence and diligence, under the circumstances then prevailing, that a prudent person acting in a like capacity and familiar with the same matters would use in the conduct of an enterprise of a like character and with like aims as that of ASRS. Within this broad framework, the ASRS has chosen to invest in short-term securities, obligations of the U.S. government or agencies of the U.S. government, corporate bonds, common and preferred stocks (domestic and foreign), mortgages, derivatives, commodities, real estate, private equity and opportunistic debt and equity investments.

The Statutes place the following restrictions on the ASRS' investment fund portfolio:

1. No more than $80 \%$ of the ASRS' assets may be in-
vested at any given time in equities, measured at market value.
2. No more than $5 \%$ of the ASRS' assets may be invested in securities issued by any one institution, agency or corporation, other than securities issued as direct obligations of or fully guaranteed by the U.S. government or mortgage backed securities and agency debentures issued by federal agencies, measured at market value.
3. No more than $40 \%$ of the ASRS' assets may be invested in non-U.S. public investments, measured at market value.
4. No more than $60 \%$ of the ASRS' assets may be invested internally, measured at market value.
5. No more than $10 \%$ of the ASRS' assets may be invested in bonds or other evidences of indebtedness of those multinational development banks in which the U.S. is a member nation, including the International Bank for Reconstruction and Development, the African Development Bank, the Asian Development Bank, and the Inter-American Development Bank, measured at market value.

Subject to the limitations noted above, the Board may authorize the Director to make investments that are designated by the Board and that do not exceed $60 \%$ of the assets of the investment account measured at cost.

The Board has not formally adopted more restrictive policies than required by State Statute for the various types of risks. The management of ASRS believes it has complied with the above guidelines. Management does expect the money managers to abide by contract requirements, which are considerably more restrictive than the statute. Due to the flow of securities to and from transfer agents and the security lending program, securities occasionally cannot
be delivered for a sale or received for a purchase, resulting in a "failed" transaction. Securities with trade dates in June and settlement dates in July result in "outstanding" transactions. Since these securities have contractually changed ownership, receivables and payables result from these transactions. Such transactions resulted in a receivable for securities sold of $\$ 42.5$ million and a payable for securities purchased of $\$ 306.7$ million at June 30, 2014.

Investment Policy - The plan's policy in regard to the allocation of invested assets is established and may be amended by the ASRS Board. Plan assets are managed on a total return basis with a long-term objective of achieving and maintain a fully funded status for the benefits provided through the pension plan. The following was the ASRS Board's adopted asset allocation policy as of June 30, 2014:

| Asset Class | Target Allocation |
| :--- | ---: |
| Equity | $63 \%$ |
| Fixed income | $25 \%$ |
| Commodities | $4 \%$ |
| Real estate | $8 \%$ |
| Total | $100 \%$ |
|  |  |

Rate of Return - For the year ended June 30, 2014, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was $17.78 \%$. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

## Investments by Investment Type

At June 30, 2014
(Dollars in Thousands)

| Investment Type | Retirement HBS |  |  | LTD |  | $\begin{array}{r} 2014 \\ \text { Fair Value } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| SHORT-TERM INVESTMENTS |  |  |  |  |  |  |
| Cash and Cash Equivalents | \$ | 678,061 | \$ | 2,835 | \$ | 680,896 |
| Foreign Currency |  | 188,287 |  | - |  | 188,287 |
| Short-term Investments including U.S. Tbills |  | 880,608 |  | - |  | 880,608 |
| Total Short-Term Investments |  | 1,746,956 |  | 2,835 |  | 1,749,791 |
| SECURITIES LENDING COLLATERAL |  |  |  |  |  |  |
| Domestic Equity |  | 13,122 |  | - |  | 13,122 |
| Non-U.S. Equity |  | 2,305 |  | - |  | 2,305 |
| Total Securities Lending Collateral |  | 15,427 |  | - |  | 15,427 |
| EQUITY SECURITIES |  |  |  |  |  |  |
| Large Cap |  | 8,036,836 |  | 100,987 |  | 8,137,823 |
| Mid Cap |  | 1,593,263 |  | - |  | 1,593,263 |
| Small Cap |  | 1,487,508 |  | 19,617 |  | 1,507,125 |
| Total U.S. Equity |  | 11,117,607 |  | 120,604 |  | 11,238,211 |
| Developed Large Cap |  | 4,013,006 |  | 39,620 |  | 4,052,626 |
| Developed Small Cap |  | 1,301,642 |  | 9,615 |  | 1,311,257 |
| Emerging Markets |  | 2,005,045 |  | 16,403 |  | 2,021,448 |
| Total Non-U.S. Equity |  | 7,319,693 |  | 65,638 |  | 7,385,331 |
| Private Equity |  | 2,204,231 |  | - |  | 2,204,231 |
| Opportunistic Equity |  | 355,487 |  | - |  | 355,487 |
| Total Other Equity |  | 2,559,718 |  | - |  | 2,559,718 |
| Total Equity Securities |  | 20,997,018 |  | 186,242 |  | 21,183,260 |
| FIXED INCOME SECURITIES |  |  |  |  |  |  |
| Core |  | 3,081,901 |  | 31,557 |  | 3,113,458 |
| High Yield |  | 1,037,422 |  | 18,378 |  | 1,055,800 |
| Total U.S. Fixed Income |  | 4,119,323 |  | 49,935 |  | 4,169,258 |
| Emerging Market Debt |  | 711,515 |  | 10,227 |  | 721,742 |
| Opportunistic Debt |  | 930,906 |  | - |  | 930,906 |
| Private Debt |  | 1,201,508 |  | - |  | 1,201,508 |
| Total Other Debt |  | 2,843,929 |  | 10,227 |  | 2,854,156 |
| Total Fixed Income Securities |  | 6,963,252 |  | 60,162 |  | 7,023,414 |
| OTHER INVESTMENTS |  |  |  |  |  |  |
| Real Estate |  | 2,073,103 |  | 22,382 |  | 2,095,485 |
| Commodities |  | - |  | 7,311 |  | 7,311 |
| Global Tactical Asset Allocation |  | 3,471,373 |  | - |  | 3,471,373 |
| Farmland and Timber |  | 105,841 |  | - |  | 105,841 |
| Total Other Investments |  | 5,650,317 |  | 29,693 |  | 5,680,010 |
| TOTAL INVESTMENTS AT FAIR VALUE | \$ | 35,372,970 | \$ | 278,932 | \$ | 35,651,902 |

Investments are subject to a number of risks including custodial credit risk, concentration of credit risk, credit quality risk, interest rate risk and foreign currency risk.

Custodial Credit Risk - For an investment, custodial credit risk is the risk that, in the event of a failure of a counter party, the ASRS will not be able to recover the value of its investment or the collateral securities that are in the possession of an outside party. Publicly traded securities are registered in the name of the ASRS including loaned securities.

Credit Quality Risk - Credit quality risk is the risk that the issuer will not fulfill its obligations to the purchaser of its debt instruments. Arizona State statutes are not specif-
ic as to the credit ratings of the investments of the ASRS. The statutes require the Prudent Person Rule. The Board has not adopted a formal policy on credit ratings. The present management policy is to set standards for each portfolio manager based on an assessment of their expertise.

Concentration of Credit Risk - Concentration of credit risk is the risk of substantial loss if investments are concentrated in one issuer. Arizona state statute requires that no more than $5 \%$ of the assets can be invested in one issuer, except for the U.S. government and its agencies. The Board has not adopted a more restrictive policy.

The following table presents the fixed income investments at June 30, 2014 categorized to give an indication of the level of credit quality risk assumed by ASRS:

## Debt Securities <br> Credit Quality Risk (Fixed Income Securities)

At June 30, 2014
(Dollars in Thousands)

|  | Fair Value as <br> Percent of Total <br> Debt Securities <br> Investments |  |
| :--- | ---: | ---: |
| Moody's Credit Rating | $\$ 11.08 \%$ |  |
| Aaa | 876,069 | $23.79 \%$ |
| Aa1-Aa3 | $1,880,633$ | $3.64 \%$ |
| A1-A3 | 287,614 | $5.87 \%$ |
| Baa1-Baa3 | 463,694 | $4.06 \%$ |
| Ba1-Ba3 | 321,174 | $6.56 \%$ |
| B1-B3 | 518,298 | $2.67 \%$ |
| Ca | 210,921 | $42.33 \%$ |
| NA $^{\mathbf{1}}$ |  | $\mathbf{1 0 0 . 0 0 \%}$ |
| Total $^{\mathbf{2}}$ |  | $\mathbf{7 , 9 0 4 , 0 2 2}$ |

[^0]Interest Rate Risk - Interest rate risk is the risk that debt securities will lose value due to rising interest rates. Arizona State statutes are silent regarding interest rate risk. The Board has not adopted a specific formal policy for interest rate risk. It does set more restrictive requirements in its contracts with money managers. The ASRS utilizes
effective duration to identify and manage its interest rate risk. Effective duration measures the expected change in value of a fixed income security for a given change in interest rate. The method takes into account the likely timing and amounts of variable cash flows for bonds with call options and prepayment provisions.

The following table shows the effective duration by investment type:

## Interest Rate Risk

At June 30, 2014
(Dollars in Thousands)

| Fixed Income Security Type | Fair Value | Effective Duration <br> (in years) |
| :--- | ---: | ---: |
| U.S. Treasury Bills | $\$ 60,704$ | 0.3 |
| Asset Backed Securities | 5,363 | 1.6 |
| Commercial Mortgage Backed | 67,075 | 1.5 |
| Corporate Bonds | $1,563,343$ | 4.6 |
| Government Related | 256,568 | 5.4 |
| Government Agencies CMO's | 785,487 | 2.8 |
| Government Bonds | $1,103,905$ | 6.3 |
| Government Mortgage Backed | 76,120 | 3.8 |
| Duration Not Available ${ }^{1}$ | $\mathbf{3 , 2 8 5 , 4 5 7}$ |  |
| Total | $\mathbf{7 , 9 0 4 , 0 2 2}$ |  |

${ }^{1}$ Represents Fixed Income in which the duration is not available. The fair value of $\$ 3,285,457$ is comprised of Emerging Market Debt of $\$ 417,186$, Opportunistic Debt of $\$ 930,906$, Private Debt of $\$ 1,201,508$ and Commingled Funds of $\$ 735,857$.

Foreign Currency Risk - Foreign currency risk is the risk that changes in the foreign exchange rate will adversely impact the fair value of an investment. The ASRS is authorized to invest part of its assets in foreign investments. According to Arizona State statutes, no more than $40 \%$ of ASRS assets may be invested in foreign securities
and the investments must be made by investment managers with expertise in those investments. The Board has not adopted a formal policy that is more restrictive. Management does have certain policies in the contracts with the money managers permitted to invest in foreign denominated securities.

The following table shows exposure to foreign currency risk (U.S. dollars):

## Foreign Currency Risk

At June 30, 2014
(Dollars in Thousands)

| Currency Type | Short-term Investments |  |  | Fixed Income |  | Equity Securities |  | Private Equity | Real Estate |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Australian Dollar | \$ | (48) | \$ | - | \$ | 26,958 | \$ | - | \$ | \$ | 26,910 |
| Brazilian Real |  | 178 |  | 53,587 |  | 4,872 |  | - | - |  | 58,637 |
| Canadian Dollar |  | $(5,789)$ |  | - |  | 44,755 |  | - | - |  | 38,966 |
| Columbian Peso |  | 67 |  | 17,951 |  | - |  | - | - |  | 18,018 |
| Danish Krone |  | 157 |  | - |  | 19,693 |  | - | - |  | 19,850 |
| Euro Currency |  | 58,103 |  | - |  | 420,041 |  | 173,122 | 32,926 |  | 684,192 |
| Hong Kong Dollar |  | 405 |  | - |  | 25,542 |  | - | - |  | 25,947 |
| Hungarian Forint |  | - |  | 6,421 |  | - |  | - | - |  | 6,421 |
| Indonesian Rupiah |  | 126 |  | 22,071 |  | - |  | - | - |  | 22,197 |
| Israeli Shekel |  | 27 |  | - |  | 4,289 |  | - | - |  | 4,316 |
| Japanese Yen |  | 2,705 |  | - |  | 294,691 |  | - | - |  | 297,396 |
| Mexican Peso |  | - |  | 30,504 |  | - |  | - | 104,057 |  | 134,561 |
| Malaysian Ringgit |  | 8 |  | 23,344 |  | - |  | - | - |  | 23,352 |
| New Romaian Leu |  | 79 |  | 4,337 |  | - |  | - | - |  | 4,416 |
| New Russian Ruble |  | - |  | 26,409 |  | - |  | - | - |  | 26,409 |
| New Zealand Dollar |  | 5 |  | - |  | 2,309 |  | - | - |  | 2,314 |
| Nigerian Naira |  | 228 |  | 6,192 |  | - |  | - | - |  | 6,420 |
| Norwegian Krone |  | 179 |  | - |  | 5,440 |  | - | - |  | 5,619 |
| Peruvian Nouveau Sol |  | - |  | 5,609 |  | - |  | - | - |  | 5,609 |
| Philippine Peso |  | - |  | 1,991 |  | - |  | - | - |  | 1,991 |
| Polish Zloty |  | - |  | 25,507 |  | - |  | - | - |  | 25,507 |
| Pound Sterling |  | 1,223 |  | - |  | 381,957 |  | - | - |  | 383,180 |
| Singapore Dollar |  | 402 |  | - |  | 16,126 |  | - | - |  | 16,528 |
| South African Rand |  | - |  | 36,909 |  | - |  | - | - |  | 36,909 |
| South Korean WON |  | - |  | - |  | 13,794 |  | - | - |  | 13,794 |
| Swedish Krone |  | 91 |  | - |  | 23,073 |  | - | - |  | 23,164 |
| Swiss Franc |  | 269 |  | - |  | 98,137 |  | - | - |  | 98,406 |
| Taiwan Dollar |  | 351 |  | - |  | - |  | - | - |  | 351 |
| Thailand Baht |  | - |  | 6,873 |  | - |  | - | - |  | 6,873 |
| Turkish Lira |  | 1 |  | 27,436 |  | - |  | - | - |  | 27,437 |
| Total | \$ | 58,767 | \$ | 295,141 | \$ | 1,381,677 | \$ | 173,122 | \$ 136,983 | \$ | 2,045,690 |

## 4. Securities Lending Program

Arizona Revised Statutes Section 38-718(G) allows the ASRS to participate in a securities lending program. The ASRS' custodial bank enters into agreements with borrowers to loan securities and have the same securities redelivered at a later date. Securities eligible for loan include U.S. fixed income securities, U.S. and international equities.

The ASRS currently receives as collateral at least $102 \%$ of the market value of the loaned securities and maintains collateral at no less than $100 \%$ for the duration of the loan. At year-end, the ASRS had limited counter party risk to borrowers because the amount the ASRS owed to each borrower exceeded the amount each borrower owed the ASRS. Securities loaned are initially fully collateralized by cash (USD and Euro), U.S. Government or Agency securities, sovereign debt, corporate bonds and equities. Cash collateral may be reinvested (under certain constraints) in:
a) Instruments issued or fully guaranteed by the U.S. Government, Federal agencies, or sponsored agencies or sponsored corporations,
b) Instruments issued by domestic corporations including corporate notes and floating rate notes,
c) Obligations of approved domestic and foreign banks,
d) U.S. dollar-denominated instruments issued by sovereigns, sovereign supported credits, and instruments of foreign banks and corporations,
e) Repurchase agreements,
f) Insurance company funding agreements, guaranteed investment contracts and bank investment contracts,
g) Money market mutual funds.

The ASRS records the cash collateral received and the same amount as an obligation for securities on loan. The maturities of the investments are closely matched to those of the security loans to avoid interest rate exposure. The ASRS receives a spread for its lending activities. Investments made with cash collateral are classified as an asset on the Statement of Combined Fiduciary Net Position. A corresponding liability is recorded as the ASRS must return the cash collateral to the borrower upon expiration of the loan. At June 30, 2014, the fair value of securities on
loan was $\$ 95.8$ million; of which $\$ 15.0$ million were cash collateralized loans. Cash of $\$ 15.4$ million received as collateral for securities loaned was reinvested and had a net asset value of $\$ 15.0$ million as of June 30, 2014. The securities lending payable at June 30, 2014, was $\$ 15.4$ million. The ASRS does not have the ability to pledge or sell the collateral unless there is a borrower default. There are no restrictions on the dollar amount of security loans that may be made by the ASRS. The ASRS in indemnified against gross negligence and borrower default by the lending agents, but is not indemnified against cash collateral reinvestment risk.

## 5. Derivatives

A derivative instrument is a financial instrument or other contract with all three of the following characteristics:
a) Settlement Factors: It has one or more reference rates and one or more notional amounts or payment provisions or both. Those terms determine the amount of the settlement or settlements, and, in some cases whether or not a settlement is required,
b) Leverage: It requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors,
c) Net Settlement: Its terms require or permit net settlement, it can readily be settled net by means outside the contract, or it provides for delivery of an asset that puts the recipient in a position not substantially different from net settlement.

ASRS' derivatives are considered "Investment Derivative Instruments" as defined in GASB 53 "Accounting and Financial Reporting for Derivative Instruments".
All funds are considered fiduciary funds.

ASRS' derivative instruments, which consist of futures contracts, forward contracts, options, swaps, rights and warrants are measured at fair value and reported on the Statement of Combined Fiduciary Net Position. Changes in fair value of derivative instruments are reported as net appreciation of fair value on the Combined Statement of Changes in Fiduciary Net Position.

The fair value balances and notional amounts of derivative instruments outstanding at June 30, 2014, classified by type, and the changes in fair value of derivative
instruments for the year then ended as reported in the June 30, 2014 financial statements are as follows:

## Investment Derivatives by Type

## (Dollars in Thousands)

| Investment Derivatives | Changes in Fair Value ${ }^{1}$ |  |  | Fair Value at June 30, 2014 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Classification |  | ount ${ }^{2}$ | Classification |  |  |  | Notional ${ }^{4}$ |
| Commodity Futures Long | Net Appreciation in Fair Value | \$ | 83,877 | Not Applicable | \$ | - |  | 262,560 |
| Commodity Futures Short | Net Appreciation in Fair Value |  | $(1,924)$ | Not Applicable |  | - |  | (50) |
| Credit Default Swaps Bought | Net Appreciation in Fair Value |  | (993) | Not Applicable |  | - | \$ | - |
| Credit Default Swaps Written | Net Appreciation in Fair Value |  | 70 | Not Applicable |  | - |  | - |
| Fixed Income Futures Long | Net Appreciation in Fair Value |  | 602 | Not Applicable |  | - |  | - |
| Fixed Income Futures Short | Net Appreciation in Fair Value |  | (926) | Not Applicable |  | - |  | $(11,300)$ |
| Fixed Income Options Written | Net Appreciation in Fair Value |  | 629 | Not Applicable |  | - |  | - |
| Foreign Currency Options Bought | Net Appreciation in Fair Value |  | 25 | Fixed Income Securities |  | - |  | 650 |
| Foreign Currency Options Written | Net Appreciation in Fair Value |  | 241 | Fixed Income Securities |  | (29) |  | $(10,678)$ |
| Foreign Currency Forwards | Net Appreciation in Fair Value |  | $(3,176)$ | Forward Contracts Receivable |  | 857 | \$ | 239,400 |
| Futures Options Written | Net Appreciation in Fair Value |  | 72 | Not Applicable |  | - |  | - |
| Index Futures Long | Net Appreciation in Fair Value |  | 6,314 | Not Applicable |  | - |  | 11 |
| Pay Fixed Interest Rate Swaps | Net Appreciation in Fair Value |  | (419) | Not Applicable |  | - | \$ | - |
| Receive Fixed Interest Rate Swaps | Net Appreciation in Fair Value |  | (406) | Fixed Income Securities |  | (62) | \$ | 9,645 |
| Rights | Net Appreciation in Fair Value |  | 556 | Equity Securities |  | - | \$ | - |
| Warrants | Net Appreciation in Fair Value |  | 2,061 | Equity Securities |  | - | \$ | - |
| Total |  | \$ | 86,603 |  | \$ | 766 |  |  |

${ }^{1}$ Excludes futures margin payments.
${ }^{2}$ Brackets refer to losses.
${ }^{3}$ Brackets refer to liabilities.
${ }^{4}$ Notional may be a dollar amount or size of underlying futures and options; brackets refer to short positions.

The fair value of derivative instruments reported by ASRS is based on quoted market prices off national exchanges. The fair value of foreign currency forward contracts are based on mathematical models and are valued using a pricing service, which uses published Reuter's foreign currency rates as the primary source for the calculation.

Credit Risk - The credit quality ratings of counterparties as described by nationally recognized statistical rating organizations and the counterparties related risk concentration as of the end of the reporting period are as follows:

## Counterparty Risk and Ratings

## (Dollars in Thousands)

|  | Total Net <br> Exposure | Risk <br> Concentration | S\&P | RATINGS |
| :--- | :---: | :---: | :--- | :--- | :--- |
| Fitch |  |  |  |  | Moody's

The maximum amount of loss due to credit risk that the ASRS would incur if the counterparties to the derivative instrument failed to perform according to the terms of the contract, without respect to any collateral or other security or netting arrangement, is the total unrealized gain of derivatives at the end of the reporting period.

ASRS has no general investment policy requiring collateral or other security to support derivative instruments. Each investment manager hired has discretion with respect to derivative investments and risk control. Each investment manager is governed by its Investment Manager Agreement.

ASRS has no general investment policy with respect to netting arrangements. ASRS' investment managers have master netting arrangements to allow net settlement with the same counterparty in the event the counterparty defaults on its obligations.

The aggregate fair value of investment derivative instruments in asset positions at June 30, 2014 was $\$ 2.3$ million. This represents the maximum amount of loss in case of default of all counterparties of over-the-counter positions as of June 30, 2014. There was no collateral received or netting arrangements in place as of June 30, 2014 with counterparties that would reduce this exposure.

Interest Rate Risk - The ASRS has exposure to interest rate risk due to the investment in an interest rate swap agreement. The required risk disclosures are included in the Interest Rate Risk schedule in Note 3.

The fair value balance and notional amount of the interest rate swap outstanding at June 30, 2014, for the year then ended as reported in the June 30, 2014 financial statements are as follows:

## Derivative Instruments Subject to Interest Rate Risk Investment Maturities

## (In Thousands)

| Investment Type | Fair Value ${ }^{1}$ |  | Investment Maturities (in years) |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Less Than 1 |  | 1-5 |  | 6-10 |  | 10+ |  |
| Receive Fixed Interest Rate Swaps | \$ | (62) | \$ | - | \$ | (41) | \$ | (21) | \$ | - |
| Total | \$ | (62) | \$ | - | \$ | (41) | \$ | (21) | \$ | - |

## Derivative Instruments Highly Sensitive to Interest Rate Changes (In Thousands)

Asset ID Asset Description ${\text { Interest Rate }{ }^{\text {Fair Value }}{ }^{1} \text { Notional }}^{2}$
FIXED INCOME FUTURES SHORT

ADIO7VSP2 US 10YR NOTE (CBT) SEP 14 0.00\%
Total Pay Fixed Interest Rate Swaps
RECEIVE FIXED INTEREST RATE SWAPS

| $\begin{aligned} & \text { 99S0EIJN8/ } \\ & \text { 99S0EIJO6 } \end{aligned}$ | SWU002S11 IRS ZAR R F 6.50000 / SWU002S11 IRS ZAR P V 03MJHBRG | 6.50\% | \$ | (51) | \$ | 931 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \text { 99S0EM2K3/ } \\ & \text { 99S0EM2L1 } \end{aligned}$ | SWU023WC8 IRS BRLR F 8.65000 / SWU023WC8 IRS BRL P V 00MCETIP | 8.65\% |  | (46) |  | 817 |
| $\begin{aligned} & \text { 99S0FZ5T1/ } \\ & 99 S 0 F Z 5 U 8 \end{aligned}$ | SWU004PQ5 IRS BRL R F 10.91000 / SWU004PQ5 IRS BRL P V 00MBRCDI | 10.91\% |  | (4) |  | 4,356 |
| $\begin{aligned} & \text { 99S0HFQQ6/ } \\ & \text { 99S0HFQR4 } \end{aligned}$ | SWU005W76 IRS BRL R F 11.32000 / SWU005W76 IRS BRL P V 00MCETIP | 11.32\% |  | 6 |  | 544 |
| 99SOHQRT5/ 99SOHQRU2 | SWU006FE8 IRS THB R F 3.34000 / SWU006FE8 IRS THB P V 06MLIBOR | 3.34\% |  | 3 |  | 123 |
| $\begin{aligned} & \text { 99SOIA423/ } \\ & \text { 99SOIA431 } \end{aligned}$ | SWU006VU4 IRS THB R F 3.41000 / SWU006VU4 IRS THB P V 06MTHFX | 3.41\% |  | 3 |  | 259 |
| $\begin{aligned} & \text { 99SOIAEK2/ } \\ & \text { 99SOIAELO } \end{aligned}$ | SWU006X81 IRS THB R F 3.42000 / SWU006X81 IRS THB P V 06MTHFX | 3.42\% |  | 10 |  | 759 |
| 99S0IAWE6/ 99S0IAWF3 | SWU006XQ1 IRS THB R F 3.41500 / SWU006XQ1 IRS THB P V 06MTHFX | 3.42\% |  | 5 |  | 381 |
| 99SOIAWN6/ 99SOIAWO4 | SWU006XR9 IRS THB R F 3.41000 / SWU006XR9 IRS THB P V 06MTHFX | 3.41\% |  | 5 |  | 380 |
| $\begin{aligned} & \text { 99SOIXAH3/ } \\ & \text { 99SOIXAI1 } \end{aligned}$ | SWU007VO6 IRS COP R F 6.20000 / SWU007VO6 IRS COP P V 00MC00VI | 6.20\% |  | 4 |  | 558 |
| 99S0IXAT7/ 99SOIXAU4 | SWU007VN8 IRS COP R F 6.20000 / SWU007VN8 IRS COP P V 00MCOOVI | 6.20\% |  | 3 |  | 537 |
| Total Receiv | Fixed Interest Rate Swaps |  | \$ | (62) | \$ | 9,645 |

[^1]Foreign Currency Risk - ASRS is exposed to foreign currency risk on its foreign currency forward contracts and future contracts. The required risk disclosures are included in the Foreign Currency Risk schedule in Note 3.

## 6. Net Pension Liability of Employers

The components of the net pension liability of the participating employers' at June 30, 2014 (in thousands), was as follows:

| Net Pension Liability of Employers |  |  |
| :--- | :---: | :---: |
| Total pension liability | $\$$ | $48,490,307$ |
| Retirement fiduciary net position |  | $(33,693,705)$ |
| Employers' net pension liability | $\$$ | $14,796,602$ |

Retirement fiduciary net position as a percentage of total pension liability
69.49\%

Actuarial Assumptions - The total pension liability was determined by an actuarial valuation as of June 30, 2013, and rolled forward using generally accepted actuarial procedures to June 30, 2014:

| Actuarial Assumptions - Retirement Plan |  |
| :--- | ---: |
| Actuarial valuation date | June 30, 2013 |
| Actuarial roll forward date | June 30, 2014 |
| Actuarial cost method | Entry age normal |
| Amortization Method: |  |
| Plan amendments | Immediate |
| Investment gain/loss | 5 years |
| Assumption gain/loss | Avg future serv lives |
| Experience gain/loss | Avg future serv lives |
| Asset valuation | Fair value |
| Discount rate | $8 \%$ |
| Projected salary increases | $3-6.75 \%$ |
| Inflation | $3 \%$ |
| Permanent benefit increase | Included |
| Mortality rates | 1994 GAM |

The above actuarial assumptions pertain to assumptions utilized for financial reporting requirements and differ from the assumptions utilized for funding purposes. The principal differences between the actuarial assumptions for financial reporting purposes and those utilized for funding purposes are the, actuarial cost methodology,
amortization methodology, valuation of the plan assets and the inclusion of the permanent benefit increase. The actuarial assumptions related to funding appear in the Actuarial Section. The actuarial assumptions related to funding were selected on the basis of an experience study which was performed for the five-year period ending June 30, 2012. The ASRS Board adopted the experience study recommended changes and those changes were effective for the June 30, 2013 actuarial valuation. Details of the assumptions resulting from the experience study performed as of June 30, 2013 appear in the Actuarial Section beginning on page 90 .

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2014 (see the discussion on the pension plan's investment policy) are summarized in the following table:

| Asset Class | Expected Return Arithmetic Basis |  |  |
| :---: | :---: | :---: | :---: |
|  | Target Asset Allocation | Real Return Arithmetic Basis | Long-term Expected Portfolio Real Rate of Return |
| Equity | 63\% | 7.03\% | 4.43\% |
| Fixed income | 25\% | 3.20\% | 0.80\% |
| Commodities | 4\% | 4.50\% | 0.18\% |
| Real estate | 8\% | 4.75\% | 0.38\% |
| Total | 100\% |  | 5.79\% |
| Inflation |  |  | 3.00\% |
| Expected arith | etic nominal | return | 8.79\% |

Actual returns may be lower due to volatility of returns. The long-term expected rate of return of $8.79 \%$ differs from the $8 \%$ utilized to discount the net pension liability. Details' regarding the discount rate for actuarial purposes follows.

Discount rate - The discount rate used to measure the total pension liability was $8 \%$. The projection of cash flows used to determine the discount rate assumed that contributions from participating employers will be made based on the actuarially determined rates based on the Boards' funding policy, which establishes the contractually required rate under Arizona statute. Based on those assumptions, the Plan's fiduciary net position was projected to be available to make all the projected future benefit payments of current plan members. Therefore, the longterm expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

## Sensitivity of the net pension liability to changes

 in the discount rate - The table below presents the net pension liability of the participating employers calculated using the discount rate of $8 \%$, as well as what the employers' net pension liability would be if it were calculated using the discount rate that is $1.00 \%$ lower $(7.00 \%)$ or $1.00 \%$ higher $(9.00 \%)$ than the current rate at June 30, 2014 (in thousands):| $\mathbf{1 \%}$ | Current <br> Discount <br> Rate | 1\% <br> Increase |  |
| ---: | ---: | ---: | ---: |
| Decrease | $\mathbf{( 8 . 0 0 \% )}$ | $\mathbf{( 9 . 0 0 \% )}$ |  |
| $\mathbf{( 7 . 0 0 \% )}$ | $18,702,146$ | $\$$ | $14,796,602$ |$\$ 12,677,648$

## 7. Other Postemployment Benefits

In addition to retirement benefits, ASRS provides retired members access to health insurance and a health insurance premium supplement benefit. Active contributing members are eligible for long-term disability benefits.

Per Arizona Revised Statutes, contribution requirements for active plan members and their participating employers are established and may be amended by the ASRS Board. Contribution rates are actuarially determined and are expected to finance the costs of benefits earned by plan members during the year and any unfunded accrued liability. Cost of administering the plan is financed through employer contributions, member contributions and investment earnings.

Health Insurance - Pursuant to A.R.S. §38-782, the Retiree Group Insurance Program makes available group health insurance coverage to eligible retired and disabled members and their dependents. Retired and disabled members of the ASRS, University Optional Retirement Plans, the Public Safety Personnel Retirement System, the Elected Officials' Retirement Plan and the Corrections Officer Retirement Plan are eligible for health insurance benefits through the ASRS.

The ASRS and eligible retirees pay premiums on a monthly basis to a contracted health insurance provider as consideration for health insurance coverage provided. The ASRS contract with the insurance provider allows for a portion of the difference between the total revenues and total claims expenses incurred by the provider to be distributed back to the ASRS in the form of a retrospective rate adjustment refund. The amount is calculated based on targeted retention ratio as agreed upon per the contract and may fluctuate from year-to-year. ASRS received $\$ 29.8$ million in retrospective rate adjustment refunds for revenue and claims expense activity during fiscal year 2014 and is presented as other income on the Statement of Changes in Fiduciary Net Position.

Health Insurance Premium Supplement - Pursuant to A.R.S. §38-783, retired and disabled members with at least five years of credited service are eligible to participate in the Health Insurance Premium Benefit Program (HBS). This assistance is provided to those members who elect group coverage through either the ASRS Retiree Group Insurance Program or their former member employer. For a more detailed summary of benefits, refer to the Summary of Plan Provisions in the Actuarial Section of this report.

In accordance with the funding policy as of June 30, 2014, the required contribution rate for employers for their active members was $.60 \%$ of covered payroll. There were 71,288 retired members or their beneficiaries are receiving benefits as of June 30, 2014.

The funded status for the HBS fund as of the most recent actuarial valuation date is as follows (dollar amounts in millions):

## Funded Status - HBS

| Actuarial valuation date |  | June 30, 2013 |
| :--- | ---: | ---: |
| Actuarial value of assets (a) | $\$$ | 1,325 |
| Actuarial Accrued Liability-PUC (b) |  | 1,485 |
| Unfunded AAL (UAAL) (b-a) | $\$$ | 160 |
| Percent funded (a/b) |  | $89.2 \%$ |
| Annual covered payroll (c) | $\$$ | 8,753 |
| UAAL percentage of covered |  |  |
| payroll [(b-a)/c] |  | $1.8 \%$ |

Long-term Disability - Pursuant to A.R.S. §38-797, members of the ASRS are eligible for a Long Term Disability (LTD) benefits in the event they become unable to perform their work. The monthly benefit is equal to twothirds of their monthly earnings. Participants continue to earn service credit up to their normal retirement dates. Members with LTD commencement dates after June 30, 1999 are limited to 30 years of service or the service on record as of the effective disability date, if their service is greater than 30 years.

In accordance with the funding policy as of June 30, 2014, the required contribution rate for employers and active members was $.24 \%$ of covered payroll. There were 4,313 disabled members receiving long-term disability benefits as of June 30, 2014.

The funded status for the LTD fund as of the most recent actuarial valuation date is as follows (dollar amounts in millions):

| Funded Status - LTD |  |  |
| :---: | :---: | :---: |
| Actuarial valuation date |  | June 30, 2013 |
| Actuarial value of assets (a) | \$ | 285 |
| Actuarial Accrued Liability-PUC (b) |  | 333 |
| Unfunded AAL (UAAL) (b-a) | \$ | 48 |
| Percent funded (a/b) |  | 85.6\% |
| Annual covered payroll (c) | \$ | 8,753 |
| UAAL percentage of covered payroll [(b-a)/c] |  | 0.5\% |

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment and mortality. Actuarially determined amounts are sub-
ject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The schedules of funding progress, presented as required supplementary information following the notes to the financial statements, present multi-year trend information about whether the actuarial values of plan assets are increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

The accompanying schedules of employer contributions, present trend information about the amounts contributed to the HBS and LTD funds by employers in comparison to the annual required contribution (ARC), an amount that is actuarially determined in accordance with the parameters of GASB Statement 43. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost for each year and amortize any unfunded actuarial liabilities (or funding excess) in level dollars over a fifteen-year closed period.

Projections of benefits for financial reporting purposes are based on the substantive fund and include the types of benefit provided at the time of each valuation and the historical pattern of sharing costs between the employer and plan members to that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value of assets, consistent with the long-term perspective of the calculations. Additional information as of the latest actuarial valuation follows:

## Actuarial Assumptions - HBS

| Actuarial valuation date | June 30,2013 <br> Actuarial cost method <br> Amortization method |
| :--- | ---: |
| Projected unit credit <br> Level \$ of pay <br> 15 year closed |  |
| Asset valuation | 10 year smoothed |
| Heathcare cost trend | $\mathrm{n} / \mathrm{a}$ |
| Discount rate | $8 \%$ |
| Inflation | $3 \%$ |
| Mortality rates | 1994 GAM Scale BB |


| Actuarial Assumptions - LTD |  |
| :--- | ---: |
| Actuarial valuation date | June 30, 2013 |
| Actuarial cost method | Projected unit credit |
| Amortization method | Level \$ of pay |
|  | 15 year closed |
| Asset valuation | 10 year smoothed |
| Discount rate | $8 \%$ |
| Rates of termination | $150 \%$ of 1987 CGDT |
| Disability incidence rates | Age -based unisex |
| Offsets for disabled members | $90 \%$ after 3 years |
| Offsets for active members | $55 \%$ of benefits |
| Incurred but not reported liability | $20 \%$ |

The assumptions were selected on the basis of an experience study which was performed for the five-year period ending June 30, 2012. The ASRS Board adopted the experience study recommended changes and those changes were effective for the June 30, 2013 actuarial valuation. Details of the assumptions resulting from the experience study performed as of June 30, 2013 appear in the Actuarial Section beginning on page 90 .

For a more detailed summary of benefits, refer to the Summary of Plan Provisions in the Actuarial Section of this report.

## 8. Contingent Liabilities

The ASRS is also a party in various litigation matters. While the final outcome cannot be determined at this time, management is of the opinion that the final obligation, if any, for these legal actions will not have a material adverse effect on the ASRS' financial position or results of operations.

## 9. Commitments

In connection with the purchase of various limited partnership interests in private equity, opportunistic equity, private debt, opportunistic debt, real estate, infrastructure and farmland and timber portfolios, the ASRS has commitments totaling $\$ 11.6$ billion. Remaining unfunded commitments as of June 30, 2014 are as follows: private equity $\$ 3.9$ billion; opportunistic equity $\$ 0.3$ billion; private debt $\$ 1.9$ billion; opportunistic debt $\$ 1.8$ billion; real estate $\$ 3.3$ billion; infrastructure $\$ 0.3$ billion and farmland and timber $\$ 0.1$ billion.

## 10. Due To and From Other Funds

Due to/from other funds includes amounts that need to be transferred after the year end resulting from allocations of contribution revenue as well as allocations of pooled cash, and pre-paid benefits.

## 11. Required Supplementary Schedules

Historical trend information designed to provide information about the ASRS' progress in accumulating sufficient assets to pay benefits when due is required supplementary information with respect to the HBS and LTD funds. Required supplementary information prepared in accordance with the parameters of GASB Statement No. 43 and GASB Statement No. 67 is included immediately following the Notes to the Financial Statements.

## 12. Subsequent Events

The ASRS has evaluated subsequent events through November 7, 2014, the date the financial statements were available to be issued. Events or transactions occurring after June 30, 2014, but prior to November 7, 2014 that provided additional evidence about conditions that existed at June 30, 2014 have been recognized in the financial statements for the year ended June 30, 2014. Events or transactions that provided evidence about conditions that did not exist at June 30, 2014, but arose before the financial statements were available to be issued have not been recognized in the financial statements for the year ended June 30, 2014.

## Schedule of Funding Progress - HBS and LTD

Last Three Years
(Dollars in Millions)

| Actuarial Valuation Date June 30 | Actuarial Value of Assets a | Actuarial Accrued Liability Projected Unit-Credit b | Unfunded Actuarial Accrued Liability (b-a) | Funded Ratio (a/b) | Covered <br> Payroll <br> c | Unfunded Actuarial Accrued Liability as a Percentage of Covered Payroll [(b-a)/c] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| HEALTH BENEFIT SUPPLEMENT FUND |  |  |  |  |  |  |
| 2011 | \$ 1,247 | \$ 1,504 | \$ 257 | 82.9 \% | \$ 9,061 | 2.8 \% |
| 2012 | 1,282 | 1,502 | 220 | 85.3 | 8,869 | 2.5 |
| 2013 | 1,325 | 1,485 | 160 | 89.2 | 8,753 | 1.8 |
| LONG TERM DISABILITY FUND |  |  |  |  |  |  |
| 2011 | \$ 308 | \$ 456 | \$ 148 | 67.5 \% | \$ 9,061 | 1.6 \% |
| 2012 | 296 | 440 | 144 | 67.3 | 8,869 | 1.6 |
| 2013 | 285 | 333 | 48 | 85.6 | 8,753 | 0.5 |

## Schedule of Contributions from Employer and Other Contributing Entities - HBS and LTD

Last Three Years
(Dollars in Thousands)

|  | Annual Required Contribution |  | Percentage Contributed |  | Other Contributions ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| HEALTH BENEFIT SUPPLEMENT FUND |  |  |  |  |  |
| 2012 | \$ | 54,463 | 100 \% | \$ | 35,473 |
| $2013{ }^{2}$ |  | 56,573 | 100 |  | 25,826 |
| $2014{ }^{3}$ |  | 52,874 | 100 |  | 29,848 |
| LONG TERM DISABILITY FUND |  |  |  |  |  |
| 2012 | \$ | 20,998 | 100 | \$ | - |
| 2013 |  | 20,881 | 100 |  | - |
| 2014 |  | 21,628 | 100 |  | - |

${ }^{1}$ Other contributions represent Federal Government reimbursements from the rate adjustment reimbursements from the insurance carrier.
${ }^{2}$ The 2013 required contributions from the employer for the HBS fund reflect total employer contributions of \$57,153,530 less $\$ 580,684$ in ACR contributions. ACR is not part of the required contribution rate.
${ }^{3}$ The 2014 required contributions from the employer for the HBS fund reflect total employer contributions of $\$ 53,405,674$ less $\$ 532,115$ in ACR contributions. ACR is not part of the required contribution rate.

See Notes to Required Supplementary Information.

## Schedule of Changes in the Net Pension Liability

For Year Ended June 30, 2014
(Dollars in Thousands)

| Total pension liability |  |  |
| :---: | :---: | :---: |
| Service cost | \$ | 966,705 |
| Interest |  | 3,607,440 |
| Changes of benefit terms |  | - |
| Differences between expected and actual experience ${ }^{1}$ |  | 1,078,966 |
| Changes of assumptions |  | - |
| Benefit payments |  | $(2,812,573)$ |
| Net change in total pension liability |  | 2,840,538 |
| Total pension liability-beginning |  | 45,649,769 |
| Total pension liability-ending (a) | \$ | 48,490,307 |
| Retirement fiduciary net pension |  |  |
| Contributions - employers | \$ | 965,969 |
| Contributions - members |  | 995,284 |
| Net investment income |  | 5,514,246 |
| Benefit payments, including refunds of member contributions |  | $(2,812,573)$ |
| Administrative expenses |  | $(26,107)$ |
| Other |  | 31,456 |
| Net change in Retirement fiduciary net position |  | 4,668,275 |
| Retirement fiduciary net position-beginning |  | 29,025,430 |
| Retirement fiduciary net position-ending (b) |  | 33,693,705 |
| Retirement's net pension liability-ending (a)-(b) | \$ | 14,796,602 |

${ }^{1}$ Measures the increased likelihood of future PBIs based on FY 2014 asset experience. The 6/30/13 TPL reflects the potential for future PBIs based on asset returns through FY 2013, whereas the 6/30/14 TPL reflects the potential for future PBIs based on asset returns through FY 2014.

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

## Schedule of Net Pension Liability

For Year Ended June 30, 2014
(Dollars in Thousands)

## Net Pension Liability

Total pension liability-ending (a)

| \$ | $48,490,307$ |
| :---: | ---: |
|  | $33,693,705$ |
| $\$$ | $14,796,602$ |

Retirement fiduciary net position as a percentage of the total pension liability
69.49\%

Covered payroll
\$
8,752,783
Net pension liability as a percentage of covered payroll
169.05\%

See Notes to Required Supplementary Information.
Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

## Schedule of Contributions from the Employer - Retirement

Last 10 Fiscal Years
(Dollars in Thousands)


5 The 2010 required contributions from the employer for the retirement fund reflect total employer contributions of $\$ 763,099,507$ less $\$ 13,463,483$ of unfunded employer liabilities.
6 The 2011 required contributions from the employer for the retirement fund reflect total employer contributions of $\$ 786,661,694$ less $\$ 4,314,379$ of unfunded employer liabilities.
7 The 2012 required contributions from the employer for the retirement fund reflect total employer contributions of $\$ 852,167,123$ less $\$ 1,711,105$ of unfunded employer liabilities.
8 The 2013 required contributions from the employer for the retirement fund reflect total employer contributions of 911,299,680 less $\$ 931,385$ of unfunded employer liability.

## Schedule of Investment Returns

For Year Ended June 30, 2014

Annual money-weighted rate of return, net of investment expenses
Fiscal 2014
17.78\%

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.
See Notes to Required Supplementary Information.

## Actuarial Methods and Assumptions for Valuations Performed

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated, which is the most recent actuarial valuation.

| Actuarial Assumptions - Retirement Plan |  |
| :---: | :---: |
| Actuarial valuation date | June 30, 2013 |
| Actuarial roll forward date | June 30, 2014 |
| Actuarial cost method | Entry age normal |
| Amortization Method: |  |
| Plan amendments | Immediate |
| Investment gain/loss | 5 years |
| Assumption gain/loss | Avg future serv lives |
| Experience gain/loss | Avg future serv lives |
| Asset valuation | Fair value |
| Discount rate | 8\% |
| Projected salary increases | 3-6.75\% |
| Inflation | 3\% |
| Permanent benefit increase | Included |
| Mortality rates | 1994 GAM Scale BB |
| Actuarial Assumptions - HBS |  |
| Actuarial valuation date | June 30, 2013 |
| Actuarial cost method | Projected unit credit |
| Amortization method | Level \$ of pay |
|  | 15 year closed |
| Asset valuation | 10 year smoothed |
| Heathcare cost trend | n/a |
| Discount rate | 8\% |
| Inflation | 3\% |
| Mortality rates | 1994 GAM Scale BB |

## Actuarial Assumptions - LTD

| Actuarial valuation date | June 30, 2013 |
| :--- | ---: |
| Actuarial cost method | Projected unit credit |
| Amortization method | Level \$ of pay |
|  | 15 year closed |
| Asset valuation | 10 year smoothed |
| Discount rate | $8 \%$ |
| Rates of termination | $150 \%$ of 1987 CGDT |
| Disability incidence rates | Age -based unisex |
| Offsets for disabled members | $90 \%$ after 3 years |
| Offsets for active members | $55 \%$ of benefits |
| Incurred but not reported liability | $20 \%$ |

## Significant Factors Affecting Identification of Trends

The following information is an executive summary of the "2012 Experience Study" conducted by Buck Consultants, the Plan's actuary. The purpose of this experience study is to review actual experience in relation to the actuarial assumptions currently in effect. This Study covers the experience of active, inactive, and retired members for the period July 1, 2007, through June 30, 2012. The five-year period under study is an atypical period that includes the financial panic of 2008 and subsequent "Great Recession," it is important to use judgment regarding the extent to which future experience is expected to be like the experience for this period.

The ASRS Board adopted all of the proposed assumptions at its meeting on May 24, 2013. The Study does not include an analysis of the assumed investment rate of return. The assumptions adopted by the ASRS Board were included in the June 30, 2013 valuation. With respect to the retirement fund, the June 30, 2013 values were rolled forward to June 30, 2014 for implementation of GASB 67.

The actual-to-expected ratios developed in this study are weighted by the accrued liabilities of each member under the Projected Unit Credit method. In this way, the ratios give more weight to members with large liabilities (generally the longest-serviced and highest-paid members).

## Experience Analysis Purpose

To carry out an actuarial valuation of the assets and liabilities of ASRS, the actuary must use assumptions for each of the following items:

## Demographic assumptions

- The probabilities of members separating from active service on account of withdrawal, retirement, death, and disability.
- The probabilities of retirement and death for members who have separated from service, but have not yet retired
- The mortality rates to be experienced among retired persons
- Health plan coverage elections
- Optional forms elected
- Alternate contribution amounts
- Timing of contributions


## Economic assumptions

- Investment returns to be realized on the funds over many years.
- The relative increases in a member's salary from the date of the valuation to the date of assumed separation from active status.


## Summary of Results for Assumptions Plan and LTD

The results of the 2012 Experience Study may be summarized as follows:

## Mortality for Active Members

- Number of deaths among active members (weighted by liability) is much lower than expected under current assumptions.
- We propose $50 \%$ of the 1994 GAM, sex-distinct, projected to 2015 using Scale BB.
- Actual-to-Expected ratios on the proposed table are $91 \%$ for males and $103 \%$ for females.


## Disability

- Actual liability-weighted disabilities are less than those expected under current assumptions.
- We propose unisex rates, reduced at higher ages from the current rates, to reflect the actual experience.
- Actual-to-Expected ratios on the proposed table are $81 \%$ for males and $89 \%$ for females.


## Withdrawal

- Liability-weighted withdrawals are higher than our assumptions predict and correlate more closely with service than age throughout members' careers.
- We propose new service-based rates for both male and female members to reflect the actual experience.
- Actual-to-Expected ratios on the proposed table are $106 \%$ for males and $105 \%$ for females.


## Retirement

- Retirement rates are slightly lower than our assumptions predict.
- In our study of the retirement decrement, we excluded members who retired as a result of an early termination incentive offer. In that way, our proposed rates represent anticipated retirement experience in the absence of such offers.
- We propose new unisex rates to reflect the actual experience.
- Adjusted rates are applied for members hired on or after July 1, 2011 to reflect the new tier of retirement eligibilities.
- Actual-to-Expected ratio on the proposed tables is $95 \%$ for males and $95 \%$ for females.


## Salary Experience

- Salary increases have varied greatly from year to year and, in aggregate, have been significantly lower than expected for the five-year period.
- We propose using $75 \%$ of the current rates.
- Proposed assumption increases Actual-toExpected ratio to $97 \%$.


## Mortality for Retired Members

- Liability-weighted number of deaths among retired members is lower than expected.
- We propose updating the mortality assumption to the 1994 GAM, sex-distinct, projected to 2015
using Scale BB with adjustments for small and large benefit amounts. The previous table was projected to 2010 using Scale AA. The Retirement Plans Experience Committee of the Society of Actuaries promulgated Scale BB in 2012 as an interim table to be used until a new table and a new projection scale are completed. Scale AA had underestimated the rate of longevity improvement, and the Society developed Scale BB to incorporate the actual rate of improvement. By adjusting for large and small benefit amounts, the new assumption follows the analysis of the RP2000 mortality study. Since longevity is greater for retirees with large incomes than for others, it is important to increase the liability for highincome retirees.
- Actual-to-Expected ratios on the proposed tables are $117 \%$ for males and $116 \%$ for females.


## Mortality for Inactive Members

- Mortality experience for inactive non-retired members during 2007-2012 was not analyzed for this period. Due to a data clean-up on inactive members, reported deaths included many deaths that occurred before the experience period.
- We propose the 1994 GAM, sex-distinct, projected to 2015 using Scale BB - the same table that we propose for retired members, absent the adjustment for the size of the benefit.


## Mortality for Disabled Members

- Number of deaths among disabled members is lower than expected.
- We propose returning to the mortality table used prior to 2008 with lower mortality rates for disabled members.
- Actual-to-Expected ratios on the proposed tables are $108 \%$ for males and $103 \%$ for females.


## Health Insurance Benefit (HIB) Elections

- Actual number of retirees electing coverage is less than our current assumption predicts.
However, among members who elected coverage, the actual number of retirees electing dependent coverage is greater than our current assumption predicts. In addition, the proportion of retirees
electing coverage is significantly different during the first year of retirement than in later years.
- We propose changing the proportion of future retiring members who get the health insurance premium supplement from $70 \%$ to $60 \%$ and the proportion of those retirees getting the dependent premium supplement from $35 \%$ to $40 \%$. We also propose using those assumptions for members who have been retired less than one year and continuing to use actual elections for members who have been retired for at least one year.


## Optional Form Load

- Optional form election experience has changed slightly since the optional form load was implemented.
- We propose changing the optional form load from $0.087 \%$ to $0.174 \%$.


## Alternate Contribution Rate

- Payment of the unfunded liability will be reduced by the alternate contribution rates the Plan is receiving.
- We propose using the total payroll for those paying the alternate contribution to adjust the calculated past service cost contribution rates.


## Mid-Year Contributions

- Contribution rates are currently being calculated assuming contributions are paid at the beginning of the fiscal year, but they are actually paid with each payroll throughout the fiscal year.
- We propose that contribution rates be calculated assuming contributions are paid in the middle of the fiscal year.
- The proposed assumption will minimize losses experienced each year due to timing of contribution payments.


## SUMMARY OF RESULTS FOR ASSUMPTIONS - LTD ONLY

## LTD Rates of Termination of Claims due to Death or Recovery

- Recoveries among LTD members are higher than expected.
- We recommend using $150 \%$ of the current rates.
- Actual-to-Expected ratios on the proposed tables are $88 \%$ for males and $109 \%$ for females.


## Offsets for Disabled and Active Members

- Offsets for current LTD members reduce their benefits by more than expected.
- We propose changing the percentage that offsets reduce LTD benefits to $45 \%$.
- We also propose keeping the assumption that $90 \%$ of disabled members will have offsets to LTD benefits after 3 years.
- For active members, offsets are assumed to reduce the gross benefits by $45 \%$.


## Pre-existing Condition Period

- Current assumption is to reduce liabilities to account for the extension of the pre-existing condition period from 3 to 6 months.
- We propose removing the $3 \%$ reduction in liabilities because all experience data used to set the other LTD assumptions occurred under the 6month pre-existing condition period.


## Incurred but Not Reported (IBNR) Load Assumption

- No adjustment for IBNR is currently being made. Based on experience from 2007-2012, IBNR equals $20.25 \%$ of the liability for new LTD members.
- We propose adding a $20 \%$ load to the liability for new LTD recipients.


## SUMMARY OF RESULTS FOR ASSUMPTIONS - SYSTEM

## Mortality for All Members

- We propose continuing to use a generational mortality table with mortality rates adjusted for members with annual benefits greater than $\$ 14,400$, but adding an adjustment for members with annual benefits less than $\$ 6,000$ and switching to Projection Scale BB. We also recommend setting male rates back 1 year and female rates back 2 years to better match experience. On the proposed table, Actual-to-Expected ratios become $150 \%$ for males and $134 \%$ for females with annu-
al benefits less than $\$ 6,000$, $91 \%$ for males and $171 \%$ for females with annual benefits between $\$ 6,000$ and $\$ 14,400$, and $105 \%$ for males and $97 \%$ for females with annual benefits over $\$ 14,400$. Note that $90 \%$ of the liability for retired members is for members with annual benefits over $\$ 14,400$.


## FINANCIAL IMPACT OF ASSUMPTION CHANGES - PLAN, LTD PROGRAM, AND SYSTEM

- Our proposed assumptions would result in slightly higher Plan contribution rates in the near future.
- Current Plan contribution rate would have been 23.07\% under our proposed assumptions, rather than the current rate of $22.55 \%$, if these assumption changes had been incorporated in the June 30, 2012 valuation.
- Overall change in total Plan actuarial liabilities is $0.73 \%$ under our proposed assumptions.
- Total Plan normal cost changes from $13.53 \%$ to $13.52 \%$ under our proposed assumptions.
- The Plan's Unfunded Liability changes from $\$ 9.723$ billion to $\$ 10.015$ billion under our proposed assumptions.
- The current LTD contribution rate would have been $0.23 \%$ under our proposed assumptions, rather than the current rate of $0.47 \%$, if these assumption changes had been incorporated in the June 30, 2012 valuation.
- The System deficit would have increased from $\$ 70.810$ million to $\$ 92.559$ million based on the proposed mortality assumption if it had been incorporated in the June 30, 2012 valuation.


## Combining Schedule of Retirement Fiduciary Net Position

As of June 30, 2014
(Dollars in Thousands)

|  | Retirement Plan |  |  | Retirement System | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ASSETS |  |  |  |  |  |  |
| Cash | \$ | 2,347 | \$ | 18 | \$ | 2,365 |
| RECEIVABLES |  |  |  |  |  |  |
| Accrued interest and dividends |  | 59,851 |  | 623 |  | 60,474 |
| Securities sold |  | 40,322 |  | 470 |  | 40,792 |
| Forward contracts |  | 415,314 |  | 4,566 |  | 419,880 |
| Contributions |  | 69,136 |  | - |  | 69,136 |
| Due from other funds |  | 612 |  | - |  | 612 |
| Other |  | 536 |  | 9 |  | 545 |
| Total receivables |  | 585,771 |  | 5,668 |  | 591,439 |
| INVESTMENTS AT FAIR VALUE |  |  |  |  |  |  |
| Short-term investments |  | 1,602,958 |  | 18,659 |  | 1,621,617 |
| Securities lending collateral |  | 14,623 |  | 161 |  | 14,784 |
| Equity |  | 19,926,128 |  | 196,015 |  | 20,122,143 |
| Fixed income |  | 6,577,035 |  | 94,633 |  | 6,671,668 |
| Real estate |  | 1,963,216 |  | 22,482 |  | 1,985,698 |
| Commodities |  | - |  | - |  | - |
| Global tactical asset allocation |  | 3,292,293 |  | 35,467 |  | 3,327,760 |
| Other |  | 100,189 |  | 1,210 |  | 101,399 |
| Total investments |  | 33,476,442 |  | 368,627 |  | 33,845,069 |
| TOTAL ASSETS |  | 34,064,560 |  | 374,313 |  | 34,438,873 |
| LIABILITIES |  |  |  |  |  |  |
| Securities purchased |  | 290,834 |  | 3,160 |  | 293,994 |
| Securities lending collateral |  | 14,623 |  | 161 |  | 14,784 |
| Forward contracts |  | 395,115 |  | 4,350 |  | 399,465 |
| Due to other funds |  | - |  | 9,760 |  | 9,760 |
| Other |  | 26,842 |  | 323 |  | 27,165 |
| TOTAL LIABILITIES |  | 727,414 |  | 17,754 |  | 745,168 |
| RETIREMENT FIDUCIARY NET POSITION | \$ | 33,337,146 | \$ | 356,559 | \$ | 33,693,705 |

In accordance with GASB 34, for financial reporting purposes the Retirement Plan and the Retirement System are presented in one column, Retirement Fund, in the ASRS Basic Financial Statements because they are administered within a single pension plan within a trust. The Combining Schedule of Retirement Fiduciary Net Position and Changes in Retirement Fiduciary Net Position are presented here to provide members with more detailed information about the two plan components.

## Combining Schedule of Changes in Retirement Fiduciary Net Position

For the Year Ended June 30, 2014
(Dollars in Thousands)

|  | Retirement Plan |  |  | Retirement System | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ADDITIONS |  |  |  |  |  |  |
| CONTRIBUTIONS |  |  |  |  |  |  |
| Member contributions | \$ | 995,245 | \$ | 39 | \$ | 995,284 |
| Employer contributions |  | 965,930 |  | 39 |  | 965,969 |
| Transfers from other plans |  | 1,044 |  | - |  | 1,044 |
| Purchased Service |  | 32,441 |  | - |  | 32,441 |
| Total Contributions |  | 1,994,660 |  | 78 |  | 1,994,738 |
| INVESTING ACTIVITY INCOME |  |  |  |  |  |  |
| Net appreciation in fair value of investments |  | 5,065,574 |  | 49,112 |  | 5,114,686 |
| Interest |  | 183,153 |  | 2,073 |  | 185,226 |
| Dividends |  | 334,479 |  | 3,715 |  | 338,194 |
| Other income |  | 17,750 |  | 199 |  | 17,949 |
| Total investing activity income |  | 5,600,956 |  | 55,099 |  | 5,656,055 |
| INVESTMENT ACTIVITY EXPENSE |  |  |  |  |  |  |
| Management fees |  | $(134,621)$ |  | $(1,127)$ |  | $(135,748)$ |
| Custody fees |  | $(1,147)$ |  | (13) |  | $(1,160)$ |
| Consultant and legal fees |  | $(3,654)$ |  | (10) |  | $(3,664)$ |
| Internal investment activity expense |  | $(3,125)$ |  | (34) |  | $(3,159)$ |
| Total investment activity expenses |  | $(142,547)$ |  | $(1,184)$ |  | $(143,731)$ |
| Net income from investing activities |  | 5,458,409 |  | 53,915 |  | 5,512,324 |
| FROM SECURITIES LENDING ACTIVITIES |  |  |  |  |  |  |
| Securities lending income |  | 1,626 |  | 18 |  | 1,644 |
| Unrealized gain on securities lending |  | 85 |  | 1 |  | 86 |
| Total securities lending activity income |  | 1,711 |  | 19 |  | 1,730 |
| Security lending expense: |  |  |  |  |  |  |
| Interest rebate |  | 461 |  | 5 |  | 466 |
| Management fees |  | (271) |  | (3) |  | (274) |
| Total securities lending activity expense |  | 190 |  | 2 |  | 192 |
| Net income from securities lending activities |  | 1,901 |  | 21 |  | 1,922 |
| Total net investment income |  | 5,460,310 |  | 53,936 |  | 5,514,246 |
| Other Income |  | - |  | - |  | - |
| TOTAL ADDITIONS |  | 7,454,970 |  | 54,014 |  | 7,508,984 |
| DEDUCTIONS |  |  |  |  |  |  |
| Retirement and disability benefits |  | 2,481,587 |  | 45,451 |  | 2,527,038 |
| Survivor benefits |  | 39,275 |  | 59 |  | 39,334 |
| Refunds to withdrawing members, including interest |  | 246,163 |  | 38 |  | 246,201 |
| Administrative expenses |  | 25,822 |  | 285 |  | 26,107 |
| Transfers to other plans |  | 915 |  | - |  | 915 |
| Other |  | 1,105 |  | 9 |  | 1,114 |
| TOTAL DEDUCTIONS |  | 2,794,867 |  | 45,842 |  | 2,840,709 |
| NET INCREASE IN FIDUCIARY NET POSITION |  | 4,660,103 |  | 8,172 |  | 4,668,275 |
| RETIREMENT FIDUCIARY NET POSITION |  |  |  |  |  |  |
| Beginning of year |  | 28,677,043 |  | 348,387 |  | 29,025,430 |
| End of year | \$ | 33,337,146 | \$ | 356,559 | \$ | 33,693,705 |

In accordance with GASB 34, for financial reporting purposes the Retirement Plan and The Retirement System are presented in one column, Retirement Fund, in the ASRS basic financial statements because they are administered within a single pension plan within a trust. The Combining Schedule of Retirement Fiduciary Net Position and Changes in Retirement Fiduciary Net Position are presented here to provide members with more detailed information about the two plan components.

## Schedule of Administrative Expenses

For Year Ended June 30, 2014
(Dollars in Thousands)

| Administrative Expenses | Amount |  |
| :---: | :---: | :---: |
| Salaries | \$ | 12,376 |
| Retirement contributions |  | 1,266 |
| Other employee related expenses |  | 3,511 |
| Total personnel services |  | 17,153 |
| Actuarial services |  | 1,236 |
| Attorney services |  | 324 |
| Auditing services |  | 65 |
| Banking services |  | 1,426 |
| Staffing services |  | 2,709 |
| LTD administrative services |  | 2,532 |
| Other professional services |  | 151 |
| Total professional services |  | 8,443 |
| Telephone |  | 316 |
| Printing |  | 9 |
| Postage and mailing |  | 226 |
| Total communications |  | 551 |
| Lease expense |  | 1,440 |
| Total facilities |  | 1,440 |
| Computer supplies and software |  | 1,374 |
| Maintenance agreements |  | 83 |
| Equipment and equipment rental |  | 285 |
| Total software and equipment |  | 1,742 |
| Professional development |  | 62 |
| Travel |  | 64 |
| Tuition reimbursement |  | 12 |
| Total education, meetings, and travel |  | 138 |
| Advertising |  | 19 |
| Insurance |  | 152 |
| Membership dues |  | 22 |
| Office supplies |  | 50 |
| Periodicals and publications |  | 55 |
| Miscellaneous |  | 21 |
| Total general |  | 319 |
| Total administrative expenses | \$ | 29,786 |

## Schedule of Professional Consultant Fees

For Year Ended June 30, 2014
(Dollars in Thousands)

| Professional/Consultant | Amount |  |
| :---: | :---: | :---: |
| Buck Consultants, LLC | \$ | 1,053 |
| Mercer Health \& Benefits LLC |  | 122 |
| Gabriel Roeder Smith \& Company |  | 61 |
| Total actuarial services |  | 1,236 |
| Arizona Office of the Attorney General |  | 222 |
| Charles W Whetstine, P.C. |  | 85 |
| Arizona Office of Administrative Hearings |  | 11 |
| Atkinson-Baker, Inc. |  | 3 |
| Arizona Rules LLC |  | 2 |
| Peter Gold |  | 1 |
| Total attorney services |  | 324 |
| CliftonLarsonAllen, LLP |  | 65 |
| Total auditing services |  | 65 |
| State Street Bank And Trust Company |  | 1,424 |
| BNY Mellon Asset Services, Inc. |  | 2 |
| Total banking services |  | 1,426 |
| Guidesoft Inc. |  | 2,687 |
| Perfect Placement Services, Inc. |  | 20 |
| Corporate Job Bank Personnel Services |  | 1 |
| Professional Search Associates |  | 1 |
| Total staffing services |  | 2,709 |
| Sedgwick Claims Management Services |  | 2,532 |
| Total LTD administrative services |  | 2,532 |
| Arizona Deparment of Administration, State Procurement Office |  | 60 |
| CEM Benchmarking, Inc. |  | 40 |
| CenturyLink |  | 25 |
| Facilitec, Inc. |  | 9 |
| Lecroy \& Milligian Associates, Inc. |  | 7 |
| Iron Mountain, Inc. |  | 5 |
| The Centers for Habilitation |  | 1 |
| Horn Interpreting Services, Inc. |  | 1 |
| Catholic Community Services of Southern Arizona, Inc. |  | 1 |
| Marin-Garcia Reporting, Inc. |  | 1 |
| Beacon Group SW, Inc. |  | 1 |
| Total other professional services |  | 151 |
| Total professional and consulting services | \$ | 8,443 |

Information on investment management and consulting fees can be found in the Schedule of Investment Expenses on pages 54-57. Investment management fees also appear on pages 81-87.

## Schedule of Investment Expenses

For Year Ended June 30, 2014
(Dollars in Thousands)

| Management Fees ${ }^{1}$ |  | Amount |
| :---: | :---: | :---: |
| Public Equity Managers |  |  |
| Aberdeen Asset Management | \$ | 2,337 |
| American Century Investments |  | 36 |
| AQR Capital Management |  | 1,175 |
| Blackrock EAFE Country Fund U/A |  | 1,367 |
| Blackrock MSCI EAFE Small Cap |  | 521 |
| Blackrock MSCI Emerging Markets Free B |  | 802 |
| Blackrock Russell 1000 Index Fund B |  | 40 |
| Blackrock Russell 2000 Index Fund B |  | 15 |
| Brandes Investment Partners International Equity |  | 1,851 |
| Champlain Investment Partners |  | 1,087 |
| CRM Funds Mid Cap Value |  | 639 |
| Dimensional Fund Advisors Equity Fund |  | 805 |
| Dimensional Fund Advisors International Small Cap |  | 1,389 |
| Eaton Vance Investment Managers |  | 4,540 |
| Franklin Templeton Investments |  | 2,865 |
| Hansberger Global Investors, LC |  | 1,118 |
| Intech Large Capital |  | 1,984 |
| LSV Asset Management - Emerging Markets Equity Fund LP |  | 2,679 |
| LSV Asset Management - US Large Cap Value Account |  | 1,860 |
| Thompson, Siegel \& Walmsley LLC Investment Management |  | 17 |
| Timessquare Capital Management |  | 4,384 |
| Trinity Street Asset Management |  | 32 |
| Walter Scott \& Partners |  | 1,273 |
| Wellington Management Co. - Mid Cap Opportunities |  | 2,231 |
| William Blair \& Company |  | 2,328 |
| Total Public Equity Management Fees |  | 37,375 |
| Public Fixed Income Managers |  |  |
| Ashmore Investment Management |  | (903) |
| Blackrock Custom US Debt Fund |  | 30 |
| Blackrock Intermediate Govt/Credit Bond Index Fund |  | 6 |
| Blackrock Local Bond Index Fund B |  | 29 |
| Blackrock US High Yield Bond Index Fund B |  | 35 |
| Blackrock US Debt Index Fund B |  | 22 |
| Columbia Management Investment Advisors, LLC |  | 2,463 |
| J.P. Morgan Asset Management |  | 1,158 |
| Pacific Investment Management Company |  | 2,467 |
| Shenkman Capital Management |  | 523 |
| Total Public Fixed Income Management Fees |  | 5,830 |
| Global Tactical Asset Allocation Managers |  |  |
| Bridgewater Associates Global Tactical Asset Allocation |  | 17,130 |
| Windham Capital Management |  | 2,324 |
| Total Global Tactical Asset Allocation Management Fees |  | 19,454 |
| Commodities Managers |  |  |
| Blackrock Dow Jones/UBS |  | 29 |
| Gresham Investment Management |  | 3,023 |
| Total Commodities Management Fees |  | 3,052 |

[^2]| Management Fees ${ }^{1}$ | Amount |
| :---: | :---: |
| Private Equity Managers |  |
| Accel-KKR Capital Partners III, LP | 600 |
| Apollo Investment Fund VII, LP | 82 |
| Apollo Investment Fund VIII, LP | 599 |
| Apollo Natural Resources Partners, LP | 975 |
| Arlington Capital Partners III, LP | 589 |
| Atlas Venture Fund VIII, LP | 291 |
| Audax Private Equity Fund IV, LP | 264 |
| Baird Capital Partners V Limited Partnership | 763 |
| Blackrock Private Opportunities Fund, LP | 42 |
| Blackstone Capital Partners VI, LP | 868 |
| Blackstone Energy Partners, LP | 542 |
| Bridgepoint Europe IV 'D', LP | 293 |
| Brookfield Special Situations Fund III (NR A), LP | 927 |
| Catalyst Fund Limited Partnership III | 939 |
| Catalyst Fund Limited Partnership IV | 2,169 |
| Catterton Partners VII, LP | 1,072 |
| Centerbridge Capital Partners II, LP | 445 |
| CMEA Ventures VII, LP | 56 |
| Crown European Buyout Opportunities II, Plc | 162 |
| CVC European Equity Partners V (C), LP | 375 |
| Edgewater Growth Capital Partners III, LP | 334 |
| EnCap Energy Capital Fund IX, LP | 525 |
| Energy Capital Partners II-A, LP | 713 |
| First Reserve Fund XII, LP | 982 |
| IDG Ventures SF, LP | 223 |
| JLL Partners Fund VI, LP | 424 |
| Khosla Ventures IV, LP | 129 |
| Kinderhook Capital Fund III, LP | 229 |
| Levine Leichtman Capital Partners Private Capital Solutions, LP | 1,422 |
| Levine Leichtman Capital Partners IV, LP | 822 |
| Levine Leichtman Capital Partners V, LP | 1,328 |
| Linconshire Equity Fund IV-A, LP | (71) |
| Littlejohn Fund IV-A, LP | 514 |
| LLR Equity Partners III, LP | 350 |
| LLR Equity Partners IV, LP | 1,014 |
| Maranon Mezzanine Fund, LP | 530 |
| Montreux Equity Partners IV, LP | 192 |
| Nautic Partners VI, LP | 189 |
| New Atlantic Ventures Fund III, LP | 165 |
| New Mountain Partners III, LP | 60 |
| Oakhill Capital Partners III, LP | 1,289 |
| Oaktree European Principal Fund III, LP | 664 |
| Olympus Growth Fund VI, LP | 122 |
| Onex Partners III, LP | 985 |
| Partners Group Secondary 2008, LP | 846 |
| Partners Group Secondary 2011 (USD), LP, Inc | 624 |
| Paul Capital Partners IX, LP | 469 |
| Peninsula Technology Ventures, LP | 75 |
| Pine Brook Capital Partners, LP | 719 |
| Pine Brook Capital Partners II, LP | 1,001 |
| Quantum Energy Partners V, LP | 1,084 |
| Saybrook Corporate Opportunity Fund, LP | 180 |
| Seidler Equity Partners IV, LP | 600 |
| Silver Lake Partners III, LP | 161 |
| TCW/Crescent Mezzanine Partners V, LP | 515 |
| Tenex Capital Partners, LP | 755 |
| The Resolute Fund II, LP | 263 |
| The Veritas Capital Fund IV, LP | 543 |
| ${ }^{1}$ Negative amounts represent instances in which performance incentive fees received in excess of investment fees charged. |  |


| Management Fees ${ }^{1}$ | Amount |
| :---: | :---: |
| Thomas H Lee Equity Fund VI, LP | 68 |
| Trilantic Capital Partners V (North America), LP | 1,375 |
| Vista Equity Partners Fund IV, LP | 530 |
| Warburg Pincus Private Equity X, LP | 437 |
| Waud Capital Partners QP III, LP | 706 |
| Wayzata Opportunities Fund II, LP | 108 |
| White Deer Energy, LP | 646 |
| White Deer Energy, LP II | 999 |
| Yucaipa American Alliance Fund II, LP | 582 |
| Total Private Equity Management Fees | 38,473 |
| Opportunistic Equity Managers |  |
| 56th and Park (NY) Holdings, LLC | 94 |
| OCM STR Co-Invest 1, LP | 750 |
| Total Opportunistic Equity Management Fees | 844 |
| Opportunistic Debt Managers |  |
| Avenue Europe Special Situations Fund II (US), LP | 2,977 |
| Blackrock Credit Investors II, LP | 1 |
| Blackrock Mortgage Investors, LP | 315 |
| Fortress MSR Opportunities Fund II A LP | 38 |
| Guggenheim Partners Management | 1,594 |
| Oaktree Opportunities Fund VIII, LP | 429 |
| Oaktree Opportunities Fund VIIIb, LP | 2,179 |
| OZ Credit Opportunities Domestic Partners, LP | 432 |
| TCW Capital Trust | 2,617 |
| Total Opportunistic Debt Management Fees | 10,582 |
| Private Debt Managers |  |
| Blackstone/GSO Capital Solutions Fund, LP | 470 |
| Cerberus ASRS Credit Opportunities Fund, LP | 417 |
| H/2 Core Real Estate Debt Fund, LP | 417 |
| Highbridge Principal Strategies - Mezzanine Partners II, LP | 523 |
| RFM Cactus Holding Company, LLC | 718 |
| White Oak Global Advisors Private Debt | 2,495 |
| Total Private Debt Management Fees | 5,040 |
| Private Real Estate Managers |  |
| AEW Core Property Trust (U.S.), Inc. | 1,132 |
| AEW Value Investors Fund II, LP | 327 |
| Alcion Real Estate Partners Tax-Exempt Parallel Fund II, LP | 708 |
| Almanac Realty Securities IV, LP | 413 |
| Almanac Realty Securities V, LP | 528 |
| Blackrock US Real Estate Securities Fund B | 29 |
| Blackstone Real Estate Partners VI, LP | 535 |
| Blackstone Real Estate Partners VII, LP | 747 |
| Cactus Mulit-Asset Investor, LLC | 542 |
| Carlyle Realty Partners V, LP | 412 |
| CB Richard Ellis Strategic Partners US Opportunity 5, LP | 407 |
| CB Richard Ellis Strategic Partners US Value 5, LP | 45 |
| CIM Fund III, LP | 700 |
| CIM Fund VIII, LP | 972 |
| CIM Urban REIT, LLC | 693 |
| CIM VI (Urban REIT), LLC | 290 |
| Colony Investors VIII, LP | 347 |
| Dune Real Estate Fund, LP | 515 |
| Dune Real Estate Fund II, LP | 530 |
| Five Mile Capital Partners II, LP | 491 |


| Management Fees ${ }^{1}$ |  | Amount |
| :---: | :---: | :---: |
| H/2 Special Opportunities II, LP |  | 1,002 |
| Harrison Street Real Estate Partners III, LP |  | 613 |
| Heitman Value Partners II, LP |  | 164 |
| Hunt Commercial Realty Partners III, LP |  | 368 |
| Invesco Asian Real Estate Partners II (USD), LP |  | 163 |
| Lone Star Fund VI (US), LP |  | 79 |
| Lone Star Real Estate Fund (US), LP |  | 74 |
| M\&G Real Estate Debt Fund, LP |  | 171 |
| Oaktree Real Estate Opportunities Fund V, LP |  | 653 |
| Oaktree Real Estate Opportunities Fund VI, LP |  | 748 |
| PLA Residential III, LP |  | 748 |
| PLA Retail Fund I, LP |  | 892 |
| PRISA II |  | 629 |
| RREEF Global Opportunities Fund II, LLC |  | (751) |
| Tishman Speyer Real Estate Venture VI, LP |  | 132 |
| Tishman Speyer Real Estate Venture VII, LP |  | 494 |
| US Cactus Industrial/Logistics Fund LP |  | 215 |
| VTRAZ Holdings, LLC |  | 1,323 |
| Waterton Residential Property Venture XI, LP |  | 406 |
| Westbrook Real Estate Fund VII, LP |  | 394 |
| Westbrook Real Estate Fund VIII, LP |  | 614 |
| Total Private Real Estate Management Fees |  | 19,494 |
| Farmland and Timber Manager |  |  |
| U.S. Farming Realty Trust II, LP |  | 1,729 |
| Total Farmland and Timber Management Fees |  | 1,729 |
| Total Management Fees | \$ | 141,873 |
| Other Investment Fees |  | Amount |
| Investment Custodial Fees |  |  |
| State Street Bank and Trust Company | \$ | 1,210 |
| Investment Consultant Fees |  |  |
| CGM Grovsner |  | 701 |
| Institutional Shareholder Services |  | 113 |
| KPMG LLP |  | 92 |
| Meketa Investment Group |  | 528 |
| Mercer Investment Consulting Inc |  | 35 |
| New England Pension Consultants |  | 523 |
| Robert Charles Lesser and Co, LLC |  | 781 |
| Woodsedge Consulting LLC |  | 1 |
| Investment Legal Fees |  |  |
| Cox Castle and Nicholson |  | 66 |
| Foley and Lardner, LLP |  | 862 |
| Morrison \& Foester, LLP |  | 1 |
| Subtotal Investment and Legal Fees |  | 3,703 |
| Internal Investment Activity Expenses - see detailed schedule |  | 3,297 |
| Total Investing Activity Expense |  | 150,083 |
| Securities Lending Activity |  |  |
| Securities Lending Borrower Rebates |  | (486) |
| Securities Lending Management Fees |  | 285 |
| Total Securities Lending Activity Expenses |  | (201) |
| Total Investment Expenses | \$ | 149,882 |

[^3]
## Schedule of Internal Investment Activity Expenses

For Year Ended June 30, 2014
(Dollars in Thousands)

| Internal Investment Activity Expense | Amount |
| :--- | ---: |
| Salaries | 1,342 |
| Employee Insurance | 118 |
| Retirement Contributions - ASRS | 148 |
| Other Personnel Expense | 130 |
| Total personnel services | 1,738 |
| Lease expense | 43 |
| Total facilities | 43 |
| Professional development | 5 |
| Travel | 17 |
| Tuition reimbursement | 3 |
| Total education, meetings and travel | 25 |
| Research and information services | 1,480 |
| Membership dues | 8 |
| Supplies | 1 |
| Telephone | 1 |
| Periodicals and publications | 1 |
| Total general administrative expense | $\mathbf{1}$ |
| Total internal investment activity expense | $\mathbf{2}$ |

# लाI ROAD TO RETIREMENT <br> 5+ <br> <br> NAVIGATE YOUR FUTURE 

 <br> <br> NAVIGATE YOUR FUTURE}

Your Career: Mid - Five Plus Years


Check out the additional benefits and opportunities for you to explore.
$\checkmark$ Service Center: Time for a tune up and come back at least annually
$\checkmark$ Money Mart: ASRS Investments \& Financial Planning

See you at the next highway marker!

## INVESTMENT

## III. Investment Section

Chief Investment Officer's Report. ..... 60
Asset Allocation ..... 67
Investment Results
Performance Accounting / Computation Standards. ..... 68
Annualized Rates of Return ..... 68
Historical Rates of Return ..... 69
Ten Year Review of Investment Income ..... 70
Net Income from Investments ..... 70
Asset Allocation
Schedule of Investment Portfolios by Asset Class ..... 71
Equity Portfolio Profile
Equity Sub-Sector Allocation ..... 72
Ten Largest Domestic Equity Holdings. ..... 72
Distribution by Market Sector ..... 73
Ten Largest International Equity Holdings ..... 73
Summary of Broker Commissions ..... 73
Fixed Income Portfolio Profile
Distribution by Sector. ..... 74
Distribution by Maturity ..... 74
Distribution by Coupon ..... 74
Ten Largest Domestic Fixed Income Holdings. ..... 74
Private Investment Portfolio Profile
Ten Largest Real Estate Managers ..... 75
Ten Largest Private Equity Managers ..... 76
Opportunistic Equity Managers ..... 76
Opportunistic Debt Managers ..... 77
Private Debt Managers ..... 77
Farmland and Timber Manager ..... 77
Schedule of Broker Commissions
Domestic Equity Trades ..... 78
Foreign Equity Trades ..... 80
Schedule of Investment Fees ..... 81
Fixed Income. ..... 84
Real Estate ..... 85
Commodities ..... 87
Global Tactical Asset Allocation ..... 87
Other Investments ..... 87

## Chief Investment Officer's Report

Dear Members:

Following is the Investment Section of the ASRS Comprehensive Annual Financial Report for the fiscal year ended June 30, 2014. A few highlights of the year are as follows:

- As of June 30, 2014, the fair market value of total fund assets was $\$ 36.3$ billion, an increase of approximately $\$ 7.5$ billion over the prior year.
- The investment portfolio generated approximately $\$ 5.8$ billion in net investment earnings during the year.
- The combined investment portfolio experienced a net return of $18.6 \%$ compared to the Interim Total Fund Benchmark return of $17.8 \%$.
- The increase in net investments during the year is primarily due to strong performance in U.S. and international equities, as well as opportunistic debt, real estate and opportunistic equity.


## A Review - Fiscal Year 2014

During the fiscal year, the ASRS investments were broadly diversified in domestic and international equities, domestic fixed income, real estate, private equity, opportunistic, commodities and cash equivalent instruments.

The ASRS held $\$ 11.2$ billion in domestic equities and $\$ 7.4$ billion in international equities at June 30, 2014, a decrease of $0.8 \%$ in domestic equities and a $13.9 \%$ increase in international equities from fiscal year 2013. Market performance and the reallocation of assets account for the change in value. The fiscal year 2014 rate of return for ASRS domestic equities was $24.7 \%$ compared to $22.2 \%$ in fiscal year 2013. By comparison, the ASRS domestic equities benchmark, comprised of a combination of S\&P 400, S\&P 500 and the S\&P 600 indices, had a return of $24.9 \%$ for fiscal year 2014. The fiscal year 2014 rate of return for ASRS international equities was $21.3 \%$ compared to $14.0 \%$ in fiscal year 2013 .
Comparatively, the ASRS international equities benchmark, comprised of the MSCI EAFE, MCSI EAFE Small Cap and the MSCI EM indices, had a rate of return of $22.0 \%$ for fiscal year 2014. The underperformance of the Fund's international equities class was largely a result of the stock and country selections made by external portfolio managers.

Total public fixed income securities held by the Fund were $\$ 4.9$ billion at June 30 , 2014, which is a slight decrease from prior year. The rate of return was $6.0 \%$ for domestic fixed income compared to $(0.3 \%)$ in the previous year which is the result of lower long-term interest rates and the narrowing of credit spreads during fiscal year 2014. The Private Debt program has made substantial progress towards being fully funded at the Strategic Asset Allocation Policy (SAAP) target of $3.0 \%$ of the Total Fund. At June 30, 2014, $\$ 1.2$ billion was invested in various strategies with a since inception IRR of $15.7 \%$. Our Opportunistic Debt program continues to add value to the fixed income asset class with current investments totaling $\$ 930.9$ million and since inception IRR of $12.2 \%$.

At June 30, 2014, the ASRS held $\$ 856$ million in commodities exposure, of which $\$ 849$ million is reported in ShortTerm Investments and $\$ 7.3$ million is reported in Commodities on the Statement of Fiduciary Net Position. The TWO managers experienced a return of $10.1 \%$ and $7.9 \%$, respectively, compared to the DJUBS Commodity Index, which returned 8.2\% during fiscal year 2014.

At June 30, 2014, the ASRS held $\$ 2.1$ billion in real estate assets, an increase of $\$ 372.3$ million from fiscal year 2013. The one year and three year time weighted returns for the real estate program are $13.7 \%$ and $12.9 \%$, respectively. This compares to the NFI-ODCE Index of $12.7 \%$ and $12.0 \%$ for the one and three year periods. The NFI-ODCE Index is comprised of core institutional quality real estate with moderate leverage and reported net of fees. Approximately $79 \%$
of the real estate program assets are invested in opportunity fund style investments, which can differ substantially from core style investments. The recent performance of the real estate investments reflects an improving economy and property markets. The difference in performance compared to the benchmark reflects primarily a divergence in the type of assets owned. During fiscal year 2014, the ASRS initiated investments in Farmland and Timber currently valued at $\$ 105.8$ million and a since inception IRR of $1.3 \%$ which modestly lagged the CPI ex-Food and Energy +350 bps benchmark of $2.7 \%$.

At June 30, 2014, the ASRS held $\$ 2.2$ billion in private equity investments, an increase of $\$ 499.1$ million from fiscal year 2013. On a relative basis over the long-term ( 10 years or longer), the ASRS Strategic Investment Policy benchmarks the private equity program against and expects the program's performance to generate a minimum internal rate of return equal to the Russell 2000 Index, net of all investment management fees and expenses. For the year ending June 30, 2014, the one year and three year net-of-fees rate of return was $17.8 \%$ and $15.3 \%$, respectively. For the same periods, the Russell 2000 Index returned $24.9 \%$ and $13.2 \%$, respectively. Mid-teen returns for the private equity portfolio since 2009 reflect improvements in the economy since the low point of the recent recession and have been accretive to total fund returns. The comparison to the Russell 2000 reflects composition differences between the public market benchmark and the private market holdings, as well as volatility in the public market compared to private market appraisal valuations. Our Opportunistic Equity program continues to add value to the equity asset class with current investments totaling $\$ 355.5$ million and since inception IRR of $37.3 \%$.

## U.S. Economy and Capital Markets

The U.S. economy has picked up speed throughout fiscal year 2014 notwithstanding the slowdown in the first quarter which has prompted the Federal Reserve to steadily decrease the Quantitative Easing program. Generally speaking, the global macroeconomic picture has stabilized throughout the year, led by the U.S., as reflected in the double digit gains across equity markets. U.S. GDP expanded by $4.2 \%$ for the latest quarter. The unemployment rate has declined from $7.5 \%$ as of June 30, 2013 to $6.2 \%$ as of June 30, 2014. The CPI Index has generally remained stable and stands at $2.1 \%$ year-over-year as of June 30, 2104. The Federal Funds rate remained unchanged during the fiscal year with a range of $0.00 \%$ to $0.25 \%$.

Equity markets across the board rose during the fiscal year. The S\&P 500 Index was up $24.6 \%$ with returns marginally lagging mid-caps and small-caps. The S\&P 400 Index and the S\&P 600 Index increased $25.2 \%$ and $25.5 \%$ during the fiscal year. Growth significantly outperformed value in the large cap space while value modestly outperformed growth in the mid cap space. Interestingly, growth and value performed equally among small-caps. International equity markets marginally lagged domestic markets. The MSCI EAFE Index increased $24.4 \%$ during the fiscal year. The MSCI ACWI ex U.S. Index rose $22.5 \%$ during the fiscal year. Europe (ex-United Kingdom) was the best performing developed market as it increased $31.8 \%$. Emerging markets were slightly hindered by Indonesia, Ukraine, Chile, and Hungary, causing emerging markets to significantly underperform their developed market counterparts. The MSCI EM Index increased $14.7 \%$.

The Barclays Aggregate Fixed Income Index significantly underperformed the equity markets increasing 4.4\% during the fiscal year. High Yield was the top performer within fixed income, increasing $11.7 \%$ while Financial Institutions was the top performing sector in the Barclays Aggregate Index as investors exhibited an increased appetite for risk and preferred longer durations. Long duration bonds outperformed short term issues. Lower-quality issues outperformed higherquality issues in the investment credit space. Mortgages increased $4.7 \%$ and Treasuries increased $2.0 \%$ during the fiscal year. Emerging market debt produced a positive return for the fiscal year of $3.9 \%$, but experienced significant volatility throughout the year.

REITs exhibited modestly positive performance for the fiscal year; the FTSE NAREIT Index rose $13.4 \%$. Private real estate fared well; the NCREIF Property Index was up $12.7 \%$ (on a quarterly lag) for the fiscal year.

Commodities also contributed positive returns for the fiscal year with the Dow Jones-UBS Commodity Index increasing $8.2 \%$ during the fiscal year. Industrial metals were the major detractor while energy, precious metals, agriculture, and livestock were positive.

## Our Beliefs

The following Investment Beliefs have been established to ensure the development of congruent and synergistic investment strategies, and to ensure the effective and efficient allocation of resources. These Investment Beliefs determine the general paradigm within which investment strategies are developed, investment ideas are reviewed, and investment decisions are implemented.

Modifications to these Investment Beliefs will occur if experiential, academic, conceptual, and/or practical perspectives suggest that a superior belief system exists.

Investment Beliefs

- Asset Class Decisions are Key

In general, decisions with respect to which asset classes and sub-asset classes to invest in, and the allocations to these asset classes and sub-asset classes, have a greater impact on total fund investment returns than decisions in which specific securities to invest.

- Theories and Concepts Must be Sound

Over longer periods of time, investment outcomes (e.g. rates of return, volatility) conform to logical theories and concepts. Significant deviations (e.g. internet bubble, pre-subprime erosion of risk premiums) from theoretically and conceptually sound investment constructs are usually not sustainable and are typically self-reverting.

- House Capital Market Views are Imperative

The development and articulation of sound House Views (e.g. views on interest rates, corporate spreads, asset valuations) will ensure consistency among investment decisions, clarity of investment direction, baselines for debates, and conformity of understanding.

- Investment Strategies Must be Forward Looking

Investment strategies will be developed based on forward-looking insights, rather than simply on successful strategies in the past.

Asset class valuations and security valuations are significantly affected by endogenous outcomes (e.g. earnings, GDP growth rates, competitive barriers) that are probabilistic, and these outcomes are typically well analyzed by the investment industry.
Asset class valuations and security valuations are also significantly affected by random outcomes (e.g. natural disasters, certain supply and demand shocks) that are virtually unpredictable, and these outcomes are typically not analyzed directly by the investment industry.
Asset class valuations and security valuations are also significantly affected by exogenous outcomes (e.g. foreign policies, global cultural interactions) that can possibly be modeled, and these outcomes are typically not analyzed by the investment industry.

- Public Markets are Generally Informationally Efficient

Asset Class Valuations - Asset class valuations (e.g. stock market levels versus interest rate levels) are often in equilibrium with one another, but anomalous situations do occur which result in disequilibria between asset class
valuations. These disequilibria offer valuable investment opportunities which we will proactively seek and capitalize on.
Security Valuations - Security valuations (e.g. IBM versus Cisco) are often in equilibrium with one another, but private markets and anomalous public market situations do occur which result in disequilibria between security valuations. These disequilibria offer investment opportunities which we will proactively seek and capitalize on.
The extent of informational efficiency varies across asset classes.
Private markets offer significant opportunities for asset mispricing and manager excellence which we will proactively seek and capitalize on.

- Market Frictions are Highly Relevant

Market frictions (e.g. management fees, carried interest, revenue sharing, expenses, costs, transaction spreads, market impacts, taxes, commissions) can be significantly detrimental to investment performance and as a result will be initiated only to the extent where there is a strong level of conviction that they will result in increased investment returns or decreased risks net of all market frictions.

- Internal Investment Professionals are the Foundation of a Successful Investment Program

In-house investment management capability engaged in direct portfolio management results in superior investment decision-making.

In-house investment management proactively monitors capital markets in order to determine mispricing opportunities and allocate capital and will successfully increase risk adjusted returns.
In-house professionals are more closely aligned with, and have a better understanding of, the purpose and risk and reward tolerance of the ASRS than external parties.
In-house investment professionals will impact direct investment negotiations, better align economic interests, and influence investment industry conditions (e.g. private deal structures, fee levels, introduction of innovation products and strategies).

- External Investment Management is Beneficial

External investment management organizations can offer greater expertise, resources, and/or flexibility than internal personnel for various investment strategies.

- Investment Consultants

Investment consultants will be effectively utilized in the following four general categories, and utilization of consultants will be focused on situations where there is a demonstrable need in at least one of the four areas:

- Independence: When oversight or controls should be enhanced.
- Perspective: When internal perspectives are not broad enough.
- Special Skills: When internal skills are not deep enough.
- Resource Allocation: When internal resources are not broad enough.
- Trustee Experience

Trustees often have expertise in various areas of investment management, and this experience should be utilized while ensuring separation between Board oversight and staff management.

## Our Goals and Objectives

The ASRS has developed and established a set of Investment Goals and Objectives that describe the macro-level outcomes that the ASRS seeks to achieve.

## Goals

- Maximize Fund Rates of Return for Acceptable Levels of Fund Risk

This goal has an asset oriented focus. Here, the returns generated and earned by the investment Fund should be considered in conjunction with the risk or volatility that the Fund will support, where risk is essentially the possibility of a change in the value of the ASRS Fund attributed to changes in economic conditions, interest rates, dividend policy and other variables in any given year.

- Achieve $75^{\text {th }}$ Percentile Rates of Return Compared to Peers

This goal compares the performance of ASRS' aggregate investment portfolio to other public pension funds with over $\$ 1$ billion of assets under management. Though ASRS' asset allocation policy will differ from other public pension funds given its risk return profile and investment beliefs, it is common practice to compare returns between comparable public pension funds.

- Achieve Long-term Fund Rates of Return Equal to or Greater than the Actuarial Assumed Interest Rate

This goal has a liability oriented focus. Here, the returns generated or earned by the investment Fund should be considered in conjunction with the actuarial assumed interest rate, where this interest rate is essentially an estimate of the long-term average of the combined expected inflation rates and expected real rates of return. The actuarial assumed interest rate is also the discount rate used to calculate the present value of liabilities.

- Achieve Long-Term Economic and Actuarial Funded Statuses of $100 \%$

This goal has a funded status oriented focus. Here, the structuring of the investment Fund should be considered in conjunction with the level, volatility, and direction of the economic and actuarial funded status of the Fund. Although both actuarial and economic funded status levels are valuable for discussion and decision-making, economic-funded status is more reflective of financial condition and long-term policy implications. Economicfunded status is defined as the actual or market value of investments as a percentage of the actual or market value of liabilities and excludes such accounting constructs as smoothing and amortization.

- Mitigate Contribution Rate Volatility

This goal has a contribution rate orientation focus. Here, the structuring of the investment Fund should be considered in conjunction with the level, volatility, and direction of the contribution rates that will need to be paid by both employees and employers in the Fund. In general, lower levels and volatility in contribution rates are preferred.
Collectively, the above goals incorporate the following elements that are important for a fund's comprehensive investment structure:

- Complementary use of absolute and relative rates-of-return perspectives.
- Complementary use of asset-only and asset-liability perspectives.
- Complementary use of economic and actuarial perspectives.

See below for the fiscal year 2014 investment goals and results.

## Objectives

- Total Fund Performance
- Achieve a 20 -year rolling annual total fund net rate of return equal to or greater than the actuarial assumed interest rate.
- Achieve one-year and three-year rolling annual total fund net rates of return equal to or greater than the return of the ASRS asset allocation policy (SAAP) Benchmark.
- Asset Class Performance
- Achieve one-year and three-year rolling annual net rates of return for ASRS strategic asset classes that are equal to or greater than their respective strategic asset class benchmarks.
- Cash Flow Performance
- Ensure sufficient monies are available to meet pension benefits, health insurance, member refunds, administrative payments, and other cash flow requirements.


## Investment Objectives and Results

1. Achieve a twenty-year rolling annual total fund net rate of return equal to or greater than the actuarial assumed interest rate.
Benchmark: $\quad 8.0 \%$ (over twenty years)
Actual: $\quad 8.9 \%$ (over twenty years)
2. Achieve one and three-year rolling annual total fund net rates of return equal to or greater than the return of the ASRS SAAP Benchmark.
Benchmark: $\quad 17.8 \%$ (one year) and $10.4 \%$ (three year)
Actual: $\quad 18.6 \%$ (one year) and $10.8 \%$ (three year)
3. Achieve one and three-year rolling annual net rates of return for ASRS strategic asset classes that are equal to or greater than their respective asset class benchmarks.

## Total Domestic and International Equity:

Benchmark: $\quad 23.7 \%$ (one year) and $13.0 \%$ (three year)
Actual: $\quad 23.3 \%$ (one year) and $12.8 \%$ (three year)
Domestic Equity:
Benchmark: $24.9 \%$ (one year) and $16.5 \%$ (three year)
Actual: $\quad 24.7 \%$ (one year) and $16.1 \%$ (three year)

## International Equity:

Benchmark: $\quad 22.0 \%$ (one year) and $6.6 \%$ (three year)
Actual: $\quad 21.3 \%$ (one year) and $6.4 \%$ (three year)

## Public Markets Fixed Income:

Benchmark: $\quad 6.0 \%$ (one year) and $4.4 \%$ (three year)
Actual: $\quad 6.0 \%$ (one year) and $4.5 \%$ (three year)

## Inflation-Linked:

Benchmark: $\quad 8.2 \%$ (one year) and $-5.2 \%$ (three year)
Actual: $\quad 10.1 \%$ (one year) and $-3.3 \%$ (three year)

## Global Tactical Asset Allocation:

Benchmark: $\quad 17.9 \%$ (one year) and $10.7 \%$ (three year)
Actual: $\quad 21.2 \%$ (one year) and $11.8 \%$ (three year)
Private Equity:
Benchmark: $\quad 24.9 \%$ (one year) and $13.2 \%$ (three year)
Actual: $\quad 17.8 \%$ (one year) and $15.3 \%$ (three year)
Opportunistic Equity*:
*Net absolute rate of return expectations range from 10-14\% per annum.
Actual: $\quad 37.9 \%$ (one year) and $24.7 \%$ (three year)
Private Debt*:
*Three-year not applicable
Benchmark: $\quad 6.9 \%$ (one year)
Actual: $\quad 15.0 \%$ (one year)
Opportunistic Debt*:

* Net absolute rate of return expectations range from 10-14\% per annum.

Benchmark: $\quad 9.6 \%$ (one year) and $8.2 \%$ (three-year)
Real Estate:
Benchmark: $\quad 12.7 \%$ (one year) and $12.0 \%$ (three year)
Actual: $\quad 13.7 \%$ (one year) and $12.9 \%$ (three year)
4. Ensure sufficient monies are available to meet pension benefits, health insurance, member refunds, administrative payments, and other cash flow requirements.
Achieved this goal.

## Investment Policies

An integral part of the overall investment policy is the SAAP, which is designed to optimize returns while minimizing risk. The ASRS maintains its investment assets in accordance with Board approved Strategic Asset Allocation Policy. Investment assets are managed in 186 externally managed and 8 internally managed portfolios, which are diversified in U.S. equities, U.S. fixed income, international equities, real estate, private equity, opportunistic investments and commodity investments.

The ASRS adheres to all statutory requirements set by Arizona State law. In addition the ASRS established investment guidelines for its internal and external investment managers and a complete set of policies, procedures, compliance requirements, and oversight of internal investment management to ensure that investment assets are prudently managed. Both internal and external compliance procedures are in place. Oversight responsibilities reside with the ASRS Board. Details of investments are located at the end of this report.

Please refer to the continuing pages of the Investment Section for more in-depth details of ASRS' investment activities.
Best regards,

Gary R. Dokes, Chief Investment Officer

## Asset Allocation Targets

During fiscal year 2014, the ASRS asset allocation policy targets and ranges were as follows:

| Asset Class | Policy | Range | Benchmark |
| :---: | :---: | :---: | :---: |
| Large Cap | 23\% |  | S\&P 500 |
| Mid Cap | 5\% |  | S\&P 400 |
| Small Cap | 5\% |  | S\&P 600 |
| US Equity | 33\% | (26-38\%) |  |
| Developed Large Cap | 14\% |  | MSCI EAFE |
| Developed Small Cap | 3\% |  | MSCE EAFE Small Cap |
| Emerging Markets | 6\% |  | MSCI EM |
| Non-US Equity | 23\% | (16-28\%) |  |
| Private Equity | 7\% | (5-9\%) | Russell 2000 |
| Opportunistic Equity* | 0\% | (0-3\%) | Investment Specific |
| Other Equity | 7\% |  |  |
| Total Equity | 63\% | (53-70\%) |  |
| Core | 13\% |  | Barclays Aggregate |
| High Yield | 5\% |  | Barclays HY |
| US Fixed Income | 18\% | (8-28\%) |  |
| Emerging Market Debt | 4\% |  | JP Morgan GBI-EM Global Diversified |
| Private Debt | 3\% |  | S\&P/LSTA Leveraged Loan Index + 2.5\% |
| Opportunistic Debt* | 0\% | (0-10\%) | Investment Specific |
| Other Debt | 7\% |  |  |
| Total Fixed Income | 25\% | (15-35\%) |  |
| Commodities | 4\% | (1-7\%) | DJ UBS Total Return |
| Real Estate | 8\% | (6-10\%) | NCREIF ODCE |
| Infrastructure | 0\% | (0-3\%) | CPI (ex food and energy) $+3.5 \%$ |
| Farmland and Timber | 0\% | (0-3\%) | CPI (ex food and energy) $+3.5 \%$ |
| Opportunistic Inflation Linked* | 0\% | (0-3\%) | Investment Specific |
| Total Inflation Linked Assets | 12\% | (8-16\%) |  |
| TOTAL | 100\% |  |  |
| Global Tactical Asset Allocation (GTAA) | 10\% | (5-15\%) | Total Fund Benchmark |

* Note: Aggregate Opportunistic asset classes not to exceed 10\%.


## Investment Results

## Performance Accounting/ Computation Standards

The ASRS investment performance rates of return are calculated on a total return basis, using time-weighted rates of return, based upon market values. The fair value of real estate, private equity and opportunistic investments are based on estimated values. Fair value is based on estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values.

Performance is calculated on an accrual basis provided that the accrual information is available from the custodian or record-keeper. The rates of return are generated by asset class and include cash holdings.

Below are the rates of return on the overall portfolio, as well as specific asset classes, along with the benchmark used to compare performance.

## Annualized Rates of Return (Net of Fees)

## (Retirement \& HBS)

| Time Weighted Returns | 1 Year | 3 Year | 5 Year | 10 Year | Inception |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Total Fund | 18.6\% | 10.8\% | 14.2\% | 7.5\% | 10.1\% |
| Interim SAA Policy Benchmark | 17.8\% | 10.4\% | 13.6\% | 7.2\% | 9.8\% |
| Domestic Equity | 24.7\% | 16.1\% | 19.8\% | 8.7\% | 11.4\% |
| S\&P Custom Index | 24.9\% | 16.5\% | 19.7\% | 8.3\% | 11.5\% |
| Domestic Fixed Income | 6.0\% | 4.5\% | 5.9\% | 5.4\% | 8.6\% |
| Custom Fixed Income Index | 6.0\% | 4.4\% | 5.3\% | 5.2\% | n/a |
| International Equity | 21.3\% | 6.4\% | 11.1\% | 6.7\% | 6.6\% |
| MSCI Custom Index | 22.0\% | 6.6\% | 11.9\% | 8.0\% | 6.3\% |
| Commodities | 10.1\% | -3.3\% | n/a | n/a | 2.7\% |
| DJUBS Commodity Index | 8.2\% | -5.2\% | n/a | n/a | 0.8\% |
| Global Tactical Asset Allocation | 21.2\% | 11.8\% | 16.2\% | 8.8\% | 8.5\% |
| Custom Global Tactical Asset Allocation | 17.9\% | 10.7\% | 13.3\% | 6.9\% | 6.9\% |
| Real Estate | 13.7\% | 12.9\% | 11.2\% | n/a | 5.8\% |
| NFI-ODCE Index | 12.7\% | 12.0\% | 6.3\% | n/a | 5.0\% |
| Private Equity | 17.8\% | 15.3\% | 16.2\% | n/a | 12.9\% |
| Russell 2000 | 24.9\% | 13.2\% | 24.3\% | n/a | 16.3\% |
| Private Debt | 15.0\% | n/a | n/a | n/a | 15.7\% |
| S\&P Loan Syndications and Trading Association Leveraged Loan Index | 6.9\% | n/a | n/a | n/a | 8.2\% |
| Opportunistic Debt | 9.6\% | 8.2\% | n/a | n/a | 12.2\% |
| Opportunistic Equity | 37.9\% | 24.7\% | n/a | n/a | 37.3\% |

## Historical Rates of Return ${ }^{1}$ (Net of Fees)

(Retirement \& HBS)

| Fiscal Year | Return | Fiscal Year | Return | Fiscal Year | Return |
| ---: | ---: | ---: | ---: | ---: | ---: |
| $2013-14$ | $18.6 \%$ | $2005-06$ | $9.8 \%$ | $1997-98$ | $21.3 \%$ |
| $2012-13$ | $13.1 \%$ | $2004-05$ | $8.5 \%$ | $1996-97$ | $20.6 \%$ |
| $2011-12$ | $1.3 \%$ | $2003-04$ | $17.5 \%$ | $1995-96$ | $16.7 \%$ |
| $2010-11$ | $24.6 \%$ | $2002-03$ | $2.4 \%$ | $1994-95$ | $17.8 \%$ |
| $2009-10$ | $14.9 \%$ | $2001-02$ | $-8.2 \%$ | $1993-94$ | $1.9 \%$ |
| $2008-09$ | $-18.1 \%$ | $-7.6 \%$ | $-6.7 \%$ | $1992-93$ | $16.7 \%$ |
| $2007-08$ | $17.8 \%$ | $1999-00$ | $1998-99$ | $10.0 \%$ | $1991-92$ |

[^4]
## Ten Year Review of Investment Income

(Dollars in Thousands)

| Fiscal Year | Income |  | + | Net Apprec/(Depr) |  | - | Expense |  | $=$ |  | Net Income |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2004-2005 | \$ | 454,389 |  | \$ | 1,382,587 |  | \$ | 33,584 |  | \$ | 1,803,392 |
| 2005-2006 |  | 523,997 |  |  | 1,758,899 |  |  | 51,957 |  |  | 2,230,939 |
| 2006-2007 |  | 604,320 |  |  | 3,766,089 |  |  | 59,891 |  |  | 4,310,518 |
| 2007-2008 |  | 654,878 |  |  | $(2,645,900)$ |  |  | 81,419 |  |  | $(2,072,441)$ |
| 2008-2009 |  | 285,665 |  |  | $(4,855,030)$ |  |  | 104,125 |  |  | $(4,673,490)$ |
| 2009-2010 |  | 647,859 |  |  | 2,484,029 |  |  | 116,170 |  |  | 3,015,718 |
| 2010-2011 |  | 925,578 |  |  | 4,893,382 |  |  | 128,281 |  |  | 5,690,679 |
| 2011-2012 |  | 891,210 |  |  | $(419,010)$ |  |  | 137,905 |  |  | 334,295 |
| 2012-2013 |  | 1,167,263 |  |  | 2,579,350 |  |  | 188,770 |  |  | 3,557,843 |
| 2013-2014 |  | 564,891 |  |  | 5,382,920 |  |  | 150,083 |  |  | 5,797,728 |

## Net Income from Investments

(Dollars in Millions)


## Schedule of Investment Portfolios by Asset Class

## (Dollars in Thousands)

|  | Fair Value |  | Percentage of Investments at Fair Value |
| :---: | :---: | :---: | :---: |
| Equity |  |  |  |
| U.S. Equity ${ }^{1}$ | \$ | 11,251,333 | 31.6\% |
| Non-U.S. Equity ${ }^{1}$ |  | 7,387,636 | 20.7\% |
| Private Equity |  | 2,204,231 | 6.2\% |
| Opportunistic Equity |  | 355,487 | 1.0\% |
| Total Equity |  | 21,198,687 | 59.5\% |
| Fixed Income |  |  |  |
| U.S. Fixed Income |  | 4,169,258 | 11.7\% |
| Emerging Market Debt |  | 721,742 | 2.0\% |
| Opportunistic Debt |  | 930,906 | 2.6\% |
| Private Debt |  | 1,201,508 | 3.4\% |
| Total Fixed Income |  | 7,023,414 | 19.7\% |
| Other Investments |  |  |  |
| Commodities |  | 7,311 | 0.0\% |
| Real Estate |  | 2,095,485 | 5.9\% |
| Farmland and Timber |  | 105,841 | 0.3\% |
| Global Tactical Asset Allocation |  | 3,471,373 | 9.7\% |
| Total Other Investments |  | 5,680,010 | 15.9\% |
| Short-Term Investments |  | 1,749,791 | 4.9\% |
| Total Investments | \$ | 35,651,902 | 100.0\% |

## Add Receivables:

Accrued Interest and Dividend
63,115
Securities Sold
Forward Contracts
42,523
Total Receivables
438,188

## Less Payables:

Securities Purchased
306,670
Forward Contracts
416,884
Securities Lending Collateral
Other Payables
15,427
Total Payables
5,633
744,614

## Total Net Total Investments

\$ 35,451,114
${ }^{1}$ Includes Securities Lending Collateral investments.

Note: A detailed listing of investments is available upon request.
Direct inquiries to: ASRS, 3300 North Central Avenue, Phoenix, AZ 85012

## Equity Sub-Sector Allocation

(Dollars in Thousands)

|  | \% of Equity <br> Portfolio |  |
| :--- | :---: | ---: |
| US Large Cap Equity | $38.42 \%$ | Fair Value |
| US Mid Cap Equity | 7.52 | $8,137,823$ |
| US Small Cap Equity | 7.11 | $1,593,263$ |
| Total US Equity | $\mathbf{5 3 . 0 5}$ | $1,507,125$ |
| Non US Equity | 34.86 | $\mathbf{1 1 , 2 3 8 , 2 1 1}$ |
| Private Equity | 10.41 | $7,385,331$ |
| Opportunistic Equity | 1.68 | $2,204,231$ |
| TOTAL EQUITY SECURITIES | $\mathbf{1 0 0 . 0 0 \%}$ | $\mathbf{\$}$ |

Note: Above schedule does not include Securities Lending Collateral investments.

## Ten Largest Domestic Equity Holdings

|  | \% of Domestic <br> Equity Portfolio |
| :--- | :---: |
| SPDR S+P 500 ETF Trust | $11.75 \%$ |
| Apple, Inc. | 1.95 |
| Exxon Mobil, Corp. | 1.68 |
| Microsoft Corp. | 1.39 |
| Johnson \& Johnson | 1.24 |
| Vanguard Total Stock Market ET | 1.18 |
| ISHARES MSCI USA Value Factor | 1.14 |
| ISHARES MSCI USA Momentum Factor | 1.13 |
| Chevron Corp. | 1.13 |
| ISHARES MSCI USA Quality Factor | 1.13 |
| Total | $\mathbf{2 3 . 7 2 \%}$ |

Direct inquiries to: ASRS, 3300 North Central Avenue, Phoenix, AZ 85012

## Distribution by Market Sector

|  | ASRS Domestic |
| :--- | :---: | :---: |
| Equity |  |$\quad$ S\&P 500 Index

## Ten Largest International Equity Holdings

|  | \% of International <br> Equity Portfolio |
| :--- | :---: |
| Nestle SA Reg | $0.38 \%$ |
| Roche Holding AG Genusschein | 0.37 |
| Novartis AG Reg | 0.34 |
| Grafton Group, PLC | 0.32 |
| UBS AG Reg | 0.30 |
| Saint-Gobain SA | 0.30 |
| LM Ericsson | 0.29 |
| Kennedy Wilson Real Estate Europe, PLC | 0.28 |
| Lloyds Banking Group, PLC | 0.27 |
| GDF Suez SA | 0.26 |
| Total | $\mathbf{3 . 1 1 \%}$ |

## Summary of Broker Commissions

(Dollars in Thousands)

| Summary of Broker Commissions | Commission |  |
| :--- | :--- | :---: |
| Domestic Equity | $\$$ | 2,880 |
| International Equity | $\$$ | 1,717 |

Note: A detailed listing of investments is available upon request.
Direct inquiries to: ASRS, 3300 North Central Avenue, Phoenix, AZ 85012

## Distribution by Sector

|  | Percent |
| :--- | :---: |
| Short-Term Investments | $9.62 \%$ |
| Asset Backed Securities | 0.07 |
| Commercial Mortgage Backed | 0.85 |
| Corporate Bonds | 19.78 |
| Government Related | 3.25 |
| Government Agencies CMO's | 9.94 |
| Government Bonds (Treasury) | 13.97 |
| Government Mortgage Backed | 0.96 |
| Other ${ }^{1}$ | $\mathbf{4 1 . 5 6}$ |
| ${ } }$ | $\mathbf{1 0 0 . 0 0 \%}$ |

## Distribution by Maturity

|  | Percent |
| :--- | :---: |
| $0-2$ years | $30.15 \%$ |
| 2 to 3 years | 9.07 |
| 3 to 4 years | 7.59 |
| 4 to 5 years | 18.36 |
| 5 to 6 years | 12.34 |
| 6 to 8 years | 9.28 |
| > 8 years | 13.21 |
|  | $\mathbf{1 0 0 . 0 0 \%}$ |

${ }^{1}$ Other includes Emerging Market Debt, Opportunistic Debt and Private Debt.

## Distribution by Coupon

|  | Percent |
| :--- | :---: |
| $0.00 \%-6.5 \%$ | $80.28 \%$ |
| $6.51 \%-7.50 \%$ | 7.32 |
| $7.51 \%-9.0 \%$ | 8.36 |
| $>9.00 \%$ | 4.04 |
|  | $\mathbf{1 0 0 . 0 0 \%}$ |

## Ten Largest Domestic Fixed Income Holdings

(Dollars in Thousands)

|  | Coupon | Maturity | Par Value | Fair Value | Percent |  |
| :--- | ---: | ---: | ---: | ---: | ---: | :---: |
| US TREASURY NOTE | $0.75 \%$ | $6 / 30 / 2017$ | $\$$ | 56,000 | $\$$ | 55,776 |
| FANNIE MAE | $4.00 \%$ | $12 / 1 / 2043$ | 51,885 | 55,102 | $0.79 \%$ |  |
| US TREASURY NOTE | $3.12 \%$ | $4 / 30 / 2017$ | 48,000 | 51,108 | 0.73 |  |
| US TREASURY NOTE | $4.62 \%$ | $2 / 15 / 2040$ | 40,700 | 50,619 | 0.72 |  |
| US TREASURY NOTE | $2.75 \%$ | $11 / 15 / 2023$ | 48,000 | 49,197 | 0.70 |  |
| US TREASURY NOTE | $2.12 \%$ | $2 / 29 / 2016$ | 45,600 | 46,970 | 0.67 |  |
| US TREASURY NOTE | $4.12 \%$ | $5 / 15 / 2015$ | 37,000 | 38,289 | 0.55 |  |
| US TREASURY NOTE | $0.75 \%$ | $1 / 15 / 2017$ | 35,000 | 35,057 | 0.50 |  |
| FEDERAL HOME LOAN BANK | $5.00 \%$ | $11 / 17 / 2017$ | 30,000 | 33,849 | 0.48 |  |
| US TREASURY NOTE | $2.00 \%$ | $1 / 31 / 2016$ | 32,500 | 33,379 | 0.48 |  |
| Total |  |  | $\mathbf{\$}$ | $\mathbf{4 2 4 , 6 8 5}$ | $\mathbf{\$ 2 4}$ | $\mathbf{4 4 9 , 3 4 6}$ |

[^5]
## Ten Largest Real Estate Managers

(Dollars in Thousands)

|  | Fair Value | of Real Estate <br> Portfolio |
| :--- | ---: | :---: |
| AEW Core Property Trust (U.S.), Inc. | $\$$ | 237,303 |

Note: A detailed listing of investments is available upon request.
Direct inquiries to: ASRS, 3300 North Central Avenue, Phoenix, AZ 85012

## Ten Largest Private Equity Managers

## (Dollars in Thousands)

|  | Fair Value of Private <br> Equity Portfolio |  |
| :--- | ---: | ---: |
| The Veritas Capital Fund IV, LP | $\$$ | 79,977 |
| Onex Partners III, LP | 74,840 | $3.63 \%$ |
| Centerbridge Capital Partners, LP | 73,469 | 3.40 |
| First Reserve Fund XII, LP | 64,933 | 3.33 |
| Yucaipa American Alliance Fund II, LP | 62,235 | 2.95 |
| Oakhill Capital Partners III, LP | 61,475 | 2.82 |
| Levine Leichtman Capital Partners IV, LP | 58,354 | 2.79 |
| Levine Leichtman Capital Partners Private Capital Solutions, LP | 57,333 | 2.65 |
| Energy Capital Partners II-A, LP | 56,306 | 2.60 |
| Partners Group Secondary 2008, LP | $\mathbf{5 3 , 4 3 6}$ | 2.55 |
| Total | $\mathbf{\$}$ | $\mathbf{6 4 2 , 3 5 8}$ |

## Opportunistic Equity Managers

(Dollars in Thousands)

|  | Fair Value |  | \% of Opportunistic Equity Portfolio |
| :---: | :---: | :---: | :---: |
| OCM STR Co-Invest 1, LP | \$ | 181,220 | 50.98\% |
| 56th and Park (NY) Holdings, LLC |  | 95,635 | 26.90 |
| TPG Specialty Lending, Inc |  | 48,431 | 13.62 |
| Blackstone CPQ Co-Invest, LP |  | 20,601 | 5.80 |
| Athene Holding Ltd |  | 9,600 | 2.70 |
| Total | \$ | 355,487 | 100.00\% |

Note: A detailed listing of investments is available upon request.
Direct inquiries to: ASRS, 3300 North Central Avenue, Phoenix, AZ 85012

## Opportunistic Debt Managers

(Dollars in Thousands)

|  | Fair <br> of Opportunistic <br> Debt Portfolio |  |
| :--- | ---: | :---: |
| OZ Credit Opportunities Domestic Partners, LP | $\$$ | 312,703 |

## Private Debt Managers

(Dollars in Thousands)

|  | Fair Value | Of Opportunistic <br> Portfolio |
| :--- | ---: | :---: |
| Cerberus ASRS Credit Opportunities Fund, LP | $\$$ | 465,240 |
| H/2 Core Real Estate Debt Fund, LP | 257,285 | 21.41 |
| Blackstone/GSO Capital Solutions Fund, LP | 158,930 | 13.23 |
| RFM Cactus Holding Company, LLC | 119,294 | 9.93 |
| Highbridge Principal Strategies - Mezzanine Partners II, LP | 118,320 | 9.85 |
| White Oak Global Advisors Private Debt | 82,439 | 6.86 |
| Total | $\mathbf{\$}$ | $\mathbf{1 , 2 0 1 , 5 0 8}$ |

## Farmland and Timber Manager

(Dollars in Thousands)

|  |  | \% of Farmland <br> and Timber <br> Portfolio |  |
| :--- | :---: | :---: | :---: |
| U.S. Farming Realty Trust II, LP | Fair Value | 105,841 | $100.00 \%$ |
| Total | $\$$ | $\mathbf{1 0 5 , 8 4 1}$ | $\mathbf{1 0 0 . 0 0 \%}$ |

[^6]
## Schedule of Broker Commissions

## Domestic Equity Trades

(Dollars in Thousands)

| Broker Name | Dollar Amount of Trades |  | Number of Shares | Average Commission Per Share |  | Dollar Amount of Commission |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Barclays Capital Inc./LE | \$ | 342,874 |  | \$ | 0.0102 | \$ | 88 |
| Barclays Capital LE |  | 29,461 | 1,022 |  | 0.0342 |  | 35 |
| BMO Capital Markets |  | 10,720 | 301 |  | 0.0432 |  | 13 |
| BNP Paribas Brokerage Securities, Inc. |  | 22,828 | 405 |  | 0.0099 |  | 4 |
| BNP Paribas Prime Brokerage, Inc. |  | 14,648 | 235 |  | 0.0085 |  | 2 |
| BNY Convergex LJR |  | 49,178 | 1,248 |  | 0.0240 |  | 30 |
| Broadcort Capital |  | 38,135 | 906 |  | 0.0408 |  | 37 |
| BTIG, LLC |  | 25,644 | 701 |  | 0.0456 |  | 32 |
| Cantor Fitzgerald \& Co. |  | 27,427 | 677 |  | 0.0310 |  | 21 |
| Capital Institutional Svcs Inc. Equities |  | 148,069 | 2,562 |  | 0.0293 |  | 75 |
| Citigroup Global Markets, Inc. |  | 359,551 | 9,562 |  | 0.0116 |  | 111 |
| Convergex Execution Solutions, LLC |  | 51,256 | 1,343 |  | 0.0253 |  | 34 |
| Cowen \& Company, LLC |  | 22,237 | 473 |  | 0.0465 |  | 22 |
| Credit Suisse Securities (USA) LLC |  | 591,240 | 12,705 |  | 0.0142 |  | 180 |
| Deutsche Bank Securities, Inc. |  | 183,745 | 3,595 |  | 0.0273 |  | 98 |
| Goldman Sachs \& Co. |  | 210,187 | 5,073 |  | 0.0148 |  | 75 |
| Guzman \& Co. |  | 56,879 | 1,546 |  | 0.0181 |  | 28 |
| Instinet, LLC |  | 1,519,855 | 38,108 |  | 0.0116 |  | 441 |
| Investment Technology Group, Inc. |  | 444,286 | 12,035 |  | 0.0120 |  | 145 |
| ISI Group, Inc. |  | 12,075 | 231 |  | 0.0303 |  | 7 |
| J.P. Morgan Securities, Inc. |  | 209,798 | 4,731 |  | 0.0230 |  | 109 |
| Jefferies \& Company, Inc. |  | 287,336 | 6,893 |  | 0.0203 |  | 140 |
| Jones Trading Institutional Services, LLC |  | 11,669 | 293 |  | 0.0307 |  | 9 |
| Keefe Bruyette \& Woods, Inc. |  | 14,162 | 412 |  | 0.0437 |  | 18 |
| Keybanc Capital Markets, Inc. |  | 17,071 | 366 |  | 0.0464 |  | 17 |
| Knight Equity Markets L.P. |  | 48,624 | 1,169 |  | 0.0496 |  | 58 |
| Liquidnet, Inc. |  | 64,318 | 1,527 |  | 0.0216 |  | 33 |
| Merrill Lynch Pierce Fenner \& Smith, Inc. |  | 292,500 | 6,613 |  | 0.0129 |  | 85 |
| Mischler Financial Group, Inc. |  | 13,332 | 161 |  | 0.0373 |  | 6 |
| Morgan Stanley \& Co., Inc. |  | 130,515 | 4,886 |  | 0.0145 |  | 71 |
| Morgan Stanley \& Co. International, PLC |  | 40,634 | 1,014 |  | 0.0089 |  | 9 |
| Oppenheimer \& Co., Inc. |  | 19,377 | 399 |  | 0.0476 |  | 19 |

## Domestic Equity Trades - continued

(Dollars in Thousands)

| Broker Name | Dollar Amount of Trades |  | Number of Shares | Average Commission Per Share |  | Dollar Amount of Commission |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Pulse Trading, LLC | \$ | 12,946 | 380 | \$ | 0.0158 | \$ | 6 |
| Raymond James And Associates Inc. |  | 27,908 | 713 |  | 0.0421 |  | 30 |
| RBC Capital Markets |  | 78,372 | 1,990 |  | 0.0246 |  | 49 |
| Robert W. Baird Co. Inc. |  | 37,498 | 795 |  | 0.0428 |  | 34 |
| Rosenblatt Securities, LLC |  | 88,425 | 1,435 |  | 0.0314 |  | 45 |
| Sanford C Bernstein Co., LLC |  | 134,151 | 2,572 |  | 0.0284 |  | 73 |
| SG Americas, LLC |  | 124,208 | 2,109 |  | 0.0294 |  | 62 |
| Stifel Nicolaus \& Co., Inc. |  | 55,488 | 1,379 |  | 0.0392 |  | 54 |
| Sungard Brokerage \& Securities Svcs, LLC |  | 12,047 | 297 |  | 0.0067 |  | 2 |
| Suntrust Capital Markets, Inc. |  | 14,878 | 338 |  | 0.0444 |  | 15 |
| Tesley Advisory Group, LLC |  | 18,749 | 289 |  | 0.0346 |  | 10 |
| UBS Securities, LLC |  | 379,165 | 6,710 |  | 0.0230 |  | 154 |
| Wallachbeth Capital, LLC |  | 441,243 | 8,587 |  | 0.0100 |  | 86 |
| Weeden \& Co. |  | 62,163 | 1,305 |  | 0.0238 |  | 31 |
| Wells Fargo Securities, LLC |  | 13,938 | 470 |  | 0.0277 |  | 13 |
| William Blair \& Co., LLC |  | 23,546 | 524 |  | 0.0439 |  | 23 |
| Various Other Brokers |  | 150,898 | 4,225 |  | 0.0334 |  | 141 |
| Total | \$ | 6,985,254 | 163,964 | \$ | 0.0176 | \$ | 2,880 |

[^7]Direct inquiries to: ASRS, 3300 North Central Avenue, Phoenix, AZ 85012

## Foreign Equity Trades

## (Dollars in Thousands)



[^8]Direct inquiries to: ASRS, 3300 North Central Avenue, Phoenix, AZ 85012

## Equity

(Dollars in Thousands)

| Manager | Assets Managed at Fair Value at June 30, 2014 | Management Fees |
| :---: | :---: | :---: |
| Public U.S. Equity Managers |  |  |
| ASRS Internal | 8,271,338 | \$ - |
| Blackrock Russell 1000 Index Fund B | 100,988 | 40 |
| Blackrock Russell 2000 Index Fund B | 19,617 | 15 |
| Champlain Investment Partners | 96,922 | 1,087 |
| CRM Funds Mid Cap Value | 98,307 | 639 |
| Dimensional Fund Advisors Equity Fund | 428,233 | 805 |
| Intech Large Capital | 527,951 | 1,984 |
| LSV Asset Management - US Large Cap Value Account | 796,184 | 1,860 |
| Timessquare Capital Management | 464,150 | 4,384 |
| Wellington Management Co. - Mid Cap Opportunities | 434,521 | 2,231 |
| Total Public U.S. Equity | 11,238,211 | 13,045 |

## Public Non-U.S. Equity Managers

| Aberdeen Asset Management | - |  |
| :--- | ---: | ---: |
| American Century Investments | 2,337 |  |
| AQR Capital Management | 179,653 | 36 |
| ASRS International Transition | 6,127 | - |
| Blackrock EAFE Country Fund U/A | $2,482,428$ | 1,367 |
| Blackrock MSCI EAFE Small Cap | 486,842 | 521 |
| Blackrock MSCI Emerging Markets Free B | 715,366 | 802 |
| Brandes Investment Partners International Equity | 553,636 | 1,851 |
| Dimensional Fund Advisors International Small Cap | 229,582 | 1,389 |
| Eaton Vance Investment Managers | 518,019 | 4,540 |
| Franklin Templeton Investments | 415,180 | 2,865 |
| Hansberger Global Investors, LC | 182 | 1,118 |
| LSV Asset Management - Emerging Markets Equity Fund LP | 316,111 | 2,679 |
| QS Investors - EAFE | 156,963 | - |
| Thompson, Siegel \& Walmsley LLC Investment Management | 326,468 | 17 |
| Trinity Street Asset Management | 87 | 32 |
| Walter Scott \& Partners | 471,952 | 1,273 |
| William Blair \& Company | $\mathbf{7 , 3 8 5 , 3 3 1}$ |  |
| Total Public Non-U.S. Equity |  | $\mathbf{2 , 3 2 8}$ |

## Private Equity Managers

| Accel-KKR Capital Partners III, LP | 21,438 | 600 |
| :--- | ---: | ---: |
| Altaris Health Partners III, LP | 4,435 | - |
| Apollo Investment Fund VII, LP | 34,693 | 82 |
| Apollo Investment Fund VIII, LP | 2,781 | 599 |

## Equity - continued

(Dollars in Thousands)

| Manager | Assets Managed at Fair Value at June 30, 2014 | Management Fees ${ }^{1}$ |
| :---: | :---: | :---: |
| Apollo Natural Resources Partners, LP | 42,900 | 975 |
| Arlington Capital Partners III, LP | 16,653 | 589 |
| Atlas Venture Fund VIII, LP | 18,032 | 291 |
| Audax Private Equity Fund IV, LP | 18,778 | 264 |
| Baird Capital Partners V Limited Partnership | 37,654 | 763 |
| Blackrock Private Opportunities Fund, LP | 5,201 | 42 |
| Blackstone Capital Partners VI, LP | 45,209 | 868 |
| Blackstone Energy Partners, LP | 36,859 | 542 |
| Bridgepoint Europe IV 'D', LP | 38,583 | 293 |
| Brookfield Special Situations Fund III (NR A), LP | 30,632 | 927 |
| Catalyst Fund Limited Partnership III | 43,575 | 939 |
| Catalyst Fund Limited Partnership IV | 36,120 | 2,169 |
| Catterton Partners VII, LP | 11,074 | 1,072 |
| CCMP Capital Investors III, LP | 13,782 | - |
| Centerbridge Capital Partners II, LP | 73,469 | 445 |
| Clear Channel Private Stock | 1,362 | - |
| CMEA Ventures VII, LP | 6,602 | 56 |
| Crown European Buyout Opportunities II, Plc | 15,955 | 162 |
| CVC European Equity Partners V (C), LP | 49,206 | 375 |
| Edgewater Growth Capital Partners III, LP | 27,342 | 334 |
| EnCap Energy Capital Fund IX, LP | 9,255 | 525 |
| Energy Capital Partners II-A, LP | 56,306 | 713 |
| First Reserve Fund XII, LP | 64,933 | 982 |
| IDG Ventures SF, LP | 12,640 | 223 |
| JLL Partners Fund VI, LP | 36,896 | 424 |
| Khosla Ventures IV, LP | 18,597 | 129 |
| Kinderhook Capital Fund III, LP | 32,149 | 229 |
| KPS Special Situations Fund IV, LP | 4,061 | - |
| Levine Leichtman Capital Partners Private Capital Solutions, LP | 57,333 | 1,422 |
| Levine Leichtman Capital Partners IV, LP | 58,354 | 822 |
| Levine Leichtman Capital Partners V, LP | 8,815 | 1,328 |
| Linconshire Equity Fund IV-A, LP | 21,804 | (71) |
| Linden Capital Partners II, LP | 14,075 | - |
| Littlejohn Fund IV-A, LP | 36,625 | 514 |
| LLR Equity Partners III, LP | 27,451 | 350 |
| LLR Equity Partners IV, LP | 6,059 | 1,014 |
| Maranon Mezzanine Fund, LP | 12,235 | 530 |
| Montreux Equity Partners IV, LP | 9,760 | 192 |
| Nautic Partners VI, LP | 47,307 | 189 |
| New Atlantic Ventures Fund III, LP | 8,905 | 165 |
| New Mountain Partners III, LP | 38,282 | 60 |

[^9]
## Equity - continued

(Dollars in Thousands)

| Manager | Assets Managed at Fair Value at June 30, 2014 |  | Management Fees ${ }^{1}$ |
| :---: | :---: | :---: | :---: |
| Oakhill Capital Partners III, LP | 61,475 |  | 1,289 |
| Oaktree European Principal Fund III, LP | 26,946 |  | 664 |
| Olympus Growth Fund VI, LP | 2,673 |  | 122 |
| Onex Partners III, LP | 74,839 |  | 985 |
| Partners Group Secondary 2008, LP | 53,436 |  | 846 |
| Partners Group Secondary 2011 (USD), LP, Inc | 30,872 |  | 624 |
| Paul Capital Partners IX, LP | 21,945 |  | 469 |
| Peninsula Technology Ventures, LP | 7,244 |  | 75 |
| Pine Brook Capital Partners, LP | 43,318 |  | 719 |
| Pine Brook Capital Partners II, LP | 14,850 |  | 1,001 |
| Platinum Equity Capital Partners II, LP | 26,456 |  | - |
| Quantum Energy Partners V, LP | 46,137 |  | 1,084 |
| Saybrook Corporate Opportunity Fund, LP | 14,505 |  | 180 |
| Seidler Equity Partners IV, LP | 29,304 |  | 600 |
| Silver Lake Partners III, LP | 27,921 |  | 161 |
| TCW/Crescent Mezzanine Partners V, LP | 27,488 |  | 515 |
| Tenex Capital Partners, LP | 36,000 |  | 755 |
| The Energy \& Minerals Group Fund III, LP | 8,562 |  | - |
| The Resolute Fund II, LP | 42,522 |  | 263 |
| The Resolute Fund III, LP | (4) |  | - |
| The Veritas Capital Fund IV, LP | 79,975 |  | 543 |
| Thomas H Lee Equity Fund VI, LP | 51,987 |  | 68 |
| Trilantic Capital Partners V (North America), LP | 8,615 |  | 1,375 |
| Vista Equity Partners Fund IV, LP | 48,747 |  | 530 |
| Vista Equity Partners Fund V, LP | 2,790 |  | - |
| Warburg Pincus Private Equity X, LP | 46,527 |  | 437 |
| Waud Capital Partners QP III, LP | 21,675 |  | 706 |
| Wayzata Opportunities Fund II, LP | 22,161 |  | 108 |
| White Deer Energy, LP | 44,305 |  | 646 |
| White Deer Energy, LP II | 4,548 |  | 999 |
| Yucaipa American Alliance Fund II, LP | 62,235 |  | 582 |
| Total Private Equity | 2,204,231 |  | 38,473 |
| Opportunistic Equity Managers |  |  |  |
| 56th and Park (NY) Holdings, LLC | 95,635 |  | 94 |
| Athene Holding Ltd | 9,600 |  | - |
| Blackstone CPQ Co-Invest, LP | 20,601 |  | - |
| OCM STR Co-Invest 1, LP | 181,220 |  | 750 |
| TPG Specialty Lending, Inc | 48,431 |  | - |
| Total Opportunistic Equity | 355,487 |  | 844 |
| Total Equity | \$ 21,183,260 | \$ | 76,692 |

[^10]
## Fixed Income

(Dollars in Thousands)

| Manager | Assets Managed at Fair Value at June 30, 2014 | Management Fees ${ }^{1}$ |
| :---: | :---: | :---: |
| Public U.S. Fixed Income Managers |  |  |
| ASRS Internal | \$ 1,822,758 | \$ - |
| Blackrock Custom US Debt Fund | 711,972 | 30 |
| Blackrock Intermediate Govt/Credit Bond Index Fund | 23,885 | 6 |
| Blackrock US High Yield Bond Index Fund B | 18,378 | 35 |
| Blackrock US Debt Index Fund B | 31,557 | 22 |
| Bridgewater Associates Global Tactical Asset Allocation ${ }^{2}$ | 523,286 | - |
| Columbia Management Investment Advisors, LLC | 720,249 | 2,463 |
| J.P. Morgan Asset Management | 317,173 | 1,158 |
| Shenkman Capital Management ${ }^{3}$ | - | 523 |
| Total Public U.S. Fixed Income | 4,169,258 | 4,237 |

## Emerging Market Debt Managers

| Ashmore Investment Management | (903) |  |
| :--- | ---: | ---: |
| Blackrock Local Bond Index Fund B | 29 |  |
| Pacific Investment Management Company | 10,227 | 2,467 |
| Total Emerging Market Debt | 294,329 | $\mathbf{7 2 1 , 7 4 2}$ |

## Opportunistic Debt Managers

| Avenue Europe Special Situations Fund II (US), LP | 2,977 |  |
| :--- | ---: | ---: |
| Blackrock Credit Investors II, LP | 254,295 | 1 |
| Blackrock Mortgage Investors, LP | 3,878 | 315 |
| Fortress MSR Opportunities Fund II A LP | 962 | 38 |
| GSO Cactus Credit Opportunities Fund, LP | - |  |
| Guggenheim Partners Management | 55,136 | 1,594 |
| Oaktree Opportunities Fund VIII, LP | 203 | 429 |
| Oaktree Opportunities Fund VIIIb, LP | 42,995 | 2,179 |
| OZ Credit Opportunities Domestic Partners, LP | 186,601 | 432 |
| TCW Capital Trust | 312,703 | $\mathbf{2 , 6 1 7}$ |
| Total Opportunistic Debt | $\mathbf{6 3 , 1 2 3}$ | $\mathbf{1 0 , 5 8 2}$ |

## Private Debt Managers

Blackstone/GSO Capital Solutions Fund, LP
Cerberus ASRS Credit Opportunities Fund, LP
H/2 Core Real Estate Debt Fund, LP
Highbridge Principal Strategies - Mezzanine Partners II, LP
RFM Cactus Holding Company, LLC
White Oak Global Advisors Private Debt
Total Private Debt

## Total Fixed Income

| 158,930 | 470 |
| ---: | ---: |
| 465,240 | 417 |
| 257,285 | 417 |
| 118,320 | 523 |
| 119,294 | 718 |
| 82,439 | 2,495 |
| $\mathbf{1 , 2 0 1 , 5 0 8}$ | $\mathbf{5 , 0 4 0}$ |
|  |  |
| $\mathbf{7 , 0 2 3 , 4 1 4}$ | $\mathbf{\$}$ |

[^11]
## Real Estate

(Dollars in Thousands)

| Manager | Assets Managed at Fair Value at June 30, 2014 | Management Fees |
| :---: | :---: | :---: |
| Private Real Estate Managers |  |  |
| AEW Core Property Trust (U.S.), Inc. | \$ 237,301 | \$ 1,132 |
| AEW Value Investors Fund II, LP | 21,030 | 327 |
| Alcion Real Estate Partners Tax-Exempt Parallel Fund II, LP | 30,442 | 708 |
| Almanac Realty Securities IV, LP | 39,021 | 413 |
| Almanac Realty Securities V, LP | 26,020 | 528 |
| ASRS Internal | 50,213 | - |
| Blackrock US Real Estate Securities Fund B | 22,381 | 29 |
| Blackstone Real Estate Partners VI, LP | 67,816 | 535 |
| Blackstone Real Estate Partners VII, LP | 40,319 | 747 |
| Cactus Mulit-Asset Investor, LLC | 97,845 | 542 |
| Carlyle Realty Partners V, LP | 17,327 | 412 |
| CB Richard Ellis Strategic Partners US Opportunity 5, LP | 37,310 | 407 |
| CB Richard Ellis Strategic Partners US Value 5, LP | 469 | 45 |
| CIM Fund III, LP | 72,501 | 700 |
| CIM Fund VIII, LP | 85,214 | 972 |
| CIM Urban REIT, LLC | 87,559 | 693 |
| CIM VI (Urban REIT), LLC | 51,391 | 290 |
| Colony Investors VIII, LP | 18,693 | 347 |
| Dune Real Estate Fund, LP | 31,780 | 515 |
| Dune Real Estate Fund II, LP | 36,978 | 530 |
| FC Cactus Residential Development Fund, LLC | 75,705 | - |
| Five Mile Capital II LOPO Co-Investment, LP | 24,852 | - |
| Five Mile Capital Partners II, LP | 41,333 | 491 |
| Forum Securities, Ltd | 13 | - |
| H/2 Special Opportunities II, LP | 140,121 | 1,002 |
| Harrison Street Real Estate Partners III, LP | 49,192 | 613 |
| Heitman Value Partners II, LP | 34,044 | 164 |
| Hunt Commercial Realty Partners III, LP | 26,811 | 368 |
| Invesco Asian Real Estate Partners II (USD), LP | 10,731 | 163 |
| Lone Star Fund VI (US), LP | 26,612 | 79 |
| Lone Star Real Estate Fund (US), LP | 8,000 | 74 |
| M\&G Real Estate Debt Fund, LP | 30,083 | 171 |
| Oaktree Real Estate Opportunities Fund V, LP | 57,077 | 653 |
| Oaktree Real Estate Opportunities Fund VI, LP | 36,938 | 748 |
| Pegasus Cactus Self Storage Fund, LLC | 45,453 | - |
| PEP-Cactus Student Housing, LLC | 30,183 | - |
| PLA Residential III, LP | 40,755 | 748 |
| PLA Retail Fund I, LP | 65,471 | 892 |
| PRISA II | 71,883 | 629 |

## Real Estate - continued

(Dollars in Thousands)

| Manager | Assets Managed at Fair Value at June 30, 2014 |  | Management Fees ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: |
| RREEF Global Opportunities Fund II, LLC |  | 3,468 |  | (751) |
| Tishman Speyer Real Estate Venture VI, LP |  | 11,178 |  | 132 |
| Tishman Speyer Real Estate Venture VII, LP |  | 30,131 |  | 494 |
| US Cactus Industrial/Logistics Fund LP |  | 44,541 |  | 215 |
| VTRAZ Holdings, LLC |  | 178 |  | 1,323 |
| Waterton Residential Property Venture XI, LP |  | 56,571 |  | 406 |
| Westbrook Real Estate Fund VII, LP |  | 25,568 |  | 394 |
| Westbrook Real Estate Fund VIII, LP |  | 36,983 |  | 614 |
| Total | \$ | 2,095,485 | \$ | 19,494 |

[^12]
## Commodities

(Dollars in Thousands)

| Manager | Assets Managed at Fair Value at June 30, 2014 |  | Management Fees |  |
| :---: | :---: | :---: | :---: | :---: |
| Commodities Managers |  |  |  |  |
| Blackrock Dow Jones/UBS | \$ | 7,311 | \$ | 29 |
| Gresham Investment Management ${ }^{1}$ |  | - |  | 3,023 |
| Total | \$ | 7,311 | \$ | 3,052 |

${ }^{\mathbf{1}}$ The fair value of assets managed by Gresham Investment Management are reported in Short-Term Investments on the Statement of Fiduciary Net Position.

## Global Tactical Asset Allocation

(Dollars in Thousands)

| Manager | Assets Managed at Fair Value at June 30, 2014 |  | Management Fees |  |
| :---: | :---: | :---: | :---: | :---: |
| Global Tactical Asset Allocation Managers |  |  |  |  |
| Bridgewater Associates Global Tactical Asset Allocation | \$ | 2,867,534 | \$ | 17,130 |
| Windham Capital Management |  | 603,839 |  | 2,324 |
| Total | \$ | 3,471,373 | \$ | 19,454 |

## Other Investments

(Dollars in Thousands)

| Manager | Assets Managed at Fair Value at June 30, 2014 |  | Management Fees |  |
| :---: | :---: | :---: | :---: | :---: |
| Farmland and Timber Manager |  |  |  |  |
| U.S. Farming Realty Trust II, LP | \$ | 105,841 | \$ | 1,729 |
| Total | \$ | 105,841 | \$ | 1,729 |



Welcome to the Retirement Mall. Here you will find everything you need to complete your journey.
$\checkmark$ Check out the mall directory to find what you need from the 10 available stores.


Try on some ideas and find out what is best for you.

## ACTUARIAL

## IV. Actuarial Section

## RETIREMENT AND HBS

Actuarial Certification Statement ..... 90
Independent Review of 2013 Actuarial Valuations ..... 98
General Actuarial Information ..... 99
Summary of the Benefit Provisions ..... 101
Statement of Actuarial Methods and Assumptions ..... 107
Retirement and HBS Schedules
Schedule of Active Member Valuation Data - Last 10 Years ..... 113
Schedule of Retirement Retirees Added to and Removed from Rolls - Last 10 Years ..... 113
Schedule of HBS Retirees Added to and Removed from Rolls - Last 5 Years ..... 114
Schedule of Funding Progress - Retirement and HBS - Last 10 Years ..... 114
Solvency Test - Retirement - Last 10 Years ..... 115
Solvency Test - HBS - Last 10 Years ..... 115
Analysis of Financial Experience for Retirement - Last 10 Years ..... 116
Analysis of Financial Experience for HBS - Last 10 Years ..... 116
LTD
Actuarial Certification Statement ..... 117
General Actuarial Information. ..... 120
Summary of Benefit Provisions ..... 121
Statement of Actuarial Methods and Assumptions ..... 123
LTD Schedules
Schedule of Benefit Recipients Added to and Removed from Rolls - Last 10 Years. ..... 125
Schedule of Funding Progress - Last 10 Years. ..... 126
Solvency Test - Last 10 Years. ..... 126
Analysis of Financial Experience for LTD. ..... 127
Legislative Plan Changes
Summary of Legislative Plan Changes ..... 130

Arizona State Retirement Plan
Actuarial Valuation - June 30, 2013

Actuarial Certification ARIZONA STATE RETIREMENT PLAN<br>Actuarial Certification Statement

This is to certify that Buck Consultants has prepared an actuarial valuation of the Arizona State Retirement Plan as of June 30, 2013. The Plan provisions are described in Title 38, Chapter 4, Article 2 of the Arizona Revised Statutes. All benefits described in the statutes are reflected in this valuation, except that future PBI and enhanced PBI awards are not valued.

Actuarial calculations have been made with respect to a total of 540,933 members $-202,693$ active members, 213,058 inactive members, 120,875 retired members and beneficiaries, and 4,307 members on long term disability. In addition, there are 192 System retirees receiving only ad hoc benefits, 521 System retirees receiving only health insurance benefits, and 106 System retirees receiving both ad hoc benefits and health insurance benefits from the Plan.

The actuarial calculations establish a total benefit cost of $22.96 \%$ of the annual compensation of members. The total normal cost rate is $13.45 \%$ of compensation and the required amortization payment determined in accordance with Section $38-737$ is $9.51 \%$ of compensation.

## Actuarial Valuation of the Plan as of June 30, 2013

We have made all calculations for this report in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, the report's results comply with the requirements of the Arizona Constitution and statutes and, where applicable, the Internal Revenue Code, the Employee Retirement Income Security Act of 1974 (ERISA), and the Statements of the Governmental Accounting Standards Board. The undersigned actuary is independent. He is an Enrolled Actuary, Fellow of the Society of Actuaries and Member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. He is experienced in performing valuations for large public retirement systems and fully qualified to provide actuarial services to the State of Arizona. This report has been prepared in accordance with all applicable Actuarial Standards of Practice.

## Actuarial Valuations

The primary purpose of the valuation report is to determine the required member and employer contribution rates; to describe the current financial condition of the Plan, and to analyze changes in the Plan's condition. In addition, the report provides information that ASRS requires in connection with Governmental Accounting Standards Board Statement Numbers 25 and 43 (GASB Nos. 25 and 43) and it summarizes census data.
Valuations are performed annually as of June 30, the last day of both the Plan year and ASRS' fiscal year.

## Funding Objectives

The actuarial valuation calculates the contribution rates payable by members and participating employers. These rates, when applied to payroll, yield contribution amounts sufficient to provide for the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL) over the period specified in the statutes. The rate calculated becomes effective for the next fiscal year. For example, the rate calculated in the June 30, 2013, valuation report $11.48 \%$ for each member and each employer is applicable for the fiscal year beginning July 1, 2014.

## Arizona State Retirement Plan

Actuarial Valuation - June 30, 2013

## Funding Progress

The 2012 valuation determined the rate for fiscal 2014 as $11.30 \%$. The 2013 valuation calculates a rate of $11.48 \%$ to become effective July 1, 2014. These rates do not include contributions to the LTD program. Actual contributions have matched the calculated contributions in recent years except for temporary differences, and we assume that members and employers will continue to contribute the actuarially determined amounts. Contributing these amounts ensures the realization of funding objectives.
The ASRS Board has elected to amortize the UAAL over a closed 30-year period for 401(a) unfunded actuarial accrued liability and a closed 15-year period for the 401(h) unfunded actuarial accrued liability.

## Benefit Provisions

Our valuation will reflect the following changes in Plan provisions as they become effective:

- Survivor Benefits: The legislation removed the requirement that a survivor's benefit must exceed $\$ 5,000$ to qualify for an annuity election. It limits the annuity option for the survivor to the single-life option, provided the annuity amount is greater than an amount selected by the ASRS Board (presently $\$ 100$ per month). It eliminates the present value calculation previously available if the member had reached early retirement eligibility or had 15 years of service.
- Permanent Benefit Increases: The legislation eliminates Permanent Benefit Increases for members hired after September 13, 2013.
- Health Insurance Program: The legislation permits the ASRS Board to establish a selfinsured health insurance program and an account to administer such a program, provided the self-insured program offers all the benefits required by Title 20 .
- Interest on Contribution Balances: Interest is credited at 2\% from July 1, 2013 for return of contributions upon termination and withdrawal of account balance.

Section 11 gives details of benefit provisions.

## Assumptions and Methods

We performed an experience study for the five-year period ended June 30, 2012, and recommended assumption changes based on the findings. On May 24, 2013, the Board adopted revised actuarial assumptions to be effective June 30, 2013.

On November 15, 2002, the Board adopted a change in the method of valuing actuarial assets. The Board removed the requirement that actuarial assets be within $20 \%$ of market value and prospectively changed the period for recognizing investment gains or losses from five to ten years. Section 9 of this report provides details of the assumptions and methods. The assumptions are internally consistent and are reasonably based on the actual experience of the Plan. These assumptions are in full compliance with GASB Statement Nos. 25 and 43.

On November 18, 2013, the Board adopted a change in the amortization method. The amortization method was previously a rolling 30-year period amortization. The new method amortizes the 401(a) unfunded actuarial accrued liability as of June 30, 2013 over a closed 30year period and the 401(h) unfunded actuarial accrued liability as of June 30, 2013 over a closed 15 -year period.

Arizona State Retirement Plan
Actuarial Valuation - June 30, 2013
Data
ASRS staff supplied census data for retired, active, and inactive members as of June 30, 2013. We have not audited these data, but have examined them for reasonableness and consistency with the prior year's data. ASRS staff also supplied asset information.

Trend Data and Supporting Schedules
ASRS prepared all trend data schedules in the financial section of ASRS' Comprehensive Annual Financial Report (CAFR). ASRS also prepared all supporting schedules in the actuarial section of the CAFR.
Arizona State Retirement Plan Actuarial Valuation - June 30, 2013
The actuarial cost factors as of June 30, 2013, for the total Plan are as follows:

| I. Actuarial accrued liabilities |  | 401(a) Account |  | 1(h) Account |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| A. Liabilities due to member's benefits <br> 1. Active members |  |  |  |  |  |  |
| a. Retirement benefits | \$ | 12,952,664,976 | \$ | 0 | \$ | 12,952,664,976 |
| b. Health insurance premium supplement |  | 0 |  | 699,070,334 |  | 699,070,334 |
| c. Disability deferred retirement benefits |  | 346,835,482 |  | 0 |  | 346,835,482 |
| d. Pre-retirement death benefits |  | 204,460,957 |  | 0 |  | 204,460,957 |
| e. Withdrawal benefits |  | 1,109,748,086 |  | 0 |  | 1,109,748,086 |
| f. Total active members | \$ | 14,613,709,501 | \$ | 699,070,334 | \$ | 15,312,779,835 |
| 2. Inactive members |  | 1,613,619,133 |  | 47,018,704 |  | 1,660,637,837 |
| 3. Retired members and beneficiaries |  | 22,398,414,156 |  | 694,187,656 |  | 23,092,601,812 |
| 4. Disabled members (deferred retirement) |  | 871,779,172 |  | 38,925,197 |  | 910,704,369 |
| 5. Benefit increases for other-than-plan members |  | 1,650,427 |  | 5,618,364 |  | 7,268,791 |
| 6. Post-1981 System members |  | 412,582,843 |  | 0 |  | 412,582,843 |
| 7. Total present value of benefits | \$ | 39,911,755,232 | \$ | 1,484,820,255 | \$ | 41,396,575,487 |
| B. Other miscellaneous liabilities and reserves |  | 0 |  | 0 |  | 0 |
| C. Reserve for future PBIs |  | 0 |  | 0 |  | 0 |
| D. Total actuarial accrued liability | \$ | 39,911,755,232 | \$ | 1,484,820,255 | \$ | 41,396,575,487 |
| II. Actuarial value of assets ${ }^{1}$ |  | 30,110,632,566 |  | 1,324,595,696 |  | 31,435,228,262 |
| III. Unfunded actuarial accrued liability (Item I. - Item II.) |  | 9,801,122,666 |  | 160,224,559 |  | 9,961,347,225 |
| IV. Amortization of unfunded actuarial accrued liability (per Section 38-737A. Base unfunded actuarial accrued liability amortization at beginnB. Expected alternate contributions at beginning of yearC. Interest to middle of year on A and BD. Total unfunded actuarial accrued liability amortization (A+B+C) |  |  |  |  |  |  |
|  | \$ | 806,122,737 | \$ | 17,332,452 | \$ | 823,455,189 |
|  |  | (22,595,752) |  | $(512,375)$ |  | $(23,108,127)$ |
|  |  | 31,341,079 |  | 672,803 |  | 32,013,882 |
|  | \$ | 814,868,064 | \$ | 17,492,880 | \$ | 832,360,944 |
| V. Normal cost for the year |  |  |  |  |  |  |
| A. Normal cost at beginning of year | \$ | 1,099,143,459 | \$ | 32,745,588 | \$ | 1,131,889,047 |
| B. Interest to middle of year |  | 43,965,738 |  | 1,309,824 |  | 45,275,562 |
| C. Total normal cost for the year ( $\mathrm{A}+\mathrm{B}$ ) | \$ | 1,143,109,197 | \$ | 34,055,412 | \$ | 1,177,164,609 |
| VI. Total contribution for the year (Item IV. + Item V.) | \$ | 1,957,977,261 | \$ | 51,548,292 | \$ | 2,009,525,553 |
| VII. Total covered payroll (projected to 2013/2014 plan year) | \$ | 8,752,783,004 | \$ | 8,752,783,004 | \$ | 8,752,783,004 |
| VIII. Total contribution for fiscal year 2015 as a percentage of covered payroll |  |  |  |  |  |  |
| A. Member portion |  | 11.48\% |  | 0.00\% |  | 11.48\% |
| B. Employer portion |  | 10.89\% |  | 0.59\% |  | 11.48\% |
| C. Total |  | 22.37\% |  | 0.59\% |  | 22.96\% |
| IX. Present value of future covered payroll | \$ | 61,038,369,832 | \$ | 0 | \$ | 61,038,369,832 |
| X. Present value of future benefits ${ }^{1}$ | \$ | 48,188,460,956 | \$ | 1,614,118,469 | \$ | 49,802,579,425 |
| XI. Present value of future normal cost (Item X. - Item I.D.) | \$ | 8,276,705,724 | \$ | 129,298,214 | \$ | 8,406,003,938 |

[^13]Arizona State Retirement Plan
Actuarial Valuation - June 30, 2013
The Board adopted a new asset valuation method (described in Section 9B) on November 15, 2002, to be effective for valuations on and after June 30, 2002.

On May 24, 2013 the Board adopted assumptions to be effective for valuations on and after June 30, 2013. Assumptions that were changed or added are identified below. These assumptions are as follows:

1. Investment yield - $8 \%$ per annum net of all expenses.
2. Salary increases - changed
$\left.\begin{array}{cccc}\begin{array}{c}\text { Years of } \\ \text { Service }\end{array} & & \begin{array}{c}\text { Merit } \\ \text { Component }\end{array} & \end{array} \begin{array}{c}\text { Total Salary } \\ \text { Increase* }\end{array}\right]$.
3. Rates of disability - changed

| Age |  | Unisex Rates |
| :---: | :---: | :---: |
| 20 | $0.05 \%$ |  |
| 30 | 0.07 |  |
| 40 | 0.16 |  |
| 50 | 0.36 |  |
| 60 | 0.47 |  |

Arizona State Retirement Plan
Actuarial Valuation - June 30, 2013
4. Rates of withdrawal - changed

| Years of Service | Males | Females |
| :---: | :---: | :---: |
| 0 | 18.50\% | 21.75\% |
| 1 | 15.75 | 17.00 |
| 2 | 12.75 | 14.75 |
| 3 | 10.75 | 11.75 |
| 4 | 9.50 | 10.25 |
| 5 | 8.50 | 9.75 |
| 6 | 7.75 | 8.50 |
| 7 | 6.75 | 7.75 |
| 8 | 5.75 | 6.25 |
| 9 | 5.50 | 5.75 |
| 10 | 5.25 | 5.00 |
| 11 | 4.75 | 4.50 |
| 12 | 4.25 | 4.10 |
| 13 | 3.50 | 3.80 |
| 14 | 3.25 | 3.50 |
| 15 | 3.00 | 3.25 |
| 16 | 2.75 | 3.00 |
| 17 | 2.75 | 2.75 |
| 18 | 2.50 | 2.50 |
| 19 | 2.25 | 2.25 |
| 20+ | 2.00 | 2.00 |

5. Rates of retirement - changed. Sample ages and years of service, where Tier 1 represents active members hired before July 1, 2011.

Years of Service
Tier 1:

| Age |
| :---: |
| 50 |
| 55 |
| 60 |
| 62 |
| 65 |
| 70 |


| $0-3$ |
| :---: |
| $0.00 \%$ |
| 0.00 |
| 0.00 |
| 0.00 |
| 33.00 |
| 15.00 |


| $11-18$ |
| :---: |
| $4.00 \%$ |
| 4.00 |
| 9.00 |
| 33.00 |
| 33.00 |
| 25.00 |


| 25 |
| :---: |
| $5.00 \%$ |
| 25.00 |
| 25.00 |
| 25.00 |
| 33.00 |
| 33.00 |


| $31+$ |
| :--- |
| $25.00 \%$ |
| 25.00 |
| 25.00 |
| 25.00 |
| 33.00 |
| 25.00 |

Tier 2:

| Age |
| :---: |
| 50 |
| 55 |
| 60 |
| 62 |
| 65 |
| 70 |


| $0-3$ |
| :---: |
| $0.00 \%$ |
| 0.00 |
| 0.00 |
| 0.00 |
| 33.00 |
| 15.00 |


| $11-18$ |
| :---: |
| $4.00 \%$ |
| 4.00 |
| 9.00 |
| 33.00 |
| 33.00 |
| 25.00 |


| 25 |
| :---: |
| $8.33 \%$ |
| 10.89 |
| 30.00 |
| 25.00 |
| 33.00 |
| 33.00 |


| $31+$ |
| :--- |
| $14.00 \%$ |
| 33.00 |
| 25.00 |
| 25.00 |
| 33.00 |
| 25.00 |

Deferred vested members are assumed to retire at their normal retirement age.

## Arizona State Retirement Plan

Actuarial Valuation - June 30, 2013
6. Mortality rates - changed - 1994 GAM Static, Projected to 2015 with Projection Scale BB with adjustments for small and large benefit amounts. This mortality assumption was chosen to be used from June 30, 2013 to June 30, 2017. The rates were projected to the middle point of this period and include an appropriate level of conservatism that reflects expected future mortality improvements. $50 \%$ of the rates were used for active members.
7. Mortality rates after disability - changed - Post disablement mortality rates are based on experience of other large public sector system and ASRS' own experience.
8. Future Retirees Eligible for the Health Insurance Premium Supplement - changed - It is assumed that $60 \%$ of future retirees will be eligible to receive the post-retirement health insurance premium supplement and that $40 \%$ of those retirees will be eligible for the dependent premium supplement. These assumptions also apply to members who have been retired less than one year.
9. Portion of members who will not withdraw their contributions - It is assumed that active members who terminate (prior to eligibility for retirement) and deferred vested members who have already terminated will choose to receive the enhanced refund option if the value of the enhanced refund option is greater than the present value of the deferred benefit. Otherwise, the members are assumed to elect to receive the deferred benefit. If the member is assumed to elect the enhanced refund option, then it is also assumed that the member forfeits the health insurance premium supplement.

Members who terminate eligible for early retirement are assumed to commence payments immediately.
10. Spouse Assumptions - We assume that $100 \%$ of the members are married. We also assume that the husband is three years older than the wife.
11. Modified Cash Refund Assumption - We assume that members who elect a single life annuity will receive accumulated benefit payments equal to their contributions after three years of being in receipt.
12. 415(b) Limits -415 (b) limits are not applied in the Plan valuation because there is an excess plan that pays benefits above the 415 (b) limit.
13. Optional Form load on liabilities - changed - A load of $0.174 \%$ has been added to the nonretired 401(a) liabilities to account for the election of optional forms other than a single life annuity.
14. Alternate Contribution Rate - added - The past service contribution rate is adjusted to consider alternate contribution rate payments.
15. Adjustment for Contribution Timing - added - Contribution rates are increased by $1 / 2$ of a year's assumed interest to reflect the fact that ASRS receives contributions throughout the fiscal year.

## Actuarial Certification - Retirement and HBS (Continued)

## Arizona State Retirement Plan

Actuarial Valuation - June 30, 2013

The asset valuation method is the market value less ten year phase-in of excess (shortfall) investment income. See Section 9B.

The funding method is the projected unit-credit method as prescribed in Arizona Revised Statutes Section 38.757A. The Board elected to change the amortization schedule, effective with this valuation, to a closed 30-year period for the 401 (a) portion of the Plan and to a closed 15year period for the 401(h) portion.

The actuarial calculations have been performed by qualified actuaries in accordance with accepted actuarial procedures based on the current provisions of the Plan and on the actuarial assumptions adopted by the Board.

ASRS prepared all trend data schedules in the financial section and the supporting schedules in the actuarial section of its Comprehensive Annual Financial Report.

Sincerely,


Charles E. Chittenden, FSA, EA, MAAA

## Independent Review of 2013 Actuarial Valuations

Gabriel Roeder Smith \& Company Consultants \& Actuaries

5605 N. MacArthur Blvd. Suite 870
Irving, TX 75038-2631

469.524 .0000 phone 469.524.0003 fax www.gabrielroeder.com

June 13, 2014

Retirement Board
Arizona State Retirement System
3300 North Central Avenue
14th Floor
Phoenix, Arizona 85012

Dear Retirement Board Members:
Gabriel, Roeder, Smith \& Company (GRS) is pleased to present this report of an actuarial audit of the June 30, 2013 actuarial valuations of the Arizona State Retirement System (ASRS) retirement programs. The scope of our actuarial audit included the ASRS Plan (pension and health benefits), the ASRS System (pension and health benefits), and the Long Term Disability Program (LTD). We are grateful to the ASRS staff and Buck Consultants (Buck), the retained actuary, for their cooperation throughout the actuarial audit process.

This actuarial audit involves an independent verification and analysis of the assumptions, procedures, methods, and conclusions used by the retained actuary for ASRS, in the actuarial valuations of ASRS as of June 30, 2013, to ensure that the conclusions are technically sound and conform to the appropriate Standards of Practice as promulgated by the Actuarial Standards Board.

GRS is pleased to report to the Board, in our professional opinion, the June 30, 2013 actuarial valuations prepared by the retained actuary provide fair and reasonable assessments of the financial position of ASRS.

Throughout this report we make a number of suggestions for ways to improve the work product. We hope that the retained actuary and ASRS find these items helpful. Thank you for the opportunity to work on this assignment.

Mr. Falls is an Enrolled Actuary, a Fellow of the Society of Actuaries, and a Member of the American Academy of Actuaries. He meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. Both Mr. Falls and Mr. Ward are experienced in performing valuations for large public retirement systems.

Respectfully submitted, Gabriel, Roeder, Smith \& Company

R. Ryan Falls, FSA, FCA, MAAA, EA

Senior Consultant


Lewis Ward
Consultant

## Funding Objective

The funding objective of the Arizona State Retirement System is to maintain reasonably stable contribution rates and to achieve an ultimate funded status of $100 \%$. The Board of Trustees is responsible for establishing and maintaining the funding policy.

The actuarial cost methodology utilized for funding purposes differs from the actuarial cost methodology utilized for financial reporting purposes. The identification and discussion regarding the differences between the actuarial assumptions for financial reporting purposes and those utilized for funding purposes is contained in the Notes to the Basic Financial Statements. The Projected Unit Credit (PUC) Method is utilized as the actuarial cost methodology for funding purposes. The ASRS has been utilizing the PUC since 1989, when it became law in 1989 as a result of action taken by the legislature.

As of June 30, 2013, the date of the most recent actuarial valuation, this funding level is $75.9 \%$. When the present actuarial asset value of $\$ 31.4$ billion is compared to the actuarial liabilities of $\$ 41.4$ billion, actuarial liabilities exceed actuarial assets by the amount of $\$ 10.0$ billion.

As of fiscal year 2008, statutory changes require annual actuarial valuations, not the biannual valuation required by a prior statutory change effective in 1998. The rates determined by the Plan, System and HBS (combined) valuations do not include contributions to the LTD program.

Please reference the ten-year schedule of actuarially determined and actual contributions in Required Supplementary Information.

## Asset Valuation

The ASRS actuary determines the actuarial value of assets by recognizing investment gains and losses over a period of time. For gains and losses that occurred before fiscal 2002, the period is five years. For gains and losses that occurred in fiscal 2002, or later years, the period is ten years. The gradual recognition of investment gains and losses reduces volatility in the year-to-year level of contribution rates.

## Long-Term Disability Benefit

In addition to pension, health insurance, and survivor benefits, the ASRS also offers a long-term disability benefit.
Effective October 1, 1995, to comply with Internal Revenue Code requirements, liabilities associated with the long-term disability benefit was separated from the Plan. No assets were transferred to the LTD fund. Accordingly, the objectives of the funding method that the Board adopted for the LTD program have been:

- To produce a positive cash flow
- To maintain reasonably stable contribution rates
- To build up the assets gradually

As determined by the 2013 actuarial report, the LTD contribution rate is $.48 \%, .24 \%$ for employees and $.24 \%$ for employers. These rates are effective for FY 2014.

## Summary of Actuarial Method for Long-Term Disability Benefit

The actuarial cost method changed, effective for the 2005 valuation, to the projected unit credit method. Assets are valued at market, less (or plus) an adjustment to reflect investment gains (or losses) over a 10-year period. This method applies to gains and losses incurred in fiscal 2006 and later years. The unfunded actuarial accrued liability is amortized over 15 years in level dollar payments.

The Arizona State Retirement Plan makes provision for the retirement, disability, and death and survivor benefits to all employees of the State, instrumentalities of the State and certain political subdivisions. Please refer to the Financial Section of this report for an in-depth discussion of plan provisions. The major provisions of the Plan may be summarized as follows:

## A. RETIREMENT BENEFITS

1. Normal Retirement Date (the earliest of the following):
a) a member's sixty-fifth birthday,
b) a member's sixty-second birthday and completion of at least ten years of credited service, or
c) the first day immediately following the day that the sum of the member's age and his years of total credited service equal eighty for members hired before July 1, 2011 or for members hired on or after July 1, 2011, age 60 with 25 years of credited service or age 55 with 30 years of service.

## 2. Monthly Life Annuity

The product of a benefit multiplier (as determined below) and the member's best 36 month average compensation (in last 120 months) for members hired before July 1, 2011 and 60-month average compensation (in last 120 months) for members hired on or after July 1, 2011 multiplied by his or her years of total credited service. Members who commenced membership prior to 1984 can use a 60-month average and include additional types of compensation, if doing so produces a larger result.

Years of Credited Service
Less than 20
20.0 to 24.99
25.0 to 29.99

30 or more

Benefit Multiplier
2.10\%
2.15\%
2.20\%
2.30\%

## 3. Normal Retirement Benefits

The sum of the monthly life annuity and any prior service benefits to which the employee was entitled under the System.

## 4. Early Retirement

Age 50 with 5 or more years of credited service.

## 5. Early Retirement Benefits

If not eligible for normal retirement and at least age 50 with 5 years of total credited service, normal retirement benefit earned to the date of retirement, reduced according to the following table:

| Years of Service | Age at Date of Retirement |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
| Members Hired <br> Before July 1, 2011 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5-9.99 | 35\% | 40\% | 45\% | 50\% | 55\% | 60\% | 65\% | 70\% | 75\% | 80\% | 85\% | 88\% | 91\% | 94\% | 97\% | 100\% |
| 10-19.99 | 44\% | 49\% | 54\% | 59\% | 64\% | 69\% | 74\% | 79\% | 84\% | 89\% | 94\% | 97\% | 100\% | 100\% | 100\% | 100\% |
| 20+ | 50\% | 55\% | 60\% | 65\% | 70\% | 75\% | 80\% | 85\% | 90\% | 95\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% |
| Members Hired On or After July 1, 2011 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5-9.99 | 35\% | 40\% | 45\% | 50\% | 55\% | 60\% | 65\% | 70\% | 75\% | 80\% | 85\% | 88\% | 91\% | 94\% | 97\% | 100\% |
| 10-24.99 | 44\% | 49\% | 54\% | 59\% | 64\% | 69\% | 74\% | 79\% | 84\% | 89\% | 94\% | 97\% | 100\% | 100\% | 100\% | 100\% |
| 25-29.99 | 44\% | 49\% | 54\% | 59\% | 64\% | 69\% | 74\% | 79\% | 84\% | 89\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% |
| 30+ | 44\% | 49\% | 54\% | 59\% | 64\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% | 100\% |

Provided, however, that if the member meets the Rule of 77 (but not the Rule of 80 ), the reduction will be $3 \%$ for each unit below 80 for members hired before July 1, 2011.

## 6. Normal Form of Benefit

Straight life annuity with cash refund feature payable monthly with benefits commencing on the day following the date of termination of employment.

## 7. Optional Forms

a) joint and contingent annuity (with pop-up) with either $100 \%, 66-2 / 3 \%$ or $50 \%$ of the reduced retirement income payable for the life of the contingent annuitant upon the death of the retiring participant, or
b) period certain and life annuity (with pop-up) with either five, ten, or fifteen years of payments guaranteed

## 8. Minimum Benefit

The minimum monthly benefit payable to a retired member who is at least age 75 and who has 20 or more years of service is $\$ 600$.

## B. DISABILITY BENEFITS (for disability after June 30, 1988)

1. Long-Term disability

Monthly benefit equal to two-thirds of monthly compensation, reduced by percentages of other income received payable commencing six months after date of disability until the earlier of:
a) Date of cessation of total disability, or
b) Normal retirement date.

This benefit is paid by a separate LTD plan.
2. Disability Payments if Member Remains Disabled Through Normal Retirement Date

Monthly benefit participant would have received if service had continued to normal retirement date assuming the participant's salary remained at the level it was at his or her date of disability, also provided that the amount of total credited service is limited to 30 years unless he or she had more than 30 years at date of disability.
3. The minimum monthly benefit payable to a disabled participant is $\mathbf{\$ 5 0 . 0 0}$.
C. DISABILITY BENEFITS (for disability before July 1, 1988)

## 1. Eligibility

Age 50 with 5 years of service.

## 2. Benefit Amount

A life annuity that can be provided by the member's contribution account. Disability payments after normal or early retirement eligibility are reduced by the actuarial value of the disability payments made up to the date of normal or early retirement eligibility.

## D. PRE-RETIREMENT DEATH BENEFITS

## 1. Eligibility

Applicable if death occurs prior to retirement.

## 2. Benefit

Any one of the following, at the option of the beneficiary:
a) a lump sum equal to the sum of (i) and (ii):
i) the sum of the member's member and employer balances, and
ii) the amount of the member's employee and employer accounts, along with supplemental credits, if any, transferred from the System to the Plan, with interest
b) the beneficiary may elect to receive a monthly income, in the single life form, which is actuarially equivalent to the amount in (a).

## E. VESTING OF BENEFITS

## 1. Vesting

A member is fully vested in his or her accrued benefit.

## 2. Benefits Upon Vesting

A fully vested member is entitled to either:
a) the enhanced refund option for members hired before July 1, 2011 or for members terminated due to an Employer Reduction in Force or position elimination for members hired on or after July 1, 2011, or
b) the retirement benefit payable at normal retirement earned to the date of member's termination.

The enhanced refund option allows members who terminate prior to eligibility for retirement to receive a refund of their member contributions with interest. In addition, if a member has at least five years of service, he or she is also entitled to a share of the employer contributions with interest. The share is $25 \%$ for members with five years of service and increases $15 \%$ for each additional year of service up to a maximum of $100 \%$ for ten or more years of service. The Board reduced the interest rate to be credited on refund of contributions from $8 \%$ to $4 \%$, effective June 30 , 2005, and from $4 \%$ to $2 \%$ effective June 30, 2013.

## F. RETIREE HEALTH INSURANCE PREMIUM SUPPLEMENT

## 1. Eligibility

Retirement or disability after 5 years of credited service and covered by an employer-sponsored group insurance program for which the retired or disabled member must pay part of the cost. Employees who elect the enhanced refund option are not eligible for this benefit.

## 2. Benefit

The benefit is payable only with respect to allowable health insurance premiums for which the participant is responsible. The maximum benefits for participants with 10 or more years of service are:
a) with respect to premiums paid for retirees with member only coverage:

- $\$ 150$ per month if the retiree is under age 65
- $\$ 100$ per month if the retiree is 65 or over
b) with respect to premiums paid for retirees with family coverage:
- $\$ 260$ per month if the member and dependents are under age 65
- $\$ 170$ per month if the member and dependents are 65 or over
- $\$ 215$ per month if the member is over age 65 and the dependent is under age 65
- $\$ 215$ per month if the member is under age 65 and the dependent is over age 65

For members with five to nine years of service, the benefits are the same dollar amounts as above multiplied by a vesting fraction equal to 10 percent for each completed year of service (i.e., 50 percent to 90 percent).

## G. AUTOMATIC COST OF LIVING ADJUSTMENT BASED ON EXCESS INVESTMENT EARNINGS

## 1. Permanent Benefit Increase (PBI)

Retirees who have been retired one year and LTD members are eligible for a PBI up to a maximum of a $4 \%$ increase. The PBI is paid from a reserve of "Excess Investment Earnings." If there are no "Excess Investment Earnings" in reserve, then no PBI is paid.

## 2. Permanent Benefit Increase Enhancement

Provides retired members with at least ten years of service who have been retired five or more years an additional benefit. For each complete 5 -year period the member has been retired an incremental benefit is paid if monies to pay the benefit are available. This benefit is funded by an interest credit of $8.0 \%$ of the reserve for future PBIs.

PBI and enhanced PBI benefits are reflected in the valuation as soon as they are awarded. Future PBI and enhanced PBI are not included in the valuation.

Due to legislation enacted in the 2013 legislative session, PBIs and enhanced PBIs will not be awarded to members hired after September 13, 2013.

## H. EMPLOYEE AND EMPLOYER CONTRIBUTIONS

The contribution rate for the fiscal year beginning on July 1st is based on the results of the most recent actuarial valuation as of the last day of the preceding plan year. The member's contribution rate is equal to the required employer contribution rate. The contribution rate for fiscal year 2014 is $11.30 \%$ for each member and each employer, based on the 2012 actuarial valuation. The contribution rate for fiscal year 2015 will be $11.48 \%$ based on this valuation. Interest is credited at $8.00 \%$; however, interest is credited at $4 \%$ from July 1, 2005 and $2 \%$ from July 1, 2013 for return of contributions upon withdrawal. Please refer to the ten-year schedule of actuarially determined and actual contributions provided in Required Supplementary Information.

# Statement of Actuarial Methods and Assumptions <br> Retirement and HBS 

## ADOPTED BY BOARD ACTION ON MAY 24, 2013 <br> EFFECTIVE AS OF JUNE 30, 2013

## A. Actuarial Assumptions

Determined from experience analysis from July 1, 2007 through June 30, 2012. Any changes as a result of the actuarial study or plan provisions have been taken into account in the most recent actuarial valuation.

## 1. Investment Yield Rate ${ }^{1}$

$8 \%$ per annum compounded annually, net of all expenses (determined from the Board's strategic session).

## 2. Mortality

The mortality assumption was chosen to be used from June 30, 2013 to June 30, 2017. The rates were projected to the middle point of this period and include an appropriate level of conservatism that reflects expected future mortality improvements.
a) Pre-retirement

Assumption: 50\% of 1994 GAM - Static, Projected to 2015 With Projection Scale BB, with no setback. Rates at representative ages are shown below:

| Rates of Mortality (Active)   <br> AGE MALE PARTICIPANTS FEMALE PARTICIPANTS <br> 20 0.000207 0.000128 <br> 25 0.000270 0.000127 <br> 30 0.000269 0.000146 <br> 35 0.000292 0.000211 <br> 40 0.000406 0.000344 <br> 45 0.000692 0.000476 <br> 50 0.001127 0.000639 <br> 55 0.001882 0.000987 <br> 60 0.003149 0.001779 <br> 65 0.005325 0.003450 <br> 70 0.008633 0.005639 <br> 75 0.013718 0.009380 <br> 80 0.023121 0.016632 <br> 85 0.038025 0.029474 <br> 90 0.066498 0.052712 l |  |  |
| :---: | :---: | :---: |

[^14]b) Post-retirement

Assumptions: Non-Disabled rates are based on the 1994 GAM - Static, Projected to 2015 with Projection Scale BB with adjustments for small and large benefit amounts. Disabled rates are based on the experience of other large public sector retirement systems and ASRS' own experience. Rates (with no adjustments for benefit amount) at representative ages are shown below.

| AGE | Rates of Mortality |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Male Participants |  | Female Participants |  |
|  | NON-DISABLED | DISABLED | NON-DISABLED | DISABLED |
| 20 | 0.000414 | 0.034940 | 0.000256 | 0.026940 |
| 25 | 0.000539 | 0.038890 | 0.000253 | 0.027440 |
| 30 | 0.000538 | 0.051100 | 0.000292 | 0.038300 |
| 35 | 0.000584 | 0.063540 | 0.000423 | 0.053930 |
| 40 | 0.000812 | 0.058810 | 0.000688 | 0.056980 |
| 45 | 0.001384 | 0.040920 | 0.000951 | 0.037590 |
| 50 | 0.002253 | 0.034740 | 0.001277 | 0.025700 |
| 55 | 0.003763 | 0.031360 | 0.001975 | 0.022840 |
| 60 | 0.006299 | 0.031110 | 0.003558 | 0.018030 |
| 65 | 0.010650 | 0.030860 | 0.006901 | 0.013930 |
| 70 | 0.017267 | 0.033730 | 0.011278 | 0.012990 |
| 75 | 0.027435 | 0.048250 | 0.018760 | 0.020770 |
| 80 | 0.046241 | 0.055540 | 0.033265 | 0.036470 |
| 85 | 0.076050 | 0.090010 | 0.058948 | 0.063400 |
| 90 | 0.132997 | 0.146340 | 0.105424 | 0.112480 |

3. Disability Rates

| Rates of Decrement Due to Disability <br> AGE <br> UNISEX RATES |  |
| :---: | :---: |
| 20 | 0.000491 |
| 25 | 0.000541 |
| 30 | 0.000654 |
| 35 | 0.000997 |
| 40 | 0.001583 |
| 45 | 0.002449 |
| 50 | 0.003649 |
| 55 | 0.004280 |
| 60 | 0.004655 |

4. Withdrawal Rates (for causes other than death, disability or retirement) Rates by completed years of service are shown below:

| Rate of Decrement Due to Withdrawal |  |  |
| :---: | :---: | :---: |
| YEARS OF SERVICE | MALES | FEMALES |
| 0 | $18.50 \%$ | $21.75 \%$ |
| 1 | $15.75 \%$ | $17.00 \%$ |
| 2 | $12.75 \%$ | $14.75 \%$ |
| 3 | $10.75 \%$ | $11.75 \%$ |
| 4 | $9.50 \%$ | $10.25 \%$ |
| 5 | $8.50 \%$ | $9.75 \%$ |
| 6 | $7.75 \%$ | $8.50 \%$ |
| 7 | $6.75 \%$ | $7.75 \%$ |
| 8 | $5.75 \%$ | $6.25 \%$ |
| 9 | $5.50 \%$ | $5.75 \%$ |
| 10 | $5.25 \%$ | $5.00 \%$ |
| 11 | $4.75 \%$ | $4.50 \%$ |
| 12 | $4.25 \%$ | $4.10 \%$ |
| 13 | $3.50 \%$ | $3.80 \%$ |
| 14 | $3.25 \%$ | $3.50 \%$ |
| 15 | $3.00 \%$ | $3.25 \%$ |
| 16 | $2.75 \%$ | $3.00 \%$ |
| 17 | $2.75 \%$ | $2.75 \%$ |
| 18 | $2.50 \%$ | $2.50 \%$ |
| 19 | $2.25 \%$ | $2.25 \%$ |
| $20+$ | $2.00 \%$ | $2.00 \%$ |

5. Salary Scales

A select and ultimate salary scale made up of a merit component and general salary increase component as follows:

Years of Service Merit Component | Total Salary |
| :---: |
| Increase |

| 1 | $3.75 \%$ | $6.75 \%$ |
| :---: | :---: | :---: |
| 2 | $3.00 \%$ | $6.00 \%$ |
| 3 | $1.90 \%$ | $4.90 \%$ |
| 4 | $1.35 \%$ | $4.35 \%$ |
| 5 | $1.05 \%$ | $4.05 \%$ |
| 6 | $0.95 \%$ | $3.95 \%$ |
| 7 | $0.75 \%$ | $3.75 \%$ |
| 8 | $0.60 \%$ | $3.60 \%$ |
| 9 | $0.60 \%$ | $3.60 \%$ |
| 10 | $0.40 \%$ | $3.40 \%$ |
| 11 to 19 | $0.20 \%$ | $3.20 \%$ |
| 20 or more | $0.00 \%$ | $3.00 \%$ |

${ }^{1}$ Total salary increase rate $=$ wage inflation (or growth) rate $(3.00 \%)+$ merit component

## 6. Retirement Age

Select and ultimate retirement rates are used. Rates at representative ages and years of service are shown below:

| Rates of Decrement Due to Retirement <br> YEARS OF SERVICE - ALL MEMBERS |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| AGE | $0-3$ | $11-18$ | 25 |  |
| Tier 1 ${ }^{\mathbf{1}}:$ |  |  |  |  |
| 50 | $0.00 \%$ | $4.00 \%$ | $5.00 \%$ | $25.00 \%$ |
| 55 | $0.00 \%$ | $4.00 \%$ | $25.00 \%$ | $25.00 \%$ |
| 60 | $0.00 \%$ | $9.00 \%$ | $25.00 \%$ | $25.00 \%$ |
| 62 | $0.00 \%$ | $33.00 \%$ | $25.00 \%$ | $25.00 \%$ |
| 65 | $33.00 \%$ | $33.00 \%$ | $33.00 \%$ | $33.00 \%$ |
| Tier 2: |  |  |  |  |
| 50 | $0.00 \%$ | $4.00 \%$ | $8.33 \%$ | $14.00 \%$ |
| 55 | $0.00 \%$ | $4.00 \%$ | $10.89 \%$ | $33.00 \%$ |
| 60 | $0.00 \%$ | $9.00 \%$ | $30.00 \%$ | $25.00 \%$ |
| 62 | $0.00 \%$ | $33.00 \%$ | $25.00 \%$ | $25.00 \%$ |
| 65 | $33.00 \%$ | $33.00 \%$ | $33.00 \%$ | $33.00 \%$ |
| 70 | $15.00 \%$ | $25.00 \%$ | $33.00 \%$ | $25.00 \%$ |

${ }^{1}$ Tier 1 represents active members hired before July 1, 2011.
Deferred vested members are assumed to retire at normal retirement age.

## 7. Future Retirees Eligible for the Health Insurance Premium Supplement

It is assumed that $60 \%$ of future retirees will be eligible to receive the post-retirement health insurance premium supplement and that $40 \%$ of those retirees will be eligible for the dependent premium supplement. These assumptions also apply to members who have been retired less than one year.

## 8. Proportion of Vested Term Members Who Will Not Withdraw Their Contributions

It is assumed that active members who terminate (prior to eligibility for retirement) and deferred vested members who have already terminated will choose to receive the enhanced refund option if the value of the enhanced refund option is greater than the present value of the deferred benefit. Otherwise, the members are assumed to elect to receive the deferred benefit. If the member is assumed to elect the enhanced refund option, then it is also assumed that the member forfeits the health insurance premium supplement.

Members who terminate eligible for early retirement are assumed to commence payments.

## 9. Spouse Assumptions

We assume that $100 \%$ of the members are married. We also assume that the husband is three years older than the wife.

## 10. Modified Cash Refund Assumption

We assume that members who elect a single life annuity will receive accumulated benefit payments equal to their contributions after three years of being in receipt.
11. 415 (b) Limits

415(b) limits are not applied in the Plan valuation because there is an excess plan that pays benefits above the 415(b) limit.

## 12. Optional Form Load

A load of $0.174 \%$ has been added to the non-retired 401(a) liabilities to account for the election of optional forms other than a single life annuity.

## 13. Alternate Contribution Rate

The past service contribution rate is adjusted to consider alternate contribution rate payments. The past amortization amount was reduced by the anticipated amount of alternate contributions, and adjusted for interest. Previously, no adjustment was made for alternate contribution rate payments.
14. Adjustment for Contribution Timing - determined from experience analysis for July 1, 2007 through June 30, 2012

Contribution rates are increased by $1 / 2$ of a year's interest to reflect the fact that contributions are made throughout the fiscal year. Previously, no adjustment was made for contribution rate timing.

## 15. Future Permanent Benefit Increases

Future PBIs are not valued.

## B. Actuarial Value of Assets

The actuarial value of assets is equal to the market value of assets less a ten-year phase in (five-year phase-in prior to June 30, 2002) of the Excess (Shortfall) between expected investment return and actual income on the market value of assets. There is no corridor around market value within which the actuarial value is required to fall.

## C. Actuarial Funding Method

Costs are determined under the projected unit credit method. The unfunded actuarial accrued liability was previously funded on a level dollar basis over the period of time described in Section 38-737. Effective with the 2013 valuation, the ASRS Board determines the method of amortizing the unfunded actuarial accrued liability. For the actuarial valuation as of June 30, 2013, the period is a closed 30-year period for the 401(a) portion of the Plan and a closed 15 -year period for the 401 (h) portion.

## D. Data for Valuation

In preparing the actuarial valuation as of June 30, 2013, the actuary has relied on data and assets provided by the staff of the Arizona State Retirement System. While not verifying the data at their source, the actuary has performed tests for consistency and reasonableness.

## Schedule of Retirement Active Member Valuation Data Last 10 Years

| Contributing Active Members |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| VALUATION AS OF JUNE 30 | NUMBER OF PARTICIPATING EMLOYERS | ACTIVE MEMBERS | ANNUAL PAYROLL |  | ANNU | VERAGE Y | INCREASE IN AVERAGE PAY |
| 2004 | 576 | 205,482 | \$ | 7,485,590,038 | \$ | 36,429 | 1.0\% |
| 2005 | 598 | 212,202 |  | 8,032,457,947 |  | 37,853 | 3.9\% |
| 2006 | 599 | 217,676 |  | 8,311,869,615 |  | 38,185 | 0.9\% |
| 2007 | 597 | 224,001 |  | 9,161,803,726 |  | 40,901 | 7.1\% |
| 2008 | 586 | 226,415 |  | 9,708,352,896 |  | 42,879 | 4.8\% |
| 2009 | 599 | 222,515 |  | 9,834,810,345 |  | 44,198 | 3.1\% |
| 2010 | 599 | 213,530 |  | 9,419,951,810 |  | 44,115 | -0.2\% |
| 2011 | 595 | 208,939 |  | 9,060,630,604 |  | 43,365 | -1.7\% |
| 2012 | 593 | 203,994 |  | 8,868,678,184 |  | 43,475 | 0.3\% |
| 2013 | 585 | 202,693 |  | 8,752,783,004 |  | 43,182 | -0.7\% |

## Schedule of Retirement Retirees Added to and Removed From Rolls

Last 10 Years

| Valuation as of June 30 | Retirants and Beneficiaries Added to Rolls |  |  | Retirants and Beneficiaries Removed from Rolls |  |  | Retirants and Beneficiaries Rolls End of Year |  | \% Increase in Annual Allowance | Average Annual Allowances |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NO. |  | ANNUAL LLOWANCES | NO. |  | ANNUAL ANOWANCES | NO. | ANNUAL ALLOWANCES ${ }^{1}$ |  |  |  |
| 2004 | 6,430 | \$ | 169,063,326 | 2,196 | \$ | 26,982,679 | 68,931 | \$1,230,025,859 | 13.1\% | \$ | 17,844 |
| 2005 | 7,005 |  | 136,009,712 | 2,083 |  | 29,472,225 | 73,853 | 1,336,563,347 | 8.7\% |  | 18,098 |
| 2006 | 7,143 |  | 170,867,676 | 2,498 |  | 32,717,257 | 78,498 | 1,474,713,766 | 10.3\% |  | 18,787 |
| 2007 | 7,393 |  | 144,536,847 | 2,297 |  | 30,532,270 | 83,594 | 1,588,718,343 | 7.7\% |  | 19,005 |
| 2008 | 7,784 |  | 148,885,733 | 2,422 |  | 33,418,979 | 88,956 | 1,704,185,097 | 7.3\% |  | 19,158 |
| 2009 | 7,958 |  | 153,218,995 | 2,490 |  | 30,033,184 | 94,424 | 1,827,370,908 | 7.2\% |  | 19,353 |
| 2010 | 9,360 |  | 176,419,906 | 2,477 |  | 35,666,261 | 101,307 | 1,968,124,553 | 7.7\% |  | 19,427 |
| 2011 | 9,288 |  | 179,066,507 | 2,599 |  | 38,511,310 | 107,926 | 2,108,679,750 | 7.1\% |  | 19,526 |
| 2012 | 9,227 |  | 171,972,274 | 2,792 |  | 41,695,405 | 114,431 | 2,238,956,619 | 6.2\% |  | 19,566 |
| 2013 | 9,489 |  | 175,974,484 | 3,045 |  | 47,326,711 | 120,875 | 2,367,604,392 | 5.7\% |  | 19,587 |

## Schedule of HBS Retirees Added to and Removed From Rolls

Last 5 Years ${ }^{1}$

| Valuation as of June 30 | Retirants and Beneficiaries Added to Rolls |  |  | Retirants and Beneficiaries Removed from Rolls |  |  |  | Retirants and Beneficiaries Rolls End of Year |  |  |  | \% <br> Increase in Annual | Average Annual Allowances |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NO. |  | ANNUAL LOWANCES |  | NO. |  | ANNUAL LOWANCES | $\begin{gathered} \text { NO. } \\ \text { 54,753 } \end{gathered}$ | ANNUAL ALLOWANCES |  |  |  |  |  |
| 2009 | N/A |  | N/A | N/A |  | N/A |  |  |  | \$ | 82,222,248 | N/A | \$ | 1,502 |
| 2010 | 5,689 | \$ | 10,358,376 | \$ | 1,821 | \$ | 6,487,680 | 57,795 |  |  | 86,092,944 | 4.7\% |  | 1,490 |
| 2011 | 6,047 |  | 10,459,392 |  | 3,199 |  | 7,707,744 | 60,643 |  |  | 88,844,592 | 3.2\% |  | 1,465 |
| 2012 | 5,867 |  | 9,754,788 |  | 3,285 |  | 8,936,184 | 63,225 |  |  | 89,663,196 | 0.9\% |  | 1,418 |
| 2013 | 5,861 |  | 9,434,508 |  | 4,159 |  | 9,127,908 | 64,927 | 2 |  | 89,969,796 | 0.3\% |  | 1,386 |
| ${ }^{1}$ Information not available for prior years. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{2}$ Includes 627 System members receiving HBS benefits and 1,516 members receiving LTD benefits and HBS benefits. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## Schedule of Funding Progress (Retirement and HBS combined)

 Last 10 Years| Year Ended June 30 |  | Actuarial Accrued Liabilities Plan |  | Actuarial Value of Net Plan Assets | Assets as a \% of Accrued Liabilities Plan |  | Unfunded <br> Actuarial <br> Accrued iabilities Plan <br> (UAL) |  | Covered <br> Employee <br> Payroll | UAL as a \% of Covered Employee Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2004 | \$ | 25,918,329,505 | \$ | 23,642,904,763 | 91.2\% | \$ | 2,275,424,742 | \$ | 7,485,590,038 | 30.4\% |
| 2005 |  | 27,942,601,285 |  | 23,836,519,123 | 85.3\% |  | 4,106,082,162 |  | 8,032,457,947 | 51.1\% |
| 2006 |  | 29,696,631,262 |  | 24,851,522,776 | 83.7\% |  | 4,845,108,486 |  | 8,311,869,615 | 58.3\% |
| 2007 |  | 31,995,671,426 |  | 26,476,687,905 | 82.8\% |  | 5,518,983,521 |  | 9,161,803,726 | 60.2\% |
| 2008 |  | 33,870,864,745 |  | 27,851,825,730 | 82.2\% |  | 6,019,039,015 |  | 9,708,352,896 | 62.0\% |
| 2009 |  | 35,742,538,572 |  | 28,360,159,450 | 79.3\% |  | 7,382,379,122 |  | 9,834,810,345 | 75.1\% |
| 2010 |  | 37,557,862,066 |  | 28,823,144,688 | 76.7\% |  | 8,734,717,378 |  | 9,419,951,810 | 92.7\% |
| 2011 |  | 38,555,369,013 |  | 29,230,960,267 | 75.8\% |  | 9,324,408,746 |  | 9,060,630,604 | 102.9\% |
| 2012 |  | 39,952,371,191 |  | 30,229,577,272 | 75.7\% |  | 9,722,793,919 |  | 8,868,678,184 | 109.6\% |
| 2013 |  | 41,396,575,487 |  | 31,435,228,262 | 75.9\% |  | 9,961,347,225 |  | 8,752,783,004 | 113.8\% |

## Solvency Test (Retirement)

## Last 10 Years

\left.|  | Aggregate Accrued Liabilities for: |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ACTIVE MEMBERS |  |  |  |  |  |  |  |  |  |  |  |  |$\right)$

${ }^{1}$ 401(a) liabilities for 2006 and earlier include 401 (h) liabilities for inactive members.
${ }^{2} 2010$ and subsequent years results include System liabilities and assets for members who retired or will retire on or after July1, 1981.

## Solvency Test (HBS)

## Last 10 Years



## Analysis of Financial Experience for Retirement <br> Last 10 Years (Dollars in Millions)

| Year Ended June 30 | Unfunded <br> Actuarial Liability (UAAL) Prior Year | Normal <br> Cost for the Year | Contributions for the Year |  | Interest at 8\% on UAAL |  | On Normal Cost | On Contributions |  | Total | Expected UAAL | Actual UAAL | Gain (Loss) for the Year ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2004 | \$ 362.74 | \$ 900.43 | \$ | (786.31) | \$ | 29.02 | \$ 72.03 | \$ | (31.45) | \$ 69.60 | \$ 546.46 | \$ 1,846.85 | \$ | $(1,300.39)$ |
| 2005 | 1,846.85 | 958.24 |  | (861.35) |  | 147.75 | 76.66 |  | (34.45) | 189.95 | 2,133.69 | 3,677.91 |  | $(1,544.22)$ |
| 2006 | 3,677.91 | 1,023.15 |  | $(1,171.73)$ |  | 294.23 | 81.85 |  | (46.87) | 329.22 | 3,858.54 | 4,425.52 |  | (566.98) |
| 2007 | 4,425.52 | 1,116.57 |  | $(1,527.70)$ |  | 354.04 | 89.33 |  | (61.11) | 382.26 | 4,396.65 | 5,080.59 |  | (683.94) |
| 2008 | 5,080.59 | 1,165.17 |  | $(1,616.67)$ |  | 406.45 | 93.21 |  | (64.67) | 434.99 | 5,064.08 | 5,812.04 |  | (747.96) |
| 2009 | 5,812.04 | 1,205.10 |  | $(1,598.33)$ |  | 464.96 | 96.41 |  | (63.93) | 497.44 | 5,916.24 | 7,196.33 |  | $(1,280.08)$ |
| 2010 | 7,196.33 | 1,234.67 |  | $(1,571.82)$ |  | 575.71 | 98.77 |  | (62.87) | 611.61 | 7,470.79 | 8,500.52 |  | $(1,029.73)$ |
| 2011 | 8,500.52 | 1,215.14 |  | $(1,619.79)$ |  | 680.04 | 97.21 |  | (64.79) | 712.46 | 8,808.33 | 9,067.66 |  | (259.33) |
| 2012 | 9,067.66 | 1,170.47 |  | $(1,758.02)$ |  | 725.41 | 93.64 |  | (70.32) | 748.73 | 9,228.84 | 9,502.28 |  | (273.44) |
| 2013 | 9,502.28 | 1,164.58 |  | $(1,859.21)$ |  | 760.18 | 93.17 |  | (74.37) | 778.98 | 9,586.63 | 9,801.12 |  | (214.49) |

## Analysis of Financial Experience for HBS

## Last 10 Years (Dollars in Millions)

| Year Ended June 30 | Unfunded Actuarial Liability (UAAL) Prior Year |  | Normal <br> Cost for the Year |  | Contributions for the Year |  | ```Interest at 8% on UAAL``` |  | On Normal Cost |  | On Contributions |  | Total |  | Expected UAAL |  | Actual UAAL |  | Gain (Loss) for the Year ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2004 | \$ | 424.00 | \$ | 50.35 | \$ | (79.66) | \$ | 33.92 | \$ | 4.03 | \$ | (3.19) | \$ | 34.76 | \$ | 429.46 | \$ | 428.57 | \$ | 0.89 |
| 2005 |  | 428.57 |  | 51.98 |  | (85.35) |  | 34.29 |  | 4.16 |  | (3.41) |  | 35.03 |  | 430.23 |  | 428.17 |  | 2.06 |
| 2006 |  | 428.17 |  | 52.31 |  | (93.46) |  | 34.25 |  | 4.18 |  | (3.74) |  | 34.70 |  | 421.72 |  | 419.59 |  | 2.13 |
| 2007 |  | 419.59 |  | 55.04 |  | (103.47) |  | 33.57 |  | 4.40 |  | (4.14) |  | 33.83 |  | 404.99 |  | 438.39 |  | (33.40) |
| 2008 |  | 438.39 |  | 53.73 |  | (99.03) |  | 35.07 |  | 4.30 |  | (3.96) |  | 35.41 |  | 428.50 |  | 207.00 |  | 221.50 |
| 2009 |  | 207.00 |  | 46.38 |  | (90.48) |  | 16.56 |  | 3.71 |  | (3.62) |  | 16.65 |  | 179.55 |  | 186.05 |  | (6.50) |
| 2010 |  | 186.05 |  | 41.88 |  | (59.39) |  | 14.88 |  | 3.35 |  | (2.38) |  | 15.85 |  | 184.39 |  | 234.20 |  | (49.81) |
| 2011 |  | 234.20 |  | 40.28 |  | (51.05) |  | 18.74 |  | 3.22 |  | (2.04) |  | 19.92 |  | 243.35 |  | 256.75 |  | (13.40) |
| 2012 |  | 256.75 |  | 38.42 |  | (54.46) |  | 20.54 |  | 3.07 |  | (2.18) |  | 21.43 |  | 262.14 |  | 220.51 |  | 41.63 |
| 2013 |  | 220.51 |  | 35.54 |  | (57.16) |  | 17.64 |  | 2.84 |  | (2.28) |  | 18.20 |  | 217.09 |  | 160.23 |  | 56.86 |

${ }^{1}$ Gain/Loss includes assumption and plan changes.
Values shown for valuation dates on or after June 30, 2010, for the above two schedules, include System assets and liabilities for members who retired or will retire on or after July 1, 1981.

# buckconsultants 

A Xerox Company

January 17, 2014

Retirement Board
Arizona State Retirement System
3300 North Central Avenue
$14^{\text {th }}$ Floor
Phoenix, AZ 85012
Valuation of the ASRS Long Term Disability Program as of June 30, 2013
Dear Retirement Board Members:
We certify that the information contained in the attached 2013 actuarial valuation report is accurate and fairly presents the actuarial position of the Arizona State Retirement System (ASRS) Long Term Disability Program (the LTD Program) as of June 30, 2013.

We have made all calculations for this report in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, the report's results comply with our understanding of the requirements of the Arizona Constitution and statutes and, where applicable, the Internal Revenue Code, the Employee Retirement Income Security Act of 1974 (ERISA), and the Statements of the Governmental Accounting Standards Board. The undersigned actuaries are independent. Two of them are Enrolled Actuaries, they are all members of the American Academy of Actuaries, two are Fellows and one is an Associate of the Society of Actuaries, and they jointly meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. They are experienced in performing valuations for large public retirement systems and long term disability valuations and are qualified to provide actuarial services to the State of Arizona. The undersigned actuaries are not qualified as attorneys or accountants, so their views on such matters are subject to opinion of counsel and auditors.

## Actuarial Valuations

The primary purpose of the valuation report is to determine the required member and employer contribution rates, to describe the current financial condition of the LTD Program, and to analyze changes in the LTD Program's condition. In addition, the report provides information that ASRS requires for its Comprehensive Annual Financial Report. The report also summarizes census data. Use of this report for any other purposes or by anyone other than ASRS and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover memorandum. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck Consultants' written consent.

Valuations are performed annually as of June 30 which is the last day of both the LTD Program year and ASRS' fiscal year.

Retirement Board
January 17, 2014
Page 2

## Funding Objectives

The actuarial valuation calculates the contribution rates payable by members and participating employers. These rates, when applied to payroll, yield contribution amounts sufficient to fund the normal cost plus the amortization of unfunded actuarial accrued liability over a closed 15-year period. Contribution rates are set annually, based on the valuation of the preceding year. The rate calculated in this report ( $0.24 \%$ in total) will apply in the fiscal year beginning July 1, 2014. The LTD program is meeting its funding objectives.

## Experience Studies

Most of the assumptions of the LTD program are also assumptions of the ASRS defined benefit plan (the Plan). The actuary performs experience studies for ASRS every five years. The most recent experience study was completed in 2013 using experience from July 1, 2007 to June 30, 2012. Revised actuarial assumptions were approved and implemented for the June 30, 2013 valuation.

## Benefit Provisions

The provisions of the LTD program valued in the report reflect our understanding of the long term disability provisions specified in Section 38-797 of the Arizona Revised Statutes.

There have been no changes in benefit provisions since the last valuation.

The terms of the LTD Program are summarized on pages 13 to 15 of this report. There is no provision for LTD benefits to increase for cost-of-living adjustments.

## Assumptions and Methods

As a result of the recent experience study conducted on actual plan experience from July 1, 2007 to June 30, 2012, revised mortality rates, rates of retirement, rates of withdrawal, rates of disability, rates of termination of claims in LTD payment due to death or disability, rates of salary increase, and offsets for disabled and active members were adopted for the June 30, 2013 valuation. Furthermore, as the revised assumptions were adopted based on experience under the current pre-existing condition period, the adjustment for the change in the pre-existing condition period was removed. In addition, assumptions for incurred but not reported (IBNR) claims, alternate contribution rate payments and mid-year contributions were added. All are effective beginning with the June 30, 2013 valuation. The change in assumptions due to the experience analysis resulted in a decrease of $\$ 97$ million in liabilities and an increase of 19.42 percentage points in the funded status.

The actuary originates the assumptions, in consultation with the ASRS Director and other ASRS staff members, and recommends the assumptions to the Board which makes the ultimate decision on which assumptions and methods to use

The Board elected to use the projected unit credit method. Under this method, actuarial gains (or losses) are subtracted from (or added to) the unfunded actuarial accrued liability. The Board also adopted a new 15 -year closed amortization method as of June 30, 2013. Statutes previously defined the amortization method as an amortization of unfunded actuarial accrued liability over a rolling 15year period. Under the new amortization method, the unfunded actuarial accrued liability as of June 30 , 2013 will be fully amortized over the next 15 years.

Retirement Board
January 17, 2014
Page 3

The assumptions represent a reasonable estimate of the plan's future economic and demographic experience. While the actuary believes that the assumptions are reasonable for financial reporting purposes, it should be understood that there is a range of assumptions that could be deemed reasonable that would yield different results. It should be understood that future plan experience may differ considerably from what has been assumed.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as party of the natural operation of the methodology used for the measurements, and changes in plan provisions or applicable law. Due to the limited scope of this report, Buck performed no analysis of the potential range of such future measurements.

## Data

ASRS staff and Sedgwick (the administrator of the LTD program) supplied census data for participants as of June 30, 2013. We have not audited these data, but have examined them for reasonableness and consistency with the prior year's data. ASRS staff also supplied asset information. The results of the valuation are dependent on the accuracy of the data. Data on disabled members is complete and, to the best of our knowledge, correct.

## Trend Data and Supporting Schedules

ASRS prepared all trend data schedules in the financial section of ASRS' Comprehensive Annual Financial Report (CAFR). ASRS also prepared all supporting schedules in the actuarial section of the CAFR.

We look forward to discussing this report with you at your convenience.
Sincerely,


Charles E. Chittenden, FSA, EA, MAAA
Principal and Consulting Actuary
Wurglespralla
Douglas J. Fiddler, ASA, EA, MAAA
Director, Retirement Actuary


Reza Vahid, FSA, MAAA
Director, Health \& Productivity

Effective October 1, 1995, to comply with Internal Revenue Code requirements, liabilities associated with the long-term disability benefit were separated from the Plan. No assets were transferred to the LTD fund. Accordingly, the objectives of the funding method that the Board adopted for the LTD program have been:

- To produce a positive cash flow
- To maintain reasonably stable contribution rates
- To build up the assets gradually

The Arizona State Retirement System (ASRS) Long Term Disability (LTD) Program began on July 1, 1995. The program covers ASRS LTD Program participants who become disabled on or after July 1, 1995. ASRS members who were receiving LTD benefits prior to July 1, 1995, were transferred to the program on October 1, 1995. Contributions began July 1,1995 , and are paid $50 \%$ by employers and $50 \%$ by active members.

Below we have summarized the main provisions of the LTD Program.

Effective Date: The plan was established effective July 1, 1995.

Participation: To be eligible, members must be actively at work and engaged to work at least 20 weeks in a fiscal year and at least 20 hours each week. Coverage is contingent on payment of premiums.

Contributions: Members are required to contribute to the LTD Program in accordance with the schedule ratified each year by the Board. The fiscal year 2013 rate was $0.24 \%$ of payroll. Employers have equal contributions, and the Board allocates all contributions to the LTD Program's depository.

Qualifications for Benefit: Monthly benefits are not payable until a member has been totally disabled for a period of six consecutive months. Monthly benefits are not payable to a member whose disability is due to the following:

1. an intentionally self-inflicted injury
2. war, whether declared or not
3. an injury incurred while engaged in a felonious criminal act or enterprise
4. for employees hired on or after July 1, 1998, any injury, sickness, or pregnancy for which you received medical treatment within three months prior to the effective date coverage began under the LTD Income Plan. Except for any employee who becomes an active contributing member on or after July 1, 2008 and receives medical treatment within six months prior to the date coverage begins under the LTD Income Plan. This exclusion does not apply to a disability commencing after a person has been an active contributing member of a participating employer for twelve continuous months.

Monthly benefits are not payable to a member who is receiving retirement benefits from ASRS.

Totally Disabled: A member is considered totally disabled if:

1. during the first thirty months of a period of disability, the member is unable to perform all duties of the position held by the member when the member became totally disabled; and
2. for a member who has received monthly benefits for 24 or more total months, that a member is unable to perform any work for compensation or gain for which the member is reasonably qualified by education, training, or experience.

Benefit Amount: Benefits payable from the plan equal two-thirds of a member's monthly compensation at the time of disability. Benefits are offset by:

1. $85 \%$ of social security disability benefits that the member or the member's dependents are eligible to receive;
2. $85 \%$ of social security retirement benefits that the member is eligible to receive;
3. all of any worker's compensation benefits;
4. all of any payments for a veteran's disability if both of the following apply:
a) the veteran's disability payment is for the same condition or a condition related to the condition currently causing the member's total disability;
b) the veteran's disability is due to service in the armed forces of the United States;
5. all of any other benefits by reason of employment that are financed partly or wholly by an employer, including payments for sick leave; and
6. $50 \%$ of any salary, wages, commissions, or similar pay that the member receives or is entitled to receive from any gainful employment in which the member engages.

Benefit Period: Monthly benefits cease to be payable to a member at the earliest of the following:

1. the date the member ceases to be totally disabled;
2. the date the member ceases to be under the direct care of a doctor or refuses to undergo any medical examination requested by the company selected by the Board to administer the LTD Program;
3. the date the member withdraws employee contributions with interest and ceases to be a member; and
4. the later of following:
a) the member's normal retirement date;
b) the month following 60 months of payments if disability occurs before age 65 ;
c) the month following attainment of age 70 if disability occurs at age 65 or after but before age 69 ;
d) the month following twelve-months of payments if disability occurs at or after age 69.

Expenses: Expenses associated with the operation of the LTD Program are payable by the LTD Program. The fee schedule is as follows:

|  |  |
| :--- | ---: |
| Administrative: | $\$ 13,000 /$ month |
| New Claims Fee: | $\$ 420 /$ claim |
| Claims Management: | $\$ 29 /$ claim $/$ month |

Changes in Plan Terms Since the Prior Valuation: No changes have been made since the last valuation on June 30, 2012.

## Statement of Actuarial Methods and Assumptions - LTD

We have prepared this report on our actuarial valuation of the assets and liabilities of the Arizona State Retirement System LTD Program as of June 30, 2013, in accordance with generally accepted actuarial principles, and with the requirements of GASB \#43.

The actuarial assumptions and methods on which our valuation has been based are, in our opinion, appropriate for the purpose of our current valuation. The ASRS Board has adopted the assumptions used in this valuation in its meeting on May 23, 2013.

We have not audited the data or the asset information used in this valuation, but believe them to be complete and accurate. Refer to Section 10.1 of the Arizona State Retirement System Actuarial Report of the Plan as of June 30, 2013 for information on missing data assumptions used for active members.

## Summary of Actuarial Methods

The actuarial cost method is the projected unit credit method. Benefits are attributed from hire to expected date of disability. Assets are valued at market, less (or plus) an adjustment to reflect investment gains (or losses) over a 10-year period starting as of June 30, 2006. The unfunded actuarial accrued liability is amortized over a closed 15-year period using a level dollar amortization method. This is a change of method that the ASRS Board approved in its November 23, 2013 meeting. Previously, the amortization period was a rolling 15-year period.

## Summary of Actuarial Assumptions

The assumptions unique to the LTD valuation were as follows:

## 1. Discount Rate

$8 \%$ per annum, net of investment expenses
2. Rates of Termination of Claims in Payment Due to Death or Recovery
$150 \%$ of the rates in the 1987 Commissioners' Group Long Term Disability Valuation Table (1987 CGDT), applicable to plans with a six-month elimination period.

## Statement of Actuarial Methods and Assumptions - LTD (continued)

3. Disability Incidence Rates for Active Members - based on actual disability experience from experience analysis for July 1, 2007 through June 30, 2012

Age- based unisex rates as developed for the Plan. Rates at representative ages are given below:

| Age | Unisex |
| :---: | :---: |
| 20 | $0.05 \%$ |
| 30 | $0.07 \%$ |
| 40 | $0.16 \%$ |
| 50 | $0.36 \%$ |
| 60 | $0.47 \%$ |

## 4. Offsets for Disabled Members

We are assuming that the amounts the administrator reports as offsets (other than overpayment offsets) will continue to apply to each member's benefit until that benefit expires. For members within first three years of receipt of LTD benefits, we have adjusted benefit amounts to reflect future offsets, assuming $90 \%$ of members will have offsets after 3 years.

We assume that these offsets reduce the gross benefits by $45 \%$. We also assume that the weighted average months of overpayment are equal to 19 months.

These assumptions are reviewed annually.

## 5. Offsets for Active Members

We assume that LTD Program benefits, after all applicable offsets are $55 \%$ of the benefits before the offsets. This is the percentage that applies for currently disabled members and is based on the experience study as of June 30, 2012.

## 6. Incurred But Not Reported (IBNR)

The liability for new LTD recipients was loaded by $20 \%$ to reflect IBNR. Previously, there was no load for IBNR.

## 7. Alternate Contribution Rate

We have adjusted the past service contribution rate to consider alternate contribution rate payments. Previously, there was no adjustment for alternate contribution rate payments.

## 8. Mid-Year Timing

We have adjusted the contribution rates to anticipate contributions being made throughout the year. Previously, these payments were not adjusted for mid-year payment.

## 9. Changes in Assumptions Since the Prior Valuation

All other assumptions are the same as those used in the valuation of the Plan.

## Schedule of Benefit Recipients Added to and Removed from Rolls

 Last 10 Years| Valuation as of June 30 | Retirants and Beneficiaries Added to Rolls |  |  | Retirants and Beneficiaries Removed from Rolls |  |  | Retirants and Beneficiaries Rolls End of Year |  |  | \% Increase in Annual Allowance | Average Annual <br> Allowances |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NO. |  | ANNUAL ${ }^{1}$ LOWANCES | NO. |  | NNUAL ${ }^{2}$ OWANCES | NO. |  | ANNUAL ${ }^{1}$ OWANCES |  |  |  |
| 2004 | 865 | \$ | 14,403,292 | 742 | \$ | 9,301,684 | 4,684 | \$ | 61,299,216 | 9.1\% | \$ | 13,087 |
| 2005 | 926 |  | 15,285,111 | 671 |  | 11,000,763 | 4,939 |  | 65,583,564 | 7.0\% |  | 13,279 |
| 2006 | 840 |  | 16,021,268 | 761 |  | 12,191,399 | 5,018 |  | 69,413,433 | 5.8\% |  | 13,833 |
| 2007 | 800 |  | 15,958,305 | 747 |  | 13,060,111 | 5,071 |  | 72,311,627 | 4.2\% |  | 14,260 |
| 2008 | 640 |  | 12,610,021 | 829 |  | 16,270,484 | 4,882 |  | 68,651,164 | -5.1\% |  | 14,062 |
| 2009 | 723 |  | 15,966,067 | 893 |  | 13,502,776 | 4,712 |  | 71,114,455 | 3.6\% |  | 15,092 |
| 2010 | 789 |  | 17,200,407 | 777 |  | 15,066,829 | 4,724 |  | 73,248,033 | 3.0\% |  | 15,506 |
| 2011 | 752 |  | 15,000,150 | 867 |  | 18,071,429 | 4,609 |  | 70,176,754 | -4.2\% |  | 15,226 |
| 2012 | 709 |  | 14,394,030 | 878 |  | 16,419,214 | 4,440 |  | 68,151,570 | -2.9\% |  | 15,349 |
| 2013 | 735 |  | 15,094,316 | 868 |  | 17,168,470 | 4,307 |  | 66,077,416 | -3.0\% |  | 15,342 |

## Schedule of Funding Progress

Last 10 Years
(Dollars in Thousands)

| Year Ended June 30 | Actuarial Accrued Liabilities Plan |  |  | Actuarial Value of Net Plan Assets |  | Assets as a \% of Accrued Liabilities Plan |  | Unfunded Actuarial Accrued Liabilities Plan (AAL) | Covered <br> Employee <br> Payroll | UAAL as a \% of Covered Empoyee Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2004 |  | \$ | 544,205 | \$ | 137,861 | 25.33\% | \$ | 406,344 | \$ 7,458,590 | 5.40\% |
| 2005 |  |  | 577,405 |  | 164,834 | 28.55\% |  | 412,572 | 8,032,458 | 5.10\% |
| 2006 |  |  | 574,701 |  | 194,297 | 33.81\% |  | 380,404 | 8,311,870 | 4.60\% |
| 2007 |  |  | 604,486 |  | 231,685 | 38.33\% |  | 372,800 | 9,161,804 | 4.10\% |
| 2008 |  |  | 553,185 |  | 274,902 | 49.69\% |  | 278,283 | 9,708,353 | 2.90\% |
| 2009 |  |  | 476,276 |  | 311,232 | 65.35\% |  | 165,044 | 9,834,810 | 1.70\% |
| 2010 |  |  | 477,266 |  | 319,308 | 66.90\% |  | 157,958 | 9,419,952 | 1.70\% |
| 2011 |  |  | 455,695 |  | 307,537 | 67.49\% |  | 148,158 | 9,060,631 | 1.60\% |
| 2012 |  |  | 439,706 |  | 295,786 | 67.27\% |  | 143,920 | 8,868,678 | 1.60\% |
| 2013 |  |  | 332,597 |  | 285,018 | 85.69\% |  | 47,579 | 8,752,783 | 0.50\% |

## Solvency Test

Last 10 Years
(Dollars in Thousands)

| Aggregate Accrued Liabilities for: |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year End June 30 | ACTIVE MEMBER CONTRIBUTIONS <br> (1) |  | RETIREES AND BENEFICIARIES <br> (2) |  | ACTIVE MEMBERS (EMPLOYER FINANCED PORTION) <br> (3) |  | Net Assets Available for Benefits |  | Portion of Accrued Liabilities Covered by Net Assets Available for Benefits <br> (1) <br> (2) <br> (3) |  |  |
| 2004 | 1 | - | \$ | 243,713 | \$ | 300,492 | \$ | 137,861 | 100\% | 57\% | 0\% |
| 2005 |  | - |  | 258,735 |  | 318,670 |  | 164,834 | 100\% | 64\% | 0\% |
| 2006 |  |  |  | 247,577 |  | 327,124 |  | 194,297 | 100\% | 78\% | 0\% |
| 2007 |  |  |  | 274,947 |  | 329,539 |  | 231,685 | 100\% | 84\% | 0\% |
| 2008 |  |  |  | 233,871 |  | 319,315 |  | 274,902 | 100\% | 100\% | 13\% |
| 2009 |  |  |  | 235,921 |  | 240,355 |  | 311,232 | 100\% | 100\% | 31\% |
| 2010 |  |  |  | 242,098 |  | 235,168 |  | 319,308 | 100\% | 100\% | 33\% |
| 2011 |  | - |  | 234,155 |  | 221,540 |  | 307,537 | 100\% | 100\% | 33\% |
| 2012 |  | - |  | 224,090 |  | 215,616 |  | 295,786 | 100\% | 100\% | 33\% |
| 2013 |  | - |  | 207,331 |  | 125,265 |  | 285,018 | 100\% | 100\% | 62\% |

[^15]
## Analysis of Financial Experience for LTD

As of June 30, 2013

## Lives

Reserves

## 1. CHANGE IN OPEN CLAIMS RESERVES

The increase in the reserves for payments not yet due on disabled lives may be summarized as follows:

| (a) Open Claims Reserve Liability on July 1, 2012 | 4,440 | \$ | 217,902,714 |
| :---: | :---: | :---: | :---: |
| (b) Change in reserve on 3,572 continuing disabled lives | N/A |  | $(28,493,782)$ |
| (c) Reserves released on terminated lives | (868) |  | $(24,373,090)$ |
| (d) Reserves added on new lives | 735 |  | 44,637,749 |
| (e) Change in assumptions | N/A |  | $(7,968,764)$ |
| (f) Open Claims Reserve Liability on June 30, 2013 $=(\mathrm{a})+(\mathrm{b})+(\mathrm{c})+(\mathrm{d})+(\mathrm{e})$ | 4,307 | \$ | 201,704,827 |

## 2. DEVELOPMENT OF LIABILITY (GAIN)/LOSS

(a) Actuarial Accrued Liability as of July 1, 2012
(b) Normal Cost for 2012/2013
(c) Expected Benefit Payments for 2012/2013
(d) Expected Actuarial Accrued Liability on June 30, 2013

$$
=((a)+(b)) \times 1.08-(c) \times(1+.08 \times 13 / 24)
$$

(e) Change in Plan Terms
(f) Change in Assumptions
(g) Liability (Gain)/Loss
\$ 439,706,059
25,723,092
66,427,000

433,357,980
N/A
$(97,474,730)$
(h) Actual Actuarial Accrued Liability on June 30, 2013

$$
=(\mathrm{d})+(\mathrm{e})+(\mathrm{f})+(\mathrm{g})
$$

\$ 332,596,817

## 3. SOURCES OF LIABILITY (GAIN)/LOSS

(a) Offset (Gain)/Loss
(b) Liability for members who were terminated in last year's valuation
(c) More Terminations than Expected
(d) Fewer LTD Retirees than Expected
(e) Salary Gain on Continuing Actives
(f) New Active Entrants
(g) Other (Gain)/Loss
\$ $(3,695,934)$
8,209,233
$(1,391,374)$
$(7,491,854)$
$(2,440,533)$
5,478,967
$(1,954,938)$
(h) Liability (Gain)/Loss

$$
=(\mathrm{a})+(\mathrm{b})+(\mathrm{c})+(\mathrm{d})+(\mathrm{e})+(\mathrm{f})+(\mathrm{g})
$$

## Lives

Reserves

## 4. DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

(a) Excess (Shortfall) of Investment Income:

| (i) Current Year | $9,913,473$ |
| :--- | :---: |
| (ii) Current Year - 1 | $(18,922,274)$ |
| (iii) Current Year - 2 | $36,999,159$ |
| (iv) Current Year - | $10,543,678$ |
| (v) Current Year - 4 | $(68,696,736)$ |
| (vi) Current Year - 5 | $(44,661,134)$ |
| (vii) Current Year - 6 | $11,421,699$ |
| (viii) Current Year - 7 | $1,895,241$ |

(b) Deferral of Excess (Shortfall):
(i) Current Year (90\% Deferral)

8,922,126
(ii) Current Year - 1 ( $80 \%$ Deferral)
$(15,137,819)$
(iii) Current Year - 2 ( $70 \%$ Deferral)
(iv) Current Year - 3 ( $60 \%$ Deferral)
(v) Current Year - 4 (50\% Deferral)

25,899,411
(vi) Current Year - 5 ( $40 \%$ Deferral)
$(34,348,368)$
$(17,864,454)$
(vii) Current Year - 6 (30\% Deferral)

3,426,510
(viii) Current Year - 7 (20\% Deferral)

379,048
$(22,397,339)$
(ix) Total Deferred for the Year
(c) Market Value of Assets as of June 30, 2013
(d) Actuarial Value of Assets as of June 30, 2013 = (c) - (b)(ix)

262,620,722
5. DEVELOPMENT OF ASSET (GAIN)/LOSS
\$ 285,018,061
(b) Contributions
(c) Actual Benefit Payments for 2012/2013

## (a) Actuarial Value of Assets as of July 1, 2012

\$ 295,785,765
42,216,900
63,612,703
(d) Administrative Expenses

2,739,277
(e) Expected Investment Income at 8\% Return $=$
$((a) \times .08)+((b) \times .08 \times 1 / 2)-((c) \times .08 \times 13 / 24)$

| $22,594,987$ |
| ---: |
| $294,245,672$ |
| $9,227,611$ |
| $\$ \quad 285,018,061$ |

The asset loss occurred because investment earnings on actuarial assets were less than expected. The actual net return on actuarial assets was $4.73 \%$, compared to the assumption of $8 \%$. The actual net return on market value of assets was $12.06 \%$, compared to the assumption of $8 \%$.

| Amount of <br> Monthly <br> Offsets | Number With <br> Offsets |
| ---: | ---: |
|  |  |
| $\$ 2,721,067$ | 3,178 |
| 93,201 | 102 |
| 483,420 | 971 |
| $\$ \mathbf{3 , 2 9 7 , 6 8 8}$ | $\mathbf{4 , 2 5 1}$ |
|  |  |
| $\$ 2,677,627$ | 3,312 |
| 119,230 | 128 |
| 472,513 | $\mathbf{1 , 0 0 2}$ |
| $\mathbf{\$ 3 , 2 6 9 , 3 7 0}$ | $\mathbf{4 , 4 4 2}$ |

## Summary of Legislative Plan Changes

## LEGISLATED PLAN CHANGES ENACTED BY THE 2013 LEGISLATURE OF THE STATE OF ARIZONA

1. Amortization

The legislation allows the ASRS Board to determine the periods over which to amortize deficits or surpluses.

## 2. Survivor Benefits

The legislation removed the requirement that a survivor's benefit must exceed $\$ 5,000$ to qualify for an annuity election. It limits the annuity option for the survivor to the single-life option, provided the annuity amount is greater than an amount selected by the ASRS Board (presently $\$ 100$ per month).

The legislation eliminated the present value calculation that was available upon the death of a member who had reached early retirement eligibility or had 15 years of service.

## 3. Permanent Benefit Increases

The legislation eliminates Permanent Benefit Increases for members hired after September 12, 2013.

## 4. Health Insurance Program

The legislation permits the ASRS Board to establish a self-insured health insurance program and an account to administer such a program, provided the self-insured program offers all the benefits required by Title 20.

These changes were taken into account in the most recent actuarial valuation.

## ASRS

## ROAD TO RETIREMENT

## NAVIGATE YOUR FUTURE

## YOUR JOURNEY DESTINATION



Taking an alternate route? ASRS is here to help you.

$$
\begin{array}{ll}
\checkmark & \text { Leaving ASRS } \\
\checkmark & \text { Long Term Disability } \\
\checkmark \text { Early Retirement } \\
\checkmark \text { Retirement }
\end{array}
$$

## Retir

## www.azasrs.gov

## STATISTICAL

## SECTION

## V. Statistical Section

This part of the Arizona State Retirement System's Comprehensive Annual Financial Report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required summary information says about the ASRS's overall financial health.

## Financial Trends

These schedules contain trend information to help the reader understand how the ASRS's Financial Performance has changed over the past 10 years.
Fiduciary Net Position - Last 10 Years. ..... 132
Changes in Fiduciary Net Position - Last 10 Years. ..... 134

## Revenues

These schedules contain information to help the reader understand the ASRS's funding over the last 10 years.
$\qquad$Actual Contribution Rates - Last 10 Years.138
Operations

These schedules contain information about the ASRS's Operations.
Members by Type of Benefit, ..... 139
Average Benefit Payments - Retirement - Last 10 Years. ..... 140
Average Benefit Payments - HBS - Last 9 Years ..... 141
Average Benefit Payments - LTD - Last 9 Years ..... 142
Principal Participating Employers - Current Year and Nine Years Ago, ..... 143

## Fiduciary Net Position <br> Last 10 Fiscal Years (Dollars in Thousands)

| Retirement Fund |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ASSETS |  | 2005 |  | 2006 |  | 2007 |  | 2008 |  | 2009 |
| Cash, Receivables, and Prepaids | \$ | 2,091,244 | \$ | 2,396,175 | \$ | 2,197,053 | \$ | 2,095,722 | \$ | 867,888 |
| Investments at Fair Value |  | 24,154,827 |  | 25,699,691 |  | 30,978,445 |  | 29,021,366 |  | 23,379,787 |
| Total Assets |  | 26,246,071 |  | 28,095,866 |  | 33,175,498 |  | 31,117,088 |  | 24,247,675 |
| LIABILITIES |  |  |  |  |  |  |  |  |  |  |
| Investments Payable |  | 4,654,687 |  | 4,853,112 |  | 6,078,211 |  | 6,368,470 |  | 4,313,128 |
| Other Payables |  | 20,470 |  | 23,108 |  | 27,729 |  | 31,431 |  | 54,094 |
| Total Liabilities |  | 4,675,157 |  | 4,876,220 |  | 6,105,940 |  | 6,399,901 |  | 4,367,222 |
| FIDUCIARY NET POSITION | \$ | 21,570,914 | \$ | 23,219,646 | \$ | 27,069,558 | \$ | 24,717,187 | \$ | 19,880,453 |


| HBS Fund |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ASSETS |  | 2005 |  | 2006 |  | 2007 |  | 2008 |  | 2009 |
| Cash, Receivables, and Prepaids | \$ | 85,061 | \$ | 96,084 | \$ | 90,106 | \$ | 94,213 | \$ | 45,385 |
| Investments at Fair Value |  | 974,406 |  | 1,081,538 |  | 1,335,221 |  | 1,273,867 |  | 1,046,717 |
| Total Assets |  | 1,059,467 |  | 1,177,622 |  | 1,425,327 |  | 1,368,080 |  | 1,092,102 |
| LIABILITIES |  |  |  |  |  |  |  |  |  |  |
| Investments Payable |  | 187,770 |  | 204,237 |  | 261,980 |  | 279,619 |  | 193,139 |
| Other Payables |  | 60 |  | 3,639 |  | 394 |  | 475 |  | 1,770 |
| Total Liabilities |  | 187,830 |  | 207,876 |  | 262,374 |  | 280,094 |  | 194,909 |
| FIDUCIARY NET POSITION | \$ | 871,637 | \$ | 969,746 | \$ | 1,162,953 | \$ | 1,087,986 | \$ | 897,193 |


| LTD Fund |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ASSETS |  | 2005 |  | 2006 |  | 2007 |  | 2008 |  | 2009 |
| Cash, Receivables, and Prepaids | \$ | 14,040 | \$ | 15,241 | \$ | 10,565 | \$ | 12,331 | \$ | 11,998 |
| Investments at Fair Value |  | 151,025 |  | 180,983 |  | 233,148 |  | 233,062 |  | 215,151 |
| Total Assets |  | 165,065 |  | 196,224 |  | 243,713 |  | 245,393 |  | 227,149 |
| LIABILITIES |  |  |  |  |  |  |  |  |  |  |
| Investments Payable |  | - |  | - |  | - |  | - |  | - |
| Other Payables |  | 231 |  | 222 |  | 227 |  | 222 |  | 4,341 |
| Total Liabilities |  | 231 |  | 222 |  | 227 |  | 222 |  | 4,341 |
| FIDUCIARY NET POSITION | \$ | 164,834 | \$ | 196,002 | \$ | 243,486 | \$ | 245,171 | \$ | 222,808 |


| \$ | 2010 |  | 2011 |  | 2012 |  | 2013 |  | 2014 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 975,021 | \$ | 1,056,204 | \$ | 1,006,349 | \$ | 1,062,311 | \$ | 593,804 |
|  | 24,620,142 |  | 27,911,298 |  | 26,247,996 |  | 29,225,574 |  | 33,845,069 |
|  | 25,595,163 |  | 28,967,502 |  | 27,254,345 |  | 30,287,885 |  | 34,438,873 |
|  | 3,404,191 |  | 2,086,445 |  | 795,215 |  | 1,187,021 |  | 708,243 |
|  | 44,012 |  | 41,834 |  | 57,036 |  | 75,434 |  | 36,925 |
|  | 3,448,203 |  | 2,128,279 |  | 852,251 |  | 1,262,455 |  | 745,168 |
| \$ | 22,146,960 | \$ | 26,839,223 | \$ | 26,402,094 | \$ | 29,025,430 | \$ | 33,693,705 |
| \$ | 2010 |  | 2011 |  | 2012 |  | 2013 |  | 2014 |
|  | 48,532 | \$ | 52,196 | \$ | 79,217 | \$ | 75,951 | \$ | 60,353 |
|  | 1,101,174 |  | 1,236,614 |  | 1,177,906 |  | 1,314,249 |  | 1,527,901 |
|  | 1,149,706 |  | 1,288,810 |  | 1,257,123 |  | 1,390,200 |  | 1,588,254 |
|  | 152,374 |  | 92,594 |  | 35,022 |  | 51,936 |  | 30,738 |
|  | 1,737 |  | 1,487 |  | 19,282 |  | 2,930 |  | 1,274 |
|  | 154,111 |  | 94,081 |  | 54,304 |  | 54,866 |  | 32,012 |
| \$ | 995,595 | \$ | 1,194,729 | \$ | 1,202,819 | \$ | 1,335,334 | \$ | 1,556,242 |


|  |  |  |  |  |  |  |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | 2010 |  | 2011 |  |  |  |
|  | 6,808 | $\$$ | 6,371 | $\$$ | 7,172 | $\$$ |
| 2012 | 7,254 | $\$$ | 6,864 |  |  |  |
|  | 243,823 | 274,734 | 250,594 | 255,636 | 278,932 |  |
| $\mathbf{2 5 0 , 6 3 1}$ | $\mathbf{2 8 1 , 1 0 5}$ | $\mathbf{2 5 7 , 7 6 6}$ | $\mathbf{2 6 2 , 8 9 0}$ | $\mathbf{2 8 5 , 7 9 6}$ |  |  |


|  | 252 | 250 | 443 | 270 | 280 |  |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | $\mathbf{2 5 2}$ | $\mathbf{2 5 0}$ | $\mathbf{4 4 3}$ | $\mathbf{2 7 0}$ | $\mathbf{2 8 0}$ |  |
| $\mathbf{2 5 0 , 3 7 9}$ | $\mathbf{\$}$ | $\mathbf{2 8 0 , 8 5 5}$ | $\mathbf{\$}$ | $\mathbf{2 5 7 , 3 2 3}$ | $\mathbf{\$}$ | $\mathbf{2 6 2 , 6 2 0}$ | $\mathbf{\$} \quad \mathbf{2 8 5 , 5 1 6}$

## Changes in Fiduciary Net Position

## Last 10 Fiscal Years (Dollars in Thousands)

| Retirement Fund |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ADDITIONS |  | 2005 |  | 2006 |  | 2007 |  | 2008 |  | 2009 |
| Member Contributions | \$ | 403,661 | \$ | 570,933 | \$ | 766,962 | \$ | 857,813 | \$ | 844,540 |
| Employer Contributions Purchased |  | 318,311 |  | 477,472 |  | 663,544 |  | 759,482 |  | 754,044 |
| Service/Transfers |  | 141,932 |  | 125,751 |  | 107,548 |  | 95,226 |  | 72,436 |
| Net Investment Income (Loss) |  | 1,720,991 |  | 2,126,272 |  | 4,105,644 |  | $(1,963,259)$ |  | $(4,433,461)$ |
| Total Additions/ (Reductions) |  | 2,584,895 |  | 3,300,428 |  | 5,643,698 |  | $(250,738)$ |  | (2,762,441) |
| DEDUCTIONS |  |  |  |  |  |  |  |  |  |  |
| Retirement Benefits |  | 1,406,547 |  | 1,538,992 |  | 1,650,818 |  | 1,768,219 |  | 1,888,931 |
| Survivor Benefits |  | 18,402 |  | 17,125 |  | 21,590 |  | 22,648 |  | 30,378 |
| Refunds due to Separation |  | 44,164 |  | 60,313 |  | 77,910 |  | 104,387 |  | 120,689 |
| Transfers Out |  | 4,581 |  | 5,129 |  | 10,117 |  | 177,176 |  | 5,706 |
| Administration and Other |  | 25,476 |  | 30,137 |  | 33,351 |  | 29,203 |  | 28,589 |
| Total Deductions |  | 1,499,170 |  | 1,651,696 |  | 1,793,786 |  | 2,101,633 |  | 2,074,293 |
| NET CHANGE |  | 1,085,725 |  | 1,648,732 |  | 3,849,912 |  | (2,352,371) |  | $(4,836,734)$ |
| Fiduciary net position beginning of year |  | 20,485,189 |  | 21,570,914 |  | 23,219,646 |  | 27,069,558 |  | 24,717,187 |
| FIDUCIARY NET |  |  |  |  |  |  |  |  |  |  |
| POSITION |  | 21,570,914 |  | 23,219,646 |  | 27,069,558 |  | 24,717,187 |  | 19,880,453 |


| 2010 |  | 2011 |  | 2012 |  | 2013 |  | 2014 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| \$ | 808,908 | \$ | 833,287 | \$ | 905,968 | \$ | 948,004 | \$ | 995,284 |
|  | 763,099 |  | 786,662 |  | 852,167 |  | 911,300 |  | 965,969 |
|  | 73,973 |  | 70,812 |  | 53,659 |  | 72,023 |  | 33,485 |
|  | 2,872,297 |  | 5,406,714 |  | 322,870 |  | 3,393,599 |  | 5,514,246 |
| 4,518,277 |  |  | 7,097,475 |  | 2,134,664 |  | 5,324,926 |  | 7,508,984 |
| 2,031,119 |  |  | 2,166,779 |  | 2,297,947 |  | 2,406,899 | \$ | 2,527,038 |
| 26,472 |  |  | 23,949 |  | 29,731 |  | 38,442 |  | 39,334 |
| 154,144 |  |  | 180,719 |  | 207,289 |  | 218,607 |  | 246,201 |
| 11,455 |  |  | 6,256 |  | 5,024 |  | 725 |  | 915 |
| 28,580 |  |  | 27,509 |  | 31,802 |  | 36,917 |  | 27,221 |
| 2,251,770 |  |  | 2,405,212 |  | 2,571,793 |  | 2,701,590 |  | 2,840,709 |
| 2,266,507 |  |  | 4,692,263 |  | $(437,129)$ |  | 2,623,336 |  | 4,668,275 |
| 19,880,453 |  |  | 22,146,960 |  | 26,839,223 |  | 26,402,094 |  | 29,025,430 |
| \$ 22,146,960 |  |  | 26,839,223 | \$ | 26,402,094 | \$ | 29,025,430 |  | 3,693,705 |

## Changes in Fiduciary Net Position

## Last 10 Fiscal Years (Dollars in Thousands)

| HBS Fund |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ADDITIONS |  | 2005 |  | 2006 |  | 2007 |  | 2008 |  | 2009 |
| Employer Contributions | \$ | 85,350 | \$ | 93,461 | \$ | 103,473 | \$ | 99,027 | \$ | 90,490 |
| Other Income |  | - |  | - |  | - |  | - |  | - |
| Net Investment Income (Loss) |  | 68,750 |  | 86,587 |  | 174,348 |  | $(87,559)$ |  | $(192,303)$ |
| Total Additions/ (Reductions) |  | 154,100 |  | 180,048 |  | 277,821 |  | 11,468 |  | $(101,813)$ |
| DEDUCTIONS |  |  |  |  |  |  |  |  |  |  |
| Health Premium Benefits |  | 89,602 |  | 80,827 |  | 83,236 |  | 85,132 |  | 87,723 |
| Administration and Other |  | 909 |  | 1,112 |  | 1,378 |  | 1,303 |  | 1,257 |
| Total Deductions |  | 90,511 |  | 81,939 |  | 84,614 |  | 86,435 |  | 88,980 |
| NET CHANGE |  | 63,589 |  | 98,109 |  | 193,207 |  | (74,967) |  | $(190,793)$ |
| Fiduciary net position beginning of year |  | 808,048 |  | 871,637 |  | 969,746 |  | 1,162,953 |  | 1,087,986 |
| FIDUCIARY NET POSITION | \$ | 871,637 | \$ | 969,746 | \$ | 1,162,953 | \$ | 1,087,986 | \$ | 897,193 |


| LTD Fund |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ADDITIONS |  | 2005 |  | 2006 |  | 2007 |  | 2008 |  | 2009 |
| Member Contributions | \$ | 38,982 | \$ | 41,188 | \$ | 44,518 | \$ | 47,171 | \$ | 47,213 |
| Employer Contributions |  | 38,982 |  | 41,188 |  | 44,518 |  | 47,171 |  | 47,213 |
| Net Investment Income (Loss) |  | 13,651 |  | 18,080 |  | 30,526 |  | $(21,623)$ |  | $(47,726)$ |
| Total Additions/ (Reductions) |  | 91,615 |  | 100,456 |  | 119,562 |  | 72,719 |  | 46,700 |
| DEDUCTIONS |  |  |  |  |  |  |  |  |  |  |
| Disability Benefits |  | 62,183 |  | 66,695 |  | 69,221 |  | 68,284 |  | 65,781 |
| Administration and Other |  | 2,460 |  | 2,593 |  | 2,857 |  | 2,750 |  | 3,282 |
| Total Deductions |  | 64,643 |  | 69,288 |  | 72,078 |  | 71,034 |  | 69,063 |
| NET CHANGE |  | 26,972 |  | 31,168 |  | 47,484 |  | 1,685 |  | $(22,363)$ |
| Fiduciary net position beginning of year |  | 137,862 |  | 164,834 |  | 196,002 |  | 243,486 |  | 245,171 |
| FIDUCIARY NET |  |  |  |  |  |  |  |  |  |  |
| POSITION | \$ | 164,834 | \$ | 196,002 | \$ | 243,486 | \$ | 245,171 | \$ | 222,808 |



## Revenues

## Actual Contribution Rates

## Last 10 Fiscal Years

| Retirement ${ }^{\mathbf{1}}$ <br> Contribution Rates | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | 5.20 | 6.90 | 8.60 | 9.10 | 8.95 | 9.00 | 9.60 | 10.50 | 10.90 | 11.30 |
| Member | 4.10 | 5.77 | 7.55 | 8.05 | 7.99 | 8.34 | 9.01 | 9.87 | 10.25 | 10.70 |


| HBS <br> Contribution Rates | Fiscal Years |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| Employer | 1.10 | 1.13 | 1.05 | 1.05 | 0.96 | 0.66 | 0.59 | 0.63 | 0.65 | 0.60 |


| LTD <br> Contribution Rates | Fiscal Years |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| Member | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.40 | 0.25 | 0.24 | 0.24 | 0.24 |
| Employer | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.40 | 0.25 | 0.24 | 0.24 | 0.24 |

Source: Buck Consultants, LLC

## Members by Type of Benefit As of June 30, 2014

Retirement
Monthly Benefit ${ }^{2}$

| HBS Monthly Benefits | Members |
| :--- | ---: |
| $\$ 1-199$ | 68,412 |
| $\$ 200-299$ | 2,679 |
| $\$ 300-399$ | 197 |
| $\$ 400 \&$ Over | 0 |
| Total | $\mathbf{7 1 , 2 8 8}$ |

Source: ASRS Pension Administration System

| LTD Monthly Benefits | Members |
| :--- | ---: |
| $\$ 1-299$ | 9 |
| $\$ 300-499$ | 23 |
| $\$ 500-999$ | 332 |
| $\$ 1,000-1,499$ | 935 |
| $\$ 1,500-1,999$ | 1,074 |
| $\$ 2,000 \&$ over | 1,940 |
| TOTAL | $\mathbf{4 , 3 1 3}$ |

Source: Sedgwick CMS

## Average Benefit Payments Last 10 Fiscal Years

| Retirement | Years of Credited Service |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45+ |
| FISCAL YEAR 2004 |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 139 | \$ 345 | \$ 726 | \$1,109 | \$1,629 | \$2,384 | \$3,092 | \$3,499 | \$3,863 | \$4,413 |
| Number of Retirees | 1,716 | 10,153 | 13,268 | 10,984 | 11,747 | 11,567 | 7,607 | 1,611 | 248 | 30 |
| FISCAL YEAR 2005 |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 125 | \$ 326 | \$ 687 | \$1,742 | \$1,995 | \$2,460 | \$2,894 | \$3,035 | \$3,082 | \$2,817 |
| Number of Retirees | 1,697 | 10,290 | 13,540 | 19,674 | 16,813 | 8,394 | 2,815 | 550 | 77 | 3 |
| FISCAL YEAR 2006 |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 126 | \$ 334 | \$ 702 | \$1,746 | \$2,079 | \$2,541 | \$3,001 | \$3,190 | \$3,427 | \$3,255 |
| Number of Retirees | 1,889 | 10,789 | 13,986 | 19,845 | 18,680 | 9,419 | 3,215 | 592 | 81 | 2 |
| FISCAL YEAR 2007 |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 121 | \$ 329 | \$ 697 | \$1,743 | \$2,101 | \$2,572 | \$3,034 | \$3,268 | \$3,616 | \$4,542 |
| Number of Retirees | 2,124 | 11,416 | 14,534 | 20,663 | 20,232 | 10,474 | 3,454 | 615 | 78 | 4 |
| FISCAL YEAR 2008 |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 122 | \$ 339 | \$ 717 | \$1,106 | \$1,655 | \$2,425 | \$3,273 | \$3,776 | \$4,422 | \$4,760 |
| Number of Retirees | 2,952 | 12,530 | 15,527 | 13,045 | 14,970 | 14,789 | 12,392 | 2,347 | 361 | 43 |
| FISCAL YEAR 2009 |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 195 | \$ 339 | \$ 715 | \$1,105 | \$1,663 | \$2,435 | \$3,321 | \$3,862 | \$4,453 | \$4,845 |
| Number of Retirees | 3,385 | 13,236 | 16,321 | 13,658 | 15,995 | 15,587 | 13,314 | 2,499 | 380 | 49 |
| FISCAL YEAR 2010 |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 119 | \$ 338 | \$ 714 | \$1,108 | \$1,674 | \$2,445 | \$3,342 | \$3,900 | \$4,533 | \$5,040 |
| Number of Retirees | 4,011 | 14,223 | 17,233 | 14,418 | 17,150 | 16,581 | 14,549 | 2,691 | 399 | 52 |
| FISCAL YEAR 2011 |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 121 | \$ 339 | \$ 716 | \$1,111 | \$1,681 | \$2,457 | \$3,368 | \$3,944 | \$4,661 | \$5,134 |
| Number of Retirees | 4,420 | 15,231 | 18,329 | 15,157 | 18,371 | 17,557 | 15,608 | 2,840 | 426 | 57 |
| FISCAL YEAR 2012 |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 124 | \$ 341 | \$ 718 | \$1,112 | \$1,685 | \$2,464 | \$3,383 | \$3,980 | \$4,768 | \$5,224 |
| Number of Retirees | 4,864 | 16,228 | 19,419 | 15,867 | 19,447 | 18,547 | 16,564 | 2,979 | 458 | 58 |
| FISCAL YEAR $2013{ }^{\mathbf{1}}$ |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 125 | \$ 344 | \$ 721 | \$1,113 | \$1,694 | \$2,468 | \$3,397 | \$4,022 | \$4,809 | \$5,229 |
| Number of Retirees | 5,422 | 17,223 | 20,406 | 16,637 | 20,540 | 19,522 | 17,448 | 3,121 | 495 | 61 |

Note: The above schedule does not include System retirees.
Average final salary information is not available.
Source: Buck Consultants, LLC

## Average Benefit Payments Last 9 Fiscal Years



Note: Information prior to 2006 is not available.

Source: ASRS Pension Administration System

## Average Benefit Payments Last 9 Fiscal Years

| LTD |  |  |
| :---: | :---: | :---: |
| FISCAL YEAR 2006 |  |  |
| Average Monthly Benefit | \$ | 1,689 |
| Number of LTD Participants |  | 4,968 |
| FISCAL YEAR 2007 |  |  |
| Average Monthly Benefit | \$ | 1,743 |
| Number of LTD Participants |  | 4,976 |
| FISCAL YEAR 2008 |  |  |
| Average Monthly Benefit | \$ | 1,823 |
| Number of LTD Participants |  | 4,957 |
| FISCAL YEAR 2009 |  |  |
| Average Monthly Benefit | \$ | 1,886 |
| Number of LTD Participants |  | 4,672 |
| FISCAL YEAR 2010 |  |  |
| Average Monthly Benefit | \$ | 1,966 |
| Number of LTD Participants |  | 4,797 |
| FISCAL YEAR 2011 |  |  |
| Average Monthly Benefit | \$ | 1,931 |
| Number of LTD Participants |  | 4,785 |
| FISCAL YEAR 2012 |  |  |
| Average Monthly Benefit | \$ | 1,240 |
| Number of LTD Participants |  | 4,646 |
| FISCAL YEAR 2013 |  |  |
| Average Monthly Benefit |  | 1,244 |
| Number of LTD Participants |  | 4,443 |
| FISCAL YEAR 2014 |  |  |
| Average Monthly Benefit | \$ | 1,260 |
| Number of LTD Participants |  | 4,313 |

Note: Long term disability payments are based on salary and not years of credited service.
Information prior to 2006 is not available.

Source: Sedgwick CMS

## Principal Participating Employers Current Year and Nine Years Ago

| Participating Employer | 2014 |  |  | 2005 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | COVERED EMPLOYEES | RANK | \% OF MEMBERSHIP | COVERED EMPLOYEES | RANK | \% OF MEMBERSHIP |
| Dept of Administration | 26,457 | 1 | 12.75\% | 31,007 | 1 | 14.61\% |
| Maricopa County | 9,005 | 2 | 4.34\% | 10,225 | 3 | 4.82\% |
| Mesa Unified Dist 4 | 8,400 | 3 | 4.05\% | 8,238 | 4 | 3.88\% |
| University of Arizona | 6,875 | 4 | 3.31\% | 7,166 | 6 | 3.38\% |
| Maricopa County Community Coll. | 6,310 | 5 | 3.04\% | 5,658 | 8 | 2.67\% |
| Tucson Unitfied School Dist | 6,267 | 6 | 3.02\% | 8,038 | 5 | 3.79\% |
| Arizona State Univerity | 5,258 | 7 | 2.53\% | 5,289 | 9 | 2.49\% |
| Pima County | 4,912 | 8 | 2.37\% | 5,925 | 7 | 2.79\% |
| Gilbert Unified Dist 41 | 4,648 | 9 | 2.24\% | 4,330 | 10 | 2.04\% |
| Chandler Unified Dist 80 | 4,154 | 10 | 2.00\% |  |  |  |
| Maricopa County School Office |  |  |  | 14,888 | 2 | 7.02\% |
| All other | 125,270 |  | 60.35\% | 111,404 |  | 52.51\% |
| Total | 207,556 |  | 100\% | 212,168 |  | 100.00\% |

Note: All participating employers participate in the retirement, HBS and LTD Plans.
Source: ASRS Pension Administration System

## ARIZONA STATE RETIREMENT SYSTEM

A Component Unit of the State of Arizona


## Visit ASRS Online at: www.azasrs.gov

3300 North Central Avenue 7660 E. Broadway Blvd., Suite 108
Phoenix, AZ 85012
Tucson, AZ 85710


[^0]:    ${ }^{1}$ NA represents those securities in which the rating is not readily available. The fair value of $\$ 3,345,619$ is classified as Corporate Bonds of $\$ 18,378$, Government Bonds of $\$ 41,784$, Emerging Market Debt of $\$ 417,186$, Opportunistic Debt of $\$ 930,906$, Private Debt of $\$ 1,201,508$ and Commingled Funds of $\$ 735,857$.
    ${ }^{2}$ Total of $\$ 7,904,022$ represents the total Fixed Income of $\$ 7,023,414$ and Short-term Investments of $\$ 880,608$.

[^1]:    ${ }^{1}$ Brackets refer to liabilities.
    ${ }^{2}$ Brackets refer to short positions.

[^2]:    ${ }^{1}$ Negative amounts represent instances in which performance incentive fees received in excess of investment fees charged.

[^3]:    ${ }^{1}$ Negative amounts represent instances in which performance incentive fees received in excess of investment fees charged.

[^4]:    ${ }^{1}$ Return on Private Equity Investments have not been included in Total Fund Performance for FY 2008 or 2009.

[^5]:    Note: A detailed listing of investments is available upon request.
    Direct inquiries to: ASRS, 3300 North Central Avenue, Phoenix, AZ 85012

[^6]:    Note: A detailed listing of investments is available upon request.
    Direct inquiries to: ASRS, 3300 North Central Avenue, Phoenix, AZ 85012

[^7]:    Note: A detailed listing of broker commissions is available upon request.

[^8]:    Note: A detailed listing of broker commissions is available upon request.

[^9]:    ${ }^{1}$ Negative amounts represent instances in which performance incentive fees received in excess of investment fees charged.

[^10]:    ${ }^{1}$ Negative fair value amounts due to fees charged in excess of amounts contributed.

[^11]:    ${ }^{1}$ Negative amounts represent instances in which performance incentive fees received in excess of investment fees charged.
    ${ }^{2}$ Management fees for Bridgewater Associates are reported in the Global Tactical Asset Allocation asset class.
    ${ }^{3}$ Assets under management with Shenkman Capital Management were liquidated during the fiscal year.

[^12]:    ${ }^{\mathbf{1}}$ Negative amounts represent instances in which performance incentive fees received in excess of investment fees charged.

[^13]:    Includes System assets and liabilities for members who retired or will retire on or after July 1, 1981 for 401(a)

[^14]:    ${ }^{1}$ The assumed rate of return on pension assets is different from the rate used to discount the actuarial accrued liability.

[^15]:    ${ }^{1}$ The 2004 valuation results are from a study of the effects of adopting GASB No. 43 . The formal 2004 valuation report did not use the GASB methodology.

