## ARIZONA STATE RETIREMENT SYSTEM

 A Component Unit of the State of Arizona2013 COMPREHENSIVE ANNUAL<br>Financial Report<br>For Fiscal Year Ended June 30, 2013



## Retirees Giving Back

## 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, 2013

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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.

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

## ARIZONA STATE RETIREMENT SYSTEM

## A Component Unit of the State of Arizona


"I have volunteered with my therapy dogs for 20 years, but now that I have been retired for 3 years, I spend much more time volunteering. I have been the co-chairperson for the Banner Boswell Pet Therapy program for 15 years. My dog Joy and I are visiting the hospital, care centers, and special needs adults weekly. After working for the Washington Elementary School District for 20 years, my dogs and I have made many friends." - Lyndy McKay

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## Certificate of Achievement for

## Excellence in Financial Reporting



For its Comprehensive Annual

Financial Report
for the Fiscal Year Ended
June 30, 2012


Executive Director/CEO

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, 2012. This was the $24^{\text {th }}$ 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 2013. 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 9 th consecutive year that the Arizona State Retirement System has received this prestigious award.

## Letter Of Transmittal from the Director

## Arizona State Retirement System

3300 NORTH CENTRAL AVENUE • PO BOX 33910 • PHOENIX, AZ 85067-3910 • PHONE (602) 240-2000
7660 EAST BROADWAY BOULEVARD • SUITE $108 \bullet$ TUCSON, AZ 85710-3776 • PHONE (520) 239-3100 $\quad$ Paul Matson

October 18, 2013

To: The Arizona State Retirement System Board of Trustees

We are pleased to present, on behalf of the ASRS staff, the sixtieth 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, 2013. This year's CAFR honors ASRS retirees who give back to their communities.

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, 2013. 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 percent of the ASRS membership. More than 80 percent voted to transfer to the defined benefit plan, which became effective July 1, 1971.

At June 30, 2013, total ASRS membership, including active, inactive, disabled and retired members was 542,845. There are 585 employer units participating in the ASRS, including school districts, charter schools, state colleges and universities, and local, county and state government.

## Letter of Transmittal from the Director (CONTINUED)

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. The SRSP is a supplemental defined contribution plan qualified under 401 (a) of the Internal Revenue Code.

During FY 2012-13, more than 122,257 retired annuitants, their survivors, and disabled members received in excess of $\$ 2.60$ billion in benefits. As of June 30, 2013, there were 47,469 retired members and their families enrolled in the ASRS-sponsored medical program and 49,932 retired members and their families enrolled in dental plans through the ASRS.

ASRS Board Trustees are appointed to three-year terms by the governor and confirmed by the Arizona State Senate. Four trustees of the ASRS Board must have a minimum of 10 years investment experience and each trustee who represents an ASRS member group shall have no less than five years of administrative management experience. There is no limit on the number of terms an ASRS Board Trustee may serve.

## Major Initiatives for Fiscal Year 2012-13

## Investments

- Implemented ASRS Strategic Asset Allocation Policy: Commitments made to new strategic asset classes and tactical allocations with full policy implementation expected to occur over the next 12-24 months.
- Developed and Implemented an Equity Risk Factor Exposure Program: Identification of equity market risk factors lead to the development and funding of select exchange-traded funds, which enables the ASRS to better control risk and enhance returns of its U.S. and Non-U.S. public equity portfolios.
- Modified Asset Class Committees' Composition: Changes to the ASRS Governance Handbook require a delineation for the roles of the Board and ASRS staff between authority and Committee meeting participation.
- Systematized Investment Reporting Functions: Implemented a bifurcated reporting structure, in which the CIO provides investment program updates and the ASRS general consultant provides independent reporting, monitoring, and oversight of ASRS investment program.


## Benefits Processing

- Ending Payroll Verification: A new online ending payroll verification process was implemented to enhance service to members and employers making the application process more efficient. This form, which employers must often complete when members apply for ASRS benefits, is now automatically sent to employers when a member submits an application. Employers are then able to complete the form and submit the data needed by using the ASRS's secure website.


## Letter of Transmittal from the Director (Continued)

- Spousal Consent: Implemented legislation that requires a member who is married to name and maintain their spouse as a beneficiary with at least 50 percent interest in the member's account, and, at retirement, to elect a monthly benefit in the form of a joint and survivor annuity, with the member's spouse as the contingent annuitant. The member's spouse has the ability to waive this requirement.
- Online Retirement Application: An online retirement application was implemented, and by the end of the fiscal year, over 40 percent of new retirees each month had applied using the new service. The online application enhances service by providing members with the ability to safely and securely apply for retirement at a time and place convenient to them. An additional feature of the new application allows new retirees to track the status of their application online and receive email updates at certain steps in the process.


## Services

The ASRS continued to enhance the level of service it provides to members this year through the introduction of new online tools and services for members:

- Online Member Statement: This year the ASRS replaced the paper account statement that had traditionally been printed and mailed to all active and inactive ASRS members each year with an online version that can be generated, printed, or saved electronically throughout the year. The new statement contains all of the estimates and information that were provided in the previous account statement, but has improved on the paper version by always utilizing real time data, rather than data that is several months old.
- Enhanced Secure Account Access: To complement the new online statement, significant enhancements were made to the secure member website. Each of these enhancements was made to provide members with an easy way to access information, and to provide personalized estimates for their ASRS retirement, refund, survivor, and disability benefits. Members also have the ability to apply for ASRS benefits or update their personal information online.
- "Like" us on Facebook! This year, the ASRS began to engage and communicate with members via social media. Social media, combined with last year's implementation of e-newsletters and targeted e-communications campaigns, has vastly broadened the ASRS's ability to reach members with timely, targeted, and relevant information.


## Administration

- Paperless Pension Administration: The ASRS was highlighted by CEM Benchmarking Inc. in a study done for clients on how and why the world's leading pension administration teams are moving to a paperless environment. The ASRS was highlighted as a provider who offers its members access to a high number of online services.


## Investment Policies

An integral part of the overall investment policy is the Strategic Asset Allocation Policy (SAAP), which is designed to optimize returns while minimizing risk. The ASRS maintains its investment assets in accordance with a Board approved SAAP. Investment assets are managed in 165 externally managed and 7 internally managed portfolios, which are diversified in U.S. equities, U.S. fixed income, international equities, real estate, private equity, opportunistic and commodity investments.

After deducting investment expenses, the Retirement and Health Benefit Supplement funds achieved the following net time weighted rates of return for the period ended June 30, 2013:

## Annualized Rates of Return (Net of Fees)

(Retirement \& Health Benefit Supplement)

|  | $\mathbf{1}$ <br> Year | $\mathbf{3}$ <br> Year | $\mathbf{5}$ <br> Year | $\mathbf{1 0}$ <br> Year | Inception <br> (June 30,1975) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ASRS Total Fund | $13.1 \%$ | $12.6 \%$ | $5.9 \%$ | $7.4 \%$ | $9.8 \%$ |

The ASRS has 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. Details of 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, 2012, the actuarial value of total plan assets (pension and health benefit supplement) was $\$ 30.2^{1}$ billion and the actuarial accrued liability was $\$ 40.0^{1}$ billion. The unfunded actuarial accrued liability of $\$ 9.7$ billion results in an actuarial funding ratio of $75.7^{1}$ percent for the total plan. The decrease in actuarial funding percentage from last year's $75.8^{1}$ percent is primarily due to recognition of investment losses in fiscal years 2003, 2008 and 2009.
${ }^{1}$ Results include System liabilities and assets for members who retired or will retire on or after July 1, 1981.

The June 30, 2012 market value of total plan assets (pension and health benefit supplement) was $\$ 27.6^{1}$ billion and the actuarial accrued liability was $\$ 40.0^{1}$ billion. The unfunded market value of assets accrued liability of $\$ 12.4$ billion results in a market value of assets funding ratio of $69.0^{1}$ percent for the total plan. The decrease in market value of assets funding percentage from last year's $72.7^{1}$ percent is primarily due to the rate of return on market assets of $1.10 \%$ during fiscal year 2012, versus expected earnings of $8 \%$.

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

## Funded Status and Contribution Rate Projections

Although the ASRS funds are well-diversified and professionally managed portfolio of investments, they incurred significant losses in fiscal years 2003, 2008, and 2009. These losses have the effect of reducing the actuarial value and market value of assets funded status of the funds. As a result, the combined pension and health benefit supplement contribution rate is expected to increase for approximately the next five 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, over the last 10 years, has been engaged in significant program and policy review. 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 $\$ 369$ million per year, which is equivalent to approximately $\$ 5.1$ billion in liability savings for the group of all current employees, or approximately $\$ 10.4$ 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 percent in total each year.

Please see chart on next page.
${ }^{1}$ Results include System liabilities and assets for members who retired or will retire on or after July 1, 1981.

## Estimated Impact of ASRS Cost Reduction Initiatives

As of June 30, 2012 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 VALUATION \& REFLECTED IN LOWER CURRENT CONTRIBUTION RATE |  |  |  |  |  |  |  |
| Change basis for service purchases from normal cost to actuarial present value (APV) | 0.60\% | \$ | 53.21 | \$ | 1,062.01 | \$ | 1,825.30 |
| Correction of Permanent Benefit Increase (PBI) reserve | 0.04\% |  | 3.55 |  | 70.65 |  | 63.87 |
| Decrease interest credited on withdrawn contributions from 8\% to 4\% | 0.27\% |  | 23.94 |  | 477.99 |  | 821.45 |
| Decrease interest credited on withdrawn contributions from 4\% to 2\% | 0.44\% |  | 39.02 |  | 288.51 |  | 848.26 |
| Redesign non-retired survivor benefits | 0.02\% |  | 1.77 |  | 22.25 |  | 27.23 |
| Sub-Total, Savings in Current Valuation | 1.37\% | \$ | 121.49 | \$ | 1,921.41 | \$ | 3,586.11 |
| COST SAVINGS INITIATIVES CONTAINED IN FUTURE EXPERIENCE |  |  |  |  |  |  |  |
| Long Term Disability (LTD) program design changes | 0.02\% | \$ | 1.77 | \$ | 35.95 | \$ | 61.36 |
| Reimbursements for early retirement incentives | 0.18\% |  | 15.96 |  | 318.49 |  | 547.51 |
| Increase interest rate on payroll deduction agreements (PDAs) from 0\% to 8\% | 0.16\% |  | 14.19 |  | 283.52 |  | 487.12 |
| Pop-up restrictions | 0.41\% |  | 38.01 |  | 629.30 |  | 1,174.53 |
| Rescinding modified Deferred Retirement Option Plan (mDROP) | 0.50\% |  | 44.30 |  | 747.57 |  | 1,383.08 |
| LTD changes to offsets and pre-existing condition period | 0.15\% |  | 13.30 |  | 204.09 |  | 394.92 |
| Recapture of unclaimed monies | 0.01\% |  | 0.57 |  | 8.83 |  | 16.97 |
| Eliminate 80\% cap on retirement benefits | 0.04\% |  | 3.55 |  | 39.64 |  | 90.61 |
| Require 20/20 Rule for dual employment situations | 0.04\% |  | 3.29 |  | 36.68 |  | 83.86 |
| Eliminate enhanced refunds | 0.16\% |  | 14.26 |  | 120.60 |  | 331.89 |
| Replace Rule of 80 with Rule of 85 | 0.30\% |  | 26.73 |  | 226.05 |  | 622.10 |
| Replace 36-month average salary with 60-month average | 0.25\% |  | 22.28 |  | 188.39 |  | 518.45 |
| Apply Alternative Contribution Rate (ACR) to return-to-work | 0.25\% |  | 22.28 |  | 188.39 |  | 478.03 |
| Compute service purchases with 6\% discount rate | 0.08\% |  | 7.17 |  | 53.01 |  | 155.87 |
| Eliminate service purchases through partial lump sumes | 0.07\% |  | 5.82 |  | 43.03 |  | 126.52 |
| Eliminate Permanent Benefit Increases for future members | 0.11\% |  | 9.76 |  | - |  | 219.98 |
| Sub-Total, Savings Emerging in Experience | 2.73\% | \$ | 243.24 | \$ | 3,123.54 | \$ | 6,692.80 |
| NON-ASRS INITIATIVES |  |  |  |  |  |  |  |
| Replace Rule of 85 with 55 \& 30 or 60 \& 25 | 0.00\% | \$ | 0.61 | \$ | 5.14 | \$ | 13.90 |
| Change pre-retirement death benefit to sum of employee and employer balances (ASRS Initiative) | 0.04\% |  | 3.26 |  | 27.56 |  | 74.32 |
| Adopt 6-month delay in contributions from state members | -0.13\% |  | - |  | - |  | - |
| Prospective cost-shift of 6-month delay (not included in totals) | N/A |  | (11.78) |  | (100.92) |  | (272.94) |
| Sub-Total, Saving Emerging in Experience from Non-ASRS Initiatives | -0.09\% | \$ | 3.87 | \$ | 32.70 | \$ | 88.22 |
| GRAND TOTAL | 4.01\% | \$ | 368.60 | \$ | 5,077.65 | \$ | 10,367.13 |

## Budget Savings

The ASRS regularly implements strategies to reduce agency expenditures. As a result, the ASRS realized reductions to the operating budget totaling $\$ 480,000$ for FY 2013 and $\$ 4.0$ million over the past five 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, 2012. The ASRS has received this prestigious award in each of the last 24 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, 2012 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 second 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 2013 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 ninth year the ASRS has received this award.

## Letter of Transmittal from the Director (CONTINUED)

## 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

## Organization Chart




Fiscal Year 2012-2013 Board


## Paul Matson

Director


GARY R. DOKES
Chief Investment Officer


Anthony Guarino Deputy Director,
Chief Operations Officer

## Outside Professional Consultants

ACTUARYBuck Consultants, LLCPhoenix, AZ
LONG TERM DISABILITY BENEFITS
Sedgwick CMS CompanyCalabasas, CA
CUSTODIAL BANK
State Street Bank and Trust Co.Boston, MA
PENSION DISBURSEMENT SERVICESState Street Retiree ServicesBoston, MA
INDEPENDENT AUDITORS
CliftonLarsonAllen, LLP
Baltimore, MD

## GENERAL INVESTMENT CONSULTANT

NEPC, 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 86-91

## Summary of 2013 Retirement Legislation

The 51 st Legislature, Second Regular Session adjourned June 14, 2013. Below is a brief summary of bills that have been passed into law that affect ASRS members and employers. To view legislation in its entirety, visit the Arizona Legislature's website at www.azleg.gov. All bills listed below are effective on September 13, 2013, unless otherwise noted.

## SB 1170 - ASRS; amendments

## (Laws 2013, Chapter 110)

## Amortization Period

- Requires the past service funding requirement to be amortized over a period that is determined by the Board and consistent with generally accepted actuarial standards, rather than the current rolling 30-year period.
- Instructs the Board, when determining the amortization period, to seek to improve the funded status whenever the ASRS Trust Fund is less than $100 \%$ funded.


## Member Identity Security

- States that, in order to protect a member's identity from fraud, abuse, theft or civil or criminal activity, information about a member is not subject to inspection, except for:
- The member's name
- Membership status (active, inactive, retired)
- Current or most recent employer
- Average monthly compensation used to calculate a retirement benefit
- Credited service on account for an active or inactive member or the credited service used to calculate a retired member's benefit
- Gross pension amount actually paid to a retired member
- Most recent retirement date
- Current account balance for an active or inactive member
- Gross LTD program benefit actually paid to a disabled member
- Amount paid to purchase service
- Amount of service purchased
- Prohibits any unredacted record to be inspected that contains a member's SSN, bank account information, address, telephone number, e-mail address, medical records, health insurance information, beneficiary or survivor information, disability information, or any information that is protected by any federal or state law.


## Survivor Benefits

- Removes the requirement that a survivor's benefit must exceed $\$ 5,000$ in order to elect an annuity option.
- Limits the annuity option a survivor may take to the straight-life option only, if the monthly amount is greater than an amount determined by the ASRS Board (currently $\$ 20$ per month).
- Eliminates the present value benefit calculation, which is currently only available if the member had reached an early retirement date or had 15 years of service and the designated beneficiary is a spouse, natural or adopted child under 21, or disabled child of any age.
- Permits a survivor who elects to take the annuity option to participate in the ASRS's Group Health Insurance program. Note: survivors are not eligible for the Health Benefit Supplement.
- Delays the application of survivor benefit changes to new survivors on or after January 1, 2014.


## Permanent Benefit Increases

- Eliminates the Permanent Benefit Increase program for members whose membership commences after the general effective date.


## Health Insurance Program Self-insurance

- Permits the ASRS Board to establish a self-insured health insurance program if the Board determines that selfinsuring would be less expensive and at least as effective as a fully insured plan, while considering the risks and costs.
- Permits the ASRS to establish a separate account to administer the self-insured program, and prohibits the ASRS from diverting any part of the account for any other purpose.
- Provides that if a self-insurance program is offered, it must offer all health benefits required by Title 20 (Insurance).
- Provides that if a self-insurance program was no longer offered, the monies in the separate account shall be transferred to another account of ASRS.


## Spousal Consent Clarification

- Clarifies that a member is not required to name or maintain a current spouse as their beneficiary or elect a joint and survivor annuity if such an action would violate another law, an existing contract, or a court order, retroactively to from and after June 30, 2013.


## Federal Conforming Changes

- Requires the ASRS to correct annual addition limit excesses using the Employee Plans Compliance Resolution System or future guidance prescribed by the Internal Revenue Service (IRS).
- States that once a member has reached a normal retirement date, the member's right to a normal retirement benefit cannot be forfeited by the ASRS or an employer, except as provided by the Felony Forfeiture statute.


## Miscellaneous

- Appropriates $\$ 200,000$ from the ASRS administration account to the ASRS. The appropriation is non-lapsing.
- Makes technical and conforming changes.


## HB 2562 - public retirement systems; ineligible employees

## (Laws 2013, Chapter 216)

## General Provisions

- Establishes and requires participation in a 401(a) Plan for public employees who are:
- Hired on or after September 13, 2013;
- Not eligible for the ASRS because the employee is not covered by the State's Section 218 Social Security Agreement;


## Summary of 2013 Retirement Legislation (CONTINUED)

- Otherwise ineligible for a state retirement system or plan; and
- Engaged to work at least 20 weeks in each fiscal year and at least twenty hours each week.
- Provides that enrollment in the 401(a) Plan is optional for employees who have already retired from a state retirement system (at the employer's option) or if the employer and employee have entered an alternative compensation agreement.
- Requires each participating employee and employer to contribute one-half of the ASRS total normal cost plus $1.5 \%$ of compensation into the employee's retirement savings account.
- Requires each participating employee and employer to contribute to the ASRS Long-Term Disability Program.
- Provides that the assets in an employee's annuity account immediately vest.


## Employer Duties

- Requires ASRS employers to:
- Follow ASRS procedures and to cooperate and collaborate with ASRS to ensure proper enrollment of employees.
- Submit any reports, data, paperwork or materials that are requested by ASRS that are necessary to make eligibility determinations or for the proper administration of the ASRS.
- Attend the annual ASRS training conference.
- Requires local boards to make determinations regarding employee eligibility for membership in PSPRS.
- Requires employers participating in PSPRS to provide materials necessary to eligibility determination to the local board, including the employee's hire date, position title and description.


## Appeals

- Provides procedures for enrollment of employees in the 401(a) Plan during administrative appeals to ASRS and SSA regarding employee eligibility.
- Provides procedures for enrollment of employees in the proper retirement plan (either ASRS or the 401(a) Plan) once a final eligibility determination has been made.


## Administrative

- Establishes the 401 (a) Plan as a 414(h) pre-tax pick-up plan for income tax purposes, which will be administered under the current ASRS Third Party Administrator (TPA) contract.
- Requires ASRS to go out for competitive bids at least every five years on expiration of the current TPA contract.


## Miscellaneous

- Changes the heading of Title 38, Chapter 5, Article 8 of the A.R.S. from Supplemental Defined Contribution Plans to Defined Contribution Plans.
- Appropriates 1 FTE and $\$ 72,400$ for personal services and $\$ 430,000$ for professional services from the ASRS Administration Account to ASRS for FY 2013-14, which is non-lapsing.
- Makes technical and conforming changes


## HB 2608 - EORP; closure; defined contribution

## (Laws 2013, Chapter 217)

Freezes membership in the current Elected Officials' Retirement Plan (EORP) and establishes the Elected Officials' Defined Contribution Retirement System (EODC) and Disability Program.

With respect to ASRS, HB 2608:

- Allows someone who becomes an elected official subject to term limits on or after January 1, 2014 and who is an active or inactive member of ASRS to continue or resume participation in ASRS in lieu of participation in the EODC.
- Provides that an elected official elected or appointed before January 1, 2014 who opts out of EORP may also opt out of ASRS.
- Provides that an elected official subject to term limits, whose employer participates in ASRS, who prior to January 1, 2014 elected to participate in ASRS because of an election to not participate in EORP, may irrevocably and in writing elect to continue participation in ASRS in lieu of participation in the EODC if filed with ASRS within 30 days of the beginning of the elected officials' term.
- Removes language requiring certain full time superior court commissioners to be ASRS members and reestablishes their eligibility for the Elected Officials Retirement Plan (EORP).


## ARIZONA STATE RETIREMENT SYSTEM

## A Component Unit of the State of Arizona


"As a retired teacher, volunteering at Assistance League of Phoenix (AL) has been a perfect fit for me, and very rewarding. AL is a volunteer driven 501 (c)(3) non profit organization which serves over 40,000 children. Our five philanthropic programs keep me quite busy! Operation School Bell provides new school clothes, health kits and shoes to elementary school children in need. HUGS provides teddy bears to children in crisis; LEARN promotes literacy through gifts of books, dictionaries, birthday books, and educational programs to Title 1 students; Scholarships provides special programs for students; and Wee Help provides layettes for infants born into poverty. I can even volunteer in retail at our awesome AL of Phoenix Thrift Store!" - Denise Vesci

## II. Financial Section

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CliftonLarsonAllen LLP www.cliftonlarsonallen.com

## 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 Statement of Plan Net Position as of June 30, 2013, and the related Combined Statement of Changes in Plan Net Position for the year then ended, and the related notes to the 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 audit 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 plan net position of the ASRS as of June 30,2013 , and the respective changes in its net position for the vear then ended in accordance with accounting principles generally accepted in the United States of America.

## Other Matters

The 2012 financial statements of ASRS were audited by other auditors whose report dated October 30, 2012, expressed an unmodified opinion on those statements.

## 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 and Contributions from the Employer and Other Contributing Entities 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 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 October 22, 2013 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
October 22, 2013

## Management's Discussion and Analysis

This section presents Management's Discussion and Analysis (MD\&A) of the Arizona State Retirement System's (ASRS) plan net position and changes in plan net position for the fiscal year ended June 30, 2013. 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 FY 13, ASRS assets increased primarily as the result of strong market conditions.

- At June 30, 2013, the ASRS held net investments of $\$ 30.5$ billion, an increase of $\$ 2.9$ billion from FY 12.
- The combined investment portfolio experienced a return of 13.1 percent compared to 1.3 percent in FY 12. The increase in net investments from FY 12 to FY 13 is primarily due to strong performance in U.S. and international equities, as well as opportunistic equity, debt and real estate.
- The ASRS paid $\$ 2.60$ billion in pension, disability, health insurance and survivor benefits during FY 13 compared to $\$ 2.49$ billion in FY 12.
- At June 30, 2012 (latest actuarial valuation), the total funded status of the ASRS retirement and health benefit supplement funds decreased slightly to 75.7 percent from 75.8 percent at FY 11. At FY 12, ASRS actuarial liabilities exceeded actuarial assets for the retirement and health benefit supplement funds by $\$ 9.7$ billion. This compares to an excess of actuarial liabilities over actuarial assets of $\$ 9.3$ billion at FY 11. This decrease in funded status is due primarily to the recognition of investment losses in FY 03, FY08 and FY 09.


## 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 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, 2013. This financial information also summarizes the combined changes in net position held in trust for pension benefits for the year then ended. The information available in each of these sections is briefly summarized as follows:

1) Fund financial statements. For the fiscal year ended June 30, 2013, financial statements are presented for the funds administered by the ASRS. These fiduciary funds are held for the benefit of the ASRS members.

- The Combined Statement of Plan Net Position is presented as of June 30, 2013 with combined total comparative information as of June 30, 2012. 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 Statement of Changes in Plan Net Position is presented for the year ended June 30, 2013, with comparative information for the year ended June 30, 2012. 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 32-52 of this report.

## Management's Discussion and Analysis (CONTinued)

3) Required Supplementary Information. The required supplementary information consists of three schedules and related notes concerning actuarial information, funded progress and required contributions of the defined benefit pension systems administered by the ASRS.
4) Additional Supplementary Schedules. These schedules include a Combining Schedule of Net Position and Changes in Net Position for the ASRS Plan and System retirement programs. Detailed information about additions, deductions, administrative expenses, consultant fees and investment expenses by manager incurred by the ASRS administered funds. 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.

## 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.

Plan Net Position. ASRS's total net position held in trust for benefits at June 30, 2013 were $\$ 30.6$ billion, a 9.9 percent increase from $\$ 27.9$ billion at June 30, 2012. The increase in net assets is primarily due to an increase in investment returns, which was 13.1 percent for FY 13. The retirement fund's net position was $\$ 29.0$ billion compared to $\$ 26.4$ billion last year, a 9.9 percent increase. The HBS's fund net position was $\$ 1.3$ billion at year end compared to the same $\$ 1.2$ billion at FY 12, an 11.0 percent increase. The LTD fund's net position was $\$ 262$ mil-
lion at year end compared to $\$ 257$ million last year, a 2.0 percent increase.

Cash, receivables and prepaids of $\$ 1.15$ billion in FY 13 represents an insignificant change compared to $\$ 1.10$ billion in FY 12. Liabilities of $\$ 1.3$ billion represents an increase of 45 percent compared to $\$ 907$ million last year. This is primarily due to an increase in forward contracts payable.

Changes in Net Position. For the 2013 fiscal year, contributions totaled $\$ 2.1$ billion, compared to the 2012 fiscal year contributions of $\$ 1.9$ billion. The increase is due to a 0.40 percent increase in contribution rates for retirement and HBS, and retrospective health insurance rate adjustment reimbursement totaling $\$ 25.8$ million in FY 13 compared to $\$ 15.5$ million in FY 12.

For FY 13, the ASRS recognized net investment income of $\$ 3.6$ billion which compares to net investment income of $\$ 339$ million in the previous year. This 953.9 percent increase is primarily due to strong performance in U.S. and international equities, as well as opportunistic equity and debt, 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 2013 fiscal year, pension, disability, health insurance and survivor benefits totaled $\$ 2.60$ billion, an increase of 4.7 percent over the $\$ 2.49$ billion paid during FY 12. The 4.7 percent increase is explained by an increase in total retirees. Refunds and transfers to other plans totaled $\$ 219$ million in 2013, a 3.3 percent increase from the $\$ 212$ million paid out in 2012. In FY 13, the cost of administering the ASRS benefits totaled $\$ 41$ million, an increase of 14.7 percent from the $\$ 36$ million paid in FY 12.

The following tables show the principal ASRS net assets and changes in net assets for fiscal years 2013 and 2012, in thousands of dollars:

| Net Position |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: |
| ASSETS | $\mathbf{2 0 1 3}$ | $\mathbf{2 0 1 2}$ | Change | \% Change |  |
| Cash, receivables and prepaids | $\$ 1,145,516$ | $\$$ | $1,092,738$ | $\$$ | 52,778 |
| Investments at fair value | $30,779,999$ | $27,626,426$ | $3,153,573$ | $11.4 \%$ |  |
| Securities lending | 15,460 | 50,070 | $(34,610)$ | $-69.1 \%$ |  |
| Total assets | $\mathbf{3 1 , 9 4 0 , 9 7 5}$ | $\mathbf{2 8 , 7 6 9 , 2 3 4}$ | $\mathbf{3 , 1 7 1 , 7 4 1}$ | $\mathbf{1 1 . 0 \%}$ |  |
| LIABILITIES |  |  |  |  |  |
| Payables and other liabilities | $1,302,131$ | 856,928 | 445,203 | $52.0 \%$ |  |
| Securities lending | 15,460 | 50,070 | $(34,610)$ | $-69.1 \%$ |  |
| Total Liabilities | $\mathbf{1 , 3 1 7 , 5 9 1}$ | $\mathbf{9 0 6 , 9 9 8}$ | $\mathbf{4 1 0 , 5 9 3}$ | $\mathbf{4 5 . 3 \%}$ |  |
| NET POSITION | $\mathbf{\$ 3 0 , 6 2 3 , 3 8 4}$ | $\mathbf{\$ 2 7 , 8 6 2 , 2 3 6}$ | $\mathbf{\$}$ | $\mathbf{2 , 7 6 1 , 1 4 8}$ | $\mathbf{9 . 9 \%}$ |


| Change in Net Position | 2013 | 2012 |  | Change | \% Change |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ADDITIONS |  |  |  |  |  |
| Member contributions | \$ 968,885 | \$ 926,966 | \$ | 41,919 | 4.5\% |
| Employer contributions | 989,790 | 927,628 |  | 62,162 | 6.7\% |
| Federal government reimbursement | - | 19,978 |  | $(19,978)$ | -100.0\% |
| Retrospective rate adjustment reimbursement | 25,826 | 15,495 |  | 10,331 | 66.7\% |
| Service credit purchase and transfers in | 72,023 | 53,659 |  | 18,364 | 34.2\% |
| Investment and security lending income | 3,748,774 | 475,030 |  | 3,273,744 | 689.2\% |
| Investment and security lending expense | $(178,898)$ | $(136,302)$ |  | $(42,596)$ | -31.3\% |
| Total additions | 5,626,400 | 2,282,454 |  | 3,343,946 | 146.5\% |
| DEDUCTIONS |  |  |  |  |  |
| Retirement and disability benefits | 2,566,275 | 2,457,052 |  | 109,223 | 4.4\% |
| Survivor benefits | 38,442 | 29,731 |  | 8,711 | 29.3\% |
| Refunds and transfers | 219,332 | 212,313 |  | 7,019 | 3.3\% |
| Administration and other | 41,203 | 35,929 |  | 5,274 | 14.7\% |
| Total deductions | 2,865,252 | 2,735,025 |  | 130,227 | 4.8\% |
| NET CHANGE | 2,761,148 | $(452,571)$ |  | 3,213,719 | 710.1\% |
| Net position beginning of year | 27,862,236 | 28,314,807 |  | $(452,571)$ | -1.6\% |
| Net position end of year | \$30,623,384 | \$27,862,236 | \$ | 2,761,148 | 9.9\% |



Funded Status. Actuarial valuations of the ASRS assets and benefit obligations for the retirement and health benefit supplement funds combined are performed annually. The most recent actuarial valuation available is as of June 30, 2012.

- At June 30, 2012 the total funded status of the ASRS retirement and health benefit supplement funds decreased slightly to 75.7 percent from 75.8 percent for FY 11. At FY 12, ASRS actuarial liabilities exceeded actuarial assets for the retirement and health benefit supplement funds by $\$ 9.7$ billion. This compares to an excess of actuarial liabilities over actuarial assets of $\$ 9.3$ billion for FY 11. This decrease in funded status is due primarily to the recognition of investment losses in fiscal years 2003, 2008 and 2009.

Investments. During the FY 13, the ASRS investments were broadly diversified in domestic and international equities, domestic fixed income, real estate, private equity, opportunistic, commodities and cash equivalent instruments. According to statutory restrictions, no more than 80 percent of ASRS assets may be invested at any given time in corporate stocks or equity equivalents, and no more than 40 percent of ASRS assets may be invested in foreign securities. These investments remained within statutory guidelines.

The Retirement and HBS funds are combined in commingled investment pools. Investments for each fund are allocated daily via a fluctuating dollar unitization methodology. Realized and unrealized gains are allocated daily using the same methodology. The LTD investments are held and managed in a separate fund.

At June 30, 2013, the ASRS held net investments of $\$ 30.5$ billion, an increase of $\$ 2.9$ million from FY 12. The combined investment portfolio experienced a return of 13.1 percent compared to the Interim Total Fund Benchmark return of 12.6 percent. The increase in net investments from FY 12 to FY 13 is primarily due to strong performance in U.S. and international equities, as well as opportunistic equity and debt, and real estate.

The ASRS held $\$ 12.2$ billion in domestic equities and $\$ 6.5$ billion in international equities on June 30, 2013, a decrease of 3 percent in domestic equities and a 37 percent increase in international equities from FY 12. Market performance and the reallocation of assets account for the change in value. The FY 13 rate of return for ASRS domestic equities was 22.2 percent compared to 2.8 percent in FY 12. By comparison, the ASRS domestic equities benchmark, comprised of a combination of S\&P 400, S\&P 500 and the $\mathrm{S} \& \mathrm{P} 600$ indices, had a return of 22.0 percent for FY 13. The FY 13 rate of return for ASRS international equities was 14.0 percent compared to -13.1 percent in FY 12. 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 15.1 percent for FY 13. The underperformance of the Fund's international equities class was largely a result of the stock selections made by external portfolio managers, deep recession in Europe continuing along with slowing growth in Asia.

Domestic fixed income securities held by the Fund were $\$ 5.4$ billion at June 30, 2013, which is consistent with prior year. The rate of return was -0.5 percent for core fixed income and 8.8 percent for U.S. high yield compared to 8.1 percent in the previous year for total domestic fixed income, as the result of lower long-term interest rates and the narrowing of credit spreads during FY 13. The ASRS also funded investments in Emerging Market Debt during the first quarter of 2013, which have returned -7.7 percent for FY 13. The ASRS domestic fixed income benchmark returned -0.2 percent for FY 13.

At June 30, 2013, the ASRS held $\$ 902.1$ million in commodities securities managed by two commodity managers.

The managers experienced a return of -5.6 percent and 4.0 percent, respectively, compared to the DJUBS Commodity Index, which returned -8.0 percent a during FY 13.

At June 30, 2013, the ASRS held $\$ 1.7$ billion in real estate assets, an increase of $\$ 297.2$ million from FY 12. The one year and three year time weighted returns for the real estate program are 12.8 percent and 13.9 percent, respectively. This compares to the NFI-ODCE Index 10.8 percent and 15.1 percent 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 70 percent 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.

At June 30, 2013, the ASRS held $\$ 1.7$ billion in private equity investments, an increase of $\$ 371.7$ million from $F Y$ 12. 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, 2013, the one year and three year net-offees rate of return was 12.6 percent and 15.0 percent, respectively. For the same periods, the Russell 2000 Index returned 16.3 percent and 13.5 percent, 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. The inception return of 2.4 percent of the private equity portfolio is a time weighted return, which needs to be interpreted considering the portfolio is in a build out phase where the scale of investments in recent periods is far greater than early periods.

## Management's Discussion and Analysis (CONTinued)

Every time period, however, is given an equal weight in the return calculation. By comparison, the Internal Rate of Return (IRR) for the private equity program from inception is 11.1 percent, which is 8.7 percent higher than the time weighted return.

At June 30, 2013, the ASRS held $\$ 1.3$ billion in opportunistic funds, an increase of $\$ 608.7$ million from FY 12. The performance of ASRS opportunistic investments are evaluated primarily on a net-of-fees absolute rate of return basis and are split between opportunistic equity and opportunistic debt. These investments, inception-to-date, have returned 18.6 percent and 8.9 percent, respectively. Opportunistic Investments have an absolute return benchmark, which are strategies specific to the individual manager mandates, but not the asset class itself.

The ASRS earns additional investment income by lending investment securities. State Street Bank \& Trust, the ASRS' custodial bank, acts as agent for lending transactions related to the ASRS' securities custodied at State Street. Borrowers provide collateral, either securities or cash, in excess of the value of loaned securities and generally use the borrowed securities to initiate short sales or cover failed trades. The net income from security lending program for FY 13 was $\$ 12.0$ million compared to $\$ 4.4$ million for FY 12. Included in the $\$ 12.0$ million net income is an unrealized gain of $\$ 8.9$ million related cash received on a recovery of a securities lending loss in 2009. Securities lending net income for FY 13 without the gain is $\$ 3.1$ million.

During the late summer and early fall of 2012, ongoing monitoring of ASRS exposures showed growing risks throughout Europe and in the European banking sector. In
an effort to reduce the securities lending investment pools' exposure to the European banking sector, the ASRS substantially withdrew from securities lending in September 2011. As a result, the market value of the securities on loan decreased markedly with a concurrent reduction in lending revenues. As of June 30, 2013, the ASRS remained substantially removed from securities lending activities at State Street. However, during the course of fiscal year 2013, the ASRS did participate in smaller opportunistic lending to take advantage of highly lucrative, relatively low risk transactions.

## Current Market Conditions

The U.S. economy is healing as reflected in the U.S. equity markets outperforming other public asset classes during fiscal year 2013. Internationally, there are nascent signs Europe is stabilizing, however, Asia is slowing. Projections are for slow, but not stellar growth over the next year that will be closely aligned with stimulus monetary policies and expected "tapering" of the Quantitative Easing program.

The ASRS continues to implement the Strategic Asset Allocation policy and will allocate assets tactically within guidelines as market opportunities present themselves.

Additional information is available upon request. Please direct your request to the:

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

## Combined Statement of Plan Net Position

For the Year Ended June 30, 2013 with Comparative Totals for 2012
(Dollars in Thousands)

|  | Retirement Fund | Health Benefit Supplement Fund (Note 8) | Long Term Disability Fund (Note 8) | $\begin{aligned} & \text { Com } \\ & 2013 \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { ined } \\ & 2012 \\ & \hline \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ASSETS |  |  |  |  |  |
| Cash (Note 3) | \$ 25,733 | \$ 690 | \$ | \$ 26,423 | \$ 25,748 |
| Prepaid benefits | - | - | - | - | 190,732 |
| Total cash and prepaids | 25,733 | 690 | - | 26,423 | 216,480 |
| RECEIVABLES |  |  |  |  |  |
| Accrued interest \& dividends | 65,711 | 2,868 | - | 68,579 | 67,534 |
| Securities sold (Note 3) | 39,185 | 1,700 | - | 40,885 | 439,563 |
| Forward contracts (Note 5) | 863,985 | 37,847 | - | 901,832 | 282,445 |
| Contributions (Note 7) | 67,161 | 1,196 | 883 | 69,240 | 36,179 |
| Due from other funds (Note11) | 36 | 5,823 | 2,949 | 8,808 | 25,353 |
| Other | 500 | 25,827 | 3,422 | 29,749 | 25,184 |
| Total receivables | 1,036,578 | 75,261 | 7,254 | 1,119,093 | 876,258 |
| INVESTMENTS AT FAIR VALUE (Note 3) |  |  |  |  |  |
| Temporary investments | 1,864,001 | 123,125 | 2,070 | 1,989,196 | 1,500,354 |
| Securities lending collateral (Note 4) | 14,812 | 648 | - | 15,460 | 50,070 |
| Equity securities | 17,777,630 | 769,633 | 178,909 | 18,726,172 | 17,337,425 |
| Fixed income securities | 5,096,855 | 221,801 | 55,474 | 5,374,130 | 5,375,788 |
| Real estate | 1,632,251 | 71,780 | 19,183 | 1,723,214 | 1,425,941 |
| Private equity | 1,631,641 | 73,453 | - | 1,705,094 | 1,333,375 |
| Opportunistic | 1,208,384 | 53,809 | - | 1,262,193 | 653,543 |
| Total investments | 29,225,574 | 1,314,249 | 255,636 | 30,795,459 | 27,676,496 |
| TOTAL ASSETS | 30,287,885 | 1,390,200 | 262,890 | 31,940,975 | 28,769,234 |
| LIABILITIES |  |  |  |  |  |
| Payable for securities purchased (Note 3) | 320,449 | 13,964 | - | 334,413 | 530,666 |
| Payable for securities lending collateral (Note 4) | 14,812 | 648 | - | 15,460 | 50,070 |
| Forward contracts payable (Note 5) | 851,760 | 37,324 | - | 889,084 | 249,501 |
| Due to other funds (Note 11) | 8,808 | - | - | 8,808 | 25,353 |
| Other | 66,626 | 2,930 | 270 | 69,826 | 51,408 |
| TOTAL LIABILITIES | 1,262,455 | 54,866 | 270 | 1,317,591 | 906,998 |
| NET POSITION HELD IN TRUST FOR PENSION/OPEB BENEFIT | \$ 29,025,430 | \$ 1,335,334 | \$ 262,620 | \$ 30,623,384 | \$ 27,862,236 |

The accompanying notes are an integral part of these statements.

## Combined Statement of Changes in Plan Net Position

For the Year Ended June 30, 2013 with Comparative Totals for 2012
(Dollars in Thousands)

| Additions | Retirement Fund | Health Benefit Supplement Fund (Note 8) |  | Long Term Disability Fund (Note 8) |  | Combined 2012 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CONTRIBUTIONS |  |  |  |  |  |  |  |  |  |
| Member contributions (Note 7) | \$ 948,004 | \$ | - | \$ | 20,881 | \$ | 968,885 | \$ | 926,966 |
| Employer contributions (Note 7) | 911,300 |  | 57,154 |  | 21,336 |  | 989,790 |  | 927,628 |
| Federal government reimbursement (Note 15) | - |  | - |  | - |  | - |  | 19,978 |
| Retrospective rate adjustment reimbursement (Note 16) |  |  | 25,826 |  | - |  | 25,826 |  | 15,495 |
| Transfers from other plans | 1,233 |  | - |  | - |  | 1,233 |  | 2,236 |
| Purchased Service | 70,790 |  | - |  | - |  | 70,790 |  | 51,423 |
| Total Contributions | 1,931,327 |  | 82,980 |  | 42,217 |  | 2,056,524 |  | 1,943,726 |
| INCOME FROM INVESTMENT ACTIVITIES |  |  |  |  |  |  |  |  |  |
| Net appreciation (depreciation) in fair value-public | 2,444,729 |  | 104,837 |  | 29,784 |  | 2,579,350 |  | $(419,010)$ |
| Interest income | 188,095 |  | 8,343 |  | 1 |  | 196,439 |  | 200,652 |
| Dividends income | 342,972 |  | 15,328 |  | 2 |  | 358,302 |  | 295,186 |
| Real estate income | 222,493 |  | 9,592 |  | - |  | 232,085 |  | 170,147 |
| Private equity income | 228,223 |  | 10,136 |  | - |  | 238,359 |  | 192,720 |
| Opportunistic income | 138,531 |  | 5,981 |  | - |  | 144,512 |  | 19,788 |
| Other (expense) / income | $(2,341)$ |  | (93) |  | - |  | $(2,434)$ |  | 12,717 |
| Total income from investment activities | 3,562,702 |  | 154,124 |  | 29,787 |  | 3,746,613 |  | 472,200 |
| LESS INVESTMENT ACTIVITY EXPENSES |  |  |  |  |  |  |  |  |  |
| Management fees and monitoring services-public | $(63,845)$ |  | $(2,793)$ |  | (219) |  | $(66,857)$ |  | $(57,469)$ |
| Real Estate expense | $(37,943)$ |  | $(1,630)$ |  | (28) |  | $(39,601)$ |  | $(30,561)$ |
| Private Equity expense | $(55,934)$ |  | $(2,485)$ |  | (28) |  | $(58,419)$ |  | $(45,943)$ |
| Opportunistic expense | $(22,902)$ |  | (991) |  | - |  | $(23,893)$ |  | $(3,932)$ |
| Total investment activity expenses | $(180,624)$ |  | $(7,899)$ |  | (247) |  | $(188,770)$ |  | $(137,905)$ |
| Net income from investment activities | 3,382,078 |  | 146,225 |  | 29,540 |  | 3,557,843 |  | 334,295 |
| FROM SECURITIES LENDING ACTIVITIES (NOTE 4) |  |  |  |  |  |  |  |  |  |
| Security lending income / (expense) | 2,179 |  | (18) |  | - |  | 2,161 |  | 2,830 |
| Unrealized gain on security lending | 8,427 |  | 491 |  | - |  | 8,918 |  |  |
| Total securities lending activities income | 10,606 |  | 473 |  | - |  | 11,079 |  | 2,830 |
| Security lending expenses |  |  |  |  |  |  |  |  |  |
| Interest rebate / (expense) | 1,346 |  | 59 |  | - |  | 1,405 |  | 2,257 |
| Management fees | (431) |  | (20) |  | - |  | (451) |  | (654) |
| Total securities lending activities expense | 915 |  | 39 |  | - |  | 954 |  | 1,603 |
| Net income from securities lending activities | 11,521 |  | 512 |  | - |  | 12,033 |  | 4,433 |
| Total net investment income | 3,393,599 |  | 146,737 |  | 29,540 |  | 3,569,876 |  | 338,728 |
| TOTAL ADDITIONS | 5,324,926 |  | 229,717 |  | 71,757 |  | 5,626,400 |  | 2,282,454 |
| Deductions |  |  |  |  |  |  |  |  |  |
| Retirement and disability benefits | 2,406,899 |  | 95,763 |  | 63,613 |  | 2,566,275 |  | 2,457,052 |
| Survivor benefits | 38,442 |  | - |  | - |  | 38,442 |  | 29,731 |
| Refunds to withdrawing members, including interest | 218,607 |  | - |  | - |  | 218,607 |  | 207,289 |
| Administrative expenses | 32,851 |  | 1,439 |  | 2,739 |  | 37,029 |  | 35,162 |
| Transfers to other plans | 725 |  | - |  | - |  | 725 |  | 5,024 |
| Other | 4,066 |  | - |  | 108 |  | 4,174 |  | 767 |
| TOTAL DEDUCTIONS | 2,701,590 |  | 97,202 |  | 66,460 |  | 2,865,252 |  | 2,735,025 |
| NET INCREASE (DECREASE) | \$ 2,623,336 | \$ | 132,515 | \$ | 5,297 | \$ | 2,761,148 | \$ | $(452,571)$ |
| NET POSITION HELD IN TRUST FOR PENSION/OPEB BENEFIT |  |  |  |  |  |  |  |  |  |
| Beginning of year | 26,402,094 |  | 1,202,819 |  | 257,323 |  | 27,862,236 |  | 28,314,807 |
| End of year | \$ 29,025,430 | \$ | 1,335,334 | \$ | 262,620 |  | 30,623,384 |  | 27,862,236 |

The accompanying notes are an integral part of these statements.

## Notes to the Basic Financial Statements

## 1. Description of the System

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. 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. 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.

Reporting Entity - The financial statements of the ASRS include the financial activities of all the above funds. The ASRS Retirement Board of Trustees (the Board), who oversees the ASRS, are appointed by the governor and confirmed by the Arizona State Senate.

Contributions - Participating employers and their employees contribute percentages of employees' salaries for retirement annuities, survivor annuities, health insurance supplements and long term disability in accordance with A.R.S. Employee contributions toward retirement benefits are excluded from the employees' gross income for Federal and State income tax purposes. However, employee contributions for long term disability are included in the employee's taxable wages and, therefore, fully taxable. Employers collect contributions from the employees, add their matching share and remit the total amounts to the ASRS.

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 purchase of military service regardless of whether a benefit can be paid.

Costs of administering the funds are appropriated by the State legislature and financed through contributions and investment earnings.

At June 30, 2013 and 2012, respectively the number of participating employers and employees totaled:

| Employer Units | $\mathbf{2 0 1 3}$ | $\mathbf{2 0 1 2}$ |
| :--- | ---: | ---: |
| School Districts | 242 | 243 |
| Charter Schools | 143 | 148 |
| Cities and Towns | 78 | 80 |
| Counties | 93 | 15 |
| Special Districts | 15 | 93 |
| Community College Districts | 10 | 10 |
| Universities | 3 | 3 |
| State Government | 1 | 1 |
| $\quad$ Total | $\mathbf{5 8 5}$ | $\mathbf{1}$ |
| Employee Members |  |  |
| Retirees (including Beneficiaries) | 122,257 | 112,306 |
| Non Active Fully Vested | 208,573 | $\mathbf{2 0 4 , 2 0 3}$ |
| Long Term Disability Recipients | 4,443 | 4,646 |
| Current Employees - Active | 207,572 | 214,346 |
| Total | $\mathbf{5 4 2 , 8 4 5}$ | $\mathbf{5 3 5 , 5 0 1}$ |

${ }^{1}$ The 585 Employer Reporting Units represent 690 total employers. Of the retirees noted above, 70,241 are receiving health insurance premium benefits.

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 the invested funds. The ASRS provides for retirement, disability, health insurance premium supplemental benefits and survivor benefits. Retirement benefits are calculated on the basis of age, average monthly compensation, and service credit, 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 on (a) their 65th birthday, (b) their 62nd birthday and completion of at least 10 years of credited service, (c) when the sum of their age plus total credited service equals 80 . Members with initial membership dates on or after July 1, 2011 are eligible for full retirement benefits on (a) and (b) above, (c) their $60^{\text {th }}$ birthday and completion of at least 25 years of credited service, or (d) their $55^{\text {th }}$ birthday and completion of at least 30 years of service. The benefit is based on a percentage of average monthly compensation multiplied by the years of service credit. The percentage of
average monthly compensation varies with years of service credit according to the following schedule:

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

Members who began participation in the Plan prior to January 1, 1984, may choose to have average monthly compensation determined based upon the period of 60 consecutive months during which the member receives the highest compensation within the last 120 months of service, including lump sum payments as described above. Persons who attain age 50 with at least five years of total credited service may take an early retirement, however, the amount of their retirement benefit is actuarially reduced.

Prior to July 1, 2011, average compensation is defined as the period of 36 consecutive months during which a participant receives the highest compensation within the last 120 months of service during which the employee made retirement contributions as required by law.

Participants with an initial membership date on or after July 1, 2011, the average monthly compensation is defined as the average of the highest consecutive 60 months in the last 120 months.

The compensation does not include lump sum payments on termination of employment for accumulated vacation or annual leave, sick leave, compensatory time or any other form of termination pay

Effective July 1, 1988, members of the ASRS are eligible for a Long Term Disability (LTD) benefit in the event they become unable to perform their work. The monthly benefit is equal to two-thirds 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 higher than 30 years.

The Retiree Group Insurance Program offers health insurance coverage for retired and disabled members who are no longer covered by insurance administered by their former member employers. Commencing January 1, 1989, retired and disabled members of ASRS became eligible for the Health Insurance Premium Supplement Benefit Program (HBS). Effective July 29, 2010, members must have insurance provided by either their former employer or ASRS in order to be eligible for HBS. A detailed explanation of both the LTD and HBS programs is presented in the Additional Benefits section (Note 8).

Termination - Upon termination of employment, members can elect to receive all of their contributions made to the Plan, plus accrued interest at 4 percent.

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

| Years of Service | \% of Employer <br> Contributions |
| :---: | :---: |
| 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 are prepared using the accrual basis of accounting, under which expenses are recognized when the liability is incurred and revenues are recognized in the accounting period in which they are due, pursuant to statutory requirements. Contributions from employees and employers for service through June 30 are accrued. Contributions are considered to be fully collectible and, accordingly, no allowance for uncollectible receivables is reflected in the financial statements.

Benefit and refund payments are recognized when due and payable in accordance with the terms of the retirement health benefit supplement and long term disability plan.

Investment income derived from publically traded investments is recognized when earned and investment and other expenditures are recorded when incurred.

Investments - Investments include domestic and international equities, domestic fixed income, real estate, private equity, opportunistic, commodities and cash equivalent instruments.

Publically 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 Plan Net Position. Changes in fair values of derivative instruments are reported as net appreciation of fair value on the Statement of Changes in Plan Net Position.

The fair value of real estate, private equity and opportunistic 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, management, 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.

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

Net investment income from investment activities includes net appreciation in the fair value of investments, interest income, dividend income, real estate, private equity and opportunistic investment income and total investment expense. This includes investment management, real estate, private equity and opportunistic investment expenses and all other significant investment related costs.

There are certain market risks, credit risks, liquidity risks, foreign currency exchange risks, and event risks, which may subject ASRS to economic changes occurring in certain industries, sectors, or geographies. See Note 3 for a more in-depth discussion of risk.

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:

| 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 the year ended June 30, 2013, the ASRS did not have any capitalizable expenditures at or above the above stated thresholds.

Federal Income Tax Status - During the year ended June 30, 2013, 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, 2012, which is the latest available information. 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.

Comparative Data - The accompanying financial statements include certain prior-year summarized comparative information in total, not by fund. Such information should be read in conjunction with the ASRS' financial statements for the year ended June 30, 2012, from which the summarized information was derived.

New Accounting Pronouncements - Governmental Accounting Standards Board (GASB) Statement No. 60, Accounting and Financial Reporting for Service Concession Arrangements, was issued and is effective for periods beginning after December 15, 2011. There is no effect on the ASRS financial statements.

GASB Statement No. 61, The Financial Reporting Entity: Omnibus, was issued and is effective for periods beginning after June 15, 2012. This Statement amends GASB Statement No. 14, The Financial Reporting Entity, and GASB Statement No. 34, Basic Financial Statements and Management's Discussion and Analysis - For State and Local Governments. There is no effect on the ASRS financial statements.

GASB Statement No. 62, Codification of Accounting and Financial Reporting Guidance Contained in PreNovember 30, 1989 FASB and AICPA Pronouncements, was issued and is effective for periods beginning after December 15,2011 . As the ASRS had already incorporated applicable provisions, there is no effect on the ASRS financial statements.

GASB Statement No. 63, Financial Reporting of Deferred Outflows of Resources, Deferred Inflows of Resources,
and Net Position, was issued and is effective for periods beginning after December 15, 2011. There is no effect on the ASRS financial statements.

## 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 - 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.

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 enterprise of a like character and with like aims as that of the system, subject to certain statutory limitations and restrictions. 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 investments.

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

1. No more than 80 percent of the ASRS' assets may be invested at any given time in equities, measured at market value.
2. No more than 5 percent 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 percent of the ASRS' assets may be invested in non-U.S. public investments, measured at market value.
4. No more than 60 percent of the ASRS' assets may be invested internally, measured at market value.
5. No more than 10 percent of the ASRS' assets may be invested in bonds or other evidences of indebtedness of those multinational development banks in which the United States 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 percent 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 $\$ 40.9$ million and a payable for securities purchased of $\$ 334.4$ million at June 30, 2013.

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. All securities are registered in the name of the ASRS including loaned securities.

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 percent 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.

Notes to the Basic Financial Statements (continued)

## Investments by Investment Type

At June 30, 2013
(Dollars in Thousands)

| Investment | Retirement HBS |  | LTD | $\begin{gathered} 2013 \\ \text { Fair Value } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: |
| TEMPORARY INVESTMENTS |  |  |  |  |
| Cash and Cash Equivalents | \$ 765,900 | \$ | 2,070 | \$ 767,970 |
| Foreign Currency | 175,995 |  | - | 175,995 |
| Temporary Investments including U.S. Tbills | 1,045,231 |  | - | 1,045,231 |
| Total Temporary Investments | 1,987,126 |  | 2,070 | 1,989,196 |
| SECURITIES LENDING COLLATERAL |  |  |  |  |
| Domestic Equity | 13,248 |  | - | 13,248 |
| Non-U.S. Equity | 2,212 |  | - | 2,212 |
| Total Securities Lending Collateral | 15,460 |  | - | 15,460 |
| EQUITY SECURITIES |  |  |  |  |
| Domestic Equity | 12,117,793 |  | 121,928 | 12,239,721 |
| Non-U.S. Equity | 6,429,471 |  | 56,980 | 6,486,451 |
| Total Equity Securities | 18,547,264 |  | 178,908 | 18,726,172 |
| FIXED INCOME SECURITIES |  |  |  |  |
| Corporate Obligations | 2,442,463 |  | 16,375 | 2,458,838 |
| Government Obligations | 2,876,192 |  | 39,100 | 2,915,292 |
| Total Fixed Income Securities | 5,318,655 |  | 55,475 | 5,374,130 |
| OTHER INVESTMENTS |  |  |  |  |
| Real Estate | 1,704,031 |  | 19,183 | 1,723,214 |
| Private Equity | 1,705,094 |  | - | 1,705,094 |
| Opportunistic | 1,262,193 |  | - | 1,262,193 |
| Total Other Investments | 4,671,318 |  | 19,183 | 4,690,501 |
| TOTAL INVESTMENTS AT FAIR VALUE | 30,539,823 |  | 255,636 | 30,795,459 |
| Short Term Investment Receivables | 1,011,296 |  | - | 1,011,296 |
| Short Term Investment Payables | $(1,287,742)$ |  | - | $(1,287,742)$ |
| INVESTMENTS AT FAIR VALUE - NET | \$30,263,377 | \$ | 255,636 | \$30,519,013 |

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 specific 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.

The following table presents the fixed income investments at June 30, 2013 categorized to give an indication of the level of risk assumed by ASRS:

## Debt Securities

## Credit Quality Risk (Fixed Income Securities)

## At June 30, 2013

(Dollars in Thousands)

|  |  | Fair Value as <br> Percent of Total <br> Moody's <br> Credit Rating |
| :--- | ---: | ---: |
| Fair Value | Investments |  |
| Aa1-Aa3 | $\$$ | 211,899 |
| A1-A3 | $1,967,781$ | $3.94 \%$ |
| Baa1-Baa3 | 501,097 | $36.63 \%$ |
| Ba1-Ba3 | 608,942 | $9.32 \%$ |
| B1-B3 | 364,953 | $11.33 \%$ |
| Caa1-Caa3 | 579,746 | $6.79 \%$ |
| Ca-C | 245,311 | $10.79 \%$ |
| D | 19,351 | $4.56 \%$ |
| NR | 14,435 | $0.36 \%$ |
| NA | 2,269 | $0.27 \%$ |
| Total $^{\mathbf{1}}$ | $\mathbf{8}$ | $\mathbf{5 , 3 7 4 , 1 3 0}$ |

[^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 uses effective duration to identify and man-
age 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, 2013
(Dollars in Thousands)

| Investment | Fair Value | Effective Duration <br> (in years) |
| :--- | ---: | ---: |
| DOMESTIC FIXED INCOME INVESTMENTS |  |  |
| Asset Backed Securities | $\$$ | 220,534 |
| Commercial Mortgage Backed | 156,333 | 7.7 |
| Corporate Bonds | $2,035,548$ | 2.8 |
| Non-Government Backed CMO's | 46,423 | 10.6 |
| Total Corporate Bonds | $\mathbf{2 , 4 5 8 , 8 3 8}$ |  |
| GOVERNMENT BONDS |  |  |
| Government Related | 329,312 | 7.5 |
| Government Agencies CMO's | 18,975 | 7.1 |
| Government Bonds | $1,718,469$ | 5.7 |
| Government Mortgage Backed | 848,536 | 3.4 |
| Total Government Bonds | $\mathbf{2 , 9 1 5 , 2 9 2}$ |  |
| TOTAL DEBT SECURITIES | $\mathbf{5}$ | $\mathbf{5 , 3 7 4 , 1 3 0}$ |

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 allowed to invest part of its assets in foreign investments. According to Arizona State statutes, no more than 40 percent 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, 2013
(Dollars in Thousands)

| Currency Type | Temporary Investments |  | Fixed Income |  | Equity Securities |  | Real Estate |  | Private Equity |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Australian Dollar | \$ | 147 | \$ | - | \$ | 50,462 | \$ | - | \$ | \$ | 50,609 |
| Brazilian Real |  | 56 |  | 81,850 |  | 1,573 |  | - | - |  | 83,479 |
| Canadian Dollar |  | 15 |  | 4,495 |  | 50,793 |  | - | - |  | 55,303 |
| Columbian Peso |  | 282 |  | 19,387 |  | - |  | - | - |  | 19,669 |
| Danish Krone |  | - |  | - |  | 24,745 |  | - | - |  | 24,745 |
| Euro Currency |  | 14,385 |  | 9,882 |  | 491,156 |  | 33,793 | 183,342 |  | 732,558 |
| Hong Kong Dollar |  | 134 |  | - |  | 65,698 |  | - | - |  | 65,832 |
| Hungarian Forint |  | - |  | 9,764 |  | - |  | - | - |  | 9,764 |
| Indonesian Rupiah |  | 47 |  | 33,848 |  | - |  | - | - |  | 33,895 |
| Israeli Shekel |  | 11 |  | - |  | 2,826 |  | - | - |  | 2,837 |
| Japanese Yen |  | 2,028 |  | - |  | 369,721 |  | - | - |  | 371,749 |
| Mexican Peso |  | 4,428 |  | 81,459 |  | (193) |  | 124,663 | - |  | 210,357 |
| Malaysian Ringgit |  | 570 |  | 55,729 |  | (13) |  | - | - |  | 56,286 |
| New Russian Ruble |  | 123 |  | 30,767 |  | - |  | - | - |  | 30,890 |
| New Zealand Dollar |  | 1 |  | - |  | 1,612 |  | - | - |  | 1,613 |
| Nigerian Naira |  | 391 |  | 9,213 |  | - |  | - | - |  | 9,604 |
| Norwegian Krone |  | 9 |  | - |  | 10,164 |  | - | - |  | 10,173 |
| Peruvian Nouveau Sol |  | - |  | 9,003 |  | - |  | - | - |  | 9,003 |
| Philippine Peso |  | - |  | 3,137 |  | - |  | - | - |  | 3,137 |
| Polish Zloty |  | - |  | 26,539 |  | - |  | - | - |  | 26,539 |
| Pound Sterling |  | 5,014 |  | 745 |  | 465,613 |  | - | - |  | 471,372 |
| Singapore Dollar |  | 28 |  | - |  | 58,323 |  | - | - |  | 58,351 |
| South African Rand |  | 696 |  | 57,123 |  | 4,065 |  | - | - |  | 61,884 |
| South Korean WON |  | 21 |  | - |  | 18,748 |  | - | - |  | 18,769 |
| Swedish Krone |  | - |  | - |  | 46,482 |  | - | - |  | 46,482 |
| Swiss Franc |  | 57 |  | - |  | 205,403 |  | - | - |  | 205,460 |
| Taiwan Dollar |  | 19 |  | - |  | 6,928 |  | - | - |  | 6,947 |
| Thailand Baht |  | 6 |  | 12,341 |  | - |  | - | - |  | 12,347 |
| Turkish Lira |  | 98 |  | 29,034 |  | - |  | - | - |  | 29,132 |
| Total | \$ | 28,566 | \$ | 474,316 | \$ | 1,874,106 |  | 158,456 | \$ 183,342 | \$ | 2,718,786 |

## 4. Securities Lending Program

Arizona Revised Statutes Section 38-715(D)(3) 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 percent of the market value of the loaned securities and maintains collateral at no less than 100 percent 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 Plan 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, 2013, the fair value of securities on loan was $\$ 871.7$ million; of which $\$ 14.8$ million were cash collateralized loans. Cash of $\$ 15.5$ million received as collateral for securities loaned was reinvested and had a net asset value of $\$ 14.8$ million as of June 30, 2013. The securities lending payable at June 30 , 2013, was $\$ 15.5$ 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 is indemnified against gross negligence and borrower default by the lending agents, but is not indemnified against cash collateral reinvestment risk.

During the late summer and early fall of 2011, ongoing monitoring of ASRS securities lending exposure showed growing risks throughout Europe and in the European banking sector. In an effort to reduce the securities lending investment pools' exposure to the European banking sector, the ASRS substantially withdrew from securities lending in 2011. As a result, the market value of securities on loan decreased from $\$ 3.45$ billion as of June 30, 2011 to $\$ 49.4$ million at June 30, 2012. Throughout FY 13, the ASRS remained substantially withdrawn from securities lending, but did enter into opportunistic transactions to take advantage of highly profitable and relatively low risk trades. These opportunistic transactions were in place as of June 30, 2013 resulting in a market value of securities on loan of $\$ 871.7$ million as of the close of the fiscal year.

During fiscal year 2013, ASRS received cash of $\$ 8.9$ million as partial recovery of the securities lending unrealized loss recognized in fiscal year 2009.

## 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 Plan Net Position. Changes in fair values of derivative instruments are reported as net appreciation of fair value on the Statement of Changes in Plan Net Position.

The fair value balances and notional amounts of derivative instruments outstanding at June 30, 2013, classified by type, and the changes in fair value of derivative instruments for the year then ended as reported in the June 30, 2013 financial statements are as follows:

## Investment Derivatives by Type

(Dollars in Thousands)

| Investment Derivatives | Changes in Fair Value (1) |  | Fair Value at June 30, 2013 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Classification | Amount (2) | Classification | Amount (3) |  | onal (4) |
| Commodity Futures Long | Net Appreciation in Fair Value | \$ $(100,684)$ | Not Applicable | \$ |  | 300,018 |
| Commodity Futures Short | Net Appreciation in Fair Value | 27,359 | Not Applicable | - |  | (33) |
| Credit Default Swaps Bought | Net Appreciation in Fair Value | $(1,582)$ | Equity Securities | 231 | \$ | 41,803 |
| Credit Default Swaps Written | Net Appreciation in Fair Value | 197 | Equity Securities | 16 | \$ | 5,782 |
| Fixed Income Futures Long | Net Appreciation in Fair Value | $(1,726)$ | Not Applicable | - |  | 168,300 |
| Fixed Income Futures Short | Net Appreciation in Fair Value | (754) | Not Applicable | - |  | $(14,888)$ |
| Fixed Income Options Bought | Net Appreciation in Fair Value | (289) | Not Applicable | - |  |  |
| Fixed Income Options Written | Net Appreciation in Fair Value | 136 | Equity Securities | (4) |  | $(5,000)$ |
| Foreign Currency Futures Long | Net Appreciation in Fair Value | $(34,754)$ | Not Applicable | - |  | 295,022 |
| Foreign Currency Options Bought | Net Appreciation in Fair Value | 218 | Not Applicable | - |  | - |
| Foreign Currency Options Written | Net Appreciation in Fair Value | 65 | Equity Securities | (4) |  | $(2,000)$ |
| Foreign Currency Forwards | Net Appreciation in Fair Value | $(1,347)$ | Forward Contracts Receivable | $(5,197)$ | \$ | 892,592 |
| Index Futures Long | Net Appreciation in Fair Value | 243,626 | Not Applicable | - |  | 13,318 |
| Index Futures Short | Net Appreciation in Fair Value | (920) | Not Applicable | - |  | - |
| Pay Fixed Interest Rate Swaps | Net Appreciation in Fair Value | $(1,348)$ | Equity Securities | 425 | \$ | 3,100 |
| Receive Fixed Interest Rate Swaps | Net Appreciation in Fair Value | $(1,553)$ | Equity Securities | $(1,986)$ | \$ | 74,750 |
| Rights | Net Appreciation in Fair Value | (39) | Equity Securities | 22 | \$ | 722 |
| Warrants | Net Appreciation in Fair Value | (86) | Equity Securities | 90 | \$ | 244 |
| Total |  | \$ 126,519 |  | \$ $(6,407)$ |  |  |

(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)

| Counterparty Name | Total Net Exposure |  | Risk Concentration | S\&P | RATING Fitch | Moody's |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bank of America N.A. | \$ | 154 | 1.52\% | A | A | A3 |
| Bank of New York |  | 1 | 0.01\% | A+ | AA- | AA3 |
| Barclay's Bank |  | 1,087 | 10.73\% | A+ | A | A2 |
| BNP Paribas, S.A. |  | 147 | 1.45\% | A+ | A+ | A2 |
| Citibank N.A. |  | 626 | 6.18\% | A | A | A3 |
| Credit Suisse |  | 275 | 2.72\% | A+ | A | A1 |
| Deutsche Bank London |  | 754 | 7.44\% | A+ | A+ | A2 |
| Goldman Sachs |  | 259 | 2.56\% | A- | A | A3 |
| HSBC Bank USA |  | 157 | 1.55\% | AA- | AA- | A1 |
| JP Morgan Chase Bank N.A. |  | 2,293 | 22.63\% | A+ | A+ | Aa3 |
| Morgan Stanely and Co. Inc. |  | 205 | 2.02\% | A- | A | Baa1 |
| Royal Bank of Canada |  | 142 | 1.40\% | AA- | AA | Aa3 |
| Royal Bank of Scotland, PLC |  | 150 | 1.48\% | A | A | A3 |
| Societe Generale |  | 263 | 2.59\% | A | A+ | A2 |
| Standard Chartered Bank |  | 1,248 | 12.31\% | AA- | AA- | A1 |
| State Street Bank and Trust Co. |  | 89 | 0.88\% | AA- | A+ | Aa2 |
| USB AG |  | 2,066 | 20.39\% | A | A | A2 |
| Westpac Banking Corporation |  | 217 | 2.14\% | AA- | AA- | Aa2 |
| Total | \$ | 10,133 | 100.00\% |  |  |  |

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.

ASRS' derivatives do not have contingent features.

The aggregate fair value of investment derivative instruments in asset positions at June 30, 2013 was $\$ 10.1$ million. This represents the maximum amount of loss in case of default of all counterparties for the aggregated (positive) fair value of over-the-counter positions as of June 30, 2013. There was no collateral received or netting arrangements in place at June 30, 2013 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, 2013, for the year then ended as reported in the June 30, 2013 financial statements are as follows:

## Interest Rate Risk for Interest Rate Swap

(In Thousands)

| Asset ID | Asset Description | Interest Rate | Fair Value |  | Notional |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PAY FIXED INTEREST RATE SWAPS |  |  |  |  |  |  |
| $\begin{aligned} & \text { 99S0EIVKO/ } \\ & \text { 99S0EIVL8 } \end{aligned}$ | BWU002SFO IRS USD R V 03MLIBOR / BWU002SFO IRS USD P F 2.75000 | 2.75\% | \$ | 425 | \$ | 3,100 |
| Total Pay Fixed Interest Rate Swaps |  |  | \$ | 425 | \$ | 3,100 |
| RECEIVE FIXED INTEREST RATE SWAPS |  |  |  |  |  |  |
| $\begin{aligned} & \text { 99S0CHEZO/ } \\ & \text { 99S0CHF06 } \end{aligned}$ | SWU0083W7 IRS CAD R F 2.00000 / SWU0083W7 IRS CAD P V 03MCDOR | 2.00\% | \$ | (3) | \$ | 7,868 |
| 99S0CKO58/ 99S0CKO66 | SWU000609 IRS CAD R F 2.25000 / SWU000609 IRS CAD P V 03MCDOR | 2.25\% |  | (3) |  | 6,351 |
| $\left\lvert\, \begin{aligned} & 99 \text { SOEIJN8/ } \\ & 99 S 0 E I J O 6 \end{aligned}\right.$ | SWU002S11 IRS ZAR R F 6.50000 / SWU002S11 IRS ZAR P V 03MJHBRG | 6.55\% |  | (57) |  | 997 |
| $\begin{aligned} & \text { 99S0EM2K3/ } \\ & \text { 99S0EM2L1 } \end{aligned}$ | SWU023WC8 IRS BRLR F 8.65000 / SWU023WC8 IRS BRL P V 00MCETIP | 8.65\% |  | (38) |  | 815 |
| $\begin{aligned} & \text { 99S0EOQE7/ } \\ & \text { 99S0EOQF4 } \end{aligned}$ | SWU0031Z3 IRS ZAR R F 6.50000 / SWU0031Z3 IRS ZAR P V 03MJIBAR | 6.50\% |  | (294) |  | 5,127 |
| $\begin{aligned} & \text { 99S0EPYZ8/ } \\ & 99 S 0 E P Z 04 \end{aligned}$ | SWU023FY9 IRS BRL R F 8.16000 / SWU023FY9 IRS BRL P V 00MBRCDI | 8.16\% |  | (89) |  | 4,980 |
| $\begin{aligned} & \text { 99S0F2PN5/ } \\ & \text { 99S0F2PO3 } \end{aligned}$ | SWU0283Z8 IRS BRLRF 8.94000 / SWU0283Z8 IRS BRL P V 00MBRCDI | 8.94\% |  | (568) |  | 13,988 |
| $\begin{aligned} & \text { 99S0F3K81/ } \\ & \text { 99S0F3K99 } \end{aligned}$ | SWU023N12 IRS BRLRF 8.48500 / SWU023N12 IRS BRL P V 00MBRCDI | 8.49\% |  | (163) |  | 11,860 |
| $\begin{aligned} & \text { 99S0F4N52/ } \\ & 99 S 0 F 4 N 60 \end{aligned}$ | SWU003JU5 IRS MXN R F 5.50000 / SWU003JU5 IRS MXN P V 01MTIIE | 5.50\% |  | (134) |  | 1,704 |
| 99S0FDS57/ <br> 99S0FDS65 | SWU003SX9 IRS BRLR F 8.87500 / SWU003SX9 IRS BRL P V 00MBRCDI | 8.88\% |  | (572) |  | 13,173 |
| 99S0FFWB4/ 99S0FFWC2 | SWU003VI8 IRS MYR R F 3.36000 / SWU003VI8 IRS MYR P V 03MKLIBO | 3.36\% |  | (13) |  | 1,200 |
| $\begin{aligned} & \text { 99S0FTO56/ } \\ & \text { 99S0FTO64 } \end{aligned}$ | SWU003NG1 IRS MXN R F 5.00000 / SWU003NG1 IRS MXN P V 01MTIIE | 5.00\% |  | (59) |  | 2,341 |
| $\begin{aligned} & \text { 99S0FZ5T1/ } \\ & \text { 99S0FZ5U8 } \end{aligned}$ | SWU004PQ5 IRS BRL R F 10.91000 / SWU004PQ5 IRS BRL P V 00MBRCDI | 10.91\% |  | 7 |  | 4,346 |
| Total Receive Fixed Interest Rate Swaps |  |  | \$ | $(1,986)$ | \$ | 74,750 |

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. Funding Status and Progress

Significant actuarial assumptions used in the June 30, 2012 Actuarial Valuation for the Retirement and the Health Insurance Premium Benefit Plans, the most recent actuarial valuation available, include: a rate of return on investment of present and future assets of 8 percent, compounded annually, projected salary increases ranging from 4 percent to 9 percent per year, inflation rate assumption of 3.25 percent, rates of disability, rates of withdrawal, rates of retirement, mortality rates, mortality rates after disability, valuation of assets using fair value with a ten-year phase-in of investment gains and losses, and the Projected Unit Credit (PUC) funding method. The unfunded accrued liability is amortized over a thirty-year rolling period with level dollar payments.

Significant actuarial assumptions used in the June 30, 2012 Actuarial Valuation for the Long Term Disability Plan, the most recent actuarial valuation available, are the same as those used in the valuation of the Retirement Plan and the Health Insurance Premium Benefit Plan. The Long Term Disability Plan valuation uses the Projected Unit Credit (PUC) method of funding. Assets
are valued at market, plus (or minus) an adjustment to reflect investment gains (or losses) over a ten year period. The unfunded actuarial accrued liability is amortized over a rolling fifteen years in level dollar payments. All assumptions used in the actuarial valuations are based on five year experience studies. The ASRS Board approves all substantive actuarial assumptions and methods.

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 subject 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.

Schedules of employer contributions, also presented as required supplementary information following the notes to the financial statements, present trend information about the amounts contributed to the plan by employers in comparison to the annual required contribution (ARC).

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

| Actuarial Valuation June 30 | Actuarial Value of Assets a | Actuarial Accrued Liability Projected Unit-Credit $\qquad$ b |  | unded <br> uarial <br> rued <br> bility <br> -a) | Funded Ratio (a/b) |  | overed ayroll <br> c | UAAL as a Percentage of Covered Payroll $[(b-a) / c]$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| RETIREMENT PLAN |  |  |  |  |  |  |  |  |
| 2012 | \$ 28,948 | \$ 38,450 | \$ | 9,502 | 75.3\% |  | 8,869 | 107.1\% |
| HEALTH INSURANCE PREMIUM BENEFIT |  |  |  |  |  |  |  |  |
| 2012 | \$ 1,282 | \$ 1,502 | \$ | 220 | 85.3\% |  | 8,869 | 2.5\% |
| LONG TERM DISABILITY PROGRAM |  |  |  |  |  |  |  |  |
| 2012 | \$ 296 | \$ 440 | \$ | 144 | 67.3\% |  | 8,869 | 1.6\% |

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 thirty-year rolling period for the Retirement and HBS plans and over a fifteen-year period for the LTD plan.

The funding progress and the ARC have been actuarially determined in accordance with the parameters of GASB Statement 25 for the Retirement Plan and GASB Statement 43 for the Health Benefit Supplement and LTD Plans.

Projections of benefits for financial reporting purposes are based on the substantive plan and include the types of benefit 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.

## 7. Contributions Required and Contributions Made

The Arizona State Statutes provide statutory authority for determining the employees' and employers' contribution amounts as a percentage of covered payrolls. Employers are required to contribute at the same total rate as employees. Employees' contributions are applied towards the Retirement Plan and LTD. Employers' contributions are applied towards the Retirement Plan, Health Insurance Premium Supplement Plan, and the LTD Plan. There is no legal or contractual maximum contribution rate for employees or employers.

Legislation, which became law as of July 1, 2005, requires annual contribution rate calculations for all fiscal years beginning after fiscal year end 2007. The actuarial assumptions used in this measure are those adopted by the ASRS' Board in November 2009 and November 2011. The contribution rates for the retirement, the health insurance premium supplement and the long term disability plans were actuarially determined using the projected unit credit (PUC) funding method.

Each employer and each member contribute at a rate of one-half the total percent of pay needed to pay the normal cost of the Plan and to amortize the unfunded actuarial accrued liability over a rolling thirty-year period for the retirement plan and the health insurance supplement plan. The long term disability plan uses a rolling fifteen-year period to reflect the shorter duration of LTD benefits.

Beginning July 1, 2012, legislation was enacted to provide for an Alternate Contribution Rate (ACR) that an ASRS employer is required to pay for retired members who return to work in positions that would typically be filled by an employee that contributes to ASRS. The ACR for the year ended June 30, 2013 was 8.64 percent ( 8.46 percent retirement and .18 percent LTD).
ACR contributions totaling $\$ 21.8$ million were received in FY13 and are included in Employer Contributions on the Statement of Changes in Net Position.

Notes to the Basic Financial Statements (continued)

The contribution rates for the years ended June 30, 2013 and 2012 were as follows:

|  | (2011 Valuation) <br> For the contribution period ending June 30, 2013 |  | (2010 Valuation) <br> For the contribution period ending June 30, 2012 |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
|  | Amount | Percent of Covered Payroll | Amount | Percent of Covered Payroll |
| RETIREMENT |  |  |  |  |
| Normal cost | \$ 1,170,467,758 | 12.92\% | \$ 1,215,140,371 | 12.90\% |
| Amortization of under-funded past service liability | 745,797,074 | 8.23\% | 699,150,795 | 7.47\% |
| Retirement Total | 1,916,264,832 | 21.15\% | 1,914,291,166 | 20.37\% |
| HEALTH PREMIUM BENEFIT TOTAL |  |  |  |  |
| Normal cost | 38,425,708 | 0.42\% | 40,276,497 | 0.43\% |
| Amortization of under-funded past service liability | 21,116,897 | 0.23\% | 19,262,240 | 0.20\% |
| Health Premium Benefit Total | 59,542,605 | 0.65\% | 59,538,737 | 0.63\% |
| LONG TERM DISABILITY |  |  |  |  |
| Normal cost | 28,164,635 | 0.30\% | 30,456,285 | 0.32\% |
| Amortization of under-funded past service liability | 16,027,178 | 0.18\% | 17,087,235 | 0.18\% |
| Long Term Disability Total | 44,191,813 | 0.48\% | 47,543,520 | 0.50\% |
| ACTUARIAL TOTAL | 2,019,999,250 | 22.28\% | 2,021,373,423 | 21.50\% ${ }^{2}$ |
| CONTRIBUTIONS MADE AS A PERCENTAGE OF THE CURRENT YEAR COVERED PAYROLL ${ }^{1}$ |  |  |  |  |
| Employers' Retirement | 889,580,056 | 10.25\% | 850,456,018 | 9.87\% |
| Employees' Retirement | 948,003,563 | 10.90\% | 905,967,958 | 10.50\% |
| Employers' Health Premium Benefit | 56,572,846 | 0.65\% | 54,462,585 | 0.63\% |
| Employers' Long Term Disability | 20,880,949 | 0.24\% | 20,998,181 | 0.24\% |
| Employees' Long Term Disability | 20,880,949 | 0.24\% | 20,998,181 | 0.24\% |
| Total | \$ 1,935,918,363 | 22.28\% | \$ 1,852,882,923 | 21.48\% ${ }^{2}$ |

${ }^{1}$ Retirement contributions from the employer for 2013 and 2012, exclude employer unfunded liabilities related to early termination incentive offers of $\$ 931,385$ and $\$ 1,711,105$, respectively. In addition, the 2013 retirement contributions from employers excludes $\$ 20,788,239$ in ACR contributions. Health Premium Benefit and LTD employer contributions for 2013, exclude ACR contributions of $\$ 580,684$ and $\$ 455,002$, respectively. Early incentive offers and ACR are not part of the required contribution rate.
${ }^{2}$ The difference is due to rounding adjustment resulting from the retroactive reversion of the contribution rate from 53/47 back to 50/50 as of July 1, 2011.

The statutory contribution rate and actuarially determined contribution rate for the year ended June 30, 2012 was 10.74 percent for both the employees' and employers' portion. (Employees paid 10.50 percent retirement and .24 percent long term disability. Employers paid 9.87 percent retirement, .63 percent for the health insurance premium supplement and .24 percent for long term disability.) This rate was determined by the 2010 actuarial valuation. It is applied to the covered payroll to determine the employee and employer contri
butions. The statutory contribution rate and the actuarially determined contribution rate for the year ended June 30, 2013 was 11.14 percent for both the employees' and employers' portion. (Employees paid 10.90 percent retirement and .24 percent long term disability. Employers paid 10.25 percent for retirement, .65 percent for the health insurance premium supplement and .24 percent for long term disability.) This rate was determined by the 2011 actuarial valuation. It is applied to the covered payroll to determine the employee and
employer contributions. GASB Statement No. 25 defines covered payroll as all elements included in compensation paid to active employees on which contributions to a pension plan are based.

Early termination incentive offers billed to employers of $\$ 931,385$ are included in total employer contributions for the year ended June 30, 2013. Pursuant to A.R.S. §38-749, employers must pay any unfunded liability resulting from termination incentive programs that they offer if the incentive results in an actuarial unfunded liability to ASRS. The unfunded liabilities were calculated by ASRS' actuary.

## 8. Additional Benefits

In addition to the pension benefits described, the ASRS offers the Retiree Group Insurance Program and the Health Insurance Premium Benefit Program to eligible retired and disabled members. A retired member is defined as a member actively receiving an annuity benefit and a disabled member is defined as a member receiving an LTD benefit through the LTD program administered by the ASRS. The employees' and member employers' each contributed .24 percent of compensation to the LTD fund in FY 13 and .24 percent in FY 12.

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. As of June 30, 2013, more than 47,469 coverage agreements currently exist for retired and disabled members and their dependents.

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. This assistance is provided to those members who elect group coverage through either the ASRS Retiree Group Insurance Program or their former member employer.

In FY 13, the employer's retirement contribution of 10.25 percent of compensation included .65 percent for the Health Premium Insurance Supplement.

Members who retire after December 31, 2003, can elect to receive a reduced premium benefit so that an eligible contingent annuitant may continue to receive a premium benefit after the member's death. The ASRS reimbursed approximately $\$ 95.8$ million and $\$ 94.0$ million towards the cost of group health insurance coverage for the years ended June 30, 2013 and 2012, respectively.

Notes to the Basic Financial Statements (continued)

The following chart illustrates the maximum amount of the monthly available benefit for eligible members and their dependents:

| Years of Credited Service | Percent of Premium Benefit | WITHOUT MEDICARE |  |  |  | WITH MEDICARE A\&B |  |  |  | COMBINATIONS |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Retiree Only |  | Retiree \& Dependents |  | Retiree Only |  | Retiree \& Dependents |  |  <br> Dependent, One with Medicare, the other without |  | Retiree \& Dependent with Medicare, other dependent without |  |
| 5.0-5.9 | 50 percent | \$ | 75 | \$ | 130 | \$ | 50 | \$ | 85 | \$ | 107.50 | \$ | 107.50 |
| 6.0-6.9 | 60 percent |  | 90 |  | 156 |  | 60 |  | 102 |  | 129.00 |  | 129.00 |
| 7.0-7.9 | 70 percent |  | 105 |  | 182 |  | 70 |  | 119 |  | 150.50 |  | 150.50 |
| 8.0-8.9 | 80 percent |  | 120 |  | 208 |  | 80 |  | 136 |  | 172.00 |  | 172.00 |
| 9.0-9.9 | 90 percent |  | 135 |  | 234 |  | 90 |  | 153 |  | 193.50 |  | 193.50 |
| 10.0+ | 100 percent |  | 150 |  | 260 |  | 100 |  | 170 |  | 215.00 |  | 215.00 |

## 9. 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.

## 10. Commitments

In connection with the purchase of various limited partnership interests in real estate, private equity and opportunistic investment portfolios, the ASRS has commitments totaling $\$ 4.1$ billion. Remaining unfunded commitments for real estate, private equity and opportunistic investments are $\$ 1.0$ billion, $\$ 1.8$ billion and $\$ 1.3$ billion, respectively, as of June 30, 2013.

## 11. 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.

## 12. 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. Required supplementary information prepared in accordance with the parameters of GASB Statement No. 25 and GASB Statement No. 43 is included immediately following the Notes to the Financial Statements.

## 13. Retirement Plans

All eligible ASRS employees participate in the Arizona State Retirement System. The ASRS is a cost-sharing, multiple-employer, defined benefit 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 A.R.S. The Long Term Disability Program is administered in accordance with Title 38, Chapter 5, Article 2.1

The ASRS Retirement Plan provides retirement, disability benefits and survivor benefits to members and their beneficiaries. 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 (LTD) benefits, respectively.

Effective July 1, 1995, the ASRS has established a fund for each benefit program and has reported those funds in the combined financial statements. The financial statements of the ASRS include the financial activities of all the above funds. The Board, appointed by the governor and confirmed by the Arizona State Senate, manages the ASRS.

The contribution rate is established and may be amended by the Board. The contribution rates for the Retirement, the HBS and the LTD plans are actuarially determined using the PUC funding method. There is no legal or contractual maximum contribution rate for employees or employers. The statutory contribution rates for the years ended June 30, 2013 and June 30, 2012, were 11.14 percent ( 10.90 percent retirement and .24 percent LTD) and 10.74 (10.50 percent retirement and .24 percent LTD), respectively. All eligible ASRS employees were required to contribute 11.14 percent of their annual covered salary, and the ASRS, as the employer, was required to match these contributions.

The contributions received were equal to the required contributions. The ASRS collects the contributions and remits them to the Plan. Employee contributions, except for LTD, are excluded from gross income for federal and state income tax purposes and earn interest at the rate of 8 percent per annum.

Beginning July 1, 2012, legislation was enacted to provide for an Alternate Contribution Rate (ACR) that an ASRS employer is required to pay for retired members
who return to work in positions that would typically be filled by an employee that contributes to ASRS. The ASRS, as the employer, paid these contributions on behalf of its return to work employees. The ACR for the year ended June 30, 2013 was 8.64 percent ( 8.46 percent retirement and .18 percent LTD).

Refunds to employees always include employee contributions, plus interest. The interest rate applied to account balances is set at 8 percent for purposes of survivor benefits, the same as the ASRS assumed earnings rate. However, for purposes of withdrawal only, interest of 4 percent is applied to balances accumulated after July 1,2005 , and interest of 2 percent is applied to balances accumulated after July 1, 2013. Members who join the ASRS on or after July 1, 2011 do not receive any employer contributions when refunding, unless separation is due to a reduction-in-force or position elimination.

The Plan provides benefits under formulas and provisions described in the law. Benefits and administrative expenses are paid from funds contributed by members and employers and from earnings on the invested funds.

Retirement benefits are calculated on the basis of age, average monthly compensation and service credit, which is established on a fiscal year basis (July 1 to June 30). The benefit is based on a percentage of average monthly compensation multiplied by the years of service credit.

Qualified ASRS employees are eligible for a LTD benefit in the event they become unable to perform their work. The Retiree Group Insurance Program offers health insurance coverage for both retired and disabled members.

Refer to Note 6 of these financial statements for current information regarding the funding status and progress of the retirement, health insurance premium benefit and the long term disability plans.

Notes to the Basic Financial Statements (continued)

The ASRS, as the employer, made contributions for the past three years as follows:

| Fiscal <br> Year | Salary <br> Base $^{1}$ |  | Retirement <br> Contributions | HBS <br> Contributions | LTD <br> Contributions | Total <br> Contributions | \% of Required <br> Contributions |  |
| :---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 2011 | $\$ 10,170,633$ | $\$$ | 915,762 | $\$$ | 59,958 | $\$$ | 26,090 | $\$$ |
| 2012 | $11,351,146$ | $1,090,891$ | 73,347 | 27,632 | $1,191,870$ | $100 \%$ |  |  |
| 2013 | $11,546,693$ | $1,202,742$ | 75,718 | 28,024 | $1,306,484$ | 2 | $100 \%$ |  |

${ }^{1}$ Represents salaries paid by ASRS as an employer on which contributions have been calculated.
2 Includes ACR contributions of $\$ 30,800$.

## 14. Significant New Legislation

See Introductory Section for a complete listing of new legislation.

## 15. Early Retiree Reinsurance Program

The ASRS participated in the Early Retiree Reinsurance Program (ERRP) beginning in FY 12. ERRP is managed by the U.S. Department of Health and Human Services and reimburses employers for pre-Medicare health care costs. The ERRP was designed to provide financial assistance to health plan sponsors that make coverage available to early retirees (aged 55 and older) that are not yet eligible for Medicare. The program stipulates that the funds may only be used to:

- Reduce contribution levels (premiums) for all plan participants, to the extent possible, to 2009 levels,
- Mitigate ASRS health benefit cost increases while keeping minimum funding to at least 2009 levels,
- Hold in escrow to maintain member contributions and mitigate health benefit cost increases in future years.

The funds must be used by December 31, 2014. ASRS received $\$ 19,978,334$ in ERRP revenue for the year ended June 30, 2012. No ERRP revenue was received for the year ended June 30, 2013. As of June 30, 2013 the ASRS has $\$ 18,283,301$, in ERRP money, available for use as stipulated.

## 16. Retrospective Rate Adjustment Refund

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 $\$ 25,825,525$ and $\$ 15,494,699$ in retrospective rate adjustment refunds for revenue and claims expense activity during calendar year 2013 and 2012, respectively.

## 17. Subsequent Events

The ASRS has evaluated subsequent events through October 22, 2013, the date the financial statements were available to be issued. Events or transactions occurring after June 30, 2013, but prior to October 22, 2013 that provided additional evidence about conditions that existed at June 30, 2013 have been recognized in the financial statements for the year ended June 30, 2013. Events or transactions that provided evidence about conditions that did not exist at June 30, 2013 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, 2013.

## REQUIRED SUPPLEMENTARY INFORMATION

## Schedule of Funding Progress

For Year Ended June 30, 2013
(Dollars in Millions)

| Actuarial Valuation Date June 30 | Actuarial Value of Assets a |  |  | Actuarial Accrued Liability rojected nit-Credit b |  | nded uarial rued bility <br> - a) | Funded Ratio (a/b) |  | overed Payroll C | Unfunded Actuarial Accrued Liability as a Percentage of Covered Payroll [(b-a)/c] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| RETIREMENT FUND |  |  |  |  |  |  |  |  |  |  |
| 2007 | \$ | 25,310 | \$ | 30,390 | \$ | 5,080 | 83.3 \% | \$ | 9,162 | 55.4 \% |
| 2008 |  | 26,613 |  | 32,425 |  | 5,812 | 82.1 |  | 9,708 | 59.9 |
| 2009 |  | 27,094 |  | 34,290 |  | 7,196 | 79.0 |  | 9,835 | 73.2 |
| 2010 |  | 38,683 |  | 36,073 |  | 8,501 | 76.4 |  | 9,420 | 90.2 |
| 2011 |  | 27,984 |  | 37,051 |  | 9,067 | 75.5 |  | 9,061 | 100.1 |
| 2012 |  | 28,948 |  | 38,450 |  | 9,502 | 75.3 |  | 8,869 | 107.1 |
| HEALTH INSURANCE PREMIUM BENEFIT |  |  |  |  |  |  |  |  |  |  |
| 2007 | \$ | 1,167 | \$ | 1,605 | \$ | 438 | 72.7 \% | \$ | 9,162 | 4.8 \% |
| 2008 |  | 1,239 |  | 1,446 |  | 207 | 85.7 |  | 9,708 | 2.1 |
| 2009 |  | 1,266 |  | 1,452 |  | 186 | 87.2 |  | 9,835 | 1.9 |
| 2010 |  | 1,251 |  | 1,485 |  | 234 | 84.2 |  | 9,420 | 2.5 |
| 2011 |  | 1,247 |  | 1,504 |  | 257 | 82.9 |  | 9,061 | 2.8 |
| 2012 |  | 1,282 |  | 1,502 |  | 220 | 85.3 |  | 8,869 | 2.5 |
| LONG TERM DISABILITY PROGRAM |  |  |  |  |  |  |  |  |  |  |
| 2007 | \$ | 232 | \$ | 604 | \$ | 372 | 38.4 \% | \$ | 9,162 | 4.1 \% |
| 2008 |  | 275 |  | 553 |  | 278 | 49.7 |  | 9,708 | 2.9 |
| 2009 |  | 311 |  | 476 |  | 165 | 65.3 |  | 9,835 | 1.7 |
| 2010 |  | 319 |  | 477 |  | 158 | 66.9 |  | 9,420 | 1.7 |
| 2011 |  | 308 |  | 456 |  | 148 | 67.5 |  | 9,061 | 1.6 |
| 2012 |  | 296 |  | 440 |  | 144 | 67.3 |  | 8,869 | 1.6 |

Values shown for dates on or after 2010 include System assets and liabilities for members whom retired or will retire on or after July, 11981.

See Notes to Required Supplementary Information.

## Schedule of Contributions from the Employer and Other Contributing Entities

For Year Ended June 30, 2013
(Dollars in Thousands)

|  | RETIREMENT BENEFIT | LONG TERM DISABILITY <br> BENEFIT |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | Annual <br> Required <br> Contribution | Percentage <br> Contributed | Annual <br> Required <br> Contribution | Percentage <br> Contributed |
| 2008 | $\$$ | 759,482 | $100 \%$ | $\$$ |
| 2009 | 754,044 | 100 | 47,171 | $100 \%$ |
| $2010^{\mathbf{1}}$ | 749,636 | 100 | 47,213 | 100 |
| $2011^{\mathbf{2}}$ | 782,347 | 100 | 35,939 | 100 |
| $2012^{\mathbf{3}}$ | 850,456 | 100 | 21,689 | 100 |
| $2013^{4}$ | 889,580 | 100 | 20,998 | 100 |
|  |  |  | 20,881 | 100 |

${ }^{1}$ 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.
${ }^{2}$ 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.
${ }^{3}$ 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.
${ }^{4}$ The 2013 required contributions from the employer for retirement fund reflect total employer contributions of 911,299,680 less $\$ 931,385$ of unfunded employer liability related to early termination incentive offers and $\$ 20,788,239$ in ACR contributions. The 2013 required contributions from the employer for the LTD fund reflect total employer contributions of $\$ 57,153,530$ less ACR contributions of $\$ 455,002$. Early incentive offers and ACR are not part of the required contribution rate.

${ }^{5}$ Other contributions represent Federal government reimbursements from the Early Retiree Reinsurance Program, and rate adjustment reimbursements from the insurance carrier.
${ }^{6}$ 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.

## 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.

The Projected Unit Credit (PUC) method is the actuarial cost method used in the valuations for the period ended June 30, 2012. The unfunded actuarial accrued liability is amortized over a 30 year rolling period for the Retirement Fund and the Health Insurance Premium Benefit. The Long Term Disability (LTD) Program's unfunded actuarial accrued liability is amortized over a rolling 15 year period to reflect the shorter duration of LTD benefits. The amortization method is the Level Dollar Method. The actuarial value of assets is the market value adjusted to phase in the recognition of investment gains and losses over a period of time. For 2002 and later years, the period is ten years. The investment return rate assumption is 8 percent per annum, compounded annually. The inflation rate assumption is 3.25 percent per annum. Members' salaries are assumed to increase at a rate of 4 percent to 9 percent per annum, depending on the length of service. The permanent benefit increase (PBI) reserve was zero as of June 30,2012 , as a result of the payment of the 2005 PBI .

## 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 judg-
ment 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 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 longestserviced 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, sexdistinct, 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 RP-2000 mortality study. Since longevity is greater for retirees with large incomes than for others, it is important to increase the liability for high-income 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 6 -month 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-toExpected ratios become $150 \%$ for males and $134 \%$ for females with annual 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.


## Additional Supplementary Information

## Combining Schedule of Retirement Net Position

For the Year Ended June 30, 2013
(Dollars in Thousands)

|  | Retirement Plan |  | Retirement System |  | Combined 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ASSETS |  |  |  |  |  |  |
| Cash | \$ | 25,729 | \$ | 4 | \$ | 25,733 |
| Prepaid benefits |  | - |  | - |  | - |
| Total cash and prepaids |  | 25,729 |  | 4 |  | 25,733 |
| RECEIVABLES |  |  |  |  |  |  |
| Accrued interest \& dividends |  | 64,949 |  | 762 |  | 65,711 |
| Securities sold |  | 38,683 |  | 502 |  | 39,185 |
| Forward contracts |  | 850,777 |  | 13,208 |  | 863,985 |
| Contributions |  | 67,161 |  | - |  | 67,161 |
| Due from other funds |  | - |  | 36 |  | 36 |
| Other |  | 493 |  | 7 |  | 500 |
| Total receivables |  | 1,022,063 |  | 14,515 |  | 1,036,578 |
| INVESTMENTS AT FAIR VALUE |  |  |  |  |  |  |
| Temporary investments |  | 1,840,871 |  | 23,130 |  | 1,864,001 |
| Securities lending collateral |  | 14,593 |  | 219 |  | 14,812 |
| Equity securities |  | 17,563,832 |  | 213,798 |  | 17,777,630 |
| Fixed income securities |  | 5,017,128 |  | 79,727 |  | 5,096,855 |
| Real estate |  | 1,608,736 |  | 23,515 |  | 1,632,251 |
| Private equity |  | 1,631,641 |  |  |  | 1,631,641 |
| Opportunistic |  | 1,191,349 |  | 17,035 |  | 1,208,384 |
| Total investments |  | 28,868,150 |  | 357,424 |  | 29,225,574 |
| TOTAL ASSETS |  | 29,915,942 |  | 371,943 |  | 30,287,885 |
| LIABILITIES |  |  |  |  |  |  |
| Payable for securities purchased |  | 314,799 |  | 5,650 |  | 320,449 |
| Payable for securities lending collateral |  | 14,593 |  | 219 |  | 14,812 |
| Forward contracts payable |  | 838,814 |  | 12,946 |  | 851,760 |
| Due to other funds |  | 4,875 |  | 3,933 |  | 8,808 |
| Other |  | 65,818 |  | 808 |  | 66,626 |
| TOTAL LIABILITIES |  | 1,238,899 |  | 23,556 |  | 1,262,455 |
| NET POSITION HELD IN TRUST FOR PENSION/OPEB BENEFIT | \$ | 28,677,043 | \$ | 348,387 | \$ | 29,025,430 |

In accordance with GASB 25, 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. The Combining Schedule of Retirement Net Position and Changes in Retirement Net Position are presented here to provide members with more detailed information about the two plan components.

## Combining Schedule of Changes in Retirement Net Position

For the Year Ended June 30, 2013
(Dollars in Thousands)

| Additions | Retirement Plan | Retirement System | $\begin{gathered} \text { Combined } \\ 2013 \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| CONTRIBUTIONS |  |  |  |
| Member contributions | \$ 947,959 | \$ 45 | \$ 948,004 |
| Employer contributions | 911,255 | 45 | 911,300 |
| Federal government reimbursement | - | - | - |
| Retrospective rate adjustment reimbursement | - | - | - |
| Transfers from other plans | 1,233 | - | 1,233 |
| Purchased Service | 70,790 | - | 70,790 |
| Total Contributions | 1,931,237 | 90 | 1,931,327 |
|  |  |  |  |
| Net appreciation (depreciation) in fair value-public | 2,422,221 | 22,508 | 2,444,729 |
| Interest income | 183,199 | 4,896 | 188,095 |
| Dividends income | 332,339 | 10,633 | 342,972 |
| Real Estate income | 219,535 | 2,958 | 222,493 |
| Private Equity income | 228,223 | - | 228,223 |
| Opportunistic income | 136,755 | 1,776 | 138,531 |
| Other (expense) / income | $(2,405)$ | 64 | $(2,341)$ |
| Total income from investment activities | 3,519,867 | 42,835 | 3,562,702 |
| LESS INVESTMENT ACTIVITY EXPENSES |  |  |  |
| Management fees and monitoring services-public | $(62,889)$ | (956) | $(63,845)$ |
| Real estate expense | $(37,411)$ | (532) | $(37,943)$ |
| Private equity expense | $(55,934)$ | ) | $(55,934)$ |
| Opportunistic expense | $(22,617)$ | (285) | $(22,902)$ |
| Total investment activity expenses | (178,851) | $(1,773)$ | $(180,624)$ |
| Net income from investment activities | 3,341,016 | 41,062 | 3,382,078 |
| FROM SECURITIES LENDING ACTIVITIES (NOTE 4) |  |  |  |
| Security lending income / (expense) | 3,547 | $(1,368)$ | 2,179 |
| Unrealized gain on security lending | 6,832 | 1,595 | 8,427 |
| Total securities lending activities income | 10,379 | 227 | 10,606 |
| Security lending expenses |  |  |  |
| Interest rebate / (expense) | 1,320 | 26 | 1,346 |
| Management fees | (413) | (18) | (431) |
| Total securities lending activities expense | 907 | 8 | 915 |
| Net income from securities lending activities | 11,286 | 235 | 11,521 |
| Total net investment income | 3,352,302 | 41,297 | 3,393,599 |
| TOTAL ADDITIONS | 5,283,539 | 41,387 | 5,324,926 |
| Deductions |  |  |  |
| Retirement and disability benefits | 2,360,079 | 46,820 | 2,406,899 |
| Survivor benefits | 38,363 | 79 | 38,442 |
| Refunds to withdrawing members, including interest | 218,528 | 79 | 218,607 |
| Administrative expenses | 32,451 | 400 | 32,851 |
| Transfers to other plans | 725 | - | 725 |
| Other | 4,064 | 2 | 4,066 |
| TOTAL DEDUCTIONS | 2,654,210 | 47,380 | 2,701,590 |
| NET INCREASE (DECREASE) | \$ 2,629,329 | \$ $(5,993)$ | \$ 2,623,336 |
| NET POSITION HELD IN TRUST FOR PENSION/OPEB BENEFIT |  |  |  |
| Beginning of year <br> End of year | $\begin{array}{r} 26,047,714 \\ \$ 28,677,043 \end{array}$ | $\begin{array}{r} 354,380 \\ \$ \quad 348,387 \end{array}$ | $\begin{array}{r} 26,402,094 \\ \$ 29,025,430 \end{array}$ |

In accordance with GASB 25, 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. The Combining Schedule of Retirement Net Position and Changes in Retirement Net Position are presented here to provide members with more detailed information about the two plan components.

## Schedule of Additions by Source

(Dollars in Thousands)

|  | Employee <br> Contributions <br> Made | Employer <br> Contributions <br> Made | Investment <br> Income <br> (Loss) | Purchased <br> Service and <br> Other | Total |  |  |
| :---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 2004 | $\$$ | 413,462 | $\$$ | 413,458 | $\$$ | $3,228,785$ | $\$$ |
| 2005 | 442,643 | 442,643 | 113,944 | $\$$ | $4,169,649$ |  |  |
| 2006 | 612,121 | 612,121 | $2,230,992$ | 141,932 | $2,830,610$ |  |  |
| 2007 | 811,480 | 811,535 | $4,310,518$ | 125,751 | $3,580,932$ |  |  |
| 2008 | 904,984 | 905,680 | $(2,072,441)$ | 107,548 | $6,041,081$ |  |  |
| 2009 | 891,753 | 891,747 | $(4,673,490)$ | 72,436 | $(166,551)$ |  |  |
| 2010 | 844,847 | 858,431 | $3,028,216$ | 73,973 | $4,805,467$ |  |  |
| 2011 | 854,976 | 859,399 | $5,704,452$ | 70,812 | $7,489,639$ |  |  |
| 2012 | 926,966 | 927,628 | 338,728 | 89,132 | $2,282,454$ |  |  |
| 2013 | 968,885 | 989,790 | $3,569,876$ | 97,849 | $5,626,400$ |  |  |

## Schedule of Deductions by Type

(Dollars in Thousands)

|  |  | Administration <br> Transfers and <br> Other |  |  |  |
| :---: | :---: | :---: | ---: | :---: | :---: |
| Year | Benefits | Refunds | Total |  |  |
| 2004 | $\$$ | $1,396,481$ | $\$$ | 36,212 | $\$$ |
| 2005 | $1,576,734$ | 44,164 | 35,745 | $\$$ | $1,468,438$ |
| 2006 | $1,703,215$ | 60,313 | 33,426 | $1,654,324$ |  |
| 2007 | $1,824,865$ | 77,910 | 39,395 | $1,802,923$ |  |
| 2008 | $1,944,283$ | 104,387 | 47,703 | $1,950,478$ |  |
| 2009 | $2,072,813$ | 120,689 | 210,432 | $2,259,102$ |  |
| 2010 | $2,214,722$ | 154,144 | 38,834 | $2,232,336$ |  |
| 2011 | $2,348,551$ | 180,719 | 44,121 | $2,412,987$ |  |
| 2012 | $2,486,783$ | 207,289 | 38,496 | $2,567,766$ |  |
| 2013 | $2,604,717$ | 218,607 | 40,953 | $2,735,025$ |  |

## Schedule of Professional Consultant Fees

For Year Ended June 30, 2013
(Dollars in Thousands)

| Professional/Consultant | Nature Of Service | Expenses |  |
| :---: | :---: | :---: | :---: |
| Sedgwick Claims Management Services | LTD Administrative Services | \$ | 2,736 |
| State Street Bank And Trust Company | Pension Payment Services And Custodial Bank Services |  | 2,473 |
| Comsys Information Technology Services | IT And Other Consulting Services |  | 1,288 |
| Guidesoft Inc. | IT And Other Consulting Services |  | 1,181 |
| Buck Consultants, LLC | Actuarial Services |  | 969 |
| Robert Charles Lesser and Co., LLC. | Investment Consulting Services |  | 929 |
| Foley And Lardner, LLP | Investment Legal Services |  | 893 |
| Meketa Investment Group | Investment Consulting Services |  | 703 |
| New England Pension Consultants | Investment Consulting Services |  | 642 |
| DLJ MB Advisors, Inc. | Investment Back Office Services |  | 602 |
| Cox Castle And Nicholson | Investment Legal Services |  | 575 |
| Arizona State Attorney General Office | Legal Services |  | 209 |
| Institutional Shareholder | Investment Consulting Services |  | 113 |
| Heinfeld Meech And Co PC | Audit Services |  | 89 |
| Foster Pepper PLLC | Investment Legal Services |  | 40 |
| CEM Benchmarking, Inc. | Plan Administration Consulting |  | 40 |
| Callan Associates Inc | Investment Consulting Services |  | 32 |
| CliftonLarsonAllen, LLP | Independent Auditors |  | 30 |
| Charles W Whetstine, P.C. | Legal Services |  | 26 |
| LexisNexis Risk Data Management | Research Services |  | 24 |
| Cortex Applied Research Inc. | Investment Consulting Services |  | 22 |
| Facilitec, Inc | Investment Legal Services |  | 17 |
| Other Consulting Fees (Less Than Fifteen Thousand Dollars) |  |  | 114 |
| TOTAL |  | \$ | 3,747 |

## Schedule of Administrative Expenses

For Year Ended June 30, 2013
(Dollars in Thousands)

|  | Retirement and Health Benefit Supplement |  | Long-Term Disability |  | 2013 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PERSONNEL SERVICES |  |  |  |  |  |  |
| Salaries | \$ | 12,556 | \$ | - | \$ | 12,556 |
| Retirement Contributions |  | 1,281 |  | - |  | 1,281 |
| Other Employee Related Expenses |  | 3,154 |  | - |  | 3,154 |
| Total Personnel Services |  | 16,991 |  | - |  | 16,991 |
| PROFESSIONAL SERVICES |  |  |  |  |  |  |
| Actuary \& Benefit Consulting |  | 969 |  | - |  | 969 |
| Audit, Consulting \& Legal Fees |  | 1,872 |  | 2,736 |  | 4,608 |
| Programming Costs |  | 2,478 |  | - |  | 2,478 |
| Other Outside Services |  | 5,689 |  | 3 |  | 5,692 |
| Total Professional Services |  | 11,008 |  | 2,739 |  | 13,747 |
| COMMUNICATIONS |  |  |  |  |  |  |
| Postage and Delivery |  | 418 |  | - |  | 418 |
| External Printing |  | 61 |  | - |  | 61 |
| Telephone |  | 309 |  | - |  | 309 |
| Advertising |  | 10 |  | - |  | 10 |
| Total Communications |  | 798 |  | - |  | 798 |
| MISCELLANEOUS |  |  |  |  |  |  |
| Office Rent |  | 2,263 |  | - |  | 2,263 |
| Furniture \& Equipment |  | 380 |  | - |  | 380 |
| Software \& Support |  | 996 |  | - |  | 996 |
| Repair \& Maintenance |  | 96 |  | - |  | 96 |
| Travel |  | 85 |  | - |  | 85 |
| Operating Supplies |  | 68 |  | - |  | 68 |
| Insurance |  | 196 |  | - |  | 196 |
| Dues \& Subscriptions |  | 1,343 |  | - |  | 1,343 |
| Education \& Training |  | 56 |  | - |  | 56 |
| Miscellaneous |  | 10 |  | - |  | 10 |
| Total Miscellaneous |  | 5,493 |  | - |  | 5,493 |
| TOTAL | \$ | 34,290 | \$ | 2,739 | \$ | 37,029 |

## Schedule of Total Investment Expense by Manager

Public Equity and Fixed Income
For Year Ended June 30, 2013
(Dollars in Thousands)

|  | Management Fees ${ }^{1}$ |  | Other Fees |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Aberdeen Asset Management | \$ | 2,321 | \$ | 300 | \$ | 2,621 |
| ASRS Internal |  | - |  | 217 |  | 217 |
| AQR Capital Management |  | 81 |  | 36 |  | 117 |
| Ashmore Investment Management |  | (831) |  | 2 |  | (829) |
| AXA Rosenberg Investment Managers |  | - |  | 6 |  | 6 |
| Blackrock Custom US Debt Fund |  | 15 |  | - |  | 15 |
| Blackrock Dow Jones/UBS |  | 28 |  | - |  | 28 |
| Blackrock EAFE Country Fund U/A |  | 1,271 |  | - |  | 1,271 |
| Blackrock Index Fund A |  | 25 |  | - |  | 25 |
| Blackrock Intermediate Govt/Credit Bond Index Fund |  | 4 |  | - |  | 4 |
| Blackrock Local Bond Index Fund B |  | 15 |  | - |  | 15 |
| Blackrock MSCI EAFE Small Cap |  | 184 |  | - |  | 184 |
| Blackrock MSCI Emerging Markets Free B |  | 753 |  | - |  | 753 |
| Blackrock US High Yield Bond Index Fund B |  | 29 |  | - |  | 29 |
| Blackrock US Debt Index Fund B |  | 25 |  | - |  | 25 |
| Blackrock Russell 1000 Index Fund B |  | 50 |  | - |  | 50 |
| Blackrock Russell 2000 Index Fund B |  | 12 |  | - |  | 12 |
| Brandes Investment Partners International Equity |  | 1,524 |  | 773 |  | 2,297 |
| Bridgewater Associates Global Tactical Asset Allocation |  | 13,748 |  | - |  | 13,748 |
| Cargill, Inc. |  | 3,165 |  | - |  | 3,165 |
| Champlain Investment Partners |  | 1,120 |  | 1 |  | 1,121 |
| Columbia Management Investment Advisors, LLC |  | 2,370 |  | 39 |  | 2,409 |
| CRM Funds Mid Cap Value |  | 705 |  | - |  | 705 |
| Dimensional Fund Advisors Equity Fund |  | 895 |  | - |  | 895 |
| Dimensional Fund Advisors International Small Cap |  | 796 |  | 41 |  | 837 |
| Eaton Vance Investment Managers |  | 4,092 |  | - |  | 4,092 |
| Franklin Templeton Investments |  | 1,787 |  | 233 |  | 2,020 |
| Gresham Investment Management |  | 2,987 |  | 330 |  | 3,317 |
| Guggenheim Partners Management |  | 1,945 |  | - |  | 1,945 |
| Hansberger Global Investors, LC |  | 1,070 |  | 301 |  | 1,371 |
| Intech Large Capital |  | 2,375 |  | - |  | 2,375 |
| Jacobs Levy Equity Management |  | 1,225 |  | 878 |  | 2,103 |
| LSV Asset Management - Emerging Markets Equity Fund LP |  | 2,000 |  | - |  | 2,000 |
| LSV Asset Management - US Large Cap Value Account |  | 2,045 |  | - |  | 2,045 |
| Pacific Investment Management Company |  | 2,563 |  | 403 |  | 2,966 |
| Shenkman Capital Management |  | 666 |  | 28 |  | 694 |
| Timessquare Capital Management |  | 4,465 |  | 4 |  | 4,469 |
| Walter Scott \& Partners |  | 1,283 |  | 99 |  | 1,382 |
| Wellington Management Co. - Mid Cap Opportunities |  | 2,128 |  | - |  | 2,128 |
| William Blair \& Company |  | 2,168 |  | - |  | 2,168 |
| Windham Capital Management |  | 2,062 |  | - |  | 2,062 |
| Total | \$ | 63,166 | \$ | 3,691 | \$ | 66,857 |

[^1]
## Schedule of Total Investment Expense by Manager

Private Equity
For Year Ended June 30, 2013
(Dollars in Thousands)

|  | Management Fees |  | Other Fees ${ }^{1}$ |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Accel-KKR Capital Partners III, LP | \$ | 687 | \$ | 33 | \$ | 720 |
| Apollo Investment Fund VII, LP |  | 341 |  | 198 |  | 539 |
| Apollo Natural Resources Partners, LP |  | 1,405 |  | 434 |  | 1,839 |
| Arlington Capital Partners III, LP |  | 679 |  | 275 |  | 954 |
| Atlas Venture Fund VIII, LP |  | 299 |  | 257 |  | 556 |
| Audax Private Equity Fund IV, LP |  | - |  | 159 |  | 159 |
| Baird Capital Partners V Limited Partnership |  | 699 |  | 228 |  | 927 |
| Blackrock Private Opportunities Fund, LP |  | 75 |  | 13 |  | 88 |
| Blackstone Capital Partners VI, LP |  | 772 |  | 183 |  | 955 |
| Blackstone Energy Partners, LP |  | 59 |  | 1,749 |  | 1,808 |
| Bridgepoint Europe IV 'D', LP |  | 540 |  | 53 |  | 593 |
| Brookfield Special Situations Fund III (NR A), LP |  | 573 |  | 436 |  | 1,009 |
| Catalyst Fund Limited Partnership III |  | 882 |  | 17 |  | 899 |
| Catalyst Fund Limited Partnership IV |  | 1,388 |  | 18 |  | 1,406 |
| Centerbridge Capital Partners, LP |  | 563 |  | 1,195 |  | 1,758 |
| CMEA Ventures VII, LP |  | 114 |  | 85 |  | 199 |
| Crown European Buyout Opportunities II, Plc |  | 159 |  | 408 |  | 567 |
| CVC European Equity Partners V (C), LP |  | 1,158 |  | 199 |  | 1,357 |
| Edgewater Growth Capital Partners III, LP |  | 316 |  | 305 |  | 621 |
| EnCap Energy Capital Fund IX, LP |  | 150 |  | - |  | 150 |
| Energy Capital Partners II-A, LP |  | 611 |  | 1,613 |  | 2,224 |
| First Reserve Fund XII, LP |  | 959 |  | 215 |  | 1,174 |
| IDG Ventures SF, LP |  | 239 |  | 21 |  | 260 |
| JLL Partners Fund VI, LP |  | 439 |  | (183) |  | 256 |
| Khosla Ventures IV, LP |  | 206 |  | 383 |  | 589 |
| Kinderhook Capital Fund III, LP |  | 875 |  | 1,957 |  | 2,832 |
| Levine Leichtman Capital Partners Deep Value Fund |  | 1,418 |  | - |  | 1,418 |
| Levine Leichtman Capital Partners IV, LP |  | 750 |  | 79 |  | 829 |
| Linconshire Equity Fund IV-A, LP |  | 291 |  | 2 |  | 293 |
| Linden Capital Partners II, LP |  | 179 |  | 241 |  | 420 |
| Littlejohn Fund IV-A, LP |  | 1,325 |  | - |  | 1,325 |
| LLR Equity Partners III, LP |  | 600 |  | 2,204 |  | 2,804 |
| LLR Equity Partners IV, LP |  | - |  | 44 |  | 44 |
| Maranon Mezzanine Fund, LP |  | 600 |  | 17 |  | 617 |
| Montreux Equity Partners IV, LP |  | 183 |  | 384 |  | 567 |
| Nautic Partners VI, LP |  | 574 |  | 19 |  | 593 |
| New Atlantic Ventures Fund III, LP |  | 234 |  | 9 |  | 243 |
| New Mountain Partners III, LP |  | 415 |  | 612 |  | 1,027 |

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

## Schedule of Total Investment Expense by Manager

Private Equity - Continued
For Year Ended June 30, 2013
(Dollars in Thousands)

|  | Management Fees | Other Fees ${ }^{1}$ | Total |
| :---: | :---: | :---: | :---: |
| Oakhill Capital Partners III, LP | 1,268 | 32 | 1,300 |
| Oaktree European Principal Fund III, LP | 593 | - | 593 |
| Onex Partners III, LP | 1,258 | 204 | 1,462 |
| Partners Group Secondary 2008, LP | 967 | 264 | 1,231 |
| Partners Group Secondary 2011 (USD), LP, Inc | 1,098 | 53 | 1,151 |
| Paul Capital Partners IX, LP | 517 | - | 517 |
| Peninsula Technology Ventures, LP | 160 | (7) | 153 |
| Pine Brook Capital Partners, LP | 887 | 1,808 | 2,695 |
| Pine Brook Capital Partners II, LP | 151 | 283 | 434 |
| Platinum Equity Capital Partners II, LP | - | 63 | 63 |
| Quantum Energy Partners V, LP | 1,360 | (263) | 1,097 |
| Saybrook Corporate Opportunity Fund, LP | 312 | (263) | 312 |
| Seidler Equity Partners IV, LP | 600 | 62 | 662 |
| Silver Lake Partners III, LP | 430 | (59) | 371 |
| TCW/Crescent Mezzanine Partners V, LP | 411 | 31 | 442 |
| Tenex Capital Partners, LP | 673 | 15 | 688 |
| The Resolute Fund II, LP | 267 | 80 | 347 |
| The Veritas Capital Fund IV, LP | 319 | 2,865 | 3,184 |
| Thomas H Lee Equity Fund VI, LP | 516 | 115 | 631 |
| Warburg Pincus Private Equity X, LP | 594 | 115 | 709 |
| Waud Capital Partners QP III, LP | 210 | 106 | 316 |
| Wayzata Opportunities Fund II, LP | 629 | 153 | 782 |
| White Deer Energy, LP | 940 | 1,869 | 2,809 |
| White Deer Energy, LP II | 123 | - | 123 |
| Vista Equity Partners Fund IV, LP | 1,093 | - | 1,093 |
| Yucaipa American Alliance Fund II, LP | 444 | 191 | 635 |
| Total | \$ 36,577 | \$ 21,842 | \$ 58,419 |

[^2]
## Schedule of Total Investment Expense by Manager

Real Estate
For Year Ended June 30, 2013
(Dollars in Thousands)

|  | Management Fees |  | Other Fees |  | Total ${ }^{1}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| AEW Core Property Trust (U.S.), Inc. | \$ | 1,016 | \$ | - | \$ | 1,016 |
| AEW Value Investors Fund II, LP |  | 371 |  | - |  | 371 |
| Alcion Real Estate Partners Tax-Exempt Parallel Fund II, LP |  | 750 |  | 518 |  | 1,268 |
| Almanac Realty Securities IV, LP |  | 660 |  | 33 |  | 693 |
| Almanac Realty Securities V, LP |  | 474 |  | 16 |  | 490 |
| ASRS Internal |  | - |  | 6,473 |  | 6,473 |
| Blackstone Real Estate Partners VI, LP |  | 579 |  | 1,677 |  | 2,256 |
| Blackstone Real Estate Partners VII, LP |  | 284 |  | 234 |  | 518 |
| Blackrock US Real Estate Securities Fund B |  | 28 |  | - |  | 28 |
| Carlyle Realty Partners V, LP |  | 435 |  | 381 |  | 816 |
| CB Richard Ellis Strategic Partners US Opportunity 5, LP |  | 440 |  | - |  | 440 |
| CB Richard Ellis Strategic Partners US Value 5, LP |  | 370 |  | 245 |  | 615 |
| CIM Fund III, LP |  | 615 |  | - |  | 615 |
| CIM Urban REIT, LLC |  | 893 |  | - |  | 893 |
| CIM VI (Urban REIT), LLC |  | 32 |  | - |  | 32 |
| Colony Investors VIII, LP |  | 467 |  | 7 |  | 474 |
| Dune Real Estate Fund II, LP |  | 1,444 |  | 2,232 |  | 3,676 |
| Dune Real Estate Fund, LP |  | 383 |  | 57 |  | 440 |
| Five Mile Capital II LOPO Co-Investment, LP |  | 11 |  | 533 |  | 544 |
| Five Mile Capital Partners II, LP |  | 531 |  | 287 |  | 818 |
| H/2 Special Opportunities II, LP |  | 400 |  | 5,246 |  | 5,646 |
| Harrison Street Real Estate Partners III, LP |  | 825 |  | - |  | 825 |
| Heitman Value Partners II, LP |  | 263 |  | - |  | 263 |
| Hunt Commercial Realty Partners III, LP |  | 459 |  | - |  | 459 |
| Invesco Asian Real Estate Partners II (USD), LP |  | 157 |  | 50 |  | 207 |
| Lone Star Fund VI (US), LP |  | 36 |  | 1,529 |  | 1,565 |
| Lone Star Real Estate Fund (US), LP |  | 108 |  | - |  | 108 |
| M\&G Real Estate Debt Fund, LP |  | 680 |  | 147 |  | 827 |
| Oaktree Real Estate Opportunities Fund V, LP |  | 741 |  | - |  | 741 |
| Oaktree Real Estate Opportunities Fund VI, LP |  | 398 |  | 464 |  | 862 |
| PLA Residential III, LP |  | 752 |  | - |  | 752 |
| PLA Retail Fund I, LP |  | 914 |  | - |  | 914 |
| PRISA II |  | 590 |  | - |  | 590 |
| RREEF Global Opportunities Fund II, LLC |  | (158) |  | (43) |  | (201) |
| Tishman Speyer Real Estate Venture VI, LP |  | 163 |  | 76 |  | 239 |
| Tishman Speyer Real Estate Venture VII, LP |  | 461 |  | 108 |  | 569 |
| Waterton Residential Property Venture XI, LP |  | 674 |  | 828 |  | 1,502 |
| Westbrook Real Estate Fund VII, LP |  | 519 |  | 32 |  | 551 |
| Westbrook Real Estate Fund VIII, LP |  | 706 |  | - |  | 706 |
| Total | \$ | 18,471 | \$ | 21,130 | \$ | 9,601 |

[^3]
## Schedule of Total Investment Expense by Manager

Opportunistic
For Year Ended June 30, 2013
(Dollars in Thousands)

|  | Management Fees |  | Other Fees ${ }^{1}$ |  | Total |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Avenue Europe Special Situations Fund II (US), LP | \$ | 3,707 | \$ | (344) | \$ | 3,363 |
| Blackrock Credit Investors II, LP |  | 40 |  | 285 |  | 325 |
| Blackrock Mortgage Investors, LP |  | 690 |  | 4,504 |  | 5,194 |
| Blackstone/GSO Capital Solutions Fund, LP |  | 328 |  | 6,725 |  | 7,053 |
| Cerberus ASRS Credit Opportunities Fund, LP |  | - |  | 659 |  | 659 |
| H/2 Core Real Estate Debt Fund, LP |  | 1 |  | 163 |  | 164 |
| Highbridge Principal Strategies - Mezzanine Partners II, LP |  | 155 |  | 947 |  | 1,102 |
| Oaktree Opportunities Fund VIII, LP |  | 703 |  | (310) |  | 393 |
| Oaktree Opportunities Fund VIIIb, LP |  | 2,183 |  | (243) |  | 1,940 |
| OCM STR Co-Invest 1, LP |  | 505 |  | (90) |  | 415 |
| TCW Capital Trust |  | 2,890 |  | 307 |  | 3,197 |
| White Oak Global Advisors Private Debt |  | 88 |  | - |  | 88 |
| Total | \$ | 11,290 | \$ | 12,603 | \$ | 23,893 |

[^4]
## ARIZONA STATE RETIREMENT SYSTEM

## A Component Unit of the State of Arizona


"The National Exchange Club has a proud history of answering the call in response to America's greatest challenges. Founded in 1911, we are proud to say that we are the oldest American Service Club in existence. Exchange has been in Arizona since 1923 with the most recently chartered Tempe Club. I retired in February 2012 from the Department of Administration and joined the following month. In a year I have worked on six community projects, with the largest being the 9-11 Healing Fields in Tempe. I have served as the Southwest District representative for the

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## Investment Report

# U.S. Economy and Capital Markets FY 2012-13 

By Thomas Connelly, Investment Committee Chair, and Gary R. Dokes, Chief Investment Officer

The economy continues to expand, albeit, at a slower than expected pace, as reflected in mixed economic indicators which prompted the Federal Reserve to debate "tapering" the current 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 increases in developed equity markets. GDP expanded by $1.7 \%$ for the latest quarter. The unemployment rate has declined from $8.2 \%$ as of June 30, 2012 to $7.6 \%$ as of June 30, 2013. The CPI Index has edged up $0.1 \%$ to $1.8 \%$ year-overyear. 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 dramatically during the fiscal year. The S\&P 500 Index was up 20.6\% with returns lagging mid-caps and small-caps. The S\&P MidCap Index and the S\&P SmallCap Index were each up $25.2 \%$ during the fiscal year. Value modestly outperformed growth across the cap spectrums with the exception of large cap value, which significantly outperformed growth. International equity markets lagged domestic markets. The MSCI EAFE Index increased $19.1 \%$ during the fiscal year. The MSCI ACWI ex U.S. Index rose $14.3 \%$ during the fiscal year. Europe (exUnited Kingdom) increased $20.9 \%$ in the developed markets while the emerging markets were hindered by China, Russia, and Brazil, causing emerging markets to
significantly underperform their developed market counterparts. The MSCI EM Index increased 3.2\%.

The Barclays Aggregate Fixed Income Index significantly underperformed the domestic equity markets by declining $0.7 \%$ during the fiscal year. High Yield was the top performer within fixed income, increasing 9.5\% while Financial Institutions was the top performing sector in the Barclays Aggregate Index as investors exhibited an increased appetite for risk, but preferred shorter durations. Short durations bonds outperformed long term issues. Lower-quality issues outperformed higherquality issues in the investment credit space. Mortgages slid $1.1 \%$ and Treasuries decreased $1.6 \%$ during the fiscal year. Emerging market debt produced a positive return for the fiscal year of $1.3 \%$, but experienced significant declines from the May 9, 2013 high to end of the fiscal year.

REITs exhibited modestly positive performance for the fiscal year; the FTSE NAREIT Index rose $14.3 \%$. Private real estate fared better; the NCREIF Property Index was up $10.5 \%$ (on a quarterly lag) for the fiscal year.

Commodities were the worst performer of the asset classes with the Dow Jones-UBS Commodity Index falling $8.0 \%$ during the fiscal year. Metals were the major contributor to this decline while energy, agriculture, and livestock slightly mitigated it.

## Investment Goals 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.

Rate of Return: $8.0 \%$ (over 20 years) Actual: $\quad 8.2 \%$ (over 20 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 Strategic Asset Allocation Policy (SAAP) Benchmark.

Benchmark: $12.6 \%$ (1 year) and $12.4 \%$ (3years)
Actual: $\quad 13.1 \%$ (1 year) and $12.6 \%$ (3years)
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 strategic asset class benchmarks.

Total Domestic and International Equity:
Benchmark: $19.2 \%$ (1-year) and $15.6 \%$ (3years)
Actual: $\quad 18.8 \%$ (1-year) and $15.5 \%$ (3years)

Domestic Equity:
Benchmark: 22.0\% (1-year) and 18.9\% (3years)
Actual: $\quad 22.2 \%$ (1-year) and $18.9 \%$ (3years)

International Equity:
Benchmark: $15.1 \%$ (1-year) and 9.1\% (3-years)
Actual: $\quad 14.0 \%$ (1-year) and $8.6 \%$ (3-years)
Public Markets Fixed Income:
Benchmark: -0.2\% (1-year) and 3.9\% (3-years)
Actual: $\quad-0.3 \%$ (1-year) and $4.2 \%$ (3-years)

Global Tactical Asset Allocation:
Benchmark: $12.8 \%$ (1-year) and $12.3 \%$ (3years)
Actual: $\quad 12.7 \%$ (1-year) and $14.0 \%$ (3years)

Inflation-Linked:
Benchmark: -8.0\% (1-year) and -3.5\% (3years)
Actual: $\quad-5.0 \%$ (1-year) and -1.2\% (3years)

Private Equity:
Benchmark: $16.3 \%$ (1-year) and $13.5 \%$ (3years)
Actual: $\quad 12.6 \%$ (1-year) and $15.0 \%$ (3years)

Opportunistic Equity: *
*Net absolute rate of return expectations range from $10-14 \%$ per annum. 3 -year not applicable.
Actual: $\quad 41.1 \%$ (1-year)
Opportunistic Debt: *
*Net absolute rate of return expectations range from $10-14 \%$ per annum.
Actual: $\quad 12.4 \%$ (1-year) and $11.1 \%$ (3years)

Real Estate:
Benchmark: 10.8\% (1-year) and 15.1\% (3years)
Actual: $\quad 12.8 \%$ (1-year) and $13.9 \%$ (3years)
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 Report (CONTINUED)

## Asset Allocation Targets

During fiscal year 2013, the ASRS asset allocation policy targets and ranges were as follows:

| Asset Class | Policy | Range | Benchmark |
| :---: | :---: | :---: | :---: |
| Large Cap | 23\% | (26-38\%) | S\&P 500 |
| Mid Cap | 5\% |  | S\&P 400 |
| Small Cap | 5\% |  | S\&P 600 |
| US Equity | 33\% |  |  |
| Developed Large Cap | 14\% |  | MSCI EAFE |
| Developed Small Cap | 3\% |  | MSCE EFA 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\% | (8-28\%) | Barclays Aggregate |
| High Yield | 5\% |  | Barclays HY |
| US Fixed Income | 18\% |  |  |
| Emerging Market Debt | 4\% | (0-10\%) | JP Morgan GBI-EM Global Diversified |
| Opportunistic Debt* | 0\% |  | Investment Specific |
| Private Debt | 3\% |  | S\&P/LSTA Leveraged Loan Index + 2.5\% |
| 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 |

## Investment Policies

An integral part of the overall investment policy is the Strategic Asset Allocation Policy, 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 165 externally managed and 9 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.

## 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 | $\mathbf{1}$ Year | 3 Year | 5 Year | 10 Year | Inception |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Total Fund | $\mathbf{1 3 . 1 \%}$ | $\mathbf{1 2 . 6 \%}$ | $\mathbf{5 . 9 \%}$ | $\mathbf{7 . 4 \%}$ | $\mathbf{9 . 8 \%}$ |
| Interim SAA Policy Benchmark | $12.6 \%$ | $12.4 \%$ | $5.4 \%$ | $7.0 \%$ | $9.6 \%$ |
| Domestic Equity | $22.2 \%$ | $18.9 \%$ | $8.2 \%$ | $8.5 \%$ | $11.1 \%$ |
| S\&P Custom Index | $22.0 \%$ | $18.9 \%$ | $7.7 \%$ | $7.8 \%$ | $11.2 \%$ |
| Domestic Fixed Income | $-0.3 \%$ | $4.2 \%$ | $5.9 \%$ | $4.9 \%$ | $8.6 \%$ |
| Custom Fixed Income Index | $-0.2 \%$ | $3.9 \%$ | $5.4 \%$ | $4.6 \%$ | $\mathrm{n} / \mathrm{a}$ |
| International Equity | $14.0 \%$ | $8.6 \%$ | $0.0 \%$ | $7.8 \%$ | $6.1 \%$ |
| MSCI Custom Index | $15.1 \%$ | $9.1 \%$ | $0.0 \%$ | $8.9 \%$ | $5.7 \%$ |
| Commodities | $-5.0 \%$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $0.3 \%$ |
| DJUBS Commodity Index | $-8.0 \%$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $-1.7 \%$ |
| Global Tactical Asset Allocation | $12.7 \%$ | $14.0 \%$ | $8.1 \%$ | $\mathrm{n} / \mathrm{a}$ | $7.3 \%$ |
| Custom Global Tactical Asset | $12.8 \%$ | $12.3 \%$ | $5.3 \%$ | $\mathrm{n} / \mathrm{a}$ | $5.8 \%$ |
| Allocation | $12.8 \%$ | $13.9 \%$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $2.5 \%$ |
| Real Estate | $10.8 \%$ | $15.1 \%$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $4.9 \%$ |
| NFI-ODCE Index | $12.6 \%$ | $15.0 \%$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $2.4 \%$ |
| Private Equity | $16.3 \%$ | $13.5 \%$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $4.6 \%$ |
| Russell 2000 | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $13.5 \%$ |
| Private Debt |  | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $3.6 \%$ |
| S\&P Loan Syndications and |  |  | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $8.9 \%$ |
| Trading Association Leveraged | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $\mathrm{n} / \mathrm{a}$ | $18.6 \%$ |  |
| Loan Index | $12.4 \%$ | $11.1 \%$ |  |  |  |

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

(Retirement \& HBS)

| Fiscal Year | Return | Fiscal Year | Return | Fiscal Year | Return |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $2012-13$ | $13.1 \%$ | $2004-05$ | $8.5 \%$ | $1996-97$ | $20.6 \%$ |
| $2011-12$ | $1.3 \%$ | $2003-04$ | $17.5 \%$ | $1995-96$ | $16.7 \%$ |
| $2010-11$ | $24.6 \%$ | $2002-03$ | $2.4 \%$ | $1994-95$ | $17.8 \%$ |
| $2009-10$ | $14.9 \%$ | $2001-02$ | $-8.2 \%$ | $1993-94$ | $1.9 \%$ |
| $2008-09$ | $-18.1 \%$ | $2000-01$ | $-6.7 \%$ | $1992-93$ | $16.7 \%$ |
| $2007-08$ | $-7.6 \%$ | $1999-00$ | $10.0 \%$ | $1991-92$ | $14.6 \%$ |
| $2006-07$ | $17.8 \%$ | $1998-99$ | $16.8 \%$ | $1990-91$ | $8.0 \%$ |
| $2005-06$ | $9.8 \%$ | $1997-98$ | $21.3 \%$ | $1989-90$ | $9.5 \%$ |

[^5]
## Ten Year Review of Investment Income

(Dollars in Thousands)


## Net Income from Investments

(Dollars in Millions)


## Asset Allocation

## Summary of Investments

(Dollars in Thousands)

|  | Investments at Fair Value |  | Receivables |  | Payables |  |  |  | Total |  | \% of Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Temporary Investments | \$ | 1,989,196 | \$ | 1,011,296 | 1 | \$ | 1,272,282 | 2 | \$ | 1,728,210 | 5.41\% |
| Securities Lending Collateral |  | 15,460 |  | - |  |  | 15,460 |  |  |  | 0.00\% |
| Equity Securities: |  |  |  |  |  |  |  |  |  |  |  |
| Domestic Equity |  | 12,239,720 |  | - |  |  | - |  |  | 12,239,720 | 45.58\% |
| Non-U.S. Equity |  | 6,486,452 |  | - |  |  | - |  |  | 6,486,452 | 17.18\% |
| Fixed Income Securities: |  |  |  |  |  |  |  |  |  |  |  |
| Corporate Obligations |  | 2,458,838 |  | - |  |  | - |  |  | 2,458,838 | 8.07\% |
| Government Obligations |  | 2,915,292 |  | - |  |  | - |  |  | 2,915,292 | 11.39\% |
| Real Estate |  | 1,723,214 |  | - |  |  | - |  |  | 1,723,214 | 5.17\% |
| Private Equity |  | 1,705,094 |  | - |  |  | - |  |  | 1,705,094 | 4.83\% |
| Opportunistic |  | 1,262,193 |  | - |  |  | - |  |  | 1,262,193 | 2.37\% |
| Total Investments |  | 30,795,459 | \$ | 1,011,296 |  |  | 1,287,742 |  |  | 0,519,013 | 100.00\% |
|  |  |  |  |  |  |  |  |  |  |  |  |
| ${ }^{1}$ RECEIVABLES INCLUDE: |  |  |  |  |  |  | AYABLES INC | UDE |  |  |  |
| Accrued Interest \& Dividends | \$ | 68,579 |  |  |  |  | Payable for S | urit | S | urchased | \$ 334,413 |
| Securities Sold |  | 40,885 |  |  |  |  | Forward Contr | cts | ay |  | 889,084 |
| Forward Contracts Receivables |  | 901,832 |  |  |  |  | Other Payabl |  |  |  | 48,785 |
| Total | \$ | 1,011,296 |  |  |  |  | Total |  |  |  | \$ 1,272,282 |

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 | Fair Value |
| :--- | :---: | ---: |
| US Large Cap Equity | $48.58 \%$ | $\$$ |
| US Mid Cap Equity | 8.33 | $9,098,073$ |
| US Small Cap Equity | 8.45 | $1,559,217$ |
| Total US Equity | $\mathbf{6 5 . 3 6}$ | $1,582,430$ |
| Non US Equity | 34.64 | $\mathbf{1 2 , 2 3 9 , 7 2 0}$ |
| TOTAL EQUITY SECURITIES | $\mathbf{1 0 0 . 0 0 \%}$ | $\mathbf{\$}$ |

## Ten Largest Domestic Equity Holdings

|  | \% of Domestic <br> Equity Portfolio |
| :--- | :---: |
| SPDR S\&P 500 EFT Trust | $8.82 \%$ |
| Exxon Mobil, Corp. | 1.59 |
| Apple, Inc. | 1.46 |
| Microsoft, Corp. | 1.14 |
| Chevron, Corp. | 1.07 |
| Pfizer, Inc. | 0.98 |
| Johnson \& Johnson | 0.96 |
| Vanguard Total Stock Market ET | 0.93 |
| ISHARES MSCI USA Value Factor | 0.85 |
| ISHARES MSCI USA Momentum Factor | 0.84 |
| Total | $\mathbf{1 8 . 6 4 \%}$ |

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

## Distribution by Market Sector

|  | ASRS Domestic <br> Equity | S\&P 500 Index |
| :--- | :---: | :---: |$|$|  | $12.30 \%$ | 10.50 |
| :--- | :---: | :---: |
| Consumer Discretionary | 9.30 | 10.50 |
| Consumer Staples | 9.00 | 16.60 |
| Energy | 17.80 | 12.70 |
| Financials | 12.80 | 10.00 |
| Healthcare | 12.50 | 17.80 |
| Industrials | 16.30 | 3.30 |
| Information Technology | 4.00 | 2.80 |
| Materials | 2.40 | 3.30 |
| Telecommunication Services | 3.60 | $\mathbf{1 0 0 . 0 0 \%}$ |
| Utilities | $\mathbf{1 0 0 . 0 0 \%}$ |  |
| Total |  |  |

Ten Largest International Equity Holdings

|  | International <br> Equity Portfolio |
| :--- | :---: |
| Novartis AG Reg | $0.58 \%$ |
| Roche Holding AG Genusschein | 0.57 |
| Nestle SA Reg | 0.56 |
| Standard Chartered, PLC | 0.36 |
| Vodafone Group, PLC | 0.36 |
| Shin-Etsu Chemical Co., LTD | 0.34 |
| HSBC Holdings, PLC | 0.31 |
| Eni SPA | 0.30 |
| Toyota Motor Corp. | 0.30 |
| Canon, Inc. | 0.29 |
| Total | $\mathbf{3 . 9 7 \%}$ |

## Summary of Broker Commissions

(Dollars in Thousands)

| Summary of Broker Commissions | Commission |  |
| :--- | :--- | ---: |
| Domestic Equity | $\$$ | 4,558 |
| International Equity | $\$$ | 1,010 |

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 |
| :--- | :---: |
| Asset Backed Securities | $4.10 \%$ |
| Commercial Mortgage Backed | 2.91 |
| Corporate Bonds | 37.88 |
| Non-Government Backed CMO's | 0.86 |
| Government Related | 6.13 |
| Government Agencies CMO's | 0.35 |
| Government Bonds (Treasury) | 31.98 |
| Government Mortgage Backed | 15.79 |
| Total | $\mathbf{1 0 0 . 0 0 \%}$ |

## Distribution by Maturity

|  | Percent |
| :--- | :---: |
| $0-2$ years | $9.48 \%$ |
| 2 to 3 years | 7.84 |
| 3 to 4 years | 11.38 |
| 4 to 5 years | 19.16 |
| 5 to 6 years | 12.85 |
| 6 to 8 years | 19.03 |
| $>8$ years | 20.26 |
| Total | $\mathbf{1 0 0 . 0 0 \%}$ |

## Distribution by Coupon

|  | Percent |
| :---: | :---: |
| $0.00 \%-6.5 \%$ | $74.88 \%$ |
| $6.51 \%-7.50 \%$ | 8.67 |
| $7.51 \%-9.0 \%$ | 10.62 |
| $>9.00 \%$ | 5.83 |
| Total | $\mathbf{1 0 0 . 0 0 \%}$ |

Ten Largest Domestic Fixed Income Holdings
(Dollars in Thousands)

|  | Coupon | Maturity | Par Value | Fair Value | Percent |
| :--- | :---: | ---: | ---: | ---: | ---: |
| US TREASURY NOTE | $4.63 \%$ | $2 / 15 / 2040$ | $\$$ | 45,700 | $\$$ |
| 55,651 | $1.04 \%$ |  |  |  |  |
| US TREASURY NOTE | $3.13 \%$ | $4 / 30 / 2017$ |  | 48,000 |  |
| US TREASURY NOTE | $2.00 \%$ | $2 / 15 / 2023$ |  | 41,400 |  |
| US TREASURY NOTE | $4.13 \%$ | $5 / 15 / 2015$ | 37,000 | 0.97 | 0.74 |
| US TREASURY NOTE | $1.00 \%$ | $11 / 30 / 2019$ | 39,614 | 0.74 |  |
| US TREASURY NOTE | $4.75 \%$ | $2 / 15 / 2041$ | 28,200 | 37,248 | 0.69 |
| FEDERAL HOME LOAN BANK | $5.00 \%$ | $11 / 17 / 2017$ | 30,000 | 34,597 | 0.65 |
| US TREASURY NOTE | $2.00 \%$ | $1 / 31 / 2016$ | 32,500 | 33,727 | 0.64 |
| FANNIE MAE | $5.00 \%$ | $3 / 5 / 2016$ | 30,000 | 33,416 | 0.62 |
| US TREASURY NOTE | $2.13 \%$ | $2 / 29 / 2016$ | 30,600 | 31,866 | 0.59 |
| $\quad$ Total |  |  | $\mathbf{\$ 3 6 2 , 5 0 0}$ | $\mathbf{\$ 3 9 2 , 7 9 3}$ | $\mathbf{7 . 3 1 \%}$ |

[^6]
## Private Investment Portfolio Profile

## Ten Largest Real Estate Managers

(Dollars in Thousands)

|  | Fair Value | \% of Real Estate <br> Portfolio |
| :--- | :---: | :---: |
| AEW Core Property Trust (U.S.), Inc. | $\$$ | 207,145 |
| H/2 Special Opportunities II, LP | 87,232 | $12.35 \%$ |
| CIM Urban REIT, LLC | 83,464 | 5.20 |
| PLA Retail Fund I, LP | 68,453 | 4.97 |
| CIM Fund III, LP | 65,957 | 4.08 |
| PRISA II | 60,302 | 3.93 |
| PLA Residential III, LP | 56,210 | 3.59 |
| Almanac Realty Securities IV, LP | 55,542 | 3.35 |
| Blackstone Real Estate Partners VI, LP | 53,364 | 3.31 |
| Oaktree Real Estate Opportunities Fund V, LP | 53,074 | 3.18 |
| Total | $\mathbf{7 9 0 , 7 4 3}$ | $\mathbf{4 7 . 1 2 \%}$ |
|  |  |  |

## Private Investment Portfolio Profile

Ten Largest Private Equity Managers
(Dollars in Thousands)

|  | Fair Value | \% of Private Equity <br> Portfolio |
| :--- | ---: | :---: |
| Levine Leichtman Capital Partners IV, LP | $\$$ | 87,467 |
| First Reserve Fund XII, LP | 65,124 | $5.12 \%$ |
| Oakhill Capital Partners III, LP | 63,857 | 3.82 |
| Onex Partners III, LP | 59,186 | 3.75 |
| Yucaipa American Alliance Fund II, LP | 54,741 | 3.47 |
| Partners Group Secondary 2008, LP | 54,595 | 3.21 |
| The Veritas Capital Fund IV, LP | 51,330 | 3.20 |
| Centerbridge Capital Partners, LP | 49,479 | 3.01 |
| Warburg Pincus Private Equity X, LP | 47,853 | 2.90 |
| White Deer Energy, LP | 45,976 | 2.81 |
| Total | $\mathbf{5 7 9 , 6 0 8}$ | $\mathbf{3 3 . 9 9 \%}$ |
|  |  |  |

## Opportunistic Managers

(Dollars in Thousands)

|  | Fair Value | \% of Opportunistic <br> Portfolio |
| :--- | :---: | :---: |
| Cerberus ASRS Credit Opportunities Fund, LP | $\$$ | 180,932 |
| Blackstone/GSO Capital Solutions Fund, LP | 178,638 | $14.33 \%$ |
| Avenue Europe Special Situations Fund II (US), LP | 174,792 | 14.15 |
| TCW Capital Trust | 151,736 | 13.85 |
| Oaktree Opportunities Fund VIIIb, LP | 146,680 | 12.02 |
| OCM STR Co-Invest 1, LP | 108,363 | 11.62 |
| Blackrock Mortgage Investors, LP | 62,684 | 8.59 |
| RFM Cactus Holding Company, LLC | 55,476 | 4.97 |
| Oaktree Opportunities Fund VIII, LP | $\mathbf{4 7 , 7 1 0}$ | 4.40 |
| Total | $\mathbf{1 , 1 0 7 , 0 1 1}$ | $\mathbf{8 . 7 8}$ |

Note: A complete list of private equity and opportunistic investments appears on pages 89,90 and 91 , respectively.

## Domestic Equity Trades

## (Dollars in Thousands)

| Broker Name | Dollar Amount of Trades |  | Number of Shares$29,148$ | Average Commission Per Share |  | Dollar Amount of Commission |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Barclays Capital Inc./LE | \$ | 1,123,231 |  | \$ | 0.0100 | \$ | 291 |
| Barclays Capital LE |  | 19,014 | 491 |  | 0.0407 |  | 20 |
| BNP Paribas Brokerage Securities, Inc. |  | 142,844 | 4,233 |  | 0.0104 |  | 44 |
| BNY Convergex LIR |  | 93,267 | 1,651 |  | 0.0224 |  | 37 |
| BNY ESI \& Co., Inc. |  | 13,471 | 323 |  | 0.0372 |  | 12 |
| BTIG, LLC |  | 42,033 | 1,530 |  | 0.0477 |  | 73 |
| Cantor Fitzgerald \& Co. |  | 17,079 | 686 |  | 0.0335 |  | 23 |
| Capital Institutional Sves Inc. Equities |  | 189,889 | 4,562 |  | 0.0208 |  | 95 |
| Citigroup Global Markets, Inc. |  | 672,306 | 16,347 |  | 0.0111 |  | 181 |
| Convergex Execution Solutions, LLC |  | 35,843 | 1,150 |  | 0.0261 |  | 30 |
| Cowen \& Company, LLC |  | 12,726 | 582 |  | 0.0378 |  | 22 |
| Credit Suisse Securities (USA) LLC |  | 1,028,894 | 24,430 |  | 0.0131 |  | 319 |
| Dahlman Rose \& Company, LLC |  | 5,413 | 116 |  | 0.0431 |  | 5 |
| Deutsche Bank Securities, Inc. |  | 743,813 | 16,422 |  | 0.0167 |  | 274 |
| Fidelity Capital Markets |  | 113,832 | 3,209 |  | 0.0355 |  | 114 |
| Goldman Sachs \& Co. |  | 40,848 | 1,315 |  | 0.0395 |  | 52 |
| Goldman Sachs International |  | 25,538 | 777 |  | 0.0103 |  | 8 |
| Guzman \& Co. |  | 40,572 | 870 |  | 0.0230 |  | 20 |
| Instinet, LLC |  | 1,828,962 | 52,545 |  | 0.0113 |  | 593 |
| Investment Technology Group, Inc. |  | 1,590,940 | 42,319 |  | 0.0077 |  | 327 |
| ISI Group, Inc. |  | 16,412 | 553 |  | 0.0362 |  | 20 |
| J.P. Morgan Clearing Corp. |  | 105,312 | 1,980 |  | 0.0101 |  | 20 |
| J.P. Morgan Securities, Inc. |  | 53,192 | 1,673 |  | 0.0311 |  | 52 |
| Jefferies \& Company, Inc. |  | 320,875 | 8,093 |  | 0.0215 |  | 174 |
| Jones Trading Institutional Services, LLC |  | 11,661 | 282 |  | 0.0319 |  | 9 |
| Keybanc Capital Markets, Inc. |  | 26,553 | 562 |  | 0.0445 |  | 25 |
| Knight Equity Markets L.P. |  | 67,404 | 1,755 |  | 0.0444 |  | 78 |
| Lazard Capital Markets, LLC |  | 27,824 | 758 |  | 0.0356 |  | 27 |
| Leerink Swann and Company |  | 11,653 | 252 |  | 0.0437 |  | 11 |
| Liquidnet, Inc. |  | 105,201 | 3,505 |  | 0.0188 |  | 66 |
| Merrill Lynch Pierce Fenner \& Smith, Inc. |  | 405,754 | 10,065 |  | 0.0110 |  | 111 |
| Merrill Lynch Professional Clearing Corp. |  | 11,758 | 315 |  | 0.0444 |  | 14 |

## Domestic Equity Trades - continued

(Dollars in Thousands)

| Broker Name | Dollar Amount of Trades |  | Number of Shares$6,395$ | Average Commission Per Share |  | Dollar Amount of Commission |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Morgan Stanley \& Co., Inc. | \$ | 278,943 |  | \$ | 0.0147 | \$ | 94 |
| National Financial Services Corp. |  | 1,618,847 | 1,618,079 |  | 0.0000 |  | 4 |
| Nomura Securities International, Inc. |  | 656,848 | 14,273 |  | 0.0100 |  | 143 |
| Oppenheimer \& Co., Inc. |  | 28,686 | 1,159 |  | 0.0457 |  | 53 |
| Piper Jaffray |  | 12,675 | 380 |  | 0.0447 |  | 17 |
| Pulse Trading, LLC |  | 12,551 | 448 |  | 0.0179 |  | 8 |
| Raymond James And Associates Inc. |  | 41,084 | 950 |  | 0.0421 |  | 40 |
| RBC Capital Markets |  | 69,017 | 1,764 |  | 0.0317 |  | 56 |
| Robert W. Baird Co. Inc. |  | 41,546 | 1,132 |  | 0.0442 |  | 50 |
| Rosenblatt Securities, LLC |  | 249,008 | 5,055 |  | 0.0222 |  | 112 |
| Sanford C Bernstein Co., LLC |  | 253,383 | 6,025 |  | 0.0204 |  | 123 |
| State Street Global Markets, LLC |  | 179,547 | 4,265 |  | 0.0106 |  | 45 |
| Sterne, Agee \& Leach, Inc. |  | 14,022 | 360 |  | 0.0472 |  | 17 |
| Stifel Nicolaus \& Co., Inc. |  | 64,874 | 1,786 |  | 0.0420 |  | 75 |
| Sungard Brokerage \& Securities Svcs, LLC |  | 13,631 | 372 |  | 0.0081 |  | 3 |
| Suntrust Capital Markets, Inc. |  | 10,697 | 254 |  | 0.0433 |  | 11 |
| UBS Securities, LLC |  | 105,827 | 3,012 |  | 0.0206 |  | 62 |
| Wallachbeth Capital, LLC |  | 875,493 | 14,107 |  | 0.0100 |  | 141 |
| Weeden \& Co. |  | 206,596 | 4,047 |  | 0.0255 |  | 103 |
| Wells Fargo Securities, LLC |  | 23,174 | 888 |  | 0.0372 |  | 33 |
| William Blair \& Co., LLC |  | 25,026 | 631 |  | 0.0444 |  | 28 |
| Various Other Brokers |  | 223,754 | 55,631 |  | 0.0035 |  | 193 |
| Total | \$ | 13,949,343 | 1,973,512 | \$ | 0.0023 | \$ | 4,558 |

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

## Foreign Equity Trades

(Dollars in Thousands)

| Broker Name | Dollar Amount of Trades |  | Number of Shares | Average Commission Per Share |  |  | Dollar Amount of Commission |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Barclays Capital | \$ | 38,030 | 1,741 | \$ |  | 0.0247 | \$ | 43 |
| BNP Paribus Brokerage Securities, Inc. |  | 19,441 | 982 |  |  | 0.0295 |  | 29 |
| Citigroup Global Markets, Inc. |  | 24,845 | 22,859 |  |  | 0.0005 |  | 12 |
| Citigroup Global Markets Limited |  | 19,178 | 3,755 |  |  | 0.0069 |  | 26 |
| Credit Agricole Indosuez Cheuvreux |  | 17,772 | 801 |  |  | 0.0337 |  | 27 |
| Credit Lyonnais Securities (USA), Inc. |  | 12,030 | 3,735 |  |  | 0.0070 |  | 26 |
| Credit Suisse Securities (Europe) Ltd |  | 25,803 | 1,899 |  |  | 0.0179 |  | 34 |
| Credit Suisse Securities (USA) LLC |  | 31,395 | 12,501 |  |  | 0.0037 |  | 46 |
| Deutsche Bank Securities, Inc. |  | 23,154 | 1,930 |  |  | 0.0140 |  | 27 |
| Exane S.A. |  | 11,902 | 294 |  |  | 0.0578 |  | 17 |
| Goldman Sachs \& Co. |  | 343,658 | 83,498 |  |  | 0.0021 |  | 176 |
| Goodboy Stockbrokers |  | 14,826 | 1,547 |  |  | 0.0142 |  | 22 |
| Instinet U.K. Ltd |  | 14,845 | 1,933 |  |  | 0.0057 |  | 11 |
| Investment Technology Group, LTD |  | 31,979 | 3,364 |  |  | 0.0107 |  | 36 |
| JP Morgan Securities, PLC |  | 18,041 | 2,513 |  |  | 0.0099 |  | 25 |
| Macquarie Bank Limited |  | 11,068 | 2,371 |  |  | 0.0089 |  | 21 |
| Merrill Lynch International |  | 38,616 | 7,407 |  |  | 0.0076 |  | 56 |
| Merrill Lynch Pierce Fenner Smith, Inc. NY |  | 17,438 | 1,478 |  |  | 0.0129 |  | 19 |
| Morgan Stanley Co., Inc. |  | 73,108 | 19,828 |  |  | 0.0034 |  | 68 |
| Sanford C. Bernstein, Ltd |  | 11,083 | 824 |  |  | 0.0206 |  | 17 |
| UBS AG |  | 12,582 | 1,379 |  |  | 0.0131 |  | 18 |
| UBS Securities Asia, Ltd |  | 19,155 | 13,464 |  |  | 0.0023 |  | 31 |
| Various Other Brokers |  | 198,394 | 32,767 |  |  | 0.0068 |  | 223 |
| Total |  | 28,343 | 222,870 | \$ | \$ | 0.0045 | \$ | 1,010 |

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

## Schedule of Investment Fees

## Public Equity and Fixed Income

## Excluding Securities Lending

(Dollars in Thousands)

|  | Assets Managed at Fair Value at June 30, 2013 |  | Management ${ }^{1}$ <br> \& Other Fees |  |
| :---: | :---: | :---: | :---: | :---: |
| Aberdeen Asset Management | \$ | 438,692 | \$ | 2,621 |
| ASRS Internal |  | 9,765,147 |  | 217 |
| AQR Capital Management |  | 140,027 |  | 117 |
| Ashmore Investment Management |  | 537,422 |  | (829) |
| AXA Rosenberg Investment Managers |  | - |  | 6 |
| Blackrock Custom US Debt Fund |  | - |  | 15 |
| Blackrock Dow Jones/UBS |  | 8,244 |  | 28 |
| Blackrock EAFE Country Fund U/A |  | 1,866,206 |  | 1,271 |
| Blackrock Index Fund A |  | - |  | 25 |
| Blackrock Intermediate Govt/Credit Bond Index Fund |  | 23,184 |  | 4 |
| Blackrock Local Bond Index Fund B |  | 9,883 |  | 15 |
| Blackrock MSCI EAFE Small Cap |  | 284,902 |  | 184 |
| Blackrock MSCI Emerging Markets Free B |  | 626,248 |  | 753 |
| Blackrock US High Yield Bond Index Fund B |  | 16,375 |  | 29 |
| Blackrock US Debt Index Fund B |  | 29,216 |  | 25 |
| Blackrock Russell 1000 Index Fund B |  | 94,624 |  | 50 |
| Blackrock Russell 2000 Index Fund B |  | 19,060 |  | 12 |
| Brandes Investment Partners International Equity |  | 428,805 |  | 2,297 |
| Bridgewater Associates Global Tactical Asset Allocation |  | 2,824,856 |  | 13,748 |
| Cargill, Inc. |  | 121,788 |  | 3,165 |
| Champlain Investment Partners |  | 140,868 |  | 1,121 |
| Clear Channel Private Stock |  | 997 |  | - |
| Columbia Management Investment Advisors, LLC |  | 667,914 |  | 2,409 |

[^7]
## Public Equity and Fixed Income - continued

Excluding Securities Lending
(Dollars in Thousands)

|  | Assets Managed at Fair Value at June 30, 2013 |  | Management \& Other Fees |  |
| :---: | :---: | :---: | :---: | :---: |
| Cramer Rosenthal McGynn Mid Cap Value | \$ | 131,318 | \$ | 705 |
| Dimensional Fund Advisors Equity Fund |  | 438,502 |  | 895 |
| Dimensional Fund Advisors International Small Cap |  | 171,582 |  | 837 |
| Eaton Vance Investment Managers |  | 443,172 |  | 4,092 |
| Forum Securities, Ltd. |  | 6 |  | - |
| Franklin Templeton Investments |  | 334,588 |  | 2,020 |
| Gresham Investment Management |  | 823,917 |  | 3,317 |
| Guggenheim Partners Management |  | 308,275 |  | 1,945 |
| Hansberger Global Investors, LC |  | 295,848 |  | 1,371 |
| Intech Large Capital |  | 676,608 |  | 2,375 |
| Jacobs Levy Equity Management |  | 157 |  | 2,103 |
| JP Morgan High Yield |  | 319,883 |  | - |
| LSV Asset Management - Emerging Markets Equity Fund LP |  | 264,592 |  | 2,000 |
| LSV Asset Management - US Large Cap Value Account |  | 685,991 |  | 2,045 |
| Pacific Investment Management Company |  | 961,546 |  | 2,966 |
| QS Investors |  | 4 |  | - |
| Shenkman Capital Management |  | 156,238 |  | 694 |
| Timessquare Capital Management |  | 495,717 |  | 4,469 |
| Walter Scott \& Partners |  | 211,794 |  | 1,382 |
| Wellington Management Co. - Mid Cap Opportunities |  | 402,176 |  | 2,128 |
| William Blair \& Company |  | 401,478 |  | 2,168 |
| Windham Capital Management |  | 521,648 |  | 2,062 |
| Total | \$ | 26,089,498 | \$ | 66,857 |

## Real Estate

(Dollars in Thousands)

|  | Net Assets Managed at Fair Value at June 30, 2013 |  | Management ${ }^{1}$ \& Other Fees |  |
| :---: | :---: | :---: | :---: | :---: |
| AEW Core Property Trust (U.S.), Inc. | \$ | 207,145 | \$ | 1,016 |
| AEW Value Investors Fund II, LP |  | 32,388 |  | 371 |
| Alcion Real Estate Partners Tax-Exempt Parallel Fund II, LP |  | 29,720 |  | 1,268 |
| Almanac Realty Securities IV, LP |  | 55,542 |  | 693 |
| Almanac Realty Securities V, LP |  | 48,021 |  | 490 |
| ASRS Internal |  | 44,934 |  | 6,473 |
| Blackrock US Real Estate Securities Fund B |  | 19,183 |  | 28 |
| Blackstone Real Estate Partners VI, LP |  | 53,364 |  | 2,256 |
| Blackstone Real Estate Partners VII, LP |  | 19,519 |  | 518 |
| Carlyle Realty Partners V, LP |  | 26,212 |  | 816 |
| CB Richard Ellis Strategic Partners US Opportunity 5, LP |  | 42,932 |  | 440 |
| CB Richard Ellis Strategic Partners US Value 5, LP |  | 17,313 |  | 615 |
| CIM Fund III, LP |  | 65,957 |  | 615 |
| CIM Fund VIII, LP |  | 13,110 |  | - |
| CIM Urban REIT, LLC |  | 83,464 |  | 893 |
| CIM VI (Urban REIT), LLC |  | 10,520 |  | 32 |
| Colony Investors VIII, LP |  | 15,644 |  | 474 |
| Dune Real Estate Fund II, LP |  | 46,640 |  | 3,676 |
| Dune Real Estate Fund, LP |  | 39,770 |  | 440 |
| FC Cactus Residential Development Fund, LLC |  | 34,788 |  |  |
| Five Mile Capital II LOPO Co-Investment, LP |  | 24,445 |  | 544 |
| Five Mile Capital Partners II, LP |  | 39,426 |  | 818 |
| H/2 Special Opportunities II, LP |  | 87,231 |  | 5,646 |
| Harrison Street Real Estate Partners III, LP |  | 42,779 |  | 825 |
| Heitman Value Partners II, LP |  | 35,874 |  | 263 |
| Hunt Commercial Realty Partners III, LP |  | 25,576 |  | 459 |
| Invesco Asian Real Estate Partners II (USD), LP |  | 12,932 |  | 207 |
| Lone Star Fund VI (US), LP |  | 41,392 |  | 1,565 |
| Lone Star Real Estate Fund (US), LP |  | 9,772 |  | 108 |
| M\&G Real Estate Debt Fund, LP |  | 33,793 |  | 827 |
| Oaktree Real Estate Opportunities Fund V, LP |  | 53,074 |  | 741 |
| Oaktree Real Estate Opportunities Fund VI, LP |  | 34,508 |  | 862 |
| PLA Residential III, LP |  | 56,210 |  | 752 |
| PLA Retail Fund I, LP |  | 68,453 |  | 914 |
| PRISA II |  | 60,302 |  | 590 |
| RREEF Global Opportunities Fund II, LLC |  | 23,706 |  | (201) |
| Tishman Speyer Real Estate Venture VI, LP |  | 15,330 |  | 239 |
| Tishman Speyer Real Estate Venture VII, LP |  | 29,770 |  | 569 |
| US Cactus Industrial/Logistics Fund, LP |  | 199 |  | - |
| VTRAZ Holdings, LLC |  | 1,000 |  | - |
| Waterton Residential Property Venture XI, LP |  | 42,782 |  | 1,502 |
| Westbrook Real Estate Fund VII, LP |  | 33,664 |  | 551 |
| Westbrook Real Estate Fund VIII, LP |  | 44,830 |  | 706 |
| Total | \$ | 1,723,214 | \$ | 39,601 |

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

## Private Equity

(Dollars in Thousands)

|  | Net Assets ${ }^{1}$ <br> Managed at <br> Fair Value at Management June 30, 2013 \& Other Fees |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Accel-KKR Capital Partners III, LP | \$ | 25,413 | \$ | 720 |
| Apollo Investment Fund VII, LP |  | 35,977 |  | 539 |
| Apollo Natural Resources Partners, LP |  | 24,351 |  | 1,839 |
| Arlington Capital Partners III, LP |  | 15,865 |  | 954 |
| Atlas Venture Fund VIII, LP |  | 13,449 |  | 556 |
| Audax Private Equity Fund IV, LP |  | 8,037 |  | 159 |
| Baird Capital Partners V, LP |  | 36,658 |  | 927 |
| Blackrock Private Opportunities Fund, LP |  | 6,989 |  | 88 |
| Blackstone Capital Partners VI, LP |  | 21,864 |  | 955 |
| Blacstone Energy Partners, LP |  | 20,403 |  | 1,808 |
| Bridgepoint Europe IV 'D', LP |  | 31,629 |  | 593 |
| Brookfield Special Situations Fund III (NR A), LP |  | 16,597 |  | 1,009 |
| Catalyst Fund Limited Partnership III |  | 31,040 |  | 899 |
| Catalyst Fund Limited Partnership IV |  | 23,331 |  | 1,406 |
| Centerbridge Capital Partners, LP |  | 49,479 |  | 1,758 |
| CMEA Ventures VII, LP |  | 4,767 |  | 199 |
| Crown European Buyout Opportunities II, Plc |  | 13,310 |  | 567 |
| CVC European Equity Partners V ( C$)$, LP |  | 41,478 |  | 1,357 |
| Edgewater Growth Capital Partners III, LP |  | 24,742 |  | 621 |
| EnCap Energy Capital Fund IX, LP |  | 2,397 |  | 150 |
| Energy Capital Partners II-A, LP |  | 44,638 |  | 2,224 |
| First Reserve Fund XII, LP |  | 65,124 |  | 1,174 |
| IDG Ventures SF, LP |  | 8,592 |  | 260 |
| JLL Partners Fund VI, LP |  | 14,832 |  | 256 |
| Khosla Ventures IV, LP |  | 8,997 |  | 589 |
| Kinderhook Capital Fund III, LP |  | 23,483 |  | 2,832 |
| Levine Leichtman Capital Partners Private Capital Solutions II, LP |  | 16,831 |  | 1,418 |
| Levine Leichtman Capital Partners IV, LP |  | 87,467 |  | 829 |
| Levine Leichtman Capital Partners V, LP |  | 476 |  | - |
| Linconshire Equity Fund IV-A, LP |  | 13,094 |  | 293 |
| Linden Capital Partners II, LP |  | 12,171 |  | 420 |
| Littlejohn Fund IV-A, LP |  | 18,985 |  | 1,325 |
| LLR Equity Partners III, LP |  | 24,590 |  | 2,804 |
| LLR Equity Partners IV, LP |  | (44) |  | 44 |
| Maranon Mezzanine Fund, LP |  | 29,507 |  | 617 |
| Montreux Equity Partners IV, LP |  | 8,580 |  | 567 |
| Nautic Partners VI, LP |  | 35,288 |  | 593 |
| New Atlantic Ventures Fund III, LP |  | 7,966 |  | 243 |
| New Mountain Partners III, LP |  | 35,092 |  | 1,027 |
| Oakhill Capital Partners III, LP |  | 63,857 |  | 1,300 |
| Oaktree European Principal Fund III, LP |  | 18,624 |  | 593 |
| Onex Partners III, LP |  | 59,186 |  | 1,462 |

[^8]
## Private Equity - continued

(Dollars in Thousands)

|  | Net Assets Managed at Fair Value at June 30, 2013 |  | Management \& Other Fees |  |
| :---: | :---: | :---: | :---: | :---: |
| Partners Group Secondary 2008, LP | \$ | 54,595 | \$ | 1,231 |
| Partners Group Secondary 2011 (USD), LP INC |  | 11,988 |  | 1,151 |
| Paul Capital Partners IX, LP |  | 22,405 |  | 517 |
| Peninsula Technology Ventures, LP |  | 8,684 |  | 153 |
| Pine Brook Capital Partners, LP |  | 35,717 |  | 2,695 |
| Pine Brook Capital Partners II, LP |  | 4,226 |  | 434 |
| Platinum Equity Capital Partners II, LP |  | 28,686 |  | 63 |
| Quantum Energy Partners V, LP |  | 24,732 |  | 1,097 |
| Saybrook Corporate Opportunity Fund, LP |  | 13,231 |  | 312 |
| Seidler Equity Partners IV, LP |  | 10,884 |  | 662 |
| Silver Lake Partners III, LP |  | 24,459 |  | 371 |
| TCW/Crescent Mezzanine Partners V, LP |  | 42,145 |  | 442 |
| Tenex Capital Partners, LP |  | 16,647 |  | 688 |
| The Resolute Fund II, LP |  | 33,737 |  | 347 |
| The Veritas Capital Fund IV, LP |  | 51,330 |  | 3,184 |
| Thomas H Lee Equity Fund VI, LP |  | 44,728 |  | 631 |
| Vista Equity Partners Fund IV, LP |  | 23,500 |  | 1,093 |
| Warburg Pincus Private Equity X, LP |  | 47,853 |  | 709 |
| Waud Capital Partners QP III, LP |  | 20,086 |  | 316 |
| Wayzata Opportunities Fund II, LP |  | 39,384 |  | 782 |
| White Deer Energy, LP |  | 45,976 |  | 2,809 |
| White Deer Energy, LP II |  | 248 |  | 123 |
| Yucaipa American Alliance Fund II, LP |  | 54,741 |  | 635 |
| Total | \$ | 1,705,094 | \$ | 58,419 |

## Opportunistic

(Dollars in Thousands)

|  | Net Assets <br> Managed at |  |
| :--- | ---: | ---: |
|  | Fair Value at <br> June 30, 2013 | Management |
| Avenue Europe Special Situations Fund II (US), LP | $\$$ | 174,792 |

## ARIZONA STATE RETIREMENT SYSTEM

## A Component Unit of the State of Arizona


"I am member of the Civil Air Patrol (CAP) here in Arizona. CAP is a nationwide all-volunteer organization that provides search and rescue support for missing persons and lost/overdue aircraft; support for local government agencies by providing aerial photography of local infrastructure - especially after natural disasters; and aerospace education for young (high school age) CAP cadets. CAP has detachments - called Wings - in all 50 states. I am certified by CAP as a mission pilot to fly CAP aircraft in support of aerial searches for missing persons, lost aircraft and Homeland Security missions, as well as flying missions in search of people in distress in the Arizona desert. I fly orientation flights for CAP cadets that provide young members with their first flight experience. I also serve as the aircrew training coordinator. In addition I have served as a unit commander for one of the 12 flying units in Arizona. I have volunteered my time and flying

## IV. Actuarial Section

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## Actuarial Certification - Plan and HBS

## Arizona State Retirement Plan

Actuarial Valuation - June 30, 2012

## Actuarial Certification ARIZONA STATE RETIREMENT PLAN 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, 2012. 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 532,925 members $-203,994$ active members, 210,060 inactive members, 114,431 retired members and beneficiaries, and 4,440 members on long term disability. In addition, there are 229 System retirees receiving only ad hoc benefits, 536 System retirees receiving only health insurance benefits, and 125 System retirees receiving both ad hoc benefits and health insurance benefits from the Plan.

The actuarial calculations establish a total benefit cost of $22.60 \%$ of the annual compensation of members. The total normal cost rate is $13.53 \%$ of compensation and the required amortization payment determined in accordance with Section 38-737 is $9.02 \%$ of compensation.

## Actuarial Valuation of the Plan as of June 30, 2012

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, 2012, valuation report $11.30 \%$ for each member and each employer is applicable for the fiscal year beginning July 1, 2013.

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## Funding Progress

The 2011 valuation determined the rate for fiscal 2013 as $10.90 \%$. The 2012 valuation calculates a rate of $11.30 \%$ to become effective July 1, 2013. 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.

Section 38-737 of the Arizona Revised Statutes specifies that the UAAL is to be amortized over a rolling 30 -year period.

## Benefit Provisions

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

- Base partial lump-sum payments on the single-life annuity form of payment.
- Eliminate the Level Income Alternative option for new retirements after July 1, 2013.
- Reduce the credited service requirement to purchase Other Public Service, Leave of Absence time, or Military Service to five years.
- For new retirees and disabilities after August 1, 2012, eliminate health supplements for retirees and disabled members who are covered under an active employee plan, either as an insured or as a dependent, except that if the member is a dependent and the ASRS employer is not subsidizing the premium that the retiree or disabled member must pay, the member is entitled to a single coverage subsidy.
- Cap total income at $100 \%$ of member's pre-disability pay for new disabilities after August 1, 2012. Also require objective medical evidence to support claims.
- Revise the split of contributions between members and employers to be a $50 \% / 50 \%$ split, and provide for the return to members of the contribution amounts in excess of $50 \%$ that members had previously contributed.
- Require ASRS to charge employers for their share of the unfunded actuarial liabilities in the Plan and LTD programs if the employers cease to participate because of privatization, bankruptcy, or a change from public to private status. This requirement is effective for cessations that occur on or after January 2, 2013.
- Allow members who first become employees of an ASRS employer on or after age 65 and before July 1, 2015, to elect irrevocably not to participate in ASRS
- Require married members to select their spouses as their beneficiaries and to select an option with at least $50 \%$ continuation to their spouses, unless spouses waive these requirements in writing. This provision applies to retirements, beneficiary designations, or beneficiary changes that occur on or after July 1, 2013.

Section 11 gives details of benefit provisions.

## Arizona State Retirement Plan

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## Assumptions and Methods

We performed an experience study for the five-year period ended June 30, 2007, and recommended assumption changes based on the findings. On April 18, 2008, the Board adopted revised actuarial assumptions to be effective June 30, 2008. On November 23, 2009, the Board adopted further revised actuarial assumptions to be effective June 30, 2009. On November 18, 2011, the Board adopted an optional form load to liabilities and a new salary scale, where the wage inflation rate is decreased by $0.5 \%$, to be effective June $30,2011$.

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.

## Data

ASRS staff supplied census data for retired, active, and inactive members as of June 30, 2012. 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, 2012


## Arizona State Retirement Plan

Actuarial Valuation - June 30, 2012
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 November 23, 2009 the Board adopted assumptions to be effective for valuations on and after June 30, 2011. On November 18, 2011, the Board adopted an optional form load on liabilities and the $0.50 \%$ decrease in the wage inflation assumption to be effective for valuations on and after June 30, 2011. These assumptions are as follows:

1. Investment yield - $8 \%$ per annum net of all expenses.
2. Salary increases

| Years of Service | Merit Component | Total Salary Increase |
| :---: | :---: | :---: |
| 1 | 5.00\% | 9.00\% |
| 2 | 4.00 | 8.00 |
| 3 | 2.50 | 6.50 |
| 4 | 1.80 | 5.80 |
| 5 | 1.40 | 5.40 |
| 6 | 1.25 | 5.25 |
| 7 | 1.00 | 5.00 |
| 8 | 0.80 | 4.80 |
| 9 | 0.75 | 4.75 |
| 10 | 0.50 | 4.50 |
| 11 to 19 | 0.25 | 4.25 |
| 20 or more | 0.00 | 4.00 |
| $\begin{aligned} \text { * Total salary increase rate }= & \text { wage inflation (or growth) rate }(3.25 \%) \\ & + \text { productivity increase rate }(0.75 \%) \\ & + \text { merit component } \end{aligned}$ |  |  |

3. Rates of disability

| Age | Males |  | Females |
| :---: | :---: | :---: | :---: |
| 20 |  |  |  |
| 30 | $0.04 \%$ |  | $0.06 \%$ |
| 40 | 0.05 |  | 0.08 |
| 50 | 0.38 |  | 0.16 |
| 60 | 0.90 |  | 0.36 |
|  |  |  | 0.82 |

4. Rates of withdrawal - Sample ages and years of service

| Age | Years of Service |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male Members |  |  |  |  |
|  | 1 | 2 | 5 | 8 | 10+ |
| 20 | 20.50\% | 15.00\% | 9.25\% | 5.75\% | 17.24\% |
| 30 | 20.50 | 15.00 | 9.25 | 5.75 | 7.63 |
| 40 | 20.50 | 15.00 | 9.25 | 5.75 | 3.06 |
| 50 | 20.50 | 15.00 | 9.25 | 5.75 | 2.09 |
| 60 | 20.50 | 15.00 | 9.25 | 5.75 | 1.46 |

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| Age | Years of Service |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Female Members |  |  |  |  |
|  | 1 | 2 | 5 | 8 | 10+ |
| 20 | 20.50\% | 15.00\% | 9.25\% | 5.75\% | 29.00\% |
| 30 | 20.50 | 15.00 | 9.25 | 5.75 | 11.08 |
| 40 | 20.50 | 15.00 | 9.25 | 5.75 | 3.23 |
| 50 | 20.50 | 15.00 | 9.25 | 5.75 | 2.25 |
| 60 | 20.50 | 15.00 | 9.25 | 5.75 | 1.19 |

5. Rates of retirement - Sample ages and years of service

| Age | Years of Service |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 0-4 | 5 | 6-9 | 10-19 |
| 50 | 0.00\% | 10.00\% | 5.00\% | 5.00\% |
| 55 | 0.00 | 10.00 | 5.00 | 5.00 |
| 60 | 0.00 | 9.00 | 9.00 | 9.00 |
| 62 | 0.00 | 15.00 | 15.00 | 33.00 |
| 65 | 30.00 | 30.00 | 30.00 | 30.00 |
| 70 | 22.00 | 22.00 | 22.00 | 22.00 |
| Age | 20 | 25 | 30 | 31+ |
| 50 | 7.00\% | 8.67\% | 35.00\% | 20.00\% |
| 55 | 7.00 | 25.00 | 35.00 | 13.63 |
| 60 | 35.00 | 25.00 | 35.00 | 24.00 |
| 62 | 35.00 | 25.00 | 35.00 | 33.00 |
| 65 | 35.00 | 25.00 | 35.00 | 30.00 |
| 70 | 35.00 | 25.00 | 35.00 | 22.00 |

Deferred vested members are assumed to retire at their normal retirement age.
6. Mortality rates - 1994 GAM Static, Projected to 2010 with Projection Scale AA with no setback. This mortality assumption was chosen to be used from June 30, 2008 to June 30, 2012. The rates were projected to the middle point of this period and include an appropriate level of conservatism that reflects expected future mortality improvements.
7. Mortality rates after disability - 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 - It is assumed that $70 \%$ of future retirees will be eligible to receive the post-retirement health insurance premium supplement and that $35 \%$ of those retirees will be eligible for the dependent premium supplement.

## Arizona State Retirement Plan

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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 - A load of $0.087 \%$ has been added to the nonretired 401(a) liabilities to account for the election of optional forms other than a single life annuity.

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 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

## General Actuarial Information - Plan and HBS

The following charts prepared by the actuary will serve to indicate some of the more important statistics regarding the retirement program; each chart will identify each membership category separately where possible.

As of June 30, 2012

|  | Higher <br> Education <br> Members | Other <br> Education <br> Members | City <br> Members | County <br> Members | State <br> Members | Political <br> Subdivision <br> Members | Total Active <br> Members |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number of Members (active) | 23,129 | 111,273 | 16,549 | 21,057 | 25,862 | 6,124 | 203,994 |
| Average age | 47.0 | 45.0 | 45.8 | 47.0 | 47.5 | 46.2 | 45.8 |
| Average annual salary | $\$ 51,512$ | $\$ 37,970$ | $\$ 54,842$ | $\$ 47,486$ | $\$ 46,120$ | $\$ 57,467$ | $\$ 43,475$ |
| Average years of service | 10.0 | 9.3 | 10.2 | 9.8 | 10.6 | 7.7 | 9.6 |

As of June 30, 2012

|  | Higher <br> Education <br> Members | Other <br> Education <br> Members | City <br> Members | County <br> Members | State <br> Members | Political <br> Subdivision <br> Members | Total <br> Retired <br> Members |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Number of Retirees | 13,453 | 61,110 | 7,249 | 12,333 | 18,835 | 1,451 | 114,431 |
| Average age | 71.1 | 69.6 | 67.6 | 70.0 | 70.1 | 68.5 | 69.8 |
| Average monthly benefit | $\$ 1,811$ | $\$ 1,709$ | $\$ 1,818$ | $\$ 1,311$ | $\$ 1,390$ | $\$ 1,556$ | $\$ 1,630$ |
| Average years of service | 19.3 | 20.4 | 19.2 | 17.0 | 18.4 | 16.2 | 19.4 |

Of all plan retirees at June 30, 2012, $57.8 \%$ received annuities of more than $\$ 1,000$ per month. $12.8 \%$ received less than $\$ 300$ per month. Of the retirees, $12.8 \%$ are less than 60 years old, $60.8 \%$ are between 60 and 75 years old, and $26.4 \%$ are over 75 years old.

## 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 $100 \%$. As of June 30, 2012, the date of the most recent actuarial valuation, this funding level is $75.7 \%$. When the present actuarial asset value of $\$ 30.229$ billion is compared to the actuarial liabilities of $\$ 39.952$ billion, actuarial liabilities exceed actuarial assets by the amount of $\$ 9.723$ 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.

## Normal Costs and Required Contribution Rates (measured as of June 30, 2012)

The Plan's normal cost, for fiscal year (FY) 2011-2012 was $13.55 \%$ and for FY 2010-2011 was $13.34 \%$. The normal cost represents the present value cost, expressed as a percentage of pay, of the current level of benefits provided by the Plan. The Plan has a positive unfunded actuarial accrued liability (an actuarial deficit), which is treated as a debit on the Plan's required contribution rate. Because of the actuarial deficit, the required contribution rate is higher than the normal cost. If the actuarial value of assets and liabilities were equal, the required contribution rate would be the same as the normal cost. Because liabilities exceed assets, the required contribution rate is higher than the normal cost. Components of the normal cost are as follows:

| Components of Normal Cost ${ }^{\mathbf{1}}$ |  |
| :--- | ---: |
| Retirement benefits | $9.65 \%$ |
| Health insurance premium supplement | $0.40 \%$ |
| Survivor benefits | $0.39 \%$ |
| Withdrawals | $2.72 \%$ |
| Long-term disability benefit | $0.39 \%$ |
| Total, Normal Cost | $\mathbf{1 3 . 5 5 \%}$ |
| Amortization of the UAAL | $9.05 \%$ |
| Required contribution rate for FY 2013 | $\mathbf{2 2 . 6 0 \%}$ |
| Required contribution rate for FY 2013 | $10.90 \%$ |
| Required matching contribution rate shared by | $10.90 \%$ |
| member and employer to the nearest 0.05\% |  |

${ }^{1} 2010$ results include System liabilities and assets for members who retired or will retire on or after July 1, 1981.

## 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.

## General Actuarial Information - Plan and HBS (continued)

## 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 2012 and 2011 actuarial reports, the LTD contribution rate is $.40 \%, .24 \%$ for employees and $.24 \%$ for employers. These rates are effective for FY 2013 and 2012.

## 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.

## Summary of the Benefit Provisions - Plan and HBS

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. 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 | Benefit <br> Multiplier |
| :--- | :---: |
| Less than 20 | $2.10 \%$ |
| 20.0 to 24.99 | $2.15 \%$ |
| 25.0 to 19.99 | $2.20 \%$ |
| 30 or more | $2.30 \%$ |

## 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.

## Summary of the Benefit Provisions - Plan and HBS (continued)

## 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 <br> Service | Age at Date of Retirement |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

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,
b) period certain and life annuity (with pop-up) with either five, ten, or fifteen years of payments guaranteed, or
c) a social security leveling option combined with any of the other forms of payment.

## 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.

## Summary of the Benefit Provisions - Plan and HBS (continued)

## 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) if (a) is greater than $\$ 5,000$, the beneficiary may elect to receive a monthly income for five or ten years certain and life thereafter which is actuarially equivalent to the amount in (a).

## 3. Death of an Active Member After 15 Years of Credited Service or After Eligibility for Early Retirement

Beneficiary receives a benefit in the form of a survivor annuity equal to the benefit that would have been payable to the beneficiary if the participant had retired on the date of his or her death and elected to receive an annuity payable in the form of joint and $100 \%$ survivor with the beneficiary named as the joint pensioner.

## 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.

## 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. There is no benefit payable after the retiree dies. 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:

- $\quad \$ 150$ per month if the retiree is under age 65
- $\quad \$ 100$ per month if the retiree is 65 or over
b) with respect to premiums paid for retirees with family coverage:
- $\quad \$ 260$ 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 COLA up to a maximum of a $4 \%$ increase. The COLA is paid from a reserve of "Excess Investment Earnings." If there are no "Excess Investment Earnings" in reserve, then no COLA is paid.

## Summary of the Benefit Provisions - Plan and HBS (continued)

## 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.

## 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 2013 is $10.90 \%$ for each member and each employer, based on the 2011 actuarial valuation. The contribution rate for fiscal year 2014 will be $11.30 \%$ based on this valuation. Interest is credited at $8.00 \%$; however, interest is credited at $4 \%$ from July 1, 2005 for return of contributions upon termination for reasons other than retirement or death.

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

ADOPTED BY BOARD ACTION ON NOVEMBER 23, 2009 AND NOVEMBER 18, 2011 EFFECTIVE AS OF JUNE 30, 2011

## A. Actuarial Assumptions

## 1. Investment Yield Rate

$8 \%$ per annum compounded annually, net of investment expenses

## 2. Mortality

The mortality assumption was chosen to be used from June 30, 2008 to June 30, 2012. 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: 1994 GAM - Static, Projected to 2010 With Projection Scale AA, with no setback.
Rates at representative ages are shown below:

| Rates of Mortality(Active) <br> AGEMALE <br> PARTICIPANTS |  | FEMALE <br> PARTICIPANTS |
| :---: | :---: | :---: |
| 20 | 0.000373 | 0.000219 |
| 25 | 0.000563 | 0.000232 |
| 30 | 0.000739 | 0.000299 |
| 35 | 0.000785 | 0.000400 |
| 40 | 0.000943 | 0.000557 |
| 45 | 0.001280 | 0.000752 |
| 50 | 0.001929 | 0.001085 |
| 55 | 0.003255 | 0.002017 |
| 60 | 0.006162 | 0.004097 |
| 65 | 0.011600 | 0.007970 |
| 70 | 0.018633 | 0.012672 |
| 75 | 0.029696 | 0.019950 |
| 80 | 0.052813 | 0.035208 |
| 85 | 0.086903 | 0.061520 |
| 90 | 0.143432 | 0.110808 |

## Statement of Actuarial Methods and Assumptions - Plan and HBS (continued)

b) Post-retirement

Assumptions: Non-Disabled rates are based on the 1994 GAM - Static, Projected to 2010 with Projection Scale AA with no setback. Disabled rates are based on the experience of other large public sector retirement systems and ASRS' own experience. Rates at representative ages are shown below.

| Rates of Mortality |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Male Participants |  |  |  |  | Female Participants |
| AGE | NON-DISABLED | DISABLED | NON-DISABLED | DISABLED |  |  |
| 20 | 0.000373 | 0.051100 | 0.000219 | 0.027440 |  |  |
| 25 | 0.000563 | 0.063540 | 0.000232 | 0.038300 |  |  |
| 30 | 0.000739 | 0.058810 | 0.000299 | 0.053930 |  |  |
| 35 | 0.000785 | 0.040920 | 0.000400 | 0.056980 |  |  |
| 40 | 0.000943 | 0.034740 | 0.000557 | 0.037590 |  |  |
| 45 | 0.001280 | 0.031360 | 0.000752 | 0.025700 |  |  |
| 50 | 0.001929 | 0.031110 | 0.001085 | 0.022840 |  |  |
| 55 | 0.003255 | 0.030860 | 0.002017 | 0.024605 |  |  |
| 60 | 0.006162 | 0.033730 | 0.004097 | 0.026507 |  |  |
| 65 | 0.011600 | 0.048250 | 0.007970 | 0.028555 |  |  |
| 70 | 0.018633 | 0.055540 | 0.012672 | 0.030762 |  |  |
| 75 | 0.029696 | 0.090010 | 0.019950 | 0.036143 |  |  |
| 80 | 0.052813 | 0.146340 | 0.035208 | 0.046560 |  |  |
| 85 | 0.086903 | 0.228520 | 0.061520 | 0.056647 |  |  |
| 90 | 0.143432 | 0.313770 | 0.110808 | 0.068920 |  |  |

## 3. Disability Rates

| Rates of Decrement Due to Disability |  |  |
| :---: | :---: | :---: |
| AGE | MALE PARTICIPANTS | FEMALE PARTICIPANTS |
| 20 | 0.000431 | 0.000551 |
| 25 | 0.000479 | 0.000603 |
| 30 | 0.000548 | 0.000760 |
| 35 | 0.000822 | 0.001172 |
| 40 | 0.001583 | 0.001583 |
| 45 | 0.002519 | 0.002378 |
| 50 | 0.003846 | 0.003649 |
| 55 | 0.005786 | 0.005266 |
| 60 | 0.008994 | 0.008185 |

4. Withdrawal Rates (for causes other than death, disability or retirement)

Select and ultimate withdrawal rates are used. Rates at representative ages are shown below.

| Rates of Decrement Due to Withdrawal |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| AGE | 0 | 1 | 2 | $3^{\text {YE }}$ | ARS OF | SERVIC <br> 5 | ES <br> 6 | 7 | 8 | 9 | 10+ |
| MALE EMPLOYEES |  |  |  |  |  |  |  |  |  |  |  |
| 20 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.1724 |
| 30 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.0763 |
| 40 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.0306 |
| 50 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.0209 |
| 60 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.0146 |
| 70 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.0243 |
| FEMALE EMPLOYEES |  |  |  |  |  |  |  |  |  |  |  |
| 20 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.2900 |
| 30 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.1108 |
| 40 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.0323 |
| 50 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.0225 |
| 60 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.0119 |
| 70 | 0.2775 | 0.2050 | 0.1500 | 0.1250 | 0.1025 | 0.0925 | 0.0800 | 0.0700 | 0.0575 | 0.0525 | 0.0194 |

## 5. Salary Scales

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

| Years of <br> Service | Merit <br> Component | Total Salary <br> Increase $^{1}$ |
| :---: | :---: | :---: |
| 1 | $5.00 \%$ | $9.00 \%$ |
| 2 | $4.00 \%$ | $8.00 \%$ |
| 3 | $2.50 \%$ | $6.50 \%$ |
| 4 | $1.80 \%$ | $5.80 \%$ |
| 5 | $1.40 \%$ | $5.40 \%$ |
| 6 | $1.25 \%$ | $5.25 \%$ |
| 7 | $1.00 \%$ | $5.00 \%$ |
| 8 | $0.80 \%$ | $4.80 \%$ |
| 9 | $0.75 \%$ | $4.75 \%$ |
| 10 | $0.50 \%$ | $4.50 \%$ |
| 11 to 19 | $0.25 \%$ | $4.25 \%$ |
| 20 or more | $0.00 \%$ | $4.00 \%$ |

${ }^{1}$ Total salary increase rate $=$ wage inflation $($ or growth $)$ rate $(3.25 \%)+$ productivity increase rate $(0.75 \%)+$ merit component ${ }^{2}$

## Statement of Actuarial Methods and Assumptions - Plan and HBS (continued)

## 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 |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $0-4$ | 5 | $6-9$ | $10-19$ | 20 | 25 | 30 | $31+$ |  |
| AGE | 0.000 | 0.100 | 0.050 | 0.050 | 0.070 | 0.087 | 0.350 | 0.200 |  |
| 50 | 0.000 | 0.050 | 0.050 | 0.070 | 0.250 | 0.350 | 0.136 |  |  |
| 55 | 0.000 | 0.100 | 0.090 | 0.090 | 0.350 | 0.250 | 0.350 | 0.240 |  |
| 60 | 0.000 | 0.090 | 0.020 | 0.350 | 0.350 | 0.250 | 0.350 | 0.330 |  |
| 62 | 0.000 | 0.150 | 0.150 | 0.330 |  |  |  |  |  |
| 65 | 0.300 | 0.300 | 0.300 | 0.300 | 0.350 | 0.250 | 0.350 | 0.300 |  |
| 70 | 0.220 | 0.220 | 0.220 | 0.220 | 0.350 | 0.250 | 0.350 | 0.220 |  |

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 $70 \%$ of future retirees will be eligible to receive the post-retirement health insurance premium supplement and that $35 \%$ of those retirees will be eligible for the dependent premium supplement.

## 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 $0.087 \%$ has been added to the non-retired 401(a) liabilities to account for the election of optional forms other than a single life annuity.

## 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 is funded on a level dollar basis over the period of time described in Section 38-737. For the actuarial valuation as of June 30, 2012 , the period is 30 years.

## D. Data for Valuation

In preparing the actuarial valuation as of June 30, 2011, 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 Plan Active Member Valuation Data

Last 6 Years

| Contributing Active Members |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| VALUATION <br> AS OF JUNE 30 | NUMBER | ANNUAL PAYROLL | ANNUAL <br> AVERAGE PAY | INCREASE IN <br> AVERAGE PAY |
| 2007 | 224,001 | $9,161,803,726$ | 40,901 | $7.1 \%$ |
| 2008 | 226,415 | $9,708,352,896$ | 42,879 | $4.8 \%$ |
| 2009 | 222,515 | $9,834,810,345$ | 44,198 | $3.1 \%$ |
| 2010 | 213,530 | $9,419,951,810$ | 44,115 | $-0.2 \%$ |
| 2011 | 208,939 | $9,060,630,604$ | 43,365 | $-1.7 \%$ |
| 2012 | 203,994 | $8,868,678,184$ | 43,475 | $0.3 \%$ |

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

Last 6 Years
$\left.\begin{array}{|ccccccc|}\hline \begin{array}{c}\text { Valuation } \\ \text { as of } \\ \text { June 30 }\end{array} & \begin{array}{c}\text { Retirants and } \\ \text { Beneficiaries Added to } \\ \text { Rolls }\end{array} & \begin{array}{c}\text { Retirants and } \\ \text { Beneficiaries Removed } \\ \text { from Rolls }\end{array} & \begin{array}{c}\text { Retirants and } \\ \text { Beneficiaries Rolls End } \\ \text { of Year }\end{array} & \begin{array}{c}\text { \% Increase } \\ \text { in Annual } \\ \text { Allowance }\end{array} & \begin{array}{c}\text { Average } \\ \text { Annual }\end{array} \\ \hline & \text { NO. } & \text { Allowances }\end{array}\right]$
${ }^{1}$ Cost of Living Increases included here.

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

Last 4 Years ${ }^{2}$

| 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 OWANCES | NO. |  | ANNUAL OWANCES | NO. |  |  | ANNUAL LOWANCES |  |  |  |
| 2009 | N/A |  | N/A | N/A |  | N/A | 54,753 |  | \$ | 82,222,248 | N/A | \$ | 1,502 |
| 2010 | 5,689 | \$ | 10,358,376 | 2,647 | \$ | 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 | 3 |  | 88,844,592 | 3.2\% |  | 1,465 |
| 2012 | 5,867 | \$ | 9,754,788 | 3,285 | \$ | 8,936,184 | 63,225 | 3 |  | 89,663,196 | 0.9\% |  | 1,418 |

[^9]Schedule of Unfunded (Over) Accrued Liabilities (Plan and HBS combined) Last 10 Years

| Year Ended June 30 | Aggregate Accrued <br> Liabilities Plan | Actuarial Value of Net Plan Assets | Assets as a \% of Accrued Liabilities Plan | Unfunded (overfunded) Accrued <br> Liabilities Plan (UAL) | Active Member Payroll | UAL as a \% of Active Member Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2003 | 24,303,639,447 | 23,516,898,511 | 97\% | 786,740,936 | 7,296,827,756 | 10.80\% |
| 2004 | 25,918,329,505 | 23,642,904,763 | 91\% | 2,275,424,742 | 7,485,590,038 | 30.40\% |
| 2005 | 27,942,601,285 | 23,836,519,123 | 85\% | 4,106,082,162 | 8,032,457,947 | 51.10\% |
| 2006 | 29,696,631,262 | 24,851,522,776 | 84\% | 4,845,108,486 | 8,311,869,615 | 58.30\% |
| 2007 | 31,995,671,426 | 26,476,687,905 | 83\% | 5,518,983,521 | 9,161,803,726 | 60.20\% |
| 2008 | 33,870,864,745 | 27,851,825,730 | 82\% | 6,019,039,015 | 9,708,352,896 | 62.00\% |
| 2009 | 35,742,538,572 | 28,360,159,450 | 79\% | 7,382,379,122 | 9,834,810,345 | 75.10\% |
| 2010 | 37,557,862,066 | 28,823,144,688 | 77\% | 8,734,717,378 | 9,419,951,810 | 92.70\% |
| 2011 | 38,555,369,013 | 29,230,960,267 | 76\% | 9,324,408,746 | 9,060,630,604 | 102.90\% |
| 2012 | 39,952,371,191 | 30,229,577,272 | 76\% | 9,722,793,919 | 8,868,678,184 | 109.60\% |

## Solvency Test (Plan)

Last 10 Years

| Year End June 30 | Aggregate Accrued Liabilities for: |  |  |  |  | Portion of Accrued Liabilities Covered by Net Assets Available for Benefits |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | ACTIVE MEMBER CONTRIBUTIONS | RETIREES AND BENEFICIARIES | ACTIVEMEMBERS(EMPLOYERFINANCEDPORTION)(3) | Net Assets Available for Benefits |  |  |  |
|  |  | (1) | (2) |  |  | (1) | (2) | (3) |
| 2003 |  | 3,110,690,039 | 10,911,141,534 | 8,912,910,871 ${ }^{1}$ | 22,572,007,289 | 100\% | 100\% | 95.9\% |
| 2004 |  | 3,407,611,954 | 11,888,766,685 | 9,209,865,919 ${ }^{1}$ | 22,659,396,325 | 100\% | 100\% | 79.9\% |
| 2005 |  | 3,717,945,957 | 12,970,620,699 | 9,797,630,212 ${ }^{1}$ | 22,808,290,293 | 100\% | 100\% | 62.5\% |
| 2006 |  | 4,168,243,157 | 13,998,186,812 | 10,025,660,085 ${ }^{1}$ | 23,766,572,590 | 100\% | 100\% | 55.9\% |
| 2007 |  | 5,533,036,906 | 15,191,806,375 | 9,665,632,410 | 25,309,888,063 | 100\% | 100\% | 47.4\% |
| 2008 |  | 6,256,502,949 | 16,357,773,654 | 9,810,200,566 | 26,612,440,139 | 100\% | 100\% | 40.8\% |
| 2009 |  | 7,054,925,502 | 17,455,947,713 | 9,779,242,657 | 27,093,788,614 | 100\% | 100\% | 26.4\% |
| 2010 | 2 | 7,704,328,621 | 19,246,476,421 | 9,121,714,675 | 27,571,999,406 | 100\% | 100\% | 6.8\% |
| 2011 |  | 8,374,149,814 | 20,541,081,742 | 8,135,947,783 | 27,983,517,225 | 100\% | 95.5\% | 0.0\% |
| 2012 |  | 9,110,894,718 | 21,699,459,353 | 7,639,934,669 | 28,948,010,913 | 100\% | 91.4\% | 0.0\% |

[^10]
## Solvency Test (HBS)

Last 10 Years

|  | Aggregate Accrued Liabilities for: |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ACTIVE |  |

${ }^{1}$ HBS Liabilities for 2006 and earlier are included in Plan liabilities for inactive members.

## Schedule of Recommended vs. Actual Plan Contributions

Last 10 Years

| Year Ended June 30 | Active Member Payroll | Employee Contributions | Employer Retirement Contribution Rate - Actual |  | Actuary Recommended Contribution |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 2003 | 7,297,000,000 | 142,356,325 | 5.20\% |  | 5.20\% |
| 2004 | 7,486,000,000 | 377,436,100 | 5.20\% |  | 5.20\% |
| 2005 | 8,032,000,000 | 403,269,191 | 5.20\% |  | 5.20\% |
| 2006 | 8,312,000,000 | 570,581,044 | 6.90\% | 1 | 7.75\% |
| 2007 | 9,162,000,000 | 766,624,734 | 8.60\% | 1 | 7.75\% |
| 2008 | 9,708,000,000 | 857,502,851 | 9.10\% |  | 9.10\% |
| 2009 | 9,835,000,000 | 844,405,884 | 8.95\% |  | 8.95\% |
| 2010 | 9,420,000,000 | 808,814,419 | 9.00\% |  | 9.00\% |
| 2011 | 9,061,000,000 | 833,205,706 | 9.60\% |  | 9.60\% |
| 2012 | 8,869,000,000 | 905,908,620 | 10.50\% |  | 10.50\% |

[^11]
## Analysis of Financial Experience for the Plan

Last 10 Years (Dollars in Millions)

|  | Unfunded Actuarial Liability (UAAL) Prior Year | Normal Cost for the Year | Contributions for the Year | Interest at 8\% on UAAL | Normal Cost | On Contributions | Total | Expected UAAL | Actual UAAL | Gain (Loss) for the Year ${ }^{1}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2003 | $(1,356.52)$ | 781.41 | (371.27) | (108.52) | 62.51 | (14.85) | (60.86) | (1,007.24) | 362.74 | (1,369.98) |
| 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) |

${ }^{1}$ Gain/Loss includes assumption and plan changes.

## Analysis of Financial Experience for HBS

Last 10 Years (Dollars in Millions)

| Year <br> Ended June 30 | Unfunded Actuarial Liability (UAAL) Prior Year | Normal 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 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2003 | 320.42 | 50.32 | (4.26) | 25.63 | 4.03 | (0.17) | 29.49 | 395.97 | 424.00 | (28.03) |
| 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 |

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.

## History of Contribution Rates

| Fiscal Year <br> Beginning <br> July 1 | Calculated Rates |  | Actual Rates |  | Total Rate |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1980 | MEMBER | EMPLOYER | MEMBER | EMPLOYER | CALCULATED ACTUAL |  |  |
| 1981 | $7.00 \%$ | $6.28 \%$ | $7.00 \%$ | $7.00 \%$ | $13.28 \%$ | $14.00 \%$ |  |
| 1982 | $7.00 \%$ | $6.29 \%$ | $7.00 \%$ | $7.00 \%$ | $13.29 \%$ | $14.00 \%$ |  |
| 1983 | $7.00 \%$ | $5.79 \%$ | $7.00 \%$ | $7.00 \%$ | $12.79 \%$ | $14.00 \%$ |  |
| 1984 | $7.00 \%$ | $6.04 \%$ | $7.00 \%$ | $7.00 \%$ | $13.04 \%$ | $14.00 \%$ |  |
| 1985 | $6.27 \%$ | $6.27 \%$ | $6.27 \%$ | $6.27 \%$ | $12.54 \%$ | $12.54 \%$ |  |
| 1986 | $5.67 \%$ | $5.67 \%$ | $5.67 \%$ | $5.67 \%$ | $11.34 \%$ | $11.34 \%$ |  |
| 1987 | $5.53 \%$ | $5.53 \%$ | $5.53 \%$ | $5.53 \%$ | $11.06 \%$ | $11.06 \%$ |  |
| 1988 | $5.16 \%$ | $5.16 \%$ | $4.00 \%$ | $4.00 \%$ | $10.32 \%$ | $8.00 \%$ |  |
| 1989 | $5.09 \%$ | $5.09 \%$ | $5.09 \%$ | $5.09 \%$ | $10.18 \%$ | $10.18 \%$ |  |
| 1990 | $4.69 \%$ | $4.69 \%$ | $2.00 \%$ | $2.00 \%$ | $9.38 \%$ | $4.00 \%$ |  |
| 1991 | $3.82 \%$ | $3.82 \%$ | $3.82 \%$ | $3.82 \%$ | $7.64 \%$ | $7.64 \%$ |  |
| 1992 | $3.60 \%$ | $3.60 \%$ | $3.60 \%$ | $3.60 \%$ | $7.20 \%$ | $7.20 \%$ |  |
| 1993 | $3.59 \%$ | $3.59 \%$ | $3.59 \%$ | $3.59 \%$ | $7.18 \%$ | $7.18 \%$ |  |
| 1994 | $4.09 \%$ | $4.09 \%$ | $3.14 \%$ | $3.14 \%$ | $8.18 \%$ | $6.28 \%$ |  |
| 1995 | $3.75 \%$ | $3.75 \%$ | $3.75 \%$ | $3.75 \%$ | $7.50 \%$ | $7.50 \%$ |  |
| 1996 | $3.95 \%$ | $3.95 \%$ | $3.36 \%$ | $3.36 \%$ | $7.90 \%$ | $6.72 \%$ |  |
| 1997 | $3.20 \%$ | $3.20 \%$ | $3.20 \%$ | $3.20 \%$ | $6.40 \%$ | $6.40 \%$ |  |
| 1998 | $3.05 \%$ | $3.05 \%$ | $3.05 \%$ | $3.05 \%$ | $6.10 \%$ | $6.10 \%$ |  |
| 1999 | $2.85 \%$ | $2.85 \%$ | $2.85 \%$ | $2.85 \%$ | $5.70 \%$ | $5.70 \%$ |  |
| 2000 | $2.17 \%$ | $2.17 \%$ | $2.17 \%$ | $2.17 \%$ | $4.34 \%$ | $4.34 \%$ |  |
| 2001 | $2.73 \%$ | $\mathbf{1}$ | $2.73 \%$ | $\mathbf{1}$ | $2.17 \%$ | $2.17 \%$ | $5.46 \%$ |

[^12]
## Actuarial Certification - LTD

## buckconsultants

## A Xerox Company

January 23, 2013

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, 2012
Dear Retirement Board Members:

We certify that the information contained in the attached 2012 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, 2012.

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 and it 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.

3200 N Central Avenue, Suite 2200 • Phoenix, AZ 85012
602.864.3500 • 602.864.3535 (fax)

Retirement Board
January 23, 2013
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 rolling 15-year period. Contribution rates are set annually, based on the valuation of the preceding year. The rate calculated in this report ( $0.47 \%$ in total) will apply in the fiscal year beginning July 1, 2013. 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 analysis was completed in the first quarter of 2008 using experience from July 1, 2002 to June 30, 2007. Revised actuarial assumptions were approved and implemented for the June 30, 2008 valuation. Further revised actuarial assumptions were approved and implemented for the June 30, 2009 valuation and the June 30, 2011 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 experience analysis conducted on actual plan experience from July 1, 2002 to June 30, 2007, revised pre- and post-retirement mortality assumptions were adopted for the June 30, 2008 valuation. Further revised actuarial assumptions were adopted by ASRS for the June 30, 2009 valuation. Rates of retirement, rates of disability and rates of withdrawal were updated to rates recommended as a result of the last experience analysis. A revised salary scale was adopted by ASRS for the June 30, 2011 valuation. The wage inflation rate was decreased by $0.5 \%$.

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 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.

Retirement Board
January 23, 2013
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## Data

ASRS staff and Sedgwick (the administrator of the LTD program) supplied census data for participants as of June 30, 2012. 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.

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,

Cacslex \& Cititendin
Charles E. Chittenden, FSA, EA, MAAA
Principal and Consulting Actuary
(Vughersualla
Douglas J. Fiddler, ASA, EA, MAAA
Director, Retirement Actuary


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

## General Actuarial Information - LTD

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

The following table summarizes the key results of the June 30, 2012, actuarial valuation of the Arizona State Retirement System (ASRS) Long Term Disability (LTD) Program.

| Amount in OOO's | $\mathbf{2 0 1 1}$ | $\mathbf{2 0 1 2}$ |
| :--- | ---: | ---: |
| Normal Cost | $\$ 28,165$ | $\$$ |
| Actuarial Accrued Liability | 455,695 | 439,724 |
| Valuation Assets | 307,537 | 295,786 |
| Funded Status on Valuation Assets | $67.49 \%$ | $67.27 \%$ |
| Market Value of Assets | 280,856 | 257,324 |
| Funded Status on Market Value of Assets | $61.63 \%$ | $58.52 \%$ |
| Unfunded Actuarial Accrued Liability (UAAL) | 148,158 | 143,920 |
| Past Service Cost | 16,027 | 15,569 |
| Annual Required Contribution (ARC) | 44,192 | 41,292 |
| Payroll | $9,060,631$ | $8,868,678$ |
| ARC as \% of payroll for each employer | $0.23 \%$ | $\mathbf{1}$ |
| ARC as \% of payroll for each employee | $0.26 \%$ | $0.24 \%$ |
| UAAL as \% of payroll | $1.60 \%$ | $0.24 \%$ |

The following chart will serve to indicate some of the more important statistics regarding the long-term disability program.

| Number of LTD Open Claim Members | 4,440 |  |
| :--- | ---: | ---: |
| Average Age | 54.4 |  |
| Average Monthly Benefit | $\$$ | 1,279 |

[^13]
## Summary of Benefit Provisions - LTD

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 FY14 rate is $0.24 \%$ 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.

## Summary of Benefit Provisions - LTD (continued)

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: The contribution allocation between employees and employers has been changed from $53 \%$ for employees and $47 \%$ for employers to $50 \%$ for each.

## 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, 2012, 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, except for the wage inflation assumption, in its meeting on November 23, 2009. The wage inflation assumption (a $0.50 \%$ decrease from the previous year's assumption) was adopted by the ASRS Board in it meeting on November 18, 2011.

We have not audited the data or the asset information used in this valuation, but believe them to be complete and accurate.

## Summary of Actuarial Methods

The actuarial cost method is 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 starting as of June 30, 2006. The unfunded actuarial accrued liability is amortized over a rolling 15 year period using a level dollar amortization method.

## 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

1987 Commissioners' Group Long Term Disability Valuation Table (1987 CGDT), applicable to plans with a sixmonth elimination period.

## 3. Disability Incidence Rates for Active Members

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

| Age | Males | Females |
| :---: | :---: | :---: |
| 20 | $0.04 \%$ | $0.06 \%$ |
| 30 | $0.05 \%$ | $0.08 \%$ |
| 40 | $0.16 \%$ | $0.16 \%$ |
| 50 | $0.38 \%$ | $0.36 \%$ |
| 60 | $0.90 \%$ | $0.82 \%$ |

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

## 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 $40 \%$. 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 $60 \%$ 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, 2007.

## 6. Administrative Expense Reserve for Active Members

$2.8 \%$ of projected claim liabilities. This is the percentage that applies for currently disabled members.

## 7. Elimination Period

A 3\% reduction in liabilities is applied to reflect the six-month elimination period for benefits.

## 8. Changes in Assumptions Since the Prior Valuation

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

## LTD ScheduLes

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

Last 6 Years

| $\begin{aligned} & \text { Valuation } \\ & \text { as of } \\ & \text { June } 30 \end{aligned}$ | Retirants and Beneficiaries Added to Rolls |  | Retirants and Beneficiaries Removed from Rolls |  | Retirants and Beneficiaries Rolls End of Year |  | \% Increase in Annual | Average Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | NO. | ANNUAL ${ }^{1}$ <br> ALLOWANCES | NO. | ANNUAL ${ }^{2}$ <br> ALLOWANCES | NO. | ANNUAL ${ }^{1}$ <br> ALLOWANCES |  |  |
| 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 |

${ }^{1}$ Reflects actual, but not assumed, benefit offsets. Does not include overpayment offsets.
${ }^{2}$ Includes changes in benefit amounts.

## Schedule of Unfunded (Over) Accrued Liabilities

Last 6 Years
(Dollars in Thousands)

| Year <br> Ended <br> June 30 | Actuarial Accrued Liabilities Plan | Actuarial Value of Net Plan Assets | Assets as a \% of Accrued Liabilities Plan | Unfunded (over funded) Accrued Liabilities Plan (AAL) | Active Member Payroll | UAAL as a \% of Active Member Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2007 | 604,486 | 231,685 | 38.3\% | 372,800 | 9,161,804 | 4.10\% |
| 2008 | 553,185 | 274,902 | 49.7\% | 278,283 | 9,708,353 | 2.90\% |
| 2009 | 476,276 | 311,232 | 65.4\% | 165,044 | 9,834,810 | 1.70\% |
| 2010 | 477,266 | 319,308 | 66.9\% | 157,958 | 9,419,952 | 1.70\% |
| 2011 | 455,695 | 307,537 | 67.5\% | 148,158 | 9,060,631 | 1.60\% |
| 2012 | 439,706 | 295,786 | 67.3\% | 143,920 | 8,868,678 | 1.60\% |

## Solvency Test

Last 6 Years
(Dollars in Thousands)

| Year End June 30 | Aggregate Accrued Liabilities for: |  |  |  | Portion of Accrued Liabilities Covered |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ACTIVE MEMBER CONTRIBUTIONS (1) | RETIREES AND BENEFICIARIES | ACTIVE MEMBERS (EMPLOYER FINANCED PORTION) <br> (3) | Net Assets Available for Benefits | Port <br> Liabi by Availa <br> (1) | n of A ities C Net As ble for <br> (2) | rued ered ts enefits (3) |
| 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\% |

## Schedule of Recommended vs. Actual LTD Contributions

## Last 10 Years

(Dollars in Thousands)

| Year <br> Ended <br> June 30 | Active <br> Member <br> Payroll | Employee <br> Contributions | Employer <br> Contribution <br> Rate - Actual | Actuary <br> Recommended <br> Contribution |
| :---: | :---: | :---: | :---: | :---: |
| 2003 | $7,297,000$ | 36,485 | $0.50 \%$ | $0.50 \%$ |
| 2004 | $7,486,000$ | 37,430 | $0.50 \%$ | $0.50 \%$ |
| 2005 | $8,032,000$ | 40,160 | $0.50 \%$ | $0.50 \%$ |
| 2006 | $8,312,000$ | 41,560 | $0.50 \%$ | $0.50 \%$ |
| 2007 | $9,162,000$ | 45,810 | $0.50 \%$ | $0.50 \%$ |
| 2008 | $9,708,000$ | 48,540 | $0.50 \%$ | $0.50 \%$ |
| 2009 | $9,834,810$ | 49,174 | $0.50 \%$ | $0.50 \%$ |
| 2010 | $9,419,952$ | 37,680 | $0.40 \%$ | $0.40 \%$ |
| 2011 | $9,060,630$ | 23,558 | $0.48 \%$ | $0.48 \%{ }^{1}$ |
| 2012 | $8,868,678$ | 20,881 | $0.50 \%$ | $0.50 \%$ |

[^14]
## Analysis of Financial Experience for LTD

As of June 30, 2012

## Lives <br> 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, 2011 | 4,609 | $\$ 227,691,734$ |
| :--- | :---: | :---: | :---: |
| (b) Change in reserve on 3,857 continuing disabled lives | N/A | $(31,071,482)$ |
| (c) Reserves released on terminated lives | $(878)$ | $(22,084,264)$ |
| (d) Reserves added on new lives | 709 | $43,366,726$ |
| (e) Open Claims Reserve Liability on June 30, 2012 <br> = (a) + (b) + (c) + (d) | 4,440 | $\$ 217,902,714$ |

2. DEVELOPMENT OF LIABILITY (GAIN)/LOSS
(a) Actuarial Accrued Liability as of July 1, 2011
\$ 455,695,240
(b) Normal Cost for 2011/2012 28,164,635
(c) Expected Benefit Payments for 2011/2012 68,570,000
(d) Expected Actuarial Accrued Liability on June 30, 2012
$=((a)+(b)) \times 1.08-(c) \times(1+.08 \times 13 / 24) \quad 451,027,298$
(e) Change in Plan Terms
(f) Change in Assumptions
(g) Liability (Gain)/Loss
$(11,321,239)$
(h) Actual Actuarial Accrued Liability on June 30, 2012
$=(\mathrm{d})+(\mathrm{e})+(\mathrm{f})+(\mathrm{g})$
\$ 439,706,059
3. SOURCES OF LIABILITY (GAIN)/LOSS

| (a) Offset (Gain)/Loss | $(4,806,691)$ |
| :--- | :---: |
| (b) Liability for members who were terminated in last year's valuation | $8,840,516$ |
| (c) More Terminations than Expected | $(1,112,971)$ |
| (d) Fewer LTD Retirees than Expected | $(9,368,925)$ |
| (e) Salary Gain on Continuing Actives | $(5,783,297)$ |
| (f) New Active Entrants | $4,787,929$ |
| (g) Other (Gain)/Loss $(3,877,800)$ <br> (h) Liability $($ Gain $) /$ Loss  <br> $=(a)+(b)+(c)+(d)+(e)+(f)+(g)$ $\$(11,321,239)$ |  |

## 4. DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

(a) Excess (Shortfall) of Investment Income:
(i) Current Year
\$ $(18,922,274)$
(ii) Current Year - 1
(iii) Current Year - 2
(iv) Current Year - 3
(v) Current Year - 4
(vi) Current Year - 5
(vii) Current Year - 6
(b) Deferral of Excess (Shortfall):
(i) Current Year (90\% Deferral)
$(17,030,047)$
(ii) Current Year - 1 ( $80 \%$ Deferral)

29,599,327
(iii) Current Year - 2 ( $70 \%$ Deferral)

7,380,575
(iv) Current Year - 3 (60\% Deferral)
$(41,218,042)$
(v) Current Year - 4 (50\% Deferral)
$(22,330,567)$
(vi) Current Year - 5 (40\% Deferral)

4,568,680
(vii) Current Year - 6
(viii) Total Deferred for the Year

568,572
(c) Market Value of Assets as of June 30, 2012
(d) Actuarial Value of Assets as of June 30, 2012 = (c) - (b) (viii)
$(38,461,502)$
5. DEVELOPMENT OF ASSET (GAIN)/LOSS
(a) Actuarial Value of Assets as of July 1, 2011
\$ 307,536,890
(b) Contributions

41,996,508
(c) Actual Benefit Payments for 2011/2012

65,189,521
(d) Administrative Expenses 2,739,507
(e) Expected Investment Income at 8\% Return $=$
$((\mathrm{a}) \times .08)+((\mathrm{b}) \times .08 \times 1 / 2)-((\mathrm{c}) \times .08 \times 13 / 24)$

| $23,457,932$ |
| ---: |
| $305,062,302$ |
| $9,276,537$ |
| $\$ \quad 295,785,765$ |

(f) Expected Actuarial Assets as of June 30, $2012=(a)+(b)-(c)-(d)+(e)$
(g) Gain/(Loss) on Actuarial Assets
(h) Actuarial Assets as of June 30, $2012=(\mathrm{f})-(\mathrm{g})$
\$ 295,785,765
The asset loss occurred because investment earnings on actuarial assets were less than expected.
The actual net return on actuarial assets was $4.84 \%$, compared to the assumption of $8 \%$. The actual net return on market value of assets was $.90 \%$, compared to the assumption of $8 \%$.

| 6. ANALYSIS OF SEDGWICK OFFSETS | AMOUNT OF MONTHLY OFFSETS | NUMBER WITH OFFSETS |
| :---: | :---: | :---: |
| Description of Offset from Sedgwick as of June 30, 2012 |  |  |
| Social Security Disability | \$ 2,677,627 | 3,312 |
| Social Security Retirement | 119,230 | 128 |
| Other | 472,513 | 1,002 |
| Total | \$3,269,370 | 4,442 |
| Description of Offset from Sedgwick as of June 30, 2011 |  |  |
| Social Security Disability | \$ 2,591,123 | 3,431 |
| Social Security Retirement | 121,389 | 145 |
| Other | 492,182 | 986 |
| Total | \$3,204,694 | 4,562 |

## A. LEGISLATED PLAN CHANGES ENACTED BY THE 1989 LEGISLATURE OF the state of arizona

## 1. Projected Unit Credit (PUC) Funding Method

Beginning with the June 30, 1989 actuarial valuation, the total employee and employer contributions payable beginning July 1, 1990 shall be determined using the Projected Unit Credit (PUC) funding method.

## 2. $\mathbf{\$ 1 2 , 0 0 0}$ Minimum Average Compensation for Current Retirees

Recalculation of the retirement benefit for all plan members retired before June 30, 1989 who had 10 years of credited service using a minimum average compensation of one thousand dollars per month.

## 3. $\mathbf{2 . 0 \%}$ Ad Hoc COLAs

- Effective July 1, 1989, all members retired on or before June 30, 1988 shall receive a $2.0 \%$ permanent benefit increase to their December 31, 1988 base benefit.
- Effective July 1, 1990, all members retired on or before June 30, 1989 shall receive a $2.0 \%$ permanent benefit increase to their June 30, 1990 base benefit.


## 4. Early Retirement Window

During the period of May 15, 1989 through November 14, 1989 a member who is eligible for either Normal Retirement or Early Retirement with age plus credited service at least equal to 80, may retire and receive a benefit calculated using a $2.2 \%$ multiplier instead of the $2.0 \%$ multiplier in effect at that time.

## 5. 3.0\% Tax Equity Allowance

Retroactive to the later of January 1, 1989 or the date payments commence, each member retiring on or before September 14,1989 shall receive a tax equity benefit allowance consisting of a permanent increase of $3.0 \%$ in his or her January 1, 1989 base benefit.

## B. LEGISLATED PLAN CHANGES ENACTED BY THE 1990 LEGISLATURE OF THE STATE OF ARIZONA

1. Rule of 82

Effective May 1, 1990, the number of points (sum of member's age and years of service) required to be eligible for normal retirement shall be reduced from 85 to 82 . Also, the early retirement reduction factor for employees with 77 or more points but less than 82 points shall be $3 \%$ for each point or fraction thereof less than 82 .

## 2. $\mathbf{3 . 0 \%}$ Tax Equity Allowance

Each member who retires between September 15, 1989 and September 14, 1990 shall receive a tax equity benefit allowance consisting of a permanent increase of $3.0 \%$ in his or her base benefit, retroactive to the date of retirement.

## 3. Graded Vesting for Health Insurance Premium Supplement

The Health Insurance Premium Supplement is extended to those qualifying members with between five and nine years of service. The member will be eligible to receive $10 \%$ of the benefit for each completed year of service (i.e., $50 \%$ to $90 \%$ ).

## C. LEGISLATED PLAN CHANGES ENACTED BY THE 1991 LEGISLATURE OF THE STATE OF ARIZONA

## 1. $\mathbf{3 . 0 \%}$ Tax Equity Allowance

Each member who retires between September 15, 1990 and September 14, 1991 shall receive a tax equity benefit allowance consisting of a permanent increase of $3.0 \%$ in his or her base benefit, retroactive to the date of retirement.

## 2. Recalculation of Retiree Benefits Using $\mathbf{2 . 0 \%}$ Benefit Multiplier

Each retired member with at least 10 years of service who retired prior to June 30,1985 shall have his or her benefit recomputed. The recomputed benefit shall be equal to $2 \%$ times final average earnings times credited service plus an additional $\$ 2$ for each year of service. The retired member will receive the larger of the recalculated benefit or his/her current benefit. This increase is effective October 1, 1991.

## 3. $\mathbf{2 . 3 \%}$ Ad Hoc Increase

Effective July 1, 1991 all members retired on or before June 30, 1990 shall receive a $2.3 \%$ permanent benefit increase in their June 30, 1991 base benefit.

## 4. Rule of $\mathbf{8 0}$

Effective July 1, 1992, the number of points (sum of member's age and years of service) required to be eligible for normal retirement shall be reduced from 82 to 80 . (For continuation purposes this legislation is not reflected until the 1993/94 fiscal year).

## 5. Pop-up Option

A pop-up option is added for retiring members who first participate in the Plan on or after December 31, 1991.

## D. LEGISLATED PLAN CHANGES ENACTED BY THE 1992 LEGISLATURE OF THE STATE OF ARIZONA

## 1. $\mathbf{3 . 0 \%}$ Tax Equity Allowance

Each member who retires between September 15, 1991 and September 14, 1992 shall receive a tax equity benefit allowance consisting of a permanent increase of $3.0 \%$ in his or her base benefit, retroactive to the date of retirement.

## 2. Minimum Retiree Benefit

Each retiree of the Arizona State Retirement Plan who is at least age 75 on December 31, 1992 and who had at least ten years of service upon retirement from the plan shall be eligible for a minimum benefit. If the eligible retiree had at least ten years of service but less than fifteen years, his minimum benefit is $\$ 350$ a month. If the eligible retiree had at least fifteen years of service but less than twenty, his minimum benefit is $\$ 500$. If the eligible retiree had at least twenty years of service his minimum benefit is $\$ 600$. The minimum benefit shall be compared to the retiree's current benefit (including all ad hoc increases).

## 3. 5\% Ad Hoc Increase

Effective November 1, 1992 all members retired on or before October 31, 1992 shall receive a 5\% permanent benefit increase in their October 31, 1992 benefit.

## 4. Forfeited Service Repurchase

Any present active member who has previously forfeited service has until December 31, 1994 to repurchase the forfeited service by paying the Plan the employee and employer contributions (accumulated with interest) which would have been contributed during the member's period of forfeited service.

## 5. Repurchase of Service Due to Reduction in Force

Any present active member who was terminated prior to December 31, 1992 as a result of a required reduction in force may purchase the credited service for the following period of unemployment if the member had five or more years of service at the time of termination and resumed employment with a participating employer within two years of termination. The cost of the repurchase is the total of the employee and employer contribution (accumulated with interest) which would have been contributed during the member's period of unemployment.
6. Change in Section 38-781.05 Funding Method

Section 38-781.05 of the plan was amended so that the funding period for the Plan would continue to be the period between valuation and June 30, 2003 as long as the Plan has a negative Unfunded Actuarial Accrued Liability. If the Plan were to have a positive UAAL, then the old funding mechanism would apply.

## E. LEGISLATED PLAN CHANGES ENACTED BY THE 1993 LEGISLATURE OF THE STATE OF ARIZONA

1. No benefit changes were passed by the 1993 Legislature.

However, the Legislature passed legislation to reduce the required contribution rate of $4.09 \%$ down to $3.14 \%$.

## F. LEGISLATED PLAN CHANGES ENACTED BY THE 1994 LEGISLATURE OF THE STATE OF ARIZONA

## 1. Minimum LTD Benefit

Each member on long term disability will receive a minimum monthly benefit of $\$ 50$.

## 2. Minimum Retiree Benefit

Each retiree of the Arizona State Retirement Plan who is at least age 75 and who had 20 or more years of service at retirement will receive a minimum monthly benefit of $\$ 600$.

## 3. Pop-up Benefit

Members who retired prior to January 1, 1992 and who elected a Joint and Survivor option shall receive a "Pop-up" in their retirement income if their beneficiary pre-deceases them.

## 4. Excess Investment Earnings COLA

Retirees at least age 55 who have been retired at least one year and members on long-term disability are eligible to receive a cost-of-living adjustment equal to one-half the increase in CPI for the prior calendar year. The COLA will be paid from a reserve of Excess Investment Earnings. If there are no Excess Investment Earnings in reserve, no COLA will be granted.

## 5. Change in Section 38-737 Funding Period

Section 38-737 was amended to change the funding period of the Plan to a rolling 30-year period. The change is to be phased-in over the next nineteen years. If the Plan ceases to have a surplus, the funding period would immediately go to 30 -years.

## G. LEGISLATED PLAN CHANGES ENACTED BY THE 1995 LEGISLATURE OF THE STATE OF ARIZONA

1. Change in Maximum Increase Provided by Excess Investment Earnings COLA

The maximum COLA payable from Excess Investment Earnings was increased from $50 \%$ to $100 \%$ of the increase in the CPI.

## 2. Removal of LTD Benefit from the Plan

The Legislature established a new LTD program and removed the LTD benefit from the Plan. Liabilities for current LTD recipients will be transferred to the new LTD program effective October 1, 1995.

## 3. Creation of Separate Account for the Health Premium Supplement

The Health Premium Supplement benefit is to be separated into a $401(\mathrm{~h})$ account. The assets and liabilities associated with the Health Premium Supplement will be accounted for separately.

## H. LEGISLATED PLAN CHANGES ENACTED BY THE 1996 LEGISLATURE OF THE STATE OF ARIZONA

## 1. No material changes.

## I. LEGISLATED PLAN CHANGES ENACTED BY THE 1997 LEGISLATURE OF THE STATE OF ARIZONA

1. Creation of family Health Supplement.

Allows unused portion of the Health Supplement of a member or dependent to be used to pay the other recipient's health insurance premium.
2. The calculation methodology for the Excess Investment Earnings COLA was modified.
3. The contribution rate will be determined on a biennial cycle beginning with the $\mathbf{2 0 0 0}$ fiscal year.

## J. LEGISLATED PLAN CHANGES ENACTED BY THE 1998 LEGISLATURE OF the state of Arizona

1. No material changes.

## K. LEGISLATED PLAN CHANGES ENACTED BY THE 1999 LEGISLATURE OF the state of arizona

1. Enhanced Refund Option

Employees who terminate prior to eligibility for retirement may elect to receive a refund of their employee contributions with interest. If the employee has at least five years of service, the employee is also entitled to a share of the employer contributions with interest. The share is $50 \%$ with five years of service and increases $10 \%$ for each additional year of service to a maximum of $100 \%$ for ten or more years of service.
2. Benefit Multiplier Increased to $\mathbf{2 . 1 \%}$

The benefit multiplier increased from $2.0 \%$ to 2.1\% effective July 1, 2000.
3. 5\% Ad Hoc Increase

A 5\% retiree ad hoc increase for retirees and beneficiaries effective July 1, 2000.
4. Increase in Maximum Service While on LTD

Increase in the maximum amount of service that may be accrued while on LTD from 25 to 30 .

## 5. Changes in Permanent Benefit Increase COLA

a) The maximum aggregate COLA was increased from $3 \%$ to $4 \%$.
b) The threshold for determining "Excess Earnings" was lowered from $9 \%$ to $8 \%$.
c) The limitation of the COLA to the increase in the CPI was removed.

## L. LEGISLATED PLAN CHANGES ENACTED BY THE 2000 LEGISLATURE OF THE STATE OF ARIZONA

1. The age restriction on the Permanent Benefit Increase was eliminated.

## M. LEGISLATED PLAN CHANGES ENACTED BY THE 2001 LEGISLATURE OF the state of arizona

## 1. Health Insurance Premium Benefit Increase

Increases the health insurance premium benefit for eligible members as follows:

- Benefit for Medicare eligible member with member only coverage increased from $\$ 65$ to $\$ 100$
- Benefit for non-Medicare eligible member with member only coverage increased from $\$ 95$ to $\$ 150$
- Benefit for family coverage where member and dependent are non-Medicare eligible increased from $\$ 175$ to \$260
- Benefit for family coverage where member and dependent are Medicare eligible increased from $\$ 115$ to $\$ 170$
- Benefit for family coverage where member is Medicare eligible and dependent is non-Medicare eligible increased from $\$ 145$ to $\$ 215$
- Benefit for family coverage where member is non-Medicare eligible and dependent is Medicare eligible increased from $\$ 145$ to $\$ 215$


## 2. Graded Multiplier

Provides a graded multiplier in the retirement benefit formula, increasing with years of service according to the following:

- 0.00 to 19.99 Years of Service $2.10 \%$
- 20.00 to 24.99 Years of Service $2.15 \%$
- 25.00 to 29.99 Years of Service $2.20 \%$
- 30.00 or More Years of Service $2.30 \%$


## 3. Employer Option Service Purchase Incentive

Permits an employer to offer a member who is eligible to retire under the Rule of 80 a contract to work an additional three years of employment. No contributions are made to ASRS during the contract. If the employee completes the contract, then they receive an additional three years of service with the option to purchase three more years of service.

## 4. Permanent Benefit Increase Enhancement

Provides that interest at a rate of $8 \%$ be credited on the funds held in reserve for the permanent benefit increase (PBI). This interest will then be used to fund an additional increase for retirees who have at least 10 years of service and who have been retired at least five years. The increase is incremental for each five years of retirement.

## 5. Temporary Rural Health Insurance Premium Benefit

In addition to the premium benefit paid to ASRS retired and disabled members, the Legislature granted a temporary benefit for retired and disabled members who live in areas of the state not served by a managed care program (HMO) and who have 10 years of credited service in the following amounts:

- Benefit for Medicare eligible member with member only coverage of $\$ 170$ per month
- Benefit for non-Medicare eligible member with member only coverage of $\$ 300$ per month
- Benefit for Medicare eligible members with Medicare eligible dependent with family coverage of $\$ 350$ per month
- Benefit for non-Medicare eligible members with non-Medicare eligible dependent with family coverage of $\$ 600$ per month
- Benefit for Medicare eligible members with non-Medicare eligible dependent with family coverage of $\$ 470$ per month
- Benefit for non-Medicare eligible members with Medicare eligible dependent with family coverage of $\$ 470$ per month


## 6. Partial Lump Sum Option

Allows a retiring member to receive a portion of his benefit in a lump sum payment. The lump sum is limited to a maximum of 36 monthly payments. The member's monthly annuity is actuarially reduced to reflect the lump sum payment.

## 7. Maximum Benefit

Members who are hired after the date the graded multiplier became law have a maximum benefit equal to $80 \%$ of the member's 36 -month final average earnings.

## N. LEGISLATED PLAN CHANGES ENACTED BY THE 2002 LEGISLATURE OF THE STATE OF ARIZONA

## 1. No material changes.

## O. LEGISLATED PLAN CHANGES ENACTED BY THE 2003 LEGISLATURE OF THE STATE OF ARIZONA

## 1. Additional Temporary Health Insurance Premium Benefit (Rural Subsidy)

The Legislature extended the additional temporary Rural Health Insurance Subsidy for two years, beginning July 1, 2003 and ending June 30, 2005. The full benefit is provided to retired and disabled members who live in areas of the state not served by a Health Maintenance Organization (HMO) and who have 10 years of credited service. The Rural Health Insurance Subsidy now requires "minimum out of pocket" payments ranging from $\$ 100$ to $\$ 425$ per month, depending on the plan and coverage selected.

|  | Insurance Coverage <br> without Medicare <br> Parts A \& B | Insurance Coverage with <br> Rural Health Insurance Subsidy | Medicare Parts A \& B ${ }^{\mathbf{1}}$ |  |
| :--- | :---: | :---: | :---: | :---: |
| JUNE 1, 2003 - JUNE 30, 2005 | SINGLE | FAMILY | SINGLE | FAMILY |
| Required Minimum Out-of-Pocket Payment | $\$ 125$ | $\$ 425$ | $\$ 100$ | $\$ 200$ |
| Rural Health Insurance Subsidy (Maximums) | Up to $\$ 300$ | Up to $\$ 600$ | Up to $\$ 170$ | Up to $\$ 350$ |

${ }^{1}$ Combination plans that include Medicare eligible and non-Medicare eligible retiree and dependent coverage require a $\$ 400$ monthly out of pocket payment.

## P. LEGISLATED PLAN CHANGES ENACTED BY THE 2004 LEGISLATURE OF the state of Arizona

1. Service Purchase Program

The Arizona Legislature revised the method of calculating the cost of service purchases, so that future purchased would be made at true actuarial present value.

## 2. Early Retirement Incentive Programs

The Arizona Legislature provided that employers that participate in ASRS and offer early retirement incentives to their employees must notify the ASRS of the incentives. ASRS will determine the cost of the incentives and the employers will pay the cost.

## 3. Long-Term Disability Program

The Arizona Legislature revised and clarified LTD provisions so that disabled members will be required to participate in rehabilitation programs and to pursue Social Security Disability benefits. In addition, the legislation limited the receipt of disability benefits on the basis of a member's "own occupation" to 24 months, rather than to 24 consecutive months.

# Q. LEGISLATED PLAN CHANGES ENACTED BY THE 2005 LEGISLATURE OF THE STATE OF ARIZONA 

1. Temporary Rural Health Insurance Premium Benefit

The Legislature extended the temporary Rural Health Insurance Subsidy for the next two years, from July 1, 2005 to June 30, 2007. The benefit is provided to Medicare-eligible retirees and disabled members who live in Arizona counties with no Health Maintenance Organization (HMO) service area and who have 10 years of credited service.

## 2. Contribution Rates

The Legislature pegged the contribution rates for fiscal 2006 and 2007 at $6.90 \%$ and $8.60 \%$, respectively. After fiscal 2007, contribution rates are to be determined annually.

## R. LEGISLATED PLAN CHANGES ENACTED BY THE 2006 LEGISLATURE OF THE STATE OF ARIZONA

## 1. Elections After Retirement

Legislature limited the ability of ASRS retirees to rescind their elections after retirement. Specifically, members who have chosen a form with a death benefit can "pop up" once to the single life form, but are then not allowed to "pop down" to a death benefit form. ASRS will implement this provision upon receipt of a private letter ruling from the Internal Revenue Service.

## 2. Conformance with Certain Federal Regulations

State statutes were modified to conform to federal regulations regarding military service purchases, optional forms of retirement benefits, and minimum required distributions.

## 3. Repeal of Deferred Retirement Option Plan

The Legislature repealed the modified Deferred Retirement Option Plan (DROP).

## S. LEGISLATED PLAN CHANGES ENACTED BY THE 2007 LEGISLATURE OF THE STATE OF ARIZONA

## 1. Social Security Offsets and Pre-Existing Condition Period

Offset percentages for Social Security disability benefits were increased from $64 \%$ to $85 \%$ and for Social Security retirement benefits from $83 \%$ to $85 \%$ for members who become disabled on or after July 1, 2008. The pre-existing condition period is increased from three months to six months for members hired on or after July 1, 2008. ASRS is required to recover overpayments by reducing future benefits to a member, beneficiary, or alternate payee.

## 2. Temporary Rural Health Insurance Premium Benefit

The Legislature extended the temporary Rural Health Insurance Subsidy for two years from July 1, 2007 to June 30, 2009. The benefit is provided to Medicare-eligible retirees and disabled members who live in Apache, Gila, Mohave, or Navajo counties if they have ten years of credited service.

## 3. Exemption of Post-Doctoral Scholars

Effective September 19, 2007, post-doctoral scholars are exempted from ASRS membership.

## 4. Expanded Eligibility for Active Military Service Credit

Effective July 1, 2007, the term "presidential" call-up is changed to "military" call-up. It applies death and disability benefits to those that occur during active military service rather than just to those that are a result of active service. The law allows a member who becomes disabled during or as a result of active service to receive service credit (paid by the employer) from the date active service began through one year after the member's date of disability if the member cannot return to work. The disability provision expires June 30, 2009.

## T. LEGISLATED PLAN CHANGES ENACTED BY THE 2008 LEGISLATURE OF THE STATE OF ARIZONA

## 1. Unclaimed Property Exemption and Procedures

Legislation exempted ASRS from unclaimed property statutes. ASRS members will forfeit their benefits if they do not claim them by the time they reach age $731 / 2$. If such a member later claims his benefit, his benefit will be restored with interest if applicable. ASRS will send notices to members beginning at age $651 / 2$, and will make efforts to find lost members.

## 2. Divestment from Companies Investing in Iran or Doing Business in Sudan

ASRS must engage with and potentially divest from companies that have invested, since August 5, 1996, \$20 million or more in any year in Iran's petroleum energy sector or that meet specific Sudan-related business operations criteria. Additionally, ASRS must divest from companies that violate paragraph 6(j) of the Export Administration Act.

## 3. Transfer Procedures

For voluntary transfers, the legislation allowed retired or disabled members to elect whether to remain with ASRS or to transfer to another system and specified how a transfer will affect payroll deduction agreements. For a transfer that is mandated by either statute or an employer, the legislation required retired or disabled members to remain with ASRS and specified how a transfer will affect payroll deduction agreements.

## 4. Transfer Out Bills

These bills expanded the ASRS credited service that a dispatcher may transfer to CORP and extended the time-frame for ASRS to transfer assets from 60 to 90 days. They expanded the definition of designated position to include State detention officers and provided that all prior ASRS service will transfer to CORP unless the employee irrevocably elects to remain with ASRS. They allowed the local board of the judiciary to designate certain positions within the Administrative Office to the Courts for membership in CORP.

## 5. Plan Administration

This bill modified one of the salary calculations used for service purchases to be the average of the three pay periods (out of the last five) that remain after the pay periods with the highest and lowest pay are removed. It clarified that the salary calculations used for other public service purchases are also used for leave of absence purchases. It granted the ASRS Board rulemaking authority over the Plan, LTD program, and transfers. It clarified that a member who purchases forfeited service credit is subject to the benefit structure in place when the person again becomes a member. Finally, it required ASRS to recover overpayments by reducing benefits owed to a member, beneficiary, or alternate payee.

## 6. Federal Conforming Changes

The Legislature made changes to comply with federal laws and IRS regulations, most notably the Economic Growth and Tax Relief Reconciliation Act of 2001.

## U. LEGISLATED PLAN CHANGES ENACTED BY THE 2009 LEGISLATURE OF THE STATE OF ARIZONA

## 1. Service Purchase

Effective July 1, 2010, members will be required to have five years of service credit in ASRS before initiating a service purchase.

## 2. $\mathbf{8 0 \%}$ Cap on Benefits

Effective July 1, 2010, the maximum limit on ASRS pensions of $80 \%$ of 36 -month final average earnings is eliminated.

## 3. Return to Work

Retired members who return to work with a suspension of benefits and work for at least 60 consecutive months will be permitted to choose a new optional form of benefit when they again retire.

Retired members are allowed to return to work without suspension if the member returns to a different position that does not require participation and the member participates in another program.

## 4. Administration

ASRS is exempt from State Personnel Management and Personnel Board provisions and the State classification and compensation statute.

## 5. Early Termination Incentives

The scope of the early termination incentive statute is broadened and exceptions are limited.

## 6. Dual Employment

Contributions from a second employer will count, beginning January 1, 2010, only if member meets 20/20 membership criteria with respect to the second employer, with certain exceptions.

## V. LEGISLATED PLAN CHANGES ENACTED BY THE 2010 LEGISLATURE OF THE STATE OF ARIZONA

## 1. Average Monthly Compensation

The Average Monthly Compensation used in the retiring member's retirement benefit calculation is changed from the average of the highest consecutive 36 months in the last 120 months to the average of the highest consecutive 60 months in the last 120 months for a member whose membership commences on or after July 1, 2011.

## 2. Normal Retirement Date

The Normal Retirement Date definition is changed from 80 to 85 points (age plus years of service) for a member whose membership commences on or after July 1, 2011.

## 3. Early Retirement Deductions

The Early Retirement reductions were also modified to conform to the 85 point normal retirement for a member whose membership commences on or after July 1, 2011 by adjusting the period over which the reduction is calculated.

## 4. Employer Contribution Refunds

Employer contribution refunds are eliminated for a member hired on or after July 1, 2011 except for a member who was terminated due to an Employer Reduction in Force or position eliminated, in which case the member will receive the current refund vesting schedule.

## 5. Long-Term Disability Plan Appeals

A person appealing an ASRS decision under the LTD Program (usually a decision of an Administrative Law Judge) may request that the ASRS Board hear the appeal in Executive Session, rather than in a Public Hearing. The request for Executive Session must be made at least 48 hours in advance and the Board shall then conduct the hearing in Executive Session. The Board is required to follow existing Executive Session procedures established in the Open Meeting Law statutes. Minutes of and discussions held at an Executive Session are confidential except from the appellant for use in the appellant's further appeal to the Superior Court.

## 6. Health Insurance

A retiree may no longer purchase individual health care coverage and receive the Health Benefit Supplement (HBS). [NOTE: this provision will not eliminate the HBS or ASRS insurance enrollees or retirees enrolled in their former Employer's insurance.] ASRS may continue to pay the HBS to a retiree who is receiving the payment under the current statutory provisions (one retiree).

## 7. Compensation

I.R.C. 415 Compensation Regulations and military differential wage payments from the Heroes Earnings Assistance and Relief Tax Act of 2008 (HEART Act) have been updated as required by the Internal Revenue Service.

## W.LEGISLATED PLAN CHANGES ENACTED BY THE 2011 LEGISLATURE OF the state of arizona

## 1. Eligibility of New State Employees

State employees hired after July 20, 2011, will not be eligible for the ASRS Plan or LTD program before their $27^{\text {th }}$ week of employment, unless they are already members of ASRS.

## 2. Normal Retirement Age

For members whose membership commenced on or after July 1, 2011, the 85 -point requirement is removed and replaced by two rules: age 60 and 25 years of credited service or age 55 and 30 years of credited service. Early retirement reductions are adjusted to reflect these new rules.

## 3. Service Purchase Rules

Purchases of Other Public Service, Leave of Absence Service, and Military Service (except USERRA or Heart Act purchases) are limited to 60 months for each type of purchase, and a member is required to have ten years of credited service before initiating a request to purchase such service.

## 4. Return to Work Rules

Employers are required to pay an Alternate Contribution Rate (ACR) for retired members who return to work on or after July 1,2012 , in any capacity and in a position ordinarily filled by an employee of the employer. The ACR is the greater of $2 \%$ or the contribution rate to fund the deficits of the Plan and LTD program, but not greater than the employer's portion of the total contribution rate for the Plan and LTD program.

## 5. Split of Contributions

Retroactive to July 1, 2011, responsibility for making contributions to the ASRS Plan and LTD programs is changed from $50 \%$ employees and $50 \%$ employers to $53 \%$ employees and $47 \%$ employers. Pre-retirement survivor benefits are based on the sum of the employee and employer balances, rather than twice the employee balance. ${ }^{1}$

[^15]
## X. LEGISLATED PLAN CHANGES ENACTED BY THE 2012 LEGISLATURE OF THE STATE OF ARIZONA

## 1. Forms of Pension

Partial lump-sum payments are to be based on single-life annuity form of payment. Level Income Alternative option is eliminated for new retirements after July 1, 2013.

## 2. Service Purchase Rules

This provision reduces the credited service requirement to purchase Other Public Service, Leave of Absence time, or Military Service to five years.

## 3. Health Benefit Supplements

For new retirees and disabilities after August 1, 2012, this provision eliminates health supplements for retirees and disabled members who are covered under an active employee plan, either as an insured or as a dependent, except that if the member is a dependent and the ASRS employer is not subsidizing the premium that the retiree or disabled member must pay, the member is entitled to a single coverage subsidy.

## 4. Long-Term Disability Plan

This provision caps total income at $100 \%$ of member's pre-disability pay for new disabilities after August 1, 2012. It also requires objective medical evidence to support claims.

## 5. Split of Contributions

This provision revises the split of contributions between members and employers to be a $50 \% / 50 \%$ split, and provides for the return to members of the contribution amounts in excess of $50 \%$ that members had previously contributed.

## 6. Employers that Cease Participation in ASRS

This provision requires ASRS to charge employers for their share of the unfunded actuarial liabilities in the Plan and LTD programs if the employers cease to participate because of privatization, bankruptcy, or a change from public to private status. It is effective for cessations that occur on or after January 2, 2013.
7. Opt-out of ASRS for Members First Hired before July 1, 2015

Members who first become employees of an ASRS employer on or after Age 65 and before July 1, 2015, can irrevocably elect not to participate in ASRS. ASRS must report on this provision by December 31, 2014.

## 8. Spousal Consent

Married members must select their spouses as their beneficiaries and must select an option with at least $50 \%$ continuation to their spouses, unless spouses waive these requirements in writing. This provision applies to retirements, beneficiary designations, or beneficiary changes that occur on or after July 1, 2013.

## ARIZONA STATE RETIREMENT SYSTEM

## A Component Unit of the State of Arizona



## 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.
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## Revenues

These schedules contain information to help the reader understand the ASRS's funding over the last 10 years.
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## Operations

These schedules contain information about the ASRS's Operations.
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Schedules and information are derived from ASRS internal sources unless otherwise noted.

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



Financial Trends (continued)

## Changes in Net Position

Last 10 Fiscal Years (Dollars in Thousands)



## Actual Contribution Rates

## Last 10 Fiscal Years

| Retirement <br> R <br> Contribution Rates | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | 5.20 | 5.20 | 6.90 | 8.60 | 9.10 | 8.95 | 9.00 | 9.60 | 10.50 | 10.90 |
| Member | 4.10 | 4.10 | 5.77 | 7.55 | 8.05 | 7.99 | 8.34 | 9.01 | 9.87 | 10.25 |


| HBS <br> Contribution Rates | Fiscal Years |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Employer | 1.10 | 1.10 | 1.13 | 1.05 | 1.05 | 0.96 | 0.66 | 0.59 | 0.63 | 0.65 |


| LTD <br> Contribution Rates | Fiscal Years |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Member | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.40 | 0.25 | 0.24 | 0.24 |
| Employer | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.40 | 0.25 | 0.24 | 0.24 |

[^16]Source: Buck Consultants, LLC

## Operations

## Members by Type of Benefit As of June 30, 2013

| Retirement Monthly Benefit ${ }^{2}$ | Options ${ }^{1}$ |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Under \$300 | 10,253 | 258 | 373 | 745 | 2,417 | 208 | 443 |
| \$300-\$499 | 6,957 | 261 | 407 | 549 | 2,050 | 262 | 484 |
| \$500-\$999 | 13,813 | 574 | 1,019 | 1,062 | 4,004 | 774 | 1,420 |
| \$1,000-\$1,499 | 9,285 | 462 | 845 | 688 | 3,240 | 876 | 1,267 |
| \$1,500-\$1,999 | 6,528 | 307 | 531 | 502 | 2,605 | 807 | 1,090 |
| \$2,000 \& Over | 18,711 | 573 | 1,292 | 1,636 | 8,474 | 2,713 | 3,666 |
| Totals | 65,547 | 2,435 | 4,467 | 5,182 | 22,790 | 5,640 | 8,370 |

${ }^{1}$ OPTIONS KEY

1. Life Annuity
2. Life Annuity - guaranteed 5 years
3. Life Annuity - guaranteed 10 years
4. Life Annuity - guaranteed 15 years
5. Joint Annuity - 100 percent to contingent survivor
6. Joint Annuity - $662 / 3$ percent to contingent survivor
7. Joint Annuity - 50 percent to contingent survivor
${ }^{2}$ Most recent information available is 2012.
Source: Buck Consultants, LLC

| HBS Monthly Benefits | Members |
| :--- | ---: |
| $\$ 1-199$ | 66,862 |
| $\$ 200-299$ | 3,135 |
| $\$ 300-399$ | 244 |
| $\$ 400$ \& Over | 0 |
| Total | $\mathbf{7 0 , 2 4 1}$ |


| LTD MONTHLY BENEFIT | MEMBERS |
| :--- | ---: |
| $\$ 1-299$ | 28 |
| $\$ 300-499$ | 26 |
| $\$ 500-999$ | 373 |
| $\$ 1,000-1,499$ | 1,007 |
| $\$ 1,500-1,999$ | 1,100 |
| $\$ 2,000$ \& over | 1,909 |
| TOTAL | $\mathbf{4 , 4 4 3}$ |

[^17]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 2003 |  |  |  |  |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 149 | \$ 328 | \$ 695 | \$1,068 | \$1,571 | \$2,312 | \$2,957 | \$3,314 | \$3,535 | \$4,335 |
| Number of Retirees | 1,555 | 9,744 | 12,811 | 10,568 | 11,103 | 10,838 | 6,477 | 1,373 | 203 | 25 |
| 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 $2012{ }^{\mathbf{1}}$ |  |  |  |  |  |  |  |  |  |  |
| 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 |

${ }^{1}$ Most recent information available.
Note: The above schedule does not include System retirees.
Average final salary information is not available.
Source: Buck Consultants, LLC

# Average Benefit Payments Last 8 Fiscal Years 

| HBS | Years of Credited Service |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 5 | 6 | 7 | 8 | 9 | 10 or more |
| FISCAL YEAR 2006 |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 65 | \$ 71 | \$ 81 | \$ 86 | \$ 103 | \$ 130 |
| Number of HBS Participants | 1,008 | 861 | 872 | 869 | 895 | 47,117 |
| FISCAL YEAR 2007 |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 57 | \$ 69 | \$ 83 | \$ 89 | \$ 96 | \$ 130 |
| Number of HBS Participants | 1,046 | 877 | 903 | 885 | 891 | 49,368 |
| FISCAL YEAR 2008 |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 61 | \$ 72 | \$ 76 | \$ 89 | \$ 97 | \$ 130 |
| Number of HBS Participants | 1,082 | 917 | 911 | 934 | 897 | 51,167 |
| FISCAL YEAR 2009 |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 61 | \$ 70 | \$ 78 | \$ 89 | \$ 100 | \$ 130 |
| Number of HBS Participants | 1,123 | 941 | 916 | 951 | 906 | 53,198 |
| FISCAL YEAR 2010 |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 61 | \$ 67 | \$ 76 | \$ 86 | \$ 97 | \$ 127 |
| Number of HBS Participants | 1,149 | 941 | 928 | 998 | 924 | 54,589 |
| FISCAL YEAR 2011 |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 59 | \$ 67 | \$ 75 | \$ 87 | \$ 92 | \$ 126 |
| Number of HBS Participants | 1,252 | 1,018 | 999 | 1,057 | 983 | 58,656 |
| FISCAL YEAR 2012 |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 64 | \$ 74 | \$ 78 | \$ 96 | \$ 100 | \$ 144 |
| Number of HBS Participants | 1,352 | 1,074 | 1,087 | 1,094 | 1,045 | 62,706 |
| FISCAL YEAR 2013 |  |  |  |  |  |  |
| Average Monthly Benefit | \$ 64 | \$ 72 | \$ 79 | \$ 85 | \$ 95 | \$ 152 |
| Number of HBS Participants | 1,402 | 1,120 | 1,130 | 1,161 | 1,074 | 64,354 |

Note: Information prior to 2006 is not available.
Source: ASRS Pension Administration System

# Average Benefit Payments <br> <br> Last 8 Fiscal Years 

 <br> <br> Last 8 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 |

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 | 2013 |  |  | 2004 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | COVERED <br> EMPLOYEES | RANK | \% OF MEMBERSHIP | COVERED <br> EMPLOYEES | RANK | \% OF MEMBERSHIP |
| Dept Of Administration | 26,129 | 1 | 12.59\% | 29,996 | 1 | 14.61\% |
| Maricopa County | 8,937 | 2 | 4.31\% | 9,615 | 3 | 4.68\% |
| Mesa Unified Dist 4 | 8,323 | 3 | 4.01\% | 8,094 | 4 | 3.94\% |
| University Of Arizona | 6,810 | 4 | 3.28\% | 7,143 | 6 | 3.48\% |
| Tucson Unified Dist 1 | 6,737 | 5 | 3.25\% | 8,047 | 5 | 3.92\% |
| Maricopa County Community College District | 6,226 | 6 | 3.00\% | 5,118 | 8 | 2.49\% |
| Arizona State University | 5,162 | 7 | 2.49\% | 5,032 | 9 | 2.45\% |
| Pima County | 4,986 | 8 | 2.40\% | 6,047 | 7 | 2.95\% |
| Gilbert Unified Dist 41 | 4,569 | 9 | 2.20\% | 4,122 | 10 | 2.01\% |
| Chandler Unified Dist 80 | 4,079 | 10 | 1.97\% |  |  |  |
| Maricopa County School Office |  |  |  | 13,928 | 2 | 6.78\% |
| ${ }^{1}$ All other | 125,614 |  | 60.50\% | 108,175 |  | 52.69\% |
| Total | 207,572 |  | 100\% | 205,317 |  | 100.00\% |


| 1 In 2013, "All Other" consisted of: <br> TYPE | NUMBER | EMPLOYEES |
| :--- | ---: | ---: |
| Public Schools | 238 | 84,854 |
| Charter Schools | 143 | 4,494 |
| Cities | 78 | 16,640 |
| Counties | 13 | 7,512 |
| Higher Education | 10 | 5,626 |
| Other | 93 | 6,488 |
| Total | $\mathbf{5 7 5}$ | $\mathbf{1 2 5 , 6 1 4}$ |

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
Phoenix, AZ 85012

7660 E. Broadway Blvd., Suite 108 Tucson, AZ 85710


[^0]:    ${ }^{1}$ NR total of $\$ 2,269$ represents those securities that are not rated.
    ${ }^{2}$ NA represents those securities that are not applicable to the rating disclosure requirement. The fair value of $\$ 858,346$ is classified as Corporate Bonds totaling \$348,253 and Government Bonds totaling \$510,093.
    ${ }^{3}$ Total of $\$ 5,374,130$ represents the total corporate bonds of $\$ 2,458,838$ and total government bonds of $\$ 2,915,292$.

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

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

[^5]:    ${ }^{1}$ Return on Private Equity Investments have not been included in Total Fund Performance for FY 2008 or 2009.

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

[^7]:    ${ }^{1}$ Negative amounts represent instances in which performance incentive fees received in excess of investment fees charged.

[^8]:    ${ }^{1}$ Negative fair value amounts due to fees charged from commitment date of investment prior to initial funding of investment.

[^9]:    ${ }^{2}$ Information not available for prior years.
    ${ }^{3}$ Includes 679 System members receiving HBS benefits and 1,705 members receiving LTD benefits and HBS benefits.

[^10]:    ${ }^{1}$ 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.

[^11]:    ${ }^{1}$ The $7.75 \%$ rate was determined in the 2004 valuation and would have applied to the 2006/2007 biennium. The Legislature adopted a stairstep approach to increasing contribution rates and set the rate at $6.9 \%$ for fiscal year 2006 and $8.6 \%$ for fiscal year 2007.

[^12]:    ${ }^{1}$ Hypothetical Rate. The actual contribution rate was set by the prior year valuation.
    ${ }^{2}$ Legislation action has fixed the rates for fiscal 2006and 2007 at $6.9 \%$ and $8.6 \%$ respectively.
    ${ }^{3}$ Includes System liabilities and assets for members who retired and will retire on or after July 1, 1981. Reflects the change in contribution responsibility from $50 \%$ employees and $50 \%$ employers to $53 \%$ employees and $47 \%$ employers.
    ${ }^{4}$ Reflects the change in contribution responsibility from $50 \%$ employees and $50 \%$ employers to $53 \%$ employees and $47 \%$ employers.
    ${ }^{5}$ Subsequent to the completion of this actuarial valuation, the 50th Arizona State Legislature enacted legislation which retroactively reverted the contribution rate percentage back to $50 \%$ for employees and $50 \%$ for employers, as of July $1,2011$.

[^13]:    ${ }^{1}$ Subsequent to the completion of this actuarial valuation, the $50^{\text {th }}$ Arizona State Legislature enacted legislation which retro actively reverted the contribution rate back to $50 \%$ for employees and $50 \%$ for employers, as of July 1, 2011.

[^14]:    ${ }^{1}$ Subsequent to the completion of the June 30, 2011 Actuarial Valuation which set the LTD rate at $.50 \%$ beginning July 1, 2011, the $50{ }^{\text {th }}$ Arizona State Legislature enacted legislation which retroactively reverted contribution rates back to $50 \%$ for employees and $50 \%$ for employers and resulted in a revision of the LTD rate to $.48 \%$ beginning July 1, 2011.

[^15]:    ${ }^{1}$ Subsequent to the completion of this actuarial valuation, the $50^{\text {th }}$ Arizona State Legislature enacted legislation which retro actively reverted the contribution rate back to $50 \%$ for employees and $50 \%$ for employers, beginning July 1, 2011.

[^16]:    ${ }^{1}$ The above schedule does not include System retirees.

[^17]:    Source: ASRS Pension Administration System

