# ARIZONA STATE RETIREMENT SYSTEM 

3300 North Central Avenue, Suite 1400
Phoenix, Arizona 85012

The 49th

# Comprehensive Annual Financial Report of the 

Arizona State Retirement System
A Component Unit
of the
State of Arizona
For the Year Ended June 30, 2002

Mr. Jim Bruner, Chairman
Mr. Norman Miller, Vice Chairman
Arizona State Retirement System Board

Report prepared by the Arizona State Retirement System Staff
LeRoy Gilbertson, Director

## ARIZONA STATE RETIREMENT SYSTEM <br> TABLE OF CONTENTS

Page
INTRODUCTORY SECTION ..... 1
Chairman's Report ..... 3
Letter of Transmittal ..... 5
Certificate of Achievement for Excellence in Financial Reporting ..... 10
Administrative Organization ..... 11
Organizational Chart ..... 11
Board Members ..... 12
Executive Staff ..... 13
Senior Staff ..... 14
Professional Consultants ..... 14
Actuary ..... 14
Benefits ..... 14
Custodial Bank ..... 14
Independent Auditors ..... 14
Investment Advisors ..... 14
Investment Managers. ..... 14
Summary of 2001 Retirement Legislation ..... 15
FINANCIAL SECTION ..... 17
Index- Financial Section ..... 19
Independent Auditors' Report ..... 21
Management's Discussion and Analysis ..... 23
Combined Financial Statements for the Year Ended June 30, 2002 with Comparative
Totals for June 30, 2001:
Combined Statements of Plan Net Assets ..... 28
Combined Statements of Changes in Plan Net Assets ..... 29
Notes to the Financial Statements ..... 30
Required Supplemental Information:
Schedule of Funding Progress ..... 42
Schedule of Employer Contributions ..... 42
Notes to Required Supplemental Information ..... 43
Additional Supplemental Schedules:
Schedule of Additions and Deductions ..... 51
Schedule of Administrative Expenses (Retirement Fund) ..... 52
Schedule of Long-Term Disability Expenses ..... 53
Schedules of Cash Receipts and Cash Disbursements ..... 54

## ARIZONA STATE RETIREMENT SYSTEM

## TABLE OF CONTENTS

Page
Schedule of Professional Consultant Fees ..... 55
Schedule of Net Investment Income Experience by Manager ..... 56
Schedule of Total Investment Expenses by Manager ..... 57
Schedule of Investment Manager Expenses ..... 58
INVESTMENT PORTFOLIO SECTION ..... 59
Index - Investment Section ..... 61
Investment Report ..... 63
Schedule of Investments ..... 65
Performance Accounting/Computation Standards ..... 66
Graph - Investment Portfolio Components ..... 66
Equity Portfolio Profile ..... 67
Fixed Income Portfolio Profile ..... 68
Schedule of Broker Commissions ..... 69
Chart - Investment Allocation ..... 77
Rates of Return ..... 77
Graph - Net Income from Investments ..... 78
Ten-Year Review of Investment Income ..... 78
ACTUARIAL SECTION ..... 79
Index - Actuarial Section ..... 81
Actuarial Certification Statement ..... 83
Actuarial Valuation ..... 87
General Actuarial Information ..... 91
Financing Objective ..... 92
Summary of the Benefit Provisions ..... 94
Statement of Actuarial Methods and Assumptions Used in Determining Cost ..... 105
Table A - Schedule of Plan Active Member Valuation Data - Last 6 Years ..... 106
Table B - Schedule of Plan Retirees Added to and Removed from Rolls - Last 6 Years ..... 106
Table C - Schedule of Unfunded (Over) Accrued Liabilities - Plan - Last 10 Years ..... 107
Table D - Solvency Test - Last 10 Years ..... 108
Table E - Schedule of Recommended vs. Actual Plan Contributions - Last 10 Years ..... 109
Analysis of Financial Experience for the Plan ..... 109
Page
STATISTICAL SECTION ..... 111
Index - Statistical Section ..... 113
List of Employers ..... 115
Graph - Contributions Received ..... 120
Actual Contribution Rates ..... 120
Graph - Total Benefit Payments ..... 121
Graph - Total Reserves for Benefits. ..... 122
Graph - Non-Retired and Retired Members. ..... 123
Schedule of Revenues by Source ..... 124
Schedule of Expenses by Type ..... 125
Schedule of Benefit Expenses by Type ..... 125
Schedule of Average Benefit Payments for Retirees under the Plan ..... 126
Retirement Benefit Options ..... 127

## INTRODUCTORY SECTION



## Arizona State Retirement System

3300 North Central Avenue • PO Box 33910 • Phoenix, AZ 85067-3910 • Phone (602) 240-2000<br>7660 East Broadday Boulevard • Suite 108 • Tucson, AZ 85710-3776 • Phone (520) 239-3100<br>Toll Free Outside Metro Phoenix and Tucson 1-800-621-3778<br>LeRoy Gilbertson<br>Director

December 5, 2002
The Honorable Jane Hull
Governor of Arizona
State Capitol
1700 W. Washington St.
Phoenix, Arizona 85007
Dear Governor Hull:
On behalf of the Arizona State Retirement System Board (ASRS), it is my pleasure to present you the 49th Comprehensive Annual Financial Report (CAFR) of the ASRS. This CAFR includes pertinent financial statements, investment information, actuarial data and statistical data. The CAFR also includes 10-year summaries of a variety of indicators that affect or reflect the ASRS operations.

The actuarial valuation performed by Watson Wyatt Worldwide at June 30, 2001 indicated that the ASRS, through proper management and prudent investment practices, maintained a fully-funded status throughout the year. During the fiscal year (FY) ended June 30, 2002, the total rate of return on investments was -8.2 percent.

The contribution rate is determined in a biennial actuarial study. The actuarially recommended rate for 2001-2002 fiscal year, for both the employer and employee, as determined by Gabriel, Roeder, Smith \& Company was 2 percent. This contribution rate will continue for the 2002-2003 fiscal year.

Respectfully submitted,

James Bruner
Chairman
Arizona State Retirement System Board

## Arizona State Retirement System

LeRoy Gilbertson
Director

December 5, 2002
Mr. James Bruner
Arizona State Retirement System Board
3300 North Central Avenue, 14th Floor
Phoenix, Arizona 85012
Dear Mr. Bruner:
I am pleased to present the 49th Comprehensive Annual Financial Report (CAFR) of the Arizona State Retirement System (ASRS), a Component Unit of the State of Arizona, for the fiscal year ended June 30, 2002. Title 38 of the Arizona Revised Statutes requires the 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 all legal requirements governing the preparation and content of annual reports.

This CAFR consists of five sections. The Introductory Section includes the Board chairman's letter to the governor, this Letter of Transmittal, our Government Finance Officers Association (GFOA) Certificate of Achievement for Excellence in Financial Reporting Award for last year's report, a summary of the ASRS administration structure, a list of consultants providing service to the ASRS, an organizational chart of the ASRS, and a summary of the 2002 retirement legislation. The Financial Section includes the Independent Auditors' Report, The Management Discussion and Analysis, the ASRS combined financial statements including footnotes, and supplemental schedules. The Investment Portfolio Section presents a listing of ASRS investments as well as supplemental schedules. The Actuarial Section includes the independent consulting actuary's certification statement, a summary of benefit provisions, the results of the most recent actuarial valuation, the ASRS financing objective, and general actuarial information. The Statistical Section includes information concerning the membership, benefit payments, and additional financial data. The management of the ASRS is responsible for the information presented in the CAFR.

Accounting Principles Generally Accepted in the United States of America (GAAP) requires that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD\&A). This letter of transmittal is designed to complement MD\&A and should be read in conjunction with it. ASRS' MD\&A can be found immediately following the Independent Auditors' Report.

## History and Overview

The ASRS was created in 1953 to provide defined contribution retirement benefits to employees of state, university and political subdivisions in Arizona. Arizona teachers voted to join the ASRS in 1954, effective January 1, 1955. In 1970, the state legislature authorized the creation of
a defined benefit plan contingent upon the election to transfer at least 70 percent of the ASRS membership. More than 80 percent voted to transfer to the "plan" effective July 1, 1971.
At the end of fiscal year 2001-2002, total ASRS membership, including active, inactive, and retired members is 373,643 , and the number of ASRS employer members is 513 , including school districts, state colleges and universities, and local, county and state governments. In addition to pension benefits, the ASRS provides a health insurance premium benefit and sponsors medical and dental coverage for retired members. Active members receive long-term disability insurance coverage equal to two-thirds of pay at the time of disablement.

The ASRS staff provides administrative support to the ASRS Board to carry out the ASRS statutory mandates. More than 64,000 retired annuitants, their survivors, and disabilitants receive a monthly benefit totaling in excess of $\$ 75$ million. More than 40,000 retired members are enrolled in the ASRS-sponsored medical or dental plans.

## Fiscal Year 2002 Developments

The ASRS Board members are appointed for three-year terms by the governor and confirmed by the Arizona State Senate. Four members of the Board must have a minimum of 10 years investment experience. There is no limit on the number of terms that a Board member may serve. During FY2002, the following Board members were appointed or reappointed:

- Ms. Charlotte Borcher, appointed as a representative for retirees; term to expire on January 17, 2005
- Mr. N. Carl Tenney, appointed as a representative of political subdivisions; term to expire on January 17, 2005
- Mr. Jim Bruner, reappointed as a representative of the public, term to expire on January 21, 2005

Mr. LeRoy Gilbertson, Executive Director of the ASRS, announced his retirement, effective January 2003. Mr. Gilbertson has been Executive Director of the ASRS since January 1994.

## Information Technology Plan

The total membership of the ASRS has grown over $60 \%$ in the last decade. An additional 70,000 members will become eligible for retirement in the next decade. To address past growth and prepare for the future, the ASRS has prepared and received funding for a 5-year Information Technology (IT) Plan effort. The major components of the Information Technology Plan include:
$\Rightarrow$ Completion of the Public Employee Retirement Information System (PERIS), a customized database built specifically to deliver ASRS services
$\Rightarrow$ New Internet Applications Development
$\Rightarrow$ Implementation of an Electronic Document Imaging Management System (EDIMS)
$\Rightarrow$ Ongoing maintenance and upgrades to Telephone and Network technology
$\Rightarrow$ Implementation of a Financial Accounting System

Implementation of the IT Plan began in July 2002. Once completed, the IT Plan is expected to:

- Consolidate all ASRS services to operate from a single database (telephone staff currently must query as many as five separate databases to answer a single call)
- Create a near paperless office (an $80 \%$ or higher reduction in the need for filing or paper handling to perform services)
- Automate and re-engineer the delivery of services to achieve "best practice" service levels
- Create a platform by which electronic data transfers (contributions, name, social security number, and address changes) can be sent from employers to update ASRS records automatically
- Create a platform by which members can access their account information over the internet and request changes when necessary
- Give members the opportunity to speak directly with a benefit advisor over the internet
- Connect the telephone and computer systems, resulting in faster service to members
- Create retirement and financial planning tools that link with Deferred Compensation and Social Security Administrators
- Utilize videoconferencing to transmit seminars, workshops, group meetings, and board meetings to remote locations throughout the state
- Post pre-recorded seminars, workshops, and group meetings over the internet which members can view anytime or anyplace
- Give members the opportunity to enroll in a person-to-person seminar, workshop, or group meeting automatically over the internet
- Give members the opportunity to request or receive service over the internet - some services will be fully automated and will not require the assistance of a benefit advisor
- Create a system that is flexible enough to handle the complexity and portability of today's pension funds
- Create a system that has the capability to handle multiple types of retirement plans


## Investment Management

The ASRS met or outperformed established benchmarks for investment returns for four of its five internally managed portfolios for Fiscal Year ended June 30, 2002:

- E1 Stock Portfolio Outperformed benchmark by 20 basis points
- E2 Stock Portfolio Outperformed benchmark by 4 basis points
- E3 Stock Portfolio Outperformed benchmark by 90 basis points
- F1 Bond Portfolio Underperformed benchmark by 70 basis points
- F2 Bond Portfolio Met performance benchmark

In addition, 8 of 18 externally managed portfolios met or outperformed established benchmarks for investment returns for Fiscal Year ended June 30, 2002.

Other accomplishments for the investment management division include:

- Issuing an RFP for Custody, Benefits Payables and Security Lending; analyzing all responses and awarding the fully bundled contract to Mellon Bank
- Issuing an RFP for Mid Cap Manager Search, analyzing and interviewing prospective managers, awarding and funding contracts to six Mid Cap Manager portfolios (two internally managed portfolios and four externally managed portfolios)
- Transitioning all portfolios for the Mid Cap mandate
- Issuing an RFP for Small Cap Manager Search, analyzing and interviewing prospective managers, awarding and funding contracts to three Small Cap Manager portfolios
- Transitioning all portfolios for the Small Cap mandate
- Developing guidelines for implementation and funding of a fourth Internal Equity Portfolio (E4)


## Actuarial Valuations and Funding Progress

An actuarial valuation of the ASRS is performed annually. The date of the most recent valuation information is June 30, 2001. A statutory change effective in 1998 requires that an actuarial valuation be performed only following even-numbered years, rather than annually. This biennial valuation recommends contribution rates for a two-year period. Valuations are prepared annually as of June 30 of each year, the last day of the Plan's plan year and ASRS' fiscal year.

Any excess of additions over deductions is accumulated by the ASRS in order to meet future benefit obligations when due. According to the actuarial valuation as of June 30, 2001, the actuarial present value of the assets of the ASRS was $\$ 22.855$ billion. (This value includes an asset valuation method upward adjustment of $\$ 2.961$ billion from the book value of the assets.) This figure corresponds to the calculated actuarial accrued liabilities of $\$ 20.268$ billion. Thus, the asset side of the actuarial balance sheet exceeds the amount of the actuarial liabilities by $\$ 2.587$ billion. 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 current valuation is presented in the required supplementary information, Schedule of Funding Progress.

## Financial Information

The management of the ASRS is responsible for maintaining a system of adequate internal controls. The system of internal controls at the ASRS is designed to provide reasonable assurance that the assets of the ASRS are protected and that financial transactions are executed in accordance with state policy and statute, to ensure management's responsibility to the retirement fund, and to facilitate the timely preparation of financial statements in accordance with accounting principles generally accepted in the United States of America.

Responsibility for the accuracy, completeness and fair presentation of the information, and all disclosures rests with the ASRS. The basic financial statements have been prepared in accordance with generally accepted accounting principles applied on a consistent basis as promulgated by the Government Accounting Standards Board (GASB) and its predecessor; the National Council on Government Accounting. The basic financial statements are presented in accordance with the guidelines established by GASB Statement No. 25, Financial Reporting for

Defined Benefit Plans, GASB No. 34 Basic Financial Statements-Management Discussion and Analysis-for state and Local Governments and other GASB statements as appropriate control procedures and responsibilities are documented and are reviewed periodically by the ASRS Internal Audit department. The Chief Auditor submits all audit reports to the ASRS Audit Committee. An audit plan is prepared biennially based on a risk analysis performed by the Internal Audit Department.

The Audit Committee, a committee appointed by the Board Chairman, monitors operations and controls throughout the year. The ASRS is audited annually by an independent accounting firm. The current contract for external audit services is with Deloitte \& Touche lip.

## Other Information

An independent accounting firm audited the financial statements contained in this CAFR. The auditors' report for this year is unqualified, which is the best designation attainable. It means that in the opinion of our independent auditor, our financial statements present fairly, in all material respects, the financial position of the ASRS for the period under audit and the results of its operations for that period are in conformity with accounting principles generally accepted in the United States of America.

The GFOA awards the highest recognition achievable for financial reporting for state and local governments. The ASRS has received the GFOA Certificate of Achievement for Excellence in Financial Reporting in each of the last 13 years. We believe that this year's report also conforms to the requirements for the certificate and we will, therefore, be submitting it to the GFOA for consideration.

This report reflects the efforts of the many dedicated ASRS employees under the direction of the ASRS Board. It is intended to provide complete and reliable information for decision making, to insure compliance with legal requirements, and is a means of measuring the responsible stewardship of the assets of the ASRS.

As we enter our $50^{\text {th }}$ anniversary year, I would like to express my gratitude to my staff, the ASRS Board and the many other individuals who have been instrumental in maintaining the quality of service and performance which has become the standard for the ASRS.

Respectfully submitted,


LeRoy Gilbertson
Director

# Certificate of Achievement for Excellence in Financial Reporting 

Presented to

## The Arizona State Retirement System

For its Comprehensive Annual<br>Financial Report<br>for the Fiscal Year Ended<br>June 30, 2001<br>A Certificate of Achievement for Excellence in Financial Reporting is presented by the Government Finance Officers Association of the United States and Canada to government units and public employee retirement systems whose comprehensive annual financial reports (CAFRs) achieve the highest standards in government accounting and financial reporting.



The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to Arizona State Retirement System for its comprehensive annual financial report for the fiscal year ended June 30, 2001. This was the 14th consecutive year that the government has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both accounting principles generally accepted in the United States of America and applicable legal requirements.

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

## ARIZONA STATE REITREMENT SYSTEM <br> Administrative Organization

## ORGANIZATIONAL CHART



## BOARD MEMBERS



James Bruner, Chairman
Public, Scottsdale
(Member since January 1998)


Charlotte Borcher Retirees, Chandler (April 2002)


Dr. Chuck Essigs Educators, Mesa (May 1995)


Bonnie Gonzalez State Employees, Flagstaff (March 2000)


Alan Maguire At-Large, Phoenix (January 1998)

N. Carl Tenney Political Subdivisions Chino Valley (April 2002)

## EXECUTIVE STAFF



LeRoy Gilbertson, Director


Anthony Guarino Deputy Director Chief Operations Officer


Paul Matson Chief Investment Officer


Richard Stephenson Deputy Director External Affairs

## SENIOR STAFF

Vacant, Assistant Director, Financial Services
Prudence Lee, Acting Assistant Director, Member Services
Bernard Glick, Chief Internal Auditor
Kent Smith, Assistant Director, Information Services
Fred Stork, Legal Counsel

## PROFESSIONAL CONSULTANTS

## Actuary

Buck Consultants, Chicago, IL
Gabriel, Roeder, Smith \& Company, Dallas, TX

## Benefits

VPA, Calabasas, CA

## Custodial Bank

Mellon Trust, Pittsburgh, PA
Independent Auditors
Deloitte \& Touche LLP, Phoenix, AZ
Investment Advisors
Callan Associates, Inc., San Francisco, CA
William M. Mercer Investment Consulting Inc., Los Angeles, CA

## Investment Managers

Investment managers are listed in the Schedule of Total Investment Expenses by Manager on page 57.

## ARIZONA STATE RETIREMENT SYSTEM <br> Summary of 2002 Retirement Legislation

## SB 1095 Conforming Changes

## Return to Work

Permits retired members of the ASRS to return to work and still be eligible to receive retirement benefits if they have been terminated from employment for a period of 12 months.

The members who take this option will not be eligible for LTD benefits nor will they contribute to the ASRS or accrue additional benefits during the period of re-employment. This act is repealed June 30, 2003.

This is similar to the bill passed last session allowing retired teachers to return to work, and it does not affect the requirements of that program.

FINANCIAL SECTION


## ARIZONA STATE RETIREMENT SYSTEM <br> COMPREHENSIVE ANNUAL FINANCIAL REPORT INDEX - FINANCIAL SECTION

Page
Independent Auditor's Report ..... 21
Management's Discussion and Analysis ..... 23
COMBINED FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 2002 WITH COMPARATIVE TOTALS FOR JUNE 30, 2001
Combined Statements of Plan Net Assets ..... 28
Combined Statements of Changes in Plan Net Assets ..... 29
Notes to the Financial Statements ..... 30
REQUIRED SUPPLEMENTAL INFORMATION - SIX-YEAR COMPARISON
Schedule of Funding Progress ..... 42
Schedule of Employer Contributions ..... 42
Notes to Required Supplemental Information for the Year Ended June 30, 2002 ..... 43
ADDITIONAL SUPPLEMENTAL SCHEDULES
Schedule of Additions and Deductions ..... 51
Schedule of Administrative Expenses (Retirement Fund) ..... 52
Schedule of Long-Term Disability Expenses ..... 53
Schedules of Cash Receipts and Cash Disbursements ..... 54
Schedule of Professional Consultant Fees ..... 55
Schedule of Net Investment Income Experience by Manager ..... 56
Schedule of Total Investment Expenses by Manager ..... 57
Schedule of Investment Manager Expenses ..... 58

# INDEPENDENT AUDITOR'S REPORT 

Arizona State Retirement System Board<br>Auditor General of the State of Arizona<br>Phoenix, Arizona

We have audited the accompanying combined financial statements of the Arizona State Retirement System ("ASRS") as of June 30, 2002 and for the year then ended, listed in the foregoing table of contents. These financial statements are the responsibility of the management of the ASRS. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinions.

In our opinion, such combined financial statements present fairly, in all material respects, the net assets of the ASRS as of June 30, 2002 and the changes in its net assets for the year then ended in conformity with accounting principles generally accepted in the United States of America.

As described in Note 1 to the combined financial statements, in fiscal year 2002, ASRS adopted Governmental Accounting Standards Board ("GASB") Statement No. 34, Basic Financial Statements - and Management's Discussion and Analysis - for State and Local Governments, GASB Statement No. 37, Basic Financial Statements - and Management's Discussion and Analysis - for State and Local Governments: Omnibus, and GASB Statement No. 38, Certain Financial Statement Note Disclosures.

The Management's Discussion and Analysis on pages 23 through 27 is not a required part of the basic financial statements but is supplementary information required by the Governmental Accounting Standards Board. We have applied certain limited procedures, which consisted principally of inquiries of management regarding the methods of measurement and presentation of the supplementary information. However, we did not audit the information and express no opinion on it.

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise ASRS's combined financial statements. The Introductory Section, Required Supplementary Information and Additional Supplemental Schedules, Investment Section, Actuarial Section and Statistical Section as listed in the foregoing table of contents are also presented for purposes of additional analysis and are not a required part of the combined financial statements. The Required Supplementary Information and Additional Supplemental Schedules as listed in the
foregoing table of contents under the Financial Section have been subjected to the auditing procedures applied in the audit of the combined financial statements and, in our opinion, are fairly stated in all material respects in relation to the combined financial statements taken as a whole. The Introductory Section, Investment Section, Actuarial Section and Statistical Section, have not been subjected to the auditing procedures applied in our audit of the combined financial statements and, accordingly, we express no opinion on them.

In accordance with Government Auditing Standards, we have also issued our report dated December 5, 2002 on our consideration of the ASRS' internal control over financial reporting. That report is an integral part of an audit performed in accordance with Government Auditing Standards and should be read in conjunction with this report in considering the results of our audit.


December 5, 2002

## ARIZONA STATE RETIREMENT SYSTEM

## Management's Discussion and Analysis

Management of the Arizona State Retirement System (ASRS) presents a discussion and analysis of the financial position and performance for the fiscal year ended June 30, 2002. This, in conjunction with the letter of transmittal, provide an overview of the ASRS. This section is presented as a narrative.

## The Funds

The ASRS administers retirement, health and long term disability benefits for teachers, state, county and other public municipal employees. The ASRS is made up of 3 funds: Retirement, Health Benefit Supplement (HBS) and Long Term Disability (LTD).

As of June 30, 2002, the fair value of the ASRS funds (includes retirement, health benefits, and disability funds) was $\$ 19.2$ billion. According to statutory restrictions, no more than 80 percent of the fund may be allocated to domestic and international equity securities, no more than 20 percent of the fund may be allocated solely to international equity securities. The respective fair value of the ASRS funds was as follows:


During the fiscal year ended June 30, 2002, the ASRS funds remained broadly diversified with investments in domestic and international equities, domestic fixed income, and cash equivalent securities.

## Financial Highlights

- As of June 30, 2002, the ASRS funds consisted of 51.4 percent domestic equity securities, 32.4 percent domestic fixed income securities, including mortgages and short-term investments, and 16.2 percent international equity securities.
- During Fiscal Year 2001-2002, the ASRS funds returned -8.2 percent. The combined fixed income investments returned 8.4 percent versus the Lehman Brothers Aggregate Bond Index of 8.6 percent. The domestic equity securities returned -16.3 percent versus the -18.0 percent return for the Standard \& Poor's 500 Equity Index. The international equity investments returned -8.5 percent versus -9.2 percent for the Morgan Stanley Capital International Europe, Australia, and Far East Gross Index.
- The net assets of ASRS decreased by $\$ 2.5$ billion, or 11.6 percent. The decrease was due primarily to a down turn in the US equity markets, enhanced benefits and a low contribution rate.
- As of June 30, 2002, according to the most recent actuarial valuation the fund is 106.4 percent funded compared to 115.2 percent in 2001.


## Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the ASRS financial reporting which is comprised by the following components: 1) financial statements, 2) notes to the financial statements, 3) required supplementary information and 4) other supplementary schedules.

Collectively, this information presents the combined net assets held in trust for pension benefits for each of the funds administered by the ASRS as of June 30, 2002. The financial information also summarizes the combined changes in net assets 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) Financial statements. For the year ended June 30, 2002, financial statements are presented for the funds administered by the ASRS. Fiduciary funds are used to account for resources held for the benefit of parties outside of the ASRS.

- The combined statement of plan net assets is presented as of June 30, 2002 with combined total comparative information as of June 30, 2001. These financial statements reflect the resources available to pay benefits to members, including retirees and beneficiaries, at the end of the years reported. Investments totaled $\$ 21,054,703,516$ compared to $\$ 23,246,642,414$. The 9.4 percent decrease is primarily due to the loss in US stocks. Receivables or $\$ 312,382,150$ compared to last years $\$ 239,726,191$ and liabilities of $\$ 2,170,288,392$ compared to $\$ 1,830,412,593$ are due to timing of the trades and settlement.
- The combined statement of changes in plan net assets is presented for the pension trust fund for the year ended June 30, 2002 with comparative information for the year ended June 30, 2001. These financial statements reflect the change resources available to pay benefits to retirees and other beneficiaries for the fiscal year 2002, and 2001.

2) Notes to the Financial Statements. The notes to the Financial Statements provide additional information that is essential to a full understanding of the data provided in the basic financial statements. Information in the Notes to the Financial Statements is described below.

- Note 1 provides a general description of ASRS, as well as descriptions the funds, reporting relationships, the participating employers and the benefits administered.
- Note 2 provides a summary of significant accounting policies, including the basis of accounting, new accounting pronouncements, investment accounting policies, management use of estimates, tax status and comparative data.
- Note 3 describes information about cash, investments, investing authority, and investment risk categories.
- Note 4 describes the security lending program.
- Note 5 describes derivatives and the investment managers' use of derivatives.
- Note 6 provides information about the actuarial assumptions, funding status and progress for the defined benefit program.
- Note 7 provides information about the contributions required and made to the ASRS.
- Note 8 describes the additional benefits of the health insurance premium benefit program and the long term disability program.
- Note 9 describes information about litigation.
- Note 10 describes transfers to and from other funds.
- Note 11 describes the liquidation of a previous investment line.
- Note 12 describes required supplementary schedules.

3) Required Supplementary Information. The required supplementary information consists of two schedules and related notes concerning actuarial information, funded status and required contributions of the defined benefit pension systems administered by ASRS.
4) Other Supplementary Schedules. Other schedules including detailed information on administrative expenses incurred by the ASRS administered funds, as well as investment and professional and outside expenses.

## Additions and Deductions

The ASRS provides retirement benefits to covered State of Arizona, county, local governments and public education employees. The primary expenses of the ASRS are the payment of retirement and disability benefits to beneficiaries, the refund of contributions to former members and the cost of administering the ASRS.

The net assets held in trust for benefits on June 30, 2002 were $\$ 19,209,809,392$ compared to $\$ 21,730,542,658$ last year. The decrease of $\$ 2,520,733,266$ equates to 11.6 percent drop. The decrease is primarily due to the negative US stock return, enhanced benefits and low contribution rate. Additions to the ASRS net assets held in trust for benefits include employer and member contributions, service purchase or reinstatements, member transfers and investment income. In fiscal year 2002, contributions received were $\$ 336,425,073$ compared to $\$ 326,883,364$ in 2001 . The contributions rates remained the same for both fiscal years. The 2.9 percent increase is due to an increase in membership. Liabilities for the year ended 2002 , were $\$ 2,170,288,222$ compared to $\$ 1,830,412,593$ for 2001 . The increase of 18.5 percent is securities that have been purchased but not yet paid for.

The following table shows the principal ASRS additions and deductions for fiscal years 2002 and 2001, in millions of dollars:

|  | 2002 | 2001 | Variance | Variance |
| :---: | :---: | :---: | :---: | :---: |
| Additions Type: |  |  |  |  |
| Member contributions | \$ 168 | \$ 163 | 5 | 3.1\% |
| Employer contributions | 168 | 163 | 5 | 3.1\% |
| Member reimbursements or transfers | 51 | 40 | 11 | 27.5\% |
| Investments and other income | $(1,707)$ | $(1,421)$ | (286) | 20.1\% |
| Investment Expense | $\underline{62}$ | $\underline{108}$ | (46) | (42.6)\% |
| Total | \$(1382) | \$(1,163) | \$(311) | $\underline{\underline{26.7 \%}}$ |
| Deductions |  |  |  |  |
| Benefits | \$1,069 | \$910 | 159 | 17.5\% |
| Refunds | 43 | 99 | (56) | (56.6)\% |
| Transfer to other plans | 9 | 10 | (1) | (10.0)\% |
| Administration | 19 | 12 | 7 | 58.3\% |
| Other | $\underline{1}$ | $\underline{2}$ | (1) | (50.0)\% |
| Total | \$1,140 | \$1,033 | \$108 | $\underline{\underline{10.4 \%}}$ |

Benefit payments and other deductions for fiscal year 2002 were $\$ 1,139,914,184$, compared to $\$ 1,032,790,022$ in fiscal year 2001. Net assets for the year ended June 30, 2002 were $\$ 19,209,809,392$ compared to $\$ 21,730,542,658$ last year. The biggest dollar increase was in benefit payments, which was due to benefit enhancements such as an increase in health benefit supplements of $\$ 35.4$ million over last year and $\$ 115.0$ million in increased pension payments. Investment loss of $\$ 286$ million was primarily in US stocks.

## Financial Analysis of the ASRS Funds

The retirement and Health Benefit Supplement (HBS) fund are combined in a commingled investment pool. The long term disability fund is a separate fund. Income is allocated to the HBS fund in accordance with respective ownership share of the total. Retirement, HBS and LTD are reported in separate columns in the Statement of Plan Net Assets. Investment gains and losses are reported in the Statement of Changes in Plan Net Assets.

## Total Investments

On June 30, 2002, the ASRS held total investments of $\$ 19.2$ billion, a decrease of $\$ 2.5$ billion from the fiscal year 2001. The combined investment portfolio experienced a loss of - 8.2 percent compared to the benchmark return of -8.4 percent. The benchmark is comprised of 53 percent S\&P 500, 30 percent Lehman Brother Aggregate and 17\% EAFE indices.

## Equities

On June 30, 2002, the ASRS held $\$ 10$ billion in domestic equities and $\$ 3.1$ billion in international equities. The rate of return was -16.3 percent compared to the S\&P 500 return of -18.0 percent for domestic equities. International rate of return for the year ended June 30, 2002 was -8.5 percent compared to EAFE, -9.2 percent.

## Domestic Fixed Income

The ASRS had $\$ 6.3$ billion in debt securities for the period ended June 30, 2002, compared to $\$ 7.0$ billion last year. The rate of return was 8.4 percent compared the Lehman Aggregate rate of 8.6 percent.

## Security Lending

The ASRS earns additional investment income by lending investment securities to brokers. This is done on a pooled basis by our custodian bank, Mellon Trust. The brokers provide collateral and generally use the borrowed securities to cover short sales and failed trades. Security lending income for fiscal year ended June 30,2002 was $\$ 7,306,455$ compared to $\$ 8,453,680$ for the year ended June 30, 2001.

## ARIZONA STATE RETIREMENT SYSTEM

Combined Financial Statements June 30, 2002 with Comparative Totals for June 30, 2001

|  | Retirement | Health Benefit Supplement (Note 8) | Long-Term Disability (Note 8) | $\begin{gathered} \text { Combined } \\ \text { June 30, } \\ 2002 \\ \hline \end{gathered}$ | $\begin{gathered} \text { Combined } \\ \text { June 30, } \\ 2001 \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ASSETS: |  |  |  |  |  |
| Cash (Note 3) | \$10,083,462 | \$28,474 | \$2,900,012 | \$13,011,948 | \$74,586,646 |
| RECEIVABLES: |  |  |  |  |  |
| Accrued interest \& dividends | 71,063,385 | 2,980,361 | 6,051 | 74,049,797 | 76,529,868 |
| Securities sold (Note 3) | 181,265,783 | 7,602,192 |  | 188,867,975 | 129,082,349 |
| Forward contract receivable | 36,143,159 | 1,515,825 |  | 37,658,984 | 16,948,869 |
| Contributions (Note 7) | 7,502,257 |  | 1,708,194 | 9,210,451 | 8,356,616 |
| Due From Other Funds | 1,027,400 |  | 569,478 | 1,596,878 | 5,145,724 |
| Miscellaneous receivables | 848,986 | 149,079 |  | 998,065 | 3,662,765 |
| Total receivables | 297,850,970 | 12,247,457 | 2,283,723 | 312,382,150 | 239,726,191 |
| INVESTMENTS AT FAIR VALUE (Note 3): |  |  |  |  |  |
| Temporary Investments: |  |  |  |  |  |
| ASRS Investments | 605,807,278 | 25,407,239 | 1,500 | 631,216,017 | 479,529,097 |
| Collateral for Security Lending | 1,606,162,231 | 67,361,601 |  | 1,673,523,832 | 1,528,313,442 |
| U. S. gov't obligations | 3,805,089,854 | 159,583,472 | 27,921,850 | 3,992,595,176 | 3,122,251,298 |
| Corporate \& Convertible bonds | 1,555,301,775 | 65,228,540 |  | 1,620,530,315 | 1,845,960,746 |
| Common and preferred stocks | 12,519,441,766 | 525,058,818 | 62,125,092 | 13,106,625,676 | 16,037,444,361 |
| Valley Ventures (Note 11) |  |  |  |  | 24,531 |
| Real estate mortgages \& contracts | 28,996,405 | 1,216,095 |  | 30,212,500 | 233,118,939 |
| Total investments | 20,120,799,309 | 843,855,765 | 90,048,442 | 21,054,703,516 | 23,246,642,414 |
| TOTAL | 20,428,733,741 | 856,131,696 | 95,232,177 | 21,380,097,614 | 23,560,955,251 |

LIABILITIES:

| Payable for securities purchased (Note 3) | $436,944,522$ | $18,325,224$ |  | $455,269,746$ | $280,019,334$ |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Payable for securities lending collateral (Note 4; | $1,606,162,231$ | $67,361,601$ |  | $1,673,523,832$ | $1,528,313,442$ |  |
| Forward contracts payable | $38,099,540$ | $1,597,875$ |  | $39,697,415$ | $16,388,576$ |  |
| Due to other funds | 569,478 |  | $1,027,400$ | $1,596,878$ | $5,145,724$ |  |
| Other |  |  | 200,351 | 200,351 | 545,517 |  |
| liabilities |  |  |  |  |  |  |

NET ASSETS HELD IN TRUST FOR PENSION BENEFITS

| $\$ 18,346,957,970$ | $\$ 768,846,996$ | $\$ 94,004,426$ | $\$ 19,209,809,392$ | $\$ 21,730,542,658$ |
| :--- | :--- | :--- | :--- | :--- |

(A Schedule of Funding Progress is presented on page 42)
The accompanying notes are an integral part of these statements.

## ARIZONA STATE RETIREMENT SYSTEM

## Combined Statement of Change in Plan Net Assets for the Year Ended June 30, 2002 with Comparative Totals for the Year Ended June 30, 2001

|  | Retirement | Health Benefit Supplement | Long-Term Disability | $\begin{gathered} \text { Combined } \\ \text { June } 30 \\ 2002 \end{gathered}$ | ```Combined June 30 2001``` |
| :---: | :---: | :---: | :---: | :---: | :---: |
| ADDITIONS |  |  |  |  |  |
| Contributions |  |  |  |  |  |
| Member contributions (Note 7) | \$135,274,945 |  | \$32,937,592 | \$168,212,537 | \$163,441,640 |
| Employer contributions (Note 7) | 131,234,295 | \$4,040,650 | 32,937,591 | 168,212,536 | 163,441,724 |
| Transfers from other plans | 1,467,434 |  |  | 1,467,434 | 1,847,846 |
| Member reimbursements | 49,365,487 |  |  | 49,365,487 | 37,687,091 |
| Total Contributions | 317,342,161 | 4,040,650 | 65,875,183 | 387,257,994 | 366,418,301 |
| Investment (loss) income |  |  |  |  |  |
| Market value (depreciation) | $(2,202,829,306)$ | $(17,863,128)$ | $(7,701,718)$ | (2,228,394,152) | $(2,038,932,396)$ |
| Interest | 297,642,222 | 13,387,710 | 181,743 | 311,211,675 | 340,912,591 |
| Dividends | 143,007,628 | 6,432,369 | 2,006 | 149,442,003 | 163,767,793 |
| Security loan program (Note 4) | 41,763,537 | 1,878,491 |  | 43,642,028 | 90,469,022 |
| Real Estate | 5,631,703 | 253,310 |  | 5,885,013 | 10,313,167 |
| Other | 11,317,873 | 371,673 |  | 11,689,546 | 12,627,122 |
| Total investment income (loss) | (1,703,466,343) | 4,460,425 | $(7,517,969)$ | $(1,706,523,887)$ | $(1,420,842,701)$ |
| Less investment expenses |  |  |  |  |  |
| Investment management fees and monitor servi | 17,229,962 | 774,991 |  | 18,004,953 | 20,543,096 |
| Security loan interest expense (Note 3) | 34,771,575 | 1,563,998 |  | 36,335,573 | 82,015,342 |
| Real estate | 6,902,207 | 310,456 |  | 7,212,663 | 5,289,690 |
| Total investment expenses | 58,903,744 | 2,649,445 |  | 61,553,189 | 107,848,128 |
| Net investment (loss) income | $(1,762,370,087)$ | 1,810,980 | $(7,517,969)$ | $(1,768,077,076)$ | $(1,528,690,829)$ |
| TOTAL ADDITIONS | $(1,445,027,926)$ | 5,851,630 | 58,357,214 | $(1,380,819,082)$ | (1,162,272,528) |
| DEDUCTIONS |  |  |  |  |  |
| Retirement and disability benefits | 924,171,815 | 75,989,584 | 54,804,374 | 1,054,965,773 | 895,481,649 |
| Death benefits | 14,077,910 |  |  | 14,077,910 | 14,133,500 |
| Refunds to withdrawing members, including interest | 42,765,105 |  |  | 42,765,105 | 98,535,274 |
| Administrative expenses | 15,799,870 |  | 2,731,901 | 18,531,771 | 12,168,828 |
| Transfers to other plans | 8,616,817 |  |  | 8,616,817 | 10,156,958 |
| Other | 910,010 | 46,798 |  | 956,808 | 2,313,813 |
| TOTAL DEDUCTIONS | 1,006,341,527 | 76,036,382 | 57,536,275 | 1,139,914,184 | 1,032,790,022 |
| NET (DECREASE) INCREASE | $(2,451,369,453)$ | $(70,184,752)$ | 820,939 | $(2,520,733,266)$ | $(2,195,062,550)$ |
| Net assets held in trust for pension benefits: |  |  |  |  |  |
| Beginning of year | 20,798,327,423 | 839,031,748 | 93,183,487 | 21,730,542,658 | 23,925,605,208 |
| End of year | \$18,346,957,970 | \$768,846,996 | \$94,004,426 | \$19,209,809,392 | \$21,730,542,658 |

The accompanying notes are an integral part of these statements.

## ARIZONA STATE RETIREMENT SYSTEM

Notes to the Financial Statements for the Year Ended June 30, 2002

## 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, 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 of the Arizona Revised Statutes (A.R.S.).

The ASRS administers the Arizona State Retirement System (the "System") and the Arizona State Retirement Plan (the "Plan"). The System was established by the Arizona Legislature in 1953 to provide retirement and other benefits for state employees and teachers, together with employees of political subdivisions that elected coverage. In 1943, the Legislature had 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 to be covered by the Arizona State Retirement System 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 Arizona State Retirement System.

The Plan, enacted by the Legislature in 1970, became effective July 1, 1971. Effective July 1, 1981, all non-retired members of the System became members of the Arizona State Retirement 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 has established an account for each benefit program and has reported those funds in the combined financial statements.

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

Contributions - Participating employers and their employees contribute percentages of employees' salaries for retirement annuities and survivor annuities in accordance with Arizona Revised Statutes. The laws of 1998, Chapter 238, are applicable for the plan year beginning July 1, 1998. Contributions are excluded from gross income for federal and state income tax purposes. Contributions are collected by employers and remitted to the Plan. Contributions earn interest at the rate of 8 percent per annum.

The ASRS laws allow the purchase of eligible service credit for which no benefit could be paid by another qualified plan. Purchasable services include active duty military service, other qualified plan service and refunded service.

At June 30, 2002 and 2001, the number of participating employers and employees totaled:

|  | $\mathbf{2 0 0 2}$ | $\mathbf{2 0 0 1}$ |
| :--- | ---: | ---: |
| EMPLOYER UNITS: | 226 | 222 |
| School Districts | 138 | 119 |
| Charter Schools | 65 | 64 |
| Cities and Towns | 14 | 14 |
| Counties | 59 | 51 |
| Special Districts | 10 | 10 |
| Community College Districts | 1 | 1 |
| State Government | $\mathbf{5 1 3}$ | $\mathbf{4 8 1}$ |
| TOTAL |  |  |
| EMPLOYEE MEMBERS: | 60,346 | 60,333 |
| Retirees (including Beneficiaries) | 109,942 | 105,098 |
| Terminated employees entitled to future benefits | 4,485 | 4,031 |
| Long-Term Disability recipients |  |  |
| CURRENT EMPLOYEES: | 198,870 | 191,988 |
| Fully Vested* | $\mathbf{3 7 3 , 6 4 3}$ | $\mathbf{3 6 1 , 4 5 0}$ |

* Plan members are deemed fully vested when retirement contributions are made. The fully vested members are currently contributing.

Benefits - The Arizona State Retirement 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. The Plan provides for retirement, disability, health insurance premium benefits, and death 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 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, or (c) the first day that the sum of their age plus total credited service equals 80 . The benefit is based on a percentage of average monthly compensation multiplied by the years of service credit.

The years of service credit is a graded multiplier based on years of service according to the following schedule $0-19.99$ years -2.1 percent, $20-24.99$ years -2.15 percent, 2529.99 years -2.2 percent, 30 or more years of service 2.3 percent. Average monthly 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. 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. Members who began participation in the Plan prior to January 1, 1984, may choose to have average monthly compensation determined 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, but at a reduced retirement benefit.

Effective July 1, 1988, members of the Plan are eligible for a LTD benefit in the event they become unable to perform their work. The monthly benefit is equal to 66 and $2 / 3$ percent of the monthly rate of compensation. A participant continues to earn service credit not to exceed 30 years during the period of disability.

The Retiree Group Insurance Program offers health insurance coverage for retired and disabled members who are no longer eligible for coverage administered by their former member employers. Commencing January 1, 1989, retired and disabled members of the ASRS and Plan became eligible for a health insurance premium subsidy benefit. A detailed explanation of both programs is presented in the additional benefits section (Note $8)$.

Termination - Upon termination of employment, member contributions made to the Plan, plus accrued interest at 8 percent compounded monthly per annum, are refundable. Effective August 6, 1999 members may be eligible to receive a percentage of employer contributions to the plan based on years of service prorated as follows:

5 to 5.9 years of service receives 25 percent of employer contributions
6 to 6.9 years of service receives 40 percent of employer contributions
7 to 7.9 years of service receives 55 percent of employer contributions
8 to 8.9 years of service receives 70 percent of employer contributions
9 to 9.9 years of service receives 85 percent of employer contributions
10 or more years of service receives 100 percent of employer contributions

Withdrawal of such 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 recorded when the liability is incurred and revenues are recorded in the accounting period in which they are earned and become measurable. Employee contributions are recognized in the period in which contributions are due. Employer contributions are recognized when due and the employer has made a formal commitment to provide the contributions. Contributions from employees and employers for service through June 30 are accrued. These 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 plan.

Investment income is recognized when earned and benefit payments and refunds and other expenditures are recorded when incurred.

New Accounting Pronouncements - In June 1999 the Governmental Accounting Standards Board (GASB) issued a statement No. 34, Basic Financial Statements Management's Discussion and Analysis - for State and Local Governments (GASB 34). In June 2001, the GASB issued statement No. 37, Basic Financial Statements and Management's Discussion and Analysis - for State and Local Governments: Omnibus, which amended certain provisions of GASB Statement No. 34. GASB Statement No. 34 requires ASRS to adopt this pronouncement for the fiscal year ended June 30, 2002. The adoption of GASB Statement No. 34 required the addition of Management's Discussion and Analysis (MD\&A). The MD\&A is considered to be required supplementary information and precedes the financial statements. The adoption of GASB Statement No. 34 did not have an impact on the net assets of ASRS Funds.

Investments - Investments include U.S. government and government agency obligations, real estate, commercial mortgages, corporate bonds and equity obligations. Investments are reported at fair value.

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

Investments other than real estate and commercial mortgages are reported at fair values determined by the custodial agents. The agents' determination of fair values includes, among other things, using pricing services or prices quoted by independent brokers at current exchange rates.

Commercial mortgages have been valued on an amortized cost basis, which approximates fair value. No allowance for loan loss has been provided as all loans are considered by management to be fully collectible. 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.

Net investment income includes net depreciation in the fair value of investments, interest income, dividend income and total investment expense, which includes investment management and custodial fees 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. HBS and retirement investments are pooled. Allocation of unrealized and realized gains is based on the fund's net asset balance at year-end.

Fixed Assets - The ASRS does not record property and equipment (principally office furniture and fixtures) as assets, but includes the cost of such items in administrative expenditures in the year purchased due to the insignificant total cost.

Federal Income Tax Status - During the year ended June 30, 2002, 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, 2001, 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. ASRS utilizes various investment instruments including U.S. Government Securities, corporate debt instruments, and corporate stocks. Investment securities, in general, are exposed to various risks, such as interest rate, credit, and overall market volatility. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in the combined statements of net plan assets.

Comparative Data - The accompanying financial statements include certain prior-year summarized comparative information in total but not by net asset class. Such information does not include sufficient detail to constitute a presentation in conformity with accounting principles generally accepted in the United States of America. Accordingly, such information should be read in conjunction with the ASRS' financial statements for the year ended June 30, 2001, from which the summarized information was derived.

## 3. CASH AND INVESTMENTS

Cash - At June 30, 2002, the carrying amount of the ASRS' cash deposits with financial institutions was $\$ 13,011,948$ and the bank balance was $\$ 4,066,112$. Of the bank balances for the years ended June 30, 2002, $\$ 100,000$ was covered with federal depository insurance funds and $\$ 3,966,112$ was collateralized with securities held by the pledging bank's trust department in the ASRS' name.

Investments - Statutes enacted by the Arizona State Legislature (the "Statutes") authorize the ASRS to make investments in accordance with the "Prudent Expert" rule. Section 38719 (B) of the Arizona Revised Statutes interprets the rule to be that Investment

Management shall discharge the duties of their position with the care, skill, prudence and diligence, under the circumstances then prevailing, that a prudent person acting in a like capacity and familiar with the same matters would use in conduct of an 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 shortterm securities, obligations of the U.S. government or agencies of the U.S. government, corporate bonds, common and preferred stocks (domestic and foreign) and mortgages.

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

1. No more than 80 percent of the ASRS' total assets may be invested at any given time in corporate stocks or equity equivalents, based on cost value of the stocks or equity equivalents irrespective of capital appreciation.
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.
3. No more than 5 percent of the voting stock of any one corporation may be owned.
4. No more than 20 percent of the ASRS' assets (based on cost value of the total fund) may be invested in foreign equity securities, and those investments shall be made only by investment managers with demonstrated expertise in such investments.
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.
6. No more than 1 percent of ASRS assets may be invested in economic development projects authorized as eligible for such investment by the Arizona State Department of Commerce. During fiscal year 2002 the ASRS had no investments in economic development projects.

GASB Statement No. 3 requires government entities to categorize investments for the purpose of giving an indication of the level of credit risk assumed by the entity at yearend. The following table presents the investments at June 30, 2002, categorized to give an indication of the level of risk assumed by ASRS.

The categories are:

1. Insured or registered investments, or securities held by ASRS or its agent in the ASRS' name.
2. Uninsured or unregistered investments, with securities held by the counterparty's trust department or agent in ASRS' name.
3. Uninsured and unregistered investments, with securities held by the counterparty in ASRS' name or held by the counterparty's trust department or agent but not in ASRS' name.

Investments not evidenced by securities are not categorized.
The fair value of investments was as follows:


* Short-term Investments represent investable cash balances swept daily into the custodian bank's ShortTerm Investment Fund, which is comprised of various commercial paper and short-term government securities.

If available, quoted fair value prices have been used to value investments as of June 30, 2002. Securities not having a quoted fair value have been valued on yields currently available on comparable securities of issuers with similar credit ratings. The fair value of investments in foreign securities totaled $\$ 3,162,758,034$ at June 30, 2002, and is included in common and preferred stocks and foreign currency. Net foreign securities and currency market depreciation are included in determining the net decrease for the year ended June 30, 2002 of \$-340,654,102.

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 $\$ 188,867,975$ and a payable for securities purchased of $\$ 455,269,746$ at June 30, 2002.

## 4. SECURITIES LENDING PROGRAM

Arizona Revised Statutes Section 38-715(D)(3) allow the ASRS to participate in a securities lending program. The ASRS' custody bank enters into agreements with counterparts to loan securities and have the same securities redelivered at a later date. All securities are eligible for loan (U.S fixed income securities, U.S equities, international equities) with a higher percentage of U.S. Treasuries on loan than most other security types. 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 no credit risk exposure to borrowers because the amount the ASRS owes the borrowers exceeds the amount the borrowers owe the ASRS. During fiscal year 1998, statutes were amended to allow for other than cash collateral. Securities loaned are initially fully collateralized by cash (USD and Euro), irrevocable letters of credit, U.S. Government or Agency securities, or sovereign debt. Initial 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) yankee securities; (f) repurchase agreements; (g) insurance company funding agreements, guaranteed investment contracts and bank investment contracts; (h) asset-backed securities and (i) money market mutual funds. The ASRS records the cash collateral received and the same amount as an obligation for securities on loan. Any cash collateral received is invested in short-term investments. The ASRS receives a spread for its lending activities. Investments made with cash collateral are classified as an asset on the Combined Statements of Plan Net Assets. A corresponding liability is recorded as the ASRS must return the cash collateral to the borrower upon expiration of the loan. At June 30, 2002 and 2001, the ASRS had $\$ 1,673,523,832$ and $\$ 1,528,313,442$, respectively, outstanding as payable for securities on loan. 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. There were no defaults during the current fiscal year.

## 5. DERIVATIVES

Derivatives are instruments (securities or contracts) whose value is dependent on such things as stock or bond prices, interest rate levels, or currency exchange rates. ASRS Managers use derivatives to hedge currency risk, reduce transaction costs, obtain market exposure, and enhance returns.

The principal categories of derivatives employed and their uses during the year were as follows:

| Category | Purpose |
| :--- | :--- |
| Foreign exchange forward contracts | Hedge currency risk of investments <br> denominated in foreign currencies. |
| Futures | Reduce transaction costs; obtain market <br> exposure; enhance returns. |
| SWAPS | Interest rate risk management; enhance returns |

Generally, derivatives are subject to both market risk and counterparty risk. The derivatives utilized by ASRS managers typically have no greater market risk than their physical counterparts, and in many cases are offset by exposure elsewhere in the portfolio.

The ASRS believes that it is unlikely that any of the derivatives used by its Managers could have a material adverse effect on the financial conditions of the ASRS.

## 6. FUNDING STATUS AND PROGRESS

Significant actuarial assumptions used include: (a) a rate of return on investment of present and future assets of 8 percent, compounded annually, (b) projected salary increases ranging from 4.50 percent to 9.50 percent per year, (c) rates of disability, (d) rates of withdrawal, (e) rates of retirement, (f) mortality rates - 1983 group annuity mortality table with setback of one year for males, (g) mortality rates after disability, (h) valuation of assets using market value less five-year phase-in of excess (shortfall) investment income, and (i) projected unit-credit funding method. For the current year, there were no changes in the actuarial funding or the actuarial assumptions and methods.

## 7. CONTRIBUTIONS REQUIRED AND CONTRIBUTIONS MADE

The A.R.S. 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 rate as employees. Although the statutes prescribe the basis of making the actuarial calculation, the Arizona State Legislature is able to legislate a contribution rate other than the actuarially determined rate. The actuarial computation is made two years in advance based on the June 30 information (the rate for 2002 was based on June 30, 2000 information). The actuarial assumptions used in this measure are those adopted by the ASRS' Board on November 20, 1996. The contribution rates were actuarially determined using the Projected Unit Credit ("PUC") funding method, the use of which was established by legislative action in 1989. The employee and employer contribution rate is determined as one-half of the percent of pay needed to pay the normal cost of the Plan and a factor to amortize the under-funded past service liability based on the criteria of the A.R.S., not to exceed an amortization period of 30 years. This change is being phased-in over the next 14 years. Since the Plan is overfunded, the percent of pay needed to amortize the Unfunded Actuarial Accrued Liability ("UAAL") is negative.

The contribution rates, as actuarially determined, for the years ended June 30, 2001 and 2000 were as follows (the most recent actuarial information available was as of June 30, 2001). However, the contribution rate is determined biennially.

|  | Amount | Percent of Covered Payroll |  | Amount | Percent of Covered Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Normal cost | \$ 747,218,041 | 11.75\% |  | \$ 616,431,588 | 10.72\% |
| Amortization of over-funded past service liability | $(256,174,962)$ | (4.03)\% |  | $(310,516,301)$ | (5.40)\% |
| Total* | \$ 491,043,079 | 7.72 \% |  | \$ 305,915,287 | 5.32\% |
| Contributions made as a percentage of the current year covered payroll: |  |  |  |  |  |
| Employers' share | \$ 163,441,640 | 2.49 \% |  | \$ 152,957,838 | 2.66\% |
| Employees' share | 163,441,721 | 2.49 \% |  | 152,957,449 | 2.66\% |
| Total | \$ 326,883,361 | 4.98 \% |  | \$ 305,915,287 | 5.32\% |

*Information is based on the actual actuarial numbers of 2001.
The statutory contribution rate for the year ended June 30, 2002 and 2003 is 2.49 percent ( 2.00 percent retirement and .49 percent long-term disability) for both the employers' and employees' portion. This was determined by the 2000 actuarial valuation. The actuarially determined contribution rate for the year ended June 30, 2000 was 2.66 percent ( 2.17 percent retirement and .49 percent long-term disability) for both the employers' and employees' portion. This rate 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.

## 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 a Long-Term Disability ("LTD") benefit through the LTD program administered by the ASRS or through their former member employer's group LTD plan.

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, the Public Safety Personnel Retirement System, the Elected Officials Retirement Plan, and the Corrections Officers Retirement

Plan may participate if they are no longer eligible for health insurance benefits through their former employer. More than 38,000 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 (subsidy) Program. This assistance is provided to those members that elect group coverage through either the Retiree Group Insurance Program or their former member employer. The following chart illustrates the maximum amount of the monthly available benefit for eligible members and their dependents:

|  |  | Without Medicare |  | With Medicare A \& B |  | Combinations |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Years of Credited Service | Percent of <br> Premium <br> Benefit | Retiree Only | Retiree \& Dependents | Retiree Only | Retiree \& Dependents | Retiree \& 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 |

For qualified retirees who are participating in a medical program provided by the ASRS or an ASRS employer and who live in areas of Arizona where no managed care (HMO) program is offered, the 2001 Arizona Legislature passed, and the Governor signed, legislation to provide an additional temporary premium benefit effective July 1, 2001 through June 30,2003. These additional increases are listed in the table below.

|  |  | Without Medicare |  | With Medicare A \& B |  | Combinations |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Years of Credited Service | Percent of <br> Premium <br> Benefit | Retiree Only | Retiree \& Dependents | Retiree Only | Retiree \& Dependents | Retiree \& Dependent One with Medicare, the other without | Retiree \& Dependent with Medicare, other dependent without |
| 5.0-5.9 | 50 percent | \$150 | \$300 | \$ 85 | \$175 | \$235 | \$235 |
| 6.0-6.9 | 60 percent | 180 | 360 | 102 | 210 | 282 | 282 |
| 7.0-7.9 | 70 percent | 210 | 420 | 119 | 245 | 329 | 329 |
| 8.0-8.9 | 80 percent | 240 | 480 | 136 | 280 | 376 | 376 |
| 9.0-9.9 | 90 percent | 270 | 540 | 153 | 315 | 423 | 423 |
| 10.0+ | 100 percent | 300 | 600 | 170 | 350 | 470 | 470 |

The ASRS reimbursed approximately $\$ 76.0$ million and $\$ 40.5$ million towards the cost of group health insurance coverage for the years ended June 30, 2002 and 2001, respectively.

## 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. TRANSFERS TO AND FROM OTHER FUNDS

Due to/from other funds includes LTD cash deposits held at Bank of America at year end and amounts that need to be transferred after the year end contribution reconciliation.

## 11. VALLEY VENTURES

On June 30, 2001, the ASRS held an interest in Valley Ventures, an Arizona-based Venture Capital company. The ASRS's interest in Valley Ventures was disposed during fiscal year 2002.

## 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 for the years available in accordance with the parameters of GASB Statement No. 25 is included immediately following the notes to the financial statements.

## ARIZONA STATE RETIREMENT SYSTEM

## Required Supplemental Information <br> Six-Year Comparison

Schedule of Funding Progress - Retirement Fund

|  | Actuarial |  |  | UAAL as a |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Accrued |  |  |  |  |
| Actuarial Valuation | Actuarial Value of | Liability (AAL) Projected | Unfunded AAL | Funded | Covered | Percentage o Covered |
| Date | Assets | Unit-Credit | (UAAL) | Ratio | Payroll | Payroll |
| June 30 | a | b | (b-a) | (a/b) | c | [(b-a)/c] |
| 1996 | \$12,579 | \$11,111 | $(1,468)$ | 113.2\% | \$4,632 | (31.7)\% |
| 1997 | \$13,692 | \$11,694 | $(1,998)$ | 117.1\% | \$4,836 | (41.3)\% |
| 1998 | \$15,577 | \$12,910 | $(2,667)$ | 120.7\% | \$5,164 | (51.6)\% |
| 1999 | \$18,043 | \$15,476 | $(2,567)$ | 116.6\% | \$5,488 | (46.8)\% |
| 2000 | \$20,291 | \$16,854 | $(3,437)$ | 120.4\% | \$5,894 | (58.3)\% |
| 2001 | \$21,888 | \$19,012 | $(2,876)$ | 115.2\% | \$6,357 | (45.2)\% |

NOTE: Dollar amounts in millions. Values shown for valuation dates on or after June 30, 1996 are for the 401(a) pension plan only. The June 302001 accrued actuarial liability for the Health Benefit Supplement of $\$ 967$ million, has been excluded from this presentation.

## Schedule of Employer Contributions

| Year <br> Ended <br> June 30 | Employer <br> Contributions <br> Required | Percentage <br> Contributed |
| :---: | :---: | :---: |
| 1996 | $\$ 172,848,417$ | 100 percent |
| 1997 | $173,508,019$ | 100 percent |
| 1998 | $176,768,738$ | 100 percent |
| 1999 | $179,086,635$ | 100 percent |
| 2000 | $152,957,449$ | 100 percent |
| 2001 | $163,441,724$ | 100 percent |
| 2002 | $168,212,536$ | 100 percent |

*Includes contributions for long-term disability.
Information is shown only for the years available in accordance with the parameters of GASB No. 25. Additional years will be added as data becomes available.
See notes to required supplemental information.

## 1. ACTUARIAL METHODS AND ASSUMPTIONS FOR VALUATIONS PERFORMED

The information presented in the required supplemental schedules was determined as part of the actuarial valuations at the dates indicated.

The Projected Unit Credit ("PUC") is the actuarial cost method used in the valuation for the period ended June 30, 2001. The amortization method used for the June 30, 2001 valuation was the Level Dollar method, 15 years grading to 30 . This is a closed amortization period. A five-year smoothed market value method is used to determine the actuarial value of assets. The investment return rate used is 8 percent per year, compounded annually. The inflation rate assumption used is 4.25 percent per year. Projected salary increase assumptions are based on 4.50 percent to 9.50 percent per year. The cost-of-living adjustment reserve is $\$ 1,692$ million as of June 30, 2001.

## Significant Factors Affecting Identification of Trends - 1989

## PUC Funding Method

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

## \$12,000 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 credit service using a minimum average compensation of $\$ 1,000$ per month.

## 2.0 percent Ad Hoc COLAs

Effective July 1, 1989, all members retired on or before June 30, 1988, shall receive a 2.0 percent permanent benefit increase to their June 30, 1990, base benefit.

## Early Retirement Window

During the period of May 15, 1989 through November 14, 1989, a member who is eligible for 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 percent multiplier instead of 2.0 percent.

## 3.0 percent 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 percent in his or her January, 1989, base benefit.

## 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 percent for each point or fraction thereof less than 82 .

## 3.0 percent 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 percent in his or her base benefit, retroactive to the date of retirement.

## 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 percent of the benefit for each completed year of service (i.e., 50 percent to 90 percent).

## Significant Factors Affecting Identification of Trends - 1991

## 3.0 percent 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 percent in his or her base benefit, retroactive to the date of retirement.

## Recalculation of Retiree Benefits Using 2.0 percent 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 percent 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.

## 2.3 percent Ad Hoc Increase

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

## Rule of 80

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).

## Pop-up Option

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

## 3.0 percent 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 percent in his or her base benefit, retroactive to the date of retirement.

## Minimum Retiree Benefit

Each retiree of the Plan who is at least age 75 on December 31, 1992, and who had at least 10 years of service upon retirement from the Plan shall be eligible for a minimum benefit. If the eligible retiree had at least 10 years of service but less than 15 years, his minimum benefit is $\$ 350$ a month. If the eligible retiree had at least 15 years of service but less than 20 , the retiree's minimum benefit is $\$ 500$. If the eligible retiree had at least 20 years of service the retiree's minimum benefit is $\$ 600$. The minimum benefit shall be compared to the retiree's current benefit (including all ad hoc increases).

## 5 percent Ad Hoc Increase

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

## 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.

## Repurchase of Service Due to Reduction in Force

Any currently 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.

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 the valuation and June 30, 2002, as long as the plan has a negative Unfunded Actuarial Accrued Liability ("UAAL"). If the Plan were to have a positive UAAL, then the old funding mechanism would apply.

## Significant Factors Affecting Identification of Trends - 1993

No benefit changes were passed by the 1993, Arizona State Legislature. However, the legislature passed legislation to reduce the required contribution rate of 4.09 percent to 3.14 percent.

## Significant Factors Affecting Identification of Trends - 1994

Minimum Long-term Disability (LTD) Benefit
Each member on LTD will receive a minimum monthly benefit of $\$ 50$.

## Minimum Retiree Benefit

Each retiree of the 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 $\$ 600$.

## 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.

## Excess Investment Earnings (COLA)

Retirees at least age 55 who have been retired at least one year and members on LTD are eligible to receive a cost-of-living adjustment (COLA) 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.

## 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 19 years. If the Plan should cease to be overfunded, the funding period would immediately go to 30 years.

## Significant Factors Affecting Identification of Trends - 1995

## Change in Maximum Increase Provided by Excess Investment Earnings COLA

 The maximum COLA payable from Excess Investment Earnings was increased from 50 percent to 100 percent of the increase in the CPI.
## 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 were transferred to the new LTD program effective October 1, 1995.

## Creation of Separate Account for the Health Premium Supplement

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

## Significant Factors Affecting Identification of Trends - 1996

No material changes.

## Significant Factors Affecting Identification of Trends - 1997

## Creation of Family Health Supplement

Allows unused portion of the Health Supplement of a member or dependent to be used to pay the other recipients' health insurance premium.

The calculation methodology for the Excess Investment Earnings COLA was modified.
The contribution rate will be determined on a biennial cycle beginning with the 1999/2000 fiscal year.

## Significant Factors Affecting Identification of Trends - 1998

No material changes.

## Significant Factors Affecting Identification of Trends - 1999

## 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 25 percent with five years of service and increases 15 percent for each additional year of service to a maximum of 100 percent for 10 or more years of service.

## Benefit Multiplier Increased to 2.1 percent

The benefit multiplier increased from 2.0 percent to 2.1 percent effective July 1, 2000.

## 5 percent Ad Hoc Increase

A 5 percent retiree ad hoc increase for retirees and beneficiaries effective July 1, 2000.
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 years.

## Changes in Permanent Benefit Increase COLA

A. The maximum aggregate COLA was increased from 3 percent to 4 percent.
B. The threshold for determining "Excess Earnings" was lowered from 9 percent to 8 percent.
C. The limitation of the COLA to the increase in the CPI was removed.

Significant Factors Affecting Identification of Trends - 2000
The age restriction on eligibility for the Permanent Benefit Increase (PBI) was removed.

## Significant Factors Affecting Identification of Trends - 2001

## Return to Work

Permits retired members of the ASRS to return to work and still be eligible to receive retirement benefits if they have been terminated from employment for a period of 12 months. The members who take this option will not be eligible for LTD benefits nor will they contribute to the ASRS or accrue additional benefits during the period of reemployment. This act is repealed June 30, 2003.

This is similar to the bill passed in 2000 allowing retired teachers to return to work, and it does not affect the requirements of that program.

## Transferring Credits

Permits an inactive member who has not retired to transfer credited service from one state plan to their current or former retirement plan if the inactive member is not eligible for membership in the ASRS and has not withdrawn contributions from the ASRS.

## Health Insurance Premium Benefit

Increases the health insurance premium benefit for members of the eligible state retirement systems by the following amounts:

- Medicare eligible member from $\$ 65$ to $\$ 100$
- Non-Medicare eligible member from $\$ 95$ to $\$ 150$
- Non-Medicare family coverage from $\$ 175$ to $\$ 260$
- Medicare eligible family coverage from $\$ 115$ to $\$ 170$
- Combination Medicare and non-Medicare eligible from \$145 to \$215


## Rural Health Insurance Premium Benefit

In addition to the premium benefit paid to ASRS retired and disabled members, provides 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:

- Medicare eligible member $\$ 170$ per month
- Non-Medicare eligible member $\$ 300$ per month
- Non-Medicare family coverage $\$ 600$ per month
- Medicare eligible family coverage $\$ 350$ per month
- Combination Medicare and non-Medicare eligible $\$ 470$ per month

Also provides that a retired or disabled member may elect to purchase individual coverage and receive a payment of the increased subsidy through the member's employer if the employer assumes the administrative function associated with the payment including verification that the payment is used for health insurance.

## Supplemental Defined Contribution (DC) Plans

Repeals the provisions for the alternate DC retirement programs established in 1998 for exempt state employees (non-merit service employees), legislative agency employees and certain term limited elected officials. Persons already participating in those programs are grandfathered into them.

Provides that the ASRS, the Public Safety Personnel Retirement System (PSPRS) and their employers may establish a 401(a) defined contribution supplementary program. Employers may elect to match contributions to the supplementary program on an annual basis. Employer and member contributions to the supplement are vested immediately with the member.

## Modified Deferred Retirement Option Plan (DROP) Program

Permits an employer to offer a member who has reached normal retirement ( 80 points, age 62 with 10 years, or age 65) a contract to work up to an additional three years. Retirement contributions are not made to ASRS during the contract period; however LTD contributions still continue to be paid to the ASRS. During the contract period, the member and employer contribute to a supplemental defined contribution (DC) Plan at a rate negotiated between the member and the employer. Upon completing the additional service, the employee must purchase an equivalent amount of service from the ASRS in order to receive credit for the three years worked.

## Partial Lump Sum Option

Beginning July 1, 2002, a member may elect a partial lump sum payment at retirement equal to not more than 36 months of the member's calculated retirement benefit. The life annuity amount then would be adjusted actuarially to a reduced amount to offset the lump sum payment.

## Graded Multiplier

Provides a variable 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 | $2.30 \%$ |

## Supplemental Defined Contribution (DC) Retirement Plan

Permits the four state retirement plans to establish a 401(a) defined contribution program as a supplement to the state defined benefit programs. Repeals the alternative DC programs for term-limited state elected officials and state employees exempted from state
personnel rules. Employees may make contributions to IRS limits with a match by the employer. Each employer member of the ASRS would be permitted to choose its own match rate.

## Permanent Benefit Increase (PBI) Enhancement

Provides that interest at a rate of 8 percent be paid on the funds held in reserve for the PBI. The interest accrued to the reserve is used to fund an enhanced PBI based on the number of years a member has been retired. A member who has at least 10 years of service would be eligible for an incremental increase for each five years of retirement.

## PSPRS membership; park rangers

Transfers state and county park rangers from the ASRS to the PSPRS.

## Community colleges; optional retirement; contributions

Permits a community college that has an optional retirement program to increase employer and employee contributions to seven percent. It provides a window for ASRS members to transfer to the optional programs from October 1, 2001 through December 31, 2001. The ASRS shall transfer their contributions plus interest to the optional program.

Removal of requirement that purchase of military service be only for which the member is not receiving a benefit.
Allows for ASRS members to purchase military service time for which they may already be receiving benefits.

## Pop-Up for members choosing a life certain option

Allows for retirees that choose the 5,10 , or 15 period certain options to rescind the election of and thereafter, receive a straight life annuity, including postretirement increases. The member may again elect a period certain and life annuity subject to the same provision previously elected by the member.

## ARIZONA STATE RETIREMENT SYSTEM

Additional Supplemental Schedules
SCHEDULE OF ADDITIONS AND DEDUCTIONS
TEN-YEAR COMPARISON

|  | Additions by Source |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | Employee Contribution Made | Actuarial Employee Contribution | Employer Contribution Made | Actuarial **** Employer Contribution | Percent of Covered Payroll | Actuarially Determined Rate | Net Investment Income | Member Reimbursements and Other ***** | Total |
| 1993* | 135,644,868 | 135,644,868 | 135,644,868 | 135,644,868 | 3.59\% | 3.59\% | 2,037,437,881 | 6,870,755 | 2,315,598,372 |
| 1994* | 124,763,806 | 162,510,817 | 124,763,806 | 162,510,817 | 3.14\% | 4.09\% | 725,271,172 | 7,319,048 | 982,117,832 |
| 1995* | 158,559,931 | 158,559,931 | 158,559,931 | 158,559,931 | 3.75\% | 3.75\% | 2,409,804,569 | 9,429,152 | 2,736,353,583 |
| 1996*** | 172,848,417 | 172,848,417 | 172,848,417 | 172,848,417 | 3.85\% | 3.85\%** | 2,063,877,940 | 4,376,224 | 2,413,950,998 |
| 1997 | 173,508,080 | 173,508,080 | 173,508,019 | 173,508,080 | 3.69\% | 3.69\% | 2,832,718,071 | 11,480,946 | 3,191,215,116 |
| 1998 | 176,768,737 | 176,768,737 | 176,768,738 | 176,768,738 | 3.54\% | 3.54\% | 3,405,203,114 | 15,461,646 | 3,774,202,235 |
| 1999 | 179,086,642 | 179,086,635 | 179,086,635 | 179,086,635 | $3.34 \%$ | 3.34\% | 2,848,321,337 | 46,170,568 | 3,252,665,182 |
| 2000 | 152,957,449 | 152,957,449 | 152,957,838 | 152,957,838 | 2.17\% | 2.17\% | 2,035,312,005 | 35,347,830 | 2,376,575,122 |
| 2001 | 163,441,640 | 163,441,640 | 163,441,640 | 163,441,640 | 2.17\% | 2.17\% | $(1,528,690,829)$ | 37,687,091 | (1,164,120,458) |
| 2002 | 168,212,537 | 168,212,537 | 168,212,537 | 168,212,536 | 2.00\% | 2.00\% | (1,768,077,075) | 49,365,487 | (1,382,286,514) |


| Deductions by Type |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Year | Benefits | Refunds | Investment | Administration and Other***** | Total |
| 1993 | 422,183,217 | 21,444,985 | 29,599,274 | 6,210,761 | 479,438,237 |
| 1994 | 454,118,381 | 22,650,297 | 28,934,542 | 5,521,389 | 511,224,609 |
| 1995 | 495,150,932 | 24,516,184 | 32,403,873 | 5,970,049 | 558,041,038 |
| 1996 | 542,524,729 | 26,376,393 | 37,535,223 | 8,244,791 | 614,681,136 |
| 1997 | 596,308,127 | 31,282,457 | 45,248,028 | 12,307,628 | 685,146,240 |
| 1998 | 652,567,322 | 29,769,046 | 51,199,408 | 12,541,091 | 746,076,867 |
| 1999 | 713,870,779 | 26,108,152 | 65,886,652 | 15,352,673 | 821,218,256 |
| 2000 | 787,553,386 | 70,754,497 | 86,931,784 | 19,743,695 | 964,983,362 |
| 2001 | 909,615,149 | 98,535,274 | 107,848,128 | 24,639,599 | 1,140,638,150 |
| 2002 | 1,069,043,683 | 42,765,105 | 61,553,189 | 28,133,269 | 1,201,495,246 |

* Other income includes Chapter 137 reimbursements of $\$ 7,505,005, \$ 5,739,521$ and transfers $\$ 5,482,267$ for 1995,1994 and 1993, respectively, which are outlined by State Statute for members buying back service into ASRS. For the fiscal year ended 1994, the legislature set the contribution rate below the actuarially determined rate as noted under "Percent of Covered Payroll" above. The change to an actuarially determined rate became effective in 1985.
** The initial actuarial calculation indicated a total contribution rate of 7.90 percent in 1996. However, this was prior to separating LTD from retirement contributions. The effect of reporting LTD separately resulted in a new total contribution rate of 7.70 percent, 3.36 percent retirement and 0.49 percent LTD, for both employee and employer.
*** Investment income restated at market value for 1996. Investment income reported at market value for subsequent years.
**** Information is shown only for the years available in accordance with the parameters of GASB No. 25. Additional years will be added as data becomes available.
***** Transfers are not included in the table.


## ARIZONA STATE RETIREMENT SYSTEM

SCHEDULE OF ADMINISTRATIVE EXPENSES (Retirement Fund) YEARS ENDED JUNE 30, 2002 AND JUNE 30, 2001

|  | $\underline{2002}$ |  | $\underline{2001}$ |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Budget | Actual | Budget | Actual |
| Personnel Services: |  |  |  |  |
| Salaries | \$6,521,300 | \$6,457,838 | \$5,382,300 | \$5,558,000 |
| Retirement Contributions | 130,426 | 127,423 | 233,592 | 231,723 |
| Insurance | 1,248,274 | 1,080,688 | 912,408 | 770,065 |
| Total Personnel Services | 7,900,000 | 7,665,949 | 6,528,300 | 6,559,788 |
| Professional Services: |  |  |  |  |
| Computer Support |  | 12,100 |  | 9,312 |
| Audit, Consulting \& Legal Fees | 222,600 | 304,341 | 57,000 | 68,605 |
| Actuary\Benefit Consulting | 100,000 | 197,141 | 125,000 | 67,000 |
| Miscellaneous Outside Services | 3,091,661 | 2,787,695 | 965,000 | 911,461 |
| Total Professional Services | 3,414,261 | 3,301,277 | 1,147,000 | 1,056,378 |
| Communications: |  |  |  |  |
| Postage | 350,000 | 333,350 | 250,000 | 287,507 |
| Printing | 260,500 | 140,058 | 30,000 | 62,695 |
| Telephone | 350,000 | 339,757 | 230,000 | 307,472 |
| Total Communications | 960,500 | 813,165 | 510,000 | 657,674 |
| Miscellaneous: |  |  |  |  |
| Board \& Council | 20,000 | 4,750 | 2,000 | 5,292 |
| Office Rent | 904,000 | 1,544,015 | 904,000 | 904,904 |
| Equipment | 412,400 | 267,744 | 212,000 | 262,698 |
| Furniture | 137,000 | 106,833 |  | 106,822 |
| Repair \& Maintenance | 220,000 | 267,971 | 150,000 | 143,336 |
| Equipment Rental | 15,000 | 5,629 | 5,000 | 2,449 |
| Travel | 49,900 | 57,195 | 49,900 | 35,845 |
| Supplies | 220,000 | 187,988 | 80,000 | 96,948 |
| Insurance | 87,300 | 87,300 | 75,900 | 75,900 |
| Dues \& Subscriptions | 35,000 | 30,636 | 25,000 | 23,394 |
| Education \& Training | 60,000 | 61,855 | 35,000 | 32,874 |
| Miscellaneous | 7,800 | 841 | 246,299 | 8,887 |
| PERIS Development | 1,436,939 | 1,396,721 | 169,000 | 162,414 |
| Total Miscellaneous | 3,605,339 | 4,019,478 | 1,954,099 | 1,861,763 |

## TOTAL

$\$ 15,880,100 \quad \$ 15,799,870 \quad \$ 10,139,399 \quad \$ 10,135,603$

## ARIZONA STATE RETIREMENT SYSTEM

SCHEDULE OF LONG-TERM DISABILITY EXPENSES
YEARS ENDED JUNE 30, 2002 AND 2001

|  | $\underline{2002}$ |  | $\underline{2001}$ |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Budget | Actual | Budget | Actual |
| Professional services: |  |  |  |  |
| LTD management fee | \$2,760,128 | \$ 2,731,901 | \$2,286,700 | \$2,033,261 |
| Total professional services | 2,760,128 | 2,731,901 | 2,286,700 | 2,033,261 |
| TOTAL | \$2,760,128 | \$2,731,901 | \$ 2,286,700 | \$2,033,261 |

Effective in fiscal year 1998, the legislature began appropriating funding for the administrative costs of several ASRS programs, including LTD, Health Insurance, Outreach Education, actuarial expenses, and legal costs. Because administration of the these programs is fully commingled with administration of the overall ASRS, separate budgets were not approved for each program. The amounts shown in the actual column for fiscal year 2002 and 2001 represent only those specifically assigned to the LTD Program.

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULES OF CASH RECEIPTS AND CASH DISBURSEMENTS YEARS ENDED JUNE 30, 2002 AND 2001

|  | $\mathbf{2 0 0 2}$ | $\mathbf{2 0 0 1}$ |
| :--- | ---: | ---: |
| CASH BALANCE, beginning of year |  |  |
|  | $\$$ | $74,586,646$ |
| RECEIPTS: |  | $88,672,950$ |
| Member contributions |  |  |
| Employer contributions | $167,728,882$ | $165,670,329$ |
| Purchase of back service (membership reimbursements) | $167,728,883$ | $165,670,413$ |
| Transfers from other retirement systems | $49,365,487$ | $37,687,091$ |
| Short-term securities matured and sold | $1,467,433$ | $1,847,846$ |
| Investments matured and sold | $5,537,414,425$ | $6,559,662,051$ |
| Real estate sold | $15,341,083,843$ | $22,044,658,528$ |
| Mortgage principal payments and sales | $182,273,996$ | 576,978 |
| Building revenue | $6,017,850$ | $6,810,859$ |
| Securities lending program | $8,324,163$ | $7,323,625$ |
| Interest | $43,767,682$ | $90,440,699$ |
| Dividends | $319,925,871$ | $303,427,840$ |
| Miscellaneous | $147,422,368$ | $163,487,690$ |

## TOTAL RECEIPTS

$21,984,423,802 \quad 29,560,950,949$

## DISBURSEMENTS:

Retirement, disability and subsidy payments
Death benefits
Refunds to withdrawing members
Transfers to other retirement systems
Short-term investments purchased
Investment purchases
Securities lending program charges
Investment manager fees
Building expenses
Administrative expenses
Miscellaneous

| $1,054,965,770$ | $895,481,651$ |
| ---: | ---: |
| $14,077,910$ | $14,133,500$ |
| $42,765,105$ | $98,535,274$ |
| $8,616,818$ | $10,156,958$ |
| $6,030,899,498$ | $6,484,040,041$ |
| $14,813,473,395$ | $21,950,237,354$ |
| $36,335,573$ | $82,015,342$ |
| $17,407,241$ | $20,543,096$ |
| $7,212,663$ | $4,914,732$ |
| $18,504,866$ | $12,168,828$ |
| $1,739,661$ | $2,810,477$ |

TOTAL DISBURSEMENTS
CASH BALANCE, end of year

|  | $22,045,998,500$ | $29,575,037,253$ |  |
| :--- | ---: | ---: | ---: |
| $\$$ | $13,011,948$ | $\$$ | $74,586,646$ |

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF PROFESSIONAL CONSULTANT FEES YEAR ENDED JUNE 30, 2002

## Professional/Consultant

Mellon Bank Trust \& Investments
Capitol Systems Corp
Kelly Services Inc
Staffmark Inc
Comsys Information Technology
Buck Consultants Inc
Keane Inc
Spherion Corporation
Watson Wyatt \& Company
SCB Computer Technology Inc
ICC International
Randstad US
Charles W Whetstine
Deloitte \& Touche
R B Balch \& Associates
State Of Arizona
Glotel
West Group Research
Cost Effectiveness Measurement Inc
Greenbrier \& Russell Inc
Sheridan IT Resources LLC
Data Site Consortium Inc
Periscope Holdings Inc
Camp - Com
Danelowitz \& Associates
Achieve Global Inc
Goodmans Inc
Frontrange Solutions USA
Gabriel, Roeder, Smith \& Company
Catholic Community Services
Freelance Interpreting Services
Pima County Superior Court
Total

## Nature of Service

Pension Payment Services \$ 885,470
Temporary Agency
Temporary Agency 307,626
Temporary Agency 298,361
Consulting Services 133,232
Actuary Services 97,273
Consulting Services 81,159
Temporary Agency 80,608
Actuary Services 74,368
Temporary Agency 74,250
Consulting Services 65,025
Temporary Agency 62,625
Legal Services 61,318
Audit Services 60,000
Temporary Agency 57,676
Miscellaneous Services 50,650
Consulting Services 50,310
Consulting Surveys 36,065
Pension Consultants 25,000
Consulting Services 11,408
Temporary Agency 11,154
Call Center Consulting 9,653
Consulting Services 4,875
Microfische Services 3,285
Executive Salary Survey 2,598
Phone Center Training 2,447
Space Planning Services 1,909
Temporary Agency 1,266
Actuary Services 500
Deaf Transcription Services 460
Sign Language Seminar 172
Miscellaneous Services
\$ 3,301,277

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF NET INVESTMENT INCOME EXPERIENCE BY MANAGER YEAR ENDED JUNE 30, 2002

The following chart will serve to show the amount of investment income produced during the year by each of the investment managers.

| Manager/Fund | Divid | nds, Interest and Other |  | Market Appreciation (Depreciation) |  | Management Fees | Net Investment Income Produced |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| ASRS-Internal | \$ | 234,016,775 | \$ | $(748,820,151)$ |  |  |  | $(514,803,376)$ |
| Axe-Houghton Domestic/Byram |  | 2,181,117 |  | 11,711,510 | \$ | 288,755 |  | 13,603,872 |
| Axe-Houghton International/Bank of New York |  | 17,787,848 |  | $(110,758,322)$ |  | 798,947 |  | $(93,769,421)$ |
| Bank of Ireland International |  | 16,495,613 |  | $(67,817,212)$ |  | 1,208,140 |  | $(52,529,739)$ |
| Bank One |  | 6,200,113 |  | $(3,986,474)$ |  | 228,191 |  | 1,985,448 |
| Barclays Global Investors (BGI)-Core |  | 11,919 |  | $(273,833,980)$ |  | 279,324 |  | $(274,101,385)$ |
| BGI-International |  | 2,006 |  | $(23,625,789)$ |  | 195,719 |  | $(23,819,502)$ |
| BGI- Tactical |  |  |  | $(365,650,434)$ |  | 2,232,073 |  | $(367,882,507)$ |
| Blackrock |  | 46,892,096 |  | 18,391,016 |  | 1,260,908 |  | 64,022,204 |
| Brandes International |  | 19,215,059 |  | $(59,911,483)$ |  | 2,837,437 |  | $(43,533,861)$ |
| Brandywine |  | 1,273,569 |  | $(1,658,871)$ |  | 336,115 |  | $(721,417)$ |
| Capital Guardian International |  | 11,904,475 |  | $(78,541,295)$ |  | 2,853,751 |  | $(69,490,571)$ |
| Columbia Mgmt Co. |  | 290,368 |  | $(30,893,091)$ |  | 597,713 |  | $(31,200,436)$ |
| Cash Management |  | 7,044,702 |  | $(9,995,862)$ |  |  |  | $(2,951,160)$ |
| Dimensional Fund |  | 2,997,108 |  | 7,191,166 |  | 573,206 |  | 9,615,068 |
| Forstmann-Leff Assoc |  |  |  | 562,746 |  |  |  | 562,746 |
| Franklin Portfolio |  |  |  | 3,821,092 |  |  |  | 3,821,092 |
| Frontier Capital |  |  |  | 777,770 |  |  |  | 777,770 |
| J P Morgan |  | 45,156,971 |  | $(249,095,269)$ |  | 1,785,014 |  | (205,723,312) |
| Mellon Domestic |  | 20,904,020 |  | $(241,368,154)$ |  | 1,689,646 |  | $(222,153,780)$ |
| State Street |  | 154,203 |  | $(14,771,945)$ |  | 91,967 |  | $(14,709,709)$ |
| Valley Ventures (Note 12) |  | 16 |  | $(5,974)$ |  |  |  | $(5,958)$ |
| Wellington Mgmt Co |  |  |  | 1,349,333 |  |  |  | 1,349,333 |
| Western Asset Mgmt Co |  | 41,475,781 |  | 8,535,523 |  | 748,047 |  | 49,263,257 |
| TOTAL | \$ | 474,003,759 | \$ | $(2,228,394,150)$ | \$ | 18,004,953 |  | (1,772,395,344) |

NOTE: Not included above are non investment interest, fees and other items which are netted against income.

For Fiscal Year 2001-2002 the total rate of return was -8.20 percent, the yield on cost will be provided in the fiscal year 2002 actuarial evaluation. The net effective yield was 1.77 percent.

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF TOTAL INVESTMENT EXPENSES BY MANAGER YEAR ENDED JUNE 30, 2002

| Manager/Fund | Management Fees | Real Estate | Security Loan Program | Total Investment Expenses |
| :---: | :---: | :---: | :---: | :---: |
| ASRS-Internal |  |  |  |  |
| Axe-Houghton Domestic/Byram | \$288,755 |  |  | \$288,755 |
| Axe-Houghton International/Bank of New York | 798,947 |  |  | 798,947 |
| Bank of Ireland International | 1,208,140 |  |  | 1,208,140 |
| Bank One | 228,191 | \$7,212,663 |  | 7,440,854 |
| BGI-Core | 279,324 |  |  | 279,324 |
| BGI-International | 195,719 |  |  | 195,719 |
| BGI- Tactical | 2,232,073 |  |  | 2,232,073 |
| Blackrock | 1,260,908 |  |  | 1,260,908 |
| Brandes International | 2,837,437 |  |  | 2,837,437 |
| Brandywine | 336,115 |  |  | 336,115 |
| Capital Guardian International | 2,853,751 |  |  | 2,853,751 |
| Columbia Mgmt Company | 597,713 |  |  | 597,713 |
| Cash Management |  |  | \$36,335,573 | 36,335,573 |
| Dimensional Fund | 573,206 |  |  | 573,206 |
| J P Morgan | 1,785,014 |  |  | 1,785,014 |
| Mellon Domestic | 1,689,646 |  |  | 1,689,646 |
| State Street | 91,967 |  |  | 91,967 |
| Western Asset Mgmt Co | 748,047 |  |  | 748,047 |
| Total | \$18,004,953 | \$7,212,663 | \$36,335,573 | \$61,553,189 |

## ARIZONA STATE RETIREMENT

SCHEDULE OF INVESTMENT MANAGER EXPENSES
YEARS ENDED JUNE 30, 2002 AND 2001

|  | $\mathbf{2 0 0 2}$ | $\mathbf{2 0 0 1}$ |
| :--- | ---: | ---: |
| Axe-Houghton Associates |  |  |
| Bank Of Ireland Asset Management | $\mathbf{4 6 3 , 8 8 9}$ | $\$ 1,105,594$ |
| Bank Of New York Company | $1,208,140$ | $1,848,148$ |
| Bank One AZ N.A. Invest Management | 399,127 |  |
| Barclays Global Investors | 228,191 | 294,353 |
| Blackrock Financial Management | $2,707,116$ | $3,169,636$ |
| Brandes Investment Partners | $1,260,908$ | $1,145,662$ |
| Brandywine Asset Management | $2,837,437$ | $3,131,638$ |
| Byram Capital Management | 336,115 | 726,958 |
| Capital Guardian Trust Co | 224,686 |  |
| Columbia Mgmt Company | $2,853,751$ | $2,889,267$ |
| Conseco Capital Management | 597,713 |  |
| Dimensional Fund Advisors |  | 290,076 |
| Duff \& Phelps Investment | 573,206 | 480,753 |
| J.P. Morgan Investment Management |  | 12,081 |
| Mellon Capital Mgmt Corp. | $1,785,014$ | $2,462,046$ |
| Mellon Equity Associates | 83,035 | 83,088 |
| State Street Bank And Trust | $1,606,611$ | $1,866,892$ |
| Western Asset Management | 91,967 | 92,454 |

Total Money Managers
$\$ \quad 18,004,953 \quad \$ \quad 20,543,096$

# INVESTMENT PORTFOLIO SECTION 


ARIZONA STATE RETIREMENT SYSTEM
COMPREHENSIVE ANNUAL FINANCIAL REPORT INDEX - INVESTMENT SECTION
Page
Investment Report ..... 63
Schedule of Investments ..... 65
Performance Accounting/Computation Standards ..... 66
Graph - Investment Portfolio Components ..... 66
Equity Portfolio Profile ..... 67
Fixed Income Portfolio Profile ..... 68
Schedule of Broker Commissions ..... 69
Chart - Investment Allocation ..... 77
Rates of Return ..... 77
Graph - Net Income from Investments ..... 78
Ten-Year Review of Investment Income ..... 78

# ARIZONA STATE RETIREMENT SYSTEM 

INVESTMENT REPORT<br>BY PAUL MATSON, CHIEF INVESTMENT OFFICER, AND<br>KARL POLEN, INVESTMENT REVIEW BOARD COMMITTEE CHAIRMAN

## Economic Climate

The fragile U.S. economy suffered a severe setback following the World Trade Center and Pentagon tragedies. Third quarter 2001 GDP contracted at an annual rate of 1.3 percent, its worst performance in more than a decade. The unemployment rate rose to 4.9 percent in the third quarter. A net of 265,000 jobs were lost during the quarter with layoffs in September reaching a ten-year high. The Federal Reserve cut interest rates twice in the third quarter, including an emergency half-point ease after the attacks of September 11 in the attempt to ward off a recession and shore up investor and consumer confidence. The federal funds rate ended the third quarter at 3 percent, its lowest level in seven years.

During the fourth quarter of 2001 the unemployment rate climbed to a six-year high of 5.8 percent, as employers cut a record 923,000 jobs during the fourth quarter. 2001 saw the largest single-year loss of jobs since 1982. The National Bureau of Economic Research reported that the economy sank into recession in March after 10 years of growth, the longest expansion on record. Fourth quarter GDP unexpectedly grew at a 1.7 percent annual rate, bucking many analysts' expectations of further economic declines. The Federal Reserve cut interest rates three times in the fourth quarter which reduced the federal funds rate to 1.75 percent, its lowest level in forty years. The Federal Reserve cut interest rates a record eleven times in calendar year 2001 for a total of 4.75 percent or 475 basis points.

In the first quarter 2002, GDP grew at a brisk annual rate of 5.0 percent, as businesses slowed inventory cuts and consumers continued to spend. The unemployment rate fell slightly to 5.7 percent due to an overall increase in jobs during March. Based on signs of stabilization in manufacturing and consumer sentiment, the Federal Reserve ended it rate-cutting campaign during it first meeting in 2002.

In the second quarter 2002, GDP growth slowed relative to the previous quarter, rising at an annual rate of 1.3 percent. The Federal Reserve held interest rates at 1.75 percent due to a loss of momentum in the economic recovery. The housing market remained resilient, as new home sales and mortgage applications increased at a record pace.

## Capital Markets

The U.S. equity markets tumbled in the third quarter of 2001, engulfed by a wave of profit warnings and economic uncertainty. Large Cap stocks as measured by the S\&P 500 Index, suffered the greatest quarterly loss since the market crash of 1987, posting a -14.7 percent return. The S\&P 400 Index (MidCap) posted a return of -16.6 percent. Small Cap stocks as measured by the Russell 2000 Index, saw its worst quarter in eleven years posting a -20.8 percent return. The international equity market as measured by the MSCI EAFE (Net) Index, posted a loss for its eighth consecutive quarter at a -14.0 percent return. The U.S. fixed income market as measured by the Lehman Brothers Aggregate Index was up 4.6 percent in the third quarter, its largest gain in over seven years.

The U.S. equity market posted positive returns in the fourth quarter of 2001. Returns for the major U.S. stock indices were: 10.7 percent for the S\&P 500 Index, 18 percent for the S\&P 400 Index, and 21.1 percent for the Russell 2000 Index. The international equity market as measured by the MSCI EAFE (Net) Index also experienced positive performance in the fourth quarter, posting a 7.0 percent return. The U.S. fixed income market as measured by the Lehman Brothers Aggregate Index posted a 0.0 percent return.

The first quarter of 2002 saw a continuation of the worldwide positive equity returns. Returns posted for the U.S. equity market during this first quarter of 2002 were: 0.3 percent for the S\&P 500 Index, 6.7 percent for the S\&P MidCap Index, and 4.0 percent for the Russell 2000 Index. Returns posted for the international equity markets as measured by the MSCI EAFE (Net) Index were 0.5 percent. The U.S. fixed income market as measured by the Lehman Brothers Aggregate Index posted a 0.1 percent return.

The second quarter of 2002 saw a reversal of the worldwide positive equity returns as seen in the first quarter of 2002. Returns posted for the U.S. equity market during this second quarter were: -13.4 percent for the S\&P 500 Index, -9.5 percent for the S\&P MidCap Index and -18.3 percent for the Russell 2000 Index. Returns posted for the international equity markets as measured by the MSCI EAFE (Net) Index were -1.9 percent. The U.S. fixed income market as measured by the Lehman Brothers Aggregate Index posted a 3.7 percent return.

## ASRS Investment Results

The ASRS acted on several occasions to adjust the asset allocation to remain within the allocation parameters established by the ASRS Board. The asset allocation policy adopted by the ASRS Board during the fourth quarter of 1999 (implemented January 1, 2000) of 30 percent U.S. fixed income, 53 percent U.S. equities, and 17 percent International equities allows the ASRS to prudently diversify investment risk exposure among various asset classes. The target mix reflects the need for the Fund to be well-positioned to generate a long-term annual return of at least the actuarial rate of 8 percent.

The ASRS Total Fund returned -8.2 percent in the fiscal year ending June 30, 2002.

## Performance Accounting/Computation Standards

The ASRS investment performance rates of return are calculated on a total return basis, using timeweighted rates of return which are based upon 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.

## Investment Policies

The ASRS adheres to all statutory requirements set forth by Arizona state law, which applies upper limits to the portions of the fund that may be invested in any single entity, international equities, or total equities. The ASRS has also established investment guidelines for its 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 audit procedures are in place. Oversight and direction responsibilities are ensconced with the Board.

## Investment Goals

The ASRS adheres to the following five investment goals:

1. Retain safety as the principal consideration in the investment of the ASRS assets.
2. Achieve the actuarial investment return of 8 percent.
3. Maintain a minimum funded status of 100 percent.
4. Support excess earnings Permanent Benefit Increase (PBI) (formerly known as Cost or Living allowance or COLA).
5. Maintain a relatively stable contribution rate.

The ASRS is well positioned to achieve the above-listed investment goals.

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF INVESTMENTS

YEAR ENDED JUNE 30, 2002

|  |  | Fair Value |
| :---: | :---: | :---: |
| Corporate Equity Securities | \$ | 13,106,625,676 |
| Fixed Income Securities: |  |  |
| Corporate Debt Securities |  | 1,620,530,315 |
| U.S. Treasury \& Government Agency Securities |  | 3,992,595,176 |
| Real Estate and Mortgages |  | 30,212,500 |
| Temporary Investments |  | 631,216,017 |
| Total Fixed Income Securities |  | 6,274,554,008 |
| Net Payable on Transactions |  | $(193,505,814)$ |
| TOTAL PORTFOLIO | \$ | 19,187,673,870 |

## ARIZONA STATE RETIREMENT SYSTEM

## PERFORMANCE ACCOUNTING/COMPUTATION STANDARDS YEAR ENDED JUNE 30, 2002

The ASRS investment performance rates of return are calculated on a total return basis, using time-weighted rates of return which are based upon 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.

## INVESTMENT <br> PORTFOLIO COMPONENTS

(at fair value)


[^0]
## ARIZONA STATE RETIREMENT SYSTEM

## EQUITY PORTFOLIO PROFILE YEAR ENDED JUNE 30, 2002

| Ten Largest Domestic Equity Holdings |  | Percent Of Domestic Equity Portfolio |
| :---: | :---: | :---: |
| Microsoft Corp Com |  | 2.74\% |
| General Elec Co Company |  | 2.54\% |
| Exxon Mobil Corp |  | 2.39\% |
| Citigroup Inc Company |  | 2.09\% |
| Wal Mart Stores Inc Company |  | 1.92\% |
| PFIZER Inc Company Stk USD 0.05 |  | 1.81\% |
| John son \& Johnson Company |  | 1.44\% |
| Intel Corp |  | 1.19\% |
| IBM Corp Company |  | 1.18\% |
| American Intl Group Inc Company |  | 1.14\% |
|  | Total | 18.43\% |
| Ten Largest Foreign Equity Holdings |  | Percent Of Foreign Equity Portfolio |
| Total FINA ELF EUR10 |  | 2.11\% |
| Swiss Reinsurance CHF 0.1 |  | 1.61\% |
| Nestle SA CHF 1 |  | 1.53\% |
| E. ON AG NPV |  | 1.52\% |
| BAE Systems ORD GBP 0.025 |  | 1.52\% |
| Vodafone Group PLC ORD USD 0.10 |  | 1.48\% |
| BBVA EUR0.49 |  | 1.44\% |
| Unilever ORD 1.4P |  | 1.41\% |
| Telecom Italia Spa ORD EUR 0.55 |  | 1.34\% |
| ENI EUR1 |  | 1.32\% |
|  | Total | 15.29\% |

Distribution By Market Sector

| Market Sector |  | ASRS Domestic Equity |
| :---: | :---: | :---: |
| Basic Materials |  | 4.4\% |
| Consumer (cyclical) |  | 10.3\% |
| Consumer (non-cyclical) |  | 8.0\% |
| Consumer services |  | 5.7\% |
| Commercial Services |  | 2.1\% |
| Energy |  | 6.4\% |
| Financial |  | 23.8\% |
| Health Care |  | 13.5\% |
| Industrials |  | 3.3\% |
| Technology |  | 15.5\% |
| Telecommunications |  | 2.8\% |
| Transport |  | 1.3\% |
| Utility |  | 2.9\% |
|  | Total | 100.0\% |
| Summary Of Broker Commissions |  |  |
| Investment Type |  | Commissions |
| Domestic Equity |  | \$5,018,648 |
| Foreign Equity |  | \$1,329,936 |

Note: A Detail Listing Of Investments Available Upon Request. Direct Your Request To The ASRS, 3300 N. Central Ave., Phoenix, AZ

## ARIZONA STATE RETIREMENT SYSTEM

## FIXED INCOME PORTFOLIO PROFILE YEAR ENDED JUNE 30, 2002

| Ten Largest Fixed Income Holdings | Coupon | Maturity | Par Value | Market Value | Percent <br> of Fixed <br> Income <br> Portfolio |
| :--- | ---: | ---: | ---: | ---: | ---: |
| U S Treasury Bonds | $8.13 \%$ | $8-15-19$ | $78,415,000$ | $100,433,934$ | $2.05 \%$ |
| U S Treasury Bonds | $10.38 \%$ | $11-15-12$ | $69,845,000$ | $89,764,093$ | $1.83 \%$ |
| U S Treasury Bonds | $11.25 \%$ | $2-15-15$ | $48,000,000$ | $74,640,000$ | $1.52 \%$ |
| U S Treasury Bonds | $12.75 \%$ | $11-15-10$ | $50,000,000$ | $64,204,499$ | $1.31 \%$ |
| Federal Home Loan Mtg Debs | $7.00 \%$ | $7-15-05$ | $57,000,000$ | $62,328,929$ | $1.27 \%$ |
| US Treasury Notes | $5.75 \%$ | $11-15-05$ | $58,000,000$ | $61,902,238$ | $1.26 \%$ |
| Federal Natl. Mtg Assn Debs | $5.75 \%$ | $2-15-08$ | $53,500,000$ | $56,405,585$ | $1.15 \%$ |
| Federal Home Loan Mtg Corp | $5.25 \%$ | $1-15-06$ | $52,000,000$ | $54,158,521$ | $1.11 \%$ |
| FNMA Pool \#0323427 | $6.50 \%$ | $11-1-28$ | $47,260,294$ | $48,423,423$ | $0.99 \%$ |
| U S Treasury Bonds | $12.00 \%$ | $8-15-13$ | $33,500,000$ | $46,832,664$ | $0.96 \%$ |
|  |  |  |  |  | $13.45 \%$ |


| Distribution by Coupon | Percent |
| :---: | :---: |
| 0.00\%-6.5\% | 57.2 \% |
| 6.51\%-7.5\% | 24.5 \% |
| 7.51\%-9.0\% | 11.0 \% |
| 9.01\% and over | 7.3 \% |
|  | 100.0\% |
| Duration | Percent |
| 0 to 2 years | 2.5 \% |
| 2 to 3 years | 4.0 \% |
| 3 to 4 years | 7.2 \% |
| 4 to 5 years | 6.5 \% |
| 5 to 6 years | 2.3 \% |
| 6 to 8 years | 6.1 \% |
| 8 years and above | 71.4 \% |
|  | 100.0\% |
| Distribution by Issue | Percent |
| US Treasury \& Government Agency | 29.0\% |
| Mortgage Backed Securities | 38.1 \% |
| Corporates | 32.9 \% |
|  | 100.0 \% |

Note: A Detail Listing Of Investments Available Upon Request. Direct Your Request To The ASRS, 3300 N. Central Ave., Phoenix, AZ

## ARIZONA STATE RETIREMENT SYSTEM

SCHEDULE OF BROKER COMMISSIONS
DOMESTIC EQUITY TRADES YEAR ENDED JUNE 30, 2002

| Broker Name | No. of Shares | Commission Per Share | Total Dollar Amount of Trades | Commission |
| :---: | :---: | :---: | :---: | :---: |
| A B Watley Inc, New York | 164,648 | 0.043 | \$ 1,626,719 | \$ 7,140 |
| A G Edwards \& Sons Inc, St. Louis | 11,500 | 0.030 | 594,671 | 345 |
| Abel Noser Corp, New York | 454,400 | 0.015 | 14,250,468 | 6,816 |
| ABN AMRO Chicago Corp, Chicago | 127,387 | 0.030 | 3,997,092 | 3,822 |
| ABN AMRO SECS LLC, New York | 48,800 | 0.035 | 2,077,830 | 1,722 |
| Adams Harkness \& Hill Inc, Boston | 114,525 | 0.050 | 1,210,432 | 5,726 |
| Advest Co, Hartford | 42,800 | 0.030 | 2,109,342 | 1,284 |
| Ansbacher (Jersey) Limited, Jersey | 47,200 | 0.050 | 752,054 | 2,360 |
| Archipelago BCC Cap, Chicago | 40,000 | 0.020 | 1,013,549 | 800 |
| Arnhold \& S Bleichroeder, New York | 19,800 | 0.030 | 790,782 | 594 |
| Autranet Inc, New York | 16,000 | 0.040 | 51,840 | 640 |
| B Trade Svcs LLC, New York | 5,899,228 | 0.023 | 126,028,995 | 136,506 |
| Baird, Robert W \& Co Inc, Milwaukee | 100,800 | 0.047 | 2,355,742 | 4,705 |
| Bancboston Robertson Stephens, San Francisco | 452,000 | 0.050 | 14,310,873 | 22,621 |
| Bear Stearns \& Co Inc, New York | 20,237,531 | 0.022 | 518,577,363 | 438,115 |
| Bear Stearns \& Co Inc, New York | 284,100 | 0.037 | 8,012,099 | 10,454 |
| Bernstein Sanford C \& Co, New York | 357,200 | 0.036 | 16,944,105 | 12,914 |
| Boston Institutional Svcs Inc, Boston | 8,154,652 | 0.050 | 251,407,814 | 407,733 |
| Bridge Trading Co, St. Louis | 1,527,208 | 0.048 | 36,526,474 | 72,923 |
| Broadcourt Cap Corp/Sub of MLPF\&S, New York | 81,400 | 0.050 | 1,499,419 | 4,070 |
| Brooks Securities Inc, Cleveland | 309,100 | 0.050 | 12,052,838 | 15,562 |
| Buckingham Research Grp Inc, Brooklyn | 21,100 | 0.030 | 723,955 | 633 |
| Cantor Fitzgerald \& Co Inc, New York | 950,142 | 0.047 | 20,273,710 | 44,274 |
| Capital Instl Investors, Dallas | 4,560,644 | 0.055 | 103,617,483 | 252,038 |
| Citation Group, New York | 76,513 | 0.050 | 2,180,418 | 3,826 |
| Correspondent Svcs Corp, New York | 11,300 | 0.050 | 249,165 | 565 |
| Credit Suisse First Boston Corp, New York | 4,632,411 | 0.048 | 148,979,798 | 221,907 |
| Cruttenden \& Co, Santa Barbara | 23,800 | 0.060 | 361,523 | 1,428 |
| CSFB \& Donaldson Lufkin, New York | 341,847 | 0.031 | 2,850,024 | 10,438 |
| Dain Rauscher Inc, Minn | 517,400 | 0.045 | 13,499,936 | 23,425 |
| Davidson (D A) \& Co Inc, New York | 15,700 | 0.050 | 135,085 | 785 |
| Deutsche Banc Alex Brown Inc, New York | 7,606,356 | 0.027 | 213,476,629 | 202,386 |
| Dresdner Kleinwort Benson, New York | 191,100 | 0.045 | 3,297,275 | 8,631 |
| Execution Services Inc, New York | 1,276,520 | 0.048 | 14,101,802 | 61,404 |
| Factset Data Systems Inc, New York | 2,196,295 | 0.057 | 47,120,250 | 124,340 |
| Fidelity Cap Mkts (Div of NFSC), Boston | 795,980 | 0.050 | 34,008,013 | 39,858 |
| First Albany Corp, Albany | 83,400 | 0.033 | 2,473,985 | 2,747 |
| First Analysis Securities Corp, Chicago | 138,100 | 0.030 | 6,674,353 | 4,143 |
| First Clearing Corp, Richmond | 70,200 | 0.060 | 1,295,562 | 4,212 |
| First Tennessee Secs Co, Jersey City | 123,160 | 0.053 | 1,626,223 | 6,526 |
| First Union Cap Mkts, Charlotte | 489,200 | 0.050 | 11,153,829 | 24,663 |
| Fleet Sec (US Clearing), New York | 109,000 | 0.030 | 6,372,365 | 3,270 |
| Fox-Pitt Kelton Inc | 144,700 | 0.030 | 3,999,427 | 4,341 |
| Friedman Billings, Washington DC | 7,700 | 0.050 | 113,539 | 385 |
| Frost Sec, Dallas | 7,800 | 0.050 | 227,031 | 390 |

## ARIZONA STATE RETIREMENT SYSTEM

SCHEDULE OF BROKER COMMISSIONS
DOMESTIC EQUITY TRADES YEAR ENDED JUNE 30, 2002

| Broker Name | No. of Shares | Commission Per Share | Total Dollar Amount of Trades | Commission |
| :---: | :---: | :---: | :---: | :---: |
| Gerard Klauer Mattison \& Co | 130,850 | 0.036 | 5,768,103 | 4,667 |
| Goldman Sachs \& Co, New York | 2,643,769 | 0.047 | 70,554,163 | 124,799 |
| Green Street Advisors | 47,300 | 0.050 | 918,564 | 2,365 |
| Heflin \& Co LLC, New York | 193,466 | 0.060 | 5,085,667 | 11,608 |
| Hoenig \& Co Inc, Jersey City | 10 | 0.030 | 196 | 0 |
| Instinet Corp, New York | 1,700 | 0.051 | 29,977 | 87 |
| Instinet Corp, New York | 6,452,790 | 0.017 | 151,668,169 | 107,786 |
| Investment Technology Groups, New York | 9,164,221 | 0.019 | 152,519,487 | 171,867 |
| ISI Group Inc, New York | 268,706 | 0.030 | 5,868,412 | 8,061 |
| Jackson Partners \& Assoc Inc, New York | 348,600 | 0.025 | 10,836,177 | 8,646 |
| Janney Montgomery Scott, Philadelphia | 24,200 | 0.060 | 749,706 | 1,452 |
| Jefferies \& Co Inc, New York | 1,006,496 | 0.050 | 19,293,207 | 50,791 |
| Johnson Rice \& Co, New Orleans | 89,400 | 0.030 | 2,990,485 | 2,682 |
| Jones \& Assoc, WestLake Village | 2,087,061 | 0.047 | 45,346,248 | 98,069 |
| Kalb Voorhis \& Co LLC, New York | 137,600 | 0.045 | 4,121,086 | 6,212 |
| Keefe Bruyette \& Woods Inc, New York | 57,544 | 0.046 | 3,639,076 | 2,649 |
| Keefe Bruyetter \& Woods, Jersey City | 176,000 | 0.050 | 5,145,826 | 8,800 |
| King C L \& Assoc, Albany | 200,400 | 0.030 | 3,879,911 | 6,012 |
| Knight Sec Broadcort, Jersey City | 46,500 | 0.053 | 1,451,637 | 2,442 |
| Labranche Finl Svcs Inc, New York | 64,600 | 0.053 | 1,404,421 | 3,397 |
| Lazard Freres \& Co, New York | 568,308 | 0.031 | 15,808,816 | 17,335 |
| Legg Mason Wood Walker Inc, Baltimore | 82,825 | 0.046 | 1,912,434 | 3,787 |
| Lehman Bros Inc, New York | 7,012,939 | 0.031 | 190,330,482 | 220,701 |
| Liquidnet Inc, Brooklyn | 645,679 | 0.020 | 11,639,363 | 12,914 |
| Lynch Jones \& Ryan Inc, Houston | 6,560,565 | 0.050 | 149,693,633 | 327,015 |
| McDonald | 86,140 | 0.058 | 1,580,880 | 4,986 |
| Merrill Lynch Pierce Fenner Smith Inc, New York | 4,643,032 | 0.050 | 142,438,423 | 231,939 |
| Merrill Lynch Prof. Clrg, Purchase | 91,700 | 0.038 | 4,140,788 | 3,481 |
| Montgomery Securities, San Francisco | 4,540,201 | 0.036 | 149,640,691 | 165,701 |
| Morgan J P Secs Inc, New York | 1,800,500 | 0.050 | 62,497,369 | 89,285 |
| Morgan Keegan \& Co Inc | 376,400 | 0.051 | 10,658,895 | 19,117 |
| Morgan Stanley \& Co Inc, New York | 5,678,767 | 0.044 | 158,372,220 | 248,578 |
| Morgan Stanley Intl, London | 100 | 0.030 | 1,188 | 3 |
| National Secs Corp, Seattle | 41,700 | 0.060 | 935,530 | 2,502 |
| Needham \& Co, New York | 174,400 | 0.030 | 5,323,422 | 5,232 |
| Nutmeg Securities, Westport | 300,400 | 0.060 | 3,615,298 | 18,024 |
| Oppenheimer \& Co Inc, New York | 250,250 | 0.052 | 5,894,220 | 13,072 |
| Paulsen, Dowling Secs, Boston | 21,300 | 0.030 | 1,630,747 | 639 |
| Piper Jaffray \& Hopwood, Inc | 199,200 | 0.050 | 7,831,174 | 9,960 |
| Prudential Sec Inc, New York | 501,563 | 0.041 | 20,289,652 | 20,528 |
| Putnam Lovell, Brooklyn | 5,800 | 0.050 | 69,719 | 290 |
| Raymond James \& Assoc Inc, St Petersburg | 459,000 | 0.044 | 16,441,529 | 20,013 |
| Robinson Humphrey | 64,300 | 0.034 | 2,586,826 | 2,198 |
| Sanders Morris Mundy, Houston | 39,000 | 0.051 | 294,305 | 1,990 |
| Sandler O'Neill \& Partners, New York | 48,700 | 0.050 | 1,537,083 | 2,435 |

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF BROKER COMMISSIONS

DOMESTIC EQUITY TRADES YEAR ENDED JUNE 30, 2002

| Broker Name | No. of Shares | Commission Per Share | Total Dollar Amount of Trades | Commission |
| :---: | :---: | :---: | :---: | :---: |
| Schwab Charles \& Co Inc, San Francisco | 15,800 | 0.051 | 124,510 | 809 |
| Scott Stringfellow Inc, Richmond | 89,400 | 0.050 | 1,800,515 | 4,470 |
| SEI Financial Services Co, New York | 35,100 | 0.050 | 2,034,787 | 1,755 |
| Seidler Cos Inc, Los Angeles | 35,700 | 0.060 | 393,034 | 2,142 |
| SG Cowen Secs Corp, New York | 635,470 | 0.051 | 23,450,581 | 32,479 |
| SK International Secs, New York | 25,200 | 0.060 | 574,372 | 1,512 |
| Smith Barney Inc, New York | 4,431,916 | 0.040 | 132,669,637 | 177,355 |
| Soundview Finl Group, Stanford | 209,100 | 0.042 | 3,711,928 | 8,736 |
| Spear Leeds \& Kellogg, New York | 7,586,939 | 0.016 | 146,470,783 | 119,197 |
| Standard \& Poors Sec Inc, New York | 1,378,002 | 0.055 | 42,074,880 | 76,053 |
| Standard \& Poors Sec Inc, New York | 59,900 | 0.030 | 1,084,871 | 1,797 |
| State Street Brokerage Svcs, Boston | 945,200 | 0.025 | 33,998,044 | 23,408 |
| Stephens Inc, Little Rock | 46,550 | 0.050 | 803,504 | 2,328 |
| Sutro and Co Inc, San Francisco | 27,700 | 0.060 | 1,000,267 | 1,662 |
| Thomas \& Weisel Inc, San Fran | 302,125 | 0.050 | 7,084,020 | 15,090 |
| Thomson Institutional Sves Inc, New York | 278,050 | 0.050 | 10,246,806 | 13,925 |
| Troster Singer Stevens, Jersey City | 787,640 | 0.052 | 11,381,779 | 40,574 |
| UBS Painewebber Inc, Weehawken | 89,900 | 0.041 | 4,357,985 | 3,721 |
| Van Kasper \& Co, San Francisco | 160,900 | 0.054 | 2,145,675 | 8,658 |
| Veritas Securities, New York | 193,000 | 0.050 | 2,098,301 | 9,650 |
| W R Hambrecht \& Co LLC, San Francisco | 22,800 | 0.050 | 199,367 | 1,140 |
| Wachovia Sec Inc, Charlotte | 677,525 | 0.049 | 23,806,535 | 33,112 |
| Warburg Dillon Read LLC, New York | 1,623,697 | 0.042 | 36,235,265 | 68,624 |
| Wedbush Morgan Secs Inc, Los Angeles | 47,200 | 0.050 | 1,126,052 | 2,360 |
| Weeden \& Co, New York | 916,146 | 0.049 | 36,996,174 | 44,519 |
| Westminster Res Asoc/Broadcort, New York | 820,375 | 0.050 | 25,331,834 | 41,019 |
| William Blair \& Co, Chicago | 174,300 | 0.042 | 2,646,609 | 7,327 |
| Williams Cap Group LP, New York | 2,200 | 0.060 | 36,272 | 132 |
| Wilshire Associates, Santa Monica | 150,200 | 0.050 | 8,794,082 | 7,510 |
| TOTAL | 141,982,664 |  | \$3,674,115,555 | \$ 5,018,648 |

[^1]
## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF BROKER COMMISSIONS <br> FOREIGN EQUITY TRADES <br> YEAR ENDED JUNE 30, 2002

| Broker Name | No. of Shares | Commission Per Share | Total Dollar Amount of Trades | Commission |
| :---: | :---: | :---: | :---: | :---: |
| ABN AMRO Aust, Sydney | 27,200 | 0.016 | \$ 168,225 | \$422 |
| ABN AMRO Bank NV, Chicago | 119,600 | 0.104 | 6,210,793 | 12,397 |
| ABN AMRO EQ Aust LTD, Sydney | 16,650 | 0.023 | 259,543 | 390 |
| ABN AMRO Hoare Govett, London | 132,600 | 0.021 | 1,394,960 | 2,805 |
| Arnhold \& S Bleichroeder, New York | 15,314 | 0.020 | 90,811 | 306 |
| B Trade Svcs LLC, New York | 4,100 | 0.015 | 90,807 | 62 |
| Bank AM Bellevue, Zurich | 6,500 | 0.073 | 237,160 | 475 |
| Bank J Vontobel \& Co LTD, Zurich | 105 | 0.520 | 28,792 | 55 |
| Bank Julius Baer, Frankfurt | 800 | 0.059 | 23,553 | 47 |
| Bank of America, London | 24,725 | 0.068 | 845,670 | 1,688 |
| Banque Paribas, London | 67,500 | 0.039 | 1,321,493 | 2,652 |
| Baring Securities LTD, Hong Kong | 14,000 | 0.014 | 80,934 | 202 |
| Bear Stearns \& Co Inc, New York | 117,205 | 0.027 | 2,022,973 | 3,112 |
| BHF Sec Corp, New York | 299,600 | 0.024 | 3,549,502 | 7,085 |
| BNP Paribas Secs Svcs, London | 74,700 | 0.032 | 1,194,248 | 2,384 |
| BNP Paribas Securities Corp, New York | 38,068 | 0.069 | 1,313,725 | 2,633 |
| BNP Paribas, London | 105,516 | 0.008 | 512,569 | 842 |
| BNP Secs, New York | 575,357 | 0.027 | 7,777,103 | 15,534 |
| Broadcourt Cap Corp/Sub of MLPF\&S, New York | 197,600 | 0.050 | 4,552,744 | 9,880 |
| Brockhouse and Cooper, Montreal | 55,700 | 0.015 | 546,465 | 814 |
| Burns Fry Hoare Govette Inc, New York | 154,300 | 0.050 | 1,757,863 | 7,715 |
| C S First Boston, Hong Kong | 376,101 | 0.023 | 7,212,224 | 8,518 |
| Cantor Fitzgerald \& Co Inc, New York | 7,000 | 0.050 | 186,739 | 350 |
| Carnegie Intl, London | 56,300 | 0.031 | 886,872 | 1,770 |
| Cazenove \& Co Overseas, Hong Kong | 75,000 | 0.020 | 598,848 | 1,501 |
| Cazenove \& Co, London | 1,331,401 | 0.006 | 7,917,799 | 8,560 |
| Cazenove Inc, New York | 3,700 | 0.071 | 176,388 | 264 |
| Chevreux de Virieu SA, Paris | 553,584 | 0.041 | 11,679,259 | 22,765 |
| CI Nordic Sec AB, Stockholm | 3,600 | 0.048 | 69,549 | 174 |
| CIBC World Mkts Inc, Toronto (T079 WGDB) | 107,900 | 0.038 | 1,192,123 | 4,136 |
| CIBC World Mkts-A Unit of CIBC OPCO, New York | 2,400 | 0.050 | 70,465 | 120 |
| Commerzbank, London | 796,370 | 0.002 | 1,081,202 | 1,621 |
| Courtil LTD, Guernsey | 20,250 | 0.012 | 166,566 | 249 |
| Credit Lyonnais Sec (USA) Intl, New York | 38,346 | 0.048 | 926,201 | 1,856 |

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF BROKER COMMISSIONS FOREIGN EQUITY TRADES YEAR ENDED JUNE 30, 2002

| Broker Name | No. of Shares | Commission Per Share | Total Dollar Amount of Trades | Commission |
| :---: | :---: | :---: | :---: | :---: |
| Credit Lyonnais Secs (Asia), Hong Kong | 231,500 | 0.009 | 793,925 | 1,989 |
| Credit Lyonnais Secs (USA) Inc, New York | 155,654 | 0.025 | 1,932,269 | 3,858 |
| Credit Lyonnais Secs, Singapore | 48,000 | 0.014 | 276,812 | 694 |
| Credit Lyonnais, Hong Kong | 308,000 | 0.005 | 537,221 | 1,425 |
| Credit Suisse FB/Sec Lending, London | 416,215 | 0.007 | 1,842,088 | 2,761 |
| Credit Suisse First Boston (Europe) | 367,137 | 0.032 | 6,809,001 | 11,649 |
| Credit Suisse First Boston (Europe), London | 612,113 | 0.027 | 9,235,817 | 16,284 |
| Credit Suisse First Boston Corp, New York | 426,239 | 0.039 | 16,967,700 | 16,539 |
| Credit Suisse First Boston, Hong Kong | 9,000 | 0.034 | 304,304 | 304 |
| Credit Suisse First Boston, Tokyo | 305,100 | 0.010 | 2,582,517 | 3,042 |
| CS First Boston Equities, London | 1,051,546 | 0.008 | 9,957,297 | 8,433 |
| Daiwa Europe LTD, London | 425,200 | 0.006 | 3,047,614 | 2,618 |
| Daiwa Secs SB CAP Mkts Co LTD, Japan | 49,635 | 0.022 | 1,008,645 | 1,100 |
| Davy Stockbrokers, Dublin | 37,100 | 0.023 | 425,882 | 842 |
| Deutsche Banc Alex Brown Inc, New York | 2,060,111 | 0.012 | 16,339,492 | 25,312 |
| Deutsche Bank AG, New York | 795,599 | 0.004 | 2,256,587 | 3,363 |
| Deutsche Bank Cap Mkts (Asia), Tokyo | 3,000 | 0.014 | 30,607 | 43 |
| Deutsche Bank Sec Inc, New York | 4,329,448 | 0.014 | 31,818,839 | 59,517 |
| Deutsche Bank, Hong Kong | 166,000 | 0.007 | 495,167 | 1,242 |
| Deutsche Bank, Sydney | 22,080 | 0.012 | 177,798 | 266 |
| Deutsche Morgan Grenfell Aus LTD, London | 56,536 | 0.048 | 1,353,761 | 2,699 |
| Deutsche Morgan Grenfell Sec, Sydney | 317,099 | 0.011 | 1,550,360 | 3,427 |
| Deutsche Sec Australia LTD | 62,540 | 0.004 | 152,334 | 228 |
| Dresdner Kleinwort Benson, New York | 196,879 | 0.070 | 7,644,357 | 13,782 |
| Enskilda Secs AB, London | 190,000 | 0.008 | 807,563 | 1,612 |
| Exane, New York | 85,325 | 0.024 | 1,036,669 | 2,069 |
| Exane, Paris | 23,233 | 0.072 | 794,242 | 1,684 |
| First Pacific Stockbrokers, Melbourne | 193,697 | 0.012 | 997,804 | 2,281 |
| First Union Cap Mkts, Charlotte | 16,900 | 0.050 | 134,350 | 845 |
| G K GOH Stockbrokers PTE LTD, Singapore | 32,000 | 0.017 | 183,907 | 550 |
| Goldman Sachs (Asia) Finance, Hong Kong | 245,700 | 0.016 | 1,567,279 | 3,928 |
| Goldman Sachs \& Co, New York | 1,974,844 | 0.016 | 19,548,527 | 32,050 |
| Goldman Sachs Intl, London | 2,228,881 | 0.018 | 23,842,879 | 40,886 |
| Goldman Sachs Japan LTD, Tokyo | 477,370 | 0.008 | 5,602,761 | 4,025 |
| Goldman Sachs, London | 2,829,400 | 0.002 | 3,565,348 | 5,313 |
| Goodbody Stockbrokers, Dublin | 3,800 | 0.024 | 46,101 | 91 |

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF BROKER COMMISSIONS <br> FOREIGN EQUITY TRADES <br> YEAR ENDED JUNE 30, 2002

| Broker Name | No. of Shares | Commission Per Share | Total Dollar Amount of Trades | Commission |
| :---: | :---: | :---: | :---: | :---: |
| HG Asia Clearing Svcs LTD Kulala Lumper | 105,000 | 0.011 | 463,522 | 1,155 |
| Hoare Govett Secs LTD, London | 760,211 | 0.015 | 7,815,317 | 11,358 |
| Hong Kong \& Shanghi Bank, London | 33,400 | 0.013 | 281,604 | 420 |
| HSBC Secs (Japan) LTD, Tokyo | 289,813 | 0.006 | 1,865,489 | 1,879 |
| HSBC Secs Inc, New York | 664,400 | 0.043 | 14,439,616 | 28,899 |
| Hypovereins Bank, New York | 19,600 | 0.063 | 622,104 | 1,242 |
| Indosuez WI Carr Secs Hong Kong LTD | 46,800 | 0.022 | 1,373,444 | 1,009 |
| ING Baring Secs Japan LTD, Tokyo | 98,100 | 0.011 | 976,055 | 1,063 |
| ING Barings Corp/Intl Equity, New York | 1,599,000 | 0.015 | 9,766,344 | 24,355 |
| Instinet Corp, London | 1,800 | 0.046 | 55,156 | 83 |
| Instinet Corp, New York | 1,714,160 | 0.006 | 10,414,108 | 10,381 |
| Investment Technology Groups, New York | 6,200 | 0.015 | 208,160 | 94 |
| ITG (Europe) LTD, Dublin | 1,600 | 0.015 | 23,280 | 23 |
| J B Were Son \& Son LTD, Melbourne | 457,640 | 0.013 | 2,818,296 | 5,744 |
| J P Morgan Sec, Sydney | 76,700 | 0.019 | 586,640 | 1,470 |
| J P Morgan Secs, London | 938,151 | 0.023 | 14,183,338 | 21,970 |
| James Capel Asia LTD, Hong Kong | 25,800 | 0.005 | 213,794 | 126 |
| James Capel Inc, New York | 3,978,300 | 0.013 | 31,012,828 | 50,420 |
| James Capel Secs Inc, New York | 102,714 | 0.064 | 3,316,551 | 6,620 |
| James Capel, London | 648,887 | 0.013 | 7,587,427 | 8,539 |
| Jefferies \& Co Inc, New York | 6,200 | 0.010 | 31,805 | 62 |
| Kleinwort Benson LTD, London | 436,945 | 0.029 | 6,301,798 | 12,629 |
| Kleinwort Benson Secs LTD, London | 652,339 | 0.023 | 9,206,859 | 14,973 |
| Lehman Bros Inc, New York | 250,000 | 0.069 | 8,558,998 | 17,152 |
| Lehman Bros Japan, Tokyo | 144,526 | 0.027 | 3,304,919 | 3,842 |
| Lehman Bros Secs Asia LTD, Hong Kong | 44,293 | 0.016 | 837,303 | 701 |
| Lehman Bros, London | 4,063,409 | 0.008 | 22,617,052 | 31,637 |
| M M Warburg Brinckmann, Hamburg | 7,900 | 0.125 | 493,656 | 986 |
| Macquarie Invt Mgmt LTD, Sydney | 271,500 | 0.019 | 2,079,581 | 5,200 |
| Merrill Lynch Far East LTD, Hong Kong | 6,214,500 | 0.003 | 7,113,353 | 20,875 |
| Merrill Lynch Intl (2L), London | 4,577,956 | 0.010 | 26,388,720 | 44,798 |
| Merrill Lynch Japan Inc, Japan | 175,150 | 0.043 | 6,348,785 | 7,472 |
| Merrill Lynch Pierce Fenner Smith Inc, New York | 5,074,552 | 0.017 | 60,597,804 | 88,754 |
| Merrill Lynch Pierce Fenner, Wilmington | 677,668 | 0.015 | 6,587,758 | 9,937 |
| Merrill Lynch, New York | 160,496 | 0.041 | 4,998,482 | 6,513 |

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF BROKER COMMISSIONS FOREIGN EQUITY TRADES YEAR ENDED JUNE 30, 2002

|  |  |  | Total Dollar |
| :--- | ---: | ---: | ---: | ---: |
| Amount of |  |  |  |$\quad$ Commission

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF BROKER COMMISSIONS

## FOREIGN EQUITY TRADES

YEAR ENDED JUNE 30, 2002

|  |  | Total Dollar <br> Amount of <br> Trades |  | Commission |
| :--- | ---: | ---: | ---: | ---: |
| Broker Name | No. of Shares | Per Share | Comion |  |
| Svenska International, London | 5,700 | 0.068 | 195,005 | 389 |
| UBS (Australia) LTD, Sydney | 65,737 | 0.020 | 523,554 | 1,312 |
| UBS AG, London | 145,500 | 0.056 | $4,708,226$ | 8,177 |
| UBS Bunting Warburg Inc, Toronto (T015,BWIT) | 86,900 | 0.049 | 700,544 | 4,238 |
| UBS Equities, London | 70,364 | 0.055 | $2,418,095$ | 3,859 |
| UBS Limited, Sydney | 385,420 | 0.009 | $1,497,810$ | 3,479 |
| UBS Securities LTD, Tokyo | 756,200 | 0.007 | $7,727,110$ | 5,665 |
| Union Bank Switzerland Secs, London | $2,406,861$ | 0.006 | $13,443,013$ | 15,570 |
| Warburg Dillon Read (Asia) LTD, London | 189,000 | 0.029 | $2,702,627$ | 5,394 |
| Warburg Dillon Read LLC, New York | $20,619,268$ | 0.002 | $31,114,747$ | 45,950 |
| Warburg Secs, Hong Kong | 646,631 | 0.014 | $8,111,602$ | 9,234 |
|  |  |  |  |  |
| TOTAL |  |  | $\$ 817,112,125$ | $\$ 1,329,936$ |

## ARIZONA STATE RETIREMENT SYSTEM

## INVESTMENT ALLOCATION <br> YEAR ENDED JUNE 30, 2002

## PERFORMANCE ACCOUNTING/COMPUTATION STANDARDS

The ASRS investment performance is calculated on a total return basis using time-weighted and dollarweighted rates of return. Moreover, performance is calculated on an accrual basis provided that the accrual information is available from the custodian or record keeper. Performance is generated by asset class, including cash holdings, and aggregated for the total fund.

June 30, 2002


June 30, 2001


Rates of Return

| $1978-79$ | $8.62 \%$ | $1984-85$ | $32.10 \%$ | $1990-91$ | $7.99 \%$ | $1996-97$ | $20.60 \%$ |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| $1979-80$ | $9.54 \%$ | $1985-86$ | $31.50 \%$ | $1991-92$ | $14.62 \%$ | $1997-98$ | $21.30 \%$ |
| $1980-81$ | $4.95 \%$ | $1986-87$ | $11.80 \%$ | $1992-93$ | $16.74 \%$ | $1998-99$ | $16.80 \%$ |
| $1981-82$ | $2.40 \%$ | $1987-88$ | $3.10 \%$ | $1993-94$ | $1.89 \%$ | $1999-00$ | $10.00 \%$ |
| $1982-83$ | $40.30 \%$ | $1988-89$ | $14.33 \%$ | $1994-95$ | $17.78 \%$ | $2000-01$ | $(6.70 \%)$ |
| $1983-84$ | $(5.20 \%)$ | $1989-90$ | $9.52 \%$ | $1995-96$ | $16.70 \%$ | $2001-02$ | $(8.20 \%)$ |

## Annualized

ASRS
Domestic Equity
S\&P 500
Domestic Fixed
Lehman Agg.
International Equity
EAFE

| 1 Year | 3 Years <br> $(8.2 \%)$ | 5 Years | 10 Years |
| ---: | ---: | ---: | ---: |
| $(2.0 \%)$ | $5.9 \%$ | $10.2 \%$ |  |
| $(16.3 \%)$ | $(7.2 \%)$ | $5.0 \%$ | $11.9 \%$ |
| $(18.0 \%)$ | $(9.2 \%)$ | $3.7 \%$ | $11.4 \%$ |
| $8.4 \%$ | $8.0 \%$ | $7.6 \%$ | $8.1 \%$ |
| $8.6 \%$ | $8.1 \%$ | $7.6 \%$ | $7.3 \%$ |
| $(8.5 \%)$ | $(1.9 \%)$ | $2.8 \%$ | $5.8 \%$ |
| $(9.2 \%)$ | $(6.5 \%)$ | $(1.3 \%)$ | $4.5 \%$ |

## ARIZONA STATE RETIREMENT SYSTEM

## NET INCOME FROM INVESTMENTS (In Millions) <br> YEAR ENDED JUNE 30, 2002



Year Ended June 30, 2002
Ten Year Review of Investment Income
(All figures rounded to nearest $\$ 1,000$ )

| Fiscal <br> Year | Investment <br> Income | Market <br> Appreciation <br> (Depreciation) | Investment <br> Expenses | Net Income* <br> from Investments |
| :---: | ---: | ---: | ---: | ---: |
| $1992-93$ | $\$ 497,409,000$ | $\$ 1,052,531,000$ | $\$ 16,555,000$ | $\$ 1,533,385,000$ |
| $1993-94$ | $477,384,000$ | $(265,397,000)$ | $14,703,000$ | $197,284,000$ |
| $1994-95$ | $509,614,000$ | $1,401,325,000$ | $15,257,000$ | $1,895,682,000$ |
| $1995-96$ | $523,566,000$ | $1,562,575,000$ | $22,990,000$ | $2,063,151,000$ |
| $1996-97$ | $566,750,000$ | $2,282,015,000$ | $22,264,000$ | $2,826,501,000$ |
| $1997-98$ | $325,329,000$ | $3,094,012,000$ | $22,377,000$ | $3,396,964,000$ |
| $1998-99$ | $394,337,000$ | $2,474,779,000$ | $26,215,000$ | $2,842,901,000$ |
| $1999-00$ | $416,594,000$ | $1,625,595,000$ | $28,273,000$ | $2,013,916,000$ |
| $2000-01$ | $527,329,000$ | $(2,038,932,000)$ | $27,525,000$ | $(1,539,128,000)$ |
| $2001-02$ | $478,228,000$ | $(2,228,394,000)$ | $25,218,000$ | $(1,768,077,000)$ |

*Net income has been restated to reflect unrealized gains and losses

## ACTUARIAL SECTION



## ARIZONA STATE RETIREMENT SYSTEM <br> COMPREHENSIVE ANNUAL FINANCIAL REPORT <br> INDEX - ACTUARIAL SECTION

Page
Actuarial Certification Statement ..... 83
Actuarial Valuation ..... 87
General Actuarial Information ..... 91
Financing Objective ..... 92
Summary of the Benefit Provisions ..... 94
Statement of Actuarial Methods and Assumptions Used in Determining Cost ..... 105
Table A - Schedule of Plan Active Member Valuation Data - Last 6 Years ..... 106
Table B - Schedule of Retirees Added to and Removed from Rolls - Last 6 Years ..... 106
Table C - Schedule of Unfunded (Over) Accrued Liabilities - Plan - Last 10 Years ..... 107
Table D - Relationship between Accrued Liabilities and Assets - Last 10 Years ..... 108
Table E - Schedule of Recommended vs. Actual Plan Contributions - Last 10 Years ..... 109
Analysis of Financial Experience for the Plan ..... 109

## Actuarial Certification

## ARIZONA STATE RETIREMENT PLAN

## Actuarial Certification Statement

This is to certify that Watson Wyatt Worldwide has prepared an actuarial valuation of the Arizona State Retirement Plan (the "Plan") as of June 30, 2001.

Actuarial calculations have been made with respect to a total of 350,269 members, comprised of 191,252 active employees, 96,193 inactive members, and 58,920 retired members and beneficiaries, and 3,904 members on long term disability. In addition, there are 912 System retirees receiving ad hoc benefits from Plan assets.

The actuarial calculations establish a total benefit cost of 7.72 percent of the annual compensation of employees. The total normal cost rate is 11.75 percent of compensation, and the required amortization payment determined in accordance with Section 38-737 is -4.03 percent compensation.

The actuarial costs of factors as of June 30, 2001 are as follows:
I. Actuarial accrued liabilities
A. Liabilities due to members' benefits

1. Active members
a. Retirement benefits $\$ 8,424,685,300$
b. Health Insurance premium supplement 822,162,500
c. Disability deferred retirement benefits $\quad 140,782,300$
d. Pre-retirement death benefits 241,221,027
e. Withdrawal benefits $\quad 351,261,840$
f. Total active members
\$9,980,112,967
2. Inactive members

698,838,565
3. Retired members and beneficiaries

7,674,814,500
4. Disabled members (deferred retirement)

210,715,400
5. Benefit increases for other-than-plan participants

12,464,700
6. Total present value of benefits
B. Other miscellaneous liabilities and reserves
$\$ 18,576,946,132$
0
$1,691,568,312$
C. Reserve for future PBI COLA's

1,691,568,312
D. Total actuarial accrued liability
\$20,268,514,444
II. Actuarial value of assets
\$22,855,143,539
III. Unfunded actuarial accrued liability
(Item I - Item II)
(\$2,586,629,095)
IV. Amortizations of unfunded actuarial accrued liability
(Per Section 38-737)
(\$256,174,962)
V. Normal cost for the year

747,218,041
VI. Total contributions for the year (Item IV + Item V)
\$491,043,079
VII. Total covered payroll (projected to 2001/2002 plan year)
VIII. Total contribution for fiscal years 2001/2002 and 2002/2003
as a percentage of covered payroll
A. Employee portion

401 (a) Account
B. Employer portion 2.00\%
C. Total
1.94\%

401 (h) Account Total $0.00 \% \quad 2.00 \%$ $\underline{0.06 \%} \quad \underline{2.00 \%}$
$\begin{array}{ll}3.94 \% & \underline{0.06 \%}\end{array}$

The assumptions applied in the actuarial valuation were adopted November 15, 1996 by board action, to be effective for the valuations on and after June 30, 1996. These assumptions are as follows:

1. Investment yield -8 percent per annum.
2. Salary increases

| Years of <br> Service | Merit <br> Component | Total Salary <br> Increase |
| :---: | :---: | :---: |
| 1 | $5.00 \%$ | $9.50 \%$ |
| 2 | 4.00 | 8.50 |
| 3 | 2.50 | 7.00 |
| 4 | 1.80 | 6.30 |
| 5 | 1.40 | 5.90 |
| 6 | 1.25 | 5.75 |
| 7 | 1.00 | 5.50 |
| 8 | 0.80 | 5.30 |
| 9 | 0.75 | 5.25 |
| 10 | 0.50 | 5.00 |
| 11 to 19 | 0.25 | 4.75 |
| 20 or more | 0.00 | 4.50 |

3. Rates of disability

| Age | Males | Females |
| :---: | :---: | :---: |
| 22 | $0.08 \%$ | $0.10 \%$ |
| 32 | 0.11 | 0.16 |
| 42 | 0.20 | 0.31 |
| 52 | 0.66 | 0.73 |
| 62 | 1.67 | 1.25 |

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

|  | Years of Service <br> Male Members |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Age | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{5}$ | $\mathbf{8}$ | $\mathbf{1 0 +}$ |
| 22 | $33.24 \%$ | $25.31 \%$ | $12.68 \%$ | $6.60 \%$ | $11.04 \%$ |
| 32 | 18.87 | 14.03 | 8.76 | 4.80 | 4.67 |
| 42 | 16.93 | 9.82 | 6.24 | 3.80 | 2.01 |
| 52 | 16.18 | 8.54 | 4.43 | 3.10 | 1.38 |
| 62 | 19.05 | 10.18 | 3.73 | 2.50 | 1.10 |


|  | Years of Service <br> Female Members |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Age | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{5}$ | $\mathbf{8}$ | $\mathbf{1 0 +}$ |
| 22 | $26.86 \%$ | $23.58 \%$ | $18.08 \%$ | $12.31 \%$ | $18.04 \%$ |
| 32 | 18.51 | 15.39 | 9.69 | 7.30 | 6.47 |
| 42 | 16.44 | 11.05 | 6.20 | 4.14 | 2.08 |
| 52 | 14.31 | 9.09 | 5.05 | 2.68 | 1.52 |
| 62 | 14.57 | 9.71 | 4.65 | 2.41 | 0.83 |

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

Years of Service

| Age | $\mathbf{1 0 - 1 4}$ | $\mathbf{2 0}$ | $\mathbf{2 5}$ | $\mathbf{3 0}$ | $\mathbf{3 5 +}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 50 | $5.00 \%$ | $5.00 \%$ | $5.00 \%$ | $10.00 \%$ | $12.50 \%$ |
| 55 | 5.00 | 6.00 | 16.25 | 18.75 | 12.50 |
| 60 | 9.00 | 26.25 | 25.00 | 30.00 | 30.00 |
| 62 | 34.00 | 42.00 | 44.00 | 50.00 | 50.00 |
| 65 | 55.00 | 55.00 | 60.00 | 60.00 | 60.00 |
| 66 and above | 55.00 | 60.00 | 60.00 | 60.00 | 60.00 |

6. Mortality rates - 1983 Group Annuity Mortality Table (with margins, set back one year for males and with no setback for females.
7. Mortality rates after disability - Post disablement mortality rates are based on experience of other large public sector system, grading into post-retirement mortality rates at age 83 .
8. Valuation assets - Market value less five year phase-in of Excess (Shortfall) Investment income.
9. Funding method - Projected unit-credit.

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

All trend data schedules in the financial section and the supporting schedules in the actuarial section of ASRS's Comprehensive Annual Financial Report were prepared by ASRS.

W. Michael Carter, FSA, MAAA, EA, Senior Consultant

January 4, 2002

Retirement Board
Arizona State Retirement System
3300 North Central Avenue
$14^{\text {th }}$ Floor
Phoenix, Arizona 85012
Dear Retirement Board Members:

## Subject: Actuarial Valuation as of June 30, 2001

We certify that the information contained in the 2001 actuarial valuation report is accurate and fairly presents the actuarial position of the Arizona State Retirement Plan (the Plan) as of June 30, 2001.

All calculations have been made 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 results presented comply with the requirements of the Arizona Statues and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board. The undersigned actuary is an independent actuary. He is an Enrolled Actuary and a Member of the American Academy of Actuaries, and is experienced in performing valuations for large public retirement systems.

## Actuarial valuations

The primary purpose of the valuation report is to determine the required employee 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 required by the ASRS in connection with Governmental Accounting Standards Board Statement No. 25 (GASB No. 25), and it provides various summaries of the data.

Valuations are prepared annually, as of June $30^{\text {th }}$ of each year, the last day of the Plan's plan year and the ASRS's fiscal year.

## Financing objectives

The member contribution rate and the employer contribution rate are calculated by the actuarial valuation. The calculated rates are applicable for the two plan years beginning July 1 of the calendar year that begins after the valuation date of even numbered years. The state and the employer contributions, when combined with the contributions made by members, are intended to provide for the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL). The rate that will be contributed for the fiscal year beginning July 1, 2002 was determined by the 2000 valuation and is $2.00 \%$ of pay.

## Progress toward realization of financing objectives

The actual contribution rate of the fiscal years 2001/2002 and 2002/2003 is $2.00 \%$ of compensation as determined by the 2000 valuation. Based on this actuarial valuation as of June 30, 2001, the hypothetical matching employee and employer contribution rates would be $3.86 \%$ for the fiscal year $2002 / 2003$. This rate does not include the contribution to the LTD program. This hypothetical rate would have provided for the normal cost and would have amortized the UAAL over the required 16 years from June 30, 2001. Employees and employers contributed the recommended rate for the 2000/2001 fiscal year and are contributing the recommended rate for the 2001/2002 fiscal year. It is expected that they will continue to contribute the recommended rates as determined by the actuarial valuations. Therefore, all financing objectives are being realized.

Section 38-737 specifies that the unfunded actuarial accrued liability is amortized over a rolling 30-year period. This change is being phased-in by increasing the funding period for every even year valuation by 2 years. The amortization period for the 2001 valuation is 16 years and the amortization period for 2002 valuation will be 17 years. Beginning with the 2014 valuation the amortization period will be 30 years and will remain at that level.

## Benefit provisions

The 2001 legislature enacted several benefit enhancements to the ASRS statutes. These enhancements included the following items:

- Health Insurance Premium Benefit Increase: Increases the health insurance premium benefit for eligible members as follows:
* Medicare eligible member with member only coverage form \$65 to \$100
* Non-Medicare eligible member with member only coverage from \$95 to \$150
* Member and dependent are both non-Medicare eligible with family coverage from $\$ 175$ to \$260
* Member and dependent are both Medicare eligible with family coverage from $\$ 115$ to $\$ 170$
* Member is Medicare eligible and beneficiary is non-Medicare eligible with family coverage from \$145 to \$215
* Member is non-Medicare eligible and dependent is Medicare eligible with family coverage from \$145 to \$215
- Graded Multiplier: The benefit multiplier was changed from a flat $2.1 \%$ to a graded multiplier which increases with service as follows:
00.00 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\%
- Employer Option Service Purchase Incentive: Permits an employer to offer a member who is eligible to retire under the Rule of 80 a three year contract that if completed would provide the member an additional three years of service and an option to purchase an additional three years of service. The ASRS receives no contributions during this contract.
- 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 be used to fund an additional benefit. A member who has at least 10 years of service and who has been retired for at least five years would be eligible for an incremental increase for each five years of retirement.
- Rural Health Insurance Premium Benefit: In addition to the premium benefit paid to ASRS retired and disabled members, the ASRS provides a temporary benefit in the following amounts to retired and disabled members who live in areas of the state not served by the managed care program (HMO) and who have 10 years of credited service:

$$
\begin{array}{lr}
\text { Medicare eligible member: } & \$ 170 \text { per month } \\
\text { Non-Medicare eligible member: } & \$ 300 \text { per month } \\
\text { Non-Medicare family coverage: } \\
\text { Medicare eligible family coverage: } \$ 300 \text { per month } \\
\begin{array}{l}
\text { Combination Medicare } \\
\text { and non-Medicare eligible: }
\end{array} & \$ 470 \text { per month }
\end{array}
$$

This benefit will cease in 2003.

- Partial Lump Sum Option: Allows a retiring member to receive a portion of his benefit in a lump sum.

See Table 18 of this report for more details on the benefit provisions.

## Assumptions and methods

The actuarial assumptions were adopted on November 15, 1996 by the Board, to be effective as of June 30, 1996, as recommended by the actuary. Further detail on the assumptions and methods may be found in Table 19 of this report and in the Experience Study report dated November 15, 1996. The assumptions are internally consistent and are reasonably based on the actual experience of the Plan. These assumptions are in full compliance with all parameters established by GASB No. 25.

## Data

Member data for retired, active and inactive participants was supplied as of June 30, 2001, by the ASRS staff. We have not subjected this data to any auditing procedures, but have examined the data for reasonableness and consistency with the prior year's data. Asset information was supplied by the ASRS staff.

## Trend Data and Supporting Schedules

All trend data schedules in the financial section of the ASRS's Comprehensive Annual Financial Report (CAFR) were prepared by the ASRS. Additionally, all supporting schedules in the actuarial section of the ASRS CAFR were prepared by the ASRS.

We look forward to discussing this report with you at your convenience.
Sincerely,
Gabriel, Roeder, Smith \& Company

W. Michael Carter, FSA, MAAA, EA

Senior Consultant


Lewis Ward
Consultant

## ARIZONA STATE RETIREMENT PLAN

## GENERAL ACTUARIAL INFORMATION

The following charts 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, 2001

|  | State <br> Employees | Teachers | Subditical <br> Employees | Total |
| :--- | :---: | :---: | :---: | :---: |
| Non-Retired Members | 44,261 | 59,153 | 87,838 | 191,252 |
| Number of members (active) | 44.0 | 43.5 | 43.4 | 43.0 |
| Average age | 8.2 | 10.4 | 6.8 | 8.2 |
| Average years of service | $\$ 32,392$ | $\$ 36,634$ | $\$ 27,116$ | $\$ 31,281$ |

As of June 30, 2001

|  | State |  | Political <br> Embdivision <br> Employees | Total |
| :--- | :---: | :---: | :---: | :---: |
| Retired Members | Teachers |  |  | 56,069 |
| Number of retirees | 14,836 | 20,049 | 21,184 | 65.0 |
| Average age | 65.7 | 64.1 | 65.5 | $\$ 1,162$ |
| Average monthly benefit | $\$ 1,075$ | $\$ 1,482$ | $\$ 920$ | 18.2 |

Of all plan and system retirees at July 1, 2001, 45.1 percent received annuities of more than $\$ 1,000$ per month. Less than 1.8 percent receives less than 100 per month. All other annuity ranges were between 4.9 and 7.1 percent. Of the retirees 12.4 percent are less than 60 years old and 68.0 percent are less than 75 .

One of the most critical factors bearing on retirement costs is that of changes in the average salary level of active participants. The following chart will show, for five fiscal years (fiscal year ending June 30, 2001), the average salary level for state employees, for teachers, and for political subdivision employees other than teachers, and the average for all groups combined.

|  | $\mathbf{1 9 9 6 - 9 7}$ | $\mathbf{1 9 9 7 - 9 8}$ | $\mathbf{1 9 9 8 - 9 9}$ | $\mathbf{1 9 9 9 - 0 0}$ | $\mathbf{2 0 0 0 - 0 1}$ |
| :--- | ---: | ---: | ---: | ---: | ---: |
| State employees | $\$ 27,463$ | $\$ 29,027$ | $\$ 30,316$ | $\$ 31,380$ | $\$ 32,392$ |
| Teachers | 33,136 | 33,995 | 33,970 | 35,356 | 36,634 |
| Political subdivision employees | 23,699 | 24,050 | 25,257 | 25,924 | 27,116 |
| All groups | 27,695 | 28,457 | 29,329 | 30,163 | 31,281 |

## ARIZONA STATE RETIREMENT SYSTEM

## FINANCING OBJECTIVE

The financing objective of the Arizona State Retirement System is to maintain a funding ratio of 100 percent, as measured by the ratio of Retirement Plan actuarial assets to actuarial liabilities. As of June 30, 2001, the date of the most recent actuarial valuation, this funding level is 112.8 percent. When the present actuarial asset of $\$ 22,855$ billion is compared to the actuarial liabilities, the asset side of the actuarial balance sheet exceeds the amount of actuarial liabilities by the amount of $\$ 2,586.6$ billion.

A statutory change effective in 1998 requires that an actuarial valuation be performed only following evennumbered years, rather than annually. This biannual valuation recommends contribution rates for a two-year period. The contribution rates recommended in the valuation for the fiscal year ended June 30, 2000 will remain in effect through the fiscal year that ends June 30, 2003. These rates are described below.

## Normal Costs and Required Contribution Rates

The Plan's normal cost for fiscal year (FY) 2000-2002 and for FY 2000-2001 is 10.72 percent. 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 negative unfunded actuarial accrued liability (an actuarial surplus), which is treated as a credit on the Plan's required contribution rate. Because of the actuarial surplus, the required contribution rate is lower than the normal cost. If the actuarial value of assets and liabilities was equal, the required contribution rate would be the same as the normal cost. Because assets exceed liabilities, the required contribution rate is lower than the normal cost.

Pursuant to Arizona statute, the ASRS consulting actuary recommends a contribution rate that will result in a funding level of 100 percent at the end of the actuarial funding period. The actual contribution rate (including long-term disability (LTD) for FY 2000-01 was 2.66 percent of pay ( 2.17 percent pension and health insurance, 0.49 percent LTD). In fiscal year 2001-02 the rate is 2.49 percent of pay ( 2.00 percent pension and health insurance, 0.49 percent LTD). This rate was determined by the 2000 valuation. Both employee and employer members contribute this rate.

Components of the normal cost are as follows:
Retirement benefits ..... 9.62\%
Health insurance premium supplement ..... 0.72
Survivor benefits ..... 0.32
Withdrawals ..... 0.79
Long-term disability benefit ..... $\underline{0.30}$
Total, normal cost ..... 11.75
Amortization of the UAAL ..... (5.88)
Required contribution rate for FY 2000/1999 ..... 3.94
Shared by employee and employer
Required contribution rate for FY 2001/2002 ..... 3.94\%
Shared by employee and employer ..... 2.0\%
Required matching contribution rate ..... $\underline{\underline{1.97 \%}}$
(Due to a minimum contribution rate established by ASRS statutes, the actual contribution rate will be $2.00 \%$ )

## Asset Valuation

The methodology used by the ASRS consulting actuary to value assets phases in gains and losses over a five-year period. This results in a "smoothing" effect, minimizing year-to-year volatility in the contribution rate. By deferring some investment gains, the asset valuation methodology also results in some unrealized investment gains.

## Long-Term Disability Benefit

In addition to pension, health insurance, and survivor benefits, the ASRS also offers a long-term disability benefit. The financing objective of the long-term disability (LTD) program is to achieve a funding level of 100 percent by the end of 2010.

Effective October 1, 1995, to comply with Internal Revenue Code requirements, liabilities associated with the long-term disability benefit were separated from the Plan. Because no assets were transferred to the new LTD fund, the required contribution rate contains two components: 1) to fund current liabilities, and 2) to amortize the liabilities transferred from the Plan in 1995.

The LTD contribution rate for fiscal year 2002 and fiscal year 2001 is 1.00 percent, shared equally by employees and employers. Of this amount, 0.66 percent funds current liabilities, and 0.32 percent amortizes the liabilities transferred from the Plan in 1995. The program's liabilities are scheduled to be amortized each twelve-month period through fiscal year 2010.

As of June 30, 2002 and June 30, 2001, LTD assets were $\$ 94.0$, $\$ 93.1$ respectively. Benefit payments were 54.8 for fiscal year 2002 and 45.8 for fiscal year 2001.

## ARIZONA STATE RETIREMENT SYSTEM

## SUMMARY OF THE BENEFIT PROVISIONS OF THE ARIZONA STATE RETIREMENT PLAN - EXCERPT FROM TABLE 18 ACTUARIAL VALUATION, JUNE 30, 2001

The 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) an employee's 65th birthday,
(b) an employee's 62 nd birthday and completion of at least 10 years of credited service, or
(c) the first day immediately following the day that the sum of an employee's age and his years of total credited service equal eighty.

## 2. Monthly Life Annuity

The product of the participant's best 36 -month average compensation (in last 120 months) multiplied by his or her years of total credited service multiplied by the benefit multiplier.

## 3. Normal Retirement Benefits

The product of a benefit multiplier (as determined in table) and the participant's best 36 -month average compensation (in last 120 months) multiplied by his or her years of total credited service.

Note: Members hired after the effective date of the adoption of the graded multiplier have a maximum benefit equal to $80 \%$ of their 36-month final average earnings.
4. Early Retirement

Age 50 with 5 or more years of credited service.

## 5. Early Retirement Benefits

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

AGE AT DATE OF RETIREMENT

| YEARS OF <br> SERVICE | $\mathbf{5 0}$ | $\mathbf{5 1}$ | $\mathbf{5 2}$ | $\mathbf{5 3}$ | $\mathbf{5 4}$ | $\mathbf{5 5}$ | $\mathbf{5 6}$ | $\mathbf{5 7}$ | $\mathbf{5 8}$ | $\mathbf{5 9}$ | $\mathbf{6 0}$ | $\mathbf{6 1}$ | $\mathbf{6 2}$ | $\mathbf{6 3}$ | $\mathbf{6 4}$ | $\mathbf{6 4}$ | $\mathbf{6 5}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $5-10$ | $35 \%$ | $40 \%$ | $45 \%$ | $50 \%$ | $55 \%$ | $60 \%$ | $65 \%$ | $70 \%$ | $75 \%$ | $80 \%$ | $85 \%$ | $88 \%$ | $91 \%$ | $94 \%$ | $97 \%$ | $100 \%$ |  |
| $10-25$ | $44 \%$ | $49 \%$ | $54 \%$ | $59 \%$ | $64 \%$ | $69 \%$ | $74 \%$ | $79 \%$ | $84 \%$ | $89 \%$ | $94 \%$ | $97 \%$ | $100 \%$ | $100 \%$ | $100 \%$ | $100 \%$ |  |
| 25 OR MORE | $50 \%$ | $55 \%$ | $60 \%$ | $65 \%$ | $70 \%$ | $75 \%$ | $80 \%$ | $85 \%$ | $90 \%$ | $95 \%$ | $100 \%$ | $100 \%$ | $100 \%$ | $100 \%$ | $100 \%$ | $100 \%$ |  |

Provided, however, that if the employee meets the Rule of 77 (but not the Rule of 80 ), the reduction will be 3 percent for each unit below 80.

## STATEMENT OF ACTUARIAL METHODS AND ASSUMPTIONS USED IN DETERMING COST EXCERPT FROM TABLE 19 ACTUARIAL VALUATION, JUNE 30, 2001

## 1983 Group Annuity Mortality Table

|  | Rates of Mortality (Active) |  |
| :--- | :---: | :---: |
| Age | Male Participants | Female Participants |
|  |  |  |
| 20 | .000365 | .000189 |
| 25 | .000444 | .000253 |
| 30 | .000572 | .000342 |
| 35 | .000785 | .000476 |
| 40 | .001128 | .000665 |
| 45 | .001932 | .001010 |
| 50 | .003513 | .001647 |
| 55 | .005660 | .002541 |
| 60 | .008384 | .004241 |
| 65 | .013868 | .007064 |
| 70 | .019296 | .012385 |

6. Normal Form of Benefit

Straight life annuity payable monthly with benefits commencing on the day following the date of termination of employment.
7. Optional Forms

- Joint and contingent annuity (with Pop-up) with either 100 percent, $66-2 / 3$ percent or 50 percent of the reduced retirement income payable for the life of the contingent annuitant upon the death of the retiring participant,
- Period certain and life annuity with either five, ten, or fifteen years of payments guaranteed, or
- 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 any social security disability or workers' compensation benefits, payable commencing six months after date of disability until the earlier of:

- Date of cessation of total disability, or
- Normal retirement date.

This benefit is paid by a separate LTD plan.

## 2. Disability Payments if Participant 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 25 years unless he or she had more than 25 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 employee's contribution account. Disability payments after normal or early retirement eligibility are reduced by the actuarial value of the disability payments made up to the date of normal or early retirement eligibility.

## D. PRE-RETIREMENT DEATH BENEFITS

## 1. Eligibility

Applicable if death occurs prior to retirement.
2. Benefit

Any one of the following, at the option of the beneficiary:
(a) A lump sum equal to the sum of (i) and (ii):
(i) two times participant's contributions to the plan, with interest, and
(ii) the amount of the participant's employee and employer accounts, along with supplemental credits, if any, transferred from the ASRS to the Plan, with interest
(b) If (a) is greater than $\$ 5,000$, the beneficiary may elect to receive a monthly income for five, ten, or fifteen years certain and life thereafter which is actuarially equivalent to the amount in (a).

## 3. Death of an Active Participant 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 present value of 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 percent survivor with the beneficiary named as the joint pensioner.

## E. VESTING OF BENEFITS

1. Vesting - A participant is fully vested in his or her accrued benefit.
2. Benefits upon Vesting - A fully vested participant is entitled to either:
(a) return of contributions with interest, or
(b) the retirement benefit payable at normal retirement earned to the date of participant's termination.

The enhanced refund option allows employees who terminate prior to eligibility for retirement to receive a refund of their employee contributions with interest. In addition 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 $50 \%$ for employees with five years of service and increases $10 \%$ for each additional year of service up to a maximum of $100 \%$ for ten or more years of service.

## 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.

## 2. Benefit

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

- $\$ 150$ per month if the retiree is under age 65
$-\$ 100$ per month if the retiree is 65 or over
(b) with respect to premiums paid for retirees with family coverage:
- $\$ 260$ per month if the dependent is under age 65
- $\$ 170$ per month if the dependent is 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 employees with five to nine years of service the benefits are the same dollar amounts as above multiplied by a vesting fraction equal to $10 \%$ for each completed year of service (i.e., $50 \%$ to $90 \%$ ).

## G. AUTOMATIC COST OF LIVING ADJUSTMENT BASED ON EXCESS INVESTMENT EARNINGS Permanent Benefit Increase (PBI)

Retirees at least age 55 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.

## Permanent Benefit Increases 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.

## H. EMPLOYEE AND EMPLOYER CONTRIBUTIONS

The contribution rate for the biennium beginning on July $1^{\text {st }}$ of the odd numbered plan year is based on the results of the actuarial valuation as of the last day of the even numbered plan year preceding the biennium. Participants' contribution rate is equal to the required employer contribution rate. For the biennium July 1, 1999- June 30, 2001, the required contribution rate is $2.17 \%$. For the biennium July 2001- June 30, 2003, the required contribution rate is $2.00 \%$

## I. LEGISLATED PLAN CHANGES ENACTED BY THE 1989 LEGISLATURE OF THE STATE OF ARIZONA

## 1. 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. 2.0 \% Ad Hoc COLAs

- Effective July 1, 1989, all members retired on or before June 30, 1988, shall receive a 2.0 percent 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 percent 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 percent multiplier instead of 2.0 percent.

## 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 percent in his or her January 1, 1989, base benefit.

## J. 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 percent for each point or fraction thereof less than 82.

## 2. 3.0 percent 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 percent 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 percent of the benefit for each completed year of service (i.e., 50 percent to 90 percent).

## K. LEGISLATED PLAN CHANGES ENACTED BY THE 1991 LEGISLATION OF THE STATE OF ARIZONA

1. 3.0 percent 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 percent in his or her base benefit, retroactive to the date of retirement.
2. Recalculation of Retiree Benefits Using 2.0 percent 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 percent 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. 2.3 percent Ad Hoc Increase

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

## 4. Rule of 80

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.

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

## 1. 3.0 percent Tax Equity Allowance

Each member who retired between September 15, 1991 and September 14, 1992, shall receive a tax equity benefit allowance consisting of a permanent increase of 3.0 percent 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 10 years of service upon retirement from the plan shall be eligible for a minimum benefit. If the eligible retiree had at least 10 years of service but less than 15 years, his minimum benefit is $\$ 350$ a month. If the eligible retiree had at least 15 years of service but less than 20 , his minimum benefit is $\$ 500$. If the eligible retiree had at least 20 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. $\mathbf{5}$ percent Ad Hoc Increase

Effective November 1, 1992, all members retired on or before October 31, 1992, shall receive a 5 percent 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 members 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 the valuation and June 30, 2002 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.

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

No benefit changes were passed by the 1993 Legislature. However, the Legislature passed legislation to reduce the required contribution rate of 4.09 percent down to 3.14 percent.

## N. 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 19 years. If the Plan should cease to be overfunded, the funding period would immediately go to 30 years.

## O. 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 percent to 100 percent 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 were 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 (h) account. The assets and liabilities associated with the Health Premium Supplement will be accounted for separately.

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

1. No material changes.

## Q. 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 recipients' 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 1999/2000 fiscal year.

## R. LEGISLATED PLAN CHANGES ENACTED BY THE 1998 LEGISLATURE OF THE STATE OF ARIZONA

1. No material changes.

## S. 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. An employee with 5.0-5.9 years of service is entitles to $25 \%, 6.0-6.9$ years $40 \%, 7.0-7.9$ years $55 \%, 8.0-8.9$ years $75 \%, 9.0-9.9$ years $85 \%$ and with 10 or more years of service the member is entitled to $100 \%$ of the employer's portion with interest.

## Benefit Multiplier Increased to 2.1 percent

The benefit multiplier will increase from 2.0 percent to 2.1 percent effective July 1, 2000.
2. $\mathbf{5 \%}$ Ad Hoc Increase

A $5 \%$ retiree ad hoc increase for retirees and beneficiaries effective July 1, 2000.
3. 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 .
4. 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.

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

1. The age restriction on eligibility for the Permanent Benefit Increase was removed.

## U. 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 increase 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 increase 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. Modified Deferred Retirement Option Plan (DROP) Program

Permits an employer to offer a member who has reached normal retirement ( 80 points, age 62 with 10 years, or age 65) a contract to work up to an additional three years. Retirement contributions are not made to ASRS during the contract period; however LTD contributions still continue to be paid to the ASRS. During the contract period, the member and employer contribute to a supplemental defined contribution (DC) Plan at a rate negotiated between the member and the employer. Upon completing the additional service, the employee must purchase an equivalent amount of service from the ASRS in order to receive credit for the three years worked.

## 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.

## ARIZONA STATE RETIREMENT SYSTEM

ACTUARIAL VALUATION - JUNE 30, 2001

## STATEMENT OF ACTUARIAL METHODS AND ASSUMPTIONS USED IN DETERMINING COST (ADOPTED BY BOARD ACTION ON NOVEMBER 15, 1996) EFFECTIVE AS OF JUNE 30, 1996

## A. ACTUARIAL ASSUMPTIONS

1. Investment Yield Rate
$8 \%$ per annum, compounded annually

## 2. Mortality

(a) Pre-retirement

1983 Group Annuity Mortality Table (with margins, set back one year for males and with no setback for females. Rates at representative ages are shown below.)

Rates of Mortality (Active)

| Age | Male Participants | Female Participants |
| :--- | :---: | :---: |
|  |  |  |
| 20 | 0.000365 | 0.001890 |
| 25 | 0.000444 | 0.000253 |
| 30 | 0.000572 | 0.000342 |
| 35 | 0.000785 | 0.000476 |
| 40 | 0.001128 | 0.000665 |
| 45 | 0.001932 | 0.001010 |
| 50 | 0.003513 | 0.001647 |
| 55 | 0.005660 | 0.002541 |
| 60 | 0.008384 | 0.004241 |
| 65 | 0.013868 | 0.007064 |
| 70 | 0.019296 | 0.012385 |

(b) Post-retirement

Healthy rates are based on the 1983 Group Annuity Mortality Table with margins, setback one year for males, and with no setback for females. Disabled rates are based on the experience of other large public sector retirement systems through age 82; thereafter Non-Disabled Mortality is assumed. Rates at representative ages are shown below.

TABLE A
SCHEDULE OF PLAN ACTIVE MEMBER
VALUATION DATA
LAST 6 YEARS

| Contributing Active Members |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Valuation <br> As of June 30 | Number | Annual <br> Payroll | Annual <br> Average Pay | \% Increase <br> in Average <br> Pay |
| 1996 | 159,572 | $4,632,282,200$ | 29,029 | 1.8 |
| 1997 | 164,390 | $4,836,336,900$ | 29,420 | 1.3 |
| 1998 | 170,864 | $5,164,127,700$ | 30,224 | 2.7 |
| 1999 | 176,368 | $5,487,933,600$ | 31,116 | 3.0 |
| 2000 | 183,924 | $5,750,294,662$ | 31,265 | 0.0 |
| 2001 | 191,252 | $6,356,698,800$ | 33,237 | 3.7 |

Table B
SCHEDULE OF PLAN RETIREES ADDED TO AND REMOVED FROM ROLLS
LAST 6 YEARS

| Year Ended <br> June 30 | Added to <br> Rolls | Removed <br> From <br> Rolls | Rolls <br> End of Year | Average <br> Annual <br> Allowances | \% Increase <br> in Annual <br> Allowances |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1996 | 3,845 | 1,248 | 45,975 | 11,040 | 4.8 |
| 1997 | 3,578 |  | 49,743 | 11,340 | 2.7 |
| 1998 | 3,353 | 1,179 | 51,917 | 11,784 | 3.9 |
| 1999 | 4,380 | 1,193 | 55,104 | 12,288 | 4.3 |
| 2000 | 4,822 | 1,888 | 58,038 | 13,500 | 9.9 |
| 2001 | 4,224 | 3,342 | 58,920 | 14,532 | 7.6 |

Table C

SCHEDULE OF UNFUNDED (OVER) ACCRUED
LIABILITIES - PLAN
LAST 10 YEARS

|  |  |  |  | Unfunded |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year Ended June 30 | Aggregate <br> Accrued <br> Liabilities Plan | Actuarial Value of Net Plan Assets | Assets as a \% of Accrued <br> Liabilities Plan | (over) <br> Accrued <br> Liabilities - <br> Plan (UAL) | Active <br> Member <br> Payroll | UAL as a \% of Active Member Payroll |
| 1992 | 8,209,797,700 | 8,841,715,700 | 108 | $(631,918,000)$ | 3,674,258,800 | (17.2) |
| 1993 | 8,921,137,100 | 9,770,364,000 | 110 | (849,226,900) | 3,778,408,600 | (22.5) |
| 1994 | 9,668,031,500 | 10,540,457,100 | 109 | (872,425,600) | 3,973,369,600 | (22.0) |
| 1995 | 10,303,617,000 | 11,520,933,300 | 112 | (1,217,316,300) | 4,228,264,800 | (28.8) |
| 1996 | 11,110,688,400 | 12,578,870,100 | 113 | (1,468,181,700) | 4,465,496,000 | (32.9) |
| 1997 | 12,385,445,400 | 14,169,191,400 | 114 | (1,783,746,000) | 4,674,843,500 | (38.2) |
| 1998 | 13,638,356,506 | 16,168,476,400 | 119 | $(2,530,119,880)$ | 4,968,476,529 | (50.9) |
| 1999 | 16,121,899,529 | 18,760,959,854 | 116 | (2,639,060,325) | 5,487,933,600 | (48.1) |
| 2000 | 17,548,523,131 | 21,126,877,491 | 120 | $(3,578,354,360)$ | 5,750,294,662 | (60.7) |
| 2001 | 20,268,514,444 | 22,855,143,539 | 113 | (2,586,629,095) | 6,356,698,800 | (40.7) |

Table D

## SOLVENCY TEST

LAST 10 YEARS


## Table E

## ARIZONA STATE RETIREMENT SYSTEM

## SCHEDULE OF RECOMMENDED VS. ACTUAL PLAN CONTRIBUTIONS LAST 10 YEARS

| Year Ended | Active <br> June 30 | Member <br> Payroll | Employee <br> Contributions | Employer <br> Retirement <br> Contribution <br> Rate - Actual |
| :---: | :---: | :---: | :---: | :---: |
| Actuary |  |  |  |  |
| $\mathbf{1 9 9 2}$ | $3,616,000,000$ | $132,273,300$ | $3.60 \%$ | $3.60 \%$ |
| 1993 | $3,748,000,000$ | $135,644,900$ | $3.59 \%$ | $3.59 \%$ |
| 1994 | $4,126,000,000$ | $124,763,800$ | $3.14 \%$ | $4.09 \%$ |
| 1995 | $4,432,000,000$ | $158,559,900$ | $3.75 \%$ | $3.55 \%$ |
| 1996 | $4,632,000,000$ | $171,921,600 *$ | $3.36 \%$ | $3.95 \%$ |
| 1997 | $4,836,000,000$ | $172,602,900 *$ | $3.20 \%$ | $3.20 \%$ |
| 1998 | $5,164,000,000$ | $176,768,737 *$ | $3.05 \%$ | $3.05 \%$ |
| 1999 | $5,488,000,000$ | $179,086,642$ | $2.85 \%$ | $2.85 \%$ |
| 2000 | $5,750,000,000$ | $152,957,838$ | $2.17 \%$ | $2.17 \%$ |
| 2001 | $6,564,000,000$ | $163,441,640$ | $2.00 \%$ | $2.00 \%$ |

* Excludes contributions of $\$ 884,669, \$ 905,200$ and $\$ 926,800$ for ASRS System members who contributed 7.49 percent during 1998, 1997 and 1996, respectively.


## ANALYSIS OF FINANCIAL EXPERIENCE FOR THE PLAN (millions)

| Year Ended June 30 | Unfunded <br> Actuarial <br> Liability <br> (UAAL), <br> Prior Year | Normal <br> Cost for the Year | Contributions for the Year | Interest <br> at $8 \%$ <br> on UAAL | On Normal cost | On Contributions | Total | Expected UAAL | Actual UAAL | Gain <br> (Loss) for the Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1992 | (653.86) | 352.49 | (265.31) | (52.31) | 28.20 | (10.61) | (34.72) | (601.39) | (631.92) | 30.52 |
| 1993 | (631.92) | 400.31 | (278.16) | (50.55) | 32.03 | (11.13) | (29.65) | (539.42) | (849.23) | 309.81 |
| 1994 | (849.23) | 423.20 | (256.84) | (67.94) | 33.86 | (10.27) | (44.36) | (727.23) | (872.43) | 145.20 |
| 1995 | (872.43) | 448.92 | (324.93) | (69.79) | 35.91 | (13.00) | (46.88) | (795.31) | $(1,217.32)$ | 422.01 |
| 1996 | $(1,217.32)$ | 460.39 | (299.72) | (97.39) | 36.83 | (11.99) | (72.54) | $(1,129.19)$ | $(1,468.18)$ | 338.99 |
| 1997 | $(1,468.18)$ | 482.42 | (309.39) | (117.45) | 38.59 | (12.38) | (91.24) | $(1,386.39)$ | $(1,783.75)$ | 397.35 |
| 1998 | $(1,783.75)$ | 506.17 | (321.35) | (142.70) | 40.49 | (12.85) | (115.06) | $(1,713.98)$ | $(2,530.12)$ | 816.14 |
| 1999 | $(2,530.12)$ | 540.46 | (347.97) | (202.41) | 43.24 | (13.92) | (173.09) | $(2,510.72)$ | $(2,639.06)$ | 128.34 |
| 2000 | $(2,639.06)$ | 601.15 | (283.77) | (211.12) | 48.09 | (11.35) | (174.38) | $(2,496.06)$ | $(3,578.35)$ | 1,082.29 |
| 2001 | $(3,578.35)$ | 631.66 | (367.20) | (286.27) | 50.53 | (14.69) | (250.42) | $(3,564.30)$ | $(2,586.63)$ | (977.67) |

## STATISTICAL SECTION



## ARIZONA STATE RETIREMENT SYSTEM COMPREHENSIVE ANNUAL FINANCIAL REPORT

## INDEX - STATISTICAL SECTION

Page
List of Employers ..... 115
Graph - Contributions Received ..... 120
Actual Contribution Rates ..... 120
Graph - Total Benefit Payments ..... 121
Graph - Total Reserves for Benefits ..... 122
Graph - Non-retired and Retired Members ..... 123
Schedule of Revenues by Source ..... 124
Schedule of Expenses by Type ..... 125
Schedule of Benefit Expenses by Type ..... 125
Schedule of Average Benefit Payments for Retirees under the Plan ..... 126
Retirement Benefit Options ..... 127

## ARIZONA STATE RETIREMENT SYSTEM

LIST OF EMPLOYERS

## PUBLIC SCHOOLS

Agua Fria UHS Dist. 216
Aguila Elem. Dist. 63
Ajo Unified Dist. 15
Alhambra Elem. Dist. 68
Alpine Elem. Dist. 7
Altar Valley Dist. 51
Amphitheater Unified Dist. 10
Antelope UHS Dist. 50
Apache Elem. Dist. 42
Apache Junction Unified Dist. 43
Arlington Elem. Dist. 47
Ash Creek Elem. Dist. 53
Ash Fork Unified Dist. 31
Avondale Elem. Dist. 44
Bagdad Unified Dist. 20
Balsz Elem. Dist. 31
Beaver Creek Elem. Dist. 26
Benson Elem. Dist. 9
Benson UHS Dist. 9
Bicentennial UHS Dist. 76
Bisbee Unified Dist. 2
Blue Elem. Dist. 22
Blue Ridge Unified Dist. 32
Bonita Elem. Dist. 16
Bouse Elem. Dist. 26
Bowie Unified Dist. 14
Buckeye Elem. Dist. 33
Buckeye UHS Dist. 201
Bullhead City Elem. Dist. 15
Camp Verde Unified Dist. 28
Canon Elem. Dist. 50
Cartwright Elem. Dist. 83
Casa Grande Elem. Dist. 4
Casa Grande UHS Dist. 82
Catalina Foothills Unified Dist. 16
Cave Creek Unified Dist. 93
Cedar Unified Dist. 25
Chandler Unified Dist. 80
Chevelon Butte Elem. Dist. 5
Chinle Unified Dist. 24
Chino Valley Unified Dist. 51
Chloride Elem. Dist. 11
Clarkdale-Jerome Elem. Dist. 3
Clifton Unified Dist. 3
Cobre Valley Institute
Cochise Elem. Dist. 26
Coconino Assoc of Vocational and Ind.Tech
Colorado City Unified Dist. 14
Colorado River Union H.S. Dist. 2
Combs (J.O.) Elem. Dist. 44
Concho Elem. Dist. 6
Congress Elem. Dist. 17
Continental Elem. Dist. 39

Coolidge Unified Dist. 21
Cottonwood-Oak Creek Elem. Dist. 6
Crane Elem. Dist. 13
Creighton Elem. Dist. 14
Crown King Elem. Dist. 41
Deer Valley Unified Dist. 97
Double Adobe Elem. Dist. 45
Douglas Unified Dist. 27
Duncan Unified Dist. 2
Dysart Unified Dist. 89
Eagle Elem. Dist. 45
East Valley Technical Institute
Elfrida Elem. Dist. 12
Eloy Elem. Dist. 11
Esperanza Academy Accommodation School
Fisher (Ruth) Elem. Dist. 90
Flagstaff Unified Dist. 1
Florence Unified Dist. 1
Flowing Wells Unified Dist. 8
Ft. Thomas Unified Dist. 7
Fountain Hills Unified Dist. 98
Fowler Elem. Dist. 45
Fredonia-Moccasin Unified Dist. 6
Gadsden Elem. Dist. 32
Ganado Unified Dist. 20
Gila Bend Unified Dist. 24
Gila Institute for Technology
Gilbert Unified Dist. 41
Glendale Elem. Dist. 40
Glendale UHS Dist. 205
Globe Unified Dist. 1
Grand Canyon Unified Dist. 4
Hackberry Elem. Dist. 3
Hayden-Winkelman Unified Dist. 41
Heber Overgaard USD No. 6
Higley Elem. Dist. 60
Hillside Elem. Dist. 35
Holbrook Unified Dist. 3
Humboldt Unified Dist. 22
Hyder Elem. Dist. No. 16
Indian Oasis-Baboquivari 40
Isaac Elem. Dist. 5
Joseph City Unified Dist. 2
Kayenta Unified Dist. 27
Kingman Elem. Dist. 4
Kirkland Elem. Dist. 23
Klondyke School Dist. 09
Kyrene Elem. Dist. 28
Lake Havasu Unified Dist. 1
Laveen Elem. Dist. 59
Liberty Elem. Dist. 25
Litchfield Elem. Dist. 79
Littlefield Elem. Dist. 9

Littleton Elem. Dist. 65
Madison Elem. Dist. 38
Maine Cons. Elem. Dist. 10
Mammoth-San Manuel Unified Dist. 8
Marana Unified Dist. 6
Maricopa Unified Dist. 20
Mayer Unified Dist. 43
McNary Elem. Dist. 23
McNeal Elem. Dist. 55
Mesa Unified Dist. 4
Miami Unified Dist. 40
Mingus UHS Dist. 4
Mobile Elem. Dist. 86
Mohave Educational Sves Coop
Mohave UHS Dist. 30
Mohave Valley Elem. Dist. 16
Mohawk Valley Elem. Dist. 17
Morenci Unified Dist. 18
Morristown Elem. Dist. 75
Murphy Elem. Dist. 21
Naco Elem. Dist. 23
Nadaburg Elem. Dist. 81
Nogales Unified Dist. 1
Oracle Elem. Dist. 2
Osborn Elem. Dist. 8
Owens Whitney Elem. Dist. 6
Page Unified Dist. 8
Palo Verde Elem. Dist. 49
Paloma Elem. Dist. 94
Palominas Elem. Dist. 49
Paradise Valley Dist. 69
Parker Unified Dist. 27
Patagonia Elem. Dist. 6
Patagonia UHS Dist. 20
Payson Unified Dist. 10
Peach Springs Elem. Dist. 8
Peach Springs High School 7
Pearce Elem. Dist. 22
Pendergast Elem. Dist. 92
Peoria Unified Dist. 11
Phoenix Elem. Dist. 1
Phoenix UHS Dist. 210
Picacho Elem. Dist. 33
Pima Unified Dist. 6
Pine Elem. Dist. 12
Pinon Unified Dist. 4
Pomerene Elem. Dist. 64
Prescott Unified Dist. 1
Quartzsite Elem. Dist. 4
Queen Creek Unified Dist. 95
Ray Unified Dist. 3
Red Mesa Unified Dist. 27
Red Rock Elem. Dist. 5
Riverside Elem. Dist. 2
Roosevelt Elem. Dist. 66
Round Valley Unified Dist. 10
Sacaton Elem. Dist. 18
Safford Unified Dist. 1
Sahuarita Unified Dist. 30
St. David Unified Dist. 21
St. Johns Unified Dist. 1

Salome Cons. Elem. Dist. 30
San Carlos Unified Dist. 20
San Fernando Elem. Dist. 35
San Simon Unified Dist. 18
Sanders Unified Dist. 18
Santa Cruz Elem. Dist. 28
Santa Cruz Valley Dist. 35
Santa Cruz Valley UHS Dist. 840
Scottsdale Unified Dist. 48
Sedona - Oak Creek School Dist. 9
Seligman Unified Dist. 40
Sentinel Elem. Dist. 71
Show Low Unified Dist. 10
Sierra Vista Unified Dist. 68
Skull Valley Elem. Dist. 15
Snowflake Unified Dist. 5
Solomonville Elem. Dist. 5
Somerton Elem. Dist. 11
Sonoita Elem. Dist. 25
Stanfield Elem. Dist. 24
Sunnyside Unified Dist. 12
Superior Unified Dist. 15
Tanque Verde Unified Dist. 13
Tempe Elem. Dist. 3
Tempe UHS Dist. 213
Thatcher Unified Dist. 4
Tolleson Elem. Dist. 17
Tolleson UHS Dist. 214
Toltec Elem. Dist. 22
Tombstone Unified Dist. 1
Tonto Basin School Dist. 33
Topock Elem. Dist. 12
Tuba City Unified Dist. 15
Tucson Unified Dist. 1
Union Elem. Dist. 62
Vail Elem. Dist. 20
Valentine Elem. Dist. 22
Valley UHS Dist. 22
Vernon Elem. Dist. 9
Villa Oasis Inter School
Walnut Grove School District
Washington Elem. Dist. 6
Wellton Elem. Dist. 24
Wenden Elem. Dist. 19
Whiteriver Unified Dist. 20
Wickenburg Unified Dist. 9
Willcox Unified Dist. 13
Williams Unified Dist. 2
Williamson Valley Elem. Dist. 2
Wilson Elem. Dist. 7
Window Rock Unified Dist. 8
Winslow Unified Dist. 1
Yarnell Elem. Dist. 52
Yavapai Cnty Accommodation School Dist \#99
Young Elem. Dist. 5
Yuma County Accommodation School
Yucca Elem. Dist. 13
Yuma Elem. Dist. 1
Yuma UHS Dist. 70

## CHARTER SCHOOLS

Accelerated Learning Center
Accelerated Learning Center Laboratory
Acclaim Charter School
Academy of Excellence, Inc.
Academy of Tucson
Adalberto Guerrero Middle School
American Heritage Academy Chart. School
Arizona Career Academy
Arizona Charter Academy
Arizona Montessori Charter School
Arizona School for the Arts
Arizona School of Fine Arts and Science
Arizona Southwest Preparatory Academy
AZ Agribusiness \&Equine Center Chart. Sch.
AZ Institue of Bus. and Technology (AIBT)
Aztec Academy
Ball Charter School
Basis Middle School
Baurau Charter School
Benchmark Elementary
Benjamin Franklin Charter School
Benjamin Franklin School, Ltd.
Burke Basic Charter School
Career Development Inc.
Career Pathways Academy
Carmel Comm. Integrated Arts Chart. Sch.
Casey Country Day Charter School
Central Arizona Valley Inst of Technology
Challenge School, Inc.
Charter Foundation, Inc.
Children Reaching for the Sky
Central City Academy
Chester Newton Charter and Montessori Sch.
CI Wilson Academy
Country Gardens Charter School
Davis Education Center
Desert Rose Academy
Desert Springs Academy Charter School
Destiny Schools, Inc.
Discovery Academy of St. Johns
Discovery Plus Academy Charter School
Dobson Academy
Dragonflye Charter School
EAGLE Academy Charter School
Eagles Aerie Schools
East Valley Academy Charter School
Ecotech Agricultural Charter School
Edge EDE Charter School
EDU Preneurship Charter School
EDU-Prize Charter School
Enterprise Academy Charter School

Esperanza Montessori Academy
Excalibur Charter School
Excel Educations Centers Inc.
Excel Schools, Inc.
Entity Z Accounts
Evergreen Charter School Corp
Flagstaff Jr. Academy Charter School
Franklin Phonetic Primary School
Future Development Corp.
Gan Yaladeem, the Looking Glass
Genesis Academy Charter School
Gila County Transition Charter School
G.R.A.D.E. Charter School

Great Expectation Charter School
Happy Valley School, Inc.
Ha:San Preparatory and Leadership School
Heritage Academy Inc.
Horizon Charter School
Humanities and Science Institute Inc.
Intelli-School Charter School
International Commerce Institute Inc.
JWJ Academy
James Sandoval Preparatory High School
Kingman Academy of Learning
Lake Havasu Charter School
Lake Powell Academy Inc.
Laurent Clerc Elem. Charter School
Learning Crossroads Basic Academy
Learning Institute
Masada Charter School, Inc
Mexicayotl Academy
Mingus Mountain Academy
Mingus Springs Charter School
Mountain Rose Academy, Inc.
Mountain Oak School Charter School, Inc.
Multi-Dimensional Leteracy Corp
New School for the Arts
New West Charter School
Noah Webster Basic School
Northern Arizona Voc. Institute of Technology
Northland Preparatory Academy
North Star Charter School
Painted Pony Ranch Charter School
Pathways Charter Schools, Inc
Park View Middle School
PCAE-Edge
Peak School, Inc.
Phoenix School of Academic Excellence
Pimeria Alta Learning Center
Pine Forest Charter School
Presidio School

Project YES Middle School, LLC
Renaissance Education Consort, Inc.
Salt River Pima-Maricopa Indian Chart. Sch
Scholars’ Academy Charter School
Scottsdale Educational Enrichment School
Scottsdale Institute for the Arts
Sedona Charter School
Sedona-Oakcreek Airport Authority, Inc
Self Development Charter School
Sequoia Charter School
Sequoia Choice School, LLLP
Sequoia School LLC Charter School
Sequoia Village School
Skyline Technical High School
Skyview Charter School
Sonoran Desert School
Southern AZ Community Academy Chart. Sch
Southside Community School

Stepping Stones Academy
Sunway Management Charter School
Superior School
Tag Elementary Inc.
Telani Lake Elementary Sch Academy
Telesis Center for Learning, Inc.
Tolchi' Kooh Charter School Inc.
Tri-City Prep High School
Tucson Country Day School
Triumphant Learning Center
Valley Academies Inc.
Valley Academy for Career \& Technology Ed
Ventana Academic School
Village Charter School
Visions Unlimited Academy Inc.
Westmark High Schools
Westwind Academy
Young Scholars Academy Chart. School

## COLLEGES

Arizona Western College
Central Arizona College
Cochise College
Coconino County Community College
Eastern Arizona College

Maricopa County Comm.
Mohave Community College
Northland Pioneer College
Pima Community College
Yavapai College

## CITIES AND TOWNS

City of Apache Junction
City of Avondale
City of Benson
City of Bisbee
City of Casa Grande
City of Chandler
City of Coolidge
City of Cottonwood
City of Douglas
City of El Mirage
City of Eloy
City of Flagstaff
City of Glendale
City of Globe
City of Goodyear
City of Holbrook
City of Kingman
City of Lake Havasu
City of Litchfield Park
City of Mesa
City of Nogales
City of Peoria
City of Prescott
City of Safford
City of San Luis
City of Scottsdale
City of Show Low
City of Sierra Vista
City of Somerton

City of South Tucson
City of Surprise
City of Tempe
City of Tolleson
City of Tombstone
City of Willcox
City of Williams
City of Winslow
City of Yuma
Town of Buckeye
Town of Chino Valley
Town of Clarkdale
Town of Clifton
Town of Duncan
Town of Florence
Town of Fredonia
Town of Gila Bend
Town of Gilbert
Town of Guadalupe
Town of Hayden
Town of Kearny
Town of Miami
Town of ParadiseValley
Town of Parker
Town of Patagonia
Town of Pima
Town of Queen Creek
Town of Sahuarita
Town of Snowflake

Town of Springerville
Town of Superior
Town of Taylor
Town of Thatcher

Town of Wellton
Town of Wickenburg
Town of Youngtown

## COUNTIES

Apache County
Mohave County
Cochise County
Coconino County
Gila County
Graham County
Greenlee County
Maricopa County

Navajo County
Pima County
Pinal County
Santa Cruz County
Yavapai County
Yuma County

## SPECIAL DISTRICTS

Apache Jct. Fire District
Arizona Association of Counties
Arizona City Sanitary District
Arizona Counties Insurance Pool
Arizona Interscholastic Association
Avra Valley Fire District
Black Canyon Water Improvement District
Buckeye Water Conservation \& Drainage Dist
Bullhead City Fire District
Central Arizona Project
Central Heights Fire District
Chino Valley Fire District
Christopher Kohls Fire District
City of Eloy Housing Authority
City of Yuma Housing Authority
Colorado River Sewage System
Cornville-Page Springs Fire Dist
County Supervisors Association of Arizona
Diamond Star Fire District
Drexel Heights Fire District
El Frida Fire District
Fire District of Sun City West
Flagstaff Housing Authority
Fort Mojave Mesa Fire Department
Gila Resources
Grand Canyon Airport Authority
Golder Ranch Fire District
Harquahala Valley Irrigation District
Heber-Overgaard Fire District
Kino Community Hospital

Maricopa Integrated Health System
Maricopa Water District
Metropolitan Domestic Water Improve.
Dist.
New Magma Irrigation and Drainage District
Northwest Fire District
Picture Rock Fire District
Pima Home Health
Pinewood Sanitary District
Posada del sol Health
Puerco Valley Fire District
Queen Valley Domestic Water Impr. Dist.
Queen Valley Sanitary District
Roosevelt Irrigation District
San Carlos Irrigation \& Drain
State of Arizona
Sun City Fire District
Summit Fire District
Superstition Mtn Community Facilities Dist
Tourism and Sports Authority
Tri-City Fire District
Tucson Airport Authority
Tusayan Fire District
Verde Valley Fire District
Water Utilities Community District
Western Arizona Council of Governments
Whetstone Fire District
Williams Gateway Airport Authority
Yuma County Airport Authority
Yuma Mesa Irrigation District

## ARIZONA STATE RETIREMENT SYSTEM

CONTRIBUTIONS RECEIVED
(In Millions)


ACTUAL CONTRIBUTION RATES
In Percentage of Payroll

|  | 1993 | 1994 | 1995 | 1996* | 1997* | 1998* | 1999* | 2000* | 2001* | 2002* |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Employer | 3.59 | 3.14 | 3.75 | 3.85 | 3.69 | 3.54 | 3.34 | 2.66 | 2.66 | 2.49 |
| Employee | 3.59 | 3.14 | 3.75 | 3.85 | 3.69 | 3.54 | 3.34 | 2.66 | 2.66 | 2.49 |

The contribution rates include long-term disability contributions.

* Effective January 1, 1996, ASRS members (defined contribution) and their employers, each pays a 7.49 percent contribution rate (includes 0.49 percent for long-term disability).


## ARIZONA STATE RETIREMENT SYSTEM

TOTAL BENEFIT PAYMENTS
(In Millions)


Total benefit payments have increased from $\$ 414.9$ million in fiscal year 1993 to $\$ 1,055.0$ million in fiscal year 2001, an increase in excess of 154 percent over the nine-year period. This schedule does not include Social Security benefits.

## ARIZONA STATE RETIREMENT SYSTEM

## TOTAL RESERVES FOR BENEFITS* At Market (In Millions)



## YEAR ENDED JUNE 30

The increase in total reserves for benefits, nearly 77.9 percent in the past nine years, reflects the actuarial strength of the Retirement System.
*Total Reserves for Benefits had been reported at cost in previous years.

## ARIZONA STATE RETIREMENT SYSTEM

## NON-RETIRED \& RETIRED MEMBERS



The ASRS as it exists today has evolved from the consolidation of the original State Retirement System with the former Teachers' Retirement System in 1955. The category of retired members includes many survivors of former members, who have qualified for monthly benefit payments rather than for single death benefit payments.

## ARIZONA STATE RETIREMENT SYSTEM

TEN YEAR HISTORICAL DATA

## REVENUES BY SOURCE

| Fiscal Year | Employer/ Employee Contribution Rate | Employer/ Employee Long-Term Disability Rate** | Employee Contributions as a Percent of Covered Payroll | Employer Contribution Amount | Employee Contribution Amount | Member Reimbursements and Other | Net Investment Income | Total Additions |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1992 | 3.60\% | N/A | 100.00\% | \$132,273,316 | \$132,273,316 | \$ 945,836 | \$ 1,513,686,627 | \$ 1,779,179,095 |
| 1993 | 3.59\% | N/A | 76.80\% | 135,644,868 | 135,644,868 | 6,870,755 | 2,037,437,881 | 2,315,593,372 |
| 1994 | 3.14\% | N/A | 100.00\% | 124,763,806 | 124,763,806 | 7,319,048 | 725,271,172 | 982,117,832 |
| 1995 | 3.75\% | N/A | 85.10\% | 158,559,931 | 158,559,931 | 9,429,152 | 2,409,804,569 | 2,736,353,583 |
| 1996*** | 3.36\% | 0.49\% | 100.00\% | 172,848,417 | 172,848,417 | 4,376,224 | 2,063,877,940 | 2,413,950,998 |
| 1997 | 3.20\% | 0.49\% | 100.00\% | 173,508,019 | 173,508,019 | 11,480,946 | 2,832,718,071 | 3,191,215,116 |
| 1998 | 3.05\% | 0.49\% | 100.00\% | 176,768,738 | 176,768,737 | 15,461,646 | 3,405,203,114 | 3,774,202,235 |
| 1999 | 2.85\% | 0.49\% | 100.00\% | 179,086,635 | 179,086,642 | 46,170,568 | 2,848,321,337 | 3,252,665,182 |
| 2000 | 2.17\% | 0.49\% | **** | 152,957,449 | 152,957,838 | 35,347,830 | 2,035,312,005 | 2,376,575,122 |
| 2001 | 2.17\% | 0.49\% | 100.00\% | 163,441,724 | 163,441,640 | 39,534,937 | $(1,528,690,829)$ | $(1,162,272,528)$ |
| 2002 | 2.00\% | 0.49\% | 100.00\% | 168,212,537 | 168,212,537 | 128,555,405 | $(1,768,077,076)$ | $(1,303,096,598)$ |

* The LTD Program was established effective July 1, 1995. ASRS members who were receiving LTD benefits prior to July 1, 1995 were transferred to the program on October 1, 1995. Contribution rates began July 1, 1995 and are paid 50 percent from employer funds and 50 percent by active members.
** The 1995 Legislature passed legislation to separate the Health Premium Supplement contributions into a separate account. This portion of the employer contribution rate is included here. This separation is effective at the benefit's inception June 20, 1989.
*** Effective January 1, 1996, System members (defined contribution) and their employers, each pays a 7.49 percent contribution rate (includes .49 percent for long-term disability).
**** This information is shown only for the years available in accordance with the parameters of GASB No. 25. Additional years will be added as data becomes available.


## ARIZONA STATE RETIREMENT SYSTEM

## TEN YEAR HISTORICAL DATA

## EXPENSES BY TYPE

| Fiscal Year | Benefit <br> Payments | Administrative <br> and Other | Total |
| :---: | ---: | ---: | ---: |
| 1992 | $\$ 382,354,504$ | $\$ 8,115,966$ | $\$ 390,470,470$ |
| 1993 | $443,628,202$ | $6,210,761$ | $449,838,963$ |
| 1994 | $476,768,678$ | $5,521,389$ | $482,290,067$ |
| 1995 | $519,667,116$ | $5,970,049$ | $525,637,165$ |
| 1996 | $568,901,122$ | $8,244,791$ | $577,145,913$ |
| 1997 | $627,590,584$ | $12,307,628$ | $639,898,212$ |
| 1998 | $682,336,368$ | $12,541,090$ | $694,877,458$ |
| 1999 | $739,978,931$ | $15,352,673$ | $755,331,604$ |
| 2000 | $858,307,881$ | $19,743,695$ | $878,051,576$ |
| 2001 | $1,008,150,423$ | $24,639,599$ | $1,032,790,022$ |
| 2002 | $1,120,425,605$ | $20,086,291$ | $1,140,511,896$ |

## BENEFIT EXPENSES BY TYPE

| Fiscal <br> Year | Retirement <br> Benefits | Death <br> Benefits | Long-Term <br> Disability | Health <br> Benefit <br> Supplement | Refunds of <br> Contributions | Total |
| :--- | :--- | :--- | :--- | :--- | ---: | :--- |
| 1993 | $414,878,522$ | $7,304,695$ |  |  | $21,444,985$ | $443,628,202$ |
| 1994 | $445,185,700$ | $8,932,681$ |  |  | $22,650,297$ | $476,768,678$ |
| 1995 | $483,573,463$ | $11,577,469$ |  |  | $24,516,184$ | $519,667,116$ |
| 1996 | $480,697,236$ | $13,593,283$ | $\$ 20,280,929$ | $\$ 27,953,281$ | $26,376,393$ | $568,901,122$ |
| 1997 | $522,524,936$ | $13,582,730$ | $30,051,668$ | $30,148,793$ | $31,282,457$ | $627,590,584$ |
| 1998 | $574,229,820$ | $10,557,739$ | $35,112,054$ | $32,667,709$ | $29,769,046$ | $682,336,368$ |
| 1999 | $627,612,050$ | $11,484,518$ | $39,839,055$ | $34,935,156$ | $26,108,152$ | $739,978,931$ |
| 2000 | $695,425,997$ | $13,255,861$ | $41,220,028$ | $37,651,498$ | $70,754,497$ | $858,307,881$ |
| 2001 | $809,133,178$ | $14,133,500$ | $45,848,134$ | $40,500,337$ | $98,535,274$ | $1,008,150,423$ |
| 2002 | $924,171,815$ | $14,077,910$ | $54,804,374$ | $75,989,584$ | $42,765,105$ | $1,111,808,788$ |

NOTE: Effective July 1, 1995, the ASRS established separate accounts for LTD and Health Benefit Supplement.

## ARIZONA STATE RETIREMENT SYSTEM

SCHEDULE OF AVERAGE BENEFIT PAYMENTS FOR RETIREES UNDER THE PLAN*

Fiscal year 1992
Average monthly benefit
Number of retirees
AVERAGE CREDITED SERVICE
YEARS OF CREDITED SERVICE

| $0-4$ | $5-9$ | $10-14$ | $15-19$ | $20-24$ | $25-29$ | $30-34$ | $35-39$ | $40-44$ | $45+$ | TOTAL |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

Fiscal year 1993
$\begin{array}{lrrrrrrrrrrrrrrrrrrrr} \\ \text { Average monthly benefit } & \$ & 125 & \$ & 223 & \$ & 427 & \$ & 671 & \$ & 979 & \$ & 1,482 & \$ & 1,862 & \$ & 1,747 & \$ & 1,254 & \$ & 1,066\end{array} \mathbf{\$} 812$
AVERAGE CREDITED SERVICE

| $\$$ | 124 | $\$ 207$ | $\$$ | 377 | $\$$ | 588 | $\$$ | 839 | $\$$ | 1,292 | $\$$ | 1,650 | $\$$ | 1,521 | $\$$ | 1,112 | $\$$ | 936 | $\$$ |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
|  | 646 | 6,220 | 8,215 |  | 6,952 | 5,888 | 4,687 |  | 2,718 |  | 800 |  | 308 | 503 | 36,490 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 17.9 |  |

Fiscal year 1994
Average monthly benefit
Number of retirees
AVERAGE CREDITED SERVICE

| $\$$ | 126 | $\$$ | 229 | $\$$ | 445 | $\$$ | 701 | $\$$ | 1,032 | $\$$ | 1,555 | $\$$ | 1,980 | $\$$ | 1,880 | $\$$ | 1,335 | $\$$ |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 79 | 6,906 |  | 9,000 |  | 7,602 |  | 6,881 |  | 5,615 |  | 3,099 |  | 829 |  | 277 |  | 37 | 41,044 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 17.9 |

Fiscal year 1995
Average monthly benefit
Number of retirees


Fiscal year 1996
Average monthly benefit
Number of retirees
$\begin{array}{rrrrrrrrrrrrrrrrrr}\$ 123 & \$ & 239 & \$ & 470 & \$ & 741 & \$ & 1,118 & \$ & 1,669 & \$ & 2,119 & \$ & 2,125 & \$ & 1,506 & \$ \\ 91,230 & \$ & 920 \\ & & 7,781 & & 9,849 & & 8,334 & & 7,791 & & 6,654 & & 3,498 & & 884 & & 240 & \\ & & 26 & 45,975\end{array}$ 17.9

Fiscal year 1997

| Average monthly benefit | $\$ 123$ | $\$$ | 244 | $\$$ | 481 | $\$$ | 759 | $\$$ | 1,151 | $\$$ | 1,719 | $\$$ | 2,172 | $\$$ | 2,197 | $\$$ | 1,613 | $\$$ | 1,270 | $\$$ |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Number of retirees | 1,034 | 8,446 | 10,611 |  | 8,967 | 8,421 |  | 7,296 |  | 3,756 |  | 947 |  | 240 | 25 | 49,743 |  |  |  |  |
| AVERAGE CREDITED SERVICE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 18.0 |  |  |

Fiscal year 1998

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Average monthly benefit | $\$ 122$ | $\$$ | 254 | $\$$ | 499 | $\$$ | 789 | $\$$ | 1,196 | $\$$ | 1,785 | $\$$ | 2,248 | $\$$ | 2,318 | $\$$ | 1,749 | $\$$ | 1,565 |
| Number of retirees | 1,149 | 8,788 | 11,050 |  | 9,305 | 8,786 |  | 7,718 |  | 3,908 |  | 965 |  | 226 |  | 22 | 51,917 |  |  |
| AVERAGE CREDITED SERVICE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 18.0 |  |

Fiscal year 1999
$\begin{array}{lrrrrrrrrrrrrrrrrrr}\text { Average monthly benefit } & \$ 120 & \$ & 259 & \$ & 511 & \$ & 806 & \$ & 1,230 & \$ & 1,846 & \$ & 2,332 & \$ & 2,448 & \$ & 1,969 & \$ \\ \text { Number of retirees } & & 1,251,771 & \$ 1,024 \\ & & & 1,180 & 11,581 & & 9,653 & & 9,393 & & 8,475 & & 4,294 & & 1,039 & & 217 & & 21\end{array}$
AVERAGE CREDITED SERVICE

| $\$ 120$ | $\$$ | 259 | $\$ 51,024$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 1,251 | 9,180 | 11,581 | 9,653 | 9,393 | 8,475 |  | 4,294 |  | 1,039 |  | 217 |  | 21 | 55,104 |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 18.2 |

Fiscal year 2000
$\begin{array}{lrrrrrrrrrrrrrrrrrrrr} & \text { Average monthly benefit } & \$ & 125 & \$ & 278 & \$ & 550 & \$ & 872 & \$ & 1,328 & \$ & 2,013 & \$ & 2,541 & \$ & 2,732 & \$ & 2,339 & \$ \\ \text { Number of retirees } & 1,321 & 9,454 & 12,076 & 10,061 & & 9,944 & & 9,169 & & 4,683 & & 1,106 & & 207 & 17 & 58,038\end{array}$
AVERAGE CREDITED SERVICE
Fiscal year 2001
Average monthly benefit
Number of retirees

$$
\begin{array}{rrrrrrrrrrrrrrrrrrr}
\$ 130 & \$ 293 & \$ & 600 & \$ & 939 & \$ & 1,414 & \$ & 2,119 & \$ & 2,694 & \$ & 2,956 & \$ & 2,694 & \$ & 2,671 & \$, 211 \\
1,338 & 9,450 & 12,164 & 10,033 & 10,115 & 9,611 & & 4,891 & & 1,120 & & 180 & & 18 & 58,920
\end{array}
$$

AVERAGE CREDITED SERVICE
*Statistics are not available for System retirees of the ASRS

## ARIZONA STATE RETIREMENT SYSTEM

## RETIREMENT BENEFIT OPTIONS

## LIFE ANNUITY - REFUND PROVISION

Provides member monthly benefit for life. If death occurs before all member contributions, plus interest, have been paid, the remaining balance will be paid in a lump sum or at the same monthly amount in effect at the time of the member's death to the designated beneficiary.

## LIFE ANNUITY - FIVE YEARS CERTAIN

Provides member monthly benefit for life. If death occurs before the retired member receives 60 monthly payments, the remaining monthly payments (or balance of the 60 payments) will be paid to the retired member's designated beneficiary. Members under the age of 103 at retirement are eligible to choose this option.

## LIFE ANNUITY - TEN YEARS CERTAIN

Provides member monthly benefit for life. If death occurs before the retired member receives 120 monthly payments, the remaining monthly payments (or balance of the 120 monthly payments) will be paid to the retired member's designated beneficiary. Members under the age of 91 are eligible to choose this option.

## LIFE ANNUITY - FIFTEEN YEARS CERTAIN

Provides member monthly benefit for life. If death occurs before the retired member receives 180 monthly payments, the remaining monthly payments (or balance of the 180 monthly payments) will be paid to the designated beneficiary. Members under the age of 84 are eligible to choose this option.

## JOINT ANNUITY - $\mathbf{1 0 0}$ percent TO CONTINGENT SURVIVOR

Provides member monthly benefit for life then also provides a life annuity equal to 100 percent of the member's monthly benefit for one designated beneficiary should the beneficiary survive the member. Members may choose this option (1) if the beneficiary is the member's spouse, or (2) if the beneficiary is not the spouse and the member is not more than 10 years older than the beneficiary.

## JOINT ANNUITY - $\mathbf{6 6} \mathbf{2} / \mathbf{3}$ percent TO CONTINGENT SURVIVOR

Provides member monthly benefit for life then also provides a life annuity equal to $662 / 3$ percent of the member's monthly benefit for one designated beneficiary should the beneficiary survive the member. Members may choose this option (1) if the beneficiary is the member's spouse, or (2) if the beneficiary is not the spouse and the member is not more than 24 years older than the beneficiary.

## JOINT ANNUITY - 50 percent TO CONTINGENT SURVIVOR

Provides member monthly benefit for life then also provides a life annuity equal to 50 percent of the member's monthly benefit for one designated beneficiary should the beneficiary survive the member.

Members who choose a joint annuity payment option may rescind the option at any time and revert to the Life Annuity - Refund Provision or change the contingent annuitant. A member who reverted to the life annuity may later change back to the same joint annuity option originally elected and name the same or a new contingent annuitant. The member's benefit will be adjusted to reflect any change made.


[^0]:    Note: A Detail Listing Of Investments Available Upon Request. Direct Your Request To The ASRS, 3300 N. Central Ave., Phoenix, AZ

[^1]:    Note: A Detail Listing Of Investments Available Upon Request. Direct Your Request To The ASRS, 3300 N. Central Ave., Phoenix, AZ

