



# **Arizona State Retirement System**

**Actuarial Report on the**

**Valuation of the Plan**

**As of June 30, 2009**

**explore**  
excellence<sup>SM</sup>



January 28, 2010

Retirement Board  
Arizona State Retirement System  
3300 North Central Avenue  
14<sup>th</sup> Floor  
Phoenix, Arizona 85012

Dear Retirement Board Members:

We certify that the information contained in the attached 2009 actuarial valuation report is accurate and fairly presents the actuarial position of the Arizona State Retirement Plan (the Plan) as of June 30, 2009.

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

Sincerely,

Charles E. Chittenden, FSA, EA, MAAA  
Principal and Consulting Actuary

Michelle Reding DeLange, FSA, EA, MAAA  
Director, Consulting Actuary

**Table of Contents**

Section 1 Executive Summary ..... 1-5

Section 2 Introduction ..... 6

Section 3 Assets ..... 7-18

Section 4 Actuarial Balance Sheet ..... 19-22

Section 5 Contribution Rates..... 23-27

Section 6 Actuarial Gains and Losses ..... 28-30

Section 7 Permanent Benefit Increase (PBI)..... 31-32

Section 8 GASB Disclosure and CAFR Information..... 33-50

Section 9 Summary of Actuarial Methods and Assumptions..... 51-56

Section 10 Member Data..... 57-76

Section 11 Plan Provisions ..... 77-93

## Executive Summary

Attached are tables summarizing the key results of the June 30, 2009, actuarial valuation of the Arizona State Retirement Plan (the Plan).

### Demographic Changes

The number of active members has decreased from 226,415 to 222,515, a 1.7% decrease. Valuation payroll has increased 1.3% from \$9.708 billion to \$9.835 billion. The payroll for fiscal year 2010 was calculated by projecting a smoothed payroll forward one year with the salary scale. Smoothed payroll averages the payroll reported for the prior two fiscal years.

### Gains and Losses

The valuation of the Plan reflects a loss on the investment return on the actuarial value of assets of \$1,383 million. This loss is due to the investment experience of fiscal 2009 and delayed recognition of losses that have occurred in earlier years. Investment losses are recognized in actuarial assets over a ten-year period. The yield rate on actuarial assets for the 2009 fiscal year is 3.04% on the pension assets (401(a)) and 1.96% on the health supplement assets (401(h)) compared to last year's returns of 6.44% and 5.02%, respectively. The actuarially assumed rate of return is 8%. There was also a gain of \$224 million on the liability experience, mostly due to smaller pay increases than assumed.

### Changes in Plan Provisions

This valuation reflects the following changes in Plan provisions:

- Effective July 1, 2010, members will be required to have five years of service credit in ASRS before initiating a service purchase.
- Effective July 1, 2010, the maximum limit on ASRS pensions of 80% of 36-month final average earnings is eliminated.
- Retired members who return to work with a suspension of benefits and work for at least 60 consecutive months will be permitted to choose a new optional form of benefit when they again retire.
- Retired members are allowed to return to work without suspension if the member returns to a different position that does not require participation and the member participates in another program.
- ASRS is exempt from State Personnel Management and Personnel Board provisions and the State classification and compensation statute.
- The scope of the early termination incentive statute is broadened and exceptions are limited.
- Contributions from a second employer will count, beginning January 1, 2010, only if member meets 20/20 membership criteria with respect to the second employer, with certain exceptions.

**Effect on Contribution Rates and Funded Status**

The contribution rate calculated in this valuation will become effective on July 1, 2010, and will remain in effect through June 30, 2011. The Plan had a gain on liability experience and a loss on investments. The net result is that the calculated contribution rate will increase from a rate of 9.00% in the 2008 valuation report to a rate of 9.60% in this report. Later sections of this report give a detailed explanation of the change in contribution rates.

The recognition of losses has caused the funded status of the total plan (the ratio of actuarial assets to actuarial accrued liabilities) to decrease from 82.2% as of June 30, 2008, to 79.3% as of June 30, 2009. The unfunded actuarial accrued liability has grown during this period from \$6,019.0 million to \$7,382.4 million.

The calculated contribution rate has increased to a level higher than the Plan’s normal cost. If the Plan had no unfunded actuarial accrued liability, the contribution rate would be the normal cost rate, i.e., 6.49%, instead of 9.60%.

**Projected Funded Status as of November 30, 2009**

	Actuarial Value of Assets	Market Value of Assets
Projected Accrued Liability	\$ 36,529,523,609	\$ 36,529,523,609
Assets	28,311,422,956	22,239,883,878
Funded Status	77.50%	60.88%

**Reserve and Outlook for Permanent Benefit Increases**

Since the total actuarial investment return (on the actuarial value of assets) of 2.99% is below 8% for fiscal year 2009, there are no additional “Excess Investment Earnings” to be allocated for Permanent Benefit Increases (PBIs).

We project no future PBIs until after 2020.

**Outlook for Contribution Rates**

Our forecast shows contribution rates continuing to increase for four years, assuming future experience matches our assumptions and the workforce experiences no growth, 2.5% annual growth or 2.5% annual reduction, as follows:

Contribution Rate for Each Member and Employer				
Effective Date	No Growth	2.5% Annual Growth	2.5% Annual Reduction	One-Time 6% Reduction
2010/2011	9.60%	9.60%	9.60%	9.60%
2011/2012	9.68%	9.61%	9.77%	9.90%
2012/2013	10.43%	10.24%	10.65%	10.70%
2013/2014	10.88%	10.55%	11.23%	11.18%
2014/2015	11.25%	10.78%	11.78%	11.58%
2015/2016	11.55%	10.92%	12.24%	11.87%
2016/2017	11.86%	11.08%	12.75%	12.20%
2017/2018	12.11%	11.16%	13.21%	12.46%
2018/2019	12.29%	11.19%	13.61%	12.65%
2019/2020	12.38%	11.13%	13.91%	12.74%

These open-group forecasts age the population, anticipate both inward and outward migration and status changes, and perform closed-group valuations for each fiscal year.

The key results of this valuation, compared to those of last year's valuation, are as follows (dollar amounts, other than averages for individual members, are in millions):

	2008	2009
<b>Demographic Information</b>		
• Number of Members		
Actives	226,415	222,515
Inactives	203,004	210,509
Receiving benefits	88,956	94,424
Disabled (LTD)	4,882	4,712
Total	523,257	532,160
• Covered projected payroll	\$ 9,708	\$ 9,835
• Average age/service for actives	44.9/8.5	45.2/8.8
• Average pay for actives	\$ 42,879	\$ 44,198
• Average monthly benefit for retirees and beneficiaries	\$ 1,596	\$ 1,613
• Average monthly benefit for members who retired in last fiscal year	\$ 1,632	\$ 1,629
• Average age for retirees and beneficiaries	69.5	69.6
• Average age for members who retired in last fiscal year	61.4	61.5
<b>Financial Information</b>		
• Total normal cost rate	12.90%	12.98%
• Unfunded actuarial accrued liability	\$ 6,019	\$ 7,382
• Funded status of pension (401(a))	82.1%	79.0%
• Funded status of health (401(h))	85.7%	87.2%
• Funded status of total plan	82.2%	79.3%
• Unrounded contribution rate	9.00%	9.58%
• Rounded contribution rate	9.00%	9.60%
• Member and employer contributions	\$ 1,806	\$ 1,758
• Benefit and refunded payments	\$ 1,931	\$ 2,073
• Administrative expenses	\$ 30	\$ 28
• Net external cash flow	\$ (155)	\$ (343)
• PBI		
Additional liability for July 1 <sup>st</sup> PBI	\$ 0.0	\$ 0.0
Percentage increase	0%	0%
Per year of service factor	\$ 0.0	\$ 0.0
PBI reserve before July 1 <sup>st</sup> PBI	\$ 0.0	\$ 0.0

	2008	2009
● Actuarial gains (losses)		
Assets	\$ (427)	\$ (1,383)
Contribution gain/(loss)*	N/A	(127)
Liability experience	(239)	132
Legislative and administrative changes	N/A	3
Assumption changes	140	82
Method change	N/A	N/A
Total	\$ (526)	\$ (1,287)
● GASB 25 disclosure (401(a) pension only)		
Actuarial Accrued Liability (AAL)	\$ 32,425	\$ 34,290
Unfunded AAL/(Surplus)	\$ 5,812	\$ 7,196
Actuarial Value of Assets as % of AAL	82.1%	79.0%
Unfunded AAL/(Surplus) as % of payroll	59.9%	73.2%
● GASB 43 disclosure (401(h) plan only)		
Actuarial Accrued Liability (AAL)	\$ 1,446	\$ 1,453
Unfunded AAL/(Surplus)	\$ 207	\$ 186
Actuarial Value of Assets as % of AAL	85.7%	87.2%
Unfunded AAL/(Surplus) as % of payroll	2.1%	1.9%
● Changes in contribution rate:		
<b>Item</b>	<b>Contribution Rate</b>	<b>Change in Rate</b>
1. 2008 valuation	9.00%	-
2. Expected Experience	8.92%	-0.08%
3. Contribution Gain/(Loss)*	8.98%	0.06%
4. 2008/2009 Liability Experience	9.08%	0.10%
5. 2008/2009 Asset Experience	9.66%	0.58%
6. Assumption Changes	9.58%	-0.08%
7. Administrative Changes	9.58%	0.00%
8. Rounding to the Nearest 0.05%	9.60%	0.02%

\* Reflects the difference in the expected contributions and actual contributions. In 2008, the contribution gain/(loss) is included in the experience liability loss.

<b>Split of Total Contribution Rate:</b>			
<b>Item</b>	<b>401(a) Account</b>	<b>401(h) Account</b>	<b>Total</b>
1. Member Contribution Rates	9.60%	0.00%	9.60%
2. Employer Contribution Rates	<u>9.01%</u>	<u>0.59%</u>	<u>9.60%</u>
3. Total Contribution Rates	18.61%	0.59%	19.20%

• Asset Amounts, Returns on Assets, and Funded Status

	<b>2008</b>		<b>2009</b>	
<b>Asset Amounts</b>	<b>Market Value</b>	<b>Actuarial Value</b>	<b>Market Value</b>	<b>Actuarial Value</b>
Pension 401(a)	\$ 24,208	\$ 26,613	\$ 19,506	\$ 27,094
Health 401(h)	<u>1,088</u>	<u>1,239</u>	<u>897</u>	<u>1,266</u>
Total Plan	\$ 25,296	\$ 27,852	\$ 20,403	\$ 28,360
<b>Asset Yields</b>	<b>Market Value</b>	<b>Actuarial Value</b>	<b>Market Value</b>	<b>Actuarial Value</b>
Pension 401(a)	(7.46%)	6.44%	(18.28%)	3.04%
Health 401(h)	(7.62%)	5.02%	(17.83%)	1.96%
Total Plan	(7.46%)	6.37%	(18.26%)	2.99%
<b>Liabilities</b>				
Pension 401(a)	\$ 32,425	\$ 32,425	\$ 34,290	\$ 34,290
Health 401(h)	<u>1,446</u>	<u>1,446</u>	<u>1,453</u>	<u>1,453</u>
Total Plan	\$ 33,871	\$ 33,871	\$ 35,743	\$ 35,743
<b>Funded Status</b>	<b>Market Value</b>	<b>Actuarial Value</b>	<b>Market Value</b>	<b>Actuarial Value</b>
Pension 401(a)	74.7%	82.1%	56.9%	79.0%
Health 401(h)	75.2%	85.7%	61.7%	87.1%
Total Plan	74.7%	82.2%	57.1%	79.3%



## Introduction

The primary purpose of the actuarial valuation is to determine the required member and employer contribution rates in accordance with the actuarial funding policy specified in Section 38-737 of the Arizona Revised Statutes, to describe the current financial condition of the Plan, and to analyze changes in the Plan's condition. In addition, the report provides information that ASRS requires in connection with Governmental Accounting Standards Board Statement Numbers 25 and 43 (GASB Nos. 25 and 43) and it summarizes census data. The valuation covers both the 401(a) pension plan and the 401(h) health supplement plan.

The actuarial valuation of the Plan as of June 30, 2009, determines the contribution rate for fiscal year 2011. Based on the results of the 2009 Plan valuation, the contribution rate for the fiscal year beginning July 1, 2010, would increase from the 9.00% rate determined in the 2008 valuation to 9.60% of compensation.

## Assets

This section shows the change in the assets during the year, calculates the yield on assets for the Plan, and determines the actuarial value of assets under the asset valuation method that was adopted on November 15, 2002, by Board action.

### Market Value of Assets

The market value of assets represents the fair market value of assets as of June 30, 2008, and June 30, 2009, as reported by ASRS.

### Actuarial Value of Assets

The actuarial value of assets method starts with the market value of assets and is modified by the difference between expected investment return and actual investment return on the market value of assets. Effective June 30, 2002, 10% of this difference is recognized in the valuation immediately following the year in which it occurs. The remaining 90% is deferred until future valuations with an additional 10% recognized in each subsequent valuation until 100% of the difference is recognized in the tenth year. There is no corridor requiring the actuarial value to be within a given percentage of the market value. The Board adopted this actuarial valuation method on November 15, 2002. Prior to June 30, 2002, the phase-in period was five years and there was a 20% corridor around market values.

The market value of assets as of June 30, 2009, was \$20,403,436,175 and the actuarial value of asset under this method was \$28,360,159,450, or about 139% of market value as of June 30, 2009. The combined 401(a) and 401(h) deferral amount for the year is \$(7.957) billion. That is, \$7.957 billion of investment losses will be recognized in future valuations.

### Asset Returns

To determine the estimated yield for the year, we assume that the cash flow from benefit payments and refunds occurs at the beginning of the month while all other cash flow occurs middle of the year.

During the twelve months ended June 30, 2009, the Plan had an estimated yield of 3.04% on the 401(a) actuarial assets and 1.96% on the 401(h) actuarial assets for the year compared to the actuarial assumed rate of 8%. The Plan assets had an investment return of (18.28%) on the 401(a) market assets and (17.83%) on the 401(h) market assets.

The Plan's assets are split between the retirement program (401(a)) and the health premium supplement program (401(h)) as follows:

Item	401(a) Account	401(h) Account	Total
1. Market Value of Assets	\$19,506,243,433	\$ 897,192,742	\$20,403,436,175
2. Actuarial Value of Assets	\$27,093,788,614	\$ 1,266,370,836	\$28,360,159,450

Exhibit 3.1a - Change in Assets During the Year (401(a) Only)

	Year Ending June 30, 2008	Year Ending June 30, 2009
1. Market value, beginning of year	\$ 26,476,068,259	\$ 24,208,124,045
2. Contributions and receipts during the year		
a. Member contributions	857,502,851	844,405,884
b. Employer contributions	759,171,555	753,909,718
c. Member reimbursements of member contributions	90,029,879	69,130,436
d. Member reimbursements of employer contributions	0	0
e. Other miscellaneous receipts	0	0
f. Total	\$ 1,706,704,285	\$ 1,667,446,038
3. Investment income for the year (net of investment expenses)	\$ (1,928,090,391)	\$ (4,354,747,856)
4. Benefit payments		
a. Retirement and disability benefits	\$ (1,721,061,843)	\$ (1,839,024,343)
b. Death benefits	(20,847,323)	(27,741,622)
c. Total	\$ (1,741,909,166)	\$ (1,866,765,965)
5. Refunds of contributions	(104,080,495)	(118,609,040)
6. Employer adjustments	0	0
7. Administrative expenses	(28,588,722)	(26,803,812)
8. Miscellaneous	0	0
9. Other		
a. Transfers from other plans	\$ 5,196,252	\$ 3,305,811
b. Reimbursements and lump sums	0	0
c. Transfers to PSPRS	(177,175,977)	(5,705,788)
d. Increase System retired reserves	0	0
e. Employer contributions released	0	0
f. Supplemental credits	N/A	N/A
g. Transfers from System	0	0
h. Total	\$ (171,979,725)	\$ (2,399,977)
10. Change in audited assets, beginning of year	0	0
11. Total change in market value	\$ (2,267,944,214)	\$ (4,701,880,612)
12. Market value, end of year	\$ 24,208,124,045	\$ 19,506,243,433

**Exhibit 3.1b - Change in Assets During the Year (401(h) Only)**

	Year Ending June 30, 2008	Year Ending June 30, 2009
1. Market value, beginning of year	\$ 1,162,950,488	\$ 1,087,985,713
2. Contributions and receipts during the year		
a. Member contributions	\$ 0	\$ 0
b. Employer contributions	99,026,974	90,489,881
c. Member reimbursements of member contributions	0	0
d. Member reimbursements of employer contributions	0	0
e. Other miscellaneous receipts	0	0
f. Total	\$ 99,026,974	\$ 90,489,881
3. Investment income for the year (net of investment expenses)	(87,558,786)	(192,336,759)
4. Benefit payments	(85,131,834)	(87,722,652)
5. Refunds of contributions	0	0
6. Employer adjustments	0	0
7. Administrative expenses	(1,281,825)	(1,223,441)
8. Miscellaneous	0	0
9. Other	(19,304)	0
10. Change in audited assets, beginning of year	0	0
11. Total change in market value	\$ (74,964,775)	\$ (190,792,971)
12. Market value, end of year	\$ 1,087,985,713	\$ 897,192,742

**Exhibit 3.2a - Calculation of Excess Investment Income for Actuarial Value of Assets (401(a) Only)**

Item	Plan Year Ending June 30			
	2006	2007	2008	2009
1. Market value of assets, beginning of year	\$ 21,029,388,861	\$ 22,671,365,333	\$ 26,476,068,259	\$ 24,208,124,045
2. Contributions during year	1,171,724,785	1,527,694,896	1,706,704,285	1,667,446,038
3. Benefits paid during year	(1,512,124,626)	(1,624,688,898)	(1,741,909,166)	(1,866,765,965)
4. Refunds paid during year	(59,696,449)	(76,120,285)	(104,080,495)	(118,609,040)
5. Administrative expenses, assumed end of year	(26,555,563)	(29,132,681)	(28,588,722)	(26,803,812)
6. Other changes and net transfers	(4,558,022)	(4,702,840)	(171,979,725)	(2,399,977)
7. Net investment income for year, net of all expenses	2,046,630,784	3,982,520,053	(1,956,679,113)	(4,381,551,668)
8. Expected net investment income at 8%				
a. Market value of assets, beginning of year	1,682,351,109	1,813,709,227	2,118,085,461	1,936,649,924
b. Contributions	46,868,991	61,107,796	68,268,171	66,697,842
c. Benefits	(65,525,400)	(70,403,186)	(75,482,731)	(80,893,192)
d. Refunds	(2,387,858)	(3,044,811)	(4,510,155)	(5,139,725)
e. Administrative expenses	0	0	0	0
f. Other	(182,321)	(188,114)	(6,879,189)	(95,999)
g. Total	1,661,124,521	1,801,180,912	2,099,481,557	1,917,218,850
9. Excess investment income for year (Item 7 - Item 8.g.)	\$ 385,506,263	\$ 2,181,339,141	\$ (4,056,160,670)	\$ (6,298,770,518)

**Exhibit 3.2b - Calculation of Excess Investment Income for Actuarial Value of Assets (401(h) Only)**

Item	Plan Year Ending June 30			
	2006	2007	2008	2009
1. Market value of assets, beginning of year	\$ 871,636,743	\$ 969,747,605	\$ 1,162,950,488	\$ 1,087,985,713
2. Contributions during year	93,461,175	103,473,474	99,026,974	90,489,881
3. Benefits paid during year	(80,827,041)	(83,236,444)	(85,131,834)	(87,722,652)
4. Refunds paid during year	0	0	0	0
5. Administrative expenses, assumed end of year	(1,073,798)	(1,268,796)	(1,281,825)	(1,223,441)
6. Other changes and net transfers	0	(112,126)	(19,304)	0
7. Net investment income for year, net of all expenses	85,476,728	173,077,979	(88,840,611)	(193,560,200)
8. Expected net investment income at 8%				
a. Market value of assets, beginning of year	69,730,939	77,579,808	93,036,039	87,038,857
b. Contributions	3,738,447	4,138,939	3,961,079	3,619,595
c. Benefits	(3,502,505)	(3,606,913)	(3,689,046)	(3,801,315)
d. Refunds	0	0	0	0
e. Administrative expenses	0	0	0	0
f. Other	0	(4,485)	(772)	0
g. Total	69,966,881	78,107,349	93,307,300	86,857,137
9. Excess investment income for year (Item 7 - Item 8.g.)	\$ 15,509,847	\$ 94,970,630	\$ (182,147,911)	\$ (280,417,337)

**Exhibit 3.3a - Development of Actuarial Value of Assets (401(a) Only)**

Item	Valuation as of June 30, 2008	Valuation as of June 30, 2009
1. Excess (shortfall) of investment income for current year and previous seven years:		
a. Current year	\$ (4,056,160,670)	\$ (6,298,770,518)
b. Current year – 1	2,181,339,141	(4,056,160,670)
c. Current year – 2	385,506,263	2,181,339,141
d. Current year – 3	86,948,970	385,506,263
e. Current year – 4	1,614,125,853	86,948,970
f. Current year – 5	(1,074,084,926)	1,614,125,853
g. Current year – 6	(3,994,318,422)	(1,074,084,926)
h. Current year – 7		(3,994,318,422)
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ (3,650,544,603)	\$ (5,668,893,466)
b. Current year – 1 (80% deferral)	1,745,071,313	(3,244,928,536)
c. Current year – 2 (70% deferral)	269,854,384	1,526,937,399
d. Current year – 3 (60% deferral)	52,169,382	231,303,758
e. Current year – 4 (50% deferral)	807,062,927	43,474,485
f. Current year – 5 (40% deferral)	(429,633,970)	645,650,341
g. Current year – 6 (30% deferral)	(1,198,295,527)	(322,225,478)
h. Current year – 7 (20% deferral)		(798,863,684)
i. Total deferred for year	\$ (2,404,316,094)	\$ (7,587,545,181)
3. Market value of plan assets, end of year	\$ 24,208,124,045	\$ 19,506,243,433
4. Actuarial value of plan assets, end of year (Item 3 - Item 2.g.)	\$ 26,612,440,139	\$ 27,093,788,614

**Exhibit 3.3b - Development of Actuarial Value of Assets (401(h) Only)**

Item	Valuation as of June 30, 2008	Valuation as of June 30, 2009
1. Excess (shortfall) of investment income for current year and previous seven years:		
a. Current year	\$ (182,147,911)	\$ (280,417,337)
b. Current year – 1	94,970,630	(182,147,911)
c. Current year – 2	15,509,847	94,970,630
d. Current year – 3	3,700,598	15,509,847
e. Current year – 4	58,647,224	3,700,598
f. Current year – 5	(48,478,489)	58,647,224
g. Current year – 6	(288,175,769)	(48,478,489)
h. Current year – 7		(288,175,769)
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ (163,933,120)	\$ (252,375,603)
b. Current year – 1 (80% deferral)	75,976,504	(145,718,329)
c. Current year – 2 (70% deferral)	10,856,893	66,479,441
d. Current year – 3 (60% deferral)	2,220,359	9,305,908
e. Current year – 4 (50% deferral)	29,323,612	1,850,299
f. Current year – 5 (40% deferral)	(19,391,395)	23,458,890
g. Current year – 6 (30% deferral)	(86,452,731)	(14,543,546)
h. Current year – 7 (20% deferral)		(57,635,154)
i. Total deferred for year	\$ (151,399,878)	\$ (369,178,094)
3. Market value of plan assets, end of year	\$ 1,087,985,713	\$ 897,192,742
4. Actuarial value of plan assets, end of year (Item 3 - Item 2.g.)	\$ 1,239,385,591	\$ 1,266,370,836



**Exhibit 3.4a - Actual Versus Expected Actuarial Assets (401(a) Only)**

Item	Valuation as of June 30, 2008	Valuation as of June 30, 2009
1. Actuarial assets, beginning of year	\$ 25,309,888,063	\$ 26,612,440,139
2. Total contributions during year	1,706,704,285	1,667,446,038
3. Benefits paid during year	(1,741,909,166)	(1,866,765,965)
4. Refunds paid during year	(104,080,495)	(118,609,040)
5. Other changes and net transfers	(171,979,725)	(2,399,977)
6. Assumed net investment income at 8%		
a. Beginning of year assets	2,024,791,045	2,128,995,211
b. Contributions	68,268,171	66,697,842
c. Benefits	(75,482,731)	(80,893,192)
d. Refunds	(4,510,155)	(5,139,725)
e. Other	<u>(6,879,189)</u>	<u>(95,999)</u>
f. Total	\$ 2,006,187,141	\$ 2,109,564,137
7. Expected actuarial assets, end of year (Sum of Items 1 through 6)	\$ 27,004,810,103	\$ 28,401,675,332
8. Actual actuarial assets, end of year	\$ 26,612,440,139	\$ 27,093,788,614
9. Asset gain/(loss) for year (Item 8 - Item 7)	\$ (392,369,964)	\$ (1,307,886,718)

**Exhibit 3.4b - Actual Versus Expected Actuarial Assets (401(h) Only)**

Item	Valuation as of June 30, 2008	Valuation as of June 30, 2009
1. Actuarial assets, beginning of year	\$ 1,166,799,842	\$ 1,239,385,591
2. Total contributions during year	99,026,974	90,489,881
3. Benefits paid during year	(85,131,834)	(87,722,652)
4. Refunds paid during year	0	0
5. Other changes and net transfers	(19,304)	0
6. Assumed net investment income at 8%		
a. Beginning of year assets	93,343,987	99,150,847
b. Contributions	3,961,079	3,619,595
c. Benefits	(3,689,046)	(3,801,315)
d. Refunds	0	0
e. Other	(772)	0
f. Total	\$ 93,615,248	\$ 98,969,127
7. Expected actuarial assets, end of year (Sum of Items 1 through 6)	\$ 1,274,290,926	\$ 1,341,121,947
8. Actual actuarial assets, end of year	\$ 1,239,385,591	\$ 1,266,370,836
9. Asset gain/(loss) for year (Item 8 - Item 7)	\$ (34,905,335)	\$ (74,751,111)

Exhibit 3.5a - Estimate of Yields for the Year (401(a) Only)

Item	Basis of Assets	
	Market Value	Actuarial Value
1. Net investment income for the year (including net realized gains and net of investment expenses)	\$ (4,354,747,856)	\$ 828,481,231
2. Administrative expenses for the year	\$ 26,803,812	\$ 26,803,812
3. Net investment income for the asset valuation method	\$ (4,381,551,668)	\$ 801,677,419
4. Beginning of year asset value	\$ 24,208,124,045	\$ 26,612,440,139
5. End of year asset value	\$ 19,506,243,433	\$ 27,093,788,614
6. Estimated yield based on mid-year timing for contributions and 13/24 timing for benefit payments	(18.28%)	3.04%

Exhibit 3.5b - Estimate of Yields for the Year (401(h) Only)

Item	Basis of Assets	
	Market Value	Actuarial Value
1. Net investment income for the year (including net realized gains and net of investment expenses)	\$ (192,336,759)	\$ 25,441,457
2. Administrative expenses for the year	\$ 1,223,441	\$ 1,223,441
3. Net investment income for the asset valuation method	\$ (193,560,200)	\$ 24,218,016
4. Beginning of year asset value	\$ 1,087,985,713	\$ 1,239,385,591
5. End of year asset value	\$ 897,192,742	\$ 1,266,370,836
6. Estimated yield based on mid-year timing for contributions and 13/24 timing for benefit payments	(17.83%)	1.96%

Exhibit 3.6 - History of Cash Flow

Year Ending June 30	Contributions for the Year	Expenditures During the Year				External Cash Flow for the Year	End of Year Market Value of Assets	External Cash Flow as Percentage of Market
		Benefit Payments	Refunds of Contributions	Administrative Expenses <sup>1</sup>	Total			
1988	\$ 226,391,986	\$ (184,014,825)	\$ (32,440,739)	\$ (1,858,980)	\$ (218,314,544)	\$ 8,077,442	\$ 6,354,326,735	0.1%
1989	309,456,756	(211,706,362)	(32,763,953)	(2,796,196)	(247,266,511)	62,190,245	7,314,715,626	0.9%
1990	129,780,928	(291,865,604)	(31,871,455)	(3,016,679)	(326,753,738)	(196,972,810)	7,784,051,423	(2.5%)
1991	267,194,502	(313,739,121)	(27,329,212)	(4,889,991)	(345,958,324)	(78,763,822)	8,298,777,637	(0.9%)
1992	265,305,634	(351,219,516)	(24,689,694)	(6,282,138)	(382,191,348)	(116,885,714)	9,375,565,917	(1.2%)
1993	278,158,497	(414,519,290)	(21,419,534)	(5,774,866)	(441,713,690)	(163,555,193)	10,712,781,278	(1.5%)
1994	256,841,228	(445,763,795)	22,516,743)	(5,222,224)	(473,502,762)	(216,661,534)	10,680,073,807	(2.0%)
1995	326,663,838	(484,729,970)	(24,364,930)	(5,826,425)	(514,921,325)	(188,257,487)	12,356,078,492	(1.5%)
1996 <sup>2</sup>	299,724,778	(510,236,051)	(26,307,534)	(5,345,583)	(541,889,168)	(242,164,390)	13,917,637,400	(1.7%)
1997 <sup>2</sup>	309,394,448	(550,078,719)	(30,838,244)	(6,740,459)	(587,657,422)	(278,262,974)	16,397,938,329	(1.7%)
1998 <sup>2</sup>	321,349,998	(598,804,992)	(29,749,907)	(8,386,901)	(636,941,800)	(315,591,802)	19,389,956,806	(1.6%)
1999 <sup>2</sup>	347,970,526	(652,854,456)	(26,089,213)	(9,932,871)	(688,876,540)	(340,906,014)	21,836,381,722	(1.6%)
2000 <sup>2</sup>	283,772,496	(723,611,965)	(64,976,507)	(10,775,218)	(799,363,690)	(515,591,194)	23,187,551,913	(2.2%)
2001 <sup>2</sup>	367,191,042	(828,545,637)	(91,824,591)	(9,843,046)	(930,213,274)	(563,022,232)	21,872,916,420	(2.6%)
2002 <sup>2</sup>	321,775,573	(986,288,636)	(42,765,105)	(15,375,486)	(1,044,429,227)	(722,653,654)	18,594,856,337	(3.9%)
2003 <sup>2</sup>	375,522,329	(1,126,828,875)	(35,948,463)	(21,395,972)	(1,184,173,310)	(808,650,981)	18,116,820,935	(4.5%)
2004 <sup>2</sup>	865,966,060	(1,292,412,047)	(34,006,055)	(23,644,210)	(1,350,062,312)	(484,076,252)	20,748,573,247	(2.3%)
2005 <sup>2</sup>	946,697,219	(1,468,665,813)	(42,026,148)	(22,249,002)	(1,532,940,963)	(586,243,744)	21,901,025,604	(2.7%)
2006 <sup>2</sup>	1,265,185,960	(1,592,951,667)	(59,696,449)	(27,629,361)	(1,680,277,477)	(415,091,517)	23,641,112,938	(1.8%)
2007 <sup>2</sup>	1,631,168,370	(1,707,925,342)	(76,120,285)	(30,401,477)	(1,814,497,104)	(183,278,734)	27,639,018,747	(0.7%)
2008 <sup>2</sup>	1,805,731,259	(1,827,041,000)	(104,080,495)	(29,870,547)	(1,960,992,042)	(155,260,783)	25,296,109,758	(0.6%)
2009 <sup>2</sup>	1,757,935,919	(1,954,488,617)	(118,609,040)	(28,027,253)	(2,101,124,910)	(343,188,991)	20,403,436,175	(1.7%)

<sup>1</sup> Including LTD management fees prior to 1996

<sup>2</sup> 401(a) assets and 401(h) assets combined

### Actuarial Balance Sheet

The results of the actuarial valuation of the Plan as of June 30, 2008, and June 30, 2009, are summarized in the actuarial balance sheet in Exhibit 4.1. The results for 2009 are based on the benefit provisions of the Plan as of June 30, 2009, as summarized in Section 11 and on the actuarial assumptions and methods shown in Section 9.

Exhibit 4.1 - Actuarial Balance Sheet

ACTUARIAL ASSETS

	June 30	
	2008	2009
<b>I Present Assets At Actuarial Value:</b>		
1. Reserve for retired members and beneficiaries	\$ 16,426,154,403	\$ 17,484,633,479
2. Reserve for disabled members	541,533,993	589,370,142
3. Reserve for other-than-plan retirees	9,893,852	9,480,846
4. Reserve for PBI COLAs		
(a) Reserve for July 1st COLA	0	0
(b) Reserve for future COLAs	0	0
5. Member contributions		
(a) Plan members	5,372,860,665	6,055,283,650
(b) System members	N/A	N/A
6. Employer contributions		
(a) Plan members	5,048,543,368	5,728,443,284
(b) System members	N/A	N/A
7. Other miscellaneous		
(a) ASRS building and land	0	0
(b) Other	0	0
8. Additional assets	(2,102,876,523)	(9,463,775,226)
9. Total present assets	\$ 25,296,109,758	\$ 20,403,436,175
10. Adjustment to market value due to actuarial asset valuation method	2,555,715,972	7,956,723,275
11. Total actuarial value of present assets	\$ 27,851,825,730	\$ 28,360,159,450
<b>II Prospective Assets:</b>		
12. Unfunded actuarial accrued liability	6,019,039,015	7,382,379,122
13. TOTAL ACTUARIAL ASSETS	\$ 33,870,864,745	\$ 35,742,538,572

Exhibit 4.1 - Actuarial Balance Sheet

**ACTUARIAL LIABILITIES**

	June 30	
	2008	2009
<b>III Present Value of Benefits Presently Being Paid:</b>		
14. (a) Benefits for retired members and beneficiaries	\$ 15,847,041,269	\$ 16,896,871,278
(b) Health insurance premium supplement	579,113,134	587,762,201
15. (a) Benefits for disabled members	507,777,468	556,356,851
(b) Health insurance premium supplement	33,756,525	33,013,291
16. (a) Benefits for other-than-plan members	2,954,917	2,719,584
(b) Health insurance premium supplement	6,938,935	6,761,262
17. Total present value of benefits presently being paid	\$ 16,977,582,248	\$ 18,083,484,467
<b>IV Present Value of Benefits Payable in the Future to Present Members:</b>		
18. Active members		
(a) Service retirement benefits	\$ 13,143,213,500	\$ 13,662,818,533
(b) Health insurance premium supplement	773,363,955	776,581,851
(c) Disability retirement benefits	585,789,918	430,910,531
(d) Pre-retirement death benefits	324,689,013	359,548,111
(e) Withdrawal benefits	639,834,152	948,857,109
(f) Total active members	\$ 15,466,890,538	\$ 16,178,716,135
19. Inactive members		
(a) Retirement Benefits	\$ 1,373,176,932	\$ 1,432,033,875
(b) Health insurance premium supplement	53,215,027	48,304,095
(c) Total inactive members	\$ 1,426,391,959	\$ 1,480,337,970
20. Total	\$ 33,870,864,745	\$ 35,742,538,572
<b>V Other Liabilities and Reserves:</b>		
21. Reserve for other miscellaneous liabilities and reserves	\$ 0	\$ 0
22. Reserve for PBI COLAs	\$ 0	\$ 0
23. TOTAL ACTUARIAL LIABILITIES	\$ 33,870,864,745	\$ 35,742,538,572



**Exhibit 4.2 - Relative Size of Unfunded Actuarial Accrued Liability**

Year Ending June 30	Unfunded Actuarial Accrued Liability in Millions	Relative to Actuarial Covered Payroll		Relative to Actuarial Value of Present Assets		Relative to Total Actuarial Liabilities	
		Covered Payroll in Millions	Percent of Covered Payroll	Present Assets in Millions	Percent of Present Assets	Actuarial Liabilities in Millions	Percent of Actuarial Liabilities
1980	\$ 436	\$ 1,373	31.8%	\$ 1,631	26.7%	\$ 3,400	12.8%
1981	364	1,567	23.2%	1,982	18.4%	3,946	9.2%
1982	472	1,734	27.2%	2,255	20.9%	4,547	10.4%
1983	301	1,841	16.3%	2,777	10.8%	5,009	6.0%
1984	248	1,906	13.0%	3,174	7.8%	5,351	4.6%
1985	301	2,120	14.2%	3,654	8.2%	5,874	5.1%
1986	95	2,361	4.0%	4,538	2.1%	6,718	1.4%
1987	(129)	2,478	(5.2%)	5,531	(2.3%)	7,636	(1.7%)
1988	(292)	2,818	(10.3%)	6,000	(4.9%)	8,251	(3.5%)
1989	(510)	2,994	(17.0%)	6,686	(7.6%)	6,176	(8.3%)
1990	(552)	3,212	(17.2%)	7,297	(7.6%)	6,745	(8.2%)
1991	(654)	3,453	(18.9%)	7,822	(8.4%)	7,168	(9.1%)
1992	(632)	3,616	(17.5%)	8,842	(7.1%)	8,210	(7.7%)
1993	(849)	3,748	(22.7%)	9,770	(8.7%)	8,921	(9.5%)
1994	(872)	4,126	(21.1%)	10,540	(8.3%)	9,668	(9.0%)
1995	(1,217)	4,432	(27.5%)	11,521	(10.6%)	10,304	(11.8%)
1996	(1,468)	4,632	(31.7%)	12,579	(11.7%)	11,111	(13.2%)
1997	(1,784)	4,836	(36.9%)	14,169	(12.6%)	12,385	(14.4%)
1998	(2,530)	5,164	(49.0%)	16,168	(15.6%)	13,638	(18.6%)
1999	(2,639)	5,488	(48.1%)	18,761	(14.1%)	16,122	(16.4%)
2000	(3,578)	5,894	(60.7%)	21,127	(16.9%)	17,549	(20.4%)
2001	(2,587)	6,357	(40.7%)	22,855	(11.3%)	20,269	(12.8%)
2002	(1,036)	6,989	(14.8%)	23,623	(4.4%)	22,587	(4.6%)
2003	787	7,297	10.8%	23,517	3.3%	24,304	3.2%
2004	2,275	7,486	30.4%	23,643	9.6%	25,918	8.8%
2005	4,106	8,032	51.1%	23,837	17.2%	27,943	14.7%
2006	4,845	8,312	58.3%	24,852	19.5%	29,697	16.3%
2007	5,519	9,162	60.2%	26,477	20.8%	31,996	17.2%
2008	6,019	9,708	62.0%	27,852	21.6%	33,871	17.8%
2009	7,382	9,835	75.1%	28,360	26.0%	35,743	20.7%

## Contribution Rates

### Normal Cost

Exhibit 5.1 indicates that the normal cost as of June 30, 2009, is 12.98% of pay compared to 12.90% in the 2008 valuation. This normal cost is developed based on the prescribed Projected Unit Credit (PUC) actuarial valuation method. It includes both employer and member components.

### Summary of Cost Items

Exhibit 5.2 compares a number of the key actuarial items for the 2009 valuation with the corresponding items for the 2008 valuation.

### Contribution Rates

The employer and member contribution rates are each determined as one-half of the percent of pay needed to pay the normal cost of the Plan and to amortize the Unfunded Actuarial Accrued Liability (UAAL). For the valuation as of June 30, 2009, the normal cost of the Plan is 12.98% and the amortization of the UAAL is 6.17%. The calculated employer and member rates are equal to:

$$\frac{1}{2} \times (12.98\% + 6.17\%) = 9.58\%$$

The contribution rates are then rounded to the nearest 0.05%, i.e., to 9.60% for each member and employer.

If the UAAL of the Plan were eliminated, the employer and member rates would be:

$$\frac{1}{2} \times (12.98\% + 0.00\%) = 6.49\%$$

This difference of 3.09% (i.e., 9.58% - 6.49%) is due entirely to the UAAL of the Plan. Thus, the current UAAL of the Plan is equivalent to a 3.09% increase in the employer and member contribution rates determined by the 2009 valuation.

The member and employer contribution rates determined by the 2009 valuation are each 9.60% of compensation. Because of the separation of the health premium supplement into the 401(h) account, we must split the contribution rates into 401(a) and 401(h) portions. We have assumed that all member contributions will be contributed to the 401(a) account. This assumption is made to avoid any possible qualification problems due to refunds of member contributions. The contribution rates may be allocated as shown below:

Item	401(a) Account	401(h) Account	Total
1. Member Contribution Rates	9.60%	0.00%	9.60%
2. Employer Contribution Rates	<u>9.01%</u>	<u>0.59%</u>	<u>9.60%</u>
3. Total Contribution Rates	18.61%	0.59%	19.20%

Exhibit 5.3 shows the history of the contribution rates.

Exhibit 5.1 - Analysis of Normal Cost by Component

Benefit Component	Normal Cost as % of Pay	
	2008	2009
1. Retirement benefits	9.76%	9.63%
2. Health insurance premium supplement	0.48%	0.43%
3. Disability benefits (Deferred Retirement)	0.55%	0.37%
4. Death benefits	0.33%	0.33%
5. Termination benefits		
a. Refunds <sup>1</sup>	0.54%	N/A
b. Vested deferred benefits	1.24%	N/A
c. Total	1.78%	2.22%
6. Total	12.90%	12.98%

<sup>1</sup> Due to a change in cashout assumption for active members who terminate with less than five years of service. In 2009, the assumption was changed such that the member is assumed to elect the greater of the annuity or the lump sum. Due to this change, we no longer have the normal cost split for refunds.

Exhibit 5.2 - Summary of Cost Items

	Valuation as of June 30, 2008		Valuation as of June 30, 2009	
		Cost as % of Pay		Cost as % of Pay
1. Members				
a. Active members	226,415		222,515	
b. Inactive members	203,004		210,509	
c. Retired members and beneficiaries	88,956		94,424	
d. Disabled retirees	4,882		4,712	
e. Total	523,257		532,160	
f. Other-than-plan retirees receiving only benefit increases (401(a))	363		323	
g. Other-than-plan retirees receiving only health insurance benefits (401(h))	529		555	
h. Other-than-plan retirees receiving both benefit increases (401(a)) and health insurance benefits (401(h))	181		164	
2. Covered payroll	\$ 9,708,352,896		\$ 9,834,810,345	
3. Averages for active members				
a. Average age	44.9		45.2	
b. Average years of service	8.5		8.8	
c. Average pay	\$ 42,879		\$ 44,198	
4. Normal cost rate	12.90%		12.98%	
5. Actuarial accrued liability				
a. Retired members and beneficiaries	\$ 16,426,154,403		\$ 17,484,633,479	
b. Disabled members	541,533,993		589,370,142	
c. Benefits for other- than-plan retirees	9,893,852		9,480,846	
d. Active members	15,466,890,538		16,178,716,135	
e. Inactive members	1,426,391,959		1,480,337,970	
f. Reserve for PBI COLAs	0		0	
g. Total	\$ 33,870,864,745	348.9%	\$ 35,742,538,572	363.4%
6. Present actuarial assets	\$ 27,851,825,730	286.9%	\$ 28,360,159,450	288.4%
7. Unfunded actuarial accrued liability	\$ 6,019,039,015	62.0%	\$ 7,382,379,122	75.1%

Exhibit 5.2 – Summary of Cost Items (cont.)

	Valuation as of June 30, 2008		Valuation as of June 30, 2009	
		Cost as % of Pay		Cost as % of Pay
8. Section 38-737 funding period	30 years		30 years	
9. Section 38-737 contribution rate				
A. 401(a) Account				
a. Member	9.00%		9.60%	
b. Employer	8.34%		9.01%	
c. Total	17.34%		18.61%	
B. 401(h) Account				
a. Member	0.00%		0.00%	
b. Employer	0.66%		0.59%	
c. Total	0.66%		0.59%	
C. Total of Combined Accounts				
a. Member	9.00%		9.60%	
b. Employer	9.00%		9.60%	
c. Total	18.00%		19.20%	
10. Estimated yield on 401(a) actuarial assets	6.44%		3.04%	
11. Relative size of unfunded actuarial accrued liability				
a. As percentage of actuarial assets	21.6%		26.0%	
b. As percentage of covered payroll	62.0%		75.1%	
c. As percentage of total actuarial accrued liability	17.8%		20.7%	

**Exhibit 5.3 - History of Contribution Rates**

Fiscal Year Beginning July 1	Calculated Rates		Actual Rates		Total Rate	
	Member	Employer	Member	Employer	Calculated	Actual
1980	7.00%	6.28%	7.00%	7.00%	13.28%	14.00%
1981	7.00	6.29	7.00	7.00	13.29	14.00
1982	7.00	5.79	7.00	7.00	12.79	14.00
1983	7.00	6.04	7.00	7.00	13.04	14.00
1984	6.27	6.27	6.27	6.27	12.54	12.54
1985	5.67	5.67	5.67	5.67	11.34	11.34
1986	5.53	5.53	5.53	5.53	11.06	11.06
1987	5.16	5.16	4.00	4.00	10.32	8.00
1988	5.09	5.09	5.09	5.09	10.18	10.18
1989	4.69	4.69	2.00	2.00	9.38	4.00
1990	3.82	3.82	3.82	3.82	7.64	7.64
1991	3.60	3.60	3.60	3.60	7.20	7.20
1992	3.59	3.59	3.59	3.59	7.18	7.18
1993	4.09	4.09	3.14	3.14	8.18	6.28
1994	3.75	3.75	3.75	3.75	7.50	7.50
1995	3.95	3.95	3.36	3.36	7.90	6.72
1996	3.20	3.20	3.20	3.20	6.40	6.40
1997	3.05	3.05	3.05	3.05	6.10	6.10
1998	2.85	2.85	2.85	2.85	5.70	5.70
1999	2.17	2.17	2.17	2.17	4.34	4.34
2000	2.73 <sup>1</sup>	2.73 <sup>1</sup>	2.17	2.17	5.46 <sup>1</sup>	4.34
2001	1.92	1.92	2.00	2.00	3.84	4.00
2002	3.86 <sup>1</sup>	3.86 <sup>1</sup>	2.00	2.00	7.72 <sup>1</sup>	4.00
2003	5.20	5.20	5.20	5.20	10.40	10.40
2004	6.96 <sup>1</sup>	6.96 <sup>1</sup>	5.20	5.20	13.92 <sup>1</sup>	10.40
2005	7.75	7.75	6.90 <sup>2</sup>	6.90 <sup>2</sup>	15.50	13.80 <sup>2</sup>
2006	8.70 <sup>1</sup>	8.70 <sup>1</sup>	8.60 <sup>2</sup>	8.60 <sup>2</sup>	17.40 <sup>1</sup>	17.20 <sup>2</sup>
2007	9.10	9.10	9.10	9.10	18.20	18.20
2008	8.94	8.94	8.95	8.95	17.88	17.90
2009	9.00	9.00	9.00	9.00	18.00	18.00
2010	9.58	9.58	9.60	9.60	19.15	19.20

<sup>1</sup> Hypothetical rate. The actual contribution rate was set by the prior year valuation.

<sup>2</sup> Legislative action has fixed the rates for fiscal 2006 and 2007 at 6.90% and 8.60%, respectively.

### Actuarial Gains and Losses

The purpose of this section is to determine the source of the actuarial gains and losses during the year that have caused the UAAL to increase.

The valuation of the Plan reflects a loss on the investment return on the actuarial value of assets of \$1,383 million. This loss is due to the investment experience of fiscal 2009 and delayed recognition of losses that have occurred in earlier years. Investment losses are recognized in actuarial assets over a ten-year period. The yield rate on actuarial assets for the 2009 fiscal year is 3.04% on the pension assets (401(a)) and 1.96% on the health supplement assets (401(h)) compared to last year's returns of 6.44% and 5.02%, respectively. The actuarially assumed rate of return is 8%. There was also a gain of \$224 million on the liability experience and a loss of \$128 million due to contributions less than expected. The total loss for the year was \$1,287 million.

**Exhibit 6.1 - Actuarial Gain or Loss for the Year**

Item	Valuation as of June 30, 2008	Valuation as of June 30, 2009
<b>A. Calculation of Total Actuarial Gain or Loss</b>		
1. Unfunded actuarial accrued liability (UAAL), previous year	\$ 5,518,983,521	\$ 6,019,039,015
2. Normal cost for the year	\$ 1,218,902,134	\$ 1,251,483,439
3. Contributions for the year <sup>1</sup>	\$ (1,715,701,380)	\$ (1,688,805,483)
4. Interest at 8%		
a. On UAAL	441,518,682	481,523,121
b. On normal cost	97,512,171	100,118,675
c. On contributions	(68,628,055)	(67,552,219)
d. Total	\$ 470,402,798	\$ 514,089,577
5. Expected UAAL (Sum of Items 1 - 4)	\$ 5,492,587,073	\$ 6,095,806,548
6. Actual UAAL	\$ 6,019,039,015	\$ 7,382,379,122
7. Gain/(loss) for the year (Item 5 - Item 6)	\$ (526,451,942)	\$ (1,286,572,574)
<b>B. Source of Gains and Losses</b>		
8. Asset gain/(loss) for the year (Tables 3.4a and 3.4b, Item 10)	\$ (427,275,299)	\$ (1,382,637,829)
9. Asset gain/(loss) as a percentage of actuarial assets	-1.5%	-4.9%
10. PBI Cola		
a. Excess Earnings Reserve for Fiscal Year 2008	\$ 0	\$ 0
b. Excess Earnings Reserve for Fiscal Year 2009	\$ 0	\$ 0
11. Contribution gain/(loss) for the year	N/A <sup>2</sup>	\$ (127,593,371)
12. Total actuarial accrued liability gain/(loss) for the year (Item 7 - Item 8 - Item 11)	\$ (99,176,643)	\$ 223,658,626
13. Analysis of actuarial accrued liability gain/(loss)		
a. Legislative changes (Benefit cap removal)	\$ 0	\$ 3,203,227
b. Assumption changes (Experience study changes)	139,553,496	82,453,113
c. Changes due to actuarial audit	N/A	16,623,518
d. Experience liability gain/(loss)	(238,730,139)	121,378,768
e. Total actuarial accrued liability gain/(loss)	\$ (99,176,643)	\$ 223,658,626
14. Experience liability gain/(loss) as percentage of total actuarial liability (Item 13d as % of Item 5g of Exhibit 5.2)	-0.70%	0.34%

<sup>1</sup> Does not include member reimbursements of employee contributions.

<sup>2</sup> Contribution gain/(loss) for the plan year ending June 30, 2008 is included in the experience liability gain/(loss).



**Exhibit 6.2 - Analysis of Change in Contribution Rate**

Basis	Unfunded Actuarial Accrued Liability (\$ Millions)	Employer/Member Contribution Rate	Change in Contribution Rate
1. Valuation as of June 30, 2008	\$ 6,019	9.00%	-
2. Expected Experience	6,096	8.92%	-0.08%
3. Delay in contribution rate change	6,223	8.98%	0.06%
4. 2008/2009 liability experience	6,091	9.08%	0.10%
5. 2008/2009 asset experience	7,474	9.66%	0.58%
6. 2008/2009 assumption change	7,391	9.58%	-0.08%
7. 2008/2009 administrative change	7,388	9.58%	0.00%
8. Rounding to the nearest 0.05%	7,388	9.60%	0.02%

**Exhibit 6.3 - Analysis of Change in Actuarial Accrued Liability**

Basis	Actuarial Accrued Liability
1. Valuation as of June 30, 2008	\$ 33,870,864,745
2. Expected Experience	2,095,332,453
3. Assumption Changes	(82,453,113)
4. Legislative Changes	(3,203,227)
5. Audit Changes	(16,623,518)
6. Liability (Gain)/Loss	(121,378,768)
7. Valuation as of June 30, 2009	\$ 35,742,538,572

**Exhibit 6.4 – Experience Liability Gain/(Loss)**

Decrement	Gain/(Loss) as of June 30, 2008	Gain/(Loss) as of June 30, 2009	Total Gain/(Loss) Since June 30, 2009
Active Mortality	N/A	\$ (4,691,148)	\$ (4,691,148)
Active Withdrawal	N/A	27,297,370	27,297,370
Active Disability	N/A	(7,164,074)	(7,164,074)
Active Retirement	N/A	(8,802,279)	(8,802,279)
New Entrants	N/A	(89,857,848)	(89,857,848)
Salary	N/A	163,249,916	163,249,916
Inactive Mortality	N/A	18,002,983	18,002,983
Other	N/A	23,343,848	23,343,848
Total	N/A	\$ 121,378,768	\$ 121,378,768

### Permanent Benefit Increase

Exhibit 7.1 shows the determination of the PBI for 2009. The determination of the "Excess Investment Earnings" held in reserve for future PBIs is shown in Items 11 through 13. As shown in Item 13c, no assets are available for future PBIs. Since the actuarial investment return (on the actuarial value of assets) of 3.04% is below 8% for fiscal year 2009, there are no additional "Excess Investment Earnings" to be allocated for Permanent Benefit Increases (PBIs). Future PBI and enhanced PBI awards are not included in this valuation.

**Exhibit 7.1 – Determination of Permanent Benefit Increase (PBI) COLA**

<u>Determination of PBI COLA, EPBI effective July 1, 2010</u>	
1. Actuarial Present Value (APV) for all Retirees and Beneficiaries as of June 30, 2008	\$ 15,847,041,269
2. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2008	6.44%
3. Excess Earnings Available for COLA	
a. Carry-over From Prior Year	\$ 0
b. Current Year (Item 1 x [Item 2 - 8%])	0
c. Total Excess Earnings Available for COLA (Item 3.a + Item 3.b.)	\$ 0
4. One Percent of APV of all Retirees and Beneficiaries as of June 30, 2008	\$ 158,470,413
5. Preliminary COLA % (Item 3.c / Item 4 x 0.01)	0.0%
6. Actual COLA % (Item 5, but not greater than 4% and equal to 0% if less than 1%)	0.0%
7. Target Cost of 2009 COLA (Item 4 x Item 6)	\$ 0
8. APV of \$1 Per Year of Service for Eligible Group	0
9. Per Year of Service Factor for 2009 COLA	0
10. Excess Investment Earnings to be Carried Forward to Next Year	0
11. Determination of EPBI (8% of 3c)	\$ 0
<u>Determination of Reserves for Future PBI COLAs:</u>	
12. Actuarial Present Value (APV) for all Retirees and Beneficiaries as of June 30, 2009	\$ 16,896,871,278
13. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2009	3.04%
14. Excess Earnings Reserves for Future COLAs	
a. Carry Over From Prior Year (Item 10)	\$ 0
b. Current Year (Item 11 x [Item 12 - 8%, minimum 0])	0
c. Total Excess Earnings Reserves for Future COLAs	\$ 0

## **GASB Disclosure and CAFR Information**

This section focuses on the required GASB disclosures and the required CAFR information.

### **GASB 25 Schedule of Funding Progress**

The Governmental Accounting Standards Board (GASB) issued Statement No. 25 that establishes reporting and disclosures requirements for public sector defined benefit pension plans. The Schedule of Funding Progress shows a historical comparison of the 401(a) Plan's assets and liabilities using the same actuarial method used for funding the 401(a) Plan.

### **GASB 25 Schedule of Employer Contributions**

The required Schedule of Employer Contributions compares the actual employer contributions to the "Annual Required Contributions" (ARC). The ARC is the employer contribution determined under GASB 25 standards (normal cost and amortization of unfunded actuarial accrued liabilities) using the actuarial funding method used for funding the 401(a) Plan.

Under GASB 25, only the 401(a) portion of the Plan is to be disclosed. Therefore, the values in the tables reflect only the pension portion of the Plan. They exclude the assets and actuarial accrued liabilities associated with the health supplement.

### **GASB 43 Schedule of Funding Progress**

The Governmental Accounting Standards Board (GASB) issued Statement No. 43 that establishes reporting and disclosures requirements for public sector postemployment benefit plans other than pension plans. The Schedule of Funding Progress shows a historical comparison of the 401(h) Plan's assets and liabilities, using the same actuarial method as the one used for funding the 401(h) Plan.

### **GASB 43 Schedule of Employer Contributions**

The required Schedule of Employer Contributions compares the actual employer contributions to the "Annual Required Contributions" (ARC). The ARC is the employer contribution determined under GASB 43 standards (normal cost and amortization of unfunded actuarial accrued liabilities) using the actuarial funding method of the 401(h) Plan.

### **Retiree and Beneficiary Experience**

The annual CAFR requires the disclosure of historical summary data for retired members.

### **Solvency Test**

The annual CAFR requires the disclosure of a "Solvency Test." This test compares actuarial assets to actuarial accrued liabilities applying assets to active member contributions first, then to inactive and retired members and then to the remaining active member liabilities.

**Actuarial Certification**  
**ARIZONA STATE RETIREMENT PLAN**  
**Actuarial Certification Statement**

This is to certify that Buck Consultants has prepared an actuarial valuation of the Arizona State Retirement Plan as of June 30, 2009. The Plan provisions are described in Title 38, Chapter 4, Article 2 of the Arizona Revised Statutes. All benefits described in the statutes are reflected in this valuation, except that future PBI and enhanced PBI awards are not valued.

Actuarial calculations have been made with respect to a total of 532,160 members – 222,515 active members, 210,509 inactive members, 94,424 retired members and beneficiaries, and 4,712 members on long term disability. In addition, there are 323 System retirees receiving only ad hoc benefits, 555 System retirees receiving only health insurance benefits, and 164 System retirees receiving both ad hoc benefits and health insurance benefits from the Plan.

The actuarial calculations establish a total benefit cost of 19.20% of the annual compensation of members. The total normal cost rate is 12.98% of compensation and the required amortization payment determined in accordance with Section 38-737 is 6.17% of compensation. An additional 0.05% of pay is for rounding the employer and member rate to the nearest 0.05%.

**Actuarial Valuation of the Plan as of June 30, 2009**

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

**Actuarial Valuations**

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

Valuations are performed annually as of June 30, the last day of both the Plan year and ASRS' fiscal year.

**Funding Objectives**

The actuarial valuation calculates the contribution rates payable by members and participating employers. These rates, when applied to payroll, yield contribution amounts sufficient to provide for the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL) over the period specified in the statutes. The rate calculated becomes effective for the next fiscal year.

For example, the rate calculated in the June 30, 2009, valuation report (9.60% for each member and each employer) is applicable for the fiscal year beginning July 1, 2010.

Funding Progress

The 2008 valuation determined the rate for fiscal 2010 as 9.00%. The 2009 valuation calculates a rate of 9.60% to become effective July 1, 2010. These rates do not include contributions to the LTD program. Actual contributions have matched the calculated contributions in recent years except for temporary differences, and we assume that members and employers will continue to contribute the actuarially determined amounts. Contributing these amounts ensures the realization of funding objectives.

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

Benefit Provisions

This valuation reflects the following changes in Plan provisions:

1. Effective July 1, 2010, members will be required to have five years of service credit in ASRS before initiating a service purchase.
2. Effective July 1, 2010, the maximum limit on ASRS pensions of 80% of 36-month final average earnings is eliminated.
3. Retired members who return to work with a suspension of benefits and work for at least 60 consecutive months will be permitted to choose a new optional form of benefit when they again retire.

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

4. ASRS is exempt from State Personnel Management and Personnel Board provisions and the State classification and compensation statute.
5. The scope of the early termination incentive statute is broadened and exceptions are limited.
6. Contributions from a second employer will count, beginning January 1, 2010, only if member meets 20/20 membership criteria with respect to the second employer, with certain exceptions.

Section 11 gives details of benefit provisions.

Assumptions and Methods

We performed an experience study for the five-year period ended June 30, 2007, and recommended assumption changes based on the findings. On April 18, 2008, the Board adopted revised actuarial assumptions to be effective June 30, 2008. On November 23, 2009, the Board adopted further revised actuarial assumptions to be effective June 30, 2009.

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

Data

ASRS staff supplied census data for retired, active, and inactive members as of June 30, 2009. We have not audited these data, but have examined them for reasonableness and consistency with the prior year's data. ASRS staff also supplied asset information.

Trend Data and Supporting Schedules

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

The actuarial cost factors as of June 30, 2009, for the total Plan are as follows:

	<u>401(a) Account</u>	<u>401(h) Account</u>	<u>Total</u>
I. Actuarial accrued liabilities			
A. Liabilities due to member's benefits			
1. Active members			
a. Retirement benefits	\$ 13,662,818,533	\$ 0	\$ 13,662,818,533
b. Health insurance premium supplement	0	776,581,851	776,581,851
c. Disability deferred retirement benefits	430,910,531	0	430,910,531
d. Pre-retirement death benefits	359,548,111	0	359,548,111
e. Withdrawal benefits	948,857,109	0	948,857,109
f. Total active members	\$ 15,402,134,284	\$ 776,581,851	\$ 16,178,716,135
2. Inactive members	1,432,033,875	48,304,095	1,480,337,970
3. Retired members and beneficiaries	16,896,871,278	587,762,201	17,484,633,479
4. Disabled members (deferred retirement)	556,356,851	33,013,291	589,370,142
5. Benefit increases for other-than-plan members	2,719,584	6,761,262	9,480,846
6. Total present value of benefits	\$ 34,290,115,872	\$ 1,452,422,700	\$ 35,742,538,572
B. Other miscellaneous liabilities and reserves	0	0	0
C. Reserve for future PBIs	0	0	0
D. Total actuarial accrued liability	\$ 34,290,115,872	\$ 1,452,422,700	\$ 35,742,538,572
II. Actuarial value of assets	27,093,788,614	1,266,370,836	28,360,159,450
III. Unfunded actuarial accrued liability (Item I – Item II)	7,196,327,258	186,051,864	7,382,379,122
IV. Amortization of unfunded actuarial accrued liability (per Section 38-737)	591,883,524	15,302,394	607,185,918
V. Normal cost for the year	1,234,664,757	41,883,708	1,276,548,465
VI. Total contribution for the year (Item IV + Item V)	\$ 1,826,548,281	\$ 57,186,102	\$ 1,883,734,383
VII. Total covered payroll (projected to 2009/2010 plan year)	\$ 9,834,810,345	\$ 9,834,810,345	\$ 9,834,810,345
VIII. Total contribution for fiscal year 2011 as a percentage of covered payroll			
A. Member portion	9.60%	0.00%	9.60%
B. Employer portion	9.01%	0.59%	9.60%
C. Total	18.61%	0.59%	19.20%



The Board adopted a new asset valuation method (described in Section 9B) on November 15, 2002, to be effective for valuations on and after June 30, 2002.

On November 23, 2009, the Board adopted assumptions to be effective for valuations on and after June 30, 2009. These assumptions are as follows:

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

Years of Service	Merit Component	Total Salary Increase
1	5.00%	9.50%
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

\* Total salary increase rate = inflation (or growth) rate (3.75%)<sup>1</sup>  
+ productivity increase rate (0.75%)<sup>1</sup>  
+ merit component

3. Rates of disability<sup>1</sup>

Age	Males	Females
20	0.04%	0.06%
30	0.05%	0.08%
40	0.16%	0.16%
50	0.38%	0.36%
60	0.90%	0.82%

4. Rates of withdrawal - Sample ages and years of service<sup>1</sup>

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

<sup>1</sup> New assumption as of June 30, 2009

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

5. Rates of retirement - Sample ages and years of service<sup>1</sup>

Age	Years of Service			
	0-4	5	6-9	10-19
50	0.00%	10.00%	5.00%	5.00%
55	0.00	10.00	5.00	5.00
60	0.00	9.00	9.00	9.00
62	0.00	15.00	15.00	33.00
65	30.00	30.00	30.00	30.00
70	22.00	22.00	22.00	22.00

Age	20	25	30	31+
50	7.00%	8.67%	35.00%	20.00%
55	7.00	25.00	35.00	13.63
60	35.00	25.00	35.00	24.00
62	35.00	25.00	35.00	33.00
65	35.00	25.00	35.00	30.00
70	35.00	25.00	35.00	22.00

<sup>1</sup> New assumption as of June 30, 2009

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

6. Mortality rates – 1994 GAM Static, Projected to 2010 with Projection Scale AA with no setback.
7. Mortality rates after disability – Post disablement mortality rates are based on experience of other large public sector system and ASRS’ own experience.
8. Future Retirees Eligible for the Health Insurance Premium Supplement – It is assumed that 70% of future retirees will be eligible to receive the post-retirement health insurance premium supplement and that 35% of those retirees will be eligible for the dependent premium supplement.

9. Portion of members who will not withdraw their contributions<sup>1</sup> – It is assumed that active members who terminate (prior to eligibility for retirement) and deferred vested members who have already terminated will choose to receive the enhanced refund option if the value of the enhanced refund option is greater than the present value of the deferred benefit. Otherwise, the members are assumed to elect to receive the deferred benefit. If the member is assumed to elect the enhanced refund option, then it is also assumed that the member forfeits the health insurance premium supplement.

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

10. Spouse Assumptions – We assume that 100% of the members are married. We also assume that the husband is three years older than the wife.
11. Modified Cash Refund Assumption – We assume that members who elect a single life annuity will receive accumulated benefit payments equal to their contributions after three years of being in receipt.

<sup>1</sup> New assumption as of June 30, 2009.

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

The funding method is the projected unit-credit method as prescribed in Arizona Revised Statutes Section 38.757A.

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

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

Sincerely,



Charles E. Chittenden, FSA, EA, MAAA

**Exhibit 8.1a - Schedule of Funding Progress  
(401(a) Plan as required by GASB #25)**

Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2) / (3)	Annual Covered Payroll	UAAL as % of Payroll (4) / (6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
06/30/1993	\$ 9,770	\$ 8,921	\$ (849)	109.5%	\$ 3,748	(22.7%)
06/30/1994	10,549	9,668	(872)	109.0%	4,126	(21.1%)
06/30/1995	11,521	10,304	(1,217)	111.8%	4,432	(27.5%)
06/30/1996	12,579	11,111	(1,468)	113.2%	4,632	(31.7%)
06/30/1997	13,692	11,694	(1,998)	117.1%	4,836	(41.3%)
06/30/1998	15,577	12,910	(2,667)	120.7%	5,164	(51.7%)
06/30/1999	18,043	15,476	(2,567)	116.6%	5,488	(46.8%)
06/30/2000	20,292	16,854	(3,438)	120.4%	5,894	(58.3%)
06/30/2001	21,888	19,012	(2,876)	115.1%	6,357	(45.2%)
06/30/2002	22,642	21,285	(1,357)	106.4%	6,989	(19.4%)
06/30/2003	22,572	22,935	363	98.4%	7,297	5.0%
06/30/2004	22,659	24,506	1,847	92.5%	7,486	24.7%
06/30/2005	22,808	26,486	3,678	86.1%	8,032	45.8%
06/30/2006	23,767	28,192	4,426	84.3%	8,312	53.2%
06/30/2007	25,310	30,390	5,080	83.3%	9,162	55.4%
06/30/2008	26,613	32,425	5,812	82.1%	9,708	59.9%
06/30/2009	27,094	34,290	7,196	79.0%	9,835	73.2%

Note: Dollar amounts in millions.

Values shown for valuation dates on or after June 30, 1996 are for the 401(a) plan only.

**Exhibit 8.1b - Schedule of Employer Contributions  
 (401(a) Plan as required by GASB #25)**

Fiscal Year	Annual Required Contribution	Percentage Contributed
1993	\$ 135,644,868	100.0%
1994	162,452,872	76.8%
1995	158,559,931	100.0%
1996	78,608,439	100.0%
1997	89,756,995	100.0%
1998	78,004,461	100.0%
1999	85,964,481	100.0%
2000	195,810,628	100.0%
2001	209,320,281	100.0%
2002	130,647,669	100.0%
2003	137,622,205	100.0%
2004	297,268,473	100.0%
2005	317,919,116	100.0%
2006	477,119,869	100.0%*
2007	663,207,139	100.0%
2008	759,171,555	100.0%
2009	753,909,718	100.0%

\* Ignores short-term differences. The legislature set the contribution rate for fiscal 2006 to be lower than the actuarially calculated rate and the rate for 2007 to be higher than the actuarially calculated rate. Thus, the contribution deficiency for 2006 and excess for 2007 are both short-term differences.

Note: Contribution amounts shown for fiscal year 1996 and after are the contribution amounts for the 401(a) plan only.

**Exhibit 8.2a - Schedule of Funding Progress  
(401(h) Plan as required by GASB #43)**

Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2) / (3)	Annual Covered Payroll	UAAL as % of Payroll (4) / (6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
06/30/2005	\$ 1,028	\$ 1,456	\$ 428	70.6%	\$ 8,032	5.3%
06/30/2006	\$ 1,085	\$ 1,505	\$ 420	72.1%	\$ 8,312	5.1%
06/30/2007	\$ 1,167	\$ 1,605	\$ 438	72.7%	\$ 9,162	4.8%
06/30/2008	\$ 1,239	\$ 1,446	\$ 207	85.7%	\$ 9,708	2.1%
06/30/2009	\$ 1,266	\$ 1,452	\$ 186	87.2%	\$ 9,835	1.9%

Note: Dollar amounts in millions.

**Exhibit 8.2b - Schedule of Employer Contributions  
 (401(h) Plan as required by GASB #43)**

Fiscal Year	Annual Required Contribution	Percentage Contributed
2005	\$ 85,350,074	100.0%
2006	\$ 93,461,175	100.0%*
2007	\$ 103,473,474	100.0%
2008	\$ 99,026,974	100.0%
2009	\$ 90,489,881	100.0%

\* Ignores short-term differences. The legislature set the contribution rate for fiscal 2006 to be lower than the actuarially calculated rate and the rate for fiscal 2007 to be higher than the actuarially calculated rate. Thus, the contribution deficiency for 2006 and excess for 2007 are both short-term differences.

**Exhibit 8.3 - Notes to Required Supplementary Information**

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation date	June 30, 2009
Actuarial cost method	Projected Unit Credit
Amortization method	Level dollar, 30 years, open
Payroll growth rate for amortization	N/A
Asset valuation method	10-year smoothed market
Actuarial assumptions:	
Investment rate of return*	8.00%
Projected salary increases	4.50% to 9.50%
*Includes inflation at	3.75%
Cost-of-living adjustments	N/A



**Exhibit 8.4 – Components of Normal Cost**

	2009
Components of the normal cost are as follows:	
Retirement benefits	9.63%
Health insurance premium supplement	0.43%
Survivor benefits	0.33%
Withdrawals	2.22%
Long-term disability benefit	<u>0.37%</u>
Total normal cost	12.98%
Amortization of the UAAL	<u>6.17%</u>
Required contribution rate for FY 2011	19.15%
Shared by member and employer	
Required matching contribution rate	<u>9.58%</u>
Rounded contribution rate shared by member and employer to the nearest 0.05%	<u>9.60%</u>

**Exhibit 8.5 – Schedule of Plan Active Member Valuation Data**

Valuation As of June 30	Number	Annual Payroll	Annual Average Pay	Increase in Average Pay
2004	205,482	\$ 7,485,590,038	\$ 36,429	1.0%
2005	212,202	8,032,457,947	37,853	3.9%
2006	217,676	8,311,869,615	38,185	0.9%
2007	224,001	9,161,803,726	40,901	7.1%
2008	226,415	9,708,352,896	42,879	4.8%
2009	222,515	9,834,810,345	44,198	3.1%

Exhibit 8.6 – Schedule of Plan Retirees Added and Removed from Rolls for 401(a) Plan

Schedule of Retiree Data

Valuation As of June 30	Added to Rolls			Removed from Rolls			Rolls – End of Year			Percent Increase in Total Annual Allowances
	Number	Annual Allowances*	Average Annual Allowances	Number	Annual Allowances	Average Annual Allowances	Number	Annual Allowances*	Average Annual Allowances	
2004	5,882	\$ 159,779,107	\$ 27,164	1,733	\$ 23,506,435	\$ 13,564	64,121	\$ 1,168,664,755	\$ 18,226	13.2%
2005	6,429	129,398,517	20,127	1,815	26,570,628	14,639	68,735	1,271,492,645	18,498	8.8%
2006	6,522	160,698,938	24,640	2,176	29,274,714	13,453	73,081	1,402,916,869	19,197	10.3%
2007	6,919	138,099,329	19,959	1,391	21,174,343	15,222	78,609	1,519,841,855	19,334	8.3%
2008	7,269	142,348,411	19,583	2,101	28,994,115	13,800	83,777	1,633,196,151	19,495	7.5%
2009	7,458	145,821,459	19,552	2,185	26,600,736	12,174	89,050	1,752,416,874	19,679	7.3%

Schedule of Beneficiary Data

Valuation As of June 30	Added to Rolls			Removed from Rolls			Rolls – End of Year			Percent Increase in Total Annual Allowances
	Number	Annual Allowances*	Average Annual Allowances	Number	Annual Allowances	Average Annual Allowances	Number	Annual Allowances*	Average Annual Allowances	
2004	548	\$ 9,284,219	\$ 16,942	463	\$ 3,476,244	\$ 7,508	4,810	\$ 61,361,104	\$ 12,757	10.5%
2005	576	6,611,195	11,478	268	2,901,597	10,827	5,118	65,070,702	12,714	6.0%
2006	621	10,168,738	16,375	322	3,442,543	10,691	5,417	71,796,897	13,254	10.3%
2007	474	6,437,518	13,581	906	9,357,927	10,329	4,985	68,876,488	13,817	-4.1%
2008	515	6,537,322	12,694	321	4,424,864	13,785	5,179	70,988,946	13,707	3.1%
2009	500	7,397,536	14,795	305	3,432,448	11,254	5,374	74,954,034	13,948	5.6%

Schedule of Retiree and Beneficiary Data

Valuation As of June 30	Added to Rolls			Removed from Rolls			Rolls – End of Year			Percent Increase in Total Annual Allowances
	Number	Annual Allowances*	Average Annual Allowances	Number	Annual Allowances	Average Annual Allowances	Number	Annual Allowances*	Average Annual Allowances	
2004	6,430	\$ 169,063,326	\$ 26,293	2,196	\$ 26,982,679	\$ 12,287	68,931	\$ 1,230,025,859	\$ 17,844	13.1%
2005	7,005	136,009,712	19,416	2,083	29,472,225	14,149	73,853	1,336,563,347	18,098	8.7%
2006	7,143	170,867,676	23,921	2,498	32,717,257	13,097	78,498	1,474,713,766	18,787	10.3%
2007	7,393	144,536,847	19,551	2,297	30,532,270	13,292	83,594	1,588,718,343	19,005	7.7%
2008	7,784	148,885,733	19,127	2,422	33,418,979	13,798	88,956	1,704,185,097	19,158	7.3%
2009	7,958	153,218,995	19,253	2,490	30,033,184	12,062	94,424	1,827,370,908	19,353	7.2%

\* Cost of Living Increases included here.

**Exhibit 8.7 – Schedule of Unfunded (Over) Accrued Liabilities – Plans 401(a) and 401(h)**

Year Ended June 30	Aggregate Accrued Liabilities Plan	Actuarial Value of Net Plan Assets	Assets as a % of Accrued Liabilities Plan	Unfunded (over) Accrued Liabilities – Plan (UAL)	Active Member Payroll	UAL as a % of Active Member Payroll
2004	\$ 25,918,329,505	\$ 23,642,904,763	91.2%	\$ 2,275,424,742	\$ 7,485,590,038	30.4%
2005	27,942,601,285	23,836,519,123	85.3%	4,106,082,162	8,032,457,947	51.1%
2006	29,696,631,262	24,851,522,776	83.7%	4,845,108,486	8,311,869,615	58.3%
2007	31,995,671,426	26,476,687,905	82.8%	5,518,983,521	9,161,803,726	60.2%
2008	33,870,864,745	27,851,825,730	82.2%	6,019,039,015	9,708,352,896	62.0%
2009	35,742,538,572	28,360,159,450	79.3%	7,382,379,122	9,834,810,345	75.1%

**Exhibit 8.8 – Solvency Test – Plans 401(a) and 401(h)**

Year Ended June 30	Aggregate Accrued Liabilities for			Net Assets Available for Benefits	Portion of Accrued Liabilities Covered by Net Assets Available for Benefits		
	(1)  Active and Inactive Member Contributions	(2)  Retirees and Beneficiaries	(3)  Active and Inactive Members (Employer Financed Portion)		(1)	(2)	(3)
2004	\$ 3,407,611,954	\$ 12,421,950,646	\$ 10,088,766,905	\$ 23,642,904,763	100%	100%	77.4%
2005	3,717,945,957	13,522,905,728	10,701,749,600	23,836,519,123	100	100	61.6
2006	4,168,243,157	14,576,747,255	10,951,640,850	24,851,522,776	100	100	55.8
2007	5,533,036,906	15,789,894,783	10,672,739,737	26,476,687,905	100	100	48.3
2008	6,256,502,949	16,977,582,248	10,636,779,548	27,851,825,730	100	100	43.4
2009	7,054,925,502	18,083,484,467	10,604,128,603	28,360,159,450	100	100	30.4

**Exhibit 8.9 – Schedule of Recommended Versus Actual Plan Contributions for 401(a) Plan**

Year Ended June 30	Active Member Payroll	Actual Member Contributions	Employer Retirement Contribution Rate – Actual	Actuary Recommended Contribution
2004	\$ 7,486,000,000	\$ 377,436,100	5.20%	5.20%
2005	8,032,000,000	403,269,191	5.20%	5.20%
2006	8,312,000,000	570,581,044	6.90%*	7.75%*
2007	9,162,000,000	766,624,734	8.60%*	7.75%*
2008	9,708,000,000	857,502,851	9.10%	9.10%
2009	9,835,000,000	844,405,884	8.95%	8.95%

\* The 7.75% rate was determined in the 2004 valuation and would have applied to the 2006/2007 biennium. The Legislature adopted a stair-step approach to increasing contribution rates and set the rate at 6.9% for fiscal 2006 and 8.6% for fiscal 2007.

**Exhibit 8.10 – Analysis of Financial Experience for the Plan (millions) – Plans 401(a) and 401(h)**

Year Ended June 30	Prior Year Unfunded Actuarial Liability (UAAL)	Normal Cost for the Year	Contributions for the Year	Interest at 8% on UAAL	On Normal Cost	On Contributions	Total	Expected UAAL	Actual UAAL	Gain (Loss) for the Year*
2004	\$ 786.74	\$ 950.78	\$ (865.97)	\$ 62.94	\$ 76.06	\$ (34.64)	\$ 104.36	\$ 975.91	\$ 2,275.42	\$ (1,299.51)
2005	2,275.42	1,010.22	(946.70)	182.03	80.82	(37.87)	224.98	2,563.94	4,106.08	(1,542.15)
2006	4,106.08	1,075.46	(1,265.19)	328.49	86.04	(50.61)	363.92	4,280.27	4,845.11	(564.84)
2007	4,845.11	1,171.61	(1,631.17)	387.61	93.73	(65.25)	416.09	4,801.64	5,518.98	(717.34)
2008	5,518.98	1,218.90	(1,715.70)	441.52	97.51	(68.63)	470.40	5,492.58	6,019.04	(526.46)
2009	6,019.04	1,251.48	(1,688.81)	481.52	100.12	(67.55)	514.09	6,095.80	7,382.38	(1,286.58)

\* Gain/loss includes assumption and plan changes.

**Exhibit 8.11 – Contribution Rates – Plans 401(a) and 401(h)**

	For the Contribution Period Ending June 30, 2009 (2007 Valuation)		For the Contribution Period Ending June 30, 2010 (2008 Valuation)		For the Contribution Period Ending June 30, 2011 (2009 Valuation)	
<b>401(a) Normal Cost</b>	\$ 1,132,959,017	12.36%	\$ 1,205,102,668	12.42%	\$ 1,234,664,757	12.55%
<b>401(a) Amortization of Unfunded Liability*</b>	417,868,171	4.58%	478,028,422	4.92%	591,883,524	6.06%
<b>401(a) Total</b>	\$ 1,550,827,188	16.94%	\$ 1,683,131,090	17.34%	\$ 1,826,548,281	18.61%
<b>401(h) Normal Cost</b>	\$ 52,383,593	0.57%	\$ 46,380,771	0.48%	\$ 41,883,708	0.43%
<b>401(h) Amortization of Unfunded Liability</b>	36,057,185	0.39%	17,025,499	0.18%	15,302,394	0.16%
<b>401(h) Total</b>	\$ 88,440,778	0.96%	\$ 63,406,270	0.66%	\$ 57,186,102	0.59%
<b>LTD Normal Cost</b>	\$ 47,774,219	0.52%	\$ 46,423,979	0.48%	\$ 33,519,857	0.34%
<b>LTD Amortization of Unfunded Liability**</b>	40,328,046	0.48%	30,103,585	0.32%	17,853,806	0.16%
<b>LTD Total</b>	\$ 88,102,265	1.00%	\$ 76,527,564	0.80%	\$ 51,373,663	0.50%
<b>Actuarial Total</b>	\$ 1,727,370,231	18.90%	\$ 1,823,064,924	18.80%	\$ 1,935,108,046	19.70%

<b>Contributions as a Percentage of Covered Payroll</b>		
	For the Contribution Period Ending June 30, 2009	
<b>Employers' Retirement – 401(a)</b>	\$ 753,909,718	7.99%
<b>Employees' Retirement – 401(a)</b>	844,405,884	8.95%
<b>Employers' Health Premium Benefit – 401(h)</b>	90,489,881	0.96%
<b>Employers' Long-Term Disability</b>	47,212,670	0.50%
<b>Employees' Long-Term Disability</b>	47,212,670	0.50%
<b>Total</b>	\$ 1,783,230,823	18.90%

\* Reflects rounding of total Plan employer and employee contributions to the nearest 0.05%.

\*\* Reflects rounding of the total LTD contribution to the nearest 0.05%.

**Summary of Actuarial Methods and Assumptions  
Adopted by Board Action on November 23, 2009  
Effective as of June 30, 2009**

A. Actuarial Assumptions

1. Investment Yield Rate 8% per annum compounded annually, net of all expenses

2. Mortality

a. Pre-retirement 1994 GAM – Static, Projected to 2010 with Projection Scale AA, with no setback. Rates at representative ages are shown below.

Age	Rates of Mortality (Active)	
	Male Members	Female Members
20	0.000373	0.000219
25	0.000563	0.000232
30	0.000739	0.000299
35	0.000785	0.000400
40	0.000943	0.000557
45	0.001280	0.000752
50	0.001929	0.001085
55	0.003255	0.002017
60	0.006162	0.004097
65	0.011600	0.007970
70	0.018633	0.012672

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

Age	Rates of Mortality			
	Non-Disabled		Disabled	
	Male Members	Female Members	Male Members	Female Members
20	0.000373	0.000219	0.051100	0.027440
25	0.000563	0.000232	0.063540	0.038300
30	0.000739	0.000299	0.058810	0.053930
35	0.000785	0.000400	0.040920	0.056980
40	0.000943	0.000557	0.034740	0.037590
45	0.001280	0.000752	0.031360	0.025700
50	0.001929	0.001085	0.031110	0.022840
55	0.003255	0.002017	0.030860	0.024605
60	0.006162	0.004097	0.033730	0.026507
65	0.011600	0.007970	0.048250	0.028555
70	0.018633	0.012672	0.055540	0.030762

3. Disability Rates

Sample rates are shown below.

Prior Assumption:

Age	Rates of Decrement due to Disability	
	Male Members	Female Members
20	0.000575	0.000734
25	0.000638	0.000804
30	0.000730	0.001014
35	0.001096	0.001563
40	0.002111	0.002111
45	0.003358	0.003171
50	0.005128	0.004865
55	0.007715	0.007022
60	0.011992	0.010913

Adopted Assumption:

Age	Rates of Decrement due to Disability	
	Male Members	Female Members
20	0.000431	0.000551
25	0.000479	0.000603
30	0.000548	0.000760
35	0.000822	0.001172
40	0.001583	0.001583
45	0.002519	0.002378
50	0.003846	0.003649
55	0.005786	0.005266
60	0.008994	0.008185

4. Withdrawal Rates

(for causes other than death, disability, or retirement)

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

Prior Assumption:

Rates of Decrement due to Withdrawal

Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	10+
<u>Male Members</u>											
20	0.3731	0.3642	0.2895	0.2545	0.1508	0.1364	0.0910	0.0843	0.0711	0.0763	0.1277
30	0.2267	0.2055	0.1612	0.1547	0.0917	0.0943	0.0714	0.0682	0.0514	0.0514	0.0565
40	0.1931	0.1698	0.1011	0.1015	0.0601	0.0665	0.0551	0.0546	0.0400	0.0383	0.0227
50	0.1892	0.1692	0.0904	0.0820	0.0458	0.0502	0.0466	0.0351	0.0345	0.0319	0.0155
60	0.2219	0.1824	0.0963	0.0848	0.0445	0.0371	0.0339	0.0333	0.0261	0.0246	0.0108
70	0.2604	0.2282	0.1320	0.1229	0.0616	0.0549	0.0369	0.0313	0.0220	0.0204	0.0180
<u>Female Members</u>											
20	0.3116	0.3053	0.2640	0.2596	0.2101	0.2077	0.1680	0.1405	0.1380	0.1285	0.2148
30	0.2015	0.1937	0.1652	0.1456	0.1094	0.1089	0.0930	0.0813	0.0811	0.0760	0.0821
40	0.1720	0.1693	0.1174	0.0930	0.0666	0.0661	0.0563	0.0482	0.0461	0.0417	0.0239
50	0.1698	0.1457	0.0927	0.0722	0.0528	0.0522	0.0426	0.0335	0.0287	0.0227	0.0167
60	0.1805	0.1432	0.0939	0.0731	0.0508	0.0466	0.0357	0.0275	0.0237	0.0190	0.0088
70	0.1916	0.1666	0.1199	0.0955	0.0622	0.0508	0.0363	0.0293	0.0311	0.0358	0.0144

Adopted Assumption:

Rates of Decrement due to Withdrawal

Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	10+
<u>Male Members</u>											
20	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.1724
30	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0763
40	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0306
50	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0209
60	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0146
70	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0243
<u>Female Members</u>											
20	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.2900
30	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.1108
40	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0323
50	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0225
60	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0119
70	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0194



5. Salary Scale

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

Years of Service	Merit Component	Total Salary Increase*
(1)	(2)	(3)
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%

\* Total salary increase rate = inflation (or growth) rate (3.75%)  
+ productivity increase rate (0.75%)  
+ merit component

Prior assumption was 4.25% for inflation and 0.25% for productivity.

6. Retirement Age

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

Prior Assumption:

Rates of Decrement Due to Retirement									
Years of Service – Male Members									
Age	0-4	5-9	10-14	15-19	20-24	25	26-29	30	31+
50	0.000	0.070	0.046	0.051	0.056	0.086	0.078	0.191	0.141
55	0.000	0.056	0.041	0.046	0.071	0.174	0.141	0.186	0.136
60	0.000	0.077	0.081	0.101	0.248	0.278	0.211	0.361	0.311
62	0.000	0.087	0.311	0.351	0.411	0.441	0.411	0.561	0.511
65	0.269	0.139	0.312	0.312	0.312	0.342	0.312	0.362	0.312
70	0.290	0.155	0.318	0.318	0.318	0.348	0.318	0.368	0.318

Rates of Decrement Due to Retirement									
Years of Service – Female Members									
Age	0-4	5-9	10-14	15-19	20-24	25	26-29	30	31+
50	0.000	0.072	0.047	0.052	0.057	0.087	0.079	0.192	0.142
55	0.000	0.068	0.043	0.048	0.073	0.175	0.143	0.188	0.138
60	0.000	0.087	0.079	0.099	0.246	0.276	0.209	0.359	0.309
62	0.000	0.097	0.308	0.348	0.408	0.438	0.408	0.558	0.508
65	0.217	0.147	0.309	0.309	0.309	0.339	0.309	0.359	0.309
70	0.222	0.151	0.314	0.314	0.314	0.344	0.314	0.364	0.314

Adopted Assumption:

Age	Rates of Decrement Due to Retirement							
	Years of Service – All Members							
	0-4	5	6-9	10-18	20	25	30	31+
50	0.000	0.100	0.050	0.050	0.070	0.087	0.350	0.200
55	0.000	0.100	0.050	0.050	0.070	0.250	0.350	0.136
60	0.000	0.090	0.090	0.090	0.350	0.250	0.350	0.240
62	0.000	0.150	0.150	0.330	0.350	0.250	0.350	0.330
65	0.300	0.300	0.300	0.300	0.350	0.250	0.350	0.300
70	0.220	0.220	0.220	0.220	0.350	0.250	0.350	0.220

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

7. Future Retirees Eligible for the Health Insurance Premium Supplement

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

8. Proportion of Members Who Will Not Withdraw Their Contributions

Prior Assumption: It is assumed that active members who terminate with 5 or more years of service (prior to eligibility for retirement) and deferred vested members who have already terminated will choose to receive the enhanced refund option if the value of the enhanced refund option is greater than the present value of the deferred benefit. Otherwise, the members are assumed to elect to receive the deferred benefit. Active members who terminate with less than 5 years of service will receive the enhanced refund option. If the member is assumed to elect the enhanced refund option, then it is also assumed that the member forfeits the health insurance premium supplement.

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

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

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

9. Spouse Assumptions

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

10. Modified Cash Refund Assumption

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

B. Actuarial Value of Assets

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

C. Actuarial Funding Method

Costs are determined under the projected unit-credit method. The unfunded actuarial accrued liability is funded on a level dollar basis over the period of time described in Section 38-737. For the actuarial valuation as of June 30, 2009, the period is 30 years.

D. Data for Valuation

In preparing the actuarial valuation as of June 30, 2009, the actuary has relied on data and assets provided by the staff of the Arizona State Retirement System. While not verifying the data at their source, the actuary has performed tests for consistency and reasonableness.

**Member Data**

The June 30, 2009, actuarial valuation of the Plan was based on the following data. For comparison, we also show a summary of the June 30, 2008, statistical information.

**Exhibit 10.1 - Distribution of Active Members by Member Group  
and By Average Age, Average Years of Service,  
and Average Annual Salary**

**ACTIVE PLAN MEMBERS**

Member Group	Number of Active Plan Members		Average Age		Average Years of Service		Average Annual Salary	
	As of June 30, 2008	As of June 30, 2009	As of June 30, 2008	As of June 30, 2009	As of June 30, 2008	As of June 30, 2009	As of June 30, 2008	As of June 30, 2009
<b>State Members:</b>								
Male	17,411	16,319	46.8	47.6	9.3	10.0	\$ 52,172	\$ 54,230
Female	29,843	27,961	45.2	45.9	9.0	9.8	43,188	44,687
Total	47,254	44,280	45.8	46.5	9.2	9.8	\$ 46,498	\$ 48,204
<b>Teachers:</b>								
Male	18,090	17,099	44.4	44.3	9.7	9.7	\$ 51,017	\$ 52,380
Female	55,908	52,964	43.3	43.1	9.7	9.6	46,490	47,975
Total	73,998	70,063	43.6	43.4	9.7	9.6	\$ 47,597	\$ 49,050
<b>Political Subdivision Members:</b>								
Male	38,482	39,016	46.3	46.6	7.8	8.3	\$ 46,506	\$ 48,061
Female	66,681	69,156	44.9	45.5	7.0	7.7	32,984	34,539
Total	105,163	108,172	45.4	45.9	7.3	7.9	\$ 37,932	\$ 39,416
<b>All Active Plan Members:</b>								
Male	73,983	72,434	45.9	46.3	8.6	9.0	\$ 48,942	\$ 50,470
Female	152,432	150,081	44.4	44.7	8.4	8.8	39,936	41,171
Total	226,415	222,515	44.9	45.2	8.5	8.8	\$ 42,879	\$ 44,198

**Exhibit 10.2 – Summary of Retired Membership**

	June 30, 2008	June 30, 2009	Percentage Change During the Period
<b>STATE MEMBERS</b>			
Number	21,781	23,025	5.7%
Total Monthly Allowance	\$ 30,459,736	\$ 32,638,741	7.2%
Average Monthly Allowance	\$ 1,398	\$ 1,418	1.4%
Average Age	70.5	70.5	0.0%
Average Years of Service	18.3	18.3	0.0%
<b>TEACHERS</b>			
Number	27,737	29,271	5.5%
Total Monthly Allowance	\$ 62,360,278	\$ 65,839,963	5.6%
Average Monthly Allowance	\$ 2,248	\$ 2,249	0.0%
Average Age	68.1	68.3	0.3%
Average Years of Service	23.6	23.4	(0.8%)
<b>POLITICAL SUBDIVISION</b>			
Number	39,438	42,128	6.8%
Total Monthly Allowance	\$ 49,195,411	\$ 53,802,205	9.4%
Average Monthly Allowance	\$ 1,247	\$ 1,277	2.4%
Average Age	70.0	70.0	0.0%
Average Years of Service	17.4	17.5	0.6%
<b>TOTAL</b>			
Number <sup>1</sup>	88,956	94,424	6.1%
Total Monthly Allowance	\$ 142,015,425	\$ 152,280,909	7.2%
Average Monthly Allowance	\$ 1,596	\$ 1,613	1.1%
Average Age	69.5	69.6	0.1%
Average Years of Service	19.5	19.5	0.0%

<sup>1</sup> Excludes other-than-plan retirees from the System receiving benefit increases from the Plan.

**Exhibit 10.3 – Summary of Inactive Membership**

	June 30, 2008	June 30, 2009	Percentage Change During the Period
STATE MEMBERS			
Number	49,657	51,109	2.9%
TEACHERS			
Number	34,997	37,328	6.7%
POLITICAL SUBDIVISION			
Number	<u>118,350</u>	<u>122,072</u>	3.1%
TOTAL			
Number	203,004	210,509	3.7%

**Exhibit 10.4a**  
**Distribution of Active Members by Age and Years of Service**  
**State Members**  
**Count and Average Salary**  
**as of June 30, 2009**

CURRENT AGE	YEARS OF SERVICE								TOTAL	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Below 19	38	0	0	0	0	0	0	0	0	38
	\$ 19,464	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 19,464
20-24	1,144	29	0	0	0	0	0	0	0	1,173
	\$ 30,960	\$ 33,067	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 31,012
25-29	2,694	672	32	0	0	0	0	0	0	3,398
	\$ 38,236	\$ 39,529	\$ 39,997	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 38,508
30-34	2,401	1,380	368	5	0	0	0	0	0	4,154
	\$ 41,857	\$ 44,878	\$ 47,710	\$ 47,859	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 43,386
35-39	2,186	1,418	958	216	12	0	0	0	0	4,790
	\$ 44,215	\$ 47,444	\$ 51,023	\$ 50,485	\$ 52,971	\$ 0	\$ 0	\$ 0	\$ 0	\$ 46,837
40-44	1,913	1,249	1,087	671	235	14	0	0	0	5,169
	\$ 43,925	\$ 47,979	\$ 48,794	\$ 55,609	\$ 55,009	\$ 44,335	\$ 0	\$ 0	\$ 0	\$ 47,950
45-49	1,930	1,398	1,169	934	749	263	27	0	0	6,470
	\$ 44,170	\$ 47,019	\$ 49,983	\$ 55,323	\$ 58,110	\$ 58,040	\$ 61,642	\$ 0	\$ 0	\$ 49,696
50-54	1,826	1,351	1,284	1,078	935	557	173	9	0	7,213
	\$ 44,095	\$ 47,598	\$ 49,195	\$ 54,575	\$ 57,495	\$ 62,511	\$ 63,817	\$ 61,794	\$ 0	\$ 50,879
55-59	1,518	1,178	1,035	1,043	837	473	276	50	0	6,410
	\$ 46,201	\$ 49,448	\$ 49,264	\$ 53,086	\$ 57,333	\$ 61,781	\$ 67,771	\$ 57,849	\$ 0	\$ 52,035
60-64	761	751	737	679	477	270	182	114	0	3,971
	\$ 47,406	\$ 51,653	\$ 50,277	\$ 52,806	\$ 56,535	\$ 60,118	\$ 75,245	\$ 74,640	\$ 0	\$ 53,684
65-69	260	261	211	193	115	57	38	45	0	1,180
	\$ 46,736	\$ 48,116	\$ 48,576	\$ 51,616	\$ 60,021	\$ 63,385	\$ 69,868	\$ 78,699	\$ 0	\$ 52,231
70 & Over	58	62	57	63	36	6	10	22	0	314
	\$ 52,227	\$ 44,456	\$ 52,513	\$ 56,406	\$ 51,516	\$ 43,998	\$ 65,313	\$ 94,884	\$ 0	\$ 54,750
<b>TOTAL</b>	<b>16,729</b>	<b>9,749</b>	<b>6,938</b>	<b>4,882</b>	<b>3,396</b>	<b>1,640</b>	<b>706</b>	<b>240</b>	<b>0</b>	<b>44,280</b>
	\$ 42,292	\$ 47,087	\$ 49,530	\$ 54,015	\$ 57,290	\$ 60,997	\$ 68,572	\$ 73,277	\$ 0	\$ 48,204

**Exhibit 10.4b**  
**Distribution of Active Members by Age and Years of Service**  
**Teachers**  
**Count and Average Salary**  
**as of June 30, 2009**

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	23	0	0	0	0	0	0	0	23
	\$ 11,148	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 11,148
20-24	2,406	45	0	0	0	0	0	0	2,451
	\$ 38,725	\$ 32,737	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 38,615
25-29	7,065	2,000	26	0	0	0	0	0	9,091
	\$ 42,389	\$ 46,058	\$ 47,449	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 43,211
30-34	3,537	4,079	917	2	0	0	0	0	8,535
	\$ 41,990	\$ 48,694	\$ 52,929	\$ 26,751	\$ 0	\$ 0	\$ 0	\$ 0	\$ 46,366
35-39	2,747	2,827	2,772	576	4	0	0	0	8,926
	\$ 40,113	\$ 48,262	\$ 55,553	\$ 60,035	\$ 65,411	\$ 0	\$ 0	\$ 0	\$ 48,786
40-44	2,283	2,149	1,940	1,621	359	5	0	0	8,357
	\$ 38,915	\$ 46,325	\$ 54,051	\$ 62,232	\$ 64,253	\$ 51,839	\$ 0	\$ 0	\$ 49,953
45-49	2,049	2,221	1,829	1,440	1,544	423	9	0	9,515
	\$ 37,881	\$ 44,313	\$ 50,303	\$ 58,134	\$ 66,097	\$ 69,343	\$ 62,364	\$ 0	\$ 50,836
50-54	1,652	1,940	1,791	1,544	1,434	1,252	242	3	9,858
	\$ 38,177	\$ 44,673	\$ 49,003	\$ 56,227	\$ 63,507	\$ 70,481	\$ 72,424	\$ 87,792	\$ 52,892
55-59	1,427	1,452	1,404	1,514	1,243	683	422	84	8,229
	\$ 38,448	\$ 46,086	\$ 50,600	\$ 56,785	\$ 63,704	\$ 69,112	\$ 73,669	\$ 75,441	\$ 53,787
60-64	785	850	654	710	527	278	123	71	3,998
	\$ 37,239	\$ 45,727	\$ 51,376	\$ 56,467	\$ 63,619	\$ 66,697	\$ 69,531	\$ 74,077	\$ 51,944
65-69	239	221	161	79	45	30	26	14	815
	\$ 30,654	\$ 40,828	\$ 49,096	\$ 58,552	\$ 62,604	\$ 65,542	\$ 66,558	\$ 72,595	\$ 44,674
70 & Over	104	79	31	21	10	8	6	6	265
	\$ 21,543	\$ 31,520	\$ 33,584	\$ 47,322	\$ 50,716	\$ 51,554	\$ 55,828	\$ 64,721	\$ 31,729
TOTAL	24,317	17,863	11,525	7,507	5,166	2,679	828	178	70,063
	\$ 40,088	\$ 46,497	\$ 52,232	\$ 58,309	\$ 64,361	\$ 69,413	\$ 72,215	\$ 74,520	\$ 49,050



**Exhibit 10.4c**  
**Distribution of Active Members by Age and Years of Service**  
**Political Subdivision Members**  
**Count and Average Salary**  
**as of June 30, 2009**

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	601	0	0	0	0	0	0	0	601
	\$ 12,024	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 12,024
20-24	4,698	178	0	0	0	0	0	0	4,876
	\$ 21,576	\$ 26,592	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 21,759
25-29	6,171	1,575	86	0	0	0	0	0	7,832
	\$ 31,883	\$ 36,242	\$ 38,339	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 32,830
30-34	5,842	2,708	729	26	0	0	0	0	9,305
	\$ 34,340	\$ 42,586	\$ 45,639	\$ 49,442	\$ 0	\$ 0	\$ 0	\$ 0	\$ 37,667
35-39	6,348	3,131	1,714	416	26	0	0	0	11,635
	\$ 31,594	\$ 43,568	\$ 51,347	\$ 53,202	\$ 56,802	\$ 0	\$ 0	\$ 0	\$ 38,555
40-44	6,240	3,419	2,204	1,036	482	46	0	0	13,427
	\$ 30,732	\$ 40,553	\$ 50,345	\$ 57,088	\$ 58,667	\$ 60,234	\$ 0	\$ 0	\$ 39,590
45-49	6,431	4,093	2,694	1,634	1,178	460	47	0	16,537
	\$ 31,235	\$ 38,397	\$ 47,212	\$ 58,075	\$ 64,304	\$ 61,585	\$ 60,012	\$ 0	\$ 41,544
50-54	5,522	3,731	2,932	2,039	1,565	846	264	14	16,913
	\$ 32,625	\$ 40,339	\$ 45,622	\$ 52,435	\$ 61,604	\$ 67,540	\$ 63,856	\$ 69,144	\$ 43,914
55-59	4,496	3,017	2,479	1,943	1,537	641	312	75	14,500
	\$ 32,565	\$ 40,780	\$ 45,620	\$ 51,602	\$ 57,307	\$ 64,389	\$ 70,629	\$ 68,297	\$ 44,091
60-64	2,756	2,093	1,370	1,060	770	410	172	82	8,713
	\$ 30,401	\$ 38,806	\$ 45,918	\$ 50,685	\$ 58,786	\$ 63,336	\$ 64,657	\$ 80,753	\$ 42,536
65-69	1,033	739	391	226	157	100	37	33	2,716
	\$ 23,481	\$ 31,932	\$ 40,529	\$ 50,303	\$ 55,775	\$ 58,006	\$ 62,686	\$ 68,998	\$ 34,692
70 & Over	427	366	159	75	36	24	20	10	1,117
	\$ 19,287	\$ 23,153	\$ 28,542	\$ 38,100	\$ 54,185	\$ 38,818	\$ 57,471	\$ 61,176	\$ 25,737
TOTAL	50,565	25,050	14,758	8,455	5,751	2,527	852	214	108,172
	\$ 30,495	\$ 39,768	\$ 46,949	\$ 53,529	\$ 60,158	\$ 64,192	\$ 66,085	\$ 72,901	\$ 39,416

**Exhibit 10.4d**  
**Distribution of Active Members by Age and Years of Service**  
**Total Active Members**  
**Count and Average Salary**  
**as of June 30, 2009**

CURRENT AGE	YEARS OF SERVICE								
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	TOTAL
Below 19	662	0	0	0	0	0	0	0	662
	\$ 12,421	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 12,421
20-24	8,248	252	0	0	0	0	0	0	8,500
	\$ 27,880	\$ 28,435	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 27,896
25-29	15,930	4,247	144	0	0	0	0	0	20,321
	\$ 37,617	\$ 41,385	\$ 40,352	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 38,424
30-34	11,780	8,167	2,014	33	0	0	0	0	21,994
	\$ 38,169	\$ 46,024	\$ 49,337	\$ 47,827	\$ 0	\$ 0	\$ 0	\$ 0	\$ 42,123
35-39	11,281	7,376	5,444	1,208	42	0	0	0	25,351
	\$ 36,114	\$ 46,112	\$ 53,432	\$ 55,974	\$ 56,528	\$ 0	\$ 0	\$ 0	\$ 43,722
40-44	10,436	6,817	5,231	3,328	1,076	65	0	0	26,953
	\$ 34,940	\$ 43,733	\$ 51,397	\$ 59,295	\$ 59,732	\$ 56,164	\$ 0	\$ 0	\$ 44,406
45-49	10,410	7,712	5,692	4,008	3,471	1,146	83	0	32,522
	\$ 34,941	\$ 41,664	\$ 48,774	\$ 57,455	\$ 63,765	\$ 63,635	\$ 60,798	\$ 0	\$ 45,884
50-54	9,000	7,022	6,007	4,661	3,934	2,655	679	26	33,984
	\$ 35,972	\$ 42,933	\$ 47,394	\$ 54,186	\$ 61,321	\$ 67,872	\$ 66,900	\$ 68,751	\$ 47,997
55-59	7,441	5,647	4,918	4,500	3,617	1,797	1,010	209	29,139
	\$ 36,475	\$ 43,953	\$ 47,809	\$ 53,690	\$ 59,512	\$ 65,497	\$ 71,118	\$ 68,669	\$ 48,577
60-64	4,302	3,694	2,761	2,449	1,774	958	477	267	16,682
	\$ 34,657	\$ 43,010	\$ 48,375	\$ 52,949	\$ 59,617	\$ 63,405	\$ 69,954	\$ 76,368	\$ 47,445
65-69	1,532	1,221	763	498	317	187	101	92	4,711
	\$ 28,547	\$ 37,002	\$ 44,562	\$ 52,120	\$ 58,285	\$ 60,855	\$ 66,385	\$ 74,291	\$ 40,812
70 & Over	589	507	247	159	82	38	36	38	1,696
	\$ 22,929	\$ 27,062	\$ 34,706	\$ 46,571	\$ 52,590	\$ 42,317	\$ 59,375	\$ 81,251	\$ 32,045
TOTAL	91,611	52,662	33,221	20,844	14,313	6,846	2,386	632	222,515
	\$ 35,196	\$ 43,406	\$ 49,321	\$ 55,364	\$ 60,995	\$ 65,470	\$ 68,948	\$ 73,500	\$ 44,198

**Exhibit 10.5a**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**State Members**  
**Count and Average Monthly Annuity**  
**as of June 30, 2009**

CURRENT AGE	YEARS OF SERVICE										TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+	
Under 55	9	77	111	88	86	130	160	5	2	0	668
	\$ 239	\$ 353	\$ 418	\$ 592	\$ 1,024	\$ 2,228	\$ 2,976	\$ 1,688	\$ 6,772	\$ 0	\$ 1,503
55-59	9	222	264	192	347	539	478	50	1	0	2,102
	\$ 1,646	\$ 271	\$ 516	\$ 831	\$ 1,588	\$ 2,345	\$ 3,322	\$ 3,893	\$ 500	\$ 0	\$ 1,888
60-64	17	482	700	584	821	725	655	133	14	0	4,131
	\$ 954	\$ 330	\$ 686	\$ 1,037	\$ 1,558	\$ 2,310	\$ 3,148	\$ 3,981	\$ 4,390	\$ 0	\$ 1,663
65-69	240	803	1,097	882	840	586	426	154	45	2	5,075
	\$ 160	\$ 377	\$ 714	\$ 1,048	\$ 1,550	\$ 2,246	\$ 3,087	\$ 3,605	\$ 3,982	\$ 4,161	\$ 1,325
70-74	197	687	962	748	563	427	298	90	28	3	4,003
	\$ 142	\$ 386	\$ 752	\$ 1,116	\$ 1,628	\$ 2,274	\$ 3,089	\$ 4,092	\$ 5,212	\$ 4,326	\$ 1,296
75-79	163	643	739	502	414	301	182	70	11	3	3,028
	\$ 149	\$ 394	\$ 788	\$ 1,188	\$ 1,754	\$ 2,439	\$ 2,955	\$ 3,557	\$ 6,817	\$ 7,012	\$ 1,255
80-84	85	426	510	397	259	205	139	48	9	4	2,082
	\$ 191	\$ 415	\$ 834	\$ 1,254	\$ 1,825	\$ 2,354	\$ 3,012	\$ 3,353	\$ 5,582	\$ 6,528	\$ 1,310
85-89	41	260	350	303	202	119	73	33	3	2	1,386
	\$ 165	\$ 419	\$ 866	\$ 1,269	\$ 1,647	\$ 2,261	\$ 2,769	\$ 2,748	\$ 6,620	\$ 4,361	\$ 1,246
90-94	19	106	100	99	58	38	21	12	6	1	460
	\$ 189	\$ 424	\$ 928	\$ 1,128	\$ 1,969	\$ 1,992	\$ 2,270	\$ 2,275	\$ 3,494	\$ 4,153	\$ 1,180
95 & Over	4	16	26	16	11	8	7	0	2	0	90
	\$ 242	\$ 445	\$ 804	\$ 1,184	\$ 1,380	\$ 1,623	\$ 1,601	\$ 0	\$ 1,919	\$ 0	\$ 1,013
<b>TOTAL</b>	<b>784</b>	<b>3,722</b>	<b>4,859</b>	<b>3,811</b>	<b>3,601</b>	<b>3,078</b>	<b>2,439</b>	<b>595</b>	<b>121</b>	<b>15</b>	<b>23,025</b>
	\$ 193	\$ 378	\$ 740	\$ 1,098	\$ 1,610	\$ 2,303	\$ 3,107	\$ 3,670	\$ 4,715	\$ 5,422	\$ 1,418

**Exhibit 10.5b**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**Teachers**  
**Count and Average Monthly Annuity**  
**as of June 30, 2009**

CURRENT AGE	YEARS OF SERVICE										TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+	
Under 55	8	38	58	56	43	286	461	8	1	1	960
	\$ 2,928	\$ 208	\$ 421	\$ 620	\$ 1,136	\$ 2,770	\$ 3,639	\$ 2,540	\$ 2,090	\$ 4,594	\$ 2,746
55-59	25	170	255	191	476	1,230	1,979	77	5	2	4,410
	\$ 2,370	\$ 290	\$ 628	\$ 877	\$ 1,931	\$ 2,705	\$ 3,637	\$ 4,440	\$ 4,036	\$ 5,821	\$ 2,779
60-64	29	416	585	556	1,194	1,910	1,990	344	22	2	7,048
	\$ 2,148	\$ 349	\$ 741	\$ 1,247	\$ 1,887	\$ 2,703	\$ 3,516	\$ 4,288	\$ 4,415	\$ 5,169	\$ 2,459
65-69	262	529	617	682	1,114	1,397	999	323	42	7	5,972
	\$ 172	\$ 378	\$ 832	\$ 1,287	\$ 1,983	\$ 2,673	\$ 3,407	\$ 4,021	\$ 4,551	\$ 3,907	\$ 2,093
70-74	166	326	473	530	839	922	641	142	30	2	4,071
	\$ 131	\$ 426	\$ 866	\$ 1,370	\$ 2,029	\$ 2,681	\$ 3,263	\$ 4,007	\$ 4,360	\$ 4,915	\$ 2,032
75-79	95	228	367	404	611	686	557	108	10	8	3,074
	\$ 131	\$ 423	\$ 943	\$ 1,444	\$ 1,995	\$ 2,613	\$ 3,158	\$ 3,811	\$ 4,397	\$ 4,209	\$ 2,049
80-84	33	136	238	341	472	517	269	78	7	0	2,091
	\$ 133	\$ 434	\$ 937	\$ 1,384	\$ 1,872	\$ 2,363	\$ 2,893	\$ 3,535	\$ 3,767	\$ 0	\$ 1,886
85-89	16	72	138	230	266	217	127	44	9	0	1,119
	\$ 191	\$ 422	\$ 877	\$ 1,348	\$ 1,719	\$ 2,068	\$ 2,593	\$ 2,863	\$ 4,021	\$ 0	\$ 1,664
90-94	0	28	60	94	111	63	31	28	5	1	421
	\$ 0	\$ 454	\$ 892	\$ 1,234	\$ 1,513	\$ 1,766	\$ 2,049	\$ 2,236	\$ 2,863	\$ 6,675	\$ 1,445
95 & Over	1	10	13	26	22	15	4	9	5	0	105
	\$ 240	\$ 411	\$ 855	\$ 1,105	\$ 1,390	\$ 1,604	\$ 1,879	\$ 2,110	\$ 2,119	\$ 0	\$ 1,295
TOTAL	635	1,953	2,804	3,110	5,148	7,243	7,058	1,161	136	23	29,271
	\$ 365	\$ 381	\$ 819	\$ 1,289	\$ 1,921	\$ 2,635	\$ 3,444	\$ 3,962	\$ 4,212	\$ 4,526	\$ 2,249

**Exhibit 10.5c**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**Political Subdivision Members**  
**Count and Average Monthly Annuity**  
**as of June 30, 2009**

CURRENT AGE	YEARS OF SERVICE										TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+	
Under 55	14	128	174	131	108	299	402	10	0	0	1,266
\$	532	\$ 165	\$ 391	\$ 596	\$ 1,094	\$ 2,491	\$ 3,333	\$ 3,228	\$ 0	\$ 0	\$ 1,903
55-59	7	388	498	336	701	1,062	990	82	2	0	4,066
\$	1,824	\$ 220	\$ 511	\$ 765	\$ 1,599	\$ 2,457	\$ 3,466	\$ 4,236	\$ 6,452	\$ 0	\$ 2,000
60-64	20	1,119	1,247	1,019	1,692	1,323	1,028	225	23	2	7,698
\$	1,298	\$ 294	\$ 612	\$ 970	\$ 1,517	\$ 2,282	\$ 3,362	\$ 4,147	\$ 4,291	\$ 6,389	\$ 1,584
65-69	658	1,794	1,875	1,582	1,818	1,085	697	204	54	2	9,769
\$	133	\$ 303	\$ 632	\$ 1,003	\$ 1,482	\$ 2,102	\$ 3,072	\$ 4,113	\$ 4,620	\$ 5,158	\$ 1,189
70-74	591	1,418	1,772	1,412	1,290	657	340	118	29	4	7,631
\$	102	\$ 301	\$ 679	\$ 1,066	\$ 1,524	\$ 2,091	\$ 2,942	\$ 3,482	\$ 4,529	\$ 3,583	\$ 1,060
75-79	374	1,207	1,289	1,030	799	444	186	33	7	0	5,369
\$	114	\$ 327	\$ 725	\$ 1,098	\$ 1,539	\$ 2,204	\$ 2,847	\$ 3,512	\$ 3,792	\$ 0	\$ 1,003
80-84	195	832	1,018	651	466	225	112	36	5	3	3,543
\$	121	\$ 342	\$ 754	\$ 1,111	\$ 1,502	\$ 2,109	\$ 2,623	\$ 2,958	\$ 5,191	\$ 4,846	\$ 964
85-89	81	482	562	398	270	108	41	29	2	0	1,973
\$	135	\$ 360	\$ 780	\$ 1,097	\$ 1,414	\$ 1,833	\$ 2,449	\$ 2,370	\$ 2,159	\$ 0	\$ 919
90-94	18	167	184	142	83	50	18	5	1	0	668
\$	183	\$ 398	\$ 778	\$ 1,124	\$ 1,402	\$ 1,605	\$ 1,944	\$ 2,436	\$ 3,721	\$ 0	\$ 928
95 & Over	8	26	39	36	19	13	3	1	0	0	145
\$	239	\$ 393	\$ 808	\$ 1,028	\$ 1,320	\$ 1,466	\$ 1,604	\$ 1,251	\$ 0	\$ 0	\$ 902
TOTAL	1,966	7,561	8,658	6,737	7,246	5,266	3,817	743	123	11	42,128
\$	141	\$ 309	\$ 669	\$ 1,025	\$ 1,507	\$ 2,237	\$ 3,231	\$ 3,859	\$ 4,496	\$ 4,724	\$ 1,277

**Exhibit 10.5d**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**All Groups**  
**Count and Average Monthly Annuity**  
**as of June 30, 2009**

CURRENT AGE	YEARS OF SERVICE										TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+	
Under 55	31	243	343	275	237	715	1,023	23	3	1	2,894
	\$ 1,065	\$ 231	\$ 405	\$ 599	\$ 1,076	\$ 2,555	\$ 3,415	\$ 2,628	\$ 3,908	\$ 4,594	\$ 2,089
55-59	41	780	1,017	719	1,524	2,831	3,447	209	8	2	10,578
	\$ 2,118	\$ 250	\$ 542	\$ 812	\$ 1,700	\$ 2,544	\$ 3,544	\$ 4,229	\$ 4,198	\$ 5,821	\$ 2,302
60-64	66	2,017	2,532	2,159	3,707	3,958	3,673	702	59	4	18,877
	\$ 1,583	\$ 314	\$ 662	\$ 1,059	\$ 1,645	\$ 2,490	\$ 3,407	\$ 4,185	\$ 4,361	\$ 5,779	\$ 1,928
65-69	1,160	3,126	3,589	3,146	3,772	3,068	2,122	681	141	11	20,816
	\$ 147	\$ 335	\$ 692	\$ 1,077	\$ 1,645	\$ 2,389	\$ 3,233	\$ 3,955	\$ 4,396	\$ 4,181	\$ 1,482
70-74	954	2,431	3,207	2,690	2,692	2,006	1,279	350	87	9	15,705
	\$ 116	\$ 342	\$ 728	\$ 1,139	\$ 1,703	\$ 2,401	\$ 3,137	\$ 3,852	\$ 4,690	\$ 4,127	\$ 1,372
75-79	632	2,078	2,395	1,936	1,824	1,431	925	211	28	11	11,471
	\$ 126	\$ 358	\$ 777	\$ 1,194	\$ 1,740	\$ 2,449	\$ 3,056	\$ 3,680	\$ 5,196	\$ 4,973	\$ 1,349
80-84	313	1,394	1,766	1,389	1,197	947	520	162	21	7	7,716
	\$ 141	\$ 373	\$ 802	\$ 1,219	\$ 1,718	\$ 2,301	\$ 2,867	\$ 3,353	\$ 4,884	\$ 5,807	\$ 1,307
85-89	138	814	1,050	931	738	444	241	106	14	2	4,478
	\$ 150	\$ 385	\$ 821	\$ 1,215	\$ 1,588	\$ 2,063	\$ 2,622	\$ 2,692	\$ 4,312	\$ 4,361	\$ 1,206
90-94	37	301	344	335	252	151	70	45	12	2	1,549
	\$ 186	\$ 412	\$ 842	\$ 1,156	\$ 1,581	\$ 1,770	\$ 2,088	\$ 2,269	\$ 3,250	\$ 5,414	\$ 1,144
95 & Over	13	52	78	78	52	36	14	10	7	0	340
	\$ 240	\$ 413	\$ 815	\$ 1,086	\$ 1,363	\$ 1,558	\$ 1,681	\$ 2,024	\$ 2,062	\$ 0	\$ 1,053
TOTAL	3,385	13,236	16,321	13,658	15,995	15,587	13,314	2,499	380	49	94,424*
	\$ 195	\$ 339	\$ 715	\$ 1,105	\$ 1,663	\$ 2,435	\$ 3,321	\$ 3,862	\$ 4,453	\$ 4,845	\$ 1,613

\* Includes 86,330 service retirees, 1,914 members who retired from disabled status, 5,374 beneficiaries and 806 QDROs.

**Exhibit 10.5e**  
**Distribution of New Retired Members and Beneficiaries by Age and Average Years of Service**  
**Retirement Benefits Awarded Under the Plan During the Year Ended**  
**Count and Average Monthly Annuity**  
**as of June 30, 2009**

CURRENT AGE	YEARS OF SERVICE										TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+	
Under 55	19	78	121	93	68	275	330	7	2	0	993
	\$ 1,684	\$ 183	\$ 443	\$ 588	\$ 1,223	\$ 2,694	\$ 3,623	\$ 3,572	\$ 5,286	\$ 0	\$ 2,225
55-59	38	172	202	153	533	370	392	61	2	0	1,923
	\$ 2,279	\$ 312	\$ 651	\$ 1,049	\$ 1,809	\$ 2,523	\$ 3,731	\$ 4,627	\$ 3,891	\$ 0	\$ 2,123
60-64	53	442	592	489	520	277	285	92	12	0	2,762
	\$ 1,913	\$ 361	\$ 760	\$ 1,132	\$ 1,663	\$ 2,261	\$ 3,413	\$ 4,620	\$ 5,343	\$ 0	\$ 1,527
65-69	371	337	288	213	174	102	78	28	20	3	1,614
	\$ 206	\$ 370	\$ 768	\$ 1,151	\$ 1,575	\$ 2,394	\$ 3,175	\$ 4,466	\$ 4,338	\$ 5,127	\$ 1,029
70-74	83	91	69	44	43	19	17	6	0	0	372
	\$ 143	\$ 276	\$ 621	\$ 982	\$ 1,404	\$ 1,516	\$ 2,542	\$ 3,402	\$ 0	\$ 0	\$ 742
75-79	29	41	37	20	20	14	9	4	1	2	177
	\$ 103	\$ 319	\$ 619	\$ 1,070	\$ 1,269	\$ 2,416	\$ 2,441	\$ 3,553	\$ 3,854	\$ 5,476	\$ 964
80-84	7	13	12	12	10	5	3	3	0	2	67
	\$ 97	\$ 313	\$ 552	\$ 1,089	\$ 1,212	\$ 1,901	\$ 2,784	\$ 3,017	\$ 0	\$ 6,803	\$ 1,150
85-89	0	7	9	6	3	5	6	1	0	1	38
	\$ 0	\$ 258	\$ 544	\$ 791	\$ 1,446	\$ 1,802	\$ 1,701	\$ 2,344	\$ 0	\$ 3,739	\$ 1,081
90-94	0	2	1	1	2	3	1	0	0	0	10
	\$ 0	\$ 385	\$ 582	\$ 534	\$ 11,106	\$ 1,662	\$ 2,307	\$ 0	\$ 0	\$ 0	\$ 3,139
95 & Over	0	0	1	1	0	0	0	0	0	0	2
	\$ 0	\$ 0	\$ 1,278	\$ 828	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,053
TOTAL	600	1,183	1,332	1,032	1,373	1,070	1,121	202	37	8	7,958
	\$ 520	\$ 336	\$ 702	\$ 1,064	\$ 1,683	\$ 2,459	\$ 3,537	\$ 4,472	\$ 4,678	\$ 5,460	\$ 1,604

**Exhibit 10.6**  
**Members in Active Service as of June 30, 2009, by Annual Salary**

Annual Salary	Number of Members	Percent of All Members
Less than \$10,000	7,540	3.4%
\$10,000 - \$14,999	12,551	5.6%
\$15,000 - \$19,999	13,971	6.3%
\$20,000 - \$24,999	13,380	6.0%
\$25,000 - \$29,999	15,301	6.9%
\$30,000 - \$34,999	17,969	8.1%
\$35,000 - \$39,999	18,941	8.5%
\$40,000 - \$44,999	24,147	10.8%
\$45,000 - \$49,999	23,044	10.4%
\$50,000 - \$54,999	17,967	8.1%
\$55,000 - \$59,999	13,663	6.1%
\$60,000 - \$64,999	10,352	4.7%
\$65,000 - \$69,999	7,896	3.5%
\$70,000 and over	25,793	11.6%
Total	222,515	100.0%



**Exhibit 10.7**  
**Retirement Benefits in Force on June 30, 2009, by Monthly Amount**

Monthly Amount	Number of Retirees	Percentage of All Retirees
Under \$300	10,898	11.5%
\$300 - \$499	9,061	9.6%
\$500 - \$999	19,510	20.7%
\$1,000 - \$1,499	14,504	15.4%
\$1,500 - \$1,999	10,373	11.0%
\$2,000 - \$2,499	8,609	9.1%
\$2,500 - \$2,999	7,142	7.6%
\$3,000 - \$3,499	5,620	5.9%
\$3,500 - \$3,999	3,527	3.7%
\$4,000 and over	5,180	5.5%
Total	94,424	100.0%

**Exhibit 10.8 - Number of Retirees by Benefit Option**

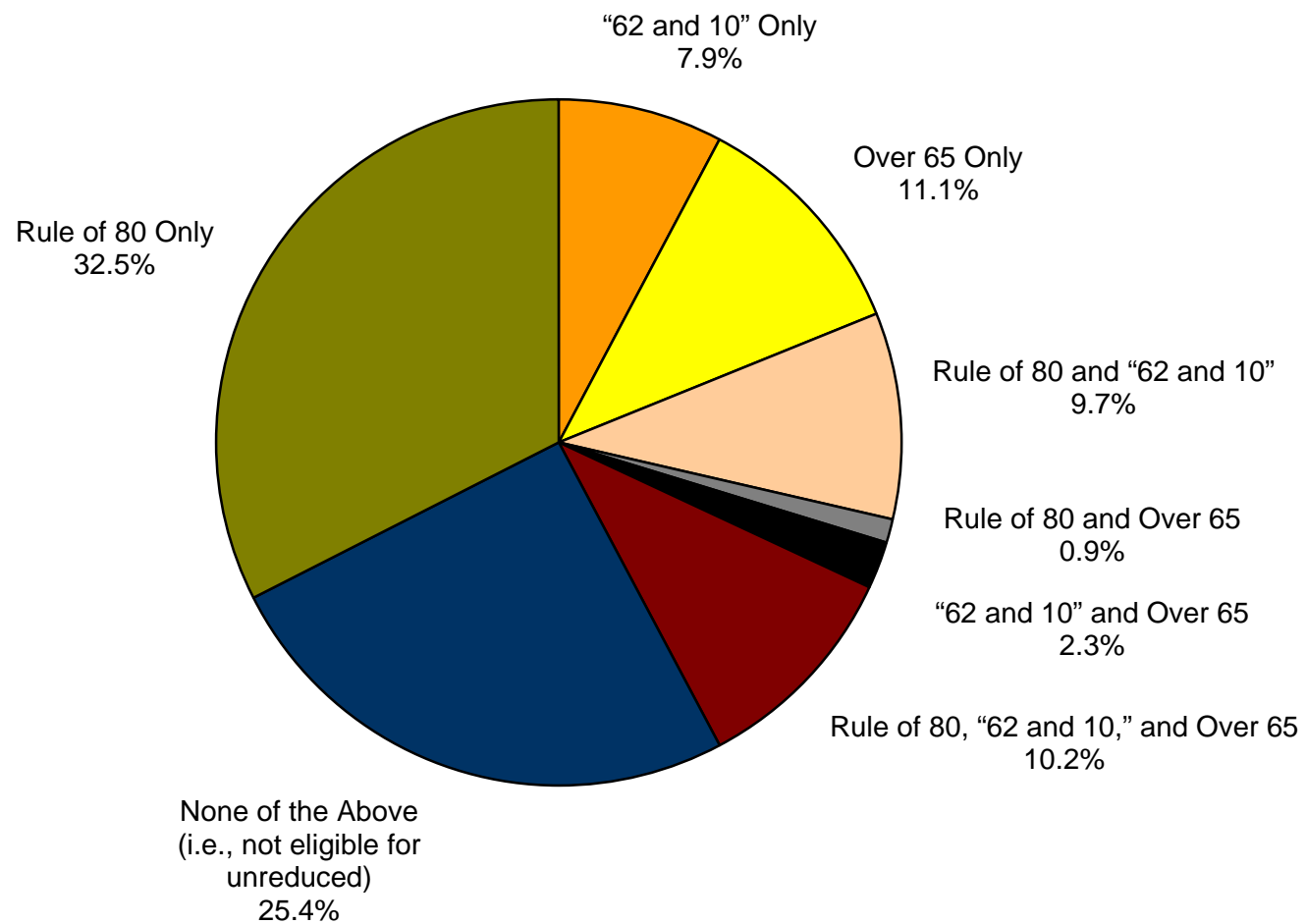
Amount of Monthly Benefit	Optional Form of Benefit							Total
	1	2	3	4	5	6	7	
Under \$300	7,382	271	362	635	1,796	153	299	10,898
\$300 - \$499	5,501	330	466	498	1,680	207	379	9,061
\$500 - \$999	11,380	785	1,200	1,010	3,306	676	1,153	19,510
\$1000 - \$1499	7,720	618	1,009	625	2,700	745	1,087	14,504
\$1500 - \$1999	5,136	410	596	473	2,137	703	918	10,373
\$2000 and over	14,523	751	1,321	1,504	6,717	2,261	3,001	30,078
Total	51,642	3,165	4,954	4,745	18,336	4,745	6,837	94,424

**Optional form**

- 1 Life annuity
- 2 Life annuity - 5 years certain and life
- 3 Life annuity - 10 years certain and life
- 4 Life annuity - 15 years certain and life
- 5 Joint annuity - 100% to contingent survivor
- 6 Joint annuity - 66 2/3% to contingent survivor
- 7 Joint annuity - 50% to contingent survivor

Note: All optional forms have a social security leveling income option available.

Exhibit 10.9 – New Retiree Eligibility



**Exhibit 10.10**  
**Health Insurance Benefit Counts**

Current HIB Benefit	Count
Single, Non-Medicare	12,066
Single, Medicare	23,067
Family, Both Non-Medicare	5,220
Family, One Medicare, One Non-Medicare	3,204
Family, Both Medicare	8,618
Total	52,175

**Exhibit 10.11**  
**Growth of Covered Payroll and Active Members**

Year Ending June 30	Active Members		Covered Payroll		Average Salary	
	Number	Percent Increase	Amount in \$ Millions	Percent Increase	Amount	Percent Increase
1980	101,666	1.6%	\$1,373	9.7%	\$ 13,503	7.9%
1981	103,222	1.5%	1,567	14.1%	15,189	12.5%
1982	103,841	0.6%	1,734	10.7%	16,701	10.0%
1983	103,174	(0.6%)	1,841	6.2%	17,846	6.9%
1984	103,889	0.7%	1,906	3.5%	18,345	2.8%
1985	107,695	3.7%	2,120	11.2%	19,684	7.3%
1986	114,456	6.3%	2,361	11.4%	20,632	4.8%
1987	117,426	2.6%	2,478	5.0%	21,100	2.3%
1988	119,073	1.4%	2,818	13.7%	23,664	12.2%
1989	124,436	4.5%	2,994	6.2%	24,057	1.7%
1990	129,701	4.2%	3,212	7.3%	24,762	2.9%
1991	134,751	3.9%	3,453	7.5%	25,625	3.5%
1992	139,633	3.6%	3,616	4.7%	25,896	1.1%
1993	144,477	3.5%	3,748	3.7%	25,943	0.2%
1994	154,901	7.2%	4,126 <sup>1</sup>	3.2% <sup>2</sup>	26,635	2.7%
1995	155,444	0.4%	4,432	7.4%	28,513	7.1%
1996	159,572	2.7%	4,632	4.5%	29,029	1.8%
1997	164,390	3.0%	4,836	4.4%	29,420	1.3%
1998	170,864	3.9%	5,164	6.8%	30,224	2.7%
1999	176,368	3.2%	5,488	6.3%	31,116	3.0%
2000	183,924	4.3%	5,894	7.4%	32,045	3.0%
2001	191,252	4.0%	6,357	7.9%	33,237	3.7%
2002	198,870	4.0%	6,989	9.9%	35,145	5.7%
2003	202,398	1.8%	7,297	4.4%	36,052	2.6%
2004	205,482	1.5%	7,486	2.6%	36,429	1.0%
2005	212,202	3.3%	8,032	7.3%	37,853	3.9%
2006	217,676	2.6%	8,312	3.5%	38,185	0.9%
2007	224,001	2.9%	9,162	10.2%	40,901	7.1%
2008	226,415	1.1%	9,708	6.0%	42,879	4.8%
2009	222,515	-1.7%	9,835	1.3%	44,198	3.1%

<sup>1</sup> Covered payroll amount has been changed to show anticipated payroll for the fiscal year following the valuation date.

<sup>2</sup> Compared to previous year's amount described in <sup>1</sup>

**Exhibit 10.12**  
**Growth of Retired Members**

Year Ending June 30,	New Retirees		New Disabled Members on LTD Program		All Retirees		All Disabled Members on LTD Program	
	Number	Average Monthly Benefit	Number	Average Monthly Benefit*	Number	Average Monthly Benefit	Number	Average Monthly Benefit*
1984	4,743	\$ 684	—	—	23,166	\$ 410	—	—
1985	802	304	—	—	23,686	447	—	—
1986	1,952	541	—	—	25,213	469	—	—
1987	1,677	707	—	—	26,577	505	—	—
1988	1,938	792	—	—	28,575	535	—	—
1989	3,405	1,105	—	—	31,396	603	—	—
1990	2,117	859	346	\$ 986	33,385	659	346	\$ 986
1991	2,209	825	215	941	34,907	687	699	957
1992	2,303	861	517	958	36,490	703	1,104	973
1993	3,954	1,173	519	865	39,684	812	1,455	919
1994	2,280	934	503	860	41,044	852	1,780	892
1995	3,223	1,008	617	951	43,378	878	2,130	878
1996	3,845	1,121	704	928	45,975	920	2,507	929
1997	3,578	1,097	599	1,036	49,743	945	2,746	954
1998	3,353	1,062	669	1,150	51,917	982	3,063	983
1999	4,380	1,326	819	1,141	55,104	1,024	3,680	1,023
2000	4,822	1,490	547	1,425	58,038	1,125	3,595	1,070
2001	4,224	1,465	632	1,455	58,920	1,211	3,904	1,151
2002	3,954	1,677	626	1,281	60,346	1,371	4,485	1,077
2003	5,955	1,578	1,001	1,106	64,697	1,401	4,561	1,027
2004	6,430	1,565	865	1,388	68,931	1,487	4,684	1,091
2005	7,005	1,597	926	1,426	73,853	1,508	4,939	1,107
2006	7,143	1,578	840	1,589	78,498	1,566	5,018	1,068
2007	7,393	1,629	800	1,662	83,594	1,584	5,071	1,091
2008	7,784	1,594	640	1,642	88,956	1,596	4,882	1,079
2009	7,958	1,604	723	1,840	94,424	1,613	4,712	1,258

\* In 2009, the LTD average monthly benefit reflects actual, but not assumed, benefit offsets.

**Exhibit 10.13  
Data Reconciliation**

	Active Members	Deferred Vested	Retirees & Beneficiaries	Total
Total at June 30, 2008	226,415	203,004	88,956	518,375
Terminations	(16,841)	16,841	0	0
Refund	(5,805)	(6,224)	0	(12,029)
Transfer Out	0	0	0	0
Disabled	(591)	(127)	0	(718)
Retirements	(5,420)	(1,195)	6,615	0
Returned from LTD	75	186	514	775
New QDRO	0	0	86	86
New Beneficiary	0	0	488	488
Deaths (with Beneficiary)	0	0	(488)	(488)
Deaths (without Beneficiary)	(227)	(516)	(1,731)	(2,474)
Benefit Expiration	0	0	(210)	(210)
Data Adjustments	(5)	205	251	451
New Entrants Terminated with Account Balance	0	3,459	0	3,459
Rehires	5,181	(5,124)	(57)	0
New Entrants	19,733	0	0	19,733
Net Change	(3,900)	7,505	5,468	9,073
Total at June 30, 2009	222,515	210,509	94,424	527,448

The inactive population includes former members who are eligible for refunds. Their printed records were discovered and first included in the June 30, 2006, valuation. They are referred to as the Green Bar people.

This exhibit excludes the 4,712 members receiving LTD benefits, 487 other-than-Plan (System) members who are receiving benefits from the 401(a) plan only, 555 other-than-Plan (System) members who are receiving benefits from the 401(h) plan only, and 164 other-than-Plan (System) members who are receiving benefits from both the 401(a) and 401(h) plan.

**Summary of the Benefit Provisions of the  
Retirement Plan as of June 30, 2009**

The Arizona State Retirement Plan makes provision for the retirement, disability, and death and survivor benefits to all members of the State, instrumentalities of the State and certain political subdivisions. The major provisions of the Plan may be summarized as follows:

A. RETIREMENT BENEFITS

1. Normal Retirement Date (the earliest of the following):

- (a) a member's sixty-fifth birthday,
- (b) a member's sixty-second birthday and completion of at least ten years of credited service, or
- (c) the first day immediately following the day that the sum of the member's age and his years of total credited service equals eighty.

2. Monthly Life Annuity

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

<u>Years of Credited Service</u>	<u>Benefit Multiplier</u>
Less than 20	2.10%
20.0 to 24.99	2.15%
25.0 to 29.99	2.20%
30 or more	2.30%

3. Normal Retirement Benefit

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

4. Early Retirement

Age 50 with five or more years of credited service.



5. Early Retirement Benefit

If not eligible for normal retirement and at least age 50 with five 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 Service	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
5-10	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	88%	91%	94%	97%	100%
10-19	44%	49%	54%	59%	64%	69%	74%	79%	84%	89%	94%	97%	100%	100%	100%	100%
20+	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%	100%	100%	100%	100%	100%

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

6. Normal Form of Benefit

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

7. Optional Forms:

- (a) joint and contingent annuity (with pop-up) with either 100%, 66-2/3% or 50% of the reduced retirement income payable for the life of the contingent annuitant upon the death of the retiring member,
- (b) period certain and life annuity (with pop-up) with five, ten, or fifteen years of payments guaranteed, or
- (c) a social security leveling option combined with any of the other forms of payment.

8. Minimum Benefit

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

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

1. Long Term Disability

Monthly benefit equal to two-thirds of monthly compensation reduced by percentages of other income received payable commencing six months after date of disability until the earlier of:

- (a) date of cessation of total disability, or
- (b) normal retirement date.

This benefit is paid by a separate LTD plan.

2. Disability Payments if Member Remains Disabled Through Normal Retirement Date

Monthly benefit member would have received if service had continued to normal retirement date assuming the member's salary remained at the level it was at his or her date of disability, also provided that the amount of total credited service is limited to 30 years unless he or she had more than 30 years at date of disability.

3. The minimum monthly benefit payable to a disabled member is \$50.00.

C. **DISABILITY BENEFITS** (for disability before July 1, 1988)

1. Eligibility

Age 50 with five years of service.

2. Benefit Amount

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

D. **PRE-RETIREMENT DEATH BENEFITS**

1. Eligibility

Applicable if death occurs prior to retirement.

2. Benefit

Any one of the following, at the option of the beneficiary:

(a) a lump sum equal to the sum of (i) and (ii):

(i) two times member's contributions to the plan with interest, and

(ii) the amount of the member's member and employer accounts, along with any supplemental credits transferred from the System to the Plan with interest.

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

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

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

E. VESTING OF BENEFITS

1. Vesting

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

2. Benefits Upon Vesting

A fully vested member is entitled to either:

- (a) the enhanced refund option, or
- (b) the retirement benefit payable at normal retirement earned to the date of member's termination.

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

F. RETIREE HEALTH INSURANCE PREMIUM SUPPLEMENT

1. Eligibility

Retirement or disability after five 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. Members who elect the enhanced refund option are not eligible for this benefit.

2. Benefit

The benefit is payable only with respect to allowable health insurance premiums for which the member is responsible. There is no benefit payable after the retirees die. The maximum benefits for members with ten or more years of service are:

- (a) with respect to premiums paid for retirees with member only coverage:
  - \$150 per month if the retiree is under age 65
  - \$100 per month if the retiree is 65 or over

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

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

See Sections O, Q and S in the Changes to Benefit Provisions section for a discussion of the temporary benefit payable to retirees in "Rural" coverage areas.

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

##### Permanent Benefit Increase (PBI)

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

##### Permanent Benefit Increase Enhancement

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

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

#### H. MEMBER AND EMPLOYER CONTRIBUTIONS

The contribution rate for the fiscal year beginning on July 1st is based on the results of the most recent actuarial valuation as of the last day of the preceding plan year. Member's contribution rate is equal to the required employer contribution rate. The contribution rate for fiscal year 2010 is 9.00% for each member and each employer, based on the 2008 actuarial valuation. The contribution rate for fiscal year 2011 will be 9.60% based on this valuation. Interest is credited at 8.00%; however, interest is credited at 4% from July 1, 2005 for return of contributions upon termination for reasons other than retirement or death.

### Changes to the Benefit Provisions

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

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

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

##### 2. \$12,000 Minimum Average Compensation for Current Retirees

Recalculation of the retirement benefit for all plan members retired before June 30, 1989 who had ten 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% permanent benefit increase to their December 31, 1988 base benefit.
- Effective July 1, 1990, all members retired on or before June 30, 1989 shall receive a 2.0% permanent benefit increase to their June 30, 1990 base benefit.

##### 4. Early Retirement Window

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

##### 5. 3.0% Tax Equity Allowance

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

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

##### 1. Rule of 82

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

2. 3.0% Tax Equity Allowance

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

3. Graded Vesting for Health Insurance Premium Supplement

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

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

1. 3.0% Tax Equity Allowance

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

2. Recalculation of Retiree Benefits Using 2.0% Benefit Multiplier

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

3. 2.3% Ad Hoc Increase

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

4. Rule of 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.

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

1. 3.0% Tax Equity Allowance

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

2. Minimum Retiree Benefit

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

3. 5% Ad Hoc Increase

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

4. Forfeited Service Repurchase

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

5. Repurchase of Service Due to Reduction in Force

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

6. Change in Section 38-781.05 Funding Method

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

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

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

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

1. Minimum LTD Benefit

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

2. Minimum Retiree Benefit

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

3. Pop-up Benefit

Members who retired prior to January 1, 1992 and who elected a Joint and Survivor option shall receive a "Pop-up" in their retirement income if their beneficiary predeceases 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 the reserve, no COLA will be granted.

5. Change in Section 38-737 Funding Period

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

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

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

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



2. Removal of LTD Benefit from the Plan

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

3. Creation of Separate Account for the Health Premium Supplement

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

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

1. No material changes.

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

1. Creation of family Health Supplement. Allows unused portion of the Health Supplement of a member or dependent to be used to pay the other recipient's health insurance premium.
2. The calculation methodology for the Excess Investment Earnings COLA was modified.
3. The contribution rate will be determined on a biennial cycle beginning with the 2000 fiscal year.

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

1. No material changes.

K. LEGISLATED PLAN CHANGES ENACTED BY THE 1999 LEGISLATURE OF THE STATE OF ARIZONA

1. Enhanced Refund Option

Members who terminate prior to eligibility for retirement may elect to receive a refund of their member contributions with interest. If the member has at least five years of service, the member is also entitled to a share of the employer contributions with interest. The share is 50% with five years of service and increases 10% for each additional year of service to a maximum of 100% for ten or more years of service.

2. Benefit Multiplier Increased to 2.1%

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

3. 5% Ad Hoc Increase

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

4. Increase in Maximum Service While on LTD

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

5. Changes in Permanent Benefit Increase COLA

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

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

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

M. LEGISLATED PLAN CHANGES ENACTED BY THE 2001 LEGISLATURE OF THE STATE OF ARIZONA

1. Health Insurance Premium Benefit Increase

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

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

2. Graded Multiplier

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

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

3. Employer Option Service Purchase Incentive

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

4. Permanent Benefit Increase Enhancement

Provides that interest at a rate of 8% be credited on the funds held in reserve for the permanent benefit increase (PBI). This interest will then be used to fund an additional increase for retirees who have at least ten 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 ten years of credited service in the following amounts:

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

6. Partial Lump Sum Option

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

7. Maximum Benefit

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

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

1. No material changes.

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

1. Temporary Rural Health Insurance Premium Benefit

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

	Insurance Coverage Without Medicare Parts A & B		Insurance Coverage With Medicare Parts A & B	
	Single	Family	Single	Family
Required Minimum Out-of-Pocket Payment	\$125	\$425	\$100	\$200
Rural Health Insurance Subsidy (Maximums)	Up to \$300	Up to \$600	Up to \$170	Up to \$350

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

P. LEGISLATED PLAN CHANGES ENACTED BY THE 2004 LEGISLATURE OF THE STATE OF ARIZONA

1. Service Purchase Program

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

2. Early Retirement Incentive Programs

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

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

1. Temporary Rural Health Insurance Premium Benefit

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

2. Contribution Rates

The contribution rates for fiscal 2006 and 2007 are 6.90% and 8.60%, respectively.

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

1. Elections After Retirement

Legislature limited the ability of ASRS retirees to rescind their elections after retirement. Specifically, members who have chosen a form with a death benefit can "pop up" once to the single life form but are then not allowed to "pop down" to a death benefit form.

2. Conformance with Certain Federal Regulations

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

3. Repeal of Deferred Retirement Option Plan

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

4. Early Termination Incentive Programs

The change made in the 2004 legislature to early retirement incentive programs was extended to early termination programs.

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

1. Social Security Offsets and Pre-Existing Condition Period

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

2. Temporary Rural Health Insurance Premium Benefit

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

3. Exemption of Post-Doctoral Scholars

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

4. Expanded Eligibility for Active Military Service Credit

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

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

1. Unclaimed Property Exemption and Procedures

Legislation exempted ASRS from unclaimed property statutes. ASRS members will forfeit their benefits if they do not claim them by the time they reach age 73½. If such a member later claims his benefit, his benefit will be restored with interest if applicable. ASRS will send notices to members beginning at age 65½, and will make efforts to find lost members.

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

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

3. Transfer Procedures

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

4. Transfer Out Bills

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

5. Plan Administration

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

6. Federal Conforming Changes

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

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

1. Service Purchase

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

2. 80% Cap on Benefits

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

3. Return to Work

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

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

4. Administration

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

5. Early Termination Incentives

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

6. Dual Employment

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