



# **Arizona State Retirement System**

**Actuarial Report on the**

**Valuation of the Plan**

**As of June 30, 2012**





January 23, 2013

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

Dear Retirement Board Members:

**Valuation of the ASRS Plan as of June 30, 2012**

Dear Retirement Board Members:

We certify that the information contained in the attached 2012 actuarial valuation report is accurate and fairly presents the actuarial position of the Arizona State Retirement Plan (the Plan) as of June 30, 2012.

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

**Actuarial Valuations**

The primary purpose of the valuation report is to determine the required member and employer contribution rates, to describe the current financial condition of the Plan, and to analyze changes in the Plan's condition. In addition, the report provides information that ASRS requires for its Comprehensive Annual Financial Report (CAFR) and it summarizes census data. Use of this report for any other purposes or by anyone other than ASRS and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages

should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck Consultants' written consent.

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

**Data**

ASRS staff supplied census data for participants as of June 30, 2012. We have not audited these data, but have examined them for reasonableness and consistency with data for the prior year's valuation. ASRS staff also supplied asset information. The results of the valuation depend on the accuracy of the data.

**Trend Data and Supporting Schedules**

ASRS prepared all trend data schedules in the financial section of ASRS's CAFR. ASRS also prepared all supporting schedules in the actuarial section of the CAFR.

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

Sincerely,



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



Douglas J. Fiddler, ASA, EA, MAAA  
Director, Retirement Actuary

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## Executive Summary

Attached are tables summarizing the key results of the June 30, 2012, actuarial valuation of the Arizona State Retirement Plan (the Plan).

### Demographic Changes

The number of active members has decreased from 208,939 to 203,994, a 2.4% decrease. Valuation payroll has decreased 2.1% from \$9.061 billion to \$8.869 billion. The payroll for fiscal year 2013 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 \$524 million. This loss is due to the investment experience of fiscal 2012 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 2012 fiscal year is 6.16% on the pension assets (401(a)) and 6.01% on the health supplement assets (401(h)) compared to last year's returns of 4.04% and 3.01%, respectively. The actuarially assumed rate of return is 8%. There was also a gain of \$305 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:

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

**Effect on Contribution Rates and Funded Status**

The contribution rate calculated in this valuation will become effective on July 1, 2013, and will remain in effect through June 30, 2014. The Plan had a gain on liability experience, including a gain due to legislative changes, and a loss on investments. The net result is that the calculated contribution rate will increase from a rate of 10.90% in the 2011 valuation report to a rate of 11.30% in this report. Later sections of this report give a detailed explanation of the change in contribution rates.

The recognition of investment losses has caused the funded status of the total plan (the ratio of actuarial assets to actuarial accrued liabilities) to decrease slightly from 75.8% as of June 30, 2011, to 75.7% as of June 30, 2012. The unfunded actuarial accrued liability has grown during this period from \$9,324.4 million to \$9,722.8 million.

The calculated total 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., 6.77%, instead of 11.30%.

**Reserve and Outlook for Permanent Benefit Increases**

Since the total actuarial investment return (on the actuarial value of 401(a) assets) of 6.16% is below 8% for fiscal year 2012, 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 total contribution rates continuing to increase for about five years, assuming future experience matches our assumptions and the workforce experiences no growth. Below we have shown 10 years of projected contribution rates assuming no growth in population, 2.5% annual growth, 2.5% annual reduction and a closed group (no new entrants).

Total Contribution Rate – Member + Employer				
Effective Date	No Growth	2.5% Annual Growth	2.5% Annual Reduction	Closed Group
2013/2014	22.55%	22.55%	22.55%	22.55%
2014/2015	23.08%	22.88%	23.27%	24.12%
2015/2016	23.63%	23.19%	24.08%	25.91%
2016/2017	23.98%	23.28%	24.72%	27.56%
2017/2018	24.16%	23.18%	25.21%	29.14%
2018/2019	24.47%	23.18%	25.87%	31.15%
2019/2020	24.35%	22.78%	26.09%	32.73%
2020/2021	23.65%	21.89%	25.67%	33.51%
2021/2022	23.00%	21.06%	25.26%	34.21%
2022/2023	22.68%	20.53%	25.23%	35.65%

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. These forecasts assume future investment returns of 8.0% on Market Value of Assets and exclude potential future PBIs.



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):

	2011	2012
<b>Demographic Information</b>		
● Number of Members		
Actives	208,939	203,994
Inactives	208,969	210,060
Receiving benefits	107,996	114,431
Disabled (LTD)	4,609	4,440
Total	530,513	532,925
● Covered projected payroll	\$ 9,061	\$ 8,869
● Average age/service for actives	45.7/9.4	45.8/9.6
● Average pay for actives	\$ 43,365	\$ 43,475
● Average monthly benefit for retirees and beneficiaries (401(a) only)	\$ 1,627	\$ 1,630
● Average monthly benefit for members who retired in last fiscal year (401(a) only)	\$ 1,628	\$ 1,575
● Average age at valuation date for retirees and beneficiaries	69.7	69.8
● Average age at retirement for retirees and beneficiaries	60.2	60.2
● Average age at valuation date for members who retired in last fiscal year	61.9	62.0
<b>Financial Information</b>		
● Total normal cost rate <sup>1</sup>	13.34%	13.53%
● Unfunded actuarial accrued liability <sup>1</sup>	\$ 9,324	\$ 9,723
● Funded status of pension (401(a)) <sup>1</sup>	75.5%	75.3%
● Funded status of health (401(h))	82.9%	85.3%
● Funded status of total plan <sup>1</sup>	75.8%	75.7%
● Unrounded total contribution rate <sup>1</sup>	21.80%	22.55%
● Member contribution rate	10.90%	11.30%
● Employer contribution rate	10.90%	11.30%
● Member and employer contributions <sup>2</sup>	\$ 1,735	\$ 1,864
● Benefit and refunded payments <sup>2</sup>	\$ 2,413	\$ 2,580
● Administrative expenses <sup>2</sup>	\$ 28	\$ 32
● Net external cash flow <sup>2</sup>	\$ (706)	\$ (748)
● 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

<sup>1</sup> Includes System liabilities and assets for members who retired or will retire on or after July 1, 1981.

<sup>2</sup> 2012 column gives information for fiscal year ended June 30, 2012 and 2011 column gives information for fiscal year ended June 30, 2011.

	2011	2012
● Actuarial gains (losses)		
Assets	\$ (1,119)	\$ (524)
Liability experience	484	276
System experience	(12)	(12)
Legislative and administrative changes	N/A	28
Assumption changes	374	N/A
Method change	N/A	N/A
Total	\$ (273)	\$ (232)
● GASB 25 disclosure (401(a) pension only)		
Actuarial Accrued Liability (AAL) <sup>1</sup>	\$ 37,051	\$ 38,450
Unfunded AAL/(Surplus) <sup>1</sup>	\$ 9,068	\$ 9,502
Actuarial Value of Assets as % of AAL <sup>1</sup>	75.5%	75.3%
Unfunded AAL/(Surplus) as % of payroll <sup>1</sup>	100.1%	107.1%
● GASB 43 disclosure (401(h) plan only)		
Actuarial Accrued Liability (AAL)	\$ 1,504	\$ 1,502
Unfunded AAL/(Surplus)	\$ 257	\$ 221
Actuarial Value of Assets as % of AAL	82.9%	85.3%
Unfunded AAL/(Surplus) as % of payroll	2.8%	2.5%
● Changes in contribution rate:		
<b>Item</b>	<b>Contribution Rate</b>	<b>Change in Rate</b>
1. 2011 Valuation	21.80%	-
2. Expected Experience	21.41%	-0.39%
3. Contribution Gain/(Loss)	21.62%	+0.21%
4. 2011/2012 Liability Experience	22.12%	+0.50%
5. 2011/2012 Asset Experience	22.60%	+0.48%
6. System Experience	22.61%	+0.01%
7. Legislative Change (53/47 to 50/50)	22.55%	-0.06%

<sup>1</sup> Includes System liabilities and assets for members who retired or will retire on or after July 1, 1981.

<b>Split of Total Contribution Rate:</b>			
<b>Item</b>	<b>401(a)<sup>1</sup> Account</b>	<b>401(h) Account</b>	<b>Total</b>
1. Member Contribution Rates	11.30%	0.00%	11.30%
2. Employer Contribution Rates	<u>10.70%</u>	<u>0.60%</u>	<u>11.30%</u>
3. Total Contribution Rates	22.00%	0.60%	22.60%

<sup>1</sup> Includes post-1981 System liabilities and assets.

- Asset Amounts, Returns on Assets, and Funded Status

	<b>2011</b>		<b>2012</b>	
<b>Asset Amounts</b>	<b>Market Value</b>	<b>Actuarial Value</b>	<b>Market Value</b>	<b>Actuarial Value</b>
Pension 401(a) <sup>1</sup>	\$ 26,838,580,309	\$ 27,983,517,225	\$ 26,401,667,918	\$ 28,948,010,913
Health 401(h)	<u>1,194,727,820</u>	<u>1,247,443,042</u>	<u>1,167,345,698</u>	<u>1,281,566,359</u>
Total Plan <sup>1</sup>	\$ 28,033,308,129	\$ 29,230,960,267	\$ 27,569,013,616	\$ 30,229,577,272
<b>Asset Yields</b>	<b>Market Value</b>	<b>Actuarial Value</b>	<b>Market Value</b>	<b>Actuarial Value</b>
Pension 401(a)	24.80%	4.04%	1.11%	6.16%
Health 401(h)	24.68%	3.01%	1.03%	6.01%
Total Plan	24.79%	3.99%	1.10%	6.15%
<b>Liabilities</b>				
Pension 401(a) <sup>1</sup>	\$ 37,051,179,339	\$ 37,051,179,339	\$ 38,450,288,740	\$ 38,450,288,740
Health 401(h)	<u>1,504,189,674</u>	<u>1,504,189,674</u>	<u>1,502,082,451</u>	<u>1,502,082,451</u>
Total Plan <sup>1</sup>	\$ 38,555,369,013	\$ 38,555,369,013	\$ 39,952,371,191	\$ 39,952,371,191
<b>Funded Status<sup>2</sup></b>	<b>Market Value</b>	<b>Actuarial Value</b>	<b>Market Value</b>	<b>Actuarial Value</b>
Pension 401(a) <sup>1</sup>	72.4%	75.5%	68.7%	75.3%
Health 401(h)	79.4%	82.9%	77.7%	85.3%
Total Plan <sup>1</sup>	72.7%	75.8%	69.0%	75.7%

<sup>1</sup> Includes System liabilities and assets for members who retired or will retire on or after July 1, 1981.

<sup>2</sup> Percentages are rounded quotients of unrounded amounts.

## 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, 2012, determines the contribution rate for fiscal year 2014. Based on the results of the 2012 Plan valuation, the total contribution rate for the fiscal year beginning July 1, 2013, would increase from the 10.90% unrounded rate determined in the 2011 valuation to 11.30% 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, 2011, and June 30, 2012, as reported by ASRS.

### Actuarial Value of Assets

The actuarial asset valuation 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, i.e., no requirement that the actuarial value be within a given percentage of the market value. The Board adopted this actuarial asset 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, 2012, was \$27,569,013,616 and the actuarial value of asset under this method was \$30,229,577,272, or about 110% of market value as of June 30, 2012. The combined 401(a) and 401(h) deferral amount for the year is \$(2.661) billion. That is, \$2.661 billion of investment losses that occurred before July 1, 2012 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 at the middle of the year.

During the twelve months ended June 30, 2012, the Plan had an estimated yield of 6.16% on the 401(a) actuarial assets and 6.01% 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 1.11% on the 401(a) market assets and 1.03% on the 401(h) market assets.

The Plan's assets are split between the retirement program (401(a)), the health premium supplement program (401(h)) and the System assets for members who retired or will retire on or after July 1, 1981 as follows:

Item	401(a) Account	401(h) Account	System	Total
1. Market Value of Assets	\$26,047,713,626	\$ 1,167,345,698	\$ 353,954,292	\$27,569,013,616
2. Actuarial Value of Assets	\$28,548,705,130	\$ 1,281,566,359	\$ 399,305,783	\$30,229,577,272

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

	Year Ending June 30, 2011	Year Ending June 30, 2012
1. Market value, beginning of year	\$ 21,779,421,537	\$ 26,440,256,592
2. Contributions and receipts during the year		
a. Member contributions <sup>1</sup>	833,205,706	905,908,620
b. Employer contributions <sup>1</sup>	786,581,145	852,107,785
c. Member reimbursements of member contributions	64,384,583	51,423,342
d. Member reimbursements of employer contributions	0	0
e. Other miscellaneous receipts	0	0
f. Total	\$ 1,684,171,434	\$ 1,809,439,747
3. Investment income for the year (net of investment expenses)	\$ 5,324,542,514	\$ 317,991,702
4. Benefit payments		
a. Retirement benefits	\$ (2,120,206,816)	\$ (2,249,900,004)
b. Death benefits	(23,930,330)	(29,575,674)
c. Total	\$ (2,144,137,146)	\$ (2,279,475,678)
5. Refunds of contributions	(177,035,003)	(207,078,258)
6. Employer adjustments	0	0
7. Administrative expenses	(26,877,407)	(30,632,862)
8. Miscellaneous	0	0
9. Other		
a. Transfers from other plans	\$ 6,427,112	\$ 2,236,314
b. Reimbursements and lump sums	0	0
c. Transfers to PSPRS	(6,256,449)	(5,023,931)
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	\$ 170,663	\$ (2,787,617)
10. Change in audited assets, beginning of year	0	0
11. Total change in market value	\$ 4,660,835,055	\$ (392,542,966)
12. Market value, end of year	\$ 26,440,256,592	\$ 26,047,713,626

<sup>1</sup> Contribution rates were 9.60% for fiscal 2011, and 10.50% for fiscal 2012.

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

	Year Ending June 30, 2011	Year Ending June 30, 2012
1. Market value, beginning of year	\$ 995,595,659	\$ 1,194,727,820
2. Contributions and receipts during the year		
a. Member contributions	\$ 0	\$ 0
b. Employer contributions <sup>1</sup>	51,047,543	54,462,585
c. Member reimbursements of member contributions	0	0
d. Member reimbursements of employer contributions	0	0
e. Other miscellaneous receipts	0	0
f. Total	\$ 51,047,543	\$ 54,462,585
3. Investment income for the year (net of investment expenses)	240,992,489	13,440,558
4. Benefit payments	(91,698,836)	(93,915,382)
5. Refunds of contributions	0	0
6. Employer adjustments	0	0
7. Administrative expenses	(1,209,035)	(1,369,883)
8. Miscellaneous	0	0
9. Other	0	0
10. Change in audited assets, beginning of year	0	0
11. Total change in market value	\$ 199,132,161	\$ (27,382,122)
12. Market value, end of year	\$ 1,194,727,820	\$ 1,167,345,698

<sup>1</sup> Contribution rates were 0.59% for fiscal 2011, and 0.63% for fiscal 2012.

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

Item	Plan Year Ending June 30			
	2009	2010	2011	2012
1. Market value of assets, beginning of year	\$ 24,208,124,045	\$ 19,506,243,433	\$ 21,779,421,537	\$ 26,440,256,592
2. Contributions during year	1,667,446,038	1,642,839,233	1,684,171,434	1,809,439,747
3. Benefits paid during year	(1,866,765,965)	(2,007,437,548)	(2,144,137,146)	(2,279,475,678)
4. Refunds paid during year	(118,609,040)	(145,833,143)	(177,035,003)	(207,078,258)
5. Administrative expenses, assumed end of year	(26,803,812)	(27,762,078)	(26,877,407)	(30,632,862)
6. Other changes and net transfers	(2,399,977)	(8,502,361)	170,663	(2,787,617)
7. Net investment income for year, net of all expenses	(4,381,551,668)	2,792,111,923	5,297,665,107	287,358,840
8. Expected net investment income at 8%				
a. Market value of assets, beginning of year	1,936,649,924	1,560,499,475	1,742,353,723	2,115,220,527
b. Contributions	66,697,842	65,713,569	67,366,857	72,377,590
c. Benefits	(80,893,192)	(86,988,960)	(92,912,610)	(98,777,279)
d. Refunds	(5,139,725)	(6,319,436)	(7,671,517)	(8,973,391)
e. Administrative expenses	0	0	0	0
f. Other	(95,999)	(340,094)	6,827	(111,505)
g. Total	1,917,218,850	1,532,564,554	1,709,143,280	2,079,735,942
9. Excess investment income for year (Item 7 - Item 8.g.)	\$ (6,298,770,518)	\$ 1,259,547,369	\$ 3,588,521,827	\$ (1,792,377,102)



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

Item	Plan Year Ending June 30			
	2009	2010	2011	2012
1. Market value of assets, beginning of year	\$ 1,087,985,713	\$ 897,192,742	\$ 995,595,659	\$ 1,194,727,820
2. Contributions during year	90,489,881	59,393,098	51,047,543	54,462,585
3. Benefits paid during year	(87,722,652)	(87,983,539)	(91,698,836)	(93,915,382)
4. Refunds paid during year	0	0	0	0
5. Administrative expenses, assumed end of year	(1,223,441)	(1,265,834)	(1,209,035)	(1,369,883)
6. Other changes and net transfers	0	0	0	0
7. Net investment income for year, net of all expenses	(193,560,200)	126,993,358	239,783,454	12,070,675
8. Expected net investment income at 8%				
a. Market value of assets, beginning of year	87,038,857	71,775,419	79,647,653	95,578,226
b. Contributions	3,619,595	2,375,724	2,041,902	2,178,503
c. Benefits	(3,801,315)	(3,812,620)	(3,973,616)	(4,069,667)
d. Refunds	0	0	0	0
e. Administrative expenses	0	0	0	0
f. Other	0	0	0	0
g. Total	86,857,137	70,338,523	77,715,939	93,687,062
9. Excess investment income for year (Item 7 - Item 8.g.)	\$ (280,417,337)	\$ 56,654,835	\$ 162,067,515	\$ (81,616,387)

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

Item	Valuation as of June 30, 2011	Valuation as of June 30, 2012
1. Excess (shortfall) of investment income for current year and previous eight years:		
a. Current year	\$ 3,588,521,827	\$ (1,792,377,102)
b. Current year – 1	1,259,547,369	3,588,521,827
c. Current year – 2	(6,298,770,518)	1,259,547,369
d. Current year – 3	(4,056,160,670)	(6,298,770,518)
e. Current year – 4	2,181,339,141	(4,056,160,670)
f. Current year – 5	385,506,263	2,181,339,141
g. Current year – 6	86,948,970	385,506,263
h. Current year – 7	1,614,125,853	86,948,970
i. Current year – 8	(1,074,084,926)	1,614,125,853
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ 3,229,669,644	\$ (1,613,139,392)
b. Current year – 1 (80% deferral)	1,007,637,895	2,870,817,462
c. Current year – 2 (70% deferral)	(4,409,139,363)	881,683,158
d. Current year – 3 (60% deferral)	(2,433,696,402)	(3,779,262,311)
e. Current year – 4 (50% deferral)	1,090,669,571	(2,028,080,335)
f. Current year – 5 (40% deferral)	154,202,505	872,535,656
g. Current year – 6 (30% deferral)	26,084,691	115,651,879
h. Current year – 7 (20% deferral)	322,825,171	17,389,794
i. Current year – 8 (10% deferral)	(107,408,493)	161,412,585
j. Total deferred for year	\$ (1,119,154,781)	\$ (2,500,991,504)
3. Market value of plan assets, end of year	\$ 26,440,256,592	\$ 26,047,713,626
4. Actuarial value of plan assets, end of year (Item 3 - Item 2.j.)	\$ 27,559,411,373	\$ 28,548,705,130

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

Item	Valuation as of June 30, 2011	Valuation as of June 30, 2012
1. Excess (shortfall) of investment income for current year and previous eight years:		
a. Current year	\$ 162,067,515	\$ (81,616,387)
b. Current year – 1	56,654,835	162,067,515
c. Current year – 2	(280,417,337)	56,654,835
d. Current year – 3	(182,147,911)	(280,417,337)
e. Current year – 4	94,970,630	(182,147,911)
f. Current year – 5	15,509,847	94,970,630
g. Current year – 6	3,700,598	15,509,847
h. Current year – 7	58,647,224	3,700,598
i. Current year – 8	(48,478,489)	58,647,224
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ 145,860,764	\$ (73,454,748)
b. Current year – 1 (80% deferral)	45,323,868	129,654,012
c. Current year – 2 (70% deferral)	(196,292,136)	39,658,385
d. Current year – 3 (60% deferral)	(109,288,747)	(168,250,402)
e. Current year – 4 (50% deferral)	47,485,315	(91,073,956)
f. Current year – 5 (40% deferral)	6,203,939	37,988,252
g. Current year – 6 (30% deferral)	1,110,179	4,652,954
h. Current year – 7 (20% deferral)	11,729,445	740,120
i. Current year – 8 (10% deferral)	<u>(4,847,849)</u>	<u>5,864,722</u>
j. Total deferred for year	\$ (52,715,222)	\$ (114,220,661)
3. Market value of plan assets, end of year	\$ 1,194,727,820	\$ 1,167,345,698
4. Actuarial value of plan assets, end of year (Item 3 - Item 2.j.)	\$ 1,247,443,042	\$ 1,281,566,359

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

Item	Valuation as of June 30, 2011	Valuation as of June 30, 2012
1. Actuarial assets, beginning of year	\$ 27,117,832,654	\$ 27,559,411,373
2. Total contributions during year	1,684,171,434	1,809,439,747
3. Benefits paid during year	(2,144,137,146)	(2,279,475,678)
4. Refunds paid during year	(177,035,003)	(207,078,258)
5. Other changes and net transfers	170,663	(2,787,617)
6. Assumed net investment income at 8%		
a. Beginning of year assets	2,169,426,612	2,204,752,910
b. Contributions	67,366,857	72,377,590
c. Benefits	(92,912,610)	(98,777,279)
d. Refunds	(7,671,517)	(8,973,391)
e. Other	6,827	(111,505)
f. Total	\$ 2,136,216,169	\$ 2,169,268,325
7. Expected actuarial assets, end of year (Sum of Items 1 through 6)	\$ 28,617,218,771	\$ 29,048,777,892
8. Actual actuarial assets, end of year	\$ 27,559,411,373	\$ 28,548,705,130
9. Asset gain/(loss) for year (Item 8 - Item 7)	\$ (1,057,807,398)	\$ (500,072,762)

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

Item	Valuation as of June 30, 2011	Valuation as of June 30, 2012
1. Actuarial assets, beginning of year	\$ 1,251,145,282	\$ 1,247,443,042
2. Total contributions during year	51,047,543	54,462,585
3. Benefits paid during year	(91,698,836)	(93,915,382)
4. Refunds paid during year	0	0
5. Other changes and net transfers	0	0
6. Assumed net investment income at 8%		
a. Beginning of year assets	100,091,623	99,795,443
b. Contributions	2,041,902	2,178,503
c. Benefits	(3,973,616)	(4,069,667)
d. Refunds	0	0
e. Other	0	0
f. Total	\$ 98,159,909	\$ 97,904,279
7. Expected actuarial assets, end of year (Sum of Items 1 through 6)	\$ 1,308,653,898	\$ 1,305,894,524
8. Actual actuarial assets, end of year	\$ 1,247,443,042	\$ 1,281,566,359
9. Asset gain/(loss) for year (Item 8 - Item 7)	\$ (61,210,856)	\$ (24,328,165)

**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)	\$ 317,991,702	\$ 1,699,828,425
2. Administrative expenses for the year	\$ 30,632,862	\$ 30,632,862
3. Net investment income for the asset valuation method	\$ 287,358,840	\$ 1,669,195,563
4. Beginning of year asset value	\$ 26,440,256,592	\$ 27,559,411,373
5. End of year asset value	\$ 26,047,713,626	\$ 28,548,705,130
6. Estimated yield based on mid-year timing for contributions and 13/24 timing for benefit payments	1.11%	6.16%

**Exhibit 3.5b – History of Yields (401(a) Only)**

Year (Ending June 30)	Market Value	Actuarial Value
2002	(11.29%)	6.36%
2003	1.83%	2.88%
2004	17.37%	2.46%
2005	8.42%	3.20%
2006	9.83%	6.03%
2007	17.69%	7.29%
2008	(7.46%)	6.44%
2009	(18.28%)	3.04%
2010	14.57%	2.03%
2011	24.80%	4.04%
2012	1.11%	6.16%

**Exhibit 3.5c - 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)	\$ 13,440,558	\$ 74,945,997
2. Administrative expenses for the year	\$ 1,369,883	\$ 1,369,883
3. Net investment income for the asset valuation method	\$ 12,070,675	\$ 73,576,114
4. Beginning of year asset value	\$ 1,194,727,820	\$ 1,247,443,042
5. End of year asset value	\$ 1,167,345,698	\$ 1,281,566,359
6. Estimated yield based on mid-year timing for contributions and 13/24 timing for benefit payments	1.03%	6.01%

**Exhibit 3.5d – History of Yields (401(h) Only)**

Year (Ending June 30)	Market Value	Actuarial Value
2002	(20.04%)	9.10%
2003	1.31%	4.66%
2004	16.39%	4.53%
2005	8.42%	4.99%
2006	9.74%	4.26%
2007	17.73%	5.65%
2008	(7.62%)	5.02%
2009	(17.83%)	1.96%
2010	14.44%	1.07%
2011	24.68%	3.01%
2012	1.03%	6.01%

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%)
2010 <sup>2</sup>	1,702,232,331	(2,095,421,087)	(145,833,143)	(29,027,912)	(2,270,282,142)	(568,049,811)	22,775,017,196	(2.5%)
2011 <sup>2</sup>	1,735,218,977	(2,235,835,982)	(177,035,003)	(28,086,442)	(2,440,957,427)	(705,738,450)	27,834,984,412	(2.6%)
2012 <sup>2</sup>	1,863,902,332	(2,373,391,060)	(207,078,258)	(32,002,745)	(2,612,472,063)	(748,569,731)	27,215,059,324	(2.8%)

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

<sup>2</sup> 401(a) assets and 401(h) assets combined, excludes System assets and cash flows



Exhibit 3.7 – History of Asset Values and Ratios

Year Ending 06/30	401(a)			401(h)			Total		
	Actuarial Value of Assets	Market Value of Assets	AVA/MVA Ratio	Actuarial Value of Assets	Market Value of Assets	AVA/MVA Ratio	Actuarial Value of Assets	Market Value of Assets	AVA/MVA Ratio
2012	\$28,548,705,130	\$26,047,713,626	109.6%	\$1,281,566,359	\$1,167,345,698	109.8%	\$29,830,271,489	\$27,215,059,324	109.6%
2011	27,559,411,373	26,440,256,592	104.2%	1,247,443,042	1,194,727,820	104.4%	28,806,854,415	27,634,984,412	104.2%
2010	27,117,832,654	21,779,421,537	124.5%	1,251,145,282	995,595,659	125.7%	28,368,977,936	22,775,017,196	124.6%
2009	27,093,788,614	19,506,243,433	138.9%	1,266,370,836	897,192,742	141.1%	28,360,159,450	20,403,436,175	139.0%
2008	26,612,440,139	24,208,124,045	109.9%	1,239,385,591	1,087,985,713	113.9%	27,851,825,730	25,296,109,758	110.1%
2007	25,309,888,063	26,476,068,259	95.6%	1,166,799,842	1,162,950,488	100.3%	26,476,687,905	27,639,018,747	95.8%
2006	23,766,572,590	22,671,365,333	104.8%	1,084,950,186	969,747,605	111.9%	24,851,522,776	23,641,112,938	105.1%
2005	22,808,290,293	21,029,388,861	108.5%	1,028,228,830	871,636,743	118.0%	23,836,519,123	21,901,025,604	108.8%
2004	22,659,396,325	19,940,524,999	113.6%	983,508,438	808,048,248	121.7%	23,642,904,763	20,748,573,247	113.9%
2003	22,572,007,289	17,418,714,877	129.6%	944,891,222	698,106,058	135.4%	23,516,898,510	18,116,820,935	129.8%
2002	22,641,693,322	17,821,982,950	127.0%	981,322,647	772,873,387	127.0%	23,623,015,969	18,594,856,337	127.0%

Excludes System Assets

### **Actuarial Balance Sheet**

The results of the actuarial valuation of the Plan as of June 30, 2011, and June 30, 2012, are summarized in the actuarial balance sheet in Exhibit 4.1. The results for 2012 are based on the benefit provisions of the Plan as of June 30, 2012, 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	
	2011	2012
<b>I Present Assets At Actuarial Value:</b>		
1. Reserve for retired members and beneficiaries	\$ 20,062,607,075	\$ 21,189,979,976
2. Reserve for disabled members	720,678,909	770,284,225
3. Reserve for other-than-plan retirees	7,988,352	7,393,391
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	7,152,357,376	7,744,272,936
(b) System members	N/A	N/A
6. Employer contributions		
(a) Plan members	6,848,029,756	7,457,474,310
(b) System members	N/A	N/A
7. Other miscellaneous		
(a) ASRS building and land	0	0
(b) Other	0	0
8. Reserve for post-1981 System Members	419,400,584	406,514,877
9. Additional assets	(7,177,753,923)	(10,006,906,099)
10. Total present assets	\$ 28,033,308,129	\$ 27,569,013,616
11. Adjustment to market value due to actuarial asset valuation method	1,197,652,138	2,660,563,656
12. Total actuarial value of present assets	\$ 29,230,960,267	\$ 30,229,577,272
<b>II Prospective Assets:</b>		
13. Unfunded actuarial accrued liability	9,324,408,746	9,722,793,919
14. TOTAL ACTUARIAL ASSETS	\$ 38,555,369,013	\$ 39,952,371,191

Exhibit 4.1 - Actuarial Balance Sheet

**ACTUARIAL LIABILITIES**

	June 30	
	2011	2012
<b><u>III Present Value of Benefits Presently Being Paid:</u></b>		
15. (a) Benefits for retired members and beneficiaries	\$ 19,433,574,123	\$ 20,556,558,195
(b) Health insurance premium supplement	629,032,952	633,421,781
16. (a) Benefits for disabled members	685,992,571	734,513,283
(b) Health insurance premium supplement	34,686,338	35,770,942
17. (a) Benefits for other-than-plan members	2,114,464	1,872,998
(b) Health insurance premium supplement	5,873,888	5,520,393
18. Total present value of benefits presently being paid	\$ 20,791,274,336	\$ 21,967,657,592
<b><u>IV Present Value of Benefits Payable in the Future to Present Members:</u></b>		
19. Active members		
(a) Service retirement benefits	\$ 13,049,077,614	\$ 13,037,065,260
(b) Health insurance premium supplement	783,757,224	776,917,054
(c) Disability retirement benefits	407,089,102	421,328,595
(d) Pre-retirement death benefits	391,479,624	400,585,401
(e) Withdrawal benefits	1,092,825,217	1,158,632,548
(f) Total active members	\$ 15,724,228,781	\$ 15,794,528,858
20. Inactive members		
(a) Retirement Benefits	\$ 1,569,626,040	\$ 1,733,217,583
(b) Health insurance premium supplement	50,839,272	50,452,281
(c) Total inactive members	\$ 1,620,465,312	\$ 1,783,669,864
21. Post-1981 System members	419,400,584	\$ 406,514,877
22. Total	\$ 38,555,369,013	\$ 39,952,371,191
<b><u>V Other Liabilities and Reserves:</u></b>		
23. Reserve for other miscellaneous liabilities and reserves	\$ 0	\$ 0
24. Reserve for PBI COLAs	\$ 0	\$ 0
25. TOTAL ACTUARIAL LIABILITIES	\$ 38,555,369,013	\$ 39,952,371,191

**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%
2010 <sup>1</sup>	8,735	9,420	92.7%	28,823	30.3%	37,558	23.3%
2011 <sup>1</sup>	9,324	9,601	102.9%	29,231	31.9%	38,555	24.2%
2012 <sup>1</sup>	9,723	8,869	109.6%	30,230	32.2%	39,952	24.3%

<sup>1</sup> Includes System liabilities and assets for members who retired or will retire on or after July 1, 1981.

## Contribution Rates

### Normal Cost

Exhibit 5.1 indicates that the total normal cost as of June 30, 2012, is 13.53% of pay compared to 13.34% in the 2011 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 2012 valuation with the corresponding items for the 2011 valuation.

### Contribution Rates<sup>1</sup>

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, 2012, the normal cost of the Plan is 13.53% and the amortization of the UAAL is 9.02%. The total contribution rate is equal to:

$$\frac{1}{2} \times (13.53\% + 9.02\%) = 11.28\%$$

The contribution rates are then rounded to the nearest 0.05%, i.e., to 11.30% for each member and employer.

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

$$\frac{1}{2} \times (13.53\% + 0.00\%) = 6.77\%$$

This difference of 4.51% (i.e., 11.28% - 6.77%) is due entirely to the UAAL of the Plan. Thus, the current UAAL of the Plan is equivalent to a 4.51% increase in the employer and member contribution rates determined by the 2012 valuation.

The member and employer contribution rates determined by the 2012 valuation are each 11.30% 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	11.30%	0.00%	11.30%
2. Employer Contribution Rates	<u>10.70%</u>	<u>0.60%</u>	<u>11.30%</u>
3. Total Contribution Rates	22.00%	0.60%	22.60%

Exhibit 5.3 shows the history of the contribution rates.

<sup>1</sup> Includes assets and liabilities for System members who retired or will retire on or after July 1, 1981.

**Exhibit 5.1 - Analysis of Normal Cost by Component**

Benefit Component	Normal Cost as % of Pay	
	2011	2012
1. Retirement benefits	9.62%	9.64%
2. Health insurance premium supplement	0.42%	0.40%
3. Disability benefits (Deferred Retirement)	0.36%	0.38%
4. Death benefits	0.38%	0.39%
5. Termination benefits	2.56%	2.72%
6. Total	13.34%	13.53%

Exhibit 5.2 - Summary of Cost Items

	Valuation as of June 30, 2011		Valuation as of June 30, 2012	
		Cost as % of Pay		Cost as % of Pay
1. Members				
a. Active members	208,939		203,994	
b. Inactive members	208,969		210,060	
c. Retired members and beneficiaries	107,996		114,431	
d. Disabled retirees	4,609		4,440	
e. Total	530,513		532,925	
f. Other-than-plan retirees receiving only benefit increases (401(a))	259		229	
g. Other-than-plan retirees receiving only health insurance benefits (401(h))	545		536	
h. Other-than-plan retirees receiving both benefit increases (401(a)) and health insurance benefits (401(h))	134		125	
2. Covered payroll	\$ 9,060,630,604		\$ 8,868,678,184	
3. Averages for active members				
a. Average age	45.7		45.8	
b. Average years of service	9.4		9.6	
c. Average pay	\$ 43,365		\$ 43,475	
4. Normal cost rate	13.34%		13.53%	
5. Actuarial accrued liability <sup>1</sup>				
a. Retired members and beneficiaries	\$ 20,062,607,075		\$ 21,189,979,976	
b. Disabled members	720,678,909		770,284,225	
c. Benefits for other-than- plan retirees	7,988,352		7,393,391	
d. Active members	15,724,228,781		15,794,528,858	
e. Inactive members	1,620,465,312		1,783,669,864	
f. Post-1981 System members	419,400,584		406,514,877	
g. Reserve for PBI COLAs	0		0	
h. Total	\$ 38,555,369,013	425.5%	\$ 39,952,371,191	450.5%
6. Present actuarial assets <sup>1</sup>	\$ 29,230,960,267	322.6%	\$ 30,229,577,272	340.9%
7. Unfunded actuarial accrued liability <sup>1</sup>	\$ 9,324,408,746	102.9%	\$ 9,722,793,919	109.6%

<sup>1</sup> Includes System liabilities and assets for members who retired or will retire on or after July 1, 1981.



Exhibit 5.2 – Summary of Cost Items (cont.)

	Valuation as of June 30, 2011		Valuation as of June 30, 2012	
		Cost as % of Pay		Cost as % of Pay
8. Section 38-737 funding period	30 years		30 years	
9. Section 38-737 contribution rate <sup>1</sup>				
A. 401(a) Account				
a. Member	10.90%		11.30%	
b. Employer	10.25%		10.70%	
c. Total	21.15%		22.00%	
B. 401(h) Account				
a. Member	0.00%		0.00%	
b. Employer	0.65%		0.60%	
c. Total	0.65%		0.60%	
C. Total of Combined Accounts				
a. Member	10.90%		11.30%	
b. Employer	10.90%		11.30%	
c. Total	21.80%		22.60%	
10. Estimated yield on 401(a) actuarial assets	4.04%		6.16%	
11. Relative size of unfunded actuarial accrued liability <sup>1</sup>				
a. As percentage of actuarial assets	31.9%		32.2%	
b. As percentage of covered payroll	102.9%		109.6%	
c. As percentage of total actuarial accrued liability	24.2%		24.3%	

<sup>1</sup> Includes System liabilities and assets for members who retired or will retire on or after July 1, 1981.

**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
2011 <sup>3</sup>	10.48	10.48	10.50	10.50	20.96	21.00
2012 <sup>3</sup>	10.90	10.90	10.90	10.90	21.80	21.80
2013 <sup>3</sup>	11.28	11.28	11.30	11.30	22.55	22.60

<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.

<sup>3</sup> Includes System liabilities and assets for members who retired or will retire on or after July 1, 1981.

### 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 \$524 million. This loss is due to the investment experience of fiscal 2012 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 2012 fiscal year is 6.16% on the pension assets (401(a)) and 6.01% on the health supplement assets (401(h)) compared to last year's returns of 4.04% and 3.01%, respectively. The actuarially assumed rate of return is 8%. There was also a gain of \$276 million on the Plan liability experience and a loss of \$12 million on the System experience. Changes in legislation for contribution rates to return to 50% employee and 50% employer decreased liabilities by \$28 million. The total loss for the year was \$232 million.

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

Item	Valuation as of June 30, 2011	Valuation as of June 30, 2012
<b>A. Calculation of Total Actuarial Gain or Loss</b>		
1. Unfunded actuarial accrued liability (UAAL), previous year	\$ 8,734,717,378	\$ 9,324,408,746
2. Normal cost for the year	\$ 1,255,416,868	\$ 1,208,893,466
3. Contributions for the year <sup>1</sup>	\$ (1,670,834,394)	\$ (1,812,478,990)
4. Interest at 8%		
a. On UAAL	698,777,390	745,952,700
b. On normal cost	100,433,349	96,711,477
c. On contributions	(66,833,376)	(72,499,160)
d. Total	\$ 732,377,363	\$ 770,165,017
5. Expected UAAL (Sum of Items 1 - 4)	\$ 9,051,677,215	\$ 9,490,988,239
6. Actual UAAL	\$ 9,324,408,746	\$ 9,722,793,919
7. Gain/(loss) for the year (Item 5 - Item 6)	\$ (272,731,531)	\$ (231,805,680)
<b>B. Source of Gains and Losses</b>		
8. Asset gain/(loss) for the year (Tables 3.4a and 3.4b, Item 10)	\$ (1,119,018,254)	\$ (524,400,927)
9. Asset gain/(loss) as a percentage of actuarial assets	-3.9%	-1.8%
10. PBI Cola		
a. Excess Earnings Reserve for Fiscal Year 2011	\$ 0	\$ 0
b. Excess Earnings Reserve for Fiscal Year 2012	\$ 0	\$ 0
11. System gain/(loss) allocated to the Plan	(12,152,842)	(12,290,783)
12. Total actuarial accrued liability gain/(loss) for the year (Item 7 - Item 8)	\$ 858,439,565	\$ 304,886,030
13. Analysis of actuarial accrued liability gain/(loss)		
a. Legislative changes	\$ N/A	\$ 28,263,129
b. Assumption changes (return to 50/50 contribution rates)	374,150,936	N/A
c. Experience liability gain/(loss)	484,288,629	276,622,901
d. Total actuarial accrued liability gain/(loss)	\$ 858,439,565	\$ 304,886,030
14. Experience liability gain/(loss) as percentage of total actuarial liability (Items 11 and 13c as % of Item 5h of Exhibit 5.2)	1.22%	0.66%

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

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

Basis	Unfunded Actuarial Accrued Liability (\$ Millions)	Combined Contribution Rate	Change in Combined Contribution Rate
1. Valuation as of June 30, 2011	\$ 9,324	21.80%	-
2. Expected Experience	9,249	21.41%	-0.39%
3. Delay in contribution rate change	9,492	21.62%	+0.21%
4. 2011/2012 liability experience	9,215	22.12%	+0.50%
5. 2011/2012 asset experience	9,739	22.60%	+0.48%
6. System experience allocated to the Plan	9,751	22.61%	+0.01%
7. Legislative Change (53/47 to 50/50)	9,723	22.55%	-0.06%

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

Basis	Actuarial Accrued Liability
1. Valuation as of June 30, 2011	\$ 38,555,369,013
2. Expected Experience	1,689,597,425
3. Legislative Changes	(28,263,129)
4. System (Gain)/Loss allocated to the Plan	12,290,783
5. Liability (Gain)/Loss	(276,622,901)
6. Valuation as of June 30, 2012	\$ 39,952,371,191

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

Decrement	Annual Gain/(Loss) as of June 30, 2012	Total Gain/(Loss) Since July 1, 2008
Active Mortality	\$ (947,648)	\$ (11,774,131)
Active Withdrawal	(4,256,838)	14,623,798
Active Disability	136,010	(10,583,694)
Active Retirement	(8,714,115)	(70,011,155)
New Entrants/Rehires	(89,152,273)	(303,688,514)
Salary	427,822,228	1,852,455,643
Inactive Mortality	15,097,212	47,719,451
Other	<u>(63,361,675)</u>	<u>(176,092,351)</u>
Total	\$ 276,622,901	\$ 1,342,649,047

### Permanent Benefit Increase

Exhibit 7.1 shows the determination of the PBI for 2012. 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 6.16% is below 8% for fiscal year 2012, 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, 2013</u>	
1. Actuarial Present Value (APV) for all Retirees and Beneficiaries as of June 30, 2011	\$ 19,433,574,123
2. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2011	4.04%
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, 2011	\$ 194,335,741
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 2012 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 2012 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, 2012	\$ 20,556,558,195
13. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2012	6.16%
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

**Exhibit 7.2 – Historical Permanent Benefit Increases**

Valuation Year	PBI Amount	Valuation Year	PBI Amount
1996	\$11.88	2005	\$25.90
1997	\$19.07	2006	\$0.00
1998	\$10.96	2007	\$0.00
1999	\$10.71	2008	\$0.00
2000	\$29.49	2009	\$0.00
2001	\$29.79	2010	\$0.00
2002	\$31.40	2011	\$0.00
2003	\$35.43	2012	\$0.00
2004	\$35.30		

## **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 contribution balances of active and inactive members first, then to the liabilities of retired members and beneficiaries, and finally to the remaining liabilities of active and inactive members.



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

This is to certify that Buck Consultants has prepared an actuarial valuation of the Arizona State Retirement Plan as of June 30, 2012. The Plan provisions are described in Title 38, Chapter 4, Article 2 of the Arizona Revised Statutes. All benefits described in the statutes are reflected in this valuation, except that future PBI and enhanced PBI awards are not valued.

Actuarial calculations have been made with respect to a total of 532,925 members – 203,994 active members, 210,060 inactive members, 114,431 retired members and beneficiaries, and 4,440 members on long term disability. In addition, there are 229 System retirees receiving only ad hoc benefits, 536 System retirees receiving only health insurance benefits, and 125 System retirees receiving both ad hoc benefits and health insurance benefits from the Plan.

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

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

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

**Actuarial Valuations**

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

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

**Funding Objectives**

The actuarial valuation calculates the contribution rates payable by members and participating employers. These rates, when applied to payroll, yield contribution amounts sufficient to provide for the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL) over the period specified in the statutes. The rate calculated becomes effective for the next fiscal year. For example, the rate calculated in the June 30, 2012, valuation report 11.30% for each member and each employer is applicable for the fiscal year beginning July 1, 2013.

Funding Progress

The 2011 valuation determined the rate for fiscal 2013 as 10.90%. The 2012 valuation calculates a rate of 11.30% to become effective July 1, 2013. These rates do not include contributions to the LTD program. Actual contributions have matched the calculated contributions in recent years except for temporary differences, and we assume that members and employers will continue to contribute the actuarially determined amounts. Contributing these amounts ensures the realization of funding objectives.

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

Benefit Provisions

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

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

Section 11 gives details of benefit provisions.

Assumptions and Methods

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

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

Data

ASRS staff supplied census data for retired, active, and inactive members as of June 30, 2012. We have not audited these data, but have examined them for reasonableness and consistency with the prior year's data. ASRS staff also supplied asset information.

Trend Data and Supporting Schedules

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

The actuarial cost factors as of June 30, 2012, 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	\$ 13,037,065,260	\$ 0	\$ 13,037,065,260
b. Health insurance premium supplement	0	776,917,054	776,917,054
c. Disability deferred retirement benefits	421,328,595	0	421,328,595
d. Pre-retirement death benefits	400,585,401	0	400,585,401
e. Withdrawal benefits	1,158,632,548	0	1,158,632,548
f. Total active members	\$ 15,017,611,804	\$ 776,917,054	\$ 15,794,528,858
2. Inactive members	1,733,217,583	50,452,281	1,783,669,864
3. Retired members and beneficiaries	20,556,558,195	633,421,781	21,189,979,976
4. Disabled members (deferred retirement)	734,513,283	35,770,942	770,284,225
5. Benefit increases for other-than-plan members	1,872,998	5,520,393	7,393,391
6. Post-1981 System members	406,514,877	0	406,514,877
7. Total present value of benefits	\$ 38,450,288,740	\$ 1,502,082,451	\$ 39,952,371,191
B. Other miscellaneous liabilities and reserves	0	0	0
C. Reserve for future PBIs	0	0	0
D. Total actuarial accrued liability	\$ 38,450,288,740	\$ 1,502,082,451	\$ 39,952,371,191
II. Actuarial value of assets <sup>1</sup>	28,948,010,913	1,281,566,359	30,229,577,272
III. Unfunded actuarial accrued liability (Item I. – Item II.)	9,502,277,827	220,516,092	9,722,793,919
IV. Amortization of unfunded actuarial accrued liability (per Section 38-737)	781,543,347	18,137,008	799,680,354
V. Normal cost for the year	1,164,576,898	35,546,148	1,200,123,046
VI. Total contribution for the year (Item IV. + Item V.)	\$ 1,946,120,245	\$ 53,683,156	\$ 1,999,803,401
VII. Total covered payroll (projected to 2012/2013 plan year)	\$ 8,868,678,184	\$ 8,868,678,184	\$ 8,868,678,184
VIII. Total contribution for fiscal year 2014 as a percentage of covered payroll			
A. Member portion	11.30%	0.00%	11.30%
B. Employer portion	10.70%	0.60%	11.30%
C. Total	22.00%	0.60%	22.60%
IX. Present value of future covered payroll	\$ 65,573,793,372	\$ 0	\$ 65,573,793,372
X. Present value of future benefits <sup>1</sup>	\$ 47,800,762,321	\$ 1,644,586,058	\$ 49,445,348,379
XI. Present value of future normal cost (Item X. – Item I.D.)	\$ 9,350,473,581	\$ 142,503,607	\$ 9,492,977,188

<sup>1</sup> Includes System assets and liabilities for members who retired or will retire on or after July 1, 1981 for 401(a).

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

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

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

2. Salary increases

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

\* Total salary increase rate = wage inflation (or growth) rate (3.25%)  
+ productivity increase rate (0.75%)  
+ merit component

3. Rates of disability

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

Age	Years of Service				
	Male Members				
Age	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

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

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

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

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

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

- Mortality rates – 1994 GAM Static, Projected to 2010 with Projection Scale AA with no setback. This mortality assumption was chosen to be used from June 30, 2008 to June 30, 2012. The rates were projected to the middle point of this period and include an appropriate level of conservatism that reflects expected future mortality improvements.
- Mortality rates after disability – Post disablement mortality rates are based on experience of other large public sector system and ASRS’ own experience.
- 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 – It is assumed that active members who terminate (prior to eligibility for retirement) and deferred vested members who have already terminated will choose to receive the enhanced refund option if the value of the enhanced refund option is greater than the present value of the deferred benefit. Otherwise, the members are assumed to elect to receive the deferred benefit. If the member is assumed to elect the enhanced refund option, then it is also assumed that the member forfeits the health insurance premium supplement.

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

10. Spouse Assumptions – We assume that 100% of the members are married. We also assume that the husband is three years older than the wife.
11. Modified Cash Refund Assumption – We assume that members who elect a single life annuity will receive accumulated benefit payments equal to their contributions after three years of being in receipt.
12. 415(b) Limits – 415(b) limits are not applied in the Plan valuation because there is an excess plan that pays benefits above the 415(b) limit.
13. Optional Form load on liabilities – A load of 0.087% has been added to the nonretired 401(a) liabilities to account for the election of optional forms other than a single life annuity.

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

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

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

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

Sincerely,



Charles E. Chittenden, FSA, EA, MAAA

**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%
06/30/2010	27,572	36,073	8,501	76.4%	9,420	90.2%
06/30/2011	27,984	37,051	9,067	75.5%	9,061	100.1%
06/30/2012	28,948	38,450	9,502	75.3%	8,869	107.1%

Note: Dollar amounts in millions.

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

Values shown for valuation dates on or after June 30, 2010 include System assets and liabilities for members who retired or will retire on or after July 1, 1981.



**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%
2010	763,005,105	100.0%
2011	786,581,145	100.0%
2012	852,107,785	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.  
 Values shown for valuation dates on or after June 30, 2010 include System assets and liabilities for members who retired or will retire on or after July 1, 1981.

**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 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%
06/30/2010	\$ 1,251	\$ 1,485	\$ 234	84.2%	\$ 9,420	2.5%
06/30/2011	\$ 1,247	\$ 1,504	\$ 257	82.9%	\$ 9,061	2.8%
06/30/2012	\$ 1,282	\$ 1,502	\$ 220	85.3%	\$ 8,869	2.5%

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%
2010	\$ 59,393,098	100.0%
2011	\$ 51,047,543	100.0%
2012	\$ 54,462,585	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, 2012
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	4.00% to 9.00%
*Includes wage inflation at	3.25%
Cost-of-living adjustments	N/A

**Exhibit 8.4 – Components of Normal Cost<sup>1</sup>**

	2012
Components of the normal cost are as follows:	
Retirement benefits	9.64%
Health insurance premium supplement	0.40%
Survivor benefits	0.39%
Withdrawals	2.72%
Long-term disability benefit	<u>0.38%</u>
Total normal cost	13.53%
Amortization of the UAAL	<u>9.02%</u>
Required contribution rate for FY 2014	22.55%

<sup>1</sup> Includes System liabilities and assets for members who retired or will retire on or after July 1, 1981.

**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%
2010	213,530	9,419,951,810	44,115	(0.2%)
2011	208,939	9,060,630,604	43,365	(1.7%)
2012	203,994	8,868,678,184	43,475	0.3%

**Exhibit 8.6a – Schedule of Plan Retirees Added and Removed from Rolls**  
**Schedule of Retiree Data (401(a) Only)**

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%
2010	8,846	169,020,787	19,107	2,199	32,024,832	14,563	95,697	1,889,412,829	19,744	7.8%
2011	8,732	170,547,373	19,531	2,323	34,684,356	14,935	102,106	2,025,265,846	19,835	7.2%
2012	8,606	162,693,011	18,905	2,485	37,409,835	15,054	108,227	2,150,549,022	19,871	6.2%

\* Cost of Living Increases included here.

**Schedule of Beneficiary Data (401(a) Only)**

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%
2010	514	7,399,119	14,395	278	3,641,429	13,099	5,610	78,711,724	14,031	5.0%
2011	556	8,519,134	15,322	276	3,816,954	13,830	5,890	83,413,904	14,162	6.0%
2012	621	9,279,263	14,942	307	4,285,570	13,960	6,204	88,407,597	14,250	6.0%

\* Cost of Living Increases included here.

**Exhibit 8.6a – Schedule of Plan Retirees Added and Removed from Rolls (cont.)**

**Schedule of Retiree and Beneficiary Data (401(a) Only)**

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%
2010	9,360	176,419,906	18,848	2,477	35,666,261	14,399	101,307	1,968,124,553	19,427	7.7%
2011	9,288	179,066,507	19,279	2,599	38,511,310	14,818	107,926	2,108,679,750	19,526	7.1%
2012	9,227	171,972,274	18,638	2,792	41,695,405	14,934	114,431	2,238,956,619	19,566	6.2%

\* Cost of Living Increases included here.

**Exhibit 8.6b - Schedule of Benefit Recipients Added to and Removed from Rolls - 401(h) Only**

Valuation As of June 30	Added to Rolls			Removed from Rolls			Rolls – End of Year			Percent Increase in Annual Allowances
	Number	Annual Allowances	Average Annual Allowances	Number	Annual Allowances	Average Annual Allowances	Number	Annual Allowances	Average Annual Allowances	
2010	5,689	\$ 10,358,376	\$ 1,821	2,647	\$ 6,487,680	\$ 2,451	57,795	\$ 86,092,944	\$ 1,490	4.7%
2011	6,047	10,459,392	1,730	3,199	7,707,744	2,409	60,643	88,844,592	1,465	3.2%
2012	5,867	9,754,788	1,663	3,285	8,936,184	2,720	63,225*	89,663,196	1,418	0.9%

\* Includes 661 System members receiving 401(h) benefits and 1,667 members receiving LTD benefits and 401(h) benefits.

**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%
2010	37,557,862,066	28,823,144,688	76.7%	8,734,717,378	9,419,951,810	92.7%
2011	38,555,369,013	29,230,960,267	75.8%	9,324,408,746	9,060,630,604	102.9%
2012	39,952,371,191	30,229,577,272	75.7%	9,722,793,919	8,868,678,184	109.6%

**Exhibit 8.8a – Solvency Test - 401(a) Only**

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)
2001	\$ 2,876,445,119	\$ 9,184,997,812	\$ 6,980,343,913 *	\$ 21,888,183,666	100.0%	100.0%	100.0%
2002	3,046,008,125	10,141,767,789	8,097,396,037 *	22,641,693,322	100.0	100.0	100.0
2003	3,110,690,039	10,911,141,534	8,912,910,871 *	22,572,007,289	100.0	100.0	95.9
2004	3,407,611,954	11,888,766,685	9,209,865,919 *	22,659,396,325	100.0	100.0	79.9
2005	3,717,945,957	12,970,620,699	9,797,630,212 *	22,808,290,293	100.0	100.0	62.5
2006	4,168,243,157	13,998,186,812	10,025,660,085 *	23,766,572,590	100.0	100.0	55.9
2007	5,533,036,906	15,191,806,375	9,665,632,410	25,309,888,063	100.0	100.0	47.4
2008	6,256,502,949	16,357,773,654	9,810,200,566	26,612,440,139	100.0	100.0	40.8
2009	7,054,925,502	17,455,947,713	9,779,242,657	27,093,788,614	100.0	100.0	26.4
2010	7,704,328,621	19,246,476,421	9,121,714,675	27,571,999,406	100.0	100.0	6.8
2011	8,374,149,814	20,541,081,742	8,135,947,783	27,983,517,225	100.0	95.5	0.0
2012	9,110,894,718	21,699,459,353	7,639,934,669	28,948,010,913	100.0	91.4	0.0

\* 401(a) liabilities for 2006 and earlier include 401(h) liabilities for inactive members.

Values shown for valuation dates on or after June 30, 2010 include System assets and liabilities for members who retired or will retire on or after July 1, 1981.



Exhibit 8.8b – Solvency Test - 401(h) Only

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)
2001	\$ 0	\$ 404,565,100	\$ 822,162,500*	\$ 966,959,873	100.0%	100.0%	68.4%
2002	0	455,596,600	846,152,200*	981,322,647	100.0	100.0	62.1
2003	0	517,510,480	851,386,523*	944,891,222	100.0	100.0	50.2
2004	0	533,183,961	878,900,986*	983,508,438	100.0	100.0	51.2
2005	0	552,285,029	904,119,388*	1,028,228,830	100.0	100.0	52.6
2006	0	578,560,443	925,980,765*	1,084,950,186	100.0	100.0	54.7
2007	0	598,088,408	1,007,107,327	1,166,799,842	100.0	100.0	56.5
2008	0	619,808,594	826,578,982	1,239,385,591	100.0	100.0	75.0
2009	0	627,536,754	824,885,946	1,266,370,836	100.0	100.0	77.4
2010	0	652,876,059	832,466,290	1,251,145,282	100.0	100.0	71.9
2011	0	669,593,178	834,596,496	1,247,443,042	100.0	100.0	69.2
2012	0	674,713,116	827,369,335	1,281,566,359	100.0	100.0	73.3

\* 401(h) Liabilities for 2006 and earlier are included in 401(a) liabilities for inactive members.

Exhibit 8.8c – 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	100.0%	100.0%	77.4%
2005	3,717,945,957	13,522,905,728	10,701,749,600	23,836,519,123	100.0	100.0	61.6
2006	4,168,243,157	14,576,747,255	10,951,640,850	24,851,522,776	100.0	100.0	55.8
2007	5,533,036,906	15,789,894,783	10,672,739,737	26,476,687,905	100.0	100.0	48.3
2008	6,256,502,949	16,977,582,248	10,636,779,548	27,851,825,730	100.0	100.0	43.4
2009	7,054,925,502	18,083,484,467	10,604,128,603	28,360,159,450	100.0	100.0	30.4
2010	7,704,328,621	19,899,352,480	9,954,180,965	28,823,144,688	100.0	100.0	12.3
2011	8,374,149,814	21,210,674,920	8,970,544,279	29,230,960,267	100.0	98.3	0.0
2012	9,110,894,718	22,374,172,469	8,467,304,004	30,229,577,272	100.0	94.4	0.0

Values shown for valuation dates on or after June 30, 2010 include System assets and liabilities for members who retired or will retire on or after July 1, 1981.

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%
2010	9,420,000,000	808,814,419	9.00%	9.00%
2011	9,061,000,000	833,205,706	9.60%	9.60%
2012	8,869,000,000	905,908,620	10.50%	10.50%

\* 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 8.10a – Analysis of Financial Experience (millions) - 401(a)

Year Ended June 30	Unfunded Actuarial Liability (UAAL), Prior Year	Normal Cost for the Year	Contributions for the Year	Interest at 8% on UAAL	On Normal Cost	On Contributions	Total Interest	Expected UAAL	Actual UAAL	Gain (Loss) for the Year*
2002	\$ (2,846.40)	\$ 701.14	\$ (317.73)	\$ (227.71)	\$ 56.09	\$ (12.71)	\$ (184.33)	\$ (2,647.32)	\$ (1,356.52)	\$ (1,290.80)
2003	(1,356.52)	781.41	(371.27)	(108.52)	62.51	(14.85)	(60.86)	(1,007.24)	362.74	(1,369.98)
2004	362.74	900.43	(786.31)	29.02	72.03	(31.45)	69.60	546.46	1,846.85	(1,300.39)
2005	1,846.85	958.24	(861.35)	147.75	76.66	(34.45)	189.95	2,133.69	3,677.91	(1,544.22)
2006	3,677.91	1,023.15	(1,171.73)	294.23	81.85	(46.87)	329.22	3,858.54	4,425.52	(566.98)
2007	4,425.52	1,116.57	(1,527.70)	354.04	89.33	(61.11)	382.26	4,396.65	5,080.59	(683.94)
2008	5,080.59	1,165.17	(1,616.67)	406.45	93.21	(64.67)	434.99	5,064.08	5,812.04	(747.96)
2009	5,812.04	1,205.10	(1,598.33)	464.96	96.41	(63.93)	497.44	5,916.24	7,196.33	(1,280.08)
2010	7,196.33	1,234.67	(1,571.82)	575.71	98.77	(62.87)	611.61	7,470.79	8,500.52	(1,029.73)
2011	8,500.52	1,215.14	(1,619.79)	680.04	97.21	(64.79)	712.46	8,808.33	9,067.66	(259.33)
2012	9,067.66	1,170.47	(1,758.02)	725.41	93.64	(70.32)	748.73	9,228.84	9,502.28	(273.44)

\* Gain/Loss includes assumption and plan changes.

Values shown for valuation dates on or after June 30, 2010 include System assets and liabilities for members who retired or will retire on or after July 1, 1981.

**Exhibit 8.10b – Analysis of Financial Experience (millions) – 401(h)**

Year Ended June 30	Unfunded Actuarial Liability (UAAL), Prior Year	Normal Cost for the Year	Contributions for the Year	Interest at 8% on UAAL	On Normal Cost	On Contributions	Total Interest	Expected UAAL	Actual UAAL	Gain (Loss) for the Year*
2002	\$ 259.77	\$ 45.77	\$ (4.04)	\$ 20.78	\$ 3.66	\$ (0.16)	\$ 24.28	\$ 325.78	\$ 320.42	\$ 5.36
2003	320.42	50.32	(4.26)	25.63	4.03	(0.17)	29.49	395.97	424.00	(28.03)
2004	424.00	50.35	(79.66)	33.92	4.03	(3.19)	34.76	429.46	428.57	0.89
2005	428.57	51.98	(85.35)	34.29	4.16	(3.41)	35.03	430.23	428.17	2.06
2006	428.17	52.31	(93.46)	34.25	4.18	(3.74)	34.70	421.72	419.59	2.13
2007	419.59	55.04	(103.47)	33.57	4.40	(4.14)	33.83	404.99	438.39	(33.40)
2008	438.39	53.73	(99.03)	35.07	4.30	(3.96)	35.41	428.50	207.00	221.50
2009	207.00	46.38	(90.48)	16.56	3.71	(3.62)	16.65	179.55	186.05	(6.50)
2010	186.05	41.88	(59.39)	14.88	3.35	(2.38)	15.85	184.39	234.20	(49.81)
2011	234.20	40.28	(51.05)	18.74	3.22	(2.04)	19.92	243.35	256.75	(13.40)
2012	256.75	38.42	(54.46)	20.54	3.07	(2.18)	21.43	262.14	220.51	41.63

\* Gain/loss includes assumption and plan changes.

**Exhibit 8.10c – 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)
2010	7,382.38	1,276.55	(1,631.21)	590.59	102.12	(65.25)	627.46	7,655.18	8,734.72	(1,079.54)
2011	8,734.72	1,255.41	(1,670.83)	648.78	100.43	(66.83)	732.38	9,051.68	9,324.41	(272.73)
2012	9,324.41	1,208.89	(1,812.48)	745.95	96.71	(72.50)	770.16	9,490.98	9,722.79	(231.81)

\* Gain/loss includes assumption and plan changes.

Values shown for valuation dates on or after June 30, 2010 include System assets and liabilities for members who retired or will retire on or after July 1, 1981.

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

	For the Contribution Period Ending June 30, 2012 (2010 Valuation)		For the Contribution Period Ending June 30, 2013 (2011 Valuation)		For the Contribution Period Ending June 30, 2014 (2012 Valuation)	
<b>401(a) Normal Cost</b>	\$ 1,215,140,371	12.90%	\$ 1,170,467,758	12.92%	\$ 1,164,576,898	13.13%
<b>401(a) Amortization of Unfunded Liability*</b>	699,150,795	7.47%	745,797,074	8.23%	781,543,347	8.82%
<b>401(a) Total</b>	\$ 1,914,291,166	20.37%	\$ 1,916,264,832	21.15%	\$ 1,946,120,245	21.95%
<b>401(h) Normal Cost</b>	\$ 40,276,497	0.43%	\$ 38,425,708	0.42%	\$ 35,546,148	0.40%
<b>401(h) Amortization of Unfunded Liability</b>	19,262,240	0.20%	21,116,897	0.23%	18,137,008	0.20%
<b>401(h) Total</b>	\$ 59,538,737	0.63%	\$ 59,542,605	0.65%	\$ 53,683,156	0.60%
<b>LTD Normal Cost</b>	\$ 30,456,285	0.32%	\$ 28,164,635	0.31%	\$ 25,723,092	0.29%
<b>LTD Amortization of Unfunded Liability**</b>	17,087,235	0.18%	16,027,178	0.18%	15,568,722	0.18%
<b>LTD Total</b>	\$ 47,543,520	0.50%	\$ 44,191,813	0.49%	\$ 41,291,814	0.47%
<b>Actuarial Total</b>	\$ 2,021,373,423	21.50%	\$ 2,019,999,250	22.29%	\$ 2,041,095,215	23.02%

<b>Contributions as a Percentage of Covered Payroll</b>		
	For the Contribution Period Ending June 30, 2012	
<b>Employers' Retirement – 401(a)</b>	\$ 852,107,785	9.87%
<b>Employees' Retirement – 401(a)</b>	905,908,620	10.50%
<b>Employers' Health Premium Benefit – 401(h)</b>	54,462,585	0.63%
<b>Employers' Long-Term Disability</b>	20,998,254	0.25%
<b>Employees' Long-Term Disability</b>	20,998,254	0.25%
<b>Total</b>	\$ 1,854,475,498	21.50%

\* 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%.

All values shown include System assets  
and liabilities for members who retired or will retire on or after July 1, 1981.

**Summary of Actuarial Methods and Assumptions  
Adopted by Board Action on November 23, 2009 and November 18, 2011  
Effective as of June 30, 2011**

A. Actuarial Assumptions

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

The mortality assumption was chosen to be used from June 30, 2008 to June 30, 2012. The rates were projected to the middle point of this period and include an appropriate level of conservatism that reflects expected future mortality improvements.

- a. Pre-retirement                      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
75	0.029696	0.019950
80	0.052813	0.035208
85	0.086903	0.061520
90	0.143432	0.110808

- 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
75	0.029696	0.019950	0.090010	0.036143
80	0.052813	0.035208	0.146340	0.046560
85	0.086903	0.061520	0.228520	0.056647
90	0.143432	0.110808	0.313770	0.068920

3. Disability Rates

Sample rates are shown below.

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.

Rates of Decrement due to Withdrawal

Age	Years of Service										
	0	1	2	3	4	5	6	7	8	9	10+
	Male Members										
20	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.1724
30	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0763
40	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0306
50	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0209
60	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0146
70	0.2775	0.2050	0.1500	0.1250	0.1025	0.0925	0.0800	0.0700	0.0575	0.0525	0.0243
	Female Members										
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%	9.00%
2	4.00%	8.00%
3	2.50%	6.50%
4	1.80%	5.80%
5	1.40%	5.40%
6	1.25%	5.25%
7	1.00%	5.00%
8	0.80%	4.80%
9	0.75%	4.75%
10	0.50%	4.50%
11 to 19	0.25%	4.25%
20 or more	0.00%	4.00%

\* Total salary increase rate = wage inflation (or growth) rate (3.25%) + productivity increase rate (0.75%) + merit component

6. Retirement Age

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

Rates of Decrement Due to Retirement								
Years of Service – All Members								
Age	0-4	5	6-9	10-19	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

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.

11. 415(b) Limits

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

12. Optional Form Load

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

B. Actuarial Value of Assets

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

C. Actuarial Funding Method

Costs are determined under the projected unit-credit method. The unfunded actuarial accrued liability is funded on a level dollar basis over the period of time described in Section 38-737. For the actuarial valuation as of June 30, 2012, the period is 30 years.

D. Data for Valuation

In preparing the actuarial valuation as of June 30, 2012, 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**

**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, 2011	As of June 30, 2012	As of June 30, 2011	As of June 30, 2012	As of June 30, 2011	As of June 30, 2012	As of June 30, 2011	As of June 30, 2012
<b>Higher Education Members:</b>								
Male	9,819	9,356	46.9	47.2	9.7	9.9	\$ 55,219	\$ 55,763
Female	14,533	13,773	46.7	46.8	9.7	10.0	47,265	48,624
Total	24,352	23,129	46.8	47.0	9.7	10.0	\$ 50,473	\$ 51,512
<b>Other Education Members:</b>								
Male	28,526	28,232	45.7	45.7	9.0	9.0	\$ 41,476	\$ 41,465
Female	84,577	83,041	44.7	44.8	9.3	9.4	37,055	36,782
Total	113,103	111,273	45.0	45.0	9.2	9.3	\$ 38,170	\$ 37,970
<b>City Members:</b>								
Male	9,660	9,487	45.8	46.1	10.0	10.2	\$ 57,654	\$ 57,854
Female	7,332	7,062	44.9	45.3	9.9	10.3	50,473	50,797
Total	16,992	16,549	45.4	45.8	10.0	10.2	\$ 54,556	\$ 54,842
<b>County Members:</b>								
Male	8,180	8,108	48.0	48.0	9.9	10.0	\$ 53,261	\$ 53,584
Female	13,524	12,949	46.2	46.3	9.4	9.7	43,084	43,668
Total	21,704	21,057	46.9	47.0	9.6	9.8	\$ 46,920	\$ 47,486
<b>State Members:</b>								
Male	9,654	9,237	48.2	48.7	10.0	10.5	\$ 51,994	\$ 52,306
Female	17,031	16,625	46.3	46.8	10.1	10.6	42,449	42,683
Total	26,685	25,862	47.0	47.5	10.1	10.6	\$ 45,902	\$ 46,120
<b>Political Subdivision Members:</b>								
Male	2,353	2,384	46.6	46.8	8.0	8.1	\$ 63,721	\$ 64,469
Female	3,750	3,740	45.7	45.8	7.4	7.5	51,791	53,004
Total	6,103	6,124	46.0	46.2	7.6	7.7	\$ 56,390	\$ 57,467
<b>All Active Plan Members:</b>								
Male	68,192	66,804	46.6	46.7	9.4	9.6	\$ 49,417	\$ 49,586
Female	140,747	137,190	45.3	45.4	9.4	9.6	40,433	40,500
Total	208,939	203,994	45.7	45.8	9.4	9.6	\$ 43,365	\$ 43,475

Exhibit 10.2 – Summary of Retired Membership

	June 30, 2011	June 30, 2012	Percentage Change During the Period
<b>HIGHER EDUCATION MEMBERS</b>			
Number	12,725	13,453	5.7%
Total Monthly Allowance	\$ 22,922,488	\$ 24,367,579	6.3%
Average Monthly Allowance	\$ 1,801	\$ 1,811	0.6%
Average Age	71.1	71.1	0.0%
Average Years of Service	19.3	19.3	0.0%
<b>OTHER EDUCATION MEMBERS</b>			
Number	58,087	61,110	5.2%
Total Monthly Allowance	\$ 99,639,706	\$ 104,416,600	4.8%
Average Monthly Allowance	\$ 1,715	\$ 1,709	(0.3%)
Average Age	69.5	69.6	0.1%
Average Years of Service	20.5	20.4	(0.5%)
<b>CITY MEMBERS</b>			
Number	6,750	7,249	7.4%
Total Monthly Allowance	\$ 12,143,656	\$ 13,180,701	8.5%
Average Monthly Allowance	\$ 1,799	\$ 1,818	1.1%
Average Age	67.4	67.6	0.3%
Average Years of Service	19.1	19.2	0.5%
<b>COUNTY MEMBERS</b>			
Number	11,574	12,333	6.6%
Total Monthly Allowance	\$ 14,896,538	\$ 16,172,863	8.6%
Average Monthly Allowance	\$ 1,287	\$ 1,311	1.9%
Average Age	70.0	70.0	0.0%
Average Years of Service	16.9	17.0	0.6%
<b>STATE MEMBERS</b>			
Number	17,585	18,835	7.1%
Total Monthly Allowance	\$ 24,225,116	\$ 26,183,870	8.1%
Average Monthly Allowance	\$ 1,378	\$ 1,390	0.9%
Average Age	70.0	70.1	0.1%
Average Years of Service	18.4	18.4	0.0%
<b>POLITICAL SUBDIVISION MEMBERS</b>			
Number	1,275	1,451	13.8%
Total Monthly Allowance	\$ 1,896,845	\$ 2,258,105	19.0%
Average Monthly Allowance	\$ 1,488	\$ 1,556	4.6%
Average Age	68.8	68.5	(0.4%)
Average Years of Service	16.1	16.2	0.6%
<b>TOTAL</b>			
Number <sup>1, 2</sup>	107,996	114,431	6.0%
Total Monthly Allowance	\$ 175,724,349	\$ 186,579,718	6.2%
Average Monthly Allowance	\$ 1,627	\$ 1,630	0.2%
Average Age	69.7	69.8	0.1%
Average Years of Service	19.5	19.4	(0.5%)

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

<sup>2</sup> For 2012, total number includes 103,987 service retirees, 3,215 members who retired from disabled status, 6,204 beneficiaries and 1,025 QDROs.

**Exhibit 10.3 – Summary of Inactive Membership**

	June 30, 2011	June 30, 2012	Percentage Change During the Period
HIGHER EDUCATION MEMBERS			
Number	24,739	25,782	4.2%
OTHER EDUCATION MEMBERS			
Number	111,183	112,464	1.2%
CITY MEMBERS			
Number	11,855	11,746	(0.9%)
COUNTY MEMBERS			
Number	26,150	25,396	(2.9%)
STATE MEMBERS			
Number	31,667	30,798	(2.7%)
POLITICAL SUBDIVISION MEMBERS			
Number	<u>3,375</u>	<u>3,874</u>	<u>14.8%</u>
TOTAL			
Number	208,969	210,060	0.5%

**Exhibit 10.4a**  
**Distribution of Active Members by Age and Years of Service**  
**Higher Education Members**  
**Count and Average Salary**  
**as of June 30, 2012**

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	9	0	0	0	0	0	0	0	9
	\$ 30,611	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 30,611
20-24	499	18	0	0	0	0	0	0	517
	\$ 24,943	\$ 26,254	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 24,989
25-29	1,263	368	6	0	0	0	0	0	1,637
	\$ 32,764	\$ 38,428	\$ 41,941	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 34,071
30-34	1,186	875	240	3	0	0	0	0	2,304
	\$ 39,479	\$ 44,516	\$ 49,353	\$ 68,808	\$ 0	\$ 0	\$ 0	\$ 0	\$ 42,459
35-39	964	852	550	122	2	0	0	0	2,490
	\$ 41,619	\$ 50,285	\$ 56,050	\$ 60,529	\$ 43,603	\$ 0	\$ 0	\$ 0	\$ 48,700
40-44	960	762	599	362	97	4	0	0	2,784
	\$ 43,269	\$ 50,454	\$ 58,342	\$ 63,586	\$ 60,624	\$ 89,249	\$ 0	\$ 0	\$ 51,791
45-49	855	742	631	385	357	121	7	0	3,098
	\$ 42,178	\$ 52,096	\$ 58,481	\$ 64,359	\$ 69,903	\$ 63,762	\$ 75,573	\$ 0	\$ 54,744
50-54	896	710	653	496	455	294	72	4	3,580
	\$ 42,852	\$ 50,426	\$ 55,664	\$ 61,458	\$ 68,023	\$ 69,794	\$ 71,865	\$ 69,853	\$ 55,294
55-59	668	699	636	512	438	282	156	36	3,427
	\$ 43,119	\$ 49,966	\$ 56,700	\$ 58,912	\$ 69,550	\$ 74,736	\$ 73,104	\$ 71,637	\$ 57,040
60-64	433	438	387	348	285	226	114	77	2,308
	\$ 41,865	\$ 52,926	\$ 56,742	\$ 60,908	\$ 69,574	\$ 76,056	\$ 79,890	\$ 97,242	\$ 59,825
65-69	141	146	140	97	90	64	36	53	767
	\$ 36,709	\$ 57,301	\$ 54,775	\$ 63,089	\$ 75,742	\$ 77,857	\$ 81,478	\$ 90,766	\$ 61,113
70 & Over	46	50	24	18	28	12	5	25	208
	\$ 25,594	\$ 42,290	\$ 50,583	\$ 60,219	\$ 68,799	\$ 61,327	\$ 83,115	\$ 101,244	\$ 53,840
<b>TOTAL</b>	<b>7,920</b>	<b>5,660</b>	<b>3,866</b>	<b>2,343</b>	<b>1,752</b>	<b>1,003</b>	<b>390</b>	<b>195</b>	<b>23,129</b>
	\$ 39,183	\$ 49,099	\$ 56,395	\$ 61,644	\$ 69,012	\$ 72,358	\$ 75,805	\$ 90,706	\$ 51,512

**Exhibit 10.4b**  
**Distribution of Active Members by Age and Years of Service**  
**Other Education Members**  
**Count and Average Salary**  
**as of June 30, 2012**

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	252	0	0	0	0	0	0	0	252
	\$ 10,759	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 10,759
20-24	4,080	158	0	0	0	0	0	0	4,238
	\$ 24,191	\$ 20,226	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 24,043
25-29	6,737	3,384	54	0	0	0	0	0	10,175
	\$ 33,120	\$ 38,916	\$ 31,352	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 35,038
30-34	4,395	5,905	1,587	31	0	0	0	0	11,918
	\$ 30,529	\$ 42,937	\$ 46,111	\$ 41,711	\$ 0	\$ 0	\$ 0	\$ 0	\$ 38,781
35-39	4,119	4,154	3,661	784	6	0	0	0	12,724
	\$ 26,992	\$ 39,353	\$ 50,065	\$ 53,741	\$ 54,916	\$ 0	\$ 0	\$ 0	\$ 39,327
40-44	4,374	4,161	3,199	2,545	553	10	0	0	14,842
	\$ 25,788	\$ 35,506	\$ 45,952	\$ 57,244	\$ 60,146	\$ 54,811	\$ 0	\$ 0	\$ 39,552
45-49	3,667	4,104	2,994	2,119	1,723	555	21	0	15,183
	\$ 24,925	\$ 32,535	\$ 40,392	\$ 51,037	\$ 60,957	\$ 63,920	\$ 51,055	\$ 0	\$ 39,227
50-54	3,361	3,795	3,372	2,437	1,824	1,556	251	3	16,599
	\$ 24,872	\$ 32,295	\$ 37,380	\$ 45,884	\$ 55,341	\$ 65,086	\$ 67,730	\$ 35,399	\$ 39,963
55-59	2,550	2,923	2,719	2,451	1,752	894	377	78	13,744
	\$ 24,782	\$ 32,623	\$ 38,565	\$ 44,840	\$ 50,501	\$ 60,763	\$ 66,659	\$ 62,737	\$ 39,736
60-64	1,692	1,936	1,551	1,259	886	569	200	108	8,201
	\$ 24,520	\$ 32,276	\$ 38,461	\$ 43,896	\$ 50,475	\$ 57,721	\$ 60,823	\$ 67,579	\$ 38,522
65-69	690	741	425	203	141	84	42	24	2,350
	\$ 18,441	\$ 27,227	\$ 35,266	\$ 43,141	\$ 44,935	\$ 51,106	\$ 50,703	\$ 66,393	\$ 30,211
70 & Over	324	379	185	78	32	25	10	14	1,047
	\$ 15,061	\$ 19,221	\$ 23,989	\$ 30,408	\$ 38,609	\$ 42,655	\$ 33,076	\$ 53,951	\$ 21,358
<b>TOTAL</b>	<b>36,241</b>	<b>31,640</b>	<b>19,747</b>	<b>11,907</b>	<b>6,917</b>	<b>3,693</b>	<b>901</b>	<b>227</b>	<b>111,273</b>
	\$ 27,040	\$ 36,063	\$ 42,339	\$ 49,162	\$ 54,985	\$ 62,232	\$ 64,182	\$ 64,524	\$ 37,970

**Exhibit 10.4c**  
**Distribution of Active Members by Age and Years of Service**  
**City Members**  
**Count and Average Salary**  
**as of June 30, 2012**

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	69	0	0	0	0	0	0	0	69
	\$ 12,788	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 12,788
20-24	478	39	0	0	0	0	0	0	517
	\$ 23,653	\$ 30,943	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 24,203
25-29	637	426	25	0	0	0	0	0	1,088
	\$ 35,672	\$ 40,902	\$ 45,772	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 37,952
30-34	603	694	263	17	0	0	0	0	1,577
	\$ 41,572	\$ 49,555	\$ 48,475	\$ 55,171	\$ 0	\$ 0	\$ 0	\$ 0	\$ 46,383
35-39	547	715	519	128	7	0	0	0	1,916
	\$ 44,379	\$ 54,165	\$ 59,722	\$ 60,244	\$ 59,523	\$ 0	\$ 0	\$ 0	\$ 53,302
40-44	523	687	576	336	106	13	0	0	2,241
	\$ 46,751	\$ 54,643	\$ 62,735	\$ 67,794	\$ 67,492	\$ 60,959	\$ 0	\$ 0	\$ 57,497
45-49	474	711	584	397	268	168	14	0	2,616
	\$ 46,922	\$ 53,632	\$ 60,039	\$ 68,110	\$ 72,839	\$ 70,038	\$ 72,583	\$ 0	\$ 59,166
50-54	483	617	602	421	358	291	60	1	2,833
	\$ 50,329	\$ 53,925	\$ 61,299	\$ 67,448	\$ 72,818	\$ 75,550	\$ 76,616	\$ 151,159	\$ 62,012
55-59	360	525	418	356	259	157	47	12	2,134
	\$ 48,769	\$ 54,373	\$ 59,800	\$ 64,228	\$ 71,795	\$ 75,329	\$ 74,845	\$ 68,267	\$ 60,320
60-64	178	305	274	190	105	93	26	9	1,180
	\$ 42,733	\$ 56,528	\$ 56,939	\$ 65,629	\$ 69,202	\$ 75,445	\$ 79,489	\$ 72,678	\$ 59,256
65-69	58	101	65	35	22	12	4	1	298
	\$ 43,122	\$ 52,567	\$ 56,198	\$ 65,063	\$ 55,575	\$ 74,637	\$ 106,032	\$ 123,310	\$ 55,054
70 & Over	18	25	22	11	3	1	0	0	80
	\$ 26,976	\$ 39,330	\$ 47,496	\$ 44,955	\$ 67,923	\$ 54,900	\$ 0	\$ 0	\$ 40,836
<b>TOTAL</b>	<b>4,428</b>	<b>4,845</b>	<b>3,348</b>	<b>1,891</b>	<b>1,128</b>	<b>735</b>	<b>151</b>	<b>23</b>	<b>16,549</b>
	<b>\$ 41,419</b>	<b>\$ 52,172</b>	<b>\$ 59,225</b>	<b>\$ 66,087</b>	<b>\$ 71,319</b>	<b>\$ 73,929</b>	<b>\$ 76,965</b>	<b>\$ 75,990</b>	<b>\$ 54,842</b>

**Exhibit 10.4d**  
**Distribution of Active Members by Age and Years of Service**  
**County Members**  
**Count and Average Salary**  
**as of June 30, 2012**

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	16	0	0	0	0	0	0	0	16
	\$ 23,205	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 23,205
20-24	435	27	0	0	0	0	0	0	462
	\$ 28,971	\$ 29,161	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 28,982
25-29	1,053	401	20	0	0	0	0	0	1,474
	\$ 34,991	\$ 35,188	\$ 35,458	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 35,051
30-34	1,009	794	248	5	0	0	0	0	2,056
	\$ 39,915	\$ 43,494	\$ 41,973	\$ 49,166	\$ 0	\$ 0	\$ 0	\$ 0	\$ 41,568
35-39	780	782	456	142	3	0	0	0	2,163
	\$ 38,670	\$ 46,811	\$ 50,030	\$ 48,700	\$ 37,466	\$ 0	\$ 0	\$ 0	\$ 44,665
40-44	803	788	613	326	129	8	0	0	2,667
	\$ 40,331	\$ 46,126	\$ 52,588	\$ 55,980	\$ 53,157	\$ 54,278	\$ 0	\$ 0	\$ 47,436
45-49	717	723	585	355	295	120	9	0	2,804
	\$ 42,391	\$ 45,379	\$ 51,538	\$ 57,905	\$ 56,334	\$ 60,429	\$ 59,018	\$ 0	\$ 49,326
50-54	750	805	636	455	415	223	68	7	3,359
	\$ 42,527	\$ 44,844	\$ 50,102	\$ 59,992	\$ 62,127	\$ 63,417	\$ 58,439	\$ 63,148	\$ 51,056
55-59	576	752	650	463	392	224	92	37	3,186
	\$ 44,318	\$ 45,606	\$ 51,880	\$ 57,387	\$ 61,208	\$ 64,779	\$ 68,524	\$ 63,435	\$ 52,502
60-64	345	510	487	277	251	151	68	37	2,126
	\$ 41,649	\$ 46,077	\$ 53,106	\$ 56,179	\$ 57,826	\$ 66,491	\$ 67,743	\$ 71,550	\$ 52,258
65-69	99	177	120	62	60	32	8	14	572
	\$ 47,778	\$ 43,091	\$ 50,214	\$ 59,040	\$ 65,165	\$ 68,965	\$ 59,428	\$ 82,922	\$ 52,092
70 & Over	36	48	31	26	14	10	5	2	172
	\$ 39,909	\$ 41,514	\$ 45,893	\$ 46,453	\$ 60,623	\$ 59,025	\$ 56,957	\$ 71,421	\$ 46,084
<b>TOTAL</b>	<b>6,619</b>	<b>5,807</b>	<b>3,846</b>	<b>2,111</b>	<b>1,559</b>	<b>768</b>	<b>250</b>	<b>97</b>	<b>21,057</b>
	<b>\$ 39,431</b>	<b>\$ 44,551</b>	<b>\$ 50,758</b>	<b>\$ 56,970</b>	<b>\$ 59,421</b>	<b>\$ 64,031</b>	<b>\$ 64,704</b>	<b>\$ 69,487</b>	<b>\$ 47,486</b>

**Exhibit 10.4e**  
**Distribution of Active Members by Age and Years of Service**  
**State Members**  
**Count and Average Salary**  
**as of June 30, 2012**

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	16	0	0	0	0	0	0	0	16
	\$ 26,809	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 26,809
20-24	468	38	0	0	0	0	0	0	506
	\$ 30,791	\$ 31,697	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 30,859
25-29	1,174	518	24	0	0	0	0	0	1,716
	\$ 37,586	\$ 37,725	\$ 36,739	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 37,616
30-34	1,068	985	321	10	0	0	0	0	2,384
	\$ 40,406	\$ 43,123	\$ 42,708	\$ 44,560	\$ 0	\$ 0	\$ 0	\$ 0	\$ 41,856
35-39	945	895	566	143	11	0	0	0	2,560
	\$ 43,020	\$ 44,912	\$ 46,762	\$ 44,834	\$ 48,192	\$ 0	\$ 0	\$ 0	\$ 44,632
40-44	929	898	694	470	145	10	0	0	3,146
	\$ 43,232	\$ 45,650	\$ 47,331	\$ 51,118	\$ 51,962	\$ 39,616	\$ 0	\$ 0	\$ 46,395
45-49	858	898	726	586	449	166	8	0	3,691
	\$ 42,844	\$ 45,588	\$ 46,528	\$ 49,058	\$ 56,134	\$ 53,192	\$ 49,530	\$ 0	\$ 47,319
50-54	806	879	760	626	598	356	119	4	4,148
	\$ 43,361	\$ 45,529	\$ 44,616	\$ 49,391	\$ 53,324	\$ 54,632	\$ 53,393	\$ 49,125	\$ 47,657
55-59	607	899	754	642	592	305	127	49	3,975
	\$ 46,736	\$ 46,408	\$ 47,329	\$ 50,004	\$ 52,340	\$ 55,756	\$ 57,408	\$ 55,538	\$ 49,278
60-64	401	617	515	417	348	206	98	65	2,667
	\$ 49,335	\$ 46,581	\$ 47,125	\$ 47,893	\$ 52,529	\$ 52,064	\$ 57,456	\$ 57,732	\$ 49,176
65-69	115	174	195	113	85	61	32	29	804
	\$ 50,085	\$ 48,367	\$ 48,076	\$ 51,058	\$ 52,900	\$ 50,761	\$ 62,554	\$ 57,196	\$ 50,464
70 & Over	31	56	50	53	28	18	3	10	249
	\$ 56,722	\$ 53,419	\$ 39,618	\$ 43,671	\$ 50,732	\$ 51,537	\$ 56,438	\$ 64,856	\$ 49,042
TOTAL	7,418	6,857	4,605	3,060	2,256	1,122	387	157	25,862
	\$ 41,833	\$ 44,807	\$ 46,233	\$ 49,251	\$ 53,342	\$ 53,859	\$ 56,441	\$ 57,183	\$ 46,120



**Exhibit 10.4f**  
**Distribution of Active Members by Age and Years of Service**  
**Political Subdivision Members**  
**Count and Average Salary**  
**as of June 30, 2012**

CURRENT AGE	YEARS OF SERVICE									TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Below 19	5	0	0	0	0	0	0	0	0	5
	\$ 15,138	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 15,138
20-24	171	5	0	0	0	0	0	0	0	176
	\$ 31,067	\$ 38,618	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 31,282
25-29	358	97	3	0	0	0	0	0	0	458
	\$ 40,784	\$ 42,666	\$ 30,623	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 41,116
30-34	412	176	46	1	0	0	0	0	0	635
	\$ 48,345	\$ 52,784	\$ 50,834	\$ 79,168	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 49,804
35-39	359	206	95	13	1	0	0	0	0	674
	\$ 53,885	\$ 57,112	\$ 59,893	\$ 57,140	\$ 59,757	\$ 0	\$ 0	\$ 0	\$ 0	\$ 55,790
40-44	342	201	109	60	13	3	0	0	0	728
	\$ 50,761	\$ 58,893	\$ 63,182	\$ 73,179	\$ 71,556	\$ 62,406	\$ 0	\$ 0	\$ 0	\$ 57,133
45-49	340	228	156	81	40	20	2	0	0	867
	\$ 51,471	\$ 57,862	\$ 65,425	\$ 68,828	\$ 89,006	\$ 73,973	\$ 44,070	\$ 0	\$ 0	\$ 59,518
50-54	352	238	189	99	76	46	11	2	0	1,013
	\$ 54,668	\$ 63,179	\$ 64,254	\$ 72,335	\$ 82,475	\$ 99,845	\$ 62,275	\$ 39,271	\$ 0	\$ 64,373
55-59	250	183	164	94	78	45	26	6	0	846
	\$ 51,818	\$ 60,579	\$ 64,604	\$ 72,142	\$ 89,475	\$ 86,811	\$ 79,818	\$ 65,450	\$ 0	\$ 64,740
60-64	140	139	104	64	38	29	7	6	0	527
	\$ 56,103	\$ 64,911	\$ 65,447	\$ 69,512	\$ 72,731	\$ 93,927	\$ 59,270	\$ 124,591	\$ 0	\$ 66,001
65-69	37	41	32	17	6	7	3	1	0	144
	\$ 57,120	\$ 56,200	\$ 59,214	\$ 70,382	\$ 85,382	\$ 71,183	\$ 33,057	\$ 47,104	\$ 0	\$ 60,179
70 & Over	12	15	15	5	2	2	0	0	0	51
	\$ 17,753	\$ 37,386	\$ 32,317	\$ 46,667	\$ 43,075	\$ 43,528	\$ 0	\$ 0	\$ 0	\$ 32,649
<b>TOTAL</b>	<b>2,778</b>	<b>1,529</b>	<b>913</b>	<b>434</b>	<b>254</b>	<b>152</b>	<b>49</b>	<b>15</b>	<b>0</b>	<b>6,124</b>
	\$ 49,133	\$ 57,833	\$ 62,583	\$ 70,527	\$ 83,305	\$ 88,653	\$ 68,622	\$ 84,393	\$ 0	\$ 57,467

**Exhibit 10.4g**  
**Distribution of Active Members by Age and Years of Service**  
**Total Active Members**  
**Count and Average Salary**  
**as of June 30, 2012**

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	367	0	0	0	0	0	0	0	367
	\$ 12,930	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 12,930
20-24	6,131	285	0	0	0	0	0	0	6,416
	\$ 25,245	\$ 24,772	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 25,224
25-29	11,222	5,194	132	0	0	0	0	0	16,548
	\$ 34,112	\$ 38,708	\$ 36,149	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 35,571
30-34	8,673	9,429	2,705	67	0	0	0	0	20,874
	\$ 35,675	\$ 43,821	\$ 45,925	\$ 47,880	\$ 0	\$ 0	\$ 0	\$ 0	\$ 40,722
35-39	7,714	7,604	5,847	1,332	30	0	0	0	22,527
	\$ 34,448	\$ 43,873	\$ 51,322	\$ 53,527	\$ 51,188	\$ 0	\$ 0	\$ 0	\$ 43,160
40-44	7,931	7,497	5,790	4,099	1,043	48	0	0	26,408
	\$ 33,879	\$ 41,737	\$ 50,096	\$ 58,099	\$ 59,077	\$ 56,566	\$ 0	\$ 0	\$ 44,461
45-49	6,911	7,406	5,676	3,923	3,132	1,150	61	0	28,259
	\$ 33,911	\$ 40,136	\$ 47,046	\$ 54,766	\$ 62,225	\$ 63,059	\$ 59,555	\$ 0	\$ 45,455
50-54	6,648	7,044	6,212	4,534	3,726	2,766	581	21	31,532
	\$ 34,956	\$ 40,146	\$ 44,625	\$ 52,067	\$ 59,554	\$ 65,785	\$ 65,033	\$ 59,707	\$ 46,662
55-59	5,011	5,981	5,341	4,518	3,511	1,907	825	218	27,312
	\$ 35,203	\$ 41,119	\$ 46,044	\$ 50,550	\$ 56,819	\$ 64,314	\$ 67,543	\$ 63,086	\$ 47,168
60-64	3,189	3,945	3,318	2,555	1,913	1,274	513	302	17,009
	\$ 34,251	\$ 41,615	\$ 46,459	\$ 50,455	\$ 56,129	\$ 63,216	\$ 66,259	\$ 74,794	\$ 47,090
65-69	1,140	1,380	977	527	404	260	125	122	4,935
	\$ 28,951	\$ 37,824	\$ 44,631	\$ 52,715	\$ 57,658	\$ 61,435	\$ 64,505	\$ 77,000	\$ 43,224
70 & Over	467	573	327	191	107	68	23	51	1,807
	\$ 21,308	\$ 27,797	\$ 32,371	\$ 40,345	\$ 53,467	\$ 50,914	\$ 52,193	\$ 79,958	\$ 32,447
<b>TOTAL</b>	<b>65,404</b>	<b>56,338</b>	<b>36,325</b>	<b>21,746</b>	<b>13,866</b>	<b>7,473</b>	<b>2,128</b>	<b>714</b>	<b>203,994</b>
	<b>\$ 33,354</b>	<b>\$ 41,288</b>	<b>\$ 47,285</b>	<b>\$ 53,176</b>	<b>\$ 58,836</b>	<b>\$ 64,206</b>	<b>\$ 65,975</b>	<b>\$ 71,521</b>	<b>\$ 43,475</b>

**Exhibit 10.5a**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**Higher Education Members**  
**Count and Average Monthly Annuity**  
**as of June 30, 2012**

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	2	23	55	44	34	81	75	8	0	0	322
	\$ 73	\$ 213	\$ 482	\$ 734	\$ 962	\$ 2,478	\$ 3,481	\$ 1,322	\$ 0	\$ 0	\$ 1,767
55-59	1	107	141	91	177	253	254	21	1	0	1,046
	\$ 68	\$ 316	\$ 598	\$ 847	\$ 1,668	\$ 2,687	\$ 3,751	\$ 3,895	\$ 10,572	\$ 0	\$ 2,118
60-64	9	255	362	266	465	392	428	92	11	0	2,280
	\$ 422	\$ 337	\$ 743	\$ 1,151	\$ 1,925	\$ 2,619	\$ 3,960	\$ 5,408	\$ 8,631	\$ 0	\$ 2,138
65-69	228	467	548	419	539	438	394	137	28	4	3,202
	\$ 137	\$ 415	\$ 798	\$ 1,254	\$ 1,862	\$ 2,877	\$ 3,863	\$ 5,060	\$ 5,980	\$ 5,453	\$ 1,829
70-74	182	341	429	356	393	291	222	81	42	2	2,339
	\$ 111	\$ 376	\$ 766	\$ 1,221	\$ 1,851	\$ 2,669	\$ 3,891	\$ 5,023	\$ 6,185	\$ 7,892	\$ 1,694
75-79	116	272	325	305	251	228	166	57	23	2	1,745
	\$ 135	\$ 400	\$ 801	\$ 1,231	\$ 2,026	\$ 2,751	\$ 3,663	\$ 4,605	\$ 6,306	\$ 10,167	\$ 1,680
80-84	72	208	273	211	181	170	109	38	7	4	1,273
	\$ 146	\$ 387	\$ 811	\$ 1,306	\$ 2,163	\$ 2,837	\$ 3,533	\$ 3,830	\$ 6,601	\$ 6,270	\$ 1,621
85-89	36	122	201	153	139	103	66	23	2	5	850
	\$ 173	\$ 415	\$ 870	\$ 1,404	\$ 1,832	\$ 2,768	\$ 3,353	\$ 4,035	\$ 5,709	\$ 6,265	\$ 1,580
90-94	12	58	75	69	46	36	16	9	5	0	326
	\$ 154	\$ 394	\$ 921	\$ 1,342	\$ 1,758	\$ 2,537	\$ 3,404	\$ 3,203	\$ 5,273	\$ 0	\$ 1,436
95 & Over	4	13	16	14	10	6	5	1	1	0	70
	\$ 218	\$ 456	\$ 864	\$ 1,256	\$ 1,627	\$ 2,328	\$ 2,232	\$ 2,066	\$ 2,209	\$ 0	\$ 1,198
TOTAL	662	1,866	2,425	1,928	2,235	1,998	1,735	467	120	17	13,453
	\$ 137	\$ 383	\$ 777	\$ 1,220	\$ 1,882	\$ 2,725	\$ 3,789	\$ 4,757	\$ 6,366	\$ 6,726	\$ 1,811

**Exhibit 10.5b**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**Other Education Members**  
**Count and Average Monthly Annuity**  
**as of June 30, 2012**

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	99	162	121	108	417	550	5	1	0	1,472
	\$ 72	\$ 187	\$ 361	\$ 566	\$ 947	\$ 2,525	\$ 3,384	\$ 1,925	\$ 2,090	\$ 0	\$ 2,156
55-59	2	381	492	403	847	1,591	2,127	78	2	1	5,924
	\$ 78	\$ 206	\$ 478	\$ 770	\$ 1,661	\$ 2,574	\$ 3,615	\$ 4,172	\$ 1,761	\$ 4,603	\$ 2,388
60-64	4	1,293	1,467	1,296	2,491	2,765	3,378	390	23	2	13,109
	\$ 134	\$ 284	\$ 632	\$ 1,037	\$ 1,685	\$ 2,491	\$ 3,489	\$ 4,385	\$ 4,686	\$ 5,821	\$ 2,086
65-69	950	2,038	2,128	1,878	2,596	2,594	2,082	512	73	5	14,856
	\$ 109	\$ 291	\$ 627	\$ 1,042	\$ 1,613	\$ 2,427	\$ 3,318	\$ 3,998	\$ 4,415	\$ 5,754	\$ 1,600
70-74	723	1,505	1,619	1,451	1,909	1,562	955	293	52	5	10,074
	\$ 94	\$ 283	\$ 627	\$ 1,038	\$ 1,656	\$ 2,363	\$ 3,102	\$ 3,866	\$ 4,521	\$ 4,039	\$ 1,411
75-79	399	1,074	1,205	1,078	1,278	1,042	735	147	21	5	6,984
	\$ 94	\$ 294	\$ 685	\$ 1,100	\$ 1,703	\$ 2,440	\$ 3,071	\$ 3,605	\$ 4,183	\$ 4,433	\$ 1,429
80-84	211	748	880	808	854	764	445	95	7	5	4,817
	\$ 106	\$ 302	\$ 729	\$ 1,154	\$ 1,670	\$ 2,376	\$ 3,021	\$ 3,624	\$ 3,427	\$ 4,390	\$ 1,411
85-89	80	361	499	474	527	377	193	58	6	0	2,575
	\$ 123	\$ 332	\$ 753	\$ 1,177	\$ 1,620	\$ 2,142	\$ 2,695	\$ 3,157	\$ 4,511	\$ 0	\$ 1,342
90-94	23	160	216	247	230	116	56	24	3	1	1,076
	\$ 138	\$ 347	\$ 755	\$ 1,156	\$ 1,512	\$ 1,810	\$ 2,253	\$ 2,573	\$ 3,959	\$ 6,675	\$ 1,182
95 & Over	3	30	55	43	41	28	10	12	1	0	223
	\$ 185	\$ 371	\$ 836	\$ 1,122	\$ 1,405	\$ 1,655	\$ 1,980	\$ 2,140	\$ 2,203	\$ 0	\$ 1,155
TOTAL	2,404	7,689	8,723	7,799	10,881	11,256	10,531	1,614	189	24	61,110
	\$ 102	\$ 288	\$ 644	\$ 1,051	\$ 1,647	\$ 2,438	\$ 3,369	\$ 3,947	\$ 4,358	\$ 4,833	\$ 1,709

**Exhibit 10.5c**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**City Members**  
**Count and Average Monthly Annuity**  
**as of June 30, 2012**

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	2	30	34	23	32	89	146	2	0	0	358
\$	64	\$ 264	\$ 526	\$ 779	\$ 1,396	\$ 3,118	\$ 3,714	\$ 1,516	\$ 0	\$ 0	\$ 2,546
55-59	1	77	111	70	147	322	288	23	0	0	1,039
\$	103	\$ 305	\$ 673	\$ 982	\$ 2,076	\$ 3,252	\$ 3,970	\$ 4,121	\$ 0	\$ 0	\$ 2,654
60-64	0	178	270	196	319	339	281	49	1	0	1,633
\$	0	\$ 408	\$ 907	\$ 1,352	\$ 2,104	\$ 2,739	\$ 3,977	\$ 4,531	\$ 7,687	\$ 0	\$ 2,161
65-69	97	290	333	262	293	255	156	58	5	0	1,749
\$	168	\$ 448	\$ 923	\$ 1,354	\$ 1,905	\$ 2,728	\$ 3,579	\$ 4,509	\$ 4,838	\$ 0	\$ 1,662
70-74	68	184	259	189	199	87	68	21	8	1	1,084
\$	128	\$ 435	\$ 852	\$ 1,345	\$ 1,843	\$ 2,437	\$ 3,450	\$ 3,307	\$ 4,061	\$ 3,452	\$ 1,368
75-79	30	116	188	132	89	54	33	4	0	0	646
\$	119	\$ 386	\$ 895	\$ 1,377	\$ 1,766	\$ 2,466	\$ 2,764	\$ 3,661	\$ 0	\$ 0	\$ 1,230
80-84	33	100	130	76	49	25	14	3	0	0	430
\$	163	\$ 422	\$ 928	\$ 1,329	\$ 1,756	\$ 2,307	\$ 2,720	\$ 3,616	\$ 0	\$ 0	\$ 1,074
85-89	9	51	61	50	20	11	8	4	2	0	216
\$	113	\$ 461	\$ 906	\$ 1,282	\$ 1,407	\$ 2,059	\$ 1,755	\$ 3,125	\$ 7,500	\$ 0	\$ 1,094
90-94	1	15	26	15	14	5	4	3	0	0	83
\$	48	\$ 403	\$ 866	\$ 1,219	\$ 1,544	\$ 1,448	\$ 1,820	\$ 2,651	\$ 0	\$ 0	\$ 1,096
95 & Over	1	2	3	2	1	2	0	0	0	0	11
\$	293	\$ 388	\$ 861	\$ 1,175	\$ 1,916	\$ 1,237	\$ 0	\$ 0	\$ 0	\$ 0	\$ 945
TOTAL	242	1,043	1,415	1,015	1,163	1,189	998	167	16	1	7,249
\$	147	\$ 414	\$ 873	\$ 1,308	\$ 1,927	\$ 2,846	\$ 3,754	\$ 4,172	\$ 4,960	\$ 3,452	\$ 1,818

**Exhibit 10.5d**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**County Members**  
**Count and Average Monthly Annuity**  
**as of June 30, 2012**

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	3	46	61	35	39	71	64	0	0	0	319
\$	148	\$ 199	\$ 481	\$ 639	\$ 1,050	\$ 2,266	\$ 3,462	\$ 0	\$ 0	\$ 0	\$ 1,519
55-59	0	127	130	85	171	242	220	26	0	0	1,001
\$	0	\$ 279	\$ 630	\$ 866	\$ 1,584	\$ 2,747	\$ 3,414	\$ 4,289	\$ 0	\$ 0	\$ 1,987
60-64	1	330	436	325	436	377	316	59	6	0	2,286
\$	232	\$ 359	\$ 731	\$ 1,113	\$ 1,743	\$ 2,421	\$ 3,214	\$ 4,096	\$ 5,338	\$ 0	\$ 1,645
65-69	274	621	611	515	485	349	270	66	13	1	3,205
\$	151	\$ 386	\$ 767	\$ 1,156	\$ 1,694	\$ 2,322	\$ 3,303	\$ 3,792	\$ 4,035	\$ 5,743	\$ 1,303
70-74	227	457	534	359	344	186	105	42	17	1	2,272
\$	121	\$ 378	\$ 760	\$ 1,146	\$ 1,636	\$ 2,078	\$ 2,737	\$ 3,448	\$ 3,094	\$ 5,607	\$ 1,081
75-79	129	305	381	283	216	102	56	8	2	5	1,487
\$	124	\$ 387	\$ 757	\$ 1,198	\$ 1,699	\$ 2,163	\$ 2,604	\$ 3,961	\$ 4,078	\$ 3,050	\$ 1,042
80-84	71	232	259	191	134	70	26	7	3	0	993
\$	133	\$ 390	\$ 819	\$ 1,229	\$ 1,703	\$ 2,138	\$ 2,483	\$ 2,972	\$ 2,948	\$ 0	\$ 1,026
85-89	27	139	171	86	66	16	21	9	0	0	535
\$	156	\$ 393	\$ 869	\$ 1,246	\$ 1,631	\$ 2,284	\$ 2,205	\$ 2,193	\$ 0	\$ 0	\$ 981
90-94	5	60	56	35	15	11	6	2	0	0	190
\$	123	\$ 404	\$ 835	\$ 1,190	\$ 1,517	\$ 1,890	\$ 2,092	\$ 2,273	\$ 0	\$ 0	\$ 915
95 & Over	3	15	9	10	5	3	0	0	0	0	45
\$	176	\$ 437	\$ 827	\$ 1,072	\$ 1,309	\$ 1,368	\$ 0	\$ 0	\$ 0	\$ 0	\$ 798
TOTAL	740	2,332	2,648	1,924	1,911	1,427	1,084	219	41	7	12,333
\$	136	\$ 373	\$ 758	\$ 1,142	\$ 1,668	\$ 2,359	\$ 3,170	\$ 3,767	\$ 3,758	\$ 3,800	\$ 1,311

**Exhibit 10.5e**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**State Members**  
**Count and Average Monthly Annuity**  
**as of June 30, 2012**

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	3	48	81	62	61	97	126	1	0	0	479
\$	163	\$ 512	\$ 418	\$ 587	\$ 1,055	\$ 2,261	\$ 2,959	\$ 6,471	\$ 0	\$ 0	\$ 1,583
55-59	2	153	166	123	269	408	362	24	1	0	1,508
\$	210	\$ 288	\$ 585	\$ 814	\$ 1,476	\$ 2,345	\$ 3,195	\$ 3,545	\$ 2,972	\$ 0	\$ 1,883
60-64	6	401	577	485	742	643	608	110	11	0	3,583
\$	245	\$ 351	\$ 728	\$ 1,070	\$ 1,550	\$ 2,291	\$ 3,197	\$ 3,552	\$ 4,399	\$ 0	\$ 1,699
65-69	270	732	926	774	790	596	487	153	35	2	4,765
\$	165	\$ 400	\$ 765	\$ 1,074	\$ 1,587	\$ 2,207	\$ 2,989	\$ 3,488	\$ 4,301	\$ 5,126	\$ 1,384
70-74	190	552	818	603	543	344	249	91	26	6	3,422
\$	147	\$ 390	\$ 724	\$ 1,090	\$ 1,574	\$ 2,164	\$ 2,873	\$ 3,248	\$ 3,477	\$ 4,810	\$ 1,234
75-79	120	453	577	422	293	223	139	43	7	0	2,277
\$	125	\$ 409	\$ 759	\$ 1,158	\$ 1,613	\$ 2,167	\$ 2,588	\$ 3,360	\$ 3,813	\$ 0	\$ 1,148
80-84	86	339	396	280	200	124	77	23	2	1	1,528
\$	156	\$ 425	\$ 832	\$ 1,239	\$ 1,712	\$ 2,060	\$ 2,531	\$ 2,789	\$ 3,808	\$ 3,509	\$ 1,114
85-89	31	205	222	160	110	69	33	22	2	0	854
\$	202	\$ 423	\$ 839	\$ 1,228	\$ 1,587	\$ 1,928	\$ 2,339	\$ 2,490	\$ 3,889	\$ 0	\$ 1,081
90-94	12	68	93	83	51	23	13	11	0	0	354
\$	160	\$ 444	\$ 909	\$ 1,200	\$ 1,471	\$ 1,587	\$ 1,900	\$ 2,251	\$ 0	\$ 0	\$ 1,066
95 & Over	5	10	21	16	3	5	3	1	1	0	65
\$	220	\$ 458	\$ 895	\$ 1,119	\$ 1,116	\$ 1,861	\$ 1,609	\$ 1,667	\$ 2,623	\$ 0	\$ 987
TOTAL	725	2,961	3,877	3,008	3,062	2,532	2,097	479	85	9	18,835
\$	155	\$ 395	\$ 750	\$ 1,095	\$ 1,564	\$ 2,222	\$ 3,007	\$ 3,343	\$ 3,965	\$ 4,736	\$ 1,390

**Exhibit 10.5f**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**Political Subdivision Members**  
**Count and Average Monthly Annuity**  
**as of June 30, 2012**

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	1	7	15	8	3	10	15	0	0	0	59
\$	60	\$ 134	\$ 443	\$ 601	\$ 1,793	\$ 3,232	\$ 4,066	\$ 0	\$ 0	\$ 0	\$ 1,884
55-59	0	24	21	10	21	33	38	3	0	0	150
\$	0	\$ 423	\$ 811	\$ 1,104	\$ 2,612	\$ 3,201	\$ 4,418	\$ 3,534	\$ 0	\$ 0	\$ 2,515
60-64	0	64	72	42	58	49	39	8	0	0	332
\$	0	\$ 413	\$ 920	\$ 1,654	\$ 2,682	\$ 3,183	\$ 4,509	\$ 5,390	\$ 0	\$ 0	\$ 2,086
65-69	36	89	95	60	65	32	17	16	5	0	415
\$	189	\$ 418	\$ 1,004	\$ 1,538	\$ 2,230	\$ 2,898	\$ 3,755	\$ 3,601	\$ 3,433	\$ 0	\$ 1,465
70-74	27	72	64	34	15	6	5	4	1	0	228
\$	109	\$ 369	\$ 844	\$ 1,496	\$ 2,058	\$ 2,981	\$ 4,171	\$ 6,387	\$ 1,483	\$ 0	\$ 1,013
75-79	13	19	24	11	10	3	0	0	1	0	81
\$	227	\$ 478	\$ 949	\$ 1,336	\$ 1,779	\$ 3,121	\$ 0	\$ 0	\$ 7,020	\$ 0	\$ 1,033
80-84	6	19	15	12	7	5	2	0	0	0	66
\$	83	\$ 308	\$ 692	\$ 1,312	\$ 1,605	\$ 1,913	\$ 2,676	\$ 0	\$ 0	\$ 0	\$ 888
85-89	4	28	11	7	6	5	1	1	0	0	63
\$	181	\$ 340	\$ 762	\$ 1,027	\$ 1,248	\$ 1,545	\$ 2,252	\$ 2,571	\$ 0	\$ 0	\$ 728
90-94	3	10	10	6	5	1	2	1	0	0	38
\$	209	\$ 415	\$ 761	\$ 1,093	\$ 1,331	\$ 1,464	\$ 1,716	\$ 2,278	\$ 0	\$ 0	\$ 862
95 & Over	1	5	4	3	5	1	0	0	0	0	19
\$	254	\$ 394	\$ 867	\$ 977	\$ 1,393	\$ 1,406	\$ 0	\$ 0	\$ 0	\$ 0	\$ 894
TOTAL	91	337	331	193	195	145	119	33	7	0	1,451
\$	163	\$ 391	\$ 882	\$ 1,428	\$ 2,265	\$ 2,994	\$ 4,205	\$ 4,295	\$ 3,667	\$ 0	\$ 1,556



**Exhibit 10.5g**  
**Distribution of Retired Members and Beneficiaries by Age and Years of Service**  
**All Groups**  
**Count and Average Monthly Annuity**  
**as of June 30, 2012**

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	20	253	408	293	277	765	976	16	1	0	3,009
\$	96	\$ 261	\$ 424	\$ 622	\$ 1,048	\$ 2,541	\$ 3,402	\$ 1,857	\$ 2,090	\$ 0	\$ 1,997
55-59	6	869	1,061	782	1,632	2,849	3,289	175	4	1	10,668
\$	125	\$ 259	\$ 557	\$ 820	\$ 1,673	\$ 2,650	\$ 3,606	\$ 4,052	\$ 4,266	\$ 4,603	\$ 2,281
60-64	20	2,521	3,184	2,610	4,511	4,565	5,050	708	52	2	23,223
\$	302	\$ 322	\$ 705	\$ 1,098	\$ 1,735	\$ 2,494	\$ 3,511	\$ 4,386	\$ 5,593	\$ 5,821	\$ 1,993
65-69	1,855	4,237	4,641	3,908	4,768	4,264	3,406	942	159	12	28,192
\$	132	\$ 351	\$ 722	\$ 1,115	\$ 1,671	\$ 2,456	\$ 3,347	\$ 4,080	\$ 4,617	\$ 5,548	\$ 1,558
70-74	1,417	3,111	3,723	2,992	3,403	2,476	1,604	532	146	15	19,419
\$	110	\$ 337	\$ 703	\$ 1,108	\$ 1,676	\$ 2,354	\$ 3,170	\$ 3,900	\$ 4,602	\$ 4,927	\$ 1,368
75-79	807	2,239	2,700	2,231	2,137	1,652	1,129	259	54	12	13,220
\$	112	\$ 349	\$ 742	\$ 1,159	\$ 1,731	\$ 2,431	\$ 3,067	\$ 3,796	\$ 5,088	\$ 4,812	\$ 1,358
80-84	479	1,646	1,953	1,578	1,425	1,158	673	166	19	10	9,107
\$	128	\$ 358	\$ 786	\$ 1,208	\$ 1,744	\$ 2,392	\$ 3,020	\$ 3,528	\$ 4,561	\$ 5,053	\$ 1,329
85-89	187	906	1,165	930	868	581	322	117	12	5	5,093
\$	151	\$ 381	\$ 815	\$ 1,234	\$ 1,643	\$ 2,225	\$ 2,737	\$ 3,124	\$ 5,105	\$ 6,265	\$ 1,282
90-94	56	371	476	455	361	192	97	50	8	1	2,067
\$	147	\$ 385	\$ 827	\$ 1,196	\$ 1,536	\$ 1,913	\$ 2,357	\$ 2,602	\$ 4,780	\$ 6,675	\$ 1,168
95 & Over	17	75	108	88	65	45	18	14	3	0	433
\$	212	\$ 412	\$ 853	\$ 1,133	\$ 1,425	\$ 1,725	\$ 1,988	\$ 2,101	\$ 2,345	\$ 0	\$ 1,083
TOTAL	4,864	16,228	19,419	15,867	19,447	18,547	16,564	2,979	458	58	114,431*
\$	124	\$ 341	\$ 718	\$ 1,112	\$ 1,685	\$ 2,464	\$ 3,383	\$ 3,980	\$ 4,768	\$ 5,224	\$ 1,630

\* Includes 103,987 service retirees, 3,215 members who retired from disabled status, 6,204 beneficiaries and 1,025 QDROs.

**Exhibit 10.5h**  
**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, 2012**

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	2	78	129	78	96	345	336	2	0	0	1,066
\$	186	\$ 239	\$ 479	\$ 735	\$ 1,280	\$ 2,659	\$ 3,599	\$ 4,370	\$ 0	\$ 0	\$ 2,248
55-59	3	200	208	173	561	421	365	55	0	0	1,986
\$	114	\$ 325	\$ 704	\$ 999	\$ 1,734	\$ 2,574	\$ 3,687	\$ 4,166	\$ 0	\$ 0	\$ 2,022
60-64	6	543	663	608	543	347	268	76	14	0	3,068
\$	368	\$ 376	\$ 817	\$ 1,213	\$ 1,808	\$ 2,509	\$ 3,485	\$ 4,552	\$ 6,914	\$ 0	\$ 1,537
65-69	495	519	457	283	268	173	109	44	16	0	2,364
\$	142	\$ 388	\$ 808	\$ 1,174	\$ 1,818	\$ 2,355	\$ 2,797	\$ 4,104	\$ 5,342	\$ 0	\$ 1,032
70-74	50	111	127	57	39	28	20	8	6	2	448
\$	129	\$ 356	\$ 718	\$ 1,033	\$ 1,547	\$ 2,094	\$ 2,877	\$ 4,444	\$ 4,044	\$ 6,073	\$ 992
75-79	6	41	36	18	13	10	17	2	1	2	146
\$	136	\$ 376	\$ 522	\$ 1,089	\$ 1,512	\$ 1,808	\$ 2,554	\$ 3,993	\$ 5,308	\$ 4,339	\$ 1,080
80-84	10	12	23	13	10	14	9	0	0	0	91
\$	96	\$ 323	\$ 752	\$ 926	\$ 1,777	\$ 1,768	\$ 2,111	\$ 0	\$ 0	\$ 0	\$ 1,052
85-89	0	6	11	9	7	4	5	1	0	0	43
\$	0	\$ 454	\$ 622	\$ 1,031	\$ 1,345	\$ 1,482	\$ 1,802	\$ 2,334	\$ 0	\$ 0	\$ 1,059
90-94	0	1	3	2	3	1	0	3	0	0	13
\$	0	\$ 414	\$ 848	\$ 1,414	\$ 1,676	\$ 1,705	\$ 0	\$ 2,518	\$ 0	\$ 0	\$ 1,544
95 & Over	0	0	0	0	1	1	0	0	0	0	2
\$	0	\$ 0	\$ 0	\$ 0	\$ 1,103	\$ 1,404	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,254
TOTAL	572	1,511	1,657	1,241	1,541	1,344	1,129	191	37	4	9,227
\$	142	\$ 365	\$ 758	\$ 1,130	\$ 1,738	\$ 2,522	\$ 3,475	\$ 4,282	\$ 5,725	\$ 5,206	\$ 1,553

**Exhibit 10.6**  
**Members in Active Service as of June 30, 2012, by Annual Salary**

Annual Salary	Number of Members	Percent of All Members
Less than \$10,000	7,374	3.6%
\$10,000 - \$14,999	12,042	5.9%
\$15,000 - \$19,999	13,180	6.5%
\$20,000 - \$24,999	12,787	6.3%
\$25,000 - \$29,999	13,918	6.8%
\$30,000 - \$34,999	16,528	8.1%
\$35,000 - \$39,999	18,511	9.1%
\$40,000 - \$44,999	24,277	11.9%
\$45,000 - \$49,999	20,535	10.1%
\$50,000 - \$54,999	15,639	7.7%
\$55,000 - \$59,999	11,481	5.6%
\$60,000 - \$64,999	8,616	4.2%
\$65,000 - \$69,999	6,633	3.2%
\$70,000 and over	22,473	11.0%
Total	203,994	100.0%

**Exhibit 10.7**  
**Retirement Benefits in Force on June 30, 2012, by Monthly Amount**

Monthly Amount	Number of Retirees	Percentage of All Retirees
Under \$300	14,697	12.8%
\$300 - \$499	10,970	9.6%
\$500 - \$999	22,666	19.8%
\$1,000 - \$1,499	16,663	14.6%
\$1,500 - \$1,999	12,370	10.8%
\$2,000 - \$2,499	10,307	9.0%
\$2,500 - \$2,999	8,447	7.4%
\$3,000 - \$3,499	6,766	5.9%
\$3,500 - \$3,999	4,420	3.9%
\$4,000 and over	7,125	6.2%
Total	114,431	100.0%

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

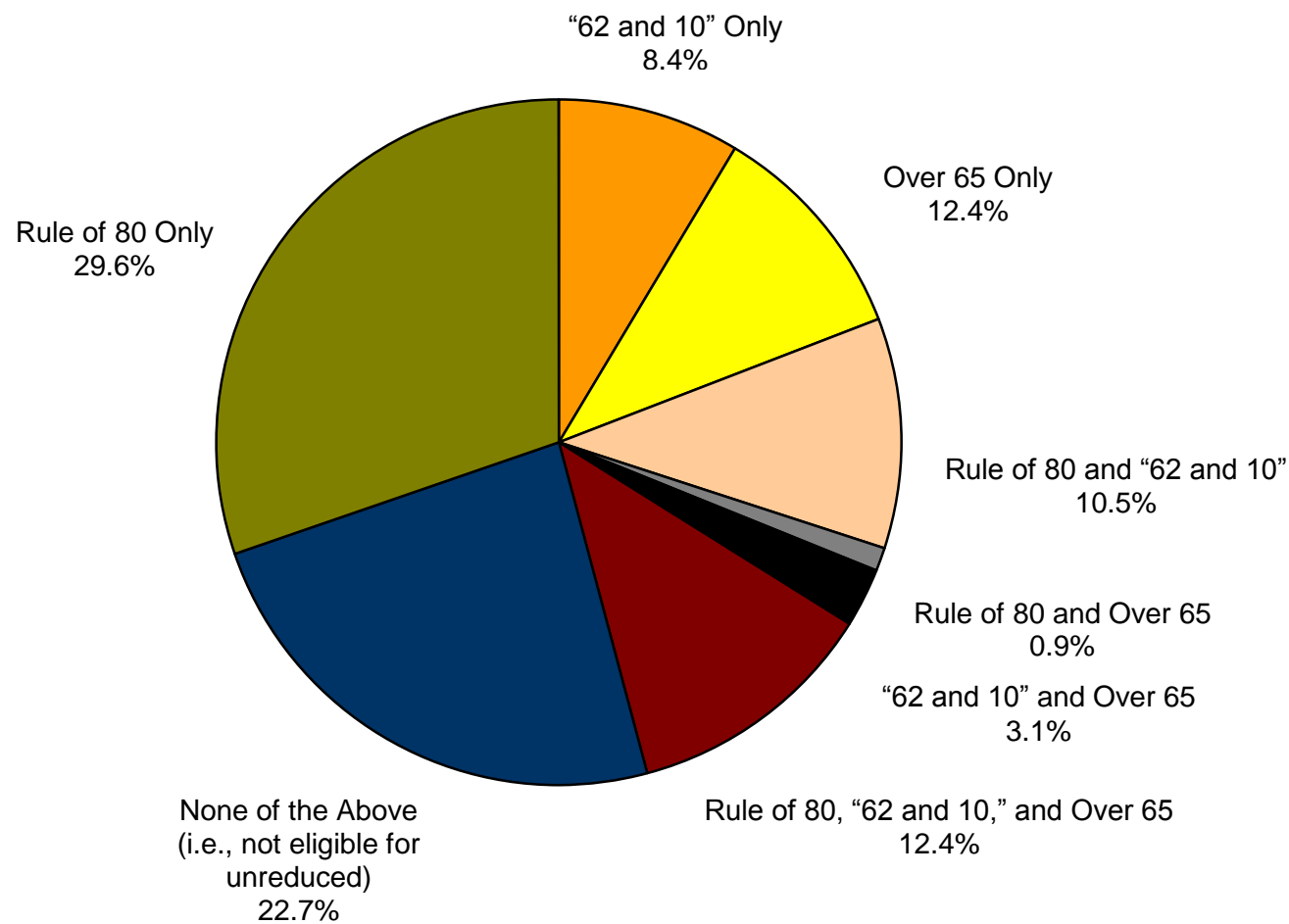
Amount of Monthly Benefit	Optional Form of Benefit							Total
	1	2	3	4	5	6	7	
Under \$300	10,253	258	373	745	2,417	208	443	14,697
\$300 - \$499	6,957	261	407	549	2,050	262	484	10,970
\$500 - \$999	13,813	574	1,019	1,062	4,004	774	1,420	22,666
\$1000 - \$1499	9,285	462	845	688	3,240	876	1,267	16,663
\$1500 - \$1999	6,528	307	531	502	2,605	807	1,090	12,370
\$2000 and over	18,711	573	1,292	1,636	8,474	2,713	3,666	37,065
Total	65,547	2,435	4,467	5,182	22,790	5,640	8,370	114,431

**Optional form**

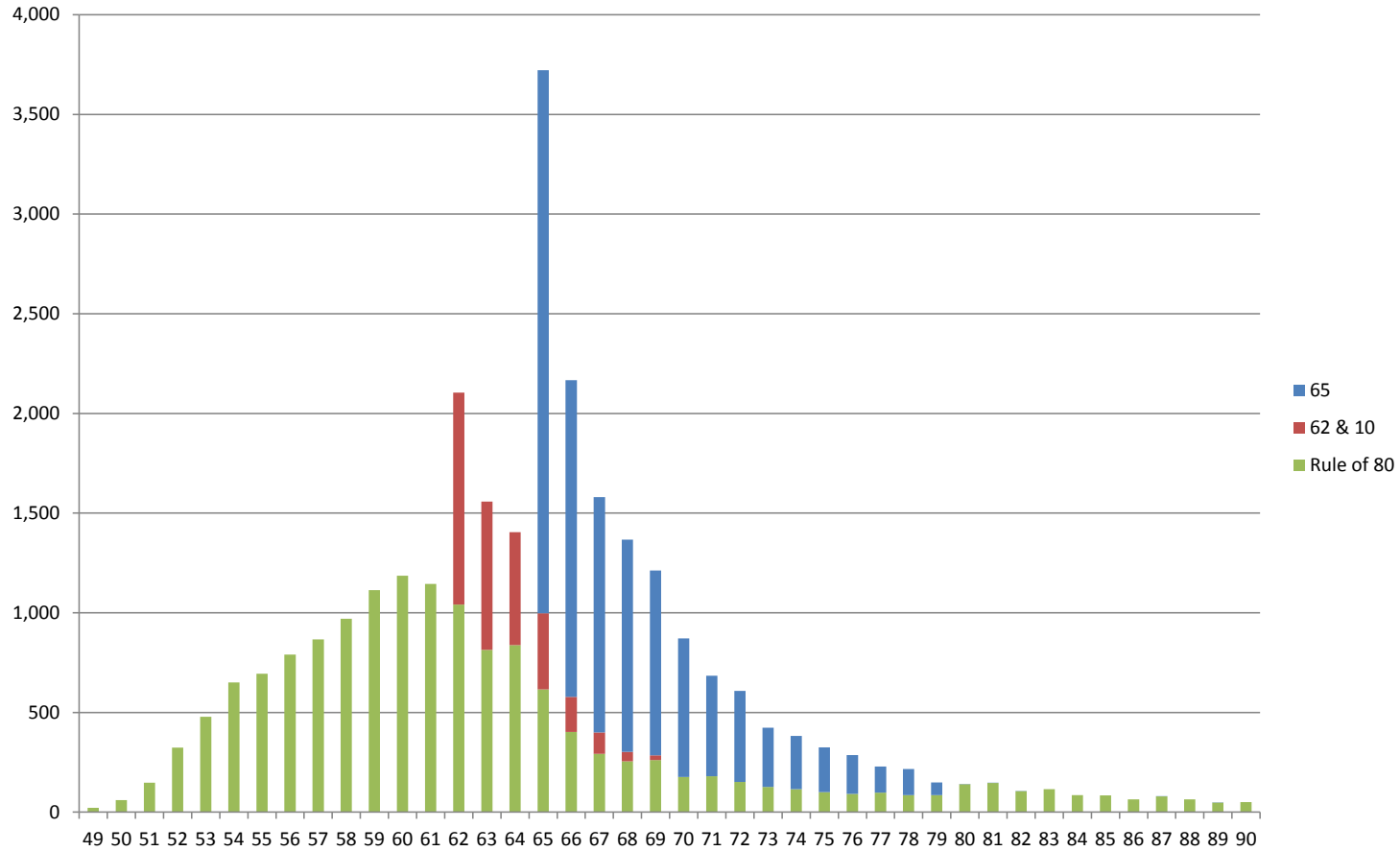
- 1 Life annuity
- 2 Life annuity - 5 years certain and life
- 3 Life annuity - 10 years certain and life
- 4 Life annuity - 15 years certain and life
- 5 Joint annuity - 100% to contingent survivor
- 6 Joint annuity - 66 2/3% to contingent survivor
- 7 Joint annuity - 50% to contingent survivor

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

Exhibit 10.9 – New Retiree Eligibility



**Exhibit 10.10**  
**Total Active and Inactive Members Eligible for**  
**Normal Retirement by Age and Rule of Eligibility**



**Exhibit 10.11**  
**Health Insurance Benefit Counts**

Current HIB Benefit	Count	Monthly Premium	Average Monthly Premium
Single, Non-Medicare	13,525	\$ 1,826,889	\$ 135
Single, Medicare	27,950	2,392,690	86
Family, Both Non-Medicare	6,731	1,266,808	188
Family, One Medicare, One Non-Medicare	4,442	717,582	162
Family, Both Medicare	10,577	1,267,964	120
Total	63,225	\$ 7,471,933	\$ 118

\* Includes 661 System members receiving 401(h) benefits and 1,667 members receiving LTD benefits and 401(h) benefits.



**Exhibit 10.12**  
**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%
2010	213,530	(4.0%)	9,420	(4.2%)	44,115	(0.2%)
2011	208,939	(2.2%)	9,061	(3.8%)	43,365	(1.7%)
2012	203,994	(2.4%)	8,869	(2.1%)	43,475	0.3%

<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 10.13  
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 <sup>1</sup>	Number	Average Monthly Benefit	Number	Average Monthly Benefit <sup>1</sup>
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
2010	9,360	1,571	789	1,817	101,307	1,619	4,724	1,292
2011	9,287 <sup>2</sup>	1,606	752	1,662	107,996	1,627	4,609	1,269
2012	9,227	1,553	709	1,692	114,431	1,630	4,440	1,279

<sup>1</sup> In 2009 and beyond, the LTD average monthly benefit reflects actual, but not assumed, benefit offsets.

<sup>2</sup> Total is 1 less than total members added to rolls because 1 member changed from beneficiary to QDRO, so was removed from beneficiary roll and added to retiree roll, but was not included in this count.

**Exhibit 10.14  
Data Reconciliation**

	Active Members	Inactive, Non-Retired Members	Retirees & Beneficiaries	Total
Total at June 30, 2011	208,939	208,969	107,996	525,904
Terminations	(14,179)	14,179	0	0
Refund	(7,205)	(8,564)	0	(15,769)
Transfer Out	(18)	(45)	0	(63)
Disabled	(552)	(153)	0	(705)
Retirements	(6,516)	(1,470)	7,986	0
Returned from LTD	35	198	501	734
New QDRO	0	0	98	98
New Beneficiary	0	0	619	619
Deaths (with Beneficiary)	0	0	(619)	(619)
Deaths (without Beneficiary)	(183)	(760)	(1,970)	(2,913)
Benefit Expiration	0	0	(120)	(120)
Data Adjustments	(20)	2	8	(10)
New Entrants Terminated with Account Balance	0	2,594	0	2,594
Rehires	4,958	(4,890)	(68)	0
New Entrants	18,735	0	0	18,735
Net Change	(4,945)	1,091	6,435	2,581
Total at June 30, 2012	203,994	210,060	114,431	528,485

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 4,440 members receiving LTD benefits, 229 other-than-Plan (System) members who are receiving benefits from the 401(a) plan only, 536 other-than-Plan (System) members who are receiving benefits from the 401(h) plan only, and 125 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, 2012**

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 for members hired before July 1, 2011 or for members hired on or after July 1, 2011, age 60 with 25 years of credited service or age 55 with 30 years of service.

2. Monthly Life Annuity

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

<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
Members Hired Before July 1, 2011																
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%
Members Hired on or after July 1, 2011																
5-10	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	88%	91%	94%	97%	100%
10-25	44%	49%	54%	59%	64%	69%	74%	79%	84%	89%	94%	97%	100%	100%	100%	100%
25-30	44%	49%	54%	59%	64%	69%	74%	79%	84%	89%	100%	100%	100%	100%	100%	100%
30+	44%	49%	54%	59%	64%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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

6. Normal Form of Benefit

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

7. Optional Forms:

- (a) joint and contingent annuity (with pop-up) with either 100%, 66-2/3% or 50% of the reduced retirement income payable for the life of the contingent annuitant upon the death of the retiring 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) the sum of the member's member and employer balances, 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 for members hired before July 1, 2011 or for members terminated due to an Employer Reduction in Force or position elimination for members hired on or after July 1, 2011, or
- (b) the retirement benefit payable at normal retirement earned to the date of member's termination.

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

F. RETIREE HEALTH INSURANCE PREMIUM SUPPLEMENT

1. Eligibility

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

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**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, Gila, Mohave, or Navajo counties if they have ten years of credited service.

3. Exemption of Post-Doctoral Scholars

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

4. Expanded Eligibility for Active Military Service Credit

Effective July 1, 2007, the term “presidential” call-up is changed to “military” call-up. 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 September 30, 2009, the maximum limit on ASRS pensions of 80% of 36-month final average earnings is eliminated.

3. Return to Work

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

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

4. Administration

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

5. Early Termination Incentives

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

6. Dual Employment

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

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

1. Average Monthly Compensation

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

2. Normal Retirement Date

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

3. Early Retirement Reductions

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

4. Employer Contribution Refunds

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

5. Long-Term Disability Plan Appeals

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

6. Health Insurance

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

7. Compensation

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

W. LEGISLATED PLAN CHANGES ENACTED BY THE 2011 LEGISLATURE OF THE STATE OF ARIZONA

1. Eligibility for New State Employees

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

2. Normal Retirement Age

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

3. Service Purchase Rules

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

4. Return-to-Work Rules

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

5. Split of Contributions

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

X. LEGISLATED PLAN CHANGES ENACTED BY THE 2012 LEGISLATURE OF THE STATE OF ARIZONA

1. Forms of Pension

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

2. Service Purchase Rules

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

3. Health Benefit Supplements

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

4. Long-Term Disability Plan

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

5. Split of Contributions

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

6. Employers that Cease Participation in ASRS

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

7. Opt-out of ASRS for Members First Hired before July 1, 2015

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



8. Spousal Consent

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