



Arizona State Retirement System

Actuarial Report on the

Valuation of the Plan

As of June 30, 2013



January 22, 2014

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

Dear Retirement Board Members:

Valuation of the ASRS Plan as of June 30, 2013

Dear Retirement Board Members:

We certify that the information contained in the attached 2013 actuarial valuation report is accurate and fairly presents the actuarial position of the Arizona State Retirement Plan (the Plan) as of June 30, 2013.

We have made all calculations for this report in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, the report's results comply with 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.

This report is intended for use by ASRS and its auditors.

Data

ASRS staff supplied census data for participants as of June 30, 2013. We have not audited these data, but have examined them for reasonableness and consistency with 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.

GASB 67 Results

There will be a separate report for GASB 67 results.

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, 2013, actuarial valuation of the Arizona State Retirement Plan (the Plan).

Demographic Changes

The number of active members has decreased from 203,994 to 202,693, a 0.6% decrease. Valuation payroll has decreased 1.3% from \$8.869 billion to \$8.753 billion. The payroll for fiscal year 2014 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 \$395 million. This loss is due to the delayed recognition of losses that have occurred in earlier years. Investment losses are recognized in actuarial assets over a ten-year period. The rate of return on actuarial assets for the 2013 fiscal year is 6.66% on the pension assets (401(a)) and 6.49% on the health supplement assets (401(h)) compared to last year's returns of 6.16% and 6.01%, respectively. The actuarially assumed rate of return is 8%. There was also a gain of \$201 million on the liability experience, mostly due to smaller pay increases than assumed.

Changes in Plan Provisions and Funding Methods

This valuation reflects the following changes in Plan provisions and funding methods:

- Amortization: The legislation allows the ASRS Board to determine the periods over which to amortize deficits or surpluses. The Board elected to exercise its discretion at its November 2013 meeting to adopt 30-year closed amortization for the 401(a) portion of the Plan and 15-year closed amortization for the 401(h) portion. Amortization payments are calculated in level dollar amounts.
- Survivor Benefits: The legislation removed the requirement that a survivor's benefit must exceed \$5,000 to qualify for an annuity election. It limits the annuity option for the survivor to the single-life option, provided the annuity amount is greater than an amount selected by the ASRS Board (presently \$100 per month). It eliminates the present value calculation previously available if the member had reached early retirement eligibility or had 15 years of service.
- Permanent Benefit Increases: The legislation eliminates Permanent Benefit Increases for members hired after September 13, 2013.
- Health Insurance Program: The legislation permits the ASRS Board to establish a self-insured health insurance program and an account to administer such a program, provided the self-insured program offers all the benefits required by Title 20.
- Interest on Contribution Balances: Interest is credited at 2% from July 1, 2013 for return of contributions upon termination and withdrawal of account balance.

Effect on Contribution Rates and Funded Status

The contribution rate calculated in this valuation will become effective on July 1, 2014, and will remain in effect through June 30, 2015. The Plan had a gain on liability experience, including a gain due to legislative changes, and a loss due to assumption changes due to the recent experience analysis, and a loss on investments. The net result is that the calculated contribution rate will increase from a rate of 11.30% in the 2012 valuation report to a rate of 11.48% in this report. The contribution rate prior to the assumption and plan provisions changes would have been 11.38%. Later sections of this report give a detailed explanation of the change in contribution rates.

The funded status of the total plan (the ratio of actuarial assets to actuarial accrued liabilities) increased slightly from 75.7% as of June 30, 2012, to 75.9% as of June 30, 2013. The unfunded actuarial accrued liability has grown during this period from \$9,722.8 million to \$9,961.3 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., 6.73%, instead of 11.48%.

Reserve and Outlook for Permanent Benefit Increases

Since the total actuarial investment return (on the actuarial value of 401(a) assets) of 6.66% is below 8% for fiscal year 2013, there are no additional “Excess Investment Earnings” to be allocated for Permanent Benefit Increases (PBIs).

We project no future PBIs until after 2020. We do not include future PBIs in our valuation.

Outlook for Contribution Rates

Future measurements may differ significantly from those of this valuation.

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
2014/2015	22.96%	22.96%	22.96%	22.96%
2015/2016	23.42%	23.21%	23.63%	24.47%
2016/2017	23.76%	23.30%	24.23%	26.00%
2017/2018	23.95%	23.23%	24.71%	27.53%
2018/2019	24.28%	23.24%	25.37%	29.40%
2019/2020	24.12%	22.84%	25.54%	30.82%
2020/2021	23.34%	21.84%	25.01%	31.36%
2021/2022	22.67%	20.98%	24.56%	31.91%
2022/2023	22.37%	20.47%	24.58%	33.20%
2023/2024	21.92%	19.84%	24.39%	34.35%

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 above results illustrate the sensitivity of Plan contribution rates to workforce growth. They do not represent a full analysis of the possible range of future measurements because other factors, such as actual investment returns and pay increases, changes in rates of mortality, disability, retirement and termination, changes in plan provisions and changes in methods or assumptions will affect future measurements.

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):

	2012	2013
Demographic Information		
• Number of Members		
Actives	203,994	202,693
Inactives	210,060	213,058
Receiving benefits	114,431	120,875
Disabled (LTD)	4,440	4,307
Total	532,925	540,933
• Covered projected payroll	\$ 8,869	\$ 8,753
• Average age/service for actives	45.8/9.6	45.7/9.6
• Average pay for actives	\$ 43,475	\$ 43,182
• Average monthly benefit for retirees and beneficiaries (401(a) only)	\$ 1,630	\$ 1,632
• Average monthly benefit for members who retired in last fiscal year (401(a) only)	\$ 1,575	\$ 1,563
• Average age at valuation date for retirees and beneficiaries	69.8	69.9
• Average age at retirement for retirees and beneficiaries	60.2	60.3
• Average age at valuation date for members who retired in last fiscal year	62.0	62.3
Financial Information		
• Total normal cost rate ¹	13.53%	13.45%
• Unfunded actuarial accrued liability ¹	\$ 9,723	\$ 9,961
• Funded status of pension (401(a)) ¹	75.3%	75.4%
• Funded status of health (401(h))	85.3%	89.2%
• Funded status of total plan ¹	75.7%	75.9%
• Unrounded total contribution rate ¹	22.55%	22.96%
• Member contribution rate	11.30%	11.48%
• Employer contribution rate	11.30%	11.48%
• Member and employer contributions ²	\$ 1,864	\$ 1,987
• Benefit and refunded payments ²	\$ 2,580	\$ 2,713
• Administrative expenses ²	\$ 32	\$ 34
• Net external cash flow ²	\$ (748)	\$ (760)
• PBI		
Additional liability for July 1 st PBI	\$ 0.0	\$ 0.0
Percentage increase	0%	0%
Per year of service factor	\$ 0.0	\$ 0.0
PBI reserve before July 1 st PBI	\$ 0.0	\$ 0.0

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

² 2013 column gives information for fiscal year ended June 30, 2013 and 2012 column gives information for fiscal year ended June 30, 2012.

	2012	2013
● Actuarial gains (losses)		
Assets	\$ (524)	\$ (395)
Liability Experience	276	201
System Experience	(12)	(7)
Legislative and Administrative Changes	28	355
Assumption Changes	N/A	(312)
Funding Method Change	N/A	N/A
Total	\$ (232)	\$ (158)
● GASB 25 Disclosure (401(a) pension only)		
Actuarial Accrued Liability (AAL) ¹	\$ 38,450	\$ 39,912
Unfunded AAL/(Surplus) ¹	\$ 9,502	\$ 9,801
Actuarial Value of Assets as % of AAL ¹	75.3%	75.4%
Unfunded AAL/(Surplus) as % of payroll ¹	107.1%	112.0%
● GASB 43 disclosure (401(h) plan only)		
Actuarial Accrued Liability (AAL)	\$ 1,502	\$ 1,485
Unfunded AAL/(Surplus)	\$ 221	\$ 160
Actuarial Value of Assets as % of AAL	85.3%	89.2%
Unfunded AAL/(Surplus) as % of payroll	2.5%	1.8%
● Changes in Contribution Rate:		
Item	Contribution Rate	Change in Rate
1. 2012 Valuation	22.55%	-
2. Expected Experience	22.13%	-0.42%
3. Contribution Gain/(Loss)	22.27%	+0.14%
4. 2012/2013 Liability Experience	22.39%	+0.12%
5. 2012/2013 Asset Experience	22.75%	+0.36%
6. System Experience	22.76%	+0.01%
7. Assumption Changes	23.40%	+0.64%
8. Plan Provisions Changes	22.91%	-0.49%
9. Funding Method Change (15 year amortization of 401(h) unfunded liabilities)	22.96%	+0.05%

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

Split of Total Contribution Rate:			
Item	401(a)¹ Account	401(h) Account	Total
1. Member Contribution Rates	11.48%	0.00%	11.48%
2. Employer Contribution Rates	<u>10.89%</u>	<u>0.59%</u>	<u>11.48%</u>
3. Total Contribution Rates	22.37%	0.59%	22.96%

¹ Includes post-1981 System liabilities and assets.

- Asset Amounts, Returns on Assets, and Funded Status

	2012		2013	
	Market Value	Actuarial Value	Market Value	Actuarial Value
Asset Amounts				
Pension 401(a) ¹	\$ 26,401,667,918	\$ 28,948,010,913	\$ 29,025,148,316	\$ 30,110,632,566
Health 401(h)	<u>1,167,345,698</u>	<u>1,281,566,359</u>	<u>1,274,036,072</u>	<u>1,324,595,696</u>
Total Plan ¹	\$ 27,569,013,616	\$ 30,229,577,272	\$ 30,299,184,388	\$ 31,435,228,262
Asset Returns				
Pension 401(a)	1.11%	6.16%	12.95%	6.66%
Health 401(h)	1.03%	6.01%	12.70%	6.49%
Total Plan	1.10%	6.15%	12.94%	6.65%
Liabilities				
Pension 401(a) ¹	\$ 38,450,288,740	\$ 38,450,288,740	\$ 39,911,755,232	\$ 39,911,755,232
Health 401(h)	<u>1,502,082,451</u>	<u>1,502,082,451</u>	<u>1,484,820,255</u>	<u>1,484,820,255</u>
Total Plan ¹	\$ 39,952,371,191	\$ 39,952,371,191	\$ 41,396,575,487	\$ 41,396,575,487
Funded Status²				
Pension 401(a) ¹	68.7%	75.3%	72.7%	75.4%
Health 401(h)	77.7%	85.3%	85.8%	89.2%
Total Plan ¹	69.0%	75.7%	73.2%	75.9%

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

² 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, 2013, determines the contribution rate for fiscal year 2015. Based on the results of the 2013 Plan valuation, the total contribution rate for the fiscal year beginning July 1, 2014, would increase from the 11.30% unrounded rate determined in the 2012 valuation to 11.48% of compensation.

This year's valuation includes, for the first time, the assumptions that the board accepted from the recent experience study. It also reflects the Board's decision to adopt 30-year closed amortization for the 401(a) portion of the Plan and 15-year closed amortization for the 401(h) portion. Amortization amounts are based on level dollar amounts.

Assets

This section shows the change in the assets during the year, calculates the return 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, 2012, and June 30, 2013, 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 (including System assets) as of June 30, 2013, was \$30,299,184,388 and the actuarial value of asset under this method was \$31,435,228,262, or about 104% of market value as of June 30, 2013. The combined 401(a) and 401(h) deferral amount for the year is \$(1.136) billion. That is, \$1.136 billion of investment losses that occurred before July 1, 2013 will be recognized in future valuations.

Asset Returns

To determine the estimated return 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, 2013, the Plan had an estimated return of 6.66% on the 401(a) actuarial assets and 6.49% 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 12.95% on the 401(a) market assets and 12.70% 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	\$28,677,043,323	\$ 1,274,036,072	\$ 348,104,993	\$30,299,184,388
2. Actuarial Value of Assets	\$29,733,566,151	\$ 1,324,595,696	\$ 377,066,415	\$31,435,228,262

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

	Year Ending June 30, 2012	Year Ending June 30, 2013
1. Market value, beginning of year	\$ 26,440,256,592	\$ 26,047,713,626
2. Contributions and receipts during the year		
a. Member contributions ¹	905,908,620	947,959,053
b. Employer contributions ¹	852,107,785	911,255,171
c. Member reimbursements of member contributions	51,423,342	70,790,399
d. Member reimbursements of employer contributions	0	0
e. Other miscellaneous receipts	0	0
f. Total	\$ 1,809,439,747	\$ 1,930,004,623
3. Investment income for the year (net of investment expenses)	\$ 317,991,702	\$ 3,348,238,394
4. Benefit payments		
a. Retirement benefits	\$ (2,249,900,004)	\$ (2,360,079,299)
b. Death benefits	(29,575,674)	(38,362,457)
c. Total	\$ (2,279,475,678)	\$ (2,398,441,756)
5. Refunds of contributions	(207,078,258)	(218,528,202)
6. Employer adjustments	0	0
7. Administrative expenses	(30,632,862)	(32,450,862)
8. Miscellaneous	0	0
9. Other		
a. Transfers from other plans	\$ 2,236,314	\$ 1,232,600
b. Reimbursements and lump sums	0	0
c. Transfers to PSPRS	(5,023,931)	(725,100)
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	\$ (2,787,617)	\$ 507,500
10. Change in audited assets, beginning of year	0	0
11. Total change in market value	\$ (392,542,966)	\$ 2,629,329,697
12. Market value, end of year	\$ 26,047,713,626	\$ 28,677,043,323

¹ Contribution rates were 10.50% for fiscal 2012, and 10.90% for fiscal 2013.

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

	Year Ending June 30, 2012	Year Ending June 30, 2013
1. Market value, beginning of year	\$ 1,194,727,820	\$ 1,167,345,698
2. Contributions and receipts during the year		
a. Member contributions	\$ 0	\$ 0
b. Employer contributions ¹	54,462,585	57,153,530
c. Member reimbursements of member contributions	0	0
d. Member reimbursements of employer contributions	0	0
e. Other miscellaneous receipts	0	0
f. Total	\$ 54,462,585	\$ 57,153,530
3. Investment income for the year (net of investment expenses)	13,440,558	146,738,900
4. Benefit payments	(93,915,382)	(95,762,723)
5. Refunds of contributions	0	0
6. Employer adjustments	0	0
7. Administrative expenses	(1,369,883)	(1,439,333)
8. Miscellaneous	0	0
9. Other	0	0
10. Change in audited assets, beginning of year	0	0
11. Total change in market value	\$ (27,382,122)	\$ 106,690,374
12. Market value, end of year	\$ 1,167,345,698	\$ 1,274,036,072

¹ Contribution rates were 0.63% for fiscal 2012, and 0.65% for fiscal 2013.

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

Item	Plan Year Ending June 30			
	2010	2011	2012	2013
1. Market value of assets, beginning of year	\$ 19,506,243,433	\$ 21,779,421,537	\$ 26,440,256,592	\$ 26,047,713,626
2. Contributions during year	1,642,839,233	1,684,171,434	1,809,439,747	1,930,004,623
3. Benefits paid during year	(2,007,437,548)	(2,144,137,146)	(2,279,475,678)	(2,398,441,756)
4. Refunds paid during year	(145,833,143)	(177,035,003)	(207,078,258)	(218,528,202)
5. Administrative expenses, assumed end of year	(27,762,078)	(26,877,407)	(30,632,862)	(32,450,862)
6. Other changes and net transfers	(8,502,361)	170,663	(2,787,617)	507,500
7. Net investment income for year, net of all expenses	2,792,111,923	5,297,665,107	287,358,840	3,315,787,532
8. Expected net investment income at 8%				
a. Market value of assets, beginning of year	1,560,499,475	1,742,353,723	2,115,220,527	2,083,817,090
b. Contributions	65,713,569	67,366,857	72,377,590	77,200,185
c. Benefits	(86,988,960)	(92,912,610)	(98,777,279)	(103,932,476)
d. Refunds	(6,319,436)	(7,671,517)	(8,973,391)	(9,469,555)
e. Administrative expenses	0	0	0	0
f. Other	(340,094)	6,827	(111,505)	20,300
g. Total	1,532,564,554	1,709,143,280	2,079,735,942	2,047,635,544
9. Excess investment income for year (Item 7 - Item 8.g.)	\$ 1,259,547,369	\$ 3,588,521,827	\$ (1,792,377,102)	\$ 1,268,151,988

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

Item	Plan Year Ending June 30			
	2010	2011	2012	2013
1. Market value of assets, beginning of year	\$ 897,192,742	\$ 995,595,659	\$ 1,194,727,820	\$ 1,167,345,698
2. Contributions during year	59,393,098	51,047,543	54,462,585	57,153,530
3. Benefits paid during year	(87,983,539)	(91,698,836)	(93,915,382)	(95,762,723)
4. Refunds paid during year	0	0	0	0
5. Administrative expenses, assumed end of year	(1,265,834)	(1,209,035)	(1,369,883)	(1,439,333)
6. Other changes and net transfers	0	0	0	0
7. Net investment income for year, net of all expenses	126,993,358	239,783,454	12,070,675	145,299,567
8. Expected net investment income at 8%				
a. Market value of assets, beginning of year	71,775,419	79,647,653	95,578,226	93,387,656
b. Contributions	2,375,724	2,041,902	2,178,503	2,286,141
c. Benefits	(3,812,620)	(3,973,616)	(4,069,667)	(4,149,718)
d. Refunds	0	0	0	0
e. Administrative expenses	0	0	0	0
f. Other	0	0	0	0
g. Total	70,338,523	77,715,939	93,687,062	91,524,079
9. Excess investment income for year (Item 7 - Item 8.g.)	\$ 56,654,835	\$ 162,067,515	\$ (81,616,387)	\$ 53,775,488

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

Item	Valuation as of June 30, 2012	Valuation as of June 30, 2013
1. Excess (shortfall) of investment income for current year and previous eight years:		
a. Current year	\$ (1,792,377,102)	\$ 1,268,151,988
b. Current year – 1	3,588,521,827	(1,792,377,102)
c. Current year – 2	1,259,547,369	3,588,521,827
d. Current year – 3	(6,298,770,518)	1,259,547,369
e. Current year – 4	(4,056,160,670)	(6,298,770,518)
f. Current year – 5	2,181,339,141	(4,056,160,670)
g. Current year – 6	385,506,263	2,181,339,141
h. Current year – 7	86,948,970	385,506,263
i. Current year – 8	1,614,125,853	86,948,970
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ (1,613,139,392)	\$ 1,141,336,789
b. Current year – 1 (80% deferral)	2,870,817,462	(1,433,901,682)
c. Current year – 2 (70% deferral)	881,683,158	2,511,965,279
d. Current year – 3 (60% deferral)	(3,779,262,311)	755,728,421
e. Current year – 4 (50% deferral)	(2,028,080,335)	(3,149,385,259)
f. Current year – 5 (40% deferral)	872,535,656	(1,622,464,268)
g. Current year – 6 (30% deferral)	115,651,879	654,401,742
h. Current year – 7 (20% deferral)	17,389,794	77,101,253
i. Current year – 8 (10% deferral)	161,412,585	8,694,897
j. Total deferred for year	\$ (2,500,991,504)	\$ (1,056,522,828)
3. Market value of plan assets, end of year		
a. Excluding System assets	\$ 26,047,713,626	\$ 28,677,043,323
b. Including System assets	\$ 26,401,667,918	\$ 29,025,148,316
4. Actuarial value of plan assets, end of year		
a. Excluding System assets (Item 3.a. - Item 2.j.)	\$ 28,548,705,130	\$ 29,733,566,151
b. Including System assets	\$ 28,948,010,913	\$ 30,110,632,566

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

Item	Valuation as of June 30, 2012	Valuation as of June 30, 2013
1. Excess (shortfall) of investment income for current year and previous eight years:		
a. Current year	\$ (81,616,387)	\$ 53,775,488
b. Current year – 1	162,067,515	(81,616,387)
c. Current year – 2	56,654,835	162,067,515
d. Current year – 3	(280,417,337)	56,654,835
e. Current year – 4	(182,147,911)	(280,417,337)
f. Current year – 5	94,970,630	(182,147,911)
g. Current year – 6	15,509,847	94,970,630
h. Current year – 7	3,700,598	15,509,847
i. Current year – 8	58,647,224	3,700,598
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ (73,454,748)	\$ 48,397,939
b. Current year – 1 (80% deferral)	129,654,012	(65,293,110)
c. Current year – 2 (70% deferral)	39,658,385	113,447,261
d. Current year – 3 (60% deferral)	(168,250,402)	33,992,901
e. Current year – 4 (50% deferral)	(91,073,956)	(140,208,669)
f. Current year – 5 (40% deferral)	37,988,252	(72,859,164)
g. Current year – 6 (30% deferral)	4,652,954	28,491,189
h. Current year – 7 (20% deferral)	740,120	3,101,969
i. Current year – 8 (10% deferral)	<u>5,864,722</u>	<u>370,060</u>
j. Total deferred for year	\$ (114,220,661)	\$ (50,559,624)
3. Market value of plan assets, end of year	\$ 1,167,345,698	\$ 1,274,036,072
4. Actuarial value of plan assets, end of year (Item 3 - Item 2.j.)	\$ 1,281,566,359	\$ 1,324,595,696

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

Item	Valuation as of June 30, 2012	Valuation as of June 30, 2013
1. Actuarial assets, beginning of year	\$ 27,559,411,373	\$ 28,548,705,130
2. Total contributions during year	1,809,439,747	1,930,004,623
3. Benefits paid during year	(2,279,475,678)	(2,398,441,756)
4. Refunds paid during year	(207,078,258)	(218,528,202)
5. Other changes and net transfers	(2,787,617)	507,500
6. Assumed net investment income at 8%		
a. Beginning of year assets	2,204,752,910	2,283,896,410
b. Contributions	72,377,590	77,200,185
c. Benefits	(98,777,279)	(103,932,476)
d. Refunds	(8,973,391)	(9,469,555)
e. Other	(111,505)	20,300
f. Total	\$ 2,169,268,325	\$ 2,247,714,864
7. Expected actuarial assets, end of year (Sum of Items 1 through 6)	\$ 29,048,777,892	\$ 30,109,962,159
8. Actual actuarial assets, end of year	\$ 28,548,705,130	\$ 29,733,566,151
9. Asset gain/(loss) for year (Item 8 - Item 7)	\$ (500,072,762)	\$ (376,396,008)

Excludes System assets

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

Item	Valuation as of June 30, 2012	Valuation as of June 30, 2013
1. Actuarial assets, beginning of year	\$ 1,247,443,042	\$ 1,281,566,359
2. Total contributions during year	54,462,585	57,153,530
3. Benefits paid during year	(93,915,382)	(95,762,723)
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	99,795,443	102,525,309
b. Contributions	2,178,503	2,286,141
c. Benefits	(4,069,667)	(4,149,718)
d. Refunds	0	0
e. Other	0	0
f. Total	<u>\$ 97,904,279</u>	<u>\$ 100,661,732</u>
7. Expected actuarial assets, end of year (Sum of Items 1 through 6)	\$ 1,305,894,524	\$ 1,343,618,898
8. Actual actuarial assets, end of year	\$ 1,281,566,359	\$ 1,324,595,696
9. Asset gain/(loss) for year (Item 8 - Item 7)	\$ (24,328,165)	\$ (19,023,202)

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

Item	Basis of Assets	
	Market Value	Actuarial Value
1. Beginning of year asset value	\$ 26,047,713,626	\$ 28,548,705,130
2. End of year asset value	\$ 28,677,043,323	\$ 29,733,566,151
3. Contributions	\$ 1,930,004,623	\$ 1,930,004,623
4. Transfers	\$ (507,500)	\$ (507,500)
5. Benefit Payments	\$ 2,616,969,958	\$ 2,616,969,958
6. Estimated yield based on mid-year timing for contributions and 13/24 timing for benefit payments	12.95%	6.66%

Exhibit 3.5b – History of Returns (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%
2013	12.95%	6.66%

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

Item	Basis of Assets	
	Market Value	Actuarial Value
1. Beginning of year asset value	\$ 1,167,345,698	\$ 1,281,566,359
2. End of year asset value	\$ 1,274,036,072	\$ 1,324,595,696
3. Contributions	\$ 57,153,530	\$ 57,153,530
4. Transfers	\$ 0	\$ 0
5. Benefit Payments	\$ 95,762,723	\$ 95,762,723
6. Estimated yield based on mid-year timing for contributions and 13/24 timing for benefit payments	12.70%	6.49%

Exhibit 3.5d – History of Returns (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%
2013	12.70%	6.49%

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 ¹	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	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 ²	1,863,902,332	(2,373,391,060)	(207,078,258)	(32,002,745)	(2,612,472,063)	(748,569,730)	27,215,059,324	(2.8%)
2013 ²	1,987,158,153	(2,494,204,479)	(218,528,202)	(33,890,195)	(2,746,622,876)	(759,464,723)	29,951,079,395	(2.5%)

¹ Including LTD management fees prior to 1996

² 401(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
2013	\$29,733,566,151	\$28,677,043,323	103.7%	\$1,324,595,696	\$1,274,036,072	104.0%	\$31,058,161,847	\$29,951,079,395	103.7%
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%

Excludes System Assets

Actuarial Balance Sheet

The results of the actuarial valuation of the Plan as of June 30, 2012, and June 30, 2013, are summarized in the actuarial balance sheet in Exhibit 4.1. The results for 2013 are based on the benefit provisions of the Plan as of June 30, 2013, 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	
	2012	2013
I <u>Present Assets At Actuarial Value:</u>		
1. Reserve for retired members and beneficiaries	\$ 21,189,979,976	\$ 23,092,601,812
2. Reserve for disabled members	770,284,225	910,704,369
3. Reserve for other-than-plan retirees	7,393,391	7,268,791
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	7,744,272,936	8,354,953,649
(b) System members	N/A	N/A
6. Employer contributions		
(a) Plan members	7,457,474,310	8,082,709,901
(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	406,514,877	412,582,843
9. Additional assets	(10,006,906,099)	(10,561,636,977)
10. Total present assets	\$ 27,569,013,616	\$ 30,299,184,388
11. Adjustment to market value due to actuarial asset valuation method	2,660,563,656	1,136,043,874
12. Total actuarial value of present assets	\$ 30,229,577,272	\$ 31,435,228,262
II <u>Prospective Assets:</u>		
13. Unfunded actuarial accrued liability	9,722,793,919	9,961,347,225
14. TOTAL ACTUARIAL ASSETS	\$ 39,952,371,191	\$ 41,396,575,487

Exhibit 4.1 - Actuarial Balance Sheet

ACTUARIAL LIABILITIES

	June 30	
	2012	2013
III Present Value of Benefits Presently Being Paid:		
15. (a) Benefits for retired members and beneficiaries	\$ 20,556,558,195	\$ 22,398,414,156
(b) Health insurance premium supplement	633,421,781	694,187,656
16. (a) Benefits for disabled members	734,513,283	871,779,172
(b) Health insurance premium supplement	35,770,942	38,925,197
17. (a) Benefits for other-than-plan members	1,872,998	1,650,427
(b) Health insurance premium supplement	5,520,393	5,618,364
18. Total present value of benefits presently being paid	\$ 21,967,657,592	\$ 24,010,574,972
IV Present Value of Benefits Payable in the Future to Present Members:		
19. Active members		
(a) Service retirement benefits	\$ 13,037,065,260	\$ 12,952,664,976
(b) Health insurance premium supplement	776,917,054	699,070,334
(c) Disability retirement benefits	421,328,595	346,835,482
(d) Pre-retirement death benefits	400,585,401	204,460,957
(e) Withdrawal benefits	1,158,632,548	1,109,748,086
(f) Total active members	\$ 15,794,528,858	\$ 15,312,779,835
20. Inactive members		
(a) Retirement Benefits	\$ 1,733,217,583	\$ 1,613,619,133
(b) Health insurance premium supplement	50,452,281	47,018,704
(c) Total inactive members	\$ 1,783,669,864	\$ 1,660,637,837
21. Post-1981 System members	406,514,877	\$ 412,582,843
22. Total	\$ 39,952,371,191	\$ 41,396,575,487
V Other Liabilities and Reserves:		
23. Reserve for other miscellaneous liabilities and reserves	\$ 0	\$ 0
24. Reserve for PBI COLAs	\$ 0	\$ 0
25. TOTAL ACTUARIAL LIABILITIES	\$ 39,952,371,191	\$ 41,396,575,487

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 ¹	8,735	9,420	92.7%	28,823	30.3%	37,558	23.3%
2011 ¹	9,324	9,601	102.9%	29,231	31.9%	38,555	24.2%
2012 ¹	9,723	8,809	109.6%	30,230	32.2%	39,952	24.3%
2013 ¹	9,961	8,753	113.8%	31,435	31.7%	41,397	24.1%

¹ 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, 2013, is 13.45% of pay compared to 13.53% in the 2012 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 2013 valuation with the corresponding items for the 2012 valuation.

Contribution Rates¹

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, 2013, the normal cost of the Plan is 13.45% and the amortization of the UAAL is 9.51%. The total contribution rate is equal to:

$$\frac{1}{2} \times (13.45\% + 9.51\%) = 11.48\%$$

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

$$\frac{1}{2} \times (13.45\% + 0.00\%) = 6.73\%$$

This difference of 4.75% (i.e., 11.48% - 6.73%) is due entirely to the UAAL of the Plan. Thus, the current UAAL of the Plan is equivalent to a 4.75% increase in the employer and member contribution rates determined by the 2013 valuation.

The member and employer contribution rates determined by the 2013 valuation are each 11.48% 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	11.48%	0.00%	11.48%
2. Employer Contribution Rates	<u>10.89%</u>	<u>0.59%</u>	<u>11.48%</u>
3. Total Contribution Rates	22.37%	0.59%	22.96%

Exhibit 5.3 shows the history of the contribution rates.

¹ 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	
	2012	2013
1. Retirement benefits	9.64%	9.78%
2. Health insurance premium supplement	0.40%	0.39%
3. Disability benefits (Deferred Retirement)	0.38%	0.37%
4. Death benefits	0.39%	0.21%
5. Termination benefits	2.72%	2.70%
6. Total	13.53%	13.45%

Exhibit 5.2 - Summary of Cost Items

	Valuation as of June 30, 2012		Valuation as of June 30, 2013	
		Cost as % of Pay		Cost as % of Pay
1. Members				
a. Active members	203,994		202,693	
b. Inactive members	210,060		213,058	
c. Retired members and beneficiaries	114,431		120,875	
d. Disabled retirees	4,440		4,307	
e. Total	532,925		540,933	
f. Other-than-plan retirees receiving only benefit increases (401(a))	229		192	
g. Other-than-plan retirees receiving only health insurance benefits (401(h))	536		521	
h. Other-than-plan retirees receiving both benefit increases (401(a)) and health insurance benefits (401(h))	125		106	
2. Covered payroll	\$ 8,868,678,184		\$ 8,752,783,004	
3. Averages for active members				
a. Average age	45.8		45.7	
b. Average years of service	9.6		9.6	
c. Average pay	\$ 43,475		\$ 43,182	
4. Normal cost rate	13.53%		13.45%	
5. Actuarial accrued liability ¹				
a. Retired members and beneficiaries	\$ 21,189,979,976		\$ 23,092,601,812	
b. Disabled members	770,284,225		910,704,369	
c. Benefits for other-than- plan retirees	7,393,391		7,268,791	
d. Active members	15,794,528,858		15,312,779,835	
e. Inactive members	1,783,669,864		1,660,637,837	
f. Post-1981 System members	406,514,877		412,582,843	
g. Reserve for PBI COLAs	0		0	
h. Total	\$ 39,952,371,191	450.5%	\$ 41,396,575,487	473.0%
6. Present actuarial assets ¹	\$ 30,229,577,272	340.9%	\$ 31,435,228,262	359.1%
7. Unfunded actuarial accrued liability ¹	\$ 9,722,793,919	109.6%	\$ 9,961,347,225	113.8%

¹ 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, 2012		Valuation as of June 30, 2013	
		Cost as % of Pay		Cost as % of Pay
8. Section 38-737 funding period	30 years		30 years	
9. Section 38-737 contribution rate ¹				
A. 401(a) Account				
a. Member	11.30%		11.48%	
b. Employer	10.70%		10.89%	
c. Total	22.00%		22.37%	
B. 401(h) Account				
a. Member	0.00%		0.00%	
b. Employer	0.60%		0.59%	
c. Total	0.60%		0.59%	
C. Total of Combined Accounts				
a. Member	11.30%		11.48%	
b. Employer	11.30%		11.48%	
c. Total	22.60%		22.96%	
10. Estimated return on 401(a) actuarial assets	6.16%		6.66%	
11. Relative size of unfunded actuarial accrued liability ¹				
a. As percentage of actuarial assets	32.2%		31.7%	
b. As percentage of covered payroll	109.6%		113.8%	
c. As percentage of total actuarial accrued liability	24.3%		24.1%	

¹ 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 ¹	2.73 ¹	2.17	2.17	5.46 ¹	4.34
2001	1.92	1.92	2.00	2.00	3.84	4.00
2002	3.86 ¹	3.86 ¹	2.00	2.00	7.72 ¹	4.00
2003	5.20	5.20	5.20	5.20	10.40	10.40
2004	6.96 ¹	6.96 ¹	5.20	5.20	13.92 ¹	10.40
2005	7.75	7.75	6.90 ²	6.90 ²	15.50	13.80 ²
2006	8.70 ¹	8.70 ¹	8.60 ²	8.60 ²	17.40 ¹	17.20 ²
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 ³	10.48	10.48	10.50	10.50	20.96	21.00
2012 ³	10.90	10.90	10.90	10.90	21.80	21.80
2013 ³	11.28	11.28	11.30	11.30	22.55	22.60
2014 ³	11.48	11.48	11.48	11.48	22.96	22.96

¹ Hypothetical rate. The actual contribution rate was set by the prior year valuation.

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

³ 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 \$395 million. This loss is due to the investment experience of fiscal 2013 and delayed recognition of losses that have occurred in earlier years. Investment losses are recognized in actuarial assets over a ten-year period. The rate of return on actuarial assets for the 2013 fiscal year is 6.66% on the pension assets (401(a)) and 6.49% on the health supplement assets (401(h)) compared to last year's returns of 6.16% and 6.01%, respectively. The actuarially assumed rate of return is 8%. There was also a gain of \$201 million on the Plan liability experience and a loss of \$7 million on the System experience. Changes in assumptions due to the Experience Analysis increased liabilities by \$312 million and change in plan provisions decreased liabilities by \$355 million. The total loss for the year was \$158 million.

Exhibit 6.1 - Actuarial Gain or Loss for the Year

Item	Valuation as of June 30, 2012	Valuation as of June 30, 2013
A. Calculation of Total Actuarial Gain or Loss		
1. Unfunded actuarial accrued liability (UAAL), previous year	\$ 9,324,408,746	\$ 9,722,793,919
2. Normal cost for the year	\$ 1,208,893,466	\$ 1,200,123,046
3. Contributions for the year ¹	\$ (1,812,478,990)	\$ (1,916,367,754)
4. Interest at 8%		
a. On UAAL	745,952,700	777,823,514
b. On normal cost	96,711,477	96,009,844
c. On contributions	(72,499,160)	(76,654,710)
d. Total	\$ 770,165,017	\$ 797,178,648
5. Expected UAAL (Sum of Items 1 - 4)	\$ 9,490,988,239	\$ 9,803,727,859
6. Actual UAAL	\$ 9,722,793,919	\$ 9,961,347,225
7. Gain/(loss) for the year (Item 5 - Item 6)	\$ (231,805,680)	\$ (157,619,366)
B. Source of Gains and Losses		
8. Asset gain/(loss) for the year (Tables 3.4a and 3.4b, Item 10)	\$ (524,400,927)	\$ (395,419,210)
9. Asset gain/(loss) as a percentage of actuarial assets	-1.8%	-1.3%
10. PBI Cola		
a. Excess Earnings Reserve for Fiscal Year 2012	\$ 0	\$ 0
b. Excess Earnings Reserve for Fiscal Year 2013	\$ 0	\$ 0
11. System gain/(loss) allocated to the Plan	(12,290,783)	(7,081,530)
12. Total actuarial accrued liability gain/(loss) for the year (Item 7 - Item 8)	\$ 304,886,030	\$ 244,881,374
13. Analysis of actuarial accrued liability gain/(loss)		
a. Legislative changes	\$ 28,263,129	\$ 355,595,664
b. Assumption changes	N/A	(312,182,048)
c. Experience liability gain/(loss)	276,622,901	201,467,758
d. Total actuarial accrued liability gain/(loss)	\$ 304,886,030	\$ 244,881,374
14. Experience liability gain/(loss) as percentage of total actuarial liability (Items 11 and 13c as % of Item 5h of Exhibit 5.2)	0.66%	0.47%

¹ 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, 2012	\$ 9,723	22.55%	-
2. Expected Experience	9,640	22.13%	-0.42%
3. Delay in contribution rate change	9,803	22.27%	+0.14%
4. 2012/2013 liability experience	9,602	22.39%	+0.12%
5. 2012/2013 asset experience	9,997	22.75%	+0.36%
6. System experience allocated to the Plan	10,004	22.76%	+0.01%
7. Assumption Changes	10,316	23.40%	+0.64%
8. Plan Provisions Changes	9,961	22.91%	-0.49%
9. Funding Method Change (15-year amortization of 401(h) unfunded liabilities)	9,961	22.96%	+0.05%

Exhibit 6.3 - Analysis of Change in Actuarial Accrued Liability

Basis	Actuarial Accrued Liability
1. Valuation as of June 30, 2012	\$ 39,952,371,191
2. Expected Experience	1,682,004,140
3. Assumption and Plan Provisions Changes	(43,413,616)
4. System (Gain)/Loss allocated to the Plan	7,081,530
5. Liability (Gain)/Loss	(201,467,758)
6. Valuation as of June 30, 2013	\$ 41,396,575,487

Exhibit 6.4 – Experience Liability Gain/(Loss)

Decrement	Annual Gain/(Loss) as of June 30, 2013	Total Gain/(Loss) Since July 1, 2008
Active Mortality	\$ 314,448	\$ (11,459,683)
Active Withdrawal	(1,191,542)	13,432,256
Active Disability	(1,149,515)	(11,733,209)
Active Retirement	(6,617,829)	(76,628,984)
New Entrants/Rehires	(97,027,942)	(400,716,456)
Salary	216,288,264	2,068,743,907
Inactive Mortality	17,942,502	65,661,953
Other	<u>72,909,372</u>	<u>(103,182,979)</u>
Total	\$ 201,467,758	\$ 1,544,116,805

Permanent Benefit Increase

Exhibit 7.1 shows the determination of the PBI for 2013. 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 6.66% is below 8% for fiscal year 2013, 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, 2014</u>	
1. Actuarial Present Value (APV) for all Retirees and Beneficiaries as of June 30, 2012	\$ 20,556,558,195
2. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2012	6.16%
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, 2012	\$ 205,565,582
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 2013 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 2013 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, 2013	\$ 22,398,414,156
13. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2013	6.66%
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	2013	\$0.00

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, 2013. The Plan provisions are described in Title 38, Chapter 4, Article 2 of the Arizona Revised Statutes. All benefits described in the statutes are reflected in this valuation, except that future PBI and enhanced PBI awards are not valued.

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

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

Actuarial Valuation of the Plan as of June 30, 2013

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

Actuarial Valuations

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

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

Funding Objectives

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

Funding Progress

The 2012 valuation determined the rate for fiscal 2014 as 11.30%. The 2013 valuation calculates a rate of 11.48% to become effective July 1, 2014. These rates do not include contributions to the LTD program. Actual contributions have matched the calculated contributions in recent years except for temporary differences, and we assume that members and employers will continue to contribute the actuarially determined amounts. Contributing these amounts ensures the realization of funding objectives.

The ASRS Board has elected to amortize the UAAL over a closed 30-year period for 401(a) unfunded actuarial accrued liability and a closed 15-year period for the 401(h) unfunded actuarial accrued liability.

Benefit Provisions

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

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

Section 11 gives details of benefit provisions.

Assumptions and Methods

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

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

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

Data

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

Trend Data and Supporting Schedules

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

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

¹ 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 May 24, 2013 the Board adopted assumptions to be effective for valuations on and after June 30, 2013. Assumptions that were changed or added are identified below. These assumptions are as follows:

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

Years of Service	Merit Component	Total Salary Increase*
1	3.75%	6.75%
2	3.00	6.00
3	1.90	4.90
4	1.35	4.35
5	1.05	4.05
6	0.95	3.95
7	0.75	3.75
8	0.60	3.60
9	0.60	3.60
10	0.40	3.40
11 to 19	0.20	3.20
20 or more	0.00	3.00

* Total salary increase rate = wage inflation (or growth) rate (3.00%)
+ merit component

3. Rates of disability - changed

Age	Unisex Rates
20	0.05%
30	0.07
40	0.16
50	0.36
60	0.47

4. Rates of withdrawal - changed

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

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

		Years of Service			
	Age	0-3	11-18	25	31+
Tier 1:	50	0.00%	4.00%	5.00%	25.00%
	55	0.00	4.00	25.00	25.00
	60	0.00	9.00	25.00	25.00
	62	0.00	33.00	25.00	25.00
	65	33.00	33.00	33.00	33.00
	70	15.00	25.00	33.00	25.00
Tier 2:	50	0.00%	4.00%	8.33%	14.00%
	55	0.00	4.00	10.89	33.00
	60	0.00	9.00	30.00	25.00
	62	0.00	33.00	25.00	25.00
	65	33.00	33.00	33.00	33.00
	70	15.00	25.00	33.00	25.00

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

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

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

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

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

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

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

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

Sincerely,

Charles E. Chittenden, FSA, EA, MAAA

**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%
06/30/2013	30,111	39,912	9,801	75.4%	8,753	112.0%

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 System 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%
2013	911,255,171	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%
06/30/2013	\$ 1,325	\$ 1,485	\$ 160	89.2%	\$ 8,753	1.8%

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%
2013	\$ 57,153,530	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, 2013
Actuarial cost method	Projected Unit Credit
Amortization method	Level dollar, 30 years, closed for 401(a) Level dollar, 15 years, closed for 401(h)
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	3.00% to 6.75%
*Includes wage inflation at	3.00%
Future Permanent Benefit Increases	Not Valued

Exhibit 8.4 – Components of Normal Cost¹

	2013
Components of the normal cost are as follows:	
Retirement benefits	9.78%
Health insurance premium supplement	0.39%
Survivor benefits	0.21%
Withdrawals	2.70%
Long-term disability benefit	<u>0.37%</u>
Total normal cost	13.45%
Amortization of the UAAL	<u>9.51%</u>
Required contribution rate for FY 2015	22.96%

¹ 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%
2013	202,693	8,752,783,004	43,182	(0.7%)

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%
2013	8,901	166,945,373	18,756	2,720	43,009,451	15,812	114,408	2,274,484,944	19,880	5.8%

* 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%
2013	588	9,029,111	15,356	325	4,317,260	13,284	6,467	93,119,448	14,399	5.3%

* 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%
2013	9,489	175,974,484	18,545	3,045	47,326,711	15,542	120,875	2,367,604,392	19,587	5.7%

* 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%
2013	5,861	9,434,508	1,610	4,159	9,127,908	2,195	64,927*	89,969,796	1,386	0.3%

* Includes 627 System members receiving 401(h) benefits and 1,516 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%
2013	41,396,575,487	31,435,228,262	75.9%	9,961,347,225	8,752,783,004	113.8%

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
2013	9,917,301,188	23,684,426,598	6,310,027,446	30,110,632,566	100.0	85.3	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
2013	0	738,731,217	746,089,038	1,324,595,696	100.0	100.0	78.5

* 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
2013	9,917,301,188	24,423,157,815	7,056,116,484	31,435,228,262	100.0	88.1	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%
2013	8,753,000,000	947,959,053	10.90%	10.90%

* 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)
2013	9,502.28	1,164.58	(1,859.21)	760.18	93.17	(74.37)	778.98	9,586.63	9,801.12	(214.49)

* 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
2013	220.51	35.54	(57.16)	17.64	2.84	(2.28)	18.20	217.09	160.23	56.86

* 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)
2013	9,722.79	1,200.12	(1,916.37)	777.82	96.01	(76.65)	797.18	9,803.72	9,961.35	(157.63)

* 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 – Contributions Calculated and Received

Calculated Contributions Amounts and Rates – Plan 401(a) and 401(h)							
	For the Contribution Period Ending June 30, 2013 (2011 Valuation)		For the Contribution Period Ending June 30, 2014 (2012 Valuation)		For the Contribution Period Ending June 30, 2015 (2013 Valuation)		
401(a) Normal Cost	\$ 1,170,467,758	12.92%	\$ 1,164,576,898	13.13%	\$ 1,143,109,197	13.06%	
401(a) Amortization of Unfunded Liability*	745,797,074	8.23%	781,543,347	8.82%	814,868,064	9.31%	
401(a) Total	\$ 1,916,264,832	21.15%	\$ 1,946,120,245	21.95%	\$ 1,957,977,261	22.37%	
401(h) Normal Cost	\$ 38,425,708	0.42%	\$ 35,546,148	0.40%	\$ 34,055,412	0.39%	
401(h) Amortization of Unfunded Liability	21,116,897	0.23%	18,137,008	0.20%	17,492,880	0.20%	
401(h) Total	\$ 59,542,605	0.65%	\$ 53,683,156	0.60%	\$ 51,548,292	0.59%	
LTD Normal Cost	\$ 28,164,635	0.31%	\$ 25,723,092	0.29%	\$ 15,925,104	0.18%	
LTD Amortization of Unfunded Liability**	16,027,178	0.18%	15,568,722	0.18%	4,873,172	0.06%	
LTD Total	\$ 44,191,813	0.49%	\$ 41,291,814	0.47%	\$ 20,798,276	0.24%	
Actuarial Total	\$ 2,019,999,250	22.29%	\$ 2,041,095,215	23.02%	\$ 2,030,323,829	23.20%	

Actual Contributions Received – Amount and as a Percentage of Actual Covered Payroll		
	For the Contribution Period Ending June 30, 2013	
Employers' Retirement – 401(a)	\$ 911,255,171	10.25%
Employees' Retirement – 401(a)	947,959,053	10.90%
Employers' Health Premium Benefit – 401(h)	57,153,530	0.65%
Employers' Long-Term Disability	21,108,450	0.25%
Employees' Long-Term Disability	21,108,450	0.25%
Total	\$ 1,958,584,654	22.30%

* 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 May 24, 2013
Effective as of June 30, 2013**

A. Actuarial Assumptions

1. Investment Yield Rate – Determined from the Board’s strategic session

8% per annum compounded annually, net of all expenses

2. Mortality – Determined from our experience analysis for July 1, 2007 through June 30 2012

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

Prior Assumption: 1994 GAM Static, Projected to 2010 with Projection Scale AA, with no setback for pre- and nondisabled post-retirement. Disabled rates were based on the experience of other large public sector retirement systems and ASRS’ own experience.

Adopted Assumption:

- a. Pre-retirement 50% of 1994 GAM – Static, Projected to 2015 with Projection Scale BB, with no setback. Rates at representative ages are shown below.

Age	Rates of Mortality (Active)	
	Male Members	Female Members
20	0.000207	0.000128
25	0.000270	0.000127
30	0.000269	0.000146
35	0.000292	0.000211
40	0.000406	0.000344
45	0.000692	0.000476
50	0.001127	0.000639
55	0.001882	0.000987
60	0.003149	0.001779
65	0.005325	0.003450
70	0.008633	0.005639
75	0.013718	0.009380
80	0.023121	0.016632
85	0.038025	0.029474
90	0.066498	0.052712

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

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

Non-disabled mortality rates are decreased for members with annual Plan income greater than \$14,400 and increased for members with annual Plan income less than \$6,000 as shown below.

Age	Large Adjustment		Small Adjustment	
	Male	Female	Male	Female
0 – 49	No Adjustment		No Adjustment	
50 – 75	75%	84%	139%	133%
76 – 111	81%	90%	105%	100%
112	84%	92%	104%	100%
113	87%	94%	103%	100%
114	90%	96%	102%	100%
115	93%	98%	101%	100%
116	96%	100%	100%	100%
117	99%	100%	100%	100%
118 and over	100%	100%	100%	100%

3. Disability Rates – Our new assumption was determined from our experience analysis for July 1, 2007 through June 30, 2012

Sample rates are shown below.

Rates of Decrement due to Disability	
Age	Unisex Rates
20	0.000491
25	0.000541
30	0.000654
35	0.000997
40	0.001583
45	0.002449
50	0.003649
55	0.004280
60	0.004655

4. Withdrawal Rates – Our new assumption was determined from our experience analysis for July 1, 2007 through June 30, 2012

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

Rates at representative ages are
shown below.

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

5. Salary Scale – Our new assumption was determined from our experience analysis for July 1, 2007 through June 30, 2012

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

* Total salary increase rate = wage inflation (or growth) rate (3.00%) + merit component

6. Retirement Age – Our new assumption was determined from our experience analysis for July 1, 2007 through June 30, 2012

Select and ultimate retirement rates are used. Rates at representative ages and years of service are shown below, where Tier 1 represents active members hired before July 1, 2011:

		Years of Service			
	Age	0-3	11-18	25	31+
Tier 1:	50	0.00%	4.00%	5.00%	25.00%
	55	0.00	4.00	25.00	25.00
	60	0.00	9.00	25.00	25.00
	62	0.00	33.00	25.00	25.00
	65	33.00	33.00	33.00	33.00
	70	15.00	25.00	33.00	25.00
Tier 2:	50	0.00%	4.00%	8.33%	14.00%
	55	0.00	4.00	10.89	33.00
	60	0.00	9.00	30.00	25.00
	62	0.00	33.00	25.00	25.00
	65	33.00	33.00	33.00	33.00
	70	15.00	25.00	33.00	25.00

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

7. Future Retirees Eligible for the Health Insurance Premium Supplement – Our new assumption was determined from our experience analysis for July 1, 2007 through June 30, 2012

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

8. Proportion of 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 - Statutory

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 – Our new assumption was determined from our experience analysis for July 1, 2007 through June 30, 2012

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

13. Alternate Contribution Rate – Our new assumption was determined from our experience analysis for July 1, 2007 through June 30, 2012

The past service contribution rate is adjusted to consider alternate contribution rate payments. We reduce the amortization amount by the anticipated amount of alternate contributions, and adjust for interest. Previously, no adjustment was made for alternate contribution rate payments.

14. Adjustment for Contribution Timing – Our new assumption was determined from our experience analysis for July 1, 2007 through June 30, 2012

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

15. Future Permanent Benefit Increases (PBIs)

Future PBIs are not valued.

B. Actuarial Value of Assets – Statutory

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 – Determined by ASRS Board, new amortization method

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

D. Data for Valuation

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

Member Data

Exhibit 10.1 – ASRS Members Missing Date of Birth and Gender 2009 – 2013

<u>Date of Birth</u>	6/30/2009	6/30/2010	6/30/2011	6/30/2012	6/30/2013
Active	6,652	4,224	3,627	4,442	2,982
New		1,918	2,845	2,867	1,720
Continuing		2,306	782	1,575	1,262
Inactive	44,703	39,833	38,065	29,075	28,444
New		536	457	478	387
Continuing		39,297	37,608	28,597	28,057
Retired	0	0	0	0	0
New		0	0	0	0
Continuing		0	0	0	0
Total	51,355	44,057	41,692	33,517	31,426
Total New		2,454	3,302	3,345	2,107
Total Continuing		41,603	38,390	30,172	29,319
Actives Average Svc	2.4	2.4	1.1	1.2	1.4
Inactives Average Svc	0.7	0.7	0.7	0.7	0.7
 Gender					
	6/30/2009	6/30/2010	6/30/2011	6/30/2012	6/30/2013
Active	3,745	3,327	3,734	4,515	2,978
New		2,015	2,930	2,903	1,730
Continuing		1,312	804	1,612	1,248
Inactive	41,662	39,303	36,821	36,286	35,485
New		564	480	510	419
Continuing		38,739	36,341	35,776	35,066
Retired	0	85	0	0	0
New		67	0	0	0
Continuing		18	0	0	0
Total	45,407	42,715	40,555	40,801	38,463
Total New		2,646	3,410	3,413	2,149
Total Continuing		40,069	37,145	37,388	36,314
Actives Average Svc	1.1	1.2	1.0	1.2	1.4
Inactives Average Svc	0.6	0.6	0.6	0.6	0.6

Missing dates of birth and gender are populated based on the averages of the remaining population grouped by age, gender and employer group. Date of birth and gender were the only data fields with at least 1,000 records missing data.

**Exhibit 10.2 - 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, 2012	As of June 30, 2013	As of June 30, 2012	As of June 30, 2013	As of June 30, 2012	As of June 30, 2013	As of June 30, 2012	As of June 30, 2013
Higher Education Members:								
Male	9,356	9,387	47.2	47.0	9.9	10.0	\$ 55,763	\$ 56,865
Female	13,773	13,870	46.8	46.6	10.0	10.1	48,624	49,066
Total	23,129	23,257	47.0	46.8	10.0	10.1	\$ 51,512	\$ 52,214
Other Education Members:								
Male	28,232	27,908	45.7	45.6	9.0	9.0	\$ 41,465	\$ 40,898
Female	83,041	82,661	44.8	44.7	9.4	9.4	36,782	36,127
Total	111,273	110,569	45.0	44.9	9.3	9.3	\$ 37,970	\$ 37,331
City Members:								
Male	9,487	9,406	46.1	46.2	10.2	10.3	\$ 57,854	\$ 57,782
Female	7,062	6,956	45.3	45.5	10.3	10.6	50,797	50,965
Total	16,549	16,362	45.8	45.9	10.2	10.4	\$ 54,842	\$ 54,884
County Members:								
Male	8,108	8,039	48.0	48.0	10.0	10.0	\$ 53,584	\$ 52,736
Female	12,949	12,878	46.3	46.3	9.7	9.7	43,668	43,143
Total	21,057	20,917	47.0	47.0	9.8	9.8	\$ 47,486	\$ 46,830
State Members:								
Male	9,237	9,079	48.7	48.5	10.5	10.3	\$ 52,306	\$ 52,302
Female	16,625	16,188	46.8	46.7	10.6	10.5	42,683	42,895
Total	25,862	25,267	47.5	47.3	10.6	10.4	\$ 46,120	\$ 46,275
Political Subdivision Members:								
Male	2,384	2,458	46.8	46.5	8.1	8.0	\$ 64,469	\$ 64,169
Female	3,740	3,863	45.8	45.5	7.5	7.4	53,004	53,392
Total	6,124	6,321	46.2	45.9	7.7	7.6	\$ 57,467	\$ 57,583
All Active Plan Members:								
Male	66,804	66,277	46.7	46.6	9.6	9.6	\$ 49,586	\$ 49,417
Female	137,190	136,416	45.4	45.3	9.6	9.6	40,500	40,154
Total	203,994	202,693	45.8	45.7	9.6	9.6	\$ 43,475	\$ 43,182

Exhibit 10.3 – Summary of Retired Membership

	June 30, 2012	June 30, 2013	Percentage Change During the Period
HIGHER EDUCATION MEMBERS			
Number	13,453	14,117	4.9%
Total Monthly Allowance	\$ 24,367,579	\$ 25,737,980	5.6%
Average Monthly Allowance	\$ 1,811	\$ 1,823	0.7%
Average Age	71.1	71.2	0.1%
Average Years of Service	19.3	19.3	0.0%
OTHER EDUCATION MEMBERS			
Number	61,110	64,491	5.5%
Total Monthly Allowance	\$ 104,416,600	\$ 109,712,853	5.1%
Average Monthly Allowance	\$ 1,709	\$ 1,701	(0.5%)
Average Age	69.6	69.8	0.3%
Average Years of Service	20.4	20.3	(0.5%)
CITY MEMBERS			
Number	7,249	7,806	7.7%
Total Monthly Allowance	\$ 13,180,701	\$ 14,294,520	8.5%
Average Monthly Allowance	\$ 1,818	\$ 1,831	0.7%
Average Age	67.6	67.8	0.3%
Average Years of Service	19.2	19.1	(0.5%)
COUNTY MEMBERS			
Number	12,333	13,065	5.9%
Total Monthly Allowance	\$ 16,172,863	\$ 17,292,795	6.9%
Average Monthly Allowance	\$ 1,311	\$ 1,324	1.0%
Average Age	70.0	70.1	0.1%
Average Years of Service	17.0	17.0	0.0%
STATE MEMBERS			
Number	18,835	19,773	5.0%
Total Monthly Allowance	\$ 26,183,870	\$ 27,669,435	5.7%
Average Monthly Allowance	\$ 1,390	\$ 1,399	0.6%
Average Age	70.1	70.2	0.1%
Average Years of Service	18.4	18.4	0.0%
POLITICAL SUBDIVISION MEMBERS			
Number	1,451	1,623	11.9%
Total Monthly Allowance	\$ 2,258,105	\$ 2,592,782	14.8%
Average Monthly Allowance	\$ 1,556	\$ 1,598	2.7%
Average Age	68.5	68.4	(0.1%)
Average Years of Service	16.2	16.3	0.6%
TOTAL			
Number ^{1, 2}	114,431	120,875	5.6%
Total Monthly Allowance	\$ 186,579,718	\$ 197,300,365	5.7%
Average Monthly Allowance	\$ 1,630	\$ 1,632	0.1%
Average Age	69.8	69.9	0.1%
Average Years of Service	19.4	19.4	0.0%

¹ Excludes other-than-plan retirees from the System receiving benefit increases from the Plan.

² For 2013, total number includes 109,697 service retirees, 3,610 members who retired from disabled status, 6,467 beneficiaries and 1,101 QDROs.

Exhibit 10.4 – Summary of Inactive Membership

	June 30, 2012	June 30, 2013	Percentage Change During the Period
HIGHER EDUCATION MEMBERS			
Number	25,782	26,228	1.7%
OTHER EDUCATION MEMBERS			
Number	112,464	114,930	2.2%
CITY MEMBERS			
Number	11,746	11,846	0.9%
COUNTY MEMBERS			
Number	25,396	25,140	(1.0%)
STATE MEMBERS			
Number	30,798	30,835	0.1%
POLITICAL SUBDIVISION MEMBERS			
Number	<u>3,874</u>	<u>4,079</u>	<u>5.3%</u>
TOTAL			
Number	210,060	213,058	1.4%

Exhibit 10.5a
Distribution of Active Members by Age and Years of Service
Higher Education Members
Count and Average Salary
as of June 30, 2013

CURRENT AGE	YEARS OF SERVICE								
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	TOTAL
Below 19	6	0	0	0	0	0	0	0	6
	\$ 12,349	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 12,349
20-24	604	16	0	0	0	0	0	0	620
	\$ 24,258	\$ 25,129	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 24,280
25-29	1,375	381	6	0	0	0	0	0	1,762
	\$ 31,610	\$ 38,006	\$ 42,758	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 33,031
30-34	1,175	927	233	9	0	0	0	0	2,344
	\$ 41,239	\$ 44,268	\$ 50,301	\$ 53,722	\$ 0	\$ 0	\$ 0	\$ 0	\$ 43,386
35-39	928	834	558	139	4	0	0	0	2,463
	\$ 42,949	\$ 52,100	\$ 54,579	\$ 61,572	\$ 52,076	\$ 0	\$ 0	\$ 0	\$ 49,748
40-44	893	842	621	378	97	3	1	0	2,835
	\$ 43,332	\$ 51,895	\$ 60,784	\$ 63,410	\$ 65,818	\$ 76,860	\$ 59,328	\$ 0	\$ 53,186
45-49	759	780	580	442	302	123	8	0	2,994
	\$ 41,908	\$ 53,345	\$ 58,145	\$ 65,140	\$ 67,846	\$ 64,681	\$ 78,827	\$ 0	\$ 55,113
50-54	809	732	645	505	442	298	75	3	3,509
	\$ 43,744	\$ 50,342	\$ 56,568	\$ 63,107	\$ 70,337	\$ 69,574	\$ 68,442	\$ 71,033	\$ 56,359
55-59	629	709	599	525	436	292	144	39	3,373
	\$ 44,804	\$ 52,694	\$ 57,571	\$ 58,367	\$ 68,156	\$ 75,556	\$ 77,574	\$ 72,312	\$ 58,239
60-64	389	471	415	356	270	225	116	81	2,323
	\$ 46,485	\$ 53,928	\$ 57,025	\$ 62,129	\$ 68,674	\$ 77,488	\$ 83,017	\$ 90,055	\$ 61,200
65-69	125	179	140	110	89	70	32	61	806
	\$ 45,740	\$ 59,526	\$ 55,079	\$ 64,319	\$ 76,426	\$ 76,611	\$ 85,565	\$ 89,280	\$ 63,905
70 & Over	36	52	36	20	29	21	3	25	222
	\$ 43,724	\$ 42,314	\$ 46,162	\$ 60,066	\$ 67,033	\$ 78,712	\$ 109,072	\$ 102,339	\$ 59,100
TOTAL	7,728	5,923	3,833	2,484	1,669	1,032	379	209	23,257
	\$ 39,590	\$ 50,167	\$ 56,852	\$ 62,282	\$ 69,008	\$ 73,093	\$ 78,335	\$ 87,714	\$ 52,214

Exhibit 10.5b
Distribution of Active Members by Age and Years of Service
Other Education Members
Count and Average Salary
as of June 30, 2013

CURRENT AGE	YEARS OF SERVICE								
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	TOTAL
Below 19	335	0	0	0	0	0	0	0	335
	\$ 10,150	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 10,150
20-24	4,473	186	0	0	0	0	0	0	4,659
	\$ 24,101	\$ 19,914	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 23,934
25-29	6,814	3,026	55	0	0	0	0	0	9,895
	\$ 32,650	\$ 38,000	\$ 34,239	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 34,295
30-34	4,317	5,959	1,565	34	0	0	0	0	11,875
	\$ 29,857	\$ 41,798	\$ 45,334	\$ 39,676	\$ 0	\$ 0	\$ 0	\$ 0	\$ 37,917
35-39	4,106	3,999	3,714	850	7	0	0	0	12,676
	\$ 26,822	\$ 38,907	\$ 49,179	\$ 52,819	\$ 55,889	\$ 0	\$ 0	\$ 0	\$ 38,944
40-44	4,252	4,062	3,123	2,715	608	8	0	0	14,768
	\$ 25,846	\$ 34,478	\$ 46,026	\$ 56,174	\$ 60,811	\$ 50,674	\$ 0	\$ 0	\$ 39,516
45-49	3,649	3,939	2,902	2,213	1,742	510	21	0	14,976
	\$ 24,711	\$ 32,250	\$ 39,956	\$ 50,325	\$ 60,075	\$ 63,339	\$ 54,268	\$ 0	\$ 38,903
50-54	3,274	3,628	3,369	2,427	1,765	1,500	230	2	16,195
	\$ 24,415	\$ 31,143	\$ 37,123	\$ 44,923	\$ 54,774	\$ 65,074	\$ 66,217	\$ 56,266	\$ 39,311
55-59	2,488	2,874	2,656	2,450	1,756	906	349	71	13,550
	\$ 24,880	\$ 31,481	\$ 37,752	\$ 42,562	\$ 49,812	\$ 58,788	\$ 67,291	\$ 57,056	\$ 38,760
60-64	1,606	1,975	1,516	1,290	900	566	184	117	8,154
	\$ 23,493	\$ 31,114	\$ 37,397	\$ 42,572	\$ 49,130	\$ 56,167	\$ 59,924	\$ 65,107	\$ 37,459
65-69	698	729	438	228	154	95	36	28	2,406
	\$ 18,698	\$ 26,238	\$ 35,384	\$ 40,312	\$ 50,228	\$ 56,190	\$ 55,145	\$ 55,430	\$ 30,540
70 & Over	316	400	192	81	36	29	13	13	1,080
	\$ 13,526	\$ 18,950	\$ 25,147	\$ 25,625	\$ 39,796	\$ 42,306	\$ 36,962	\$ 49,679	\$ 20,874
TOTAL	36,328	30,777	19,530	12,288	6,968	3,614	833	231	110,569
	\$ 26,692	\$ 35,158	\$ 41,860	\$ 47,983	\$ 54,470	\$ 61,410	\$ 64,041	\$ 60,515	\$ 37,331

Exhibit 10.5c
Distribution of Active Members by Age and Years of Service
City Members
Count and Average Salary
as of June 30, 2013

CURRENT AGE	YEARS OF SERVICE								
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	TOTAL
Below 19	55	0	0	0	0	0	0	0	55
	\$ 15,582	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 15,582
20-24	505	32	0	0	0	0	0	0	537
	\$ 24,525	\$ 28,632	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 24,770
25-29	609	407	28	0	0	0	0	0	1,044
	\$ 36,171	\$ 39,902	\$ 44,460	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 37,848
30-34	570	734	254	17	0	0	0	0	1,575
	\$ 40,342	\$ 49,389	\$ 50,074	\$ 48,230	\$ 0	\$ 0	\$ 0	\$ 0	\$ 46,213
35-39	502	728	473	136	4	0	0	0	1,843
	\$ 43,134	\$ 54,732	\$ 58,633	\$ 60,016	\$ 69,628	\$ 0	\$ 0	\$ 0	\$ 52,996
40-44	504	707	536	379	90	14	0	0	2,230
	\$ 46,250	\$ 54,136	\$ 63,319	\$ 68,773	\$ 66,749	\$ 61,356	\$ 0	\$ 0	\$ 57,603
45-49	412	717	550	400	247	155	16	0	2,497
	\$ 46,215	\$ 54,078	\$ 60,379	\$ 68,304	\$ 74,772	\$ 72,011	\$ 68,237	\$ 0	\$ 59,698
50-54	407	670	572	448	341	300	52	1	2,791
	\$ 46,204	\$ 53,411	\$ 60,203	\$ 67,212	\$ 74,199	\$ 76,171	\$ 79,376	\$ 132,815	\$ 61,466
55-59	303	558	437	396	252	183	50	8	2,187
	\$ 45,766	\$ 54,816	\$ 59,877	\$ 64,558	\$ 70,288	\$ 80,833	\$ 75,216	\$ 67,532	\$ 60,810
60-64	156	313	253	220	111	101	35	10	1,199
	\$ 40,150	\$ 54,120	\$ 58,240	\$ 64,470	\$ 68,385	\$ 74,821	\$ 70,427	\$ 70,635	\$ 58,749
65-69	47	109	74	36	30	14	4	1	315
	\$ 42,479	\$ 50,455	\$ 59,776	\$ 61,993	\$ 68,229	\$ 83,460	\$ 71,825	\$ 59,585	\$ 56,233
70 & Over	19	28	22	12	6	2	0	0	89
	\$ 26,624	\$ 36,680	\$ 49,782	\$ 44,661	\$ 66,544	\$ 51,918	\$ 0	\$ 0	\$ 41,204
TOTAL	4,089	5,003	3,199	2,044	1,081	769	157	20	16,362
	\$ 40,036	\$ 51,997	\$ 59,300	\$ 66,045	\$ 71,976	\$ 76,065	\$ 74,729	\$ 71,950	\$ 54,884

Exhibit 10.5d
Distribution of Active Members by Age and Years of Service
County Members
Count and Average Salary
as of June 30, 2013

CURRENT AGE	YEARS OF SERVICE								
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	TOTAL
Below 19	32	0	0	0	0	0	0	0	32
	\$ 22,433	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 22,433
20-24	503	15	0	0	0	0	0	0	518
	\$ 28,187	\$ 29,855	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 28,235
25-29	1,079	387	21	0	0	0	0	0	1,487
	\$ 35,049	\$ 34,891	\$ 35,199	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 35,010
30-34	1,021	794	230	14	0	0	0	0	2,059
	\$ 37,911	\$ 43,545	\$ 41,227	\$ 48,207	\$ 0	\$ 0	\$ 0	\$ 0	\$ 40,524
35-39	769	774	432	136	4	0	0	0	2,115
	\$ 38,686	\$ 45,252	\$ 49,091	\$ 48,261	\$ 45,865	\$ 0	\$ 0	\$ 0	\$ 43,843
40-44	784	806	558	350	112	7	0	0	2,617
	\$ 39,728	\$ 45,454	\$ 51,494	\$ 55,036	\$ 51,295	\$ 55,825	\$ 0	\$ 0	\$ 46,586
45-49	717	673	545	380	287	130	3	0	2,735
	\$ 40,143	\$ 44,699	\$ 50,622	\$ 58,436	\$ 59,772	\$ 56,679	\$ 65,175	\$ 0	\$ 48,767
50-54	688	778	630	418	387	257	45	1	3,204
	\$ 42,355	\$ 44,470	\$ 49,615	\$ 56,827	\$ 61,328	\$ 64,177	\$ 59,878	\$ 90,325	\$ 50,487
55-59	606	756	634	481	367	249	108	41	3,242
	\$ 42,548	\$ 45,412	\$ 51,187	\$ 57,210	\$ 59,867	\$ 65,039	\$ 67,527	\$ 62,489	\$ 51,853
60-64	342	501	466	281	237	177	67	44	2,115
	\$ 42,228	\$ 45,149	\$ 51,828	\$ 57,932	\$ 58,088	\$ 63,397	\$ 66,396	\$ 67,380	\$ 51,959
65-69	90	173	141	82	64	37	10	17	614
	\$ 45,109	\$ 45,499	\$ 52,571	\$ 57,466	\$ 57,506	\$ 78,165	\$ 55,811	\$ 83,011	\$ 53,091
70 & Over	27	51	41	22	16	13	5	4	179
	\$ 48,701	\$ 35,370	\$ 43,305	\$ 51,227	\$ 56,523	\$ 58,875	\$ 71,779	\$ 65,759	\$ 46,441
TOTAL	6,658	5,708	3,698	2,164	1,474	870	238	107	20,917
	\$ 38,426	\$ 44,060	\$ 49,973	\$ 56,422	\$ 59,118	\$ 63,593	\$ 65,330	\$ 68,143	\$ 46,830

Exhibit 10.5e
Distribution of Active Members by Age and Years of Service
State Members
Count and Average Salary
as of June 30, 2013

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	18	0	0	0	0	0	0	0	18
	\$ 22,832	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 22,832
20-24	538	25	0	0	0	0	0	0	563
	\$ 31,848	\$ 28,485	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 31,699
25-29	1,279	465	18	0	0	0	0	0	1,762
	\$ 37,125	\$ 38,304	\$ 38,433	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 37,450
30-34	1,155	971	272	11	0	0	0	0	2,409
	\$ 40,897	\$ 44,259	\$ 43,995	\$ 44,005	\$ 0	\$ 0	\$ 0	\$ 0	\$ 42,616
35-39	948	861	504	153	3	0	0	0	2,469
	\$ 41,711	\$ 47,416	\$ 48,247	\$ 46,384	\$ 59,793	\$ 0	\$ 0	\$ 0	\$ 45,346
40-44	892	901	618	459	130	10	0	0	3,010
	\$ 43,438	\$ 47,143	\$ 47,742	\$ 51,419	\$ 53,515	\$ 51,311	\$ 0	\$ 0	\$ 47,109
45-49	840	871	621	595	396	148	7	0	3,478
	\$ 41,361	\$ 46,716	\$ 48,291	\$ 50,047	\$ 56,797	\$ 54,522	\$ 51,167	\$ 0	\$ 47,763
50-54	806	811	715	634	541	396	93	5	4,001
	\$ 42,031	\$ 45,398	\$ 45,828	\$ 49,588	\$ 51,923	\$ 56,988	\$ 52,753	\$ 52,279	\$ 47,669
55-59	640	870	665	631	546	340	132	41	3,865
	\$ 44,563	\$ 46,080	\$ 47,701	\$ 49,479	\$ 53,287	\$ 54,739	\$ 58,045	\$ 59,415	\$ 48,993
60-64	390	609	512	397	320	222	97	73	2,620
	\$ 46,269	\$ 47,054	\$ 45,386	\$ 48,446	\$ 52,601	\$ 51,640	\$ 56,287	\$ 56,531	\$ 48,494
65-69	122	186	160	120	90	67	27	35	807
	\$ 56,893	\$ 49,007	\$ 50,419	\$ 49,059	\$ 53,818	\$ 56,336	\$ 61,901	\$ 60,858	\$ 52,577
70 & Over	22	58	59	52	36	18	6	14	265
	\$ 64,279	\$ 50,269	\$ 41,122	\$ 46,045	\$ 47,592	\$ 47,042	\$ 44,551	\$ 64,983	\$ 48,632
TOTAL	7,650	6,628	4,144	3,052	2,062	1,201	362	168	25,267
	\$ 41,058	\$ 45,728	\$ 46,981	\$ 49,520	\$ 53,444	\$ 54,826	\$ 56,145	\$ 58,714	\$ 46,275

Exhibit 10.5f
Distribution of Active Members by Age and Years of Service
Political Subdivision Members
Count and Average Salary
as of June 30, 2013

CURRENT AGE	YEARS OF SERVICE									TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Below 19	13	0	0	0	0	0	0	0	0	13
	\$ 18,126	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 18,126
20-24	204	5	0	0	0	0	0	0	0	209
	\$ 31,661	\$ 24,836	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 31,498
25-29	395	115	5	0	0	0	0	0	0	515
	\$ 39,565	\$ 45,509	\$ 30,983	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 40,809
30-34	427	185	44	0	0	0	0	0	0	656
	\$ 47,020	\$ 54,223	\$ 46,825	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 49,038
35-39	399	209	93	23	0	0	0	0	0	724
	\$ 51,362	\$ 59,991	\$ 57,133	\$ 58,496	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 54,821
40-44	337	218	111	62	12	2	0	0	0	742
	\$ 51,727	\$ 63,419	\$ 65,507	\$ 75,227	\$ 73,578	\$ 38,039	\$ 0	\$ 0	\$ 0	\$ 59,504
45-49	331	238	145	87	38	21	0	0	0	860
	\$ 48,126	\$ 60,573	\$ 67,357	\$ 66,566	\$ 79,661	\$ 88,225	\$ 0	\$ 0	\$ 0	\$ 59,051
50-54	332	247	190	106	68	55	9	0	0	1,007
	\$ 53,625	\$ 62,089	\$ 66,252	\$ 73,173	\$ 87,959	\$ 87,421	\$ 79,684	\$ 0	\$ 0	\$ 64,538
55-59	230	202	161	106	70	50	23	9	0	851
	\$ 52,452	\$ 62,497	\$ 64,164	\$ 73,962	\$ 81,496	\$ 91,515	\$ 77,463	\$ 50,630	\$ 0	\$ 65,072
60-64	137	129	108	74	44	27	8	7	0	534
	\$ 55,027	\$ 71,742	\$ 63,437	\$ 68,949	\$ 77,738	\$ 103,842	\$ 66,427	\$ 101,446	\$ 0	\$ 67,814
65-69	37	44	28	22	6	9	3	3	0	152
	\$ 65,030	\$ 64,075	\$ 72,336	\$ 66,350	\$ 95,510	\$ 124,320	\$ 62,339	\$ 107,241	\$ 0	\$ 71,784
70 & Over	15	15	13	9	4	1	1	0	0	58
	\$ 18,812	\$ 34,212	\$ 38,968	\$ 30,114	\$ 50,114	\$ 46,597	\$ 38,401	\$ 0	\$ 0	\$ 32,042
TOTAL	2,857	1,607	898	489	242	165	44	19	0	6,321
	\$ 47,725	\$ 60,184	\$ 63,328	\$ 70,000	\$ 81,777	\$ 92,618	\$ 73,992	\$ 78,290	\$ 0	\$ 57,582

Exhibit 10.5g
Distribution of Active Members by Age and Years of Service
Total Active Members
Count and Average Salary
as of June 30, 2013

CURRENT AGE	YEARS OF SERVICE									TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Below 19	459	0	0	0	0	0	0	0	0	459
	\$ 12,409	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 12,409
20-24	6,827	279	0	0	0	0	0	0	0	7,106
	\$ 25,284	\$ 22,603	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 25,179
25-29	11,551	4,781	133	0	0	0	0	0	0	16,465
	\$ 33,668	\$ 38,121	\$ 37,372	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 34,991
30-34	8,665	9,570	2,598	85	0	0	0	0	0	20,918
	\$ 35,356	\$ 43,254	\$ 45,764	\$ 44,839	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 40,301
35-39	7,652	7,405	5,774	1,437	22	0	0	0	0	22,290
	\$ 34,164	\$ 44,196	\$ 50,516	\$ 53,321	\$ 56,403	\$ 0	\$ 0	\$ 0	\$ 0	\$ 42,990
40-44	7,662	7,536	5,567	4,343	1,049	44	1	0	0	26,202
	\$ 33,833	\$ 41,794	\$ 50,464	\$ 57,581	\$ 60,009	\$ 56,248	\$ 59,328	\$ 0	\$ 0	\$ 44,679
45-49	6,708	7,218	5,343	4,117	3,012	1,087	55	0	0	27,540
	\$ 32,867	\$ 40,538	\$ 46,833	\$ 54,714	\$ 61,847	\$ 63,211	\$ 62,104	\$ 0	\$ 0	\$ 45,279
50-54	6,316	6,866	6,121	4,538	3,544	2,806	504	12	0	30,707
	\$ 34,033	\$ 39,670	\$ 44,535	\$ 51,555	\$ 59,501	\$ 65,953	\$ 65,096	\$ 67,514	\$ 0	\$ 46,355
55-59	4,896	5,969	5,152	4,589	3,427	2,020	806	209	0	27,068
	\$ 34,787	\$ 41,124	\$ 45,696	\$ 49,480	\$ 55,929	\$ 64,108	\$ 68,428	\$ 61,556	\$ 0	\$ 46,825
60-64	3,020	3,998	3,270	2,618	1,882	1,318	507	332	0	16,945
	\$ 33,809	\$ 41,100	\$ 45,668	\$ 50,357	\$ 55,457	\$ 62,421	\$ 66,195	\$ 70,542	\$ 0	\$ 46,693
65-69	1,119	1,420	981	598	433	292	112	145	0	5,100
	\$ 30,538	\$ 38,794	\$ 46,012	\$ 51,098	\$ 59,309	\$ 67,311	\$ 66,313	\$ 75,315	\$ 0	\$ 44,831
70 & Over	435	604	363	196	127	84	28	56	0	1,893
	\$ 21,530	\$ 26,557	\$ 33,866	\$ 38,802	\$ 51,921	\$ 55,266	\$ 52,583	\$ 78,162	\$ 0	\$ 32,958
TOTAL	65,310	55,646	35,302	22,521	13,496	7,651	2,013	754	0	202,693
	\$ 32,853	\$ 41,164	\$ 47,065	\$ 52,697	\$ 58,511	\$ 64,347	\$ 66,516	\$ 69,487	\$ 0	\$ 43,182

Exhibit 10.6a
Distribution of Retired Members and Beneficiaries by Age and Years of Service
Higher Education Members
Count and Average Monthly Annuity
as of June 30, 2013

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	21	40	37	38	72	57	7	0	0	274
	\$ 97	\$ 181	\$ 503	\$ 650	\$ 1,015	\$ 2,297	\$ 3,492	\$ 1,263	\$ 0	\$ 0	\$ 1,679
55-59	3	100	149	98	164	255	254	18	1	0	1,042
	\$ 111	\$ 333	\$ 602	\$ 850	\$ 1,687	\$ 2,777	\$ 3,738	\$ 3,977	\$ 10,572	\$ 0	\$ 2,133
60-64	8	260	346	283	481	430	434	86	11	0	2,339
	\$ 472	\$ 336	\$ 735	\$ 1,138	\$ 1,910	\$ 2,685	\$ 3,917	\$ 5,085	\$ 8,092	\$ 0	\$ 2,124
65-69	282	491	577	440	581	468	432	149	31	3	3,454
	\$ 142	\$ 415	\$ 799	\$ 1,290	\$ 1,914	\$ 2,792	\$ 3,882	\$ 5,385	\$ 6,254	\$ 4,430	\$ 1,846
70-74	194	410	477	370	433	312	256	102	40	4	2,598
	\$ 114	\$ 389	\$ 791	\$ 1,204	\$ 1,846	\$ 2,696	\$ 3,868	\$ 4,606	\$ 6,414	\$ 7,558	\$ 1,690
75-79	118	247	336	316	265	243	177	66	31	2	1,801
	\$ 125	\$ 401	\$ 809	\$ 1,223	\$ 1,992	\$ 2,687	\$ 3,797	\$ 4,889	\$ 6,213	\$ 10,167	\$ 1,755
80-84	83	224	259	210	187	175	117	37	12	4	1,308
	\$ 142	\$ 395	\$ 811	\$ 1,337	\$ 2,117	\$ 2,853	\$ 3,485	\$ 3,837	\$ 6,198	\$ 6,270	\$ 1,633
85-89	42	127	200	154	136	105	69	23	2	3	861
	\$ 170	\$ 408	\$ 843	\$ 1,393	\$ 1,952	\$ 2,713	\$ 3,505	\$ 4,144	\$ 7,693	\$ 7,534	\$ 1,588
90-94	10	57	79	76	54	38	26	10	4	2	356
	\$ 147	\$ 415	\$ 889	\$ 1,339	\$ 1,791	\$ 2,582	\$ 3,487	\$ 3,416	\$ 5,297	\$ 4,361	\$ 1,536
95 & Over	4	16	16	16	15	9	5	2	1	0	84
	\$ 174	\$ 464	\$ 930	\$ 1,208	\$ 1,679	\$ 2,342	\$ 2,232	\$ 2,974	\$ 2,209	\$ 0	\$ 1,285
TOTAL	746	1,953	2,479	2,000	2,354	2,107	1,827	500	133	18	14,117
	\$ 137	\$ 388	\$ 782	\$ 1,223	\$ 1,893	\$ 2,721	\$ 3,798	\$ 4,780	\$ 6,434	\$ 6,681	\$ 1,823

Exhibit 10.6b
Distribution of Retired Members and Beneficiaries by Age and Years of Service
Other Education Members
Count and Average Monthly Annuity
as of June 30, 2013

CURRENT AGE	YEARS OF SERVICE										TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+	
Under 55	8	94	164	132	98	440	453	6	2	0	1,397
	\$ 71	\$ 186	\$ 373	\$ 560	\$ 975	\$ 2,641	\$ 3,451	\$ 1,916	\$ 2,693	\$ 0	\$ 2,141
55-59	7	357	486	371	857	1,551	2,034	67	2	0	5,732
	\$ 154	\$ 211	\$ 486	\$ 747	\$ 1,689	\$ 2,592	\$ 3,641	\$ 3,844	\$ 1,275	\$ 0	\$ 2,394
60-64	3	1,272	1,569	1,421	2,609	2,686	3,443	348	26	3	13,380
	\$ 140	\$ 291	\$ 637	\$ 1,040	\$ 1,681	\$ 2,465	\$ 3,517	\$ 4,500	\$ 4,647	\$ 5,761	\$ 2,068
65-69	1,004	2,263	2,321	1,981	2,743	2,795	2,434	551	67	4	16,163
	\$ 111	\$ 293	\$ 639	\$ 1,048	\$ 1,620	\$ 2,435	\$ 3,331	\$ 4,081	\$ 4,500	\$ 5,446	\$ 1,625
70-74	851	1,707	1,789	1,546	2,049	1,783	1,152	360	59	6	11,302
	\$ 96	\$ 280	\$ 617	\$ 1,021	\$ 1,624	\$ 2,351	\$ 3,145	\$ 3,936	\$ 4,558	\$ 4,600	\$ 1,424
75-79	462	1,146	1,260	1,120	1,361	1,101	721	156	28	6	7,361
	\$ 94	\$ 287	\$ 662	\$ 1,087	\$ 1,692	\$ 2,414	\$ 3,074	\$ 3,537	\$ 4,229	\$ 4,574	\$ 1,399
80-84	223	754	881	839	880	807	525	96	10	4	5,019
	\$ 102	\$ 309	\$ 725	\$ 1,143	\$ 1,689	\$ 2,415	\$ 3,017	\$ 3,766	\$ 3,640	\$ 3,934	\$ 1,452
85-89	93	407	548	497	536	421	207	69	5	1	2,784
	\$ 122	\$ 320	\$ 746	\$ 1,181	\$ 1,636	\$ 2,170	\$ 2,704	\$ 3,273	\$ 4,656	\$ 6,212	\$ 1,344
90-94	29	163	210	241	239	132	63	24	3	0	1,104
	\$ 131	\$ 347	\$ 757	\$ 1,169	\$ 1,541	\$ 1,896	\$ 2,406	\$ 2,660	\$ 3,959	\$ 0	\$ 1,220
95 & Over	3	25	62	54	54	26	13	10	1	1	249
	\$ 185	\$ 344	\$ 822	\$ 1,108	\$ 1,401	\$ 1,609	\$ 1,990	\$ 2,050	\$ 2,203	\$ 6,675	\$ 1,175
TOTAL	2,683	8,188	9,290	8,202	11,426	11,742	11,045	1,687	203	25	64,491
	\$ 103	\$ 288	\$ 643	\$ 1,047	\$ 1,646	\$ 2,437	\$ 3,381	\$ 3,986	\$ 4,391	\$ 4,909	\$ 1,701

Exhibit 10.6c
Distribution of Retired Members and Beneficiaries by Age and Years of Service
City Members
Count and Average Monthly Annuity
as of June 30, 2013

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	26	36	24	26	87	146	3	0	0	350
\$	64	\$ 267	\$ 502	\$ 791	\$ 1,307	\$ 2,941	\$ 3,702	\$ 2,182	\$ 0	\$ 0	\$ 2,517
55-59	1	75	99	67	151	330	285	18	0	0	1,026
\$	103	\$ 304	\$ 685	\$ 975	\$ 2,111	\$ 3,211	\$ 3,935	\$ 4,114	\$ 0	\$ 0	\$ 2,661
60-64	1	180	298	206	347	363	315	49	2	0	1,761
\$	506	\$ 418	\$ 891	\$ 1,372	\$ 2,144	\$ 2,908	\$ 3,972	\$ 4,595	\$ 9,073	\$ 0	\$ 2,225
65-69	96	339	358	283	319	294	172	60	4	0	1,925
\$	178	\$ 463	\$ 949	\$ 1,361	\$ 1,921	\$ 2,765	\$ 3,651	\$ 4,447	\$ 4,607	\$ 0	\$ 1,682
70-74	89	212	277	199	224	119	87	26	9	1	1,243
\$	141	\$ 442	\$ 860	\$ 1,335	\$ 1,873	\$ 2,444	\$ 3,517	\$ 4,195	\$ 4,302	\$ 3,452	\$ 1,430
75-79	34	120	201	150	103	53	39	9	0	0	709
\$	107	\$ 382	\$ 895	\$ 1,366	\$ 1,768	\$ 2,524	\$ 3,040	\$ 3,823	\$ 0	\$ 0	\$ 1,274
80-84	33	102	133	87	47	30	16	4	0	0	452
\$	153	\$ 415	\$ 896	\$ 1,333	\$ 1,739	\$ 2,225	\$ 2,813	\$ 3,328	\$ 0	\$ 0	\$ 1,083
85-89	14	59	68	45	22	10	9	2	1	0	230
\$	132	\$ 446	\$ 897	\$ 1,308	\$ 1,546	\$ 2,050	\$ 1,943	\$ 3,001	\$ 12,686	\$ 0	\$ 1,038
90-94	1	22	25	22	12	4	2	4	1	0	93
\$	48	\$ 405	\$ 899	\$ 1,239	\$ 1,624	\$ 1,383	\$ 1,817	\$ 2,380	\$ 2,314	\$ 0	\$ 1,066
95 & Over	0	2	5	2	5	2	1	0	0	0	17
\$	0	\$ 432	\$ 827	\$ 1,311	\$ 1,538	\$ 1,237	\$ 1,712	\$ 0	\$ 0	\$ 0	\$ 1,147
TOTAL	271	1,137	1,500	1,085	1,256	1,292	1,072	175	17	1	7,806
\$	151	\$ 422	\$ 877	\$ 1,316	\$ 1,954	\$ 2,867	\$ 3,763	\$ 4,256	\$ 5,311	\$ 3,452	\$ 1,831

Exhibit 10.6d
Distribution of Retired Members and Beneficiaries by Age and Years of Service
County Members
Count and Average Monthly Annuity
as of June 30, 2013

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	41	47	33	43	69	65	0	4	0	305
\$	148	\$ 185	\$ 504	\$ 641	\$ 1,084	\$ 2,415	\$ 3,357	\$ 0	\$ 635	\$ 0	\$ 1,596
55-59	0	113	143	87	175	258	206	25	0	0	1,007
\$	0	\$ 296	\$ 599	\$ 972	\$ 1,708	\$ 2,618	\$ 3,438	\$ 4,145	\$ 0	\$ 0	\$ 1,976
60-64	1	334	452	326	453	382	318	62	5	0	2,333
\$	57	\$ 355	\$ 764	\$ 1,143	\$ 1,703	\$ 2,512	\$ 3,334	\$ 4,069	\$ 4,735	\$ 0	\$ 1,673
65-69	293	685	649	507	539	386	304	69	10	1	3,443
\$	156	\$ 405	\$ 771	\$ 1,143	\$ 1,747	\$ 2,407	\$ 3,270	\$ 3,976	\$ 4,604	\$ 5,743	\$ 1,334
70-74	254	499	551	423	376	215	139	43	18	0	2,518
\$	130	\$ 377	\$ 747	\$ 1,155	\$ 1,612	\$ 2,077	\$ 2,837	\$ 3,612	\$ 3,141	\$ 0	\$ 1,104
75-79	156	338	420	290	212	111	60	16	4	6	1,613
\$	123	\$ 383	\$ 780	\$ 1,200	\$ 1,715	\$ 2,159	\$ 2,642	\$ 3,295	\$ 3,808	\$ 3,476	\$ 1,038
80-84	81	228	275	196	148	77	23	7	3	0	1,038
\$	135	\$ 387	\$ 807	\$ 1,239	\$ 1,723	\$ 2,202	\$ 2,471	\$ 2,829	\$ 2,948	\$ 0	\$ 1,035
85-89	27	145	162	84	66	25	23	7	0	0	539
\$	155	\$ 402	\$ 868	\$ 1,197	\$ 1,637	\$ 2,267	\$ 2,197	\$ 2,630	\$ 0	\$ 0	\$ 997
90-94	7	62	65	41	23	11	7	4	0	0	220
\$	140	\$ 420	\$ 835	\$ 1,225	\$ 1,542	\$ 1,908	\$ 2,286	\$ 1,968	\$ 0	\$ 0	\$ 963
95 & Over	3	17	10	10	3	5	1	0	0	0	49
\$	176	\$ 427	\$ 807	\$ 1,168	\$ 1,084	\$ 1,562	\$ 2,402	\$ 0	\$ 0	\$ 0	\$ 837
TOTAL	825	2,462	2,774	1,997	2,038	1,539	1,146	233	44	7	13,065
\$	139	\$ 380	\$ 764	\$ 1,152	\$ 1,683	\$ 2,386	\$ 3,193	\$ 3,796	\$ 3,474	\$ 3,800	\$ 1,323

Exhibit 10.6
Distribution of Retired Members and Beneficiaries by Age and Years of Service
State Members
Count and Average Monthly Annuity
as of June 30, 2013

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	50	70	65	58	104	124	4	1	0	479
\$	163	\$ 269	\$ 453	\$ 609	\$ 977	\$ 2,282	\$ 2,870	\$ 3,169	\$ 4,246	\$ 0	\$ 1,570
55-59	2	153	177	128	265	414	352	20	2	0	1,513
\$	210	\$ 308	\$ 627	\$ 844	\$ 1,519	\$ 2,315	\$ 3,221	\$ 3,954	\$ 4,746	\$ 0	\$ 1,884
60-64	4	413	551	466	782	640	603	101	10	0	3,570
\$	286	\$ 366	\$ 739	\$ 1,064	\$ 1,582	\$ 2,295	\$ 3,212	\$ 3,621	\$ 4,298	\$ 0	\$ 1,711
65-69	298	774	985	801	850	657	562	159	33	3	5,122
\$	175	\$ 409	\$ 777	\$ 1,098	\$ 1,601	\$ 2,241	\$ 3,033	\$ 3,488	\$ 4,223	\$ 4,506	\$ 1,417
70-74	218	608	853	683	579	386	301	112	27	6	3,773
\$	150	\$ 390	\$ 727	\$ 1,073	\$ 1,579	\$ 2,127	\$ 2,838	\$ 3,308	\$ 3,724	\$ 4,810	\$ 1,249
75-79	129	454	604	426	331	249	151	39	13	0	2,396
\$	127	\$ 414	\$ 751	\$ 1,159	\$ 1,609	\$ 2,158	\$ 2,682	\$ 3,437	\$ 3,672	\$ 0	\$ 1,172
80-84	90	368	414	289	213	113	79	26	2	1	1,595
\$	155	\$ 407	\$ 817	\$ 1,217	\$ 1,681	\$ 2,128	\$ 2,540	\$ 2,799	\$ 3,810	\$ 3,509	\$ 1,089
85-89	34	202	210	172	104	79	31	17	3	0	852
\$	189	\$ 428	\$ 878	\$ 1,250	\$ 1,653	\$ 1,921	\$ 2,480	\$ 2,669	\$ 4,210	\$ 0	\$ 1,116
90-94	12	86	98	88	60	28	12	13	0	0	397
\$	196	\$ 424	\$ 855	\$ 1,214	\$ 1,503	\$ 1,650	\$ 1,875	\$ 2,363	\$ 0	\$ 0	\$ 1,056
95 & Over	5	10	22	22	5	4	6	2	0	0	76
\$	169	\$ 477	\$ 876	\$ 1,085	\$ 1,245	\$ 1,479	\$ 1,690	\$ 1,789	\$ 0	\$ 0	\$ 982
TOTAL	795	3,118	3,984	3,140	3,247	2,674	2,221	493	91	10	19,773
\$	160	\$ 395	\$ 757	\$ 1,098	\$ 1,580	\$ 2,221	\$ 3,017	\$ 3,386	\$ 4,007	\$ 4,589	\$ 1,399

Exhibit 10.6f
Distribution of Retired Members and Beneficiaries by Age and Years of Service
Political Subdivision Members
Count and Average Monthly Annuity
as of June 30, 2013

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	6	16	10	5	14	14	0	0	0	67
\$	196	\$ 362	\$ 453	\$ 525	\$ 2,588	\$ 3,685	\$ 4,154	\$ 0	\$ 0	\$ 0	\$ 2,056
55-59	0	21	23	12	24	35	44	1	0	0	160
\$	0	\$ 357	\$ 903	\$ 1,099	\$ 2,604	\$ 3,533	\$ 4,611	\$ 5,455	\$ 0	\$ 0	\$ 2,725
60-64	0	75	79	43	63	50	40	7	0	0	357
\$	0	\$ 444	\$ 935	\$ 1,608	\$ 2,599	\$ 3,131	\$ 4,776	\$ 3,349	\$ 0	\$ 0	\$ 1,992
65-69	41	92	121	63	66	41	28	17	5	0	474
\$	183	\$ 480	\$ 977	\$ 1,518	\$ 2,409	\$ 2,907	\$ 3,693	\$ 4,501	\$ 3,433	\$ 0	\$ 1,563
70-74	29	82	74	45	29	12	4	5	1	0	281
\$	114	\$ 421	\$ 930	\$ 1,521	\$ 2,035	\$ 2,637	\$ 3,308	\$ 5,085	\$ 1,483	\$ 0	\$ 1,089
75-79	16	28	28	13	9	2	2	1	0	0	99
\$	204	\$ 337	\$ 930	\$ 1,343	\$ 1,786	\$ 3,549	\$ 5,984	\$ 6,332	\$ 0	\$ 0	\$ 987
80-84	7	18	12	11	7	7	1	0	1	0	64
\$	103	\$ 357	\$ 602	\$ 1,298	\$ 1,546	\$ 1,939	\$ 3,080	\$ 0	\$ 7,020	\$ 0	\$ 987
85-89	4	25	13	8	6	5	2	1	0	0	64
\$	181	\$ 370	\$ 765	\$ 1,033	\$ 1,414	\$ 1,545	\$ 2,262	\$ 2,571	\$ 0	\$ 0	\$ 804
90-94	3	13	9	6	6	1	2	1	0	0	41
\$	209	\$ 385	\$ 793	\$ 1,111	\$ 1,298	\$ 1,464	\$ 1,716	\$ 2,278	\$ 0	\$ 0	\$ 839
95 & Over	0	5	4	2	4	1	0	0	0	0	16
\$	0	\$ 439	\$ 886	\$ 1,053	\$ 1,362	\$ 1,406	\$ 0	\$ 0	\$ 0	\$ 0	\$ 919
TOTAL	102	365	379	213	219	168	137	33	7	0	1,623
\$	162	\$ 422	\$ 905	\$ 1,410	\$ 2,310	\$ 3,059	\$ 4,319	\$ 4,304	\$ 3,667	\$ 0	\$ 1,598

Exhibit 10.6g
Distribution of Retired Members and Beneficiaries by Age and Years of Service
All Groups
Count and Average Monthly Annuity
as of June 30, 2013

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	238	373	301	268	786	859	20	7	0	2,872
\$	111	\$ 216	\$ 435	\$ 608	\$ 1,061	\$ 2,594	\$ 3,417	\$ 1,978	\$ 1,739	\$ 0	\$ 1,988
55-59	13	819	1,077	763	1,636	2,843	3,175	149	5	0	10,480
\$	149	\$ 268	\$ 567	\$ 828	\$ 1,715	\$ 2,654	\$ 3,629	\$ 3,969	\$ 4,523	\$ 0	\$ 2,285
60-64	17	2,534	3,295	2,745	4,735	4,551	5,153	653	54	3	23,740
\$	347	\$ 330	\$ 712	\$ 1,100	\$ 1,736	\$ 2,509	\$ 3,542	\$ 4,395	\$ 5,456	\$ 5,761	\$ 1,992
65-69	2,014	4,644	5,011	4,075	5,098	4,641	3,932	1,005	150	11	30,581
\$	136	\$ 358	\$ 732	\$ 1,125	\$ 1,693	\$ 2,466	\$ 3,361	\$ 4,202	\$ 4,776	\$ 4,940	\$ 1,585
70-74	1,635	3,518	4,021	3,266	3,690	2,827	1,939	648	154	17	21,715
\$	113	\$ 339	\$ 702	\$ 1,096	\$ 1,660	\$ 2,343	\$ 3,188	\$ 3,930	\$ 4,693	\$ 5,303	\$ 1,385
75-79	915	2,333	2,849	2,315	2,281	1,759	1,150	287	76	14	13,979
\$	110	\$ 343	\$ 735	\$ 1,153	\$ 1,721	\$ 2,404	\$ 3,115	\$ 3,840	\$ 4,921	\$ 4,902	\$ 1,355
80-84	517	1,694	1,974	1,632	1,482	1,209	761	170	28	9	9,476
\$	126	\$ 359	\$ 778	\$ 1,204	\$ 1,746	\$ 2,430	\$ 3,019	\$ 3,585	\$ 4,795	\$ 4,925	\$ 1,349
85-89	214	965	1,201	960	870	645	341	119	11	4	5,330
\$	148	\$ 375	\$ 811	\$ 1,234	\$ 1,684	\$ 2,225	\$ 2,789	\$ 3,307	\$ 5,816	\$ 7,204	\$ 1,293
90-94	62	403	486	474	394	214	112	56	8	2	2,211
\$	150	\$ 389	\$ 817	\$ 1,212	\$ 1,569	\$ 1,974	\$ 2,570	\$ 2,650	\$ 4,423	\$ 4,361	\$ 1,202
95 & Over	15	75	119	106	86	47	26	14	2	1	491
\$	175	\$ 415	\$ 848	\$ 1,127	\$ 1,436	\$ 1,713	\$ 1,972	\$ 2,145	\$ 2,206	\$ 6,675	\$ 1,121
TOTAL	5,422	17,223	20,406	16,637	20,540	19,522	17,448	3,121	495	61	120,875*
\$	125	\$ 344	\$ 721	\$ 1,113	\$ 1,694	\$ 2,468	\$ 3,397	\$ 4,022	\$ 4,809	\$ 5,229	\$ 1,632

* Includes 109,697 service retirees, 3,610 members who retired from disabled status, 6,467 beneficiaries and 1,101 QDROs.

Exhibit 10.6h
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, 2013

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	71	90	87	73	355	260	6	6	0	950
\$	227	\$ 234	\$ 521	\$ 679	\$ 1,384	\$ 2,785	\$ 3,703	\$ 3,010	\$ 1,681	\$ 0	\$ 2,320
55-59	4	164	231	165	583	400	337	46	2	0	1,932
\$	257	\$ 361	\$ 690	\$ 1,076	\$ 1,824	\$ 2,633	\$ 3,768	\$ 4,202	\$ 4,536	\$ 0	\$ 2,063
60-64	4	502	725	646	624	385	228	80	17	0	3,211
\$	307	\$ 401	\$ 816	\$ 1,221	\$ 1,832	\$ 2,591	\$ 3,479	\$ 4,136	\$ 4,833	\$ 0	\$ 1,535
65-69	593	585	489	308	251	166	129	38	13	2	2,574
\$	138	\$ 417	\$ 831	\$ 1,259	\$ 1,881	\$ 2,321	\$ 3,357	\$ 5,213	\$ 6,208	\$ 4,485	\$ 1,048
70-74	71	126	124	71	40	44	25	12	4	1	518
\$	129	\$ 348	\$ 724	\$ 1,139	\$ 1,357	\$ 1,961	\$ 2,844	\$ 3,187	\$ 7,146	\$ 5,927	\$ 981
75-79	12	33	33	21	26	13	10	4	1	0	153
\$	126	\$ 349	\$ 518	\$ 875	\$ 1,687	\$ 1,520	\$ 1,910	\$ 3,900	\$ 7,569	\$ 0	\$ 1,009
80-84	8	13	15	16	12	16	12	7	0	0	99
\$	76	\$ 399	\$ 528	\$ 1,045	\$ 1,426	\$ 1,788	\$ 2,545	\$ 3,019	\$ 0	\$ 0	\$ 1,291
85-89	3	6	5	7	8	1	6	1	0	0	37
\$	203	\$ 319	\$ 662	\$ 939	\$ 1,611	\$ 1,100	\$ 2,070	\$ 1,867	\$ 0	\$ 0	\$ 1,099
90-94	0	4	3	1	3	1	0	1	0	0	13
\$	0	\$ 552	\$ 884	\$ 930	\$ 859	\$ 1,348	\$ 0	\$ 1,245	\$ 0	\$ 0	\$ 843
95 & Over	0	0	0	1	0	1	0	0	0	0	2
\$	0	\$ 0	\$ 0	\$ 754	\$ 0	\$ 3,943	\$ 0	\$ 0	\$ 0	\$ 0	\$ 2,349
TOTAL	697	1,504	1,715	1,323	1,620	1,382	1,007	195	43	3	9,489
\$	138	\$ 389	\$ 773	\$ 1,162	\$ 1,797	\$ 2,580	\$ 3,567	\$ 4,197	\$ 5,074	\$ 4,966	\$ 1,545

Exhibit 10.7
Members in Active Service as of June 30, 2013, by Annual Salary

Annual Salary	Number of Members	Percent of All Members
Less than \$10,000	7,492	3.7%
\$10,000 - \$14,999	12,595	6.2%
\$15,000 - \$19,999	13,319	6.6%
\$20,000 - \$24,999	12,919	6.4%
\$25,000 - \$29,999	13,817	6.8%
\$30,000 - \$34,999	16,411	8.1%
\$35,000 - \$39,999	18,773	9.3%
\$40,000 - \$44,999	24,309	11.9%
\$45,000 - \$49,999	19,954	9.8%
\$50,000 - \$54,999	15,281	7.5%
\$55,000 - \$59,999	11,152	5.5%
\$60,000 - \$64,999	8,256	4.1%
\$65,000 - \$69,999	6,418	3.2%
\$70,000 and over	21,997	10.9%
Total	202,693	100.0%

Exhibit 10.8
Retirement Benefits in Force on June 30, 2013, by Monthly Amount

Monthly Amount	Number of Retirees	Percentage of All Retirees
Under \$300	15,831	13.1%
\$300 - \$499	11,608	9.6%
\$500 - \$999	23,769	19.7%
\$1,000 - \$1,499	17,461	14.4%
\$1,500 - \$1,999	13,010	10.8%
\$2,000 - \$2,499	10,870	9.0%
\$2,500 - \$2,999	8,850	7.3%
\$3,000 - \$3,499	7,118	5.9%
\$3,500 - \$3,999	4,698	3.9%
\$4,000 and over	7,660	6.3%
Total	120,875	100.0%

Exhibit 10.9 - Number of Retirees by Benefit Option and Monthly Amount

Amount of Monthly Benefit	Optional Form of Benefit							Total
	1	2	3	4	5	6	7	
Under \$300	11,102	264	369	768	2,617	228	483	15,831
\$300 - \$499	7,420	256	383	571	2,169	270	539	11,608
\$500 - \$999	14,683	549	965	1,064	4,195	810	1,503	23,769
\$1000 - \$1499	9,840	437	773	699	3,436	916	1,360	17,461
\$1500 - \$1999	6,940	279	504	516	2,774	856	1,141	13,010
\$2000 and over	20,054	559	1,262	1,648	8,983	2,832	3,858	39,196
Total	70,039	2,344	4,256	5,266	24,174	5,912	8,884	120,875

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 had a social security leveling income option available prior to July 1, 2013

Exhibit 10.10– New Retiree Eligibility

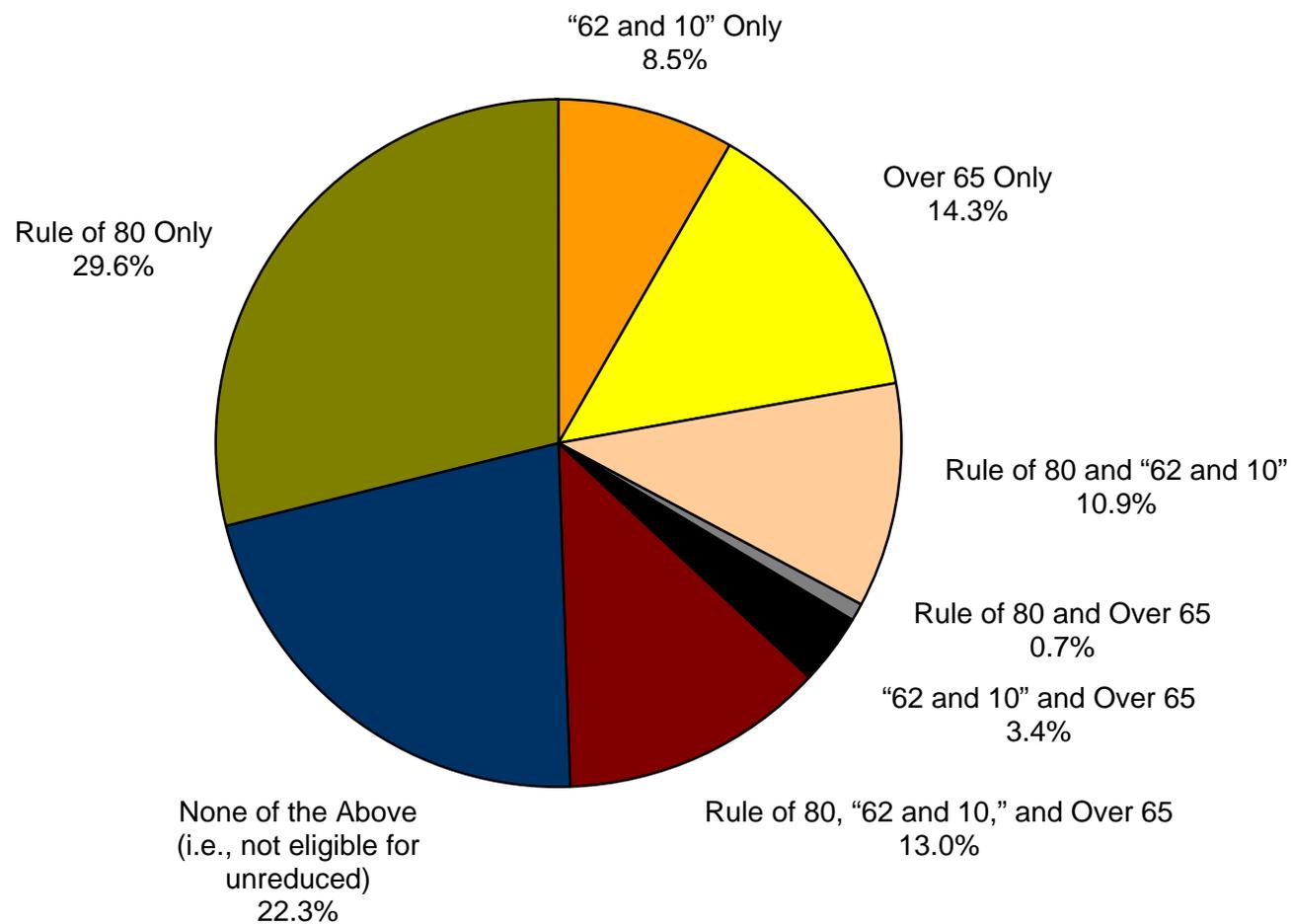


Exhibit 10.11
Total Active and Inactive Members Eligible for
Normal Retirement by Age and Rule of Eligibility

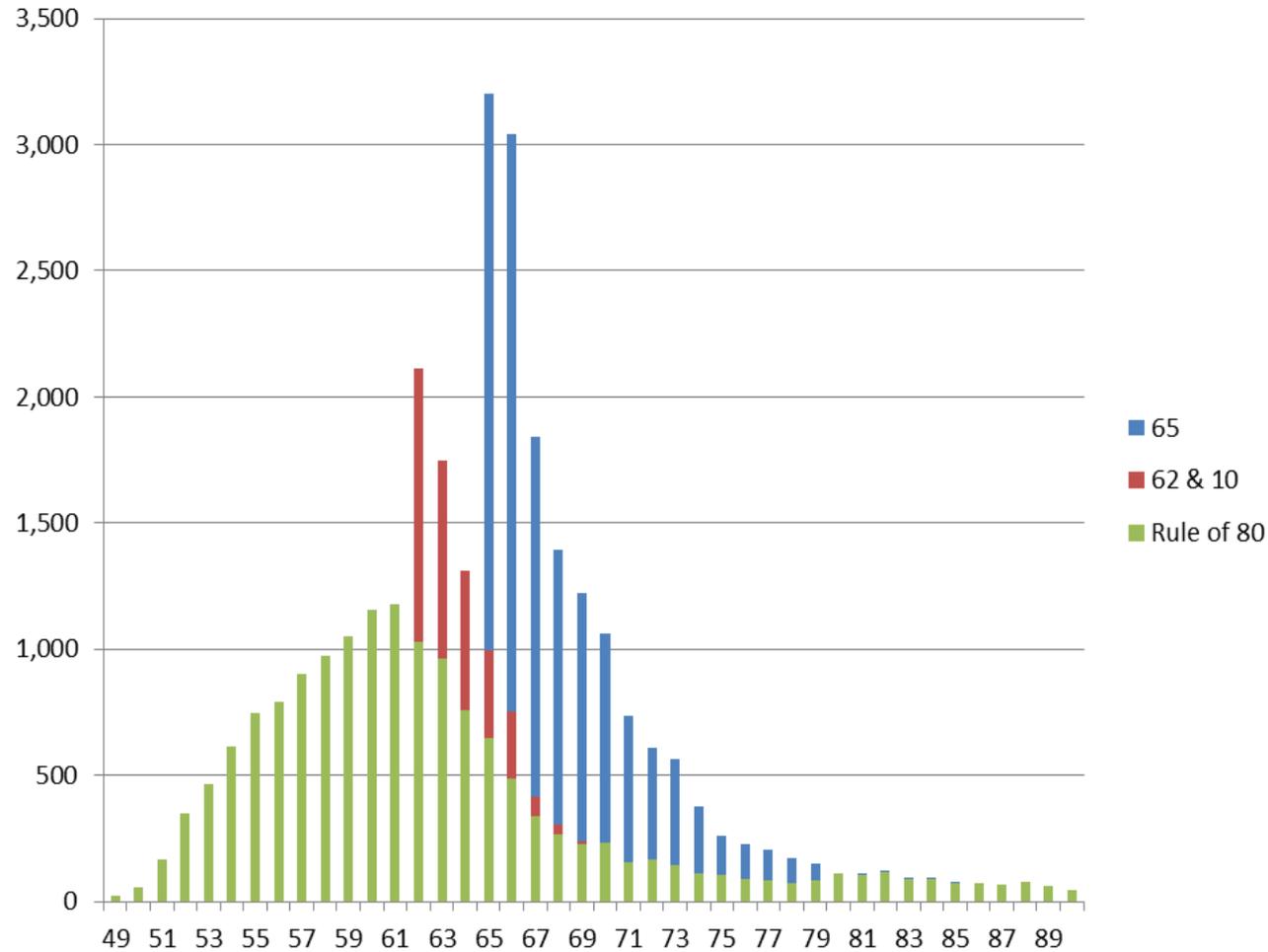


Exhibit 10.12
Health Insurance Benefit Counts

Current HIB Benefit	Count	Monthly Premium Supplement	Average Monthly Premium Supplement
Single, Non-Medicare	12,649	\$ 1,672,802	\$ 132
Single, Medicare	29,016	2,448,367	84
Family, Both Non-Medicare	6,682	1,222,712	183
Family, One Medicare, One Non-Medicare	4,787	762,966	159
Family, Both Medicare	11,793	1,390,636	118
Total	64,927	\$ 7,497,483	\$ 115

* Includes 627 System members receiving 401(h) benefits and 1,516 members receiving LTD benefits and 401(h) benefits.

Exhibit 10.13
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 ¹	3.2% ²	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%
2013	202,693	(0.6%)	8,753	(1.3%)	43,182	(0.7%)

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

² Compared to previous year's amount described in ¹

**Exhibit 10.14
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 ¹	Number	Average Monthly Benefit	Number	Average Monthly Benefit ¹
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 ²	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
2013	9,489	1,545	735	1,711	120,875	1,632	4,307	1,278

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

² 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 10.15
Data Reconciliation**

	Active Members	Inactive, Non-Retired Members	Retirees & Beneficiaries	Total
Total at June 30, 2012	203,994	210,060	114,431	528,485
Terminations	(14,708)	14,708	0	0
Refund	(5,910)	(7,094)	0	(13,004)
Transfer Out	(8)	(28)	0	(36)
Disabled	(566)	(167)	0	(733)
Retirements	(6,684)	(1,564)	8,248	0
Returned from LTD	39	189	504	732
New QDRO	0	0	101	101
New Beneficiary	0	0	587	587
Deaths (with Beneficiary)	0	0	(587)	(587)
Deaths (without Beneficiary)	(160)	(526)	(2,278)	(2,964)
Benefit Expiration	0	0	(96)	(96)
Data Adjustments	(126)	(516)	45	(597)
New Entrants Terminated with Account Balance	0	3,044	0	3,044
Rehires	5,128	(5,048)	(80)	0
New Entrants	21,694	0	0	21,694
Net Change	(1,301)	2,998	6,444	8,141
Total at June 30, 2013	202,693	213,058	120,875	536,626

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 4,307 members receiving LTD benefits, 192 other-than-Plan (System) members who are receiving benefits from the 401(a) plan only, 521 other-than-Plan (System) members who are receiving benefits from the 401(h) plan only, and 106 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, 2013**

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																
5-9.99	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	88%	91%	94%	97%	100%
10-19.99	44%	49%	54%	59%	64%	69%	74%	79%	84%	89%	94%	97%	100%	100%	100%	100%
20+	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%	100%	100%	100%	100%	100%
Members Hired on or after July 1, 2011																
5-9.99	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	88%	91%	94%	97%	100%
10-24.99	44%	49%	54%	59%	64%	69%	74%	79%	84%	89%	94%	97%	100%	100%	100%	100%
25-29.99	44%	49%	54%	59%	64%	69%	74%	79%	84%	89%	100%	100%	100%	100%	100%	100%
30+	44%	49%	54%	59%	64%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

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

6. Normal Form of Benefit

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

7. Optional Forms:

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

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) The beneficiary may elect to receive a monthly income, in the single life form, which is actuarially equivalent to the amount in (a).

E. VESTING OF BENEFITS

1. Vesting

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

2. Benefits Upon Vesting

A fully vested member is entitled to either:

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

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

F. RETIREE HEALTH INSURANCE PREMIUM SUPPLEMENT

1. Eligibility

Retirement or disability after 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.

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

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 2014 is 11.30% for each member and each employer, based on the 2012 actuarial valuation. The contribution rate for fiscal year 2015 will be 11.48% based on this valuation. Interest is credited at 8.00%; however, interest is credited at 4% from July 1, 2005 and 2% from July 1, 2013 for return of contributions upon withdrawal.

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.

Y. LEGISLATED PLAN CHANGES ENACTED BY THE 2013 LEGISLATURE OF THE STATE OF ARIZONA

1. Amortization

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

2. Survivor Benefits

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

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

3. Permanent Benefit Increases

The legislation eliminates Permanent Benefit Increases for members hired after September 13, 2013.

4. Health Insurance Program

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