

# Arizona State Retirement System

## Actuarial Report on the Valuation of the Plan

As of June 30, 2014



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**Charles E. Chittenden**  
*Principal, Retirement  
Wealth Practice*  
Charlie.Chittenden@xerox.com  
602.864.3530

**David J. Kershner**  
*Principal, Retirement  
Wealth Practice*  
David.Kershner@xerox.com  
602.864.3507

Buck Consultants, LLC.  
3200 North Central Avenue  
Suite 2200  
Phoenix, AZ 85012  
Fax: 602.864.3538

January 28, 2015

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

**Valuation of the Arizona State Retirement System (ASRS) Plan  
as of June 30, 2014**

Dear Retirement Board Members:

We certify that the information contained in the attached 2014 actuarial valuation report is accurate and fairly presents the actuarial position of the Arizona State Retirement Plan (the Plan) as of June 30, 2014.

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

The primary purpose of the valuation is to determine the required member and employer contribution rates, to describe the current financial condition of the Plan, and to analyze changes in its financial condition. The report includes 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 our written consent.

The actuarial valuation includes a calculation of the contribution rates payable by members and participating employers. These rates, when applied to payroll, yield contribution amounts sufficient to fund the normal cost plus the amortization of the unfunded actuarial accrued liability. Contribution rates are set annually, based on the valuation of the preceding year. The rate calculated in this report (22.70% of payroll) will apply in the fiscal year beginning July 1, 2015.

The actuary performs experience studies for ASRS every five years. The most recent experience study was completed in 2013 using experience from July 1, 2007 to June 30, 2012. Based on this most recent experience study, revised actuarial assumptions were approved and implemented starting with the June 30, 2013 valuation.

In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the Plan and reasonable expectations, and represent our best estimate of the anticipated experience. The assumptions and methods are summarized in Section 9 of this report.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for the measurements, and changes in the Plan provisions or applicable law. Due to the limited scope of this report, we performed no analysis of the potential range of such future measurements.

ASRS staff supplied census data for participants as of June 30, 2014. We have not audited the data, but have examined it 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.

This report has been prepared in conformity with all 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. Both are Enrolled Actuaries, Members of the American Academy of Actuaries, and Fellows of the Society of Actuaries, and they both meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. They are experienced in performing valuations for large public retirement systems and 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.

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

There are separate reports for GASB 67 and 68 results for the 401(a) portion of the Plan.

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

Sincerely,

A handwritten signature in cursive script, appearing to read "Charles E. Chittenden".

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

A handwritten signature in cursive script, appearing to read "David J. Kershner".

David J. Kershner, FSA, EA, MAAA  
Principal and Consulting Actuary

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# Section 1 – Executive Summary

## **Contribution Rates and Funded Status**

The contribution rate calculated in this valuation will become effective on July 1, 2015, and will remain in effect through June 30, 2016. As described below, the Plan had a gain on liability experience and a loss on investments during the 2014 fiscal year. The net result is that the total contribution rate will decrease from 22.96% in the 2013 valuation report to 22.70% in this report. Later sections of this report give a detailed explanation of the change in contribution rates.

The funded status of the Plan (the ratio of actuarial assets to actuarial accrued liabilities) increased slightly from 75.9% as of June 30, 2013 to 76.9% as of June 30, 2014. The unfunded actuarial accrued liability has decreased during this period from \$9,961.3 million to \$9,903.9 million.

## **Gains and Losses**

The valuation of the Plan reflects a loss on the investment return on the actuarial value of assets of \$110 million for the year ending June 30, 2014. Investment gains/losses are recognized in actuarial assets over a ten-year period. The rate of return on actuarial assets for the 2014 fiscal year was 7.64% on the pension assets (401(a)) and 7.55% on the health supplement assets (401(h)). These compare to last year's returns of 6.66% and 6.49%, respectively. The assumed rate of return is 8%. There was also a liability experience gain of \$93 million, which was mostly due to pay increases less than assumed, and fewer members electing HIB benefits than assumed.

## **Demographic Changes**

The number of active members increased from 202,693 to 203,201. Valuation payroll increased 1.8% from \$8.753 billion to \$8.909 billion. The payroll for fiscal year 2015 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.

The number of inactive members increased from 213,058 to 215,325 since the last valuation. The number of retirees/beneficiaries increased from 120,875 to 126,255.

## **Changes in Plan Provisions**

This valuation reflects the following changes in Plan provisions that were enacted by the 2014 Legislature of the State of Arizona (these changes did not have an impact on the liabilities or contribution rates):

- **Charter Schools**  
The legislation allows charter schools that obtain their charters through a university to become members of the ASRS retroactive to July 1, 2011.
- **Section 218 Agreements**  
The legislation eliminates the requirement that employees of ASRS employers must be covered by the state's Section 218 agreement with the Social Security Administration. It also repeals the ASRS defined contribution plan established by Laws 013, Chapter 216.

- Elected Officials**  
 Retroactive to January 1, 2014, a state elected official who was elected or appointed before December 31, 2013, and who is a member of ASRS because he previously elected not to participate in the Elected Officials' Retirement Plan (EORP) is no longer required to elect to continue or resume participation in ASRS in writing and is a member of ASRS without election.
- Applicable Interest Rate**  
 The legislation confirms the ASRS practice of using a "stability period" to set and maintain the "applicable interest rate" for a year. The look-back month that is used to determine the applicable interest rate is the third full calendar month preceding the first day of the stability period.
- Compensation for LTD Benefit Determinations**  
 The legislation changes the definition of "monthly compensation" to be the median of the last six pay periods of compensation, excluding the highest two and lowest two such pay periods. If the member was employed for fewer than six pay periods, "monthly compensation" is the median monthly compensation based on the pay periods that the member worked.
- Background and Credit Checks**  
 The legislation allows ASRS to perform background and credit checks on current and prospective employees.

#### Reserve for Permanent Benefit Increases

Since the total actuarial investment return (on the actuarial value of 401(a) assets) of 7.64% is below 8% for fiscal year 2014, there are no additional "Excess Investment Earnings" to be allocated for Permanent Benefit Increases (PBIs).

#### Projected Contribution Rates

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
2015/2016	22.70%	22.70%	22.70%	22.70%
2016/2017	22.45%	22.26%	22.65%	23.38%
2017/2018	22.14%	21.74%	22.55%	24.12%
2018/2019	21.98%	21.36%	22.63%	25.09%
2019/2020	21.37%	20.57%	22.25%	25.54%
2020/2021	20.18%	19.25%	21.20%	25.10%
2021/2022	19.10%	18.08%	20.26%	24.63%
2022/2023	18.47%	17.34%	19.77%	24.75%
2023/2024	17.71%	16.53%	19.10%	24.63%
2024/2025	17.11%	15.87%	18.61%	24.87%

These 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.

These projections 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):

	2013	2014
<b>Demographic Information</b>		
• Number of Members		
Actives	202,693	203,201
Inactives	213,058	215,325
Receiving benefits	120,875	126,255
Disabled (LTD)	4,307	4,206
Total	540,933	548,987
• Covered projected payroll	\$ 8,753	\$ 8,909
• Average age/service for actives	45.7/9.6	45.7/9.6
• Average pay for actives	\$ 43,182	\$ 43,841
• Total Active Member Contribution Balance	\$ 7,064,850,481	\$ 7,432,555,362
• Average Active Member Contribution Balance	\$ 34,855	\$ 36,577
• Median Active Member Contribution Balance	\$ 25,366	\$ 26,432
• Total Inactive Member Contribution Balance	\$ 1,236,061,473	\$ 1,320,372,780
• Average Inactive Member Contribution Balance	\$ 5,802	\$ 6,132
• Median Inactive Member Contribution Balance	\$ 1,191	\$ 1,249
• Average monthly benefit for retirees and beneficiaries (401(a) only)	\$ 1,632	\$ 1,639
• Average monthly benefit for members who retired in last fiscal year (401(a) only)	\$ 1,563	\$ 1,621
• Average age at valuation date for retirees and beneficiaries	69.9	70.1
• Average age at retirement for retirees and beneficiaries	60.3	60.3
• Average age at valuation date for members who retired in last fiscal year	62.3	62.2
<b>Financial Information</b>		
• Total normal cost rate <sup>1</sup>	13.45%	13.40%
• Unfunded actuarial accrued liability <sup>1</sup>	\$ 9,961	\$ 9,904
• Funded status of pension (401(a)) <sup>1</sup>	75.4%	76.3%
• Funded status of health (401(h))	89.2%	93.1%
• Funded status of total plan <sup>1</sup>	75.9%	76.9%
• Unrounded total contribution rate <sup>1</sup>	22.96%	22.70%
• Member contribution rate	11.48%	11.35%
• Employer contribution rate	11.48%	11.35%
• Member and employer contributions <sup>2</sup>	\$ 1,987	\$ 2,047
• Benefit and refunded payments <sup>2</sup>	\$ 2,713	\$ 2,869
• Administrative expenses <sup>2</sup>	\$ 34	\$ 27
• Net external cash flow <sup>2</sup>	\$ (760)	\$ (849)
• PBI		
Additional liability for July 1 <sup>st</sup> PBI	\$ 0.0	\$ 0.0
Percentage increase	0%	0%
Per year of service factor	\$ 0.0	\$ 0.0
PBI reserve before July 1 <sup>st</sup> PBI	\$ 0.0	\$ 0.0

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

<sup>2</sup> 2014 column gives information for fiscal year ended June 30, 2014 and 2013 column gives information for fiscal year ended June 30, 2013.

	2013	2014
• Actuarial gains (losses)		
Assets	\$ (395)	\$ (110)
Liability Experience	201	93
System Experience	(7)	0
Legislative and Administrative Changes	355	N/A
Assumption Changes	(312)	N/A
Funding Method Change	N/A	N/A
Total	\$ (158)	\$ (17)
• 401(a) Pension Only		
Actuarial Accrued Liability (AAL) <sup>1</sup>	\$ 39,912	\$ 41,349
Unfunded AAL/(Surplus) <sup>1</sup>	\$ 9,801	\$ 9,801
Actuarial Value of Assets as % of AAL <sup>1</sup>	75.4%	76.3%
Unfunded AAL/(Surplus) as % of payroll <sup>1</sup>	112.0%	110.0%
• 401(h) Health Only		
Actuarial Accrued Liability (AAL)	\$ 1,485	\$ 1,477
Unfunded AAL/(Surplus)	\$ 160	\$ 103
Actuarial Value of Assets as % of AAL	89.2%	93.1%
Unfunded AAL/(Surplus) as % of payroll	1.8%	1.2%
• Changes in Contribution Rate:		
<b>Item</b>	<b>Contribution Rate</b>	<b>Change in Rate</b>
1. 2013 Valuation	22.96%	-
2. Expected Experience	22.65%	-0.31%
3. Contribution Lag Gain/(Loss)	22.64%	-0.01%
4. 2013/2014 Liability Experience	22.59%	-0.05%
5. 2013/2014 Asset Experience	22.70%	+0.11%
6. System Experience	22.70%	+0.00%

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

**Split of Total Contribution Rate:**

Item	401(a) <sup>1</sup> Account	401(h) Account	Total
1. Member Contribution Rates	11.35%	0.00%	11.35%
2. Employer Contribution Rates	<u>10.85%</u>	<u>0.50%</u>	<u>11.35%</u>
3. Total Contribution Rates	22.20%	0.50%	22.70%

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

	2013		2014	
Asset Amounts	Market Value	Actuarial Value	Market Value	Actuarial Value
Pension 401(a) <sup>1</sup>	\$ 29,025,148,316	\$ 30,110,632,566	\$ 33,693,458,017	\$ 31,547,987,085
Health 401(h)	<u>1,274,036,072</u>	<u>1,324,595,696</u>	<u>1,465,095,569</u>	<u>1,374,129,582</u>
Total Plan <sup>1</sup>	\$ 30,299,184,388	\$ 31,435,228,262	\$ 35,158,553,586	\$ 32,922,116,667
Asset Returns	Market Value	Actuarial Value	Market Value	Actuarial Value
Pension 401(a)	12.95%	6.66%	19.28%	7.64%
Health 401(h)	12.70%	6.49%	19.22%	7.55%
Total Plan	12.94%	6.65%	19.28%	7.64%
Liabilities	Market Value	Actuarial Value	Market Value	Actuarial Value
Pension 401(a) <sup>1</sup>	\$ 39,911,755,232	\$ 39,911,755,232	\$ 41,349,317,003	\$ 41,349,317,003
Health 401(h)	<u>1,484,820,255</u>	<u>1,484,820,255</u>	<u>1,476,696,928</u>	<u>1,476,696,928</u>
Total Plan <sup>1</sup>	\$ 41,396,575,487	\$ 41,396,575,487	\$ 42,826,013,931	\$ 42,826,013,931
Funded Status	Market Value	Actuarial Value	Market Value	Actuarial Value
Pension 401(a) <sup>1</sup>	72.7%	75.4%	81.5%	76.3%
Health 401(h)	85.8%	89.2%	99.2%	93.1%
Total Plan <sup>1</sup>	73.2%	75.9%	82.1%	76.9%

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

## Section 2 – Summary of Valuation Results

The key valuation results as of June 30, 2014, are as follows:

	401(a) Account	401(h) Account	Total
I. Actuarial accrued liabilities			
A. Liabilities due to member's benefits			
1. Active members			
a. Retirement benefits	\$ 13,177,773,688	\$ 0	\$ 13,177,773,688
b. Health insurance premium supplement	0	694,678,630	694,678,630
c. Disability deferred retirement benefits	352,860,155	0	352,860,155
d. Pre-retirement death benefits	219,629,458	0	219,629,458
e. Withdrawal benefits	1,159,134,630	0	1,159,134,630
f. Total active members	\$ 14,909,397,931	\$ 694,678,630	\$ 15,604,076,561
2. Inactive members	1,750,841,390	47,568,265	1,798,409,655
3. Retired members and beneficiaries	23,372,573,046	691,712,305	24,064,285,351
4. Formerly disabled members now receiving benefits	922,994,040	38,459,713	961,453,753
5. Benefit increases for other-than-plan members	1,418,810	4,278,015	5,696,825
6. Post-1981 System members	392,091,786	0	392,091,786
7. Total present value of benefits	\$ 41,349,317,003	\$ 1,476,696,928	\$ 42,826,013,931
B. Other miscellaneous liabilities and reserves	0	0	0
C. Reserve for future PBIs	0	0	0
D. Total actuarial accrued liability	\$ 41,349,317,003	\$ 1,476,696,928	\$ 42,826,013,931
II. Actuarial value of assets <sup>1</sup>	31,547,987,085	1,374,129,582	32,922,116,667
III. Unfunded actuarial accrued liability (Item I. – Item II.)	9,801,329,918	102,567,346	9,903,897,264
IV. Amortization of unfunded actuarial accrued liability (per Section 38-737)			
A. Base unfunded actuarial accrued liability amortization at beginning of year	\$ 813,252,055	\$ 11,733,617	\$ 824,985,672
B. Expected alternate contributions	(27,662,268)	(594,249)	(28,256,517)
C. Interest to middle of year on A and B	31,423,591	445,575	31,869,166
D. Total unfunded actuarial accrued liability amortization (A+B+C)	\$ 817,013,378	\$ 11,584,943	\$ 828,598,321
V. Normal cost for the year			
A. Normal cost at beginning of year	\$ 1,116,714,337	\$ 31,983,201	\$ 1,148,697,538
B. Interest to middle of year	44,668,573	1,279,328	45,947,902
C. Total normal cost for the year (A+B)	\$ 1,161,382,910	\$ 33,262,529	\$ 1,194,645,439
VI. Total contribution for the year (Item IV. + Item V.)	\$ 1,978,396,288	\$ 44,847,472	\$ 2,023,243,760
VII. Total covered payroll (projected to 2014/2015 plan year)	\$ 8,908,620,792	\$ 8,908,620,792	\$ 8,908,620,792
VIII. Total contribution for fiscal year 2016 as a percentage of covered payroll			
A. Member portion	11.35%	0.00%	11.35%
B. Employer portion	10.85%	0.50%	11.35%
C. Total	22.20%	0.50%	22.70%
IX. Present value of future covered payroll	\$ 61,964,869,325	\$ 0	\$ 61,964,869,325
X. Present value of future benefits <sup>1</sup>	\$ 49,662,438,234	\$ 1,604,469,611	\$ 51,266,907,845
XI. Present value of future normal cost (Item X. – Item I.D.)	\$ 8,313,121,231	\$ 127,772,683	\$ 8,440,893,914

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

## Section 3 – 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 by the Board on November 15, 2002.

### Market Value of Assets

The market value of assets represents the fair market value of assets as of June 30, 2013, and June 30, 2014, 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, 2014, was \$35,158,553,586 and the actuarial value of assets was \$32,922,116,667 (94% of market value). The combined 401(a) and 401(h) deferral amount for the year is \$2.236 billion. That is, \$2.236 billion of net investment gains that occurred before July 1, 2014 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 each month, while all other cash flow occurs at the middle of the year.

During the twelve months ended June 30, 2014, the Plan had an estimated return of 7.64% on the 401(a) actuarial assets and 7.55% on the 401(h) actuarial assets, compared to the assumed rate of 8%. During the same period, the Plan assets had an estimated return of 19.28% on the 401(a) market assets and 19.22% 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 System 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	\$33,337,146,512	\$ 1,465,095,569	\$ 356,311,505	\$35,158,553,586
2. Actuarial Value of Assets	\$31,194,504,482	\$ 1,374,129,582	\$ 353,482,603	\$32,922,116,667

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

	Year Ending June 30, 2013	Year Ending June 30, 2014
1. Market value, beginning of year	\$ 26,047,713,626	\$ 28,677,043,323
2. Contributions and receipts during the year		
a. Member contributions <sup>1</sup>	947,959,053	995,245,287
b. Employer contributions <sup>1</sup>	911,255,171	965,930,233
c. Member reimbursements of member contributions	70,790,399	32,441,245
d. Member reimbursements of employer contributions	0	0
e. Other miscellaneous receipts	0	0
f. Total	\$ 1,930,004,623	\$ 1,993,616,765
3. Investment income for the year (net of investment expenses)	\$ 3,348,238,394	\$ 5,459,203,282
4. Benefit payments		
a. Retirement benefits	\$ (2,360,079,299)	\$ (2,481,586,767)
b. Death benefits	(38,362,457)	(39,274,820)
c. Total	\$ (2,398,441,756)	\$ (2,520,861,587)
5. Refunds of contributions	(218,528,202)	(246,163,451)
6. Employer adjustments	0	0
7. Administrative expenses	(32,450,862)	(25,821,505)
8. Miscellaneous	0	0
9. Other		
a. Transfers from other plans	\$ 1,232,600	\$ 1,044,463
b. Reimbursements and lump sums	0	0
c. Transfers to PSPRS	(725,100)	(914,778)
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	\$ 507,500	\$ 129,685
10. Change in audited assets, beginning of year	0	0
11. Total change in market value	\$ 2,629,329,697	\$ 4,660,103,189
12. Market value, end of year	\$ 28,677,043,323	\$ 33,337,146,512

<sup>1</sup> Contribution rates were 10.90% for fiscal 2013, and 11.30% for fiscal 2014.

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

	Year Ending June 30, 2013	Year Ending June 30, 2014
1. Market value, beginning of year	\$ 1,167,345,698	\$ 1,274,036,072
2. Contributions and receipts during the year		
a. Member contributions	\$ 0	\$ 0
b. Employer contributions <sup>1</sup>	57,153,530	53,405,674
c. Member reimbursements of member contributions	0	0
d. Member reimbursements of employer contributions	0	0
e. Other miscellaneous receipts	0	0
f. Total	\$ 57,153,530	\$ 53,405,674
3. Investment income for the year (net of investment expenses)	146,738,900	240,538,096
4. Benefit payments	(95,762,723)	(101,746,644)
5. Refunds of contributions	0	0
6. Employer adjustments	0	0
7. Administrative expenses	(1,439,333)	(1,137,629)
8. Miscellaneous	0	0
9. Other	0	0
10. Change in audited assets, beginning of year	0	0
11. Total change in market value	\$ 106,690,374	\$ 191,059,497
12. Market value, end of year	\$ 1,274,036,072	\$ 1,465,095,569

<sup>1</sup>Contribution rates were 0.65% for fiscal 2013, and 0.60% for fiscal 2014.

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

Item	Plan Year Ending June 30			
	2011	2012	2013	2014
1. Market value of assets, beginning of year	\$ 21,779,421,537	\$ 26,440,256,592	\$ 26,047,713,626	\$ 28,677,043,323
2. Contributions during year	1,684,171,434	1,809,439,747	1,903,004,623	1,993,616,765
3. Benefits paid during year	(2,144,137,146)	(2,279,475,678)	(2,398,441,756)	(2,520,861,587)
4. Refunds paid during year	(177,035,003)	(207,078,258)	(218,528,202)	(246,163,451)
5. Administrative expenses, assumed end of year	(26,877,407)	(30,632,862)	(32,450,862)	(25,821,505)
6. Other changes and net transfers	170,663	(2,787,617)	507,500	129,685
7. Net investment income for year, net of all expenses	5,297,665,107	287,358,840	3,315,787,532	5,433,381,777
8. Expected net investment income at 8%				
a. Market value of assets, beginning of year	1,742,353,723	2,115,220,527	2,083,817,090	2,294,163,466
b. Contributions	67,366,857	72,377,590	77,200,185	79,744,671
c. Benefits	(92,912,610)	(98,777,279)	(103,932,476)	(109,237,335)
d. Refunds	(7,671,517)	(8,973,391)	(9,469,555)	(10,667,083)
e. Administrative expenses	0	0	0	0
f. Other	6,827	(111,505)	20,300	5,187
g. Total	1,709,143,280	2,079,735,942	2,047,635,544	2,254,008,906
9. Excess investment income for year (Item 7 - Item 8.g.)	\$ 3,588,521,827	\$ (1,792,377,102)	\$ 1,268,151,988	\$ 3,179,372,871

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

Item	Plan Year Ending June 30			
	2011	2012	2013	2014
1. Market value of assets, beginning of year	\$ 995,595,659	\$ 1,194,727,820	\$ 1,167,345,698	\$ 1,274,036,072
2. Contributions during year	51,047,543	54,462,585	57,153,530	53,405,674
3. Benefits paid during year	(91,698,836)	(93,915,382)	(95,762,723)	(101,746,644)
4. Refunds paid during year	0	0	0	0
5. Administrative expenses, assumed end of year	(1,209,035)	(1,369,883)	(1,439,333)	(1,137,629)
6. Other changes and net transfers	0	0	0	0
7. Net investment income for year, net of all expenses	239,783,454	12,070,675	145,299,567	239,400,467
8. Expected net investment income at 8%				
a. Market value of assets, beginning of year	79,647,653	95,578,226	93,387,656	101,922,886
b. Contributions	2,041,902	2,178,503	2,286,141	2,136,227
c. Benefits	(3,973,616)	(4,069,667)	(4,149,718)	(4,409,021)
d. Refunds	0	0	0	0
e. Administrative expenses	0	0	0	0
f. Other	0	0	0	0
g. Total	77,715,939	93,687,062	91,524,079	99,650,092
9. Excess investment income for year (Item 7 - Item 8.g.)	\$ 162,067,515	\$ (81,616,387)	\$ 53,775,488	\$ 139,750,375

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

Item	Valuation as of June 30, 2013	Valuation as of June 30, 2014
1. Excess (shortfall) of investment income for current year and previous eight years:		
a. Current year	\$ 1,268,151,988	\$ 3,179,372,871
b. Current year – 1	(1,792,377,102)	1,268,151,988
c. Current year – 2	3,588,521,827	(1,792,377,102)
d. Current year – 3	1,259,547,369	3,588,521,827
e. Current year – 4	(6,298,770,518)	1,259,547,369
f. Current year – 5	(4,056,160,670)	(6,298,770,518)
g. Current year – 6	2,181,339,141	(4,056,160,670)
h. Current year – 7	385,506,263	2,181,339,141
i. Current year – 8	86,948,970	385,506,263
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ 1,141,336,789	\$ 2,861,435,584
b. Current year – 1 (80% deferral)	(1,433,901,682)	1,014,521,590
c. Current year – 2 (70% deferral)	2,511,965,279	(1,254,663,971)
d. Current year – 3 (60% deferral)	755,728,421	2,153,113,096
e. Current year – 4 (50% deferral)	(3,149,385,259)	629,773,685
f. Current year – 5 (40% deferral)	(1,622,464,268)	(2,519,508,207)
g. Current year – 6 (30% deferral)	654,401,742	(1,216,848,201)
h. Current year – 7 (20% deferral)	77,101,253	436,267,828
i. Current year – 8 (10% deferral)	8,694,897	38,550,626
j. Total deferred for year	\$ (1,056,522,828)	\$ 2,142,642,030
3. Market value of plan assets, end of year		
a. Excluding System assets	\$ 28,677,043,323	\$ 33,337,146,512
b. Including System assets	\$ 29,025,148,316	\$ 33,693,458,017
4. Actuarial value of plan assets, end of year		
a. Excluding System assets (Item 3.a. - Item 2.j.)	\$ 29,733,566,151	\$ 31,194,504,482
b. Including System assets	\$ 30,110,632,566	\$ 31,547,987,085

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

Item	Valuation as of June 30, 2013	Valuation as of June 30, 2014
1. Excess (shortfall) of investment income for current year and previous eight years:		
a. Current year	\$ 53,775,488	\$ 139,750,375
b. Current year – 1	(81,616,387)	53,775,488
c. Current year – 2	162,067,515	(81,616,387)
d. Current year – 3	56,654,835	162,067,515
e. Current year – 4	(280,417,337)	56,654,835
f. Current year – 5	(182,147,911)	(280,417,337)
g. Current year – 6	94,970,630	(182,147,911)
h. Current year – 7	15,509,847	94,970,630
i. Current year – 8	3,700,598	15,509,847
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ 48,397,939	\$ 125,775,338
b. Current year – 1 (80% deferral)	(65,293,110)	43,020,390
c. Current year – 2 (70% deferral)	113,447,261	(57,131,471)
d. Current year – 3 (60% deferral)	33,992,901	97,240,509
e. Current year – 4 (50% deferral)	(140,208,669)	28,327,418
f. Current year – 5 (40% deferral)	(72,859,164)	(112,166,935)
g. Current year – 6 (30% deferral)	28,491,189	(54,644,373)
h. Current year – 7 (20% deferral)	3,101,969	18,994,126
i. Current year – 8 (10% deferral)	<u>370,060</u>	<u>1,550,985</u>
j. Total deferred for year	\$ (50,559,624)	\$ 90,965,987
3. Market value of plan assets, end of year	\$ 1,274,036,072	\$ 1,465,095,569
4. Actuarial value of plan assets, end of year (Item 3 - Item 2.j.)	\$ 1,324,595,696	\$ 1,374,129,582

### Exhibit 3.3c - Development of Actuarial Value of Assets (System Only)

Item	Valuation as of June 30, 2013	Valuation as of June 30, 2014
1. Excess (shortfall) of investment income for current year and previous eight years:		
a. Current year	\$ 14,578,335	\$ 27,750,764
b. Current year – 1	(26,115,426)	14,578,335
c. Current year – 2	54,309,075	(26,115,426)
d. Current year – 3	24,922,896	54,309,075
e. Current year – 4	(118,851,796)	24,922,896
f. Current year – 5	(81,141,855)	(118,851,796)
g. Current year – 6	51,494,804	(81,141,855)
h. Current year – 7	10,087,653	51,494,804
i. Current year – 8	2,569,937	10,087,653
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ 13,120,502	\$ 24,975,688
b. Current year – 1 (80% deferral)	(20,892,341)	11,662,668
c. Current year – 2 (70% deferral)	38,016,353	(18,280,798)
d. Current year – 3 (60% deferral)	14,953,738	32,585,445
e. Current year – 4 (50% deferral)	(59,425,898)	12,461,448
f. Current year – 5 (40% deferral)	(32,456,742)	(47,540,718)
g. Current year – 6 (30% deferral)	15,448,441	(24,342,557)
h. Current year – 7 (20% deferral)	2,017,531	10,298,961
i. Current year – 8 (10% deferral)	<u>256,994</u>	<u>1,008,765</u>
j. Total deferred for year	\$ (28,961,422)	2,828,902
3. Market value of plan assets, end of year	\$ 348,386,317	356,558,465
4. Actuarial value of plan assets, end of year (Item 3 - Item 2.j.)	\$ 377,347,739	353,729,563

The June 30, 2014 System asset values that are included in Plan assets are \$356,311,505 (market value) and \$353,482,603 (actuarial value).

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

Item	Valuation as of June 30, 2013	Valuation as of June 30, 2014
1. Actuarial assets, beginning of year	\$ 28,548,705,130	\$ 29,733,566,151
2. Total contributions during year	1,930,004,623	1,993,616,765
3. Benefits paid during year	(2,398,441,756)	(2,520,861,587)
4. Refunds paid during year	(218,528,202)	(246,163,451)
5. Other changes and net transfers	507,500	129,685
6. Assumed net investment income at 8%		
a. Beginning of year assets	2,283,896,410	2,378,685,292
b. Contributions	77,200,185	79,744,671
c. Benefits	(103,932,476)	(109,237,335)
d. Refunds	(9,469,555)	(10,667,083)
e. Other	20,300	5,187
f. Total	\$ 2,247,714,864	\$ 2,338,530,732
7. Expected actuarial assets, end of year (Sum of Items 1 through 6)	\$ 30,109,962,159	\$ 31,298,818,295
8. Actual actuarial assets, end of year	\$ 29,733,566,151	\$ 31,194,504,482
9. Asset gain/(loss) for year (Item 8 - Item 7)	\$ (376,396,008)	\$ (104,313,813)

Excludes System assets

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

Item	Valuation as of June 30, 2013	Valuation as of June 30, 2014
1. Actuarial assets, beginning of year	\$ 1,281,566,359	\$ 1,324,595,696
2. Total contributions during year	57,153,530	53,405,674
3. Benefits paid during year	(95,762,723)	(101,746,644)
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	102,525,309	105,967,656
b. Contributions	2,286,141	2,136,227
c. Benefits	(4,149,718)	(4,409,021)
d. Refunds	0	0
e. Other	0	0
f. Total	\$ 100,661,732	\$ 103,694,862
7. Expected actuarial assets, end of year (Sum of Items 1 through 6)	\$ 1,343,618,898	\$ 1,379,949,588
8. Actual actuarial assets, end of year	\$ 1,324,595,696	\$ 1,374,129,582
9. Asset gain/(loss) for year (Item 8 - Item 7)	\$ (19,023,202)	\$ (5,820,006)

### 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	\$ 28,677,043,323	\$ 29,733,566,151
2. End of year asset value	\$ 33,337,146,512	\$ 31,194,504,482
3. Contributions	\$ 1,993,616,765	\$ 1,993,616,765
4. Transfers	\$ 129,685	\$ 129,685
5. Benefit Payments	\$ (2,767,025,038)	\$ (2,767,025,038)
6. Estimated yield based on mid-year timing for contributions and 13/24 timing for benefit payments	19.28%	7.64%

### 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%
2014	19.28%	7.64%

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

Item	Basis of Assets	
	Market Value	Actuarial Value
1. Beginning of year asset value	\$ 1,274,036,072	\$ 1,324,595,696
2. End of year asset value	\$ 1,465,095,569	\$ 1,374,129,582
3. Contributions	\$ 53,405,674	\$ 53,405,674
4. Transfers	\$ 0	\$ 0
5. Benefit Payments	\$ (101,746,644)	\$ (101,746,644)
6. Estimated yield based on mid-year timing for contributions and 13/24 timing for benefit payments	19.22%	7.55%

### 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%
2014	19.22%	7.55%

### Exhibit 3.6 - History of Cash Flow

Year Ending June 30	Contributions for the Year	Expenditures During the Year				External Cash Flow for the Year	End of Year Market Value of Assets	External Cash Flow as Percentage of Market
		Benefit Payments	Refunds of Contributions	Administrative Expenses <sup>1</sup>	Total			
1988	\$ 226,391,986	\$ (184,014,825)	\$ (32,440,739)	\$ (1,858,980)	\$ (218,314,544)	\$ 8,077,442	\$ 6,354,326,735	0.1%
1989	309,456,756	(211,706,362)	(32,763,953)	(2,796,196)	(247,266,511)	62,190,245	7,314,715,626	0.9%
1990	129,780,928	(291,865,604)	(31,871,455)	(3,016,679)	(326,753,738)	(196,972,810)	7,784,051,423	(2.5%)
1991	267,194,502	(313,739,121)	(27,329,212)	(4,889,991)	(345,958,324)	(78,763,822)	8,298,777,637	(0.9%)
1992	265,305,634	(351,219,516)	(24,689,694)	(6,282,138)	(382,191,348)	(116,885,714)	9,375,565,917	(1.2%)
1993	278,158,497	(414,519,290)	(21,419,534)	(5,774,866)	(441,713,690)	(163,555,193)	10,712,781,278	(1.5%)
1994	256,841,228	(445,763,795)	22,516,743)	(5,222,224)	(473,502,762)	(216,661,534)	10,680,073,807	(2.0%)
1995	326,663,838	(484,729,970)	(24,364,930)	(5,826,425)	(514,921,325)	(188,257,487)	12,356,078,492	(1.5%)
1996 <sup>2</sup>	299,724,778	(510,236,051)	(26,307,534)	(5,345,583)	(541,889,168)	(242,164,390)	13,917,637,400	(1.7%)
1997 <sup>2</sup>	309,394,448	(550,078,719)	(30,838,244)	(6,740,459)	(587,657,422)	(278,262,974)	16,397,938,329	(1.7%)
1998 <sup>2</sup>	321,349,998	(598,804,992)	(29,749,907)	(8,386,901)	(636,941,800)	(315,591,802)	19,389,956,806	(1.6%)
1999 <sup>2</sup>	347,970,526	(652,854,456)	(26,089,213)	(9,932,871)	(688,876,540)	(340,906,014)	21,836,381,722	(1.6%)
2000 <sup>2</sup>	283,772,496	(723,611,965)	(64,976,507)	(10,775,218)	(799,363,690)	(515,591,194)	23,187,551,913	(2.2%)
2001 <sup>2</sup>	367,191,042	(828,545,637)	(91,824,591)	(9,843,046)	(930,213,274)	(563,022,232)	21,872,916,420	(2.6%)
2002 <sup>2</sup>	321,775,573	(986,288,636)	(42,765,105)	(15,375,486)	(1,044,429,227)	(722,653,654)	18,594,856,337	(3.9%)
2003 <sup>2</sup>	375,522,329	(1,126,828,875)	(35,948,463)	(21,395,972)	(1,184,173,310)	(808,650,981)	18,116,820,935	(4.5%)
2004 <sup>2</sup>	865,966,060	(1,292,412,047)	(34,006,055)	(23,644,210)	(1,350,062,312)	(484,076,252)	20,748,573,247	(2.3%)
2005 <sup>2</sup>	946,697,219	(1,468,665,813)	(42,026,148)	(22,249,002)	(1,532,940,963)	(586,243,744)	21,901,025,604	(2.7%)
2006 <sup>2</sup>	1,265,185,960	(1,592,951,667)	(59,696,449)	(27,629,361)	(1,680,277,477)	(415,091,517)	23,641,112,938	(1.8%)
2007 <sup>2</sup>	1,631,168,370	(1,707,925,342)	(76,120,285)	(30,401,477)	(1,814,497,104)	(183,278,734)	27,639,018,747	(0.7%)
2008 <sup>2</sup>	1,805,731,259	(1,827,041,000)	(104,080,495)	(29,870,547)	(1,960,992,042)	(155,260,783)	25,296,109,758	(0.6%)
2009 <sup>2</sup>	1,757,935,919	(1,954,488,617)	(118,609,040)	(28,027,253)	(2,101,124,910)	(343,188,991)	20,403,436,175	(1.7%)
2010 <sup>2</sup>	1,702,232,331	(2,095,421,087)	(145,833,143)	(29,027,912)	(2,270,282,142)	(568,049,811)	22,775,017,196	(2.5%)
2011 <sup>2</sup>	1,735,218,977	(2,235,835,982)	(177,035,003)	(28,086,442)	(2,440,957,427)	(705,738,450)	27,834,984,412	(2.6%)
2012 <sup>2</sup>	1,863,902,332	(2,373,391,060)	(207,078,258)	(32,002,745)	(2,612,472,063)	(748,569,730)	27,215,059,324	(2.8%)
2013 <sup>2</sup>	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%)
2014 <sup>2</sup>	2,047,022,439	(2,622,608,231)	(246,163,451)	(26,959,134)	(2,895,730,816)	(848,708,377)	34,802,242,081	(2.4%)

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

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

### Exhibit 3.7 – History of Asset Values and Ratios

Year Ending 06/30	401(a)			401(h)			Total		
	Actuarial Value of Assets	Market Value of Assets	AVA/MVA Ratio	Actuarial Value of Assets	Market Value of Assets	AVA/MVA Ratio	Actuarial Value of Assets	Market Value of Assets	AVA/MVA Ratio
2014	\$31,194,504,482	\$33,337,146,512	93.6%	\$1,374,129,582	\$1,465,095,569	93.8%	\$32,568,634,064	\$34,802,242,081	93.6%
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	21,029,394,547	108.5%	1,028,228,830	871,636,743	118.0%	23,836,519,123	21,901,031,290	108.8%
2004	22,659,396,324	19,940,524,999	113.6%	983,508,438	808,048,248	121.7%	23,642,904,762	20,748,573,247	113.9%
2003	22,572,007,289	17,418,714,877	129.6%	944,891,222	698,106,058	135.4%	23,516,898,510	18,116,820,935	129.8%
2002	22,641,693,322	17,821,982,950	127.0%	981,322,647	772,873,387	127.0%	23,623,015,969	18,594,856,337	127.0%

Excludes System Assets

## Section 4 – Actuarial Balance Sheet

The results of the actuarial valuation of the Plan as of June 30, 2013, and June 30, 2014, are summarized in the actuarial balance sheet in Exhibit 4.1. The results for 2014 are based on the benefit provisions of the Plan as of June 30, 2014, as summarized in Section 10 and on the actuarial assumptions and methods shown in Section 9.

## Exhibit 4.1 - Actuarial Balance Sheet

### Actuarial Assets

	June 30	
	2013	2014
<b>I Current Assets At Actuarial Value:</b>		
1. Reserve for retired members and beneficiaries	\$ 23,092,601,812	\$ 24,064,285,351
2. Reserve for disabled members	910,704,369	961,453,753
3. Reserve for other-than-plan retirees	7,268,791	5,696,825
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	8,354,953,649	9,060,386,525
(b) System members	N/A	N/A
6. Employer contributions		
(a) Plan members	8,082,709,901	8,800,584,395
(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	412,582,843	392,091,786
9. Additional assets	(10,561,636,977)	(8,125,945,049)
10. Total present assets	\$ 30,299,184,388	\$ 35,158,553,586
11. Adjustment to market value due to actuarial asset valuation method	1,136,043,874	(2,236,436,919)
12. Total actuarial value of present assets	\$ 31,435,228,262	\$ 32,922,116,667
<b>II Prospective Assets:</b>		
13. Unfunded actuarial accrued liability	9,961,347,225	9,903,897,264
14. <b>Total Actuarial Assets</b>	\$ 41,396,575,487	\$ 42,826,013,931

## Actuarial Liabilities

	June 30	
	2013	2014
<b>III Present Value of Benefits Presently Being Paid:</b>		
15. (a) Benefits for retired members and beneficiaries	\$ 22,398,414,156	\$ 23,372,573,046
(b) Health insurance premium supplement	694,187,656	691,712,305
16. (a) Benefits for disabled members	871,779,172	922,994,040
(b) Health insurance premium supplement	38,925,197	38,459,713
17. (a) Benefits for other-than-plan members	1,650,427	1,418,810
(b) Health insurance premium supplement	5,618,364	4,278,015
18. Total present value of benefits presently being paid	\$ 24,010,574,972	\$ 25,031,435,929
<b>IV Present Value of Benefits Payable in the Future to Present Members:</b>		
19. Active members		
(a) Service retirement benefits	\$ 12,952,664,976	\$ 13,177,773,688
(b) Health insurance premium supplement	699,070,334	694,678,630
(c) Disability retirement benefits	346,835,482	352,860,155
(d) Pre-retirement death benefits	204,460,957	219,629,458
(e) Withdrawal benefits	1,109,748,086	1,159,134,630
(f) Total active members	\$ 15,312,779,835	\$ 15,604,076,561
20. Inactive members		
(a) Retirement Benefits	\$ 1,613,619,133	\$ 1,750,841,390
(b) Health insurance premium supplement	47,018,704	47,568,265
(c) Total inactive members	\$ 1,660,637,837	\$ 1,798,409,655
21. Post-1981 System members	\$ 412,582,843	\$ 392,091,786
22. Total	\$ 41,396,575,487	\$ 42,826,013,931
<b>V Other Liabilities and Reserves:</b>		
23. Reserve for other miscellaneous liabilities	\$ 0	\$ 0
24. Reserve for PBLs	\$ 0	\$ 0
<b>25. Total Actuarial Liabilities</b>	<b>\$ 41,396,575,487</b>	<b>\$ 42,826,013,931</b>

## 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 Current Assets		Relative to Total Actuarial Liabilities	
		Covered Payroll (in Millions)	Percent of Covered Payroll	Current Assets (in Millions)	Percent of Current Assets	Actuarial Liabilities (in Millions)	Percent of Actuarial Liabilities
1980	\$ 436	\$ 1,373	31.8%	\$ 1,631	26.7%	\$ 3,400	12.8%
1981	364	1,567	23.2%	1,982	18.4%	3,946	9.2%
1982	472	1,734	27.2%	2,255	20.9%	4,547	10.4%
1983	301	1,841	16.3%	2,777	10.8%	5,009	6.0%
1984	248	1,906	13.0%	3,174	7.8%	5,351	4.6%
1985	301	2,120	14.2%	3,654	8.2%	5,874	5.1%
1986	95	2,361	4.0%	4,538	2.1%	6,718	1.4%
1987	(129)	2,478	(5.2%)	5,531	(2.3%)	7,636	(1.7%)
1988	(292)	2,818	(10.3%)	6,000	(4.9%)	8,251	(3.5%)
1989	(510)	2,994	(17.0%)	6,686	(7.6%)	6,176	(8.3%)
1990	(552)	3,212	(17.2%)	7,297	(7.6%)	6,745	(8.2%)
1991	(654)	3,453	(18.9%)	7,822	(8.4%)	7,168	(9.1%)
1992	(632)	3,616	(17.5%)	8,842	(7.1%)	8,210	(7.7%)
1993	(849)	3,748	(22.7%)	9,770	(8.7%)	8,921	(9.5%)
1994	(872)	4,126	(21.1%)	10,540	(8.3%)	9,668	(9.0%)
1995	(1,217)	4,432	(27.5%)	11,521	(10.6%)	10,304	(11.8%)
1996	(1,468)	4,632	(31.7%)	12,579	(11.7%)	11,111	(13.2%)
1997	(1,784)	4,836	(36.9%)	14,169	(12.6%)	12,385	(14.4%)
1998	(2,530)	5,164	(49.0%)	16,168	(15.6%)	13,638	(18.6%)
1999	(2,639)	5,488	(48.1%)	18,761	(14.1%)	16,122	(16.4%)
2000	(3,578)	5,894	(60.7%)	21,127	(16.9%)	17,549	(20.4%)
2001	(2,587)	6,357	(40.7%)	22,855	(11.3%)	20,269	(12.8%)
2002	(1,036)	6,989	(14.8%)	23,623	(4.4%)	22,587	(4.6%)
2003	787	7,297	10.8%	23,517	3.3%	24,304	3.2%
2004	2,275	7,486	30.4%	23,643	9.6%	25,918	8.8%
2005	4,106	8,032	51.1%	23,837	17.2%	27,943	14.7%
2006	4,845	8,312	58.3%	24,852	19.5%	29,697	16.3%
2007	5,519	9,162	60.2%	26,477	20.8%	31,996	17.2%
2008	6,019	9,708	62.0%	27,852	21.6%	33,871	17.8%
2009	7,382	9,835	75.1%	28,360	26.0%	35,743	20.7%
2010 <sup>1</sup>	8,735	9,420	92.7%	28,823	30.3%	37,558	23.3%
2011 <sup>1</sup>	9,324	9,601	102.9%	29,231	31.9%	38,555	24.2%
2012 <sup>1</sup>	9,723	8,809	109.6%	30,230	32.2%	39,952	24.3%
2013 <sup>1</sup>	9,961	8,753	113.8%	31,435	31.7%	41,397	24.1%
2014 <sup>1</sup>	9,904	8,909	111.2%	32,922	30.1%	42,826	23.1%

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

# Section 5 – Contribution Rates

## Normal Cost

Exhibit 5.1 indicates that the total normal cost as of June 30, 2014, is 13.40% of pay, compared to 13.45% in the 2013 valuation. This normal cost is developed based on the prescribed Projected Unit Credit (PUC) actuarial funding 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 2014 valuation with the corresponding items for the 2013 valuation.

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

The employer and member contribution rates are each determined as one-half of the percent of pay needed to pay the normal cost of the Plan and to amortize the Unfunded Actuarial Accrued Liability (UAAL). For the valuation as of June 30, 2014, the normal cost of the Plan is 13.40% and the amortization of the UAAL is 9.30%. The employer and member contribution rates are equal to:

$$\frac{1}{2} \times (13.40\% + 9.30\%) = 11.35\%$$

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

$$\frac{1}{2} \times (13.40\% + 0.00\%) = 6.70\%$$

This difference of 4.65% (i.e., 11.35% - 6.70%) is due entirely to the UAAL of the Plan. Thus, the current UAAL of the Plan is equivalent to a 4.65% increase in the employer and member contribution rates determined by the 2014 valuation.

As noted above, the employer and member contribution rates determined by the 2014 valuation are each 11.35% 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	11.35%	0.00%	11.35%
2. Employer Contribution Rates	<u>10.85%</u>	<u>0.50%</u>	<u>11.35%</u>
3. Total Contribution Rates	22.20%	0.50%	22.70%

Exhibit 5.3 shows the history of the contribution rates.

<sup>1</sup> Includes System 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	
	2013	2014
1. Retirement benefits	9.78%	9.70%
2. Health insurance premium supplement	0.39%	0.37%
3. Disability benefits (Deferred Retirement)	0.37%	0.37%
4. Death benefits	0.21%	0.22%
5. Termination benefits	2.70%	2.74%
6. Total	13.45%	13.40%

## Exhibit 5.2 - Summary of Cost Items

	Valuation as of June 30, 2013		Valuation as of June 30, 2014	
		Cost as % of Pay		Cost as % of Pay
1. Members				
a. Active members	202,693		203,201	
b. Inactive members	213,058		215,325	
c. Retired members and beneficiaries	120,875		126,255	
d. Disabled retirees	4,307		4,206	
e. Total	540,933		548,987	
f. Other-than-plan retirees receiving only benefit increases (401(a))	192		170	
g. Other-than-plan retirees receiving only health insurance benefits (401(h))	521		502	
h. Other-than-plan retirees receiving both benefit increases (401(a)) and health insurance benefits (401(h))	106		97	
2. Covered payroll	\$ 8,752,783,004		\$ 8,908,620,792	
3. Averages for active members				
a. Average age	45.7		45.7	
b. Average years of service	9.6		9.6	
c. Average pay	\$ 43,182		\$ 43,841	
4. Normal cost rate	13.45%		13.40%	
5. Actuarial accrued liability <sup>1</sup>				
a. Retired members and beneficiaries	\$ 23,092,601,812		\$ 24,064,285,351	
b. Disabled members	910,704,369		961,453,753	
c. Benefits for other-than- plan retirees	7,268,791		5,696,825	
d. Active members	15,312,779,835		15,604,076,561	
e. Inactive members	1,660,637,837		1,798,409,655	
f. Post-1981 System members	412,582,843		392,091,786	
g. Reserve for PBI COLAs	0		0	
h. Total	\$ 41,396,575,487	473.0%	\$ 42,826,013,931	480.7%
6. Current actuarial assets <sup>1</sup>	\$ 31,435,228,262	359.1%	\$ 32,922,116,667	369.6%
7. Unfunded actuarial accrued liability <sup>1</sup>	\$ 9,961,347,225	113.8%	\$ 9,903,897,264	111.2%

<sup>1</sup> Includes System liabilities and assets for System 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, 2013		Valuation as of June 30, 2014	
		Cost as % of Pay		Cost as % of Pay
8. Section 38-737 unfunded actuarial accrued liability amortization period				
• 401(a)	30 years		30 years	
• 401(h)	15 years		15 years	
9. Section 38-737 contribution rate <sup>1</sup>				
A. 401(a) Account				
a. Member	11.48%		11.35%	
b. Employer	10.89%		10.85%	
c. Total	22.37%		22.20%	
B. 401(h) Account				
a. Member	0.00%		0.00%	
b. Employer	0.59%		0.50%	
c. Total	0.59%		0.50%	
C. Total of Combined Accounts				
a. Member	11.48%		11.35%	
b. Employer	11.48%		11.35%	
c. Total	22.96%		22.70%	
10. Estimated return on 401(a) actuarial assets	6.66%		7.64%	
11. Relative size of unfunded actuarial accrued liability <sup>1</sup>				
a. As percentage of actuarial assets	31.7%		30.1%	
b. As percentage of covered payroll	113.8%		111.2%	
c. As percentage of total actuarial accrued liability	24.1%		23.1%	

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

### Exhibit 5.3 - History of Contribution Rates

Fiscal Year Beginning July 1	Calculated Rates		Actual Rates		Total Rate	
	Member	Employer	Member	Employer	Calculated	Actual
1980	7.00%	6.28%	7.00%	7.00%	13.28%	14.00%
1981	7.00	6.29	7.00	7.00	13.29	14.00
1982	7.00	5.79	7.00	7.00	12.79	14.00
1983	7.00	6.04	7.00	7.00	13.04	14.00
1984	6.27	6.27	6.27	6.27	12.54	12.54
1985	5.67	5.67	5.67	5.67	11.34	11.34
1986	5.53	5.53	5.53	5.53	11.06	11.06
1987	5.16	5.16	4.00	4.00	10.32	8.00
1988	5.09	5.09	5.09	5.09	10.18	10.18
1989	4.69	4.69	2.00	2.00	9.38	4.00
1990	3.82	3.82	3.82	3.82	7.64	7.64
1991	3.60	3.60	3.60	3.60	7.20	7.20
1992	3.59	3.59	3.59	3.59	7.18	7.18
1993	4.09	4.09	3.14	3.14	8.18	6.28
1994	3.75	3.75	3.75	3.75	7.50	7.50
1995	3.95	3.95	3.36	3.36	7.90	6.72
1996	3.20	3.20	3.20	3.20	6.40	6.40
1997	3.05	3.05	3.05	3.05	6.10	6.10
1998	2.85	2.85	2.85	2.85	5.70	5.70
1999	2.17	2.17	2.17	2.17	4.34	4.34
2000	2.73 <sup>1</sup>	2.73 <sup>1</sup>	2.17	2.17	5.46 <sup>1</sup>	4.34
2001	1.92	1.92	2.00	2.00	3.84	4.00
2002	3.86 <sup>1</sup>	3.86 <sup>1</sup>	2.00	2.00	7.72 <sup>1</sup>	4.00
2003	5.20	5.20	5.20	5.20	10.40	10.40
2004	6.96 <sup>1</sup>	6.96 <sup>1</sup>	5.20	5.20	13.92 <sup>1</sup>	10.40
2005	7.75	7.75	6.90 <sup>2</sup>	6.90 <sup>2</sup>	15.50	13.80 <sup>2</sup>
2006	8.70 <sup>1</sup>	8.70 <sup>1</sup>	8.60 <sup>2</sup>	8.60 <sup>2</sup>	17.40 <sup>1</sup>	17.20 <sup>2</sup>
2007	9.10	9.10	9.10	9.10	18.20	18.20
2008	8.94	8.94	8.95	8.95	17.88	17.90
2009	9.00	9.00	9.00	9.00	18.00	18.00
2010	9.58	9.58	9.60	9.60	19.15	19.20
2011 <sup>3</sup>	10.48	10.48	10.50	10.50	20.96	21.00
2012 <sup>3</sup>	10.90	10.90	10.90	10.90	21.80	21.80
2013 <sup>3</sup>	11.28	11.28	11.30	11.30	22.55	22.60
2014 <sup>3</sup>	11.48	11.48	11.48	11.48	22.96	22.96
2015 <sup>3</sup>	11.35	11.35	11.35	11.35	22.70	22.70

<sup>1</sup> This is a hypothetical rate. The actual contribution rate was set by the prior year valuation.

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

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

## Section 6 – Actuarial Gains and Losses

The purpose of this section is to outline 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 \$110 million for fiscal 2014. Investment gains/losses are recognized in actuarial assets over a ten-year period. The rate of return on actuarial assets for the 2014 fiscal year was 7.64% on the pension assets (401(a)) and 7.55% on the health supplement assets (401(h)). These compare to last year's returns of 6.66% and 6.49%, respectively. The assumed rate of return is 8%. There was also a liability experience gain of \$93 million. Therefore, the total net loss for the year was \$17 million.

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

Item	Valuation as of June 30, 2013	Valuation as of June 30, 2014
<b>A. Calculation of Total Actuarial Gain or Loss</b>		
1. Unfunded actuarial accrued liability (UAAL), previous year	\$ 9,722,793,919	\$ 9,961,347,225
2. Normal cost for the year	\$ 1,200,123,046	\$ 1,177,164,609
3. Contributions for the year <sup>1</sup>	\$ (1,916,367,754)	\$ (2,014,581,194)
4. Interest at 8%		
a. On UAAL	777,823,514	796,907,778
b. On normal cost	96,009,844	47,086,584
c. On contributions	(76,654,710)	(80,583,248)
d. Total	\$ 797,178,648	\$ 763,411,114
5. Expected UAAL (Sum of Items 1 - 4)	\$ 9,803,727,859	\$ 9,887,341,754
6. Actual UAAL	\$ 9,961,347,225	\$ 9,903,897,264
7. Gain/(loss) for the year (Item 5 - Item 6)	\$ (157,619,366)	\$ (16,555,510)
<b>B. Source of Gains and Losses</b>		
8. Asset gain/(loss) for the year (Exhibits 3.4a and 3.4b, Item 9)	\$ (395,419,210)	\$ (110,133,819)
9. Asset gain/(loss) as a percentage of actuarial assets	-1.3%	-0.3%
10. PBI		
a. Excess Earnings Reserve for Fiscal Year 2013	\$ 0	\$ 0
b. Excess Earnings Reserve for Fiscal Year 2014	\$ 0	\$ 0
11. System gain/(loss) allocated to the Plan	\$ (7,081,530)	\$ (251,440)
12. Total actuarial accrued liability gain/(loss) for the year (Item 7 - Item 8 – Item 10a – Item 10b – Item 11)	\$ 244,881,374	\$ 93,829,749
13. Analysis of actuarial accrued liability gain/(loss)		
a. Legislative changes	\$ 355,595,664	\$ N/A
b. Assumption changes	(312,182,048)	N/A
c. Experience liability gain/(loss)	201,467,758	93,829,749
d. Total actuarial accrued liability gain/(loss)	\$ 244,881,374	\$ 93,829,749
14. Experience liability gain/(loss) as percentage of total actuarial liability (Items 11 and 13c as % of Item 5h of Exhibit 5.2)	0.47%	0.22%

<sup>1</sup> Does not include member reimbursements of member 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, 2013	\$ 9,961	22.96%	-
2. Expected Experience	9,892	22.65%	-0.31%
3. Delay in contribution rate change	9,887	22.64%	-0.01%
4. 2013/2014 liability experience	9,794	22.59%	-0.05%
5. 2013/2014 asset experience	9,904	22.70%	+0.11%
6. System experience allocated to the Plan	9,904	22.70%	+0.00%

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

Basis	Actuarial Accrued Liability
1. Valuation as of June 30, 2013	\$41,396,575,487
2. Expected Experience	1,523,016,753
3. Assumption and Plan Provisions Changes	0
4. System (Gain)/Loss allocated to the Plan	251,440
5. Liability (Gain)/Loss	(93,829,749)
6. Valuation as of June 30, 2014	\$42,826,013,931

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

Decrement	Annual Gain/(Loss) as of June 30, 2014	Total Gain/(Loss) Since July 1, 2013*
Active Mortality	\$ (1,711,719)	\$ (1,711,719)
Active Withdrawal	(16,930,957)	(16,930,957)
Active Disability	(1,942,972)	(1,942,972)
Active Retirement	33,367,382	33,367,382
New Entrants/Rehires	(62,221,382)	(62,221,382)
Salary	41,371,568	41,371,568
Inactive Mortality	61,343,639	61,343,639
Other	<u>40,554,190</u>	<u>40,554,190</u>
Total	\$ 93,829,749	\$ 93,829,749

\*Date of most recent experience study

## Section 7 – Permanent Benefit Increase (PBI)

Exhibit 7.1 shows the determination of the PBI for 2014. The determination of the "Excess Investment Earnings" held in reserve for future PBIs is shown in Items 12 through 14. As shown in Item 14c, no assets are available for future PBIs. Since the actuarial investment return (on the actuarial value of assets) of 7.64% is below 8% for fiscal year 2014, 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)

<b>Determination of PBI, EPBI effective July 1, 2015</b>		
1. Actuarial Present Value (APV) for all Retirees and Beneficiaries as of June 30, 2013 (401(a) only)		\$ 22,398,414,156
2. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2013		6.66%
3. Excess Earnings Available for PBI		
a. Carry-over From Prior Year		\$ 0
b. Current Year (Item 1 x [Item 2 - 8%])		0
c. Total Excess Earnings Available for PBI (Item 3.a + Item 3.b.)		\$ 0
4. One Percent of APV of all Retirees and Beneficiaries as of June 30, 2013		\$ 223,984,142
5. Preliminary PBI % (Item 3.c / Item 4)		0.0%
6. Actual PBI % (Item 5, but not greater than 4% and equal to 0% if less than 1%)		0.0%
7. Target Cost of 2014 PBI (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 2014 PBI (item 7 / Item 8)		0
10. Excess Investment Earnings to be Carried Forward to Next Year		0
11. Determination of EPBI (8% of 3c)		\$ 0
<b>Determination of Reserves for Future PBIs:</b>		
12. Actuarial Present Value (APV) for all Retirees and Beneficiaries as of June 30, 2014 (401(a) only)		\$ 23,372,573,046
13. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2014		7.64%
14. Excess Earnings Reserves for Future PBIs		
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 PBIs		\$ 0

## Exhibit 7.2 – Historical Permanent Benefit Increases

Valuation Year	PBI Amount	Valuation Year	PBI Amount
1996	\$11.88	2006	\$0.00
1997	\$19.07	2007	\$0.00
1998	\$10.96	2008	\$0.00
1999	\$10.71	2009	\$0.00
2000	\$29.49	2010	\$0.00
2001	\$29.79	2011	\$0.00
2002	\$31.40	2012	\$0.00
2003	\$35.43	2013	\$0.00
2004	\$35.30	2014	\$0.00
2005	\$25.90		

## Section 8 – Historical and CAFR Information

This section focuses on historical and required CAFR information.

### **Schedule of Funding Progress (401(a))**

The Schedule of Funding Progress shows a historical comparison of the 401(a) assets and liabilities using the 401(a) actuarial funding method.

### **Schedule of Employer Contributions (401(a))**

The Schedule of Employer Contributions compares the actual employer contributions to the actuarially-determined contributions, which equal the normal cost plus amortization of unfunded actuarial accrued liabilities, determined using the 401(a) actuarial funding method.

### **GASB 43 Schedule of Funding Progress (401(h))**

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

### **GASB 43 Schedule of Employer Contributions (401(h))**

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 plus amortization of unfunded actuarial accrued liabilities) which are determined using the 401(h) actuarial funding method.

### **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.

### Exhibit 8.1a - Schedule of Funding Progress (401(a))

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%
06/30/2014	31,548	41,349	9,801	76.3%	8,909	110.0%

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))

Fiscal Year	Actuarially-Determined 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%
2014	965,930,233	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 System members who retired or will retire on or after July 1, 1981.

### Exhibit 8.2a - Schedule of Funding Progress (401(h))

Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2) / (3)	Annual Covered Payroll	UAAL as % of Payroll (4) / (6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
06/30/2005	\$ 1,028	\$ 1,456	\$ 428	70.6%	\$ 8,032	5.3%
06/30/2006	\$ 1,085	\$ 1,505	\$ 420	72.1%	\$ 8,312	5.1%
06/30/2007	\$ 1,167	\$ 1,605	\$ 438	72.7%	\$ 9,162	4.8%
06/30/2008	\$ 1,239	\$ 1,446	\$ 207	85.7%	\$ 9,708	2.1%
06/30/2009	\$ 1,266	\$ 1,452	\$ 186	87.2%	\$ 9,835	1.9%
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%
06/30/2014	\$ 1,374	\$ 1,477	\$ 103	93.0%	\$ 8,909	1.2%

Note: Dollar amounts in millions.

## Exhibit 8.2b - Schedule of Employer Contributions (401(h))

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%
2014	\$ 53,405,674	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, 2014
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 of 3.00%	
Future Permanent Benefit Increases	Not Valued

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

	2014
Components of the normal cost are as follows:	
Retirement benefits	9.70%
Health insurance premium supplement	0.37%
Survivor benefits	0.22%
Withdrawals	2.74%
Long-term disability benefit	<u>0.37%</u>
Total normal cost	13.40%
Amortization of the UAAL	<u>9.30%</u>
Required contribution rate for FY 2016	22.70%

<sup>1</sup>Includes System liabilities and assets for System 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%)
2014	203,201	8,908,620,792	43,841	1.5%

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

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%
2014	7,743	150,590,436	19,449	2,692	41,360,235	15,364	119,459	2,383,715,145	19,954	4.8%

\* Includes PBIs.

### Exhibit 8.6b – Schedule of Plan Beneficiaries Added to and Removed from Rolls (401(a))

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%
2014	642	9,888,433	15,403	313	4,215,170	13,467	6,796	98,792,711	14,537	6.1%

\* Includes PBIs.

### Exhibit 8.6c – Schedule of Plan Retirees and Beneficiaries Added to and Removed from Rolls (401(a))

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%
2014	8,385	160,478,869	19,139	3,005	45,575,405	15,167	126,255	2,482,507,856	19,663	4.9%

\* Includes PBIs.

### Exhibit 8.6d - Schedule of Benefit Recipients Added to and Removed from Rolls (401(h))

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%
2014	5,609	8,620,656	1,537	3,350	8,597,436	2,566	67,186*	89,993,016	1,339	0.0%

\* Includes 608 System members receiving 401(h) benefits and 1,383 members receiving LTD benefits and 401(h) benefits.

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

Year Ended June 30	Aggregate Accrued Liabilities	Actuarial Value of Net Assets	Assets as a % of Accrued Liabilities	Unfunded (over) Accrued Liabilities – (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%
2014	42,826,013,931	32,922,116,667	76.9%	9,903,897,264	8,908,620,792	111.2%

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

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)	(2)	(3)		(1)	(2)	(3)
	Active and Inactive Member Contributions	Retirees and Beneficiaries	Active and Inactive Members (Employer Financed Portion)				
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
2014	10,780,693,824	24,689,077,682	5,879,545,497	31,547,987,085	100.0	84.1	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 System members who retired or will retire on or after July 1, 1981.

**Exhibit 8.8b – Solvency Test (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)	(2)	(3)		(1)	(2)	(3)
	Active and Inactive Member Contributions	Retirees and Beneficiaries	Active and Inactive Members(Employer Financed Portion)				
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
2014	0	734,450,033	742,246,895	1,374,129,582	100.0	100.0	86.2

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

**Exhibit 8.8c – Solvency Test (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)	(2)	(3)		(1)	(2)	(3)
	Active and Inactive Member Contributions	Retirees and Beneficiaries	Active and Inactive Members(Employer Financed Portion)				
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
2014	10,780,693,824	25,423,527,715	6,621,792,392	32,922,116,667	100.0	87.1	0.0

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

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%
2014	8,909,000,000	995,245,287	11.30%	11.30%

\* 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	Interest at 8% on Normal Cost <sup>1</sup>	Interest at 8% on Contributions	Total Interest	Expected UAAL	Actual UAAL	Gain (Loss) for the Year <sup>2</sup>
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)
2014	9,801.12	1,143.11	(1,961.18)	784.09	45.72	(78.45)	751.36	9,734.41	9,801.33	(66.92)

<sup>1</sup> Middle of year beginning in 2014, beginning of year prior to 2014.

<sup>2</sup> Gain/Loss includes assumption and plan changes.

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 8.10b – 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	Interest at 8% on Normal Cost <sup>1</sup>	Interest at 8% on Contributions	Total Interest	Expected UAAL	Actual UAAL	Gain (Loss) for the Year <sup>2</sup>
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
2014	160.23	34.05	(53.40)	12.82	1.36	(2.14)	12.04	152.92	102.57	50.35

<sup>1</sup> Middle of year beginning in 2014, beginning of year prior to 2014.

<sup>2</sup> Gain/Loss includes assumption and plan changes.

**Exhibit 8.10c – Analysis of Financial Experience for the Plan (millions) ((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	Interest at 8% on Normal Cost <sup>1</sup>	Interest at 8% on Contributions	Total Interest	Expected UAAL	Actual UAAL	Gain (Loss) for the Year <sup>2</sup>
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)
2014	9,961.35	1,177.16	(2,014.58)	796.91	47.09	(80.58)	763.42	9,887.35	9,903.90	(16.55)

<sup>1</sup> Middle of year beginning in 2014, beginning of year prior to 2014.

<sup>2</sup> Gain/Loss includes assumption and plan changes.

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 8.11 – Contributions Calculated and Received

Calculated Contributions Amounts and Rates – 401(a) and 401(h) and LTD***						
	For the Contribution Period Ending June 30, 2014 (2012 Valuation)		For the Contribution Period Ending June 30, 2015 (2013 Valuation)		For the Contribution Period Ending June 30, 2016 (2014 Valuation)	
401(a) Normal Cost	\$ 1,164,576,898	13.13%	\$ 1,143,109,197	13.06%	\$ 1,161,382,910	13.03%
401(a) Amortization of Unfunded Liability*	781,543,347	8.82%	814,868,064	9.31%	817,013,378	9.17%
401(a) Total	\$ 1,946,120,245	21.95%	\$ 1,957,977,261	22.37%	\$ 1,978,396,288	22.20%
401(h) Normal Cost	\$ 35,546,148	0.40%	\$ 34,055,412	0.39%	\$ 33,262,529	0.37%
401(h) Amortization of Unfunded Liability	18,137,008	0.20%	17,492,880	0.20%	11,584,943	0.13%
401(h) Total	\$ 53,683,156	0.60%	\$ 51,548,292	0.59%	\$ 44,847,472	0.50%
LTD Normal Cost	\$ 25,723,092	0.29%	\$ 15,925,104	0.18%	\$ 16,377,427	0.18%
LTD Amortization of Unfunded Liability**	15,568,722	0.18%	4,873,172	0.06%	5,565,759	0.06%
LTD Total	\$ 41,291,814	0.47%	\$ 20,798,276	0.24%	\$ 21,943,186	0.24%
Actuarial Total	\$ 2,041,095,215	23.02%	\$ 2,030,323,829	23.20%	\$ 2,045,186,946	22.94%

Actual Contributions Received – Amount and as a Percentage of Actual Covered Payroll		
	For the Contribution Period Ending June 30, 2014	
Employers' Retirement – 401(a)	\$ 965,930,233	10.70%
Members' Retirement – 401(a)	995,245,287	11.30%
Health Premium Benefit – 401(h)	53,405,674	0.60%
Employers' Long-Term Disability***	21,389,404	0.24%
Members' Long-Term Disability***	21,389,404	0.24%
Total	\$2,057,360,002	23.08%

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

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

\*\*\* LTD results are determined in a separate valuation.

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

# Section 9 – 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

8% per annum compounded annually, net of all expenses

2. Mortality – 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.

a. Pre-retirement

50% of 1994 GAM – Static, Projected to 2015 with Projection Scale BB, with no setback and no adjustment for amount of Plan/System income. 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 adjustment for benefit amount) after retirement 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/System income greater than \$14,400 and increased for members with annual Plan/System 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%

Post-retirement mortality rates for currently non-retired members are assumed to be the rates for non-disabled retirees unadjusted for amount of Plan/System income.

3. Disability Rates – 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 – Rates by completed years of service are shown below (for causes other than death, disability, or retirement).

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 – 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 Rates – 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:	Age	0-3	11-18	25	31+
	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

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

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

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. Prior to the June 30, 2013 valuation, no adjustment was made for alternate contribution rate payments.

14. Adjustment for Contribution Timing

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. Prior to the June 30, 2013 valuation, no adjustment was made for contribution rate timing.

15. Future Permanent Benefit Increases (PBIs)

Future PBIs are not valued for funding purposes.

**B. Actuarial Value of Assets**

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

**C. Actuarial Funding Method**

Costs are determined under the projected unit-credit method. The ASRS Board determines the method of amortizing the unfunded actuarial accrued liability. Beginning with the June 30, 2013 valuation, the period is a closed 30-year period for the 401(a) portion of the Plan and a closed 15-year period for the 401(h) portion.

**D. Data for Valuation**

In preparing the actuarial valuation as of June 30, 2014, 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.

# Section 10 – Plan Provisions

## Summary of the Benefit Provisions of the Retirement Plan as of June 30, 2014

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.

Years of Credited Service	Benefit Multiplier
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,
- b. or 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) at 8%.

#### **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 refund option for members hired on or after July 1, 2011 who are not terminated due to an Employer Reduction in Force or position elimination, or,

c. 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.

The refund option is the same as the enhanced refund option except it does not include any share of the employer contributions with interest.

## **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%).

## **G. Automatic Benefit Adjustments Based On Excess Investment Earnings**

### **Permanent Benefit Increase (PBI)**

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

### **Permanent Benefit Increase Enhancement (EPBI)**

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 PBIs and enhanced PBIs 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 2015 is 11.48% for each member and each employer, based on the 2013 actuarial valuation. The contribution rate for fiscal year 2016 will be 11.35% 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.

# Section 11 – Historical Changes to the Plan 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 pre-deceases them.

4. Excess Investment Earnings COLA

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

**Z. Legislated Plan Changes Enacted by the 2014 Legislature of the State of Arizona**

1. Charter Schools

The legislation allows charter schools that obtain their charters through a university to become members of the ASRS retroactive to July 1, 2011.

2. Section 218 Agreements

The legislation eliminates the requirement that employees of ASRS employers must be covered by the state's Section 218 agreement with the Social Security Administration. It also repeals the ASRS defined contribution plan established by Laws 013, Chapter 216.

3. Elected Officials

Retroactive to January 1, 2014, a state elected official who was elected or appointed before December 31, 2013, and who is a member of ASRS because he previously elected not to participate in the Elected Officials' Retirement Plan (EORP) is no longer required to elect to continue or resume participation in ASRS in writing and is a member of ASRS without election.

4. Applicable Interest Rate

The legislation confirms the ASRS practice of using a "stability period" to set and maintain the "applicable interest rate" for a year. The look-back month that is used to determine the applicable interest rate is the third full calendar month preceding the first day of the stability period.

5. Compensation for LTD Benefit Determinations

The legislation changes the definition of "monthly compensation" to be the median of the last six pay periods of compensation, excluding the highest two and lowest two such pay periods. If the member was employed for fewer than six pay periods, "monthly compensation" is the median monthly compensation based on the pay periods that the member worked.

6. Background Checks

The legislation allows ASRS to perform background and credit checks on current and prospective employees.

## Section 12 – Member Data

**Exhibit 12.1 – ASRS Members Missing Date of Birth and Gender 2010 - 2014**

Date of Birth					
	6/30/2010	6/30/2011	6/30/2012	6/30/2013	6/30/2014
Active	4,224	3,627	4,442	2,982	2,698
New	1,918	2,845	2,867	1,720	1,887
Continuing	2,306	782	1,575	1,262	811
Inactive	39,833	38,065	29,075	28,444	27,256
New	536	457	478	387	422
Continuing	39,297	37,608	28,597	28,057	26,834
Retired	0	0	0	0	0
New	0	0	0	0	0
Continuing	0	0	0	0	0
Total	44,057	41,692	33,517	31,426	29,954
Total New	2,454	3,302	3,345	2,107	2,309
Total Continuing	41,603	38,390	30,172	29,319	27,645
Actives Average Svc	2.4	1.1	1.2	1.4	1.2
Inactives Average Svc	0.7	0.7	0.7	0.7	0.7
Gender					
	6/30/2010	6/30/2011	6/30/2012	6/30/2013	6/30/2014
Active	3,327	3,734	4,515	2,978	2,604
New	2,015	2,930	2,903	1,730	1,871
Continuing	1,312	804	1,612	1,248	733
Inactive	39,303	36,821	36,286	35,485	3,520
New	564	480	510	419	422
Continuing	38,739	36,341	35,776	35,066	3,098
Retired	85	0	0	0	0
New	67	0	0	0	0
Continuing	18	0	0	0	0
Total	42,715	40,555	40,801	38,463	6,124
Total New	2,646	3,410	3,413	2,149	2,293
Total Continuing	40,069	37,145	37,388	36,314	3,831
Actives Average Svc	1.2	1.0	1.2	1.4	1.2
Inactives Average Svc	0.6	0.6	0.6	0.6	0.7

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 12.2 - 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, 2013	As of June 30, 2014	As of June 30, 2013	As of June 30, 2014	As of June 30, 2013	As of June 30, 2014	As of June 30, 2013	As of June 30, 2014
<b>Higher Education Members:</b>								
Male	9,387	9,434	47.0	46.9	10.0	10.0	\$ 56,865	\$ 57,386
Female	13,870	14,045	46.6	46.5	10.1	10.0	49,066	50,019
Total	23,257	23,479	46.8	46.7	10.1	10.0	\$ 52,214	\$ 52,979
<b>Other Education Members:</b>								
Male	27,908	27,739	45.6	45.5	9.0	9.1	\$ 40,898	\$ 41,330
Female	82,661	82,407	44.7	44.6	9.4	9.4	36,127	36,468
Total	110,569	110,146	44.9	44.8	9.3	9.3	\$ 37,331	\$ 37,692
<b>City Members:</b>								
Male	9,406	9,546	46.2	46.3	10.3	10.2	\$ 57,782	\$ 58,328
Female	6,956	6,922	45.5	45.5	10.6	10.6	50,965	52,010
Total	16,362	16,468	45.9	46.0	10.4	10.4	\$ 54,884	\$ 55,672
<b>County Members:</b>								
Male	8,039	8,133	48.0	48.0	10.0	9.9	\$ 52,736	\$ 53,702
Female	12,878	12,789	46.3	46.4	9.7	9.9	43,143	44,172
Total	20,917	20,922	47.0	47.0	9.8	9.9	\$ 46,830	\$ 47,877
<b>State Members:</b>								
Male	9,079	9,338	48.5	48.1	10.3	9.8	\$ 52,302	\$ 53,352
Female	16,188	16,654	46.7	46.5	10.5	10.1	42,895	43,777
Total	25,267	25,992	47.3	47.1	10.4	10.0	\$ 46,275	\$ 47,217
<b>Political Subdivision Members:</b>								
Male	2,458	2,374	46.5	46.4	8.0	8.3	\$ 64,169	\$ 66,671
Female	3,863	3,820	45.5	45.5	7.4	7.4	53,392	54,713
Total	6,321	6,194	45.9	45.8	7.6	7.7	\$ 57,583	\$ 59,296
<b>All Active Plan Members:</b>								
Male	66,277	66,564	46.6	46.5	9.6	9.5	\$ 49,417	\$ 50,145
Female	136,416	136,637	45.3	45.3	9.6	9.6	40,154	40,771
Total	202,693	203,201	45.7	45.7	9.6	9.6	\$ 43,182	\$ 43,841

## Exhibit 12.3 – Summary of Retired Membership

	June 30, 2013	June 30, 2014
<b>Higher Education Members</b>		
Number	14,117	14,765
Total Monthly Allowance	\$ 25,737,980	\$ 27,147,031
Average Monthly Allowance	\$ 1,823	\$ 1,839
Average Age	71.2	71.3
Average Years of Service	19.3	19.3
<b>Other Education Members</b>		
Number	64,491	67,264
Total Monthly Allowance	\$ 109,712,853	\$ 114,250,804
Average Monthly Allowance	\$ 1,701	\$ 1,699
Average Age	69.8	70.0
Average Years of Service	20.3	20.2
<b>City Members</b>		
Number	7,806	8,291
Total Monthly Allowance	\$ 14,294,520	\$ 15,346,564
Average Monthly Allowance	\$ 1,831	\$ 1,851
Average Age	67.8	68.1
Average Years of Service	19.1	19.2
<b>County Members</b>		
Number	13,065	13,622
Total Monthly Allowance	\$ 17,292,795	\$ 18,281,169
Average Monthly Allowance	\$ 1,324	\$ 1,342
Average Age	70.1	70.4
Average Years of Service	17.0	17.1
<b>State Members</b>		
Number	19,773	20,539
Total Monthly Allowance	\$ 27,669,435	\$ 28,930,373
Average Monthly Allowance	\$ 1,399	\$ 1,409
Average Age	70.2	70.4
Average Years of Service	18.4	18.5
<b>Political Subdivision Members</b>		
Number	1,623	1,774
Total Monthly Allowance	\$ 2,592,782	\$ 2,919,715
Average Monthly Allowance	\$ 1,598	\$ 1,646
Average Age	68.4	68.4
Average Years of Service	16.3	16.4
<b>Total</b>		
Number <sup>1, 2</sup>	120,875	126,255
Total Monthly Allowance	\$ 197,300,365	\$ 206,875,656
Average Monthly Allowance	\$ 1,632	\$ 1,639
Average Age	69.9	70.1
Average Years of Service	19.4	19.4

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

<sup>2</sup> For 2014, total number includes 114,341 service retirees, 3,903 members who retired from disabled status, 6,796 beneficiaries and 1,215 QDROs.

## Exhibit 12.4 – Summary of Inactive Membership

	June 30, 2013	June 30, 2014
<b>Higher Education Members</b>		
Number	26,228	26,688
<b>Other Education Members</b>		
Number	114,930	117,358
<b>City Members</b>		
Number	11,846	11,857
<b>County Members</b>		
Number	25,140	24,772
<b>State Members</b>		
Number	30,835	30,277
<b>Political Subdivision Members</b>		
Number	<u>4,079</u>	<u>4,373</u>
<b>Total</b>		
Number	213,058	215,325

**Exhibit 12.5a**

**Distribution of Active Members by Age and Years of Service**

**Higher Education Members**

**Count and Average Salary**

**as of June 30, 2014**

Current Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Below 19	7	0	0	0	0	0	0	0	0	7
	\$ 7,737	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 7,737
20-24	622	11	0	0	0	0	0	0	0	633
	\$ 23,505	\$ 26,233	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 23,552
25-29	1,488	340	7	0	0	0	0	0	0	1,835
	\$ 32,458	\$ 38,534	\$ 50,615	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 33,653
30-34	1,276	855	235	11	0	0	0	0	0	2,377
	\$ 41,492	\$ 45,643	\$ 47,696	\$ 50,093	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 43,638
35-39	970	832	579	145	3	0	0	0	0	2,529
	\$ 43,094	\$ 52,983	\$ 57,171	\$ 61,328	\$ 48,834	\$ 0	\$ 0	\$ 0	\$ 0	\$ 50,622
40-44	938	819	626	437	76	3	0	0	0	2,899
	\$ 44,129	\$ 55,160	\$ 61,097	\$ 66,016	\$ 66,254	\$ 84,495	\$ 0	\$ 0	\$ 0	\$ 54,830
45-49	843	727	563	452	320	120	7	0	0	3,032
	\$ 41,123	\$ 54,482	\$ 58,796	\$ 63,833	\$ 68,241	\$ 68,222	\$ 77,628	\$ 0	\$ 0	\$ 55,012
50-54	831	729	597	515	435	296	75	6	6	3,484
	\$ 42,726	\$ 53,004	\$ 58,359	\$ 64,340	\$ 72,673	\$ 69,942	\$ 68,986	\$ 91,687	\$ 57,451	\$ 57,451
55-59	620	639	564	532	440	277	156	34	34	3,262
	\$ 45,370	\$ 54,984	\$ 58,617	\$ 61,373	\$ 69,177	\$ 80,725	\$ 75,138	\$ 77,387	\$ 60,124	\$ 60,124
60-64	397	430	428	382	297	219	118	83	83	2,354
	\$ 48,443	\$ 54,073	\$ 58,679	\$ 62,611	\$ 68,917	\$ 77,094	\$ 80,443	\$ 91,928	\$ 62,018	\$ 62,018
65-69	128	171	171	116	76	73	32	58	58	825
	\$ 39,133	\$ 55,649	\$ 60,482	\$ 64,190	\$ 71,711	\$ 84,197	\$ 90,428	\$ 94,343	\$ 63,364	\$ 63,364
70 & Over	33	58	41	23	31	26	5	25	25	242
	\$ 34,357	\$ 51,428	\$ 48,172	\$ 71,111	\$ 73,458	\$ 87,825	\$ 104,562	\$ 92,741	\$ 62,517	\$ 62,517
<b>Total</b>	8,153	5,611	3,811	2,613	1,678	1,014	393	206	23,479	23,479
	\$ 39,591	\$ 51,828	\$ 58,081	\$ 63,502	\$ 69,884	\$ 75,757	\$ 77,220	\$ 90,300	\$ 52,979	\$ 52,979

**Exhibit 12.5b**  
**Distribution of Active Members by Age and Years of Service**  
**Other Education Members**  
**Count and Average Salary**  
**as of June 30, 2014**

Current Age	Years Of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Below 19	359	0	0	0	0	0	0	0	0	359
	\$ 11,037	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 11,037
20-24	4,754	113	0	0	0	0	0	0	0	4,867
	\$ 25,100	\$ 21,668	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 25,020
25-29	7,429	2,414	64	0	0	0	0	0	0	9,907
	\$ 33,465	\$ 37,519	\$ 33,197	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 34,451
30-34	4,724	5,354	1,670	40	0	0	0	0	0	11,788
	\$ 30,957	\$ 42,329	\$ 45,995	\$ 42,521	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 38,292
35-39	4,271	3,640	3,712	942	7	0	0	0	0	12,572
	\$ 27,907	\$ 39,901	\$ 49,323	\$ 53,349	\$ 43,217	\$ 0	\$ 0	\$ 0	\$ 0	\$ 39,618
40-44	4,493	3,723	3,026	2,814	647	18	0	0	0	14,721
	\$ 26,300	\$ 35,505	\$ 46,211	\$ 56,507	\$ 59,756	\$ 53,456	\$ 0	\$ 0	\$ 0	\$ 39,999
45-49	3,784	3,586	2,789	2,364	1,802	484	17	0	0	14,826
	\$ 25,195	\$ 32,454	\$ 40,808	\$ 50,408	\$ 61,590	\$ 63,894	\$ 53,307	\$ 0	\$ 0	\$ 39,627
50-54	3,366	3,362	3,216	2,505	1,716	1,532	222	2	2	15,921
	\$ 25,118	\$ 31,133	\$ 37,726	\$ 44,784	\$ 54,787	\$ 65,474	\$ 68,160	\$ 73,217	\$ 73,217	\$ 39,716
55-59	2,694	2,533	2,675	2,455	1,735	955	369	73	73	13,489
	\$ 25,181	\$ 30,896	\$ 37,615	\$ 41,693	\$ 49,185	\$ 58,635	\$ 66,336	\$ 57,277	\$ 57,277	\$ 38,481
60-64	1,650	1,801	1,559	1,345	918	576	190	117	117	8,156
	\$ 24,172	\$ 31,654	\$ 37,638	\$ 42,252	\$ 47,938	\$ 55,512	\$ 60,249	\$ 65,661	\$ 65,661	\$ 37,704
65-69	785	629	448	248	184	97	43	31	31	2,465
	\$ 19,695	\$ 26,946	\$ 37,146	\$ 40,089	\$ 46,114	\$ 54,123	\$ 55,604	\$ 60,799	\$ 60,799	\$ 31,239
70 & Over	344	361	213	77	36	22	11	11	11	1,075
	\$ 14,773	\$ 19,275	\$ 25,983	\$ 29,098	\$ 33,436	\$ 40,791	\$ 36,677	\$ 58,487	\$ 58,487	\$ 21,361
<b>Total</b>	38,653	27,516	19,372	12,790	7,045	3,684	852	234	234	110,146
	\$ 27,518	\$ 35,517	\$ 42,250	\$ 47,981	\$ 54,364	\$ 61,431	\$ 64,269	\$ 62,129	\$ 62,129	\$ 37,692

**Exhibit 12.5c**  
**Distribution of Active Members by Age and Years of Service**  
**City Members**  
**Count and Average Salary**  
**as of June 30, 2014**

Current Age	Years Of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Below 19	76	0	0	0	0	0	0	0	0	76
	\$ 16,501	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 16,501
20-24	546	18	0	0	0	0	0	0	0	564
	\$ 25,238	\$ 32,713	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 25,477
25-29	685	350	17	0	0	0	0	0	0	1,052
	\$ 37,389	\$ 40,548	\$ 42,565	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 38,524
30-34	658	644	274	18	0	0	0	0	0	1,594
	\$ 42,343	\$ 49,463	\$ 51,950	\$ 43,970	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 46,889
35-39	595	625	430	160	9	0	0	0	0	1,819
	\$ 45,822	\$ 56,449	\$ 59,031	\$ 60,389	\$ 62,928	\$ 0	\$ 0	\$ 0	\$ 0	\$ 53,962
40-44	530	628	544	381	92	8	0	0	0	2,183
	\$ 46,984	\$ 55,380	\$ 64,095	\$ 68,419	\$ 68,156	\$ 68,156	\$ 0	\$ 0	\$ 0	\$ 58,374
45-49	475	629	510	440	230	136	15	0	0	2,435
	\$ 49,356	\$ 56,271	\$ 60,992	\$ 69,333	\$ 73,107	\$ 73,763	\$ 76,918	\$ 0	\$ 0	\$ 60,966
50-54	487	597	528	481	355	283	60	4	4	2,795
	\$ 48,355	\$ 55,326	\$ 59,532	\$ 68,214	\$ 73,433	\$ 77,306	\$ 77,692	\$ 61,730	\$ 61,730	\$ 62,138
55-59	397	523	418	409	274	181	57	11	11	2,270
	\$ 47,791	\$ 56,235	\$ 61,102	\$ 64,488	\$ 72,020	\$ 78,457	\$ 79,932	\$ 80,040	\$ 80,040	\$ 61,529
60-64	184	300	264	234	117	106	42	13	13	1,260
	\$ 40,830	\$ 57,205	\$ 61,346	\$ 65,155	\$ 64,503	\$ 78,499	\$ 72,184	\$ 74,731	\$ 74,731	\$ 60,307
65-69	54	101	79	46	24	14	7	2	2	327
	\$ 28,890	\$ 54,339	\$ 65,842	\$ 57,487	\$ 74,632	\$ 89,894	\$ 77,252	\$ 63,085	\$ 63,085	\$ 56,914
70 & Over	22	31	17	13	6	4	0	0	0	93
	\$ 33,201	\$ 37,232	\$ 49,034	\$ 41,892	\$ 63,237	\$ 73,538	\$ 0	\$ 0	\$ 0	\$ 42,326
<b>Total</b>	4,709	4,446	3,081	2,182	1,107	732	181	30	30	16,468
	\$ 41,716	\$ 53,606	\$ 60,214	\$ 66,292	\$ 71,518	\$ 77,225	\$ 77,038	\$ 74,168	\$ 74,168	\$ 55,672

**Exhibit 12.5d**  
**Distribution of Active Members by Age and Years of Service**  
**County Members**  
**Count and Average Salary**  
**as of June 30, 2014**

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	0	18
	\$ 19,769	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 19,769
20-24	578	11	0	0	0	0	0	0	0	589
	\$ 29,167	\$ 31,982	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 29,220
25-29	1,198	285	19	0	0	0	0	0	0	1,502
	\$ 36,256	\$ 35,007	\$ 35,556	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 36,010
30-34	1,078	721	238	12	0	0	0	0	0	2,049
	\$ 39,401	\$ 45,622	\$ 42,274	\$ 41,247	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 41,935
35-39	809	726	447	145	6	0	0	0	0	2,133
	\$ 40,281	\$ 47,322	\$ 51,725	\$ 46,397	\$ 57,822	\$ 0	\$ 0	\$ 0	\$ 0	\$ 45,541
40-44	831	684	513	361	104	4	0	0	0	2,497
	\$ 41,734	\$ 47,278	\$ 52,678	\$ 56,698	\$ 55,759	\$ 57,530	\$ 0	\$ 0	\$ 0	\$ 48,274
45-49	744	635	519	443	263	133	9	0	0	2,746
	\$ 41,080	\$ 45,328	\$ 51,337	\$ 58,854	\$ 58,992	\$ 56,937	\$ 62,637	\$ 0	\$ 0	\$ 49,423
50-54	727	691	605	432	369	251	52	5	5	3,132
	\$ 43,205	\$ 44,744	\$ 51,444	\$ 57,119	\$ 61,958	\$ 65,604	\$ 57,478	\$ 58,322	\$ 58,322	\$ 51,321
55-59	696	680	586	474	353	251	116	40	40	3,196
	\$ 43,926	\$ 46,796	\$ 51,499	\$ 56,463	\$ 61,711	\$ 67,699	\$ 67,602	\$ 66,678	\$ 66,678	\$ 52,760
60-64	384	491	450	340	246	169	69	47	47	2,196
	\$ 45,112	\$ 46,621	\$ 51,937	\$ 56,371	\$ 60,184	\$ 64,903	\$ 64,413	\$ 68,836	\$ 68,836	\$ 52,917
65-69	116	172	144	84	67	48	19	23	23	673
	\$ 41,599	\$ 48,441	\$ 51,447	\$ 60,911	\$ 58,653	\$ 73,312	\$ 76,670	\$ 75,589	\$ 75,589	\$ 53,977
70 & Over	35	52	47	23	19	9	3	3	3	191
	\$ 45,235	\$ 35,844	\$ 43,798	\$ 55,855	\$ 51,298	\$ 67,765	\$ 75,528	\$ 71,544	\$ 71,544	\$ 46,157
<b>Total</b>	7,214	5,148	3,568	2,314	1,427	865	268	118	118	20,922
	\$ 39,738	\$ 45,557	\$ 50,915	\$ 56,512	\$ 60,278	\$ 65,155	\$ 65,381	\$ 69,044	\$ 69,044	\$ 47,877

**Exhibit 12.5e**

**Distribution of Active Members by Age and Years of Service**

**State Members**

**Count and Average Salary**

**as of June 30, 2014**

Current Age	Years Of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Below 19	16	0	0	0	0	0	0	0	0	16
	\$ 23,396	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 23,396
20-24	617	16	0	0	0	0	0	0	0	633
	\$ 31,402	\$ 30,574	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 31,381
25-29	1,568	343	13	0	0	0	0	0	0	1,924
	\$ 38,119	\$ 39,294	\$ 35,549	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 38,311
30-34	1,438	831	263	16	0	0	0	0	0	2,548
	\$ 40,103	\$ 47,035	\$ 44,347	\$ 44,434	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 42,829
35-39	1,172	757	508	167	4	0	0	0	0	2,608
	\$ 42,620	\$ 49,511	\$ 51,106	\$ 50,064	\$ 50,597	\$ 0	\$ 0	\$ 0	\$ 0	\$ 46,762
40-44	1,118	766	613	444	135	3	0	0	0	3,079
	\$ 43,233	\$ 49,351	\$ 49,156	\$ 52,428	\$ 53,428	\$ 39,496	\$ 0	\$ 0	\$ 0	\$ 47,704
45-49	1,064	723	572	605	388	137	9	0	0	3,498
	\$ 42,909	\$ 48,693	\$ 50,524	\$ 50,581	\$ 58,521	\$ 54,589	\$ 48,705	\$ 0	\$ 0	\$ 48,881
50-54	999	756	674	625	498	380	96	6	6	4,034
	\$ 43,377	\$ 48,150	\$ 47,158	\$ 50,263	\$ 53,917	\$ 59,794	\$ 56,012	\$ 57,110	\$ 0	\$ 49,139
55-59	825	744	654	640	506	356	128	56	56	3,909
	\$ 44,036	\$ 47,830	\$ 47,789	\$ 50,481	\$ 54,210	\$ 56,062	\$ 60,797	\$ 58,582	\$ 0	\$ 49,611
60-64	475	544	495	410	323	203	105	74	74	2,629
	\$ 47,072	\$ 48,135	\$ 50,444	\$ 51,005	\$ 53,602	\$ 55,113	\$ 57,990	\$ 57,209	\$ 0	\$ 50,685
65-69	131	199	148	118	97	66	33	42	42	834
	\$ 56,164	\$ 51,708	\$ 52,757	\$ 51,295	\$ 54,672	\$ 55,943	\$ 59,120	\$ 64,155	\$ 0	\$ 54,136
70 & Over	47	51	49	45	43	20	10	15	15	280
	\$ 46,083	\$ 54,763	\$ 45,246	\$ 44,103	\$ 49,268	\$ 50,380	\$ 55,934	\$ 64,266	\$ 0	\$ 49,321
<b>Total</b>	9,470	5,730	3,989	3,070	1,994	1,165	381	193	193	25,992
	\$ 41,465	\$ 47,957	\$ 48,923	\$ 50,691	\$ 54,733	\$ 56,794	\$ 58,259	\$ 59,664	\$ 0	\$ 47,217

**Exhibit 12.5f**  
**Distribution of Active Members by Age and Years of Service**  
**Political Subdivision Members**  
**Count and Average Salary**  
**as of June 30, 2014**

Current Age	Years Of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Below 19	14	0	0	0	0	0	0	0	0	14
	\$ 20,081	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 20,081
20-24	218	3	0	0	0	0	0	0	0	221
	\$ 30,606	\$ 28,416	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 30,576
25-29	428	79	4	0	0	0	0	0	0	511
	\$ 41,762	\$ 42,774	\$ 34,551	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 41,862
30-34	404	184	45	1	0	0	0	0	0	634
	\$ 48,340	\$ 56,352	\$ 55,838	\$ 40,718	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 51,185
35-39	365	238	93	23	1	0	0	0	0	720
	\$ 52,416	\$ 62,417	\$ 59,261	\$ 59,164	\$ 41,175	\$ 0	\$ 0	\$ 0	\$ 0	\$ 56,806
40-44	335	211	123	71	9	0	0	0	0	749
	\$ 52,170	\$ 66,483	\$ 64,904	\$ 76,521	\$ 59,595	\$ 0	\$ 0	\$ 0	\$ 0	\$ 60,691
45-49	284	233	113	86	31	17	1	0	0	765
	\$ 52,990	\$ 64,597	\$ 68,415	\$ 68,302	\$ 84,353	\$ 86,294	\$ 54,234	\$ 0	\$ 0	\$ 62,538
50-54	284	263	156	112	76	53	6	0	0	950
	\$ 54,588	\$ 65,007	\$ 65,613	\$ 70,421	\$ 87,381	\$ 88,299	\$126,288	\$ 0	\$ 0	\$ 66,106
55-59	252	210	162	123	55	54	17	9	0	882
	\$ 52,867	\$ 67,694	\$ 67,222	\$ 80,390	\$ 82,633	\$ 97,790	\$ 75,876	\$ 71,184	\$ 0	\$ 68,109
60-64	121	154	87	75	56	28	17	9	0	547
	\$ 49,322	\$ 68,608	\$ 63,034	\$ 71,396	\$ 74,063	\$ 96,249	\$ 88,048	\$ 94,307	\$ 0	\$ 66,838
65-69	34	44	38	20	7	3	4	2	0	152
	\$ 52,158	\$ 74,282	\$ 70,955	\$ 64,097	\$ 90,379	\$105,326	\$ 67,119	\$139,589	\$ 0	\$ 69,186
70 & Over	12	12	8	9	3	3	2	0	0	49
	\$ 30,682	\$ 46,523	\$ 22,789	\$ 33,414	\$ 44,028	\$207,141	\$ 42,667	\$ 0	\$ 0	\$ 45,884
<b>Total</b>	2,751	1,631	829	520	238	158	47	20	0	6,194
	\$ 48,328	\$ 63,441	\$ 64,372	\$ 71,963	\$ 81,053	\$ 95,316	\$ 84,095	\$ 88,430	\$ 0	\$ 59,296

## Exhibit 12.5g

### Distribution of Active Members by Age and Years of Service

#### Total Active Members Count and Average Salary as of June 30, 2014

Current Age	Years Of Service								Total	
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over		
Below 19	490	0	0	0	0	0	0	0	0	490
	\$ 12,820	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 12,820
20-24	7,335	172	0	0	0	0	0	0	0	7,507
	\$ 25,989	\$ 24,722	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 25,960
25-29	12,796	3,811	124	0	0	0	0	0	0	16,731
	\$ 34,667	\$ 37,969	\$ 36,116	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 35,430
30-34	9,578	8,589	2,725	98	0	0	0	0	0	20,990
	\$ 36,199	\$ 44,226	\$ 46,419	\$ 43,775	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 40,846
35-39	8,182	6,818	5,769	1,582	30	0	0	0	0	22,381
	\$ 35,435	\$ 45,658	\$ 51,337	\$ 53,893	\$ 53,529	\$ 0	\$ 0	\$ 0	\$ 0	\$ 43,977
40-44	8,245	6,831	5,445	4,508	1,063	36	0	0	0	26,128
	\$ 34,561	\$ 43,377	\$ 51,072	\$ 58,365	\$ 59,751	\$ 58,599	\$ 0	\$ 0	\$ 0	\$ 45,472
45-49	7,194	6,533	5,066	4,390	3,034	1,027	58	0	0	27,302
	\$ 34,017	\$ 41,393	\$ 47,631	\$ 54,914	\$ 62,780	\$ 63,935	\$ 63,098	\$ 0	\$ 0	\$ 46,052
50-54	6,694	6,398	5,776	4,670	3,449	2,795	511	23	0	30,316
	\$ 34,934	\$ 40,756	\$ 45,142	\$ 51,843	\$ 60,322	\$ 66,817	\$ 66,714	\$ 68,598	\$ 0	\$ 47,101
55-59	5,484	5,329	5,059	4,633	3,363	2,074	843	223	0	27,008
	\$ 35,588	\$ 42,114	\$ 45,769	\$ 49,717	\$ 56,279	\$ 64,990	\$ 68,410	\$ 64,041	\$ 0	\$ 47,300
60-64	3,211	3,720	3,283	2,786	1,957	1,301	541	343	0	17,142
	\$ 34,967	\$ 42,222	\$ 46,851	\$ 50,763	\$ 55,334	\$ 63,052	\$ 66,547	\$ 71,724	\$ 0	\$ 47,574
65-69	1,248	1,316	1,028	632	455	301	138	158	0	5,276
	\$ 28,835	\$ 40,914	\$ 48,733	\$ 51,398	\$ 56,245	\$ 67,050	\$ 68,852	\$ 77,184	\$ 0	\$ 45,466
70 & Over	493	565	375	190	138	84	31	54	0	1,930
	\$ 22,441	\$ 28,868	\$ 34,136	\$ 42,056	\$ 51,345	\$ 68,023	\$ 57,984	\$ 76,676	\$ 0	\$ 34,665
<b>Total</b>	70,950	50,082	34,650	23,489	13,489	7,618	2,122	801	0	203,201
	\$ 33,759	\$ 42,315	\$ 47,778	\$ 53,134	\$ 58,854	\$ 65,272	\$ 67,258	\$ 70,906	\$ 0	\$ 43,841

**Exhibit 12.6a**

**Distribution of Retired Members and Beneficiaries by Age and Years of Service**

**Higher Education Members**

**Count and Average Monthly Annuity**

**as of June 30, 2014**

Current Age	Years Of Service										Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+	
Under 55	2	23	37	37	40	69	57	4	0	0	269
	\$ 97	\$ 254	\$ 535	\$ 690	\$ 986	\$ 2,354	\$ 3,702	\$ 3,121	\$ 0	\$ 0	\$ 1,772
55-59	3	75	146	81	167	278	218	22	1	0	991
	\$ 180	\$ 337	\$ 609	\$ 834	\$ 1,874	\$ 2,739	\$ 3,782	\$ 5,067	\$10,572	\$ 0	\$ 2,223
60-64	8	269	367	305	488	429	436	90	8	0	2,400
	\$ 462	\$ 351	\$ 744	\$ 1,153	\$ 1,887	\$ 2,790	\$ 3,887	\$ 4,711	\$ 5,587	\$ 0	\$ 2,085
65-69	269	533	595	466	623	493	494	142	33	3	3,651
	\$ 157	\$ 424	\$ 788	\$ 1,332	\$ 1,959	\$ 2,747	\$ 3,899	\$ 5,465	\$ 6,952	\$ 4,430	\$ 1,884
70-74	226	449	498	387	459	350	286	117	46	4	2,822
	\$ 124	\$ 395	\$ 803	\$ 1,212	\$ 1,829	\$ 2,770	\$ 3,918	\$ 4,910	\$ 6,149	\$ 7,412	\$ 1,733
75-79	129	259	359	318	297	241	197	76	32	4	1,912
	\$ 123	\$ 389	\$ 797	\$ 1,228	\$ 1,953	\$ 2,686	\$ 3,855	\$ 4,710	\$ 5,773	\$ 8,820	\$ 1,756
80-84	88	233	266	213	195	184	119	41	12	2	1,353
	\$ 136	\$ 392	\$ 807	\$ 1,318	\$ 2,084	\$ 2,800	\$ 3,405	\$ 4,049	\$ 5,961	\$ 7,841	\$ 1,610
85-89	40	136	190	158	130	116	69	25	4	4	872
	\$ 174	\$ 410	\$ 836	\$ 1,365	\$ 2,079	\$ 2,765	\$ 3,485	\$ 3,935	\$ 7,463	\$ 6,662	\$ 1,633
90-94	15	54	94	89	71	38	32	12	3	1	409
	\$ 133	\$ 390	\$ 924	\$ 1,351	\$ 1,768	\$ 2,522	\$ 3,461	\$ 3,473	\$ 5,467	\$ 4,984	\$ 1,529
95 & Over	3	24	15	14	13	9	5	1	2	0	86
	\$ 159	\$ 435	\$ 813	\$ 1,235	\$ 1,726	\$ 2,639	\$ 2,232	\$ 3,883	\$ 3,464	\$ 0	\$ 1,262
<b>Total</b>	783	2,055	2,567	2,068	2,483	2,207	1,913	530	141	18	14,765
	\$ 143	\$ 393	\$ 783	\$ 1,237	\$ 1,908	\$ 2,740	\$ 3,818	\$ 4,842	\$ 6,220	\$ 6,974	\$ 1,839

**Exhibit 12.6b**

**Distribution of Retired Members and Beneficiaries by Age and Years of Service**

**Other Education Members**

**Count and Average Monthly Annuity**

**as of June 30, 2014**

Current Age	Years Of Service										Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+	
Under 55	9	83	153	121	101	443	415	6	2	0	1,333
	\$ 87	\$ 198	\$ 391	\$ 556	\$ 1,057	\$ 2,619	\$ 3,362	\$ 2,147	\$ 2,693	\$ 0	\$ 2,119
55-59	4	359	502	363	865	1,539	1,902	48	1	0	5,583
	\$ 137	\$ 219	\$ 493	\$ 752	\$ 1,677	\$ 2,612	\$ 3,655	\$ 4,008	\$ 2,555	\$ 0	\$ 2,367
60-64	6	1,236	1,583	1,476	2,617	2,587	3,346	336	27	2	13,216
	\$ 146	\$ 288	\$ 639	\$ 1,008	\$ 1,695	\$ 2,470	\$ 3,552	\$ 4,416	\$ 4,027	\$ 5,821	\$ 2,056
65-69	895	2,460	2,525	2,072	2,915	2,980	2,821	550	62	4	17,284
	\$ 125	\$ 300	\$ 648	\$ 1,066	\$ 1,644	\$ 2,451	\$ 3,368	\$ 4,131	\$ 4,427	\$ 5,421	\$ 1,670
70-74	932	1,900	1,910	1,639	2,165	1,946	1,345	407	62	8	12,314
	\$ 98	\$ 282	\$ 615	\$ 1,011	\$ 1,621	\$ 2,356	\$ 3,181	\$ 3,941	\$ 4,486	\$ 4,834	\$ 1,442
75-79	517	1,192	1,360	1,180	1,487	1,177	733	180	41	3	7,870
	\$ 91	\$ 283	\$ 645	\$ 1,071	\$ 1,668	\$ 2,405	\$ 3,072	\$ 3,684	\$ 4,464	\$ 4,742	\$ 1,391
80-84	263	814	902	856	908	818	569	105	9	6	5,250
	\$ 100	\$ 307	\$ 714	\$ 1,131	\$ 1,688	\$ 2,421	\$ 3,030	\$ 3,740	\$ 4,153	\$ 4,207	\$ 1,444
85-89	92	430	577	530	554	446	242	76	5	1	2,953
	\$ 112	\$ 314	\$ 735	\$ 1,184	\$ 1,644	\$ 2,237	\$ 2,826	\$ 3,383	\$ 3,468	\$ 6,212	\$ 1,378
90-94	32	165	236	234	255	150	75	24	5	0	1,176
	\$ 144	\$ 344	\$ 754	\$ 1,159	\$ 1,559	\$ 1,938	\$ 2,496	\$ 2,646	\$ 4,577	\$ 0	\$ 1,252
95 & Over	3	34	64	67	59	30	18	8	1	1	285
	\$ 185	\$ 349	\$ 776	\$ 1,149	\$ 1,738	\$ 1,675	\$ 2,059	\$ 1,966	\$ 2,203	\$ 6,675	\$ 1,240
<b>Total</b>	2,753	8,673	9,812	8,538	11,926	12,116	11,466	1,740	215	25	67,264
	\$ 107	\$ 290	\$ 642	\$ 1,043	\$ 1,653	\$ 2,444	\$ 3,392	\$ 3,998	\$ 4,335	\$ 4,974	\$ 1,699

**Exhibit 12.6c**

**Distribution of Retired Members and Beneficiaries by Age and Years of Service**

**City Members**

**Count and Average Monthly Annuity**

**as of June 30, 2014**

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	27	33	24	28	92	143	2	0	0	351
\$	964	\$ 259	\$ 598	\$ 828	\$ 1,250	\$ 3,192	\$ 3,663	\$ 2,774	\$ 0	\$ 0	\$ 2,583
55-59	4	67	91	65	157	303	273	14	0	0	974
\$	846	\$ 365	\$ 677	\$ 1,069	\$ 2,120	\$ 3,232	\$ 3,993	\$ 3,219	\$ 0	\$ 0	\$ 2,676
60-64	1	194	291	226	361	413	348	47	3	0	1,884
\$	258	\$ 404	\$ 886	\$ 1,401	\$ 2,159	\$ 2,968	\$ 3,919	\$ 4,815	\$ 7,330	\$ 0	\$ 2,267
65-69	92	357	393	307	350	311	210	59	1	0	2,080
\$	192	\$ 473	\$ 967	\$ 1,392	\$ 1,925	\$ 2,804	\$ 3,662	\$ 4,601	\$ 3,762	\$ 0	\$ 1,723
70-74	98	228	307	207	240	144	99	32	8	1	1,364
\$	152	\$ 461	\$ 868	\$ 1,346	\$ 1,903	\$ 2,531	\$ 3,638	\$ 4,260	\$ 4,401	\$ 3,452	\$ 1,482
75-79	44	130	197	170	130	60	47	14	3	0	795
\$	123	\$ 384	\$ 878	\$ 1,336	\$ 1,807	\$ 2,463	\$ 3,164	\$ 3,320	\$ 4,378	\$ 0	\$ 1,316
80-84	33	111	153	93	47	37	16	5	0	0	495
\$	145	\$ 409	\$ 913	\$ 1,314	\$ 1,780	\$ 2,315	\$ 2,920	\$ 3,293	\$ 0	\$ 0	\$ 1,100
85-89	15	59	66	44	24	11	11	2	1	0	233
\$	139	\$ 441	\$ 870	\$ 1,374	\$ 1,598	\$ 2,040	\$ 2,087	\$ 2,509	\$ 12,686	\$ 0	\$ 1,062
90-94	1	22	27	26	11	5	3	2	1	0	98
\$	148	\$ 431	\$ 922	\$ 1,152	\$ 1,588	\$ 1,384	\$ 1,764	\$ 1,698	\$ 2,314	\$ 0	\$ 1,019
95 & Over	0	1	8	1	4	2	1	0	0	0	17
\$	0	\$ 573	\$ 821	\$ 1,333	\$ 1,590	\$ 1,237	\$ 1,712	\$ 0	\$ 0	\$ 0	\$ 1,119
<b>Total</b>	290	1,196	1,566	1,163	1,352	1,378	1,151	177	17	1	8,291
\$	174	\$ 431	\$ 886	\$ 1,335	\$ 1,966	\$ 2,903	\$ 3,764	\$ 4,272	\$ 5,241	\$ 3,452	\$ 1,851

**Exhibit 12.6d**

**Distribution of Retired Members and Beneficiaries by Age and Years of Service**

**County Members**

**Count and Average Monthly Annuity**

**as of June 30, 2014**

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	29	43	39	40	72	54	2	4	0	285
\$	137	\$ 192	\$ 521	\$ 668	\$ 1,160	\$ 2,365	\$ 3,179	\$ 1,736	\$ 635	\$ 0	\$ 1,574
55-59	2	120	158	80	174	241	197	27	1	0	1,000
\$	142	\$ 297	\$ 667	\$ 992	\$ 1,747	\$ 2,537	\$ 3,620	\$ 3,920	\$ 4,463	\$ 0	\$ 1,960
60-64	0	335	422	319	449	381	321	58	3	0	2,288
\$	0	\$ 363	\$ 788	\$ 1,154	\$ 1,673	\$ 2,536	\$ 3,343	\$ 4,019	\$ 4,429	\$ 0	\$ 1,687
65-69	274	706	718	546	573	431	331	75	15	1	3,670
\$	165	\$ 415	\$ 779	\$ 1,190	\$ 1,780	\$ 2,434	\$ 3,331	\$ 4,119	\$ 4,821	\$ 5,743	\$ 1,391
70-74	284	543	565	436	398	255	178	51	19	0	2,729
\$	143	\$ 375	\$ 755	\$ 1,140	\$ 1,595	\$ 2,182	\$ 2,960	\$ 3,686	\$ 3,331	\$ 0	\$ 1,150
75-79	155	341	460	327	236	120	66	20	6	5	1,736
\$	120	\$ 388	\$ 780	\$ 1,171	\$ 1,736	\$ 2,121	\$ 2,719	\$ 3,292	\$ 3,757	\$ 3,315	\$ 1,061
80-84	86	248	250	184	149	84	30	7	3	0	1,041
\$	139	\$ 389	\$ 804	\$ 1,246	\$ 1,710	\$ 2,137	\$ 2,505	\$ 2,833	\$ 2,948	\$ 0	\$ 1,034
85-89	41	143	177	94	73	29	24	6	0	0	587
\$	133	\$ 388	\$ 862	\$ 1,202	\$ 1,639	\$ 2,285	\$ 2,298	\$ 2,780	\$ 0	\$ 0	\$ 995
90-94	9	59	69	47	32	7	6	6	0	0	235
\$	156	\$ 427	\$ 839	\$ 1,192	\$ 1,463	\$ 1,970	\$ 2,534	\$ 2,003	\$ 0	\$ 0	\$ 972
95 & Over	1	21	16	5	1	5	2	0	0	0	51
\$	67	\$ 427	\$ 822	\$ 1,310	\$ 1,305	\$ 1,668	\$ 1,755	\$ 0	\$ 0	\$ 0	\$ 821
<b>Total</b>	854	2,545	2,878	2,077	2,125	1,625	1,209	252	51	6	13,622
\$	145	\$ 384	\$ 775	\$ 1,159	\$ 1,689	\$ 2,385	\$ 3,239	\$ 3,785	\$ 3,672	\$ 3,720	\$ 1,342

**Exhibit 12.6e**

**Distribution of Retired Members and Beneficiaries by Age and Years of Service**

**State Members**

**Count and Average Monthly Annuity**

**as of June 30, 2014**

Current Age	Years Of Service											Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+		
Under 55	3	46	66	59	70	121	108	5	1	0	479	
\$	163	\$ 287	\$ 414	\$ 618	\$ 1,030	\$ 2,288	\$ 2,915	\$ 3,334	\$ 4,246	\$ 0	\$ 1,591	
55-59	3	154	168	139	290	392	336	19	2	0	1,503	
\$	209	\$ 310	\$ 640	\$ 843	\$ 1,518	\$ 2,311	\$ 3,182	\$ 4,110	\$ 4,746	\$ 0	\$ 1,847	
60-64	3	390	548	445	750	631	600	80	11	0	3,458	
\$	140	\$ 389	\$ 753	\$ 1,084	\$ 1,608	\$ 2,286	\$ 3,204	\$ 3,556	\$ 4,320	\$ 0	\$ 1,721	
65-69	308	791	996	828	914	734	635	162	30	2	5,400	
\$	190	\$ 411	\$ 780	\$ 1,113	\$ 1,603	\$ 2,252	\$ 3,055	\$ 3,617	\$ 4,330	\$ 4,876	\$ 1,457	
70-74	227	660	912	717	666	439	318	130	36	7	4,112	
\$	154	\$ 394	\$ 744	\$ 1,076	\$ 1,584	\$ 2,136	\$ 2,883	\$ 3,288	\$ 3,719	\$ 4,883	\$ 1,277	
75-79	140	478	638	482	357	254	174	47	11	1	2,582	
\$	138	\$ 404	\$ 753	\$ 1,147	\$ 1,600	\$ 2,159	\$ 2,675	\$ 3,344	\$ 3,863	\$ 3,911	\$ 1,175	
80-84	95	371	425	275	229	131	78	30	1	0	1,635	
\$	147	\$ 406	\$ 795	\$ 1,193	\$ 1,651	\$ 2,118	\$ 2,584	\$ 2,978	\$ 4,855	\$ 0	\$ 1,090	
85-89	39	203	209	172	96	75	42	13	3	1	853	
\$	170	\$ 429	\$ 886	\$ 1,236	\$ 1,693	\$ 1,954	\$ 2,560	\$ 2,600	\$ 4,027	\$ 3,509	\$ 1,122	
90-94	12	87	113	93	59	35	11	15	0	0	425	
\$	204	\$ 428	\$ 857	\$ 1,230	\$ 1,502	\$ 1,774	\$ 1,908	\$ 2,453	\$ 0	\$ 0	\$ 1,081	
95 & Over	6	17	20	28	8	7	5	1	0	0	92	
\$	159	\$ 505	\$ 921	\$ 1,126	\$ 1,641	\$ 1,696	\$ 1,588	\$ 1,667	\$ 0	\$ 0	\$ 1,023	
<b>Total</b>	836	3,197	4,095	3,238	3,439	2,819	2,307	502	95	11	20,539	
\$	165	\$ 399	\$ 762	\$ 1,102	\$ 1,585	\$ 2,221	\$ 3,020	\$ 3,409	\$ 4,047	\$ 4,668	\$ 1,409	

**Exhibit 12.6f**

**Distribution of Retired Members and Beneficiaries by Age and Years of Service**

**Political Subdivision Members**

**Count and Average Monthly Annuity**

**as of June 30, 2014**

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	5	13	12	2	11	11	0	0	0	56
\$	196	\$ 219	\$ 422	\$ 810	\$ 1,721	\$ 4,546	\$ 3,802	\$ 0	\$ 0	\$ 0	\$ 1,999
55-59	0	23	26	13	29	39	45	3	0	0	178
\$	0	\$ 425	\$ 865	\$ 1,300	\$ 2,661	\$ 3,455	\$ 4,622	\$ 3,361	\$ 0	\$ 0	\$ 2,692
60-64	0	76	73	49	61	58	49	7	0	0	373
\$	0	\$ 512	\$ 926	\$ 1,512	\$ 2,559	\$ 3,259	\$ 4,651	\$ 3,760	\$ 0	\$ 0	\$ 2,091
65-69	45	109	133	72	74	41	34	15	4	0	527
\$	204	\$ 514	\$ 1,028	\$ 1,594	\$ 2,569	\$ 2,979	\$ 4,120	\$ 4,683	\$ 3,352	\$ 0	\$ 1,618
70-74	35	93	90	51	37	23	6	7	1	1	344
\$	135	\$ 423	\$ 978	\$ 1,560	\$ 1,931	\$ 2,869	\$ 3,572	\$ 4,688	\$ 3,758	\$ 4,319	\$ 1,196
75-79	17	31	35	19	12	2	3	2	1	0	122
\$	187	\$ 336	\$ 887	\$ 1,291	\$ 2,159	\$ 3,549	\$ 5,488	\$ 4,612	\$ 1,483	\$ 0	\$ 1,060
80-84	7	20	11	14	8	7	1	0	1	0	69
\$	99	\$ 355	\$ 521	\$ 1,431	\$ 1,601	\$ 1,970	\$ 3,080	\$ 0	\$ 7,020	\$ 0	\$ 1,018
85-89	1	22	11	7	5	4	2	0	0	0	52
\$	110	\$ 328	\$ 760	\$ 905	\$ 1,586	\$ 1,622	\$ 2,262	\$ 0	\$ 0	\$ 0	\$ 788
90-94	3	10	10	5	5	1	2	0	0	0	36
\$	236	\$ 386	\$ 800	\$ 1,061	\$ 1,209	\$ 1,236	\$ 1,716	\$ 0	\$ 0	\$ 0	\$ 794
95 & Over	0	5	5	1	5	1	0	0	0	0	17
\$	0	\$ 457	\$ 846	\$ 1,031	\$ 1,297	\$ 1,406	\$ 0	\$ 0	\$ 0	\$ 0	\$ 908
<b>Total</b>	110	394	407	243	238	187	153	34	7	1	1,774
\$	173	\$ 447	\$ 928	\$ 1,450	\$ 2,342	\$ 3,165	\$ 4,358	\$ 4,373	\$ 3,667	\$ 4,319	\$ 1,646

**Exhibit 12.6g**

**Distribution of Retired Members and Beneficiaries by Age and Years of Service**

**All Groups**

**Count and Average Monthly Annuity**

**as of June 30, 2014**

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	213	345	292	281	808	788	19	7	0	2,773	
\$	203	\$ 231	\$ 448	\$ 633	\$ 1,079	\$ 2,616	\$ 3,374	\$ 2,687	\$ 1,739	\$ 0	\$ 1,995	
55-59	16	798	1,091	741	1,682	2,792	2,971	133	5	0	10,229	
\$	337	\$ 278	\$ 580	\$ 842	\$ 1,735	\$ 2,655	\$ 3,654	\$ 4,083	\$ 5,416	\$ 0	\$ 2,272	
60-64	18	2,500	3,284	2,820	4,726	4,499	5,100	618	52	2	23,619	
\$	291	\$ 337	\$ 717	\$ 1,092	\$ 1,745	\$ 2,536	\$ 3,562	\$ 4,333	\$ 4,543	\$ 5,821	\$ 1,991	
65-69	1,883	4,956	5,360	4,291	5,449	4,990	4,525	1,003	145	10	32,612	
\$	151	\$ 365	\$ 738	\$ 1,152	\$ 1,718	\$ 2,476	\$ 3,399	\$ 4,272	\$ 4,988	\$ 5,047	\$ 1,630	
70-74	1,802	3,873	4,282	3,437	3,965	3,157	2,232	744	172	21	23,685	
\$	119	\$ 341	\$ 708	\$ 1,092	\$ 1,656	\$ 2,369	\$ 3,237	\$ 3,983	\$ 4,634	\$ 5,251	\$ 1,413	
75-79	1,002	2,431	3,049	2,496	2,519	1,854	1,220	339	94	13	15,017	
\$	109	\$ 339	\$ 724	\$ 1,138	\$ 1,708	\$ 2,393	\$ 3,132	\$ 3,834	\$ 4,760	\$ 5,384	\$ 1,356	
80-84	572	1,797	2,007	1,635	1,536	1,261	813	188	26	8	9,843	
\$	122	\$ 357	\$ 769	\$ 1,192	\$ 1,737	\$ 2,420	\$ 3,021	\$ 3,640	\$ 4,986	\$ 5,115	\$ 1,345	
85-89	228	993	1,230	1,005	882	681	390	122	13	6	5,550	
\$	138	\$ 369	\$ 802	\$ 1,229	\$ 1,712	\$ 2,291	\$ 2,858	\$ 3,369	\$ 5,535	\$ 6,061	\$ 1,320	
90-94	72	397	549	494	433	236	129	59	9	1	2,379	
\$	157	\$ 387	\$ 824	\$ 1,209	\$ 1,575	\$ 1,994	\$ 2,658	\$ 2,667	\$ 4,622	\$ 4,984	\$ 1,225	
95 & Over	13	102	128	116	90	54	31	10	3	1	548	
\$	158	\$ 419	\$ 814	\$ 1,162	\$ 1,692	\$ 1,817	\$ 1,980	\$ 2,128	\$ 3,044	\$ 6,675	\$ 1,154	
<b>Total</b>	5,626	18,060	21,325	17,327	21,563	20,332	18,199	3,235	526	62	126,255*	
\$	131	\$ 347	\$ 723	\$ 1,116	\$ 1,702	\$ 2,478	\$ 3,411	\$ 4,048	\$ 4,744	\$ 5,344	\$ 1,639	

\* Includes 114,341 service retirees, 3,903 members who retired from disabled status, 6,796 beneficiaries and 1,215 QDROs.

**Exhibit 12.6h**

**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, 2014**

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	53	87	67	79	312	210	4	0	0	814
	\$ 1,032	\$ 279	\$ 517	\$ 771	\$ 1,342	\$ 2,748	\$ 3,447	\$ 2,973	\$ 0	\$ 0	\$ 2,227
55-59	6	165	215	166	561	364	315	42	1	0	1,835
	\$ 657	\$ 356	\$ 728	\$ 1,056	\$ 1,831	\$ 2,592	\$ 3,888	\$ 4,373	\$ 4,463	\$ 0	\$ 2,059
60-64	5	464	648	587	519	330	243	69	17	0	2,882
	\$ 210	\$ 414	\$ 806	\$ 1,228	\$ 1,831	\$ 2,543	\$ 3,526	\$ 4,319	\$ 3,747	\$ 0	\$ 1,542
65-69	289	515	430	289	239	154	112	29	20	0	2,077
	\$ 224	\$ 424	\$ 823	\$ 1,320	\$ 1,796	\$ 2,583	\$ 3,354	\$ 4,560	\$ 4,310	\$ 0	\$ 1,175
70-74	30	102	110	66	54	28	33	9	8	4	444
	\$ 196	\$ 348	\$ 673	\$ 911	\$ 1,671	\$ 2,048	\$ 2,849	\$ 4,452	\$ 4,752	\$ 5,667	\$ 1,166
75-79	7	34	38	25	31	14	7	8	1	1	166
	\$ 129	\$ 284	\$ 643	\$ 774	\$ 1,309	\$ 2,481	\$ 2,156	\$ 3,507	\$ 3,406	\$ 6,803	\$ 1,102
80-84	6	17	18	18	15	12	9	1	0	0	96
	\$ 217	\$ 366	\$ 568	\$ 928	\$ 1,343	\$ 1,728	\$ 1,810	\$ 816	\$ 0	\$ 0	\$ 963
85-89	0	9	8	12	6	7	6	4	0	0	52
	\$ 0	\$ 317	\$ 737	\$ 1,116	\$ 1,032	\$ 1,821	\$ 2,054	\$ 3,010	\$ 0	\$ 0	\$ 1,259
90-94	0	1	3	3	6	3	1	0	0	0	17
	\$ 0	\$ 842	\$ 684	\$ 990	\$ 1,272	\$ 1,604	\$ 1,315	\$ 0	\$ 0	\$ 0	\$ 1,154
95 & Over	0	1	0	0	1	0	0	0	0	0	2
	\$ 0	\$ 344	\$ 0	\$ 0	\$ 19,899	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 10,122
<b>Total</b>	345	1,361	1,557	1,233	1,511	1,224	936	166	47	5	8,385
	\$ 232	\$ 396	\$ 767	\$ 1,169	\$ 1,785	\$ 2,588	\$ 3,547	\$ 4,258	\$ 4,166	\$ 5,894	\$ 1,595

**Exhibit 12.7**  
**Members in Active Service as of June 30, 2014, by Annual Salary**

Annual Salary	Number of Members	Percent of All Members
Less than \$10,000	7,609	3.7%
\$10,000 - \$14,999	12,418	6.1%
\$15,000 - \$19,999	13,211	6.5%
\$20,000 - \$24,999	12,389	6.1%
\$25,000 - \$29,999	13,601	6.7%
\$30,000 - \$34,999	15,564	7.7%
\$35,000 - \$39,999	17,820	8.8%
\$40,000 - \$44,999	24,004	11.7%
\$45,000 - \$49,999	20,818	10.2%
\$50,000 - \$54,999	15,630	7.7%
\$55,000 - \$59,999	11,540	5.7%
\$60,000 - \$64,999	8,503	4.2%
\$65,000 - \$69,999	6,630	3.3%
\$70,000 - \$74,999	4,894	2.4%
\$75,000 - \$79,999	3,878	1.9%
\$80,000 - \$84,999	3,157	1.6%
\$85,000 - \$89,999	2,421	1.2%
\$90,000 and over	9,114	4.5%
Total	203,201	100.0%

**Exhibit 12.8****Retirement Benefits in Force on June 30, 2014, by Monthly Amount**

Monthly Amount	Number of Retirees	Percentage of All Retirees
Under \$300	16,469	13.0%
\$300 - \$499	12,245	9.7%
\$500 - \$999	24,824	19.6%
\$1,000 - \$1,499	18,010	14.3%
\$1,500 - \$1,999	13,577	10.8%
\$2,000 - \$2,499	11,335	9.0%
\$2,500 - \$2,999	9,219	7.3%
\$3,000 - \$3,499	7,456	5.9%
\$3,500 - \$3,999	4,934	3.9%
\$4,000 and over	8,186	6.5%
Total	126,255	100.0%

## Exhibit 12.9 - Number of Retirees by Benefit Option and Monthly Amount

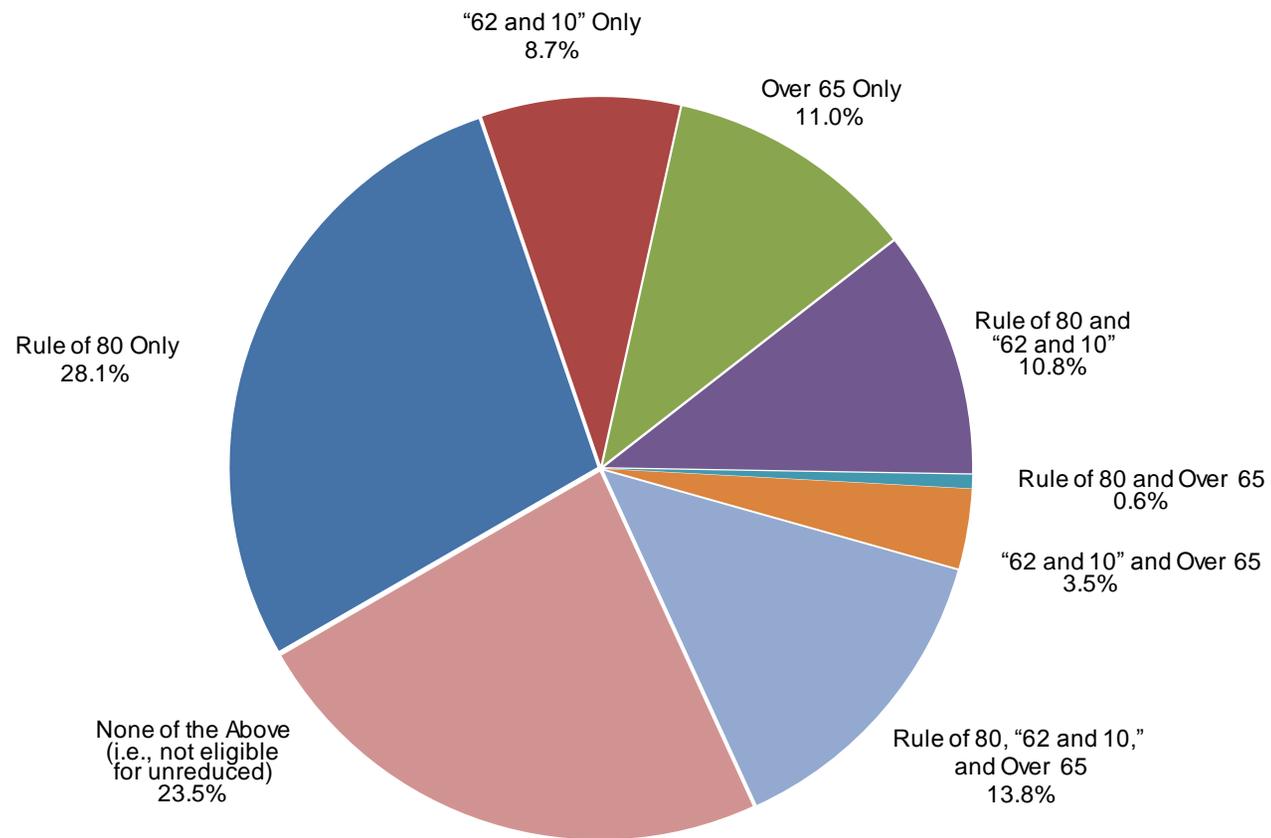
Amount of Monthly Benefit	Optional Form of Benefit							Total
	1	2	3	4	5	6	7	
Under \$300	11,407	252	357	772	2,822	259	600	16,469
\$300 - \$499	7,750	238	376	585	2,359	298	639	12,245
\$500 - \$999	15,297	502	911	1,089	4,493	864	1,668	24,824
\$1000 - \$1499	10,158	403	709	697	3,613	951	1,479	18,010
\$1500 - \$1999	7,259	256	461	508	2,945	894	1,254	13,577
\$2000 - \$2499	5,936	186	364	455	2,538	757	1,099	11,335
\$2500 - \$2999	4,767	138	316	388	2,107	594	909	9,219
\$3000 - \$3499	3,791	104	222	297	1,732	532	778	7,456
\$3500 - \$3999	2,499	49	112	216	1,175	375	508	4,934
\$4000 and over	4,123	66	187	296	1,913	711	890	8,186
<b>Total</b>	<b>72,987</b>	<b>2,194</b>	<b>4,015</b>	<b>5,303</b>	<b>25,697</b>	<b>6,235</b>	<b>9,824</b>	<b>126,255</b>

### 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

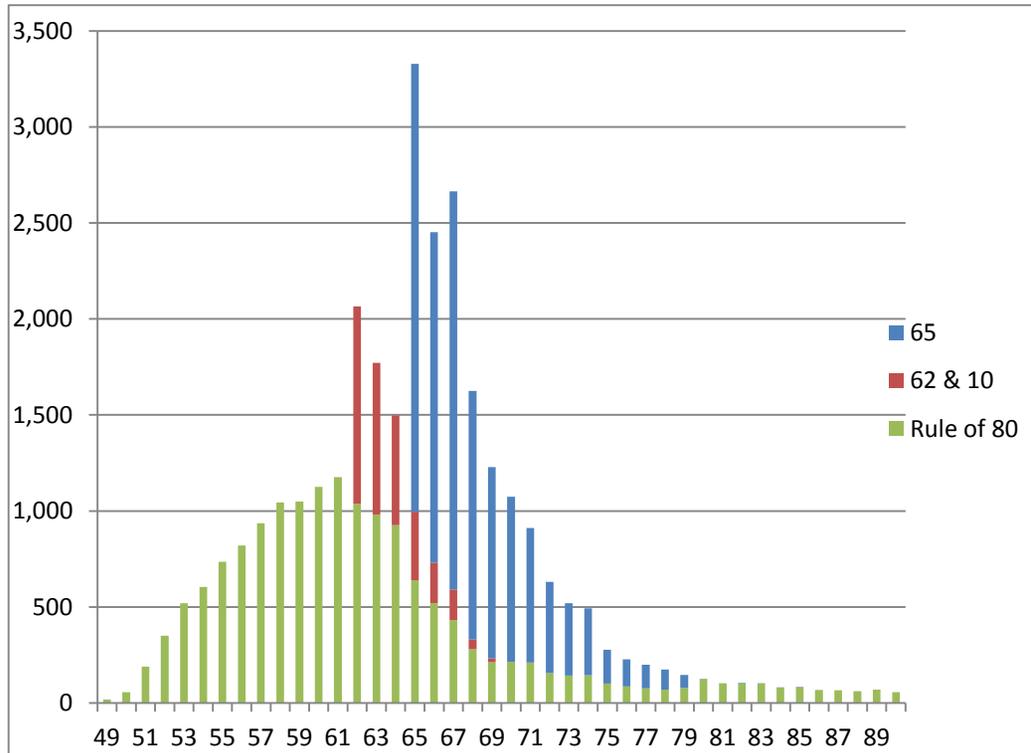
Note: All optional forms had a social security leveling income option available prior to July 1, 2013

### Exhibit 12.10– New Retiree Eligibility



**Exhibit 12.11**

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



**Exhibit 12.12**  
**Health Insurance Benefit Counts**

Current HIB Benefit	Count	Monthly Premium Supplement	Average Monthly Premium Supplement
Single, Non-Medicare	11,822	\$ 1,505,543	\$ 127
Single, Medicare	30,342	2,497,778	82
Family, Both Non-Medicare	6,607	1,159,965	176
Family, One Medicare, One Non-Medicare	5,229	807,677	154
Family, Both Medicare	13,186	1,528,455	116
<b>Total</b>	<b>67,186</b>	<b>\$ 7,499,418</b>	<b>\$ 112</b>

\* Includes 599 System members receiving 401(h) benefits and 1,383 members receiving LTD benefits and 401(h) benefits.

## Exhibit 12.13

### 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 <sup>1</sup>	3.2% <sup>2</sup>	26,635	2.7%
1995	155,444	0.4%	4,432	7.4%	28,513	7.1%
1996	159,572	2.7%	4,632	4.5%	29,029	1.8%
1997	164,390	3.0%	4,836	4.4%	29,420	1.3%
1998	170,864	3.9%	5,164	6.8%	30,224	2.7%
1999	176,368	3.2%	5,488	6.3%	31,116	3.0%
2000	183,924	4.3%	5,894	7.4%	32,045	3.0%
2001	191,252	4.0%	6,357	7.9%	33,237	3.7%
2002	198,870	4.0%	6,989	9.9%	35,145	5.7%
2003	202,398	1.8%	7,297	4.4%	36,052	2.6%
2004	205,482	1.5%	7,486	2.6%	36,429	1.0%
2005	212,202	3.3%	8,032	7.3%	37,853	3.9%
2006	217,676	2.6%	8,312	3.5%	38,185	0.9%
2007	224,001	2.9%	9,162	10.2%	40,901	7.1%
2008	226,415	1.1%	9,708	6.0%	42,879	4.8%
2009	222,515	(1.7%)	9,835	1.3%	44,198	3.1%
2010	213,530	(4.0%)	9,420	(4.2%)	44,115	(0.2%)
2011	208,939	(2.2%)	9,061	(3.8%)	43,365	(1.7%)
2012	203,994	(2.4%)	8,869	(2.1%)	43,475	0.3%
2013	202,693	(0.6%)	8,753	(1.3%)	43,182	(0.7%)
2014	203,201	0.3%	8,909	1.8%	43,841	1.5%

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

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

**Exhibit 12.14**  
**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 <sup>1</sup>	Number	Average Monthly Benefit	Number	Average Monthly Benefit <sup>1</sup>
1984	4,743	\$ 684	—	—	23,166	\$ 410	—	—
1985	802	304	—	—	23,686	447	—	—
1986	1,952	541	—	—	25,213	469	—	—
1987	1,677	707	—	—	26,577	505	—	—
1988	1,938	792	—	—	28,575	535	—	—
1989	3,405	1,105	—	—	31,396	603	—	—
1990	2,117	859	346	\$ 986	33,385	659	346	\$ 986
1991	2,209	825	215	941	34,907	687	699	957
1992	2,303	861	517	958	36,490	703	1,104	973
1993	3,954	1,173	519	865	39,684	812	1,455	919
1994	2,280	934	503	860	41,044	852	1,780	892
1995	3,223	1,008	617	951	43,378	878	2,130	878
1996	3,845	1,121	704	928	45,975	920	2,507	929
1997	3,578	1,097	599	1,036	49,743	945	2,746	954
1998	3,353	1,062	669	1,150	51,917	982	3,063	983
1999	4,380	1,326	819	1,141	55,104	1,024	3,680	1,023
2000	4,822	1,490	547	1,425	58,038	1,125	3,595	1,070
2001	4,224	1,465	632	1,455	58,920	1,211	3,904	1,151
2002	3,954	1,677	626	1,281	60,346	1,371	4,485	1,077
2003	5,955	1,578	1,001	1,106	64,697	1,401	4,561	1,027
2004	6,430	1,565	865	1,388	68,931	1,487	4,684	1,091
2005	7,005	1,597	926	1,426	73,853	1,508	4,939	1,107
2006	7,143	1,578	840	1,589	78,498	1,566	5,018	1,068
2007	7,393	1,629	800	1,662	83,594	1,584	5,071	1,091
2008	7,784	1,594	640	1,642	88,956	1,596	4,882	1,079
2009	7,958	1,604	723	1,840	94,424	1,613	4,712	1,258
2010	9,360	1,571	789	1,817	101,307	1,619	4,724	1,292
2011	9,287 <sup>2</sup>	1,606	752	1,662	107,996	1,627	4,609	1,269
2012	9,227	1,553	709	1,692	114,431	1,630	4,440	1,279
2013	9,489	1,545	735	1,711	120,875	1,632	4,307	1,278
2014	8,385	1,595	658	1,766	126,255	1,639	4,206	1,295

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

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

**Exhibit 12.15**  
**Data Reconciliation**

	Active Members	Inactive, Non-Retired Members	Retirees & Beneficiaries	Total
Total at June 30, 2013	202,693	213,058	120,875	536,626
Terminations	(14,721)	14,721	0	0
Refund	(6,080)	(6,498)	0	(12,578)
Transfer Out	(14)	(135)	0	(149)
Disabled	(511)	(144)	0	(655)
Retirements	(5,951)	(1,210)	7,161	0
Returned from LTD	32	168	436	636
New QDRO	0	0	96	96
New Beneficiary	0	0	618	618
Deaths (with Beneficiary)	0	0	(618)	(618)
Deaths (without Beneficiary)	(222)	(506)	(2,157)	(2,885)
Benefit Expiration	0	0	(118)	(118)
Data Adjustments	(78)	(1,805)	70	(1,813)
New Entrants Terminated with Account Balance	0	2,780	0	2,780
Rehires	5,212	(5,104)	(108)	0
New Entrants	22,841	0	0	22,841
Net Change	508	2,267	5,380	8,155
Total at June 30, 2014	203,201	215,325	126,255	544,781

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 4,206 members receiving LTD benefits, 170 other-than-Plan (System) members who are receiving benefits from the 401(a) plan only, 502 other-than-Plan (System) members who are receiving benefits from the 401(h) plan only, and 97 other-than-Plan (System) members who are receiving benefits from both the 401(a) and 401(h) plan.