



Arizona State Retirement System

Actuarial Valuation
as of June 30, 2004

February 1, 2005

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

Dear Retirement Board Members:

Actuarial Valuation of the Plan as of June 30, 2004

We certify that the information contained in the attached 2004 actuarial valuation report is accurate and fairly presents the actuarial position of the Arizona State Retirement Plan (the Plan) as of June 30, 2004.

We have made all calculations for this report in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, the report's results comply with the requirements of the Arizona Constitution and statutes and, where applicable, the Internal Revenue Code, the Employee Retirement Income Security Act of 1974 (ERISA), and the Statements of the Governmental Accounting Standards Board. The undersigned actuaries are independent. They are both Enrolled Actuaries and Fellows of the Society of Actuaries. Eva Yum is a Fellow of the Canadian Institute of Actuaries and Charlie Chittenden is a member of the American Academy of Actuaries. Both are experienced in performing valuations for large public retirement systems.

Actuarial Valuations

The primary purpose of the valuation report is to determine the required member and employer contribution rates, to describe the current financial condition of the Plan, and to analyze changes in the Plan's condition. In addition, the report provides information that ASRS requires in connection with Governmental Accounting Standards Board Statement Number 25 (GASB No. 25), and it summarizes census data.

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

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Funding Objectives

The actuarial valuation calculates the contribution rates payable by members and participating employers. These rates, when applied to payroll, yield contribution amounts sufficient to provide for the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL) over the period specified in the statutes. The rates calculated in even-numbered years are in effect for the next two Plan years. For example, the rate calculated in the June 30, 2004 valuation report (7.75% for each member and each employer) will apply in the fiscal years beginning July 1, 2005, and July 1, 2006. The rates calculated in odd-numbered years are purely advisory – they never take effect.

Funding Progress

The actual contribution rate in fiscal 2004 and 2005 is 5.20% for each member and each employer, as the 2002 valuation report calculated. This 2003 valuation calculates a hypothetical rate of 6.96%. This 2004 valuation calculates a rate of 7.75%, to become effective July 1, 2005. These rates do not include contributions to the LTD program. Actual contributions have matched the calculated contributions in recent years and we assume that members and employers will continue to contribute the actuarially determined amounts. Contributing these amounts ensures the realization of funding objectives.

Section 38-737 specifies that the UAAL is to be amortized over a rolling 30-year period once the surplus disappears. As of June 30, 2003, the ASRS Plan no longer had a surplus, so the amortization period for this valuation (and all future valuations) is 30 years.

Benefit Provisions

This valuation reflects two changes in Plan provisions:

- The legislature changed the basis for service purchase calculations to actuarial present value, instead of average normal cost, and
- The Board reduced the interest rate to be credited on withdrawn contributions from 8% to 4%, effective for withdrawals after June 30, 2005.

Section 11 gives details of benefit provisions.

Assumptions and Methods

We performed an experience study for the five-year period ended June 30, 2002, and recommended assumption changes based on the findings. On November 21, 2003, the Board adopted our recommended actuarial assumptions, to be effective June 30, 2003. On November 15, 2002, the Board adopted a change in the method of valuing actuarial assets – namely, the Board removed the requirement that actuarial assets be within 20% of market value and prospectively changed the period for recognizing investment gains or losses from five to ten years. Section 9 of this report

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provides details of the assumptions and methods. The assumptions are internally consistent and are reasonably based on the actual experience of the Plan. These assumptions are in full compliance with GASB No. 25.

Data

ASRS staff supplied census data for retired, active, and inactive participants as of June 30, 2004. We have not audited these data, but have examined them for reasonableness and consistency with the prior year's data. ASRS staff also supplied asset information.

Trend Data and Supporting Schedules

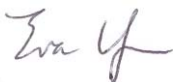
ASRS prepared all trend data schedules in the financial section of ASRS's Comprehensive Annual Financial Report (CAFR). ASRS also prepared all supporting schedules in the actuarial section of the CAFR.

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

Sincerely,



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



Eva S. Yum, FSA, EA
Director and Consulting Actuary

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Executive Summary

Attached is a table summarizing the key results of the June 30, 2004, actuarial valuation of the Arizona State Retirement Plan (the Plan).

Demographic Changes

The number of active members has increased from 202,398 to 205,482, a 1.5% increase. Valuation payroll has increased 2.6% from \$7.297 billion to \$7.486 billion. Both of these increases are smaller than those the Plan has experienced in the recent past.

Gains and Losses

The valuation of the Plan reflects a loss on the investment return on the actuarial value of assets of \$1,265 million. This loss is not due to the investment experience of fiscal 2004. Rather it is due to delayed recognition of losses that have occurred in earlier years. Investment losses are now recognized in actuarial assets over a ten-year period. The yield rate on actuarial assets for the 2004 fiscal year is 2.46% on the pension assets (401(a)) and 4.53% on the health supplement assets (401(h)), compared to last year's returns of 2.88% and 4.66%, respectively. The actuarially assumed rate of return is 8%. There was also a small loss of \$132 million on the liability experience, mostly due to the delay in implementing new contribution rates and to the increased value of contribution refunds for withdrawing members.

Changes in Plan Provisions

This valuation reflects two changes in Plan provisions:

- The legislature changed the basis for service purchase calculations to actuarial present value, instead of average normal cost, and
- The Board reduced the interest rate to be credited on withdrawn contributions from 8% to 4%, effective for withdrawals after June 30, 2005.

Effect on Contribution Rates and Funded Status

This is an even-year valuation and the contribution rate calculated in this valuation will become effective on July 1, 2005, and remain in effect through June 30, 2007. The investment loss on actuarial assets and the loss on liability experience have caused the Plan's calculated contribution rate to increase. Offsetting this increase was a reduction due to the two changes in Plan provisions identified above. The net result is that the contribution rate will increase from a rate of 6.96% in the 2003 valuation report to a rate of 7.75% in this report. Later sections of this report give a detailed explanation of the contribution rate change.

The recognition of losses has caused the funded status of the total plan (the ratio of actuarial assets to actuarial accrued liabilities) to decrease from 96.8% as of June 30, 2003, to 91.2% as of June 30, 2004. The unfunded actuarial accrued liability has grown during this period from \$786.7 million to \$2,275.4 million.

The calculated contribution rate has increased to a level higher than the Plan's normal cost. If the Plan had no unfunded actuarial accrued liability, the contribution rate would be the normal cost rate, i.e., 6.51%, instead of 7.75%.

Reserve for Permanent Benefit Increases

Since the actuarial investment return (on the actuarial value of assets) of 2.46% is below 8% for fiscal year 2004, there are no additional "Excess Investment Earnings" to be allocated for Permanent Benefit Increases (PBIs). The current excess investment earnings reserve will allow the granting of only one more PBI, effective July 1, 2005.

Outlook for Contribution Rates and Permanent Benefit Increases

Our forecast shows contribution rates continuing to increase, assuming future experience matches our assumptions, as follows:

Effective Date	Contribution Rate for Each Member	Contribution Rate for Each Employer
7/1/2005	7.75%	7.75%
7/1/2007	8.94%	8.94%
7/1/2009	9.57%	9.57%
7/1/2011	10.06%	10.06%
7/1/2013	10.23%	10.23%

Even if annual returns on the market value of Plan assets are 10% per annum, we project no Permanent Benefit Increases after the July 1, 2005, until after 2010.

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):

	2003	2004
Demographic Information		
• Number of Members		
Actives	202,398	205,482
Inactives	123,365	136,435
Receiving benefits	64,697	69,049
Disabled (LTD)	4,561	4,684
Total	395,021	415,650
• Covered projected payroll	\$7,297	\$7,486
• Average age for actives	44.6	44.7
• Average pay for actives	\$33,998	\$34,372
• Average monthly benefit for retirees and beneficiaries	\$1,404	\$1,487
• Average age for retirees and beneficiaries	70.0	69.3
Financial Information		
• Total normal cost rate	13.03%	13.02%
• Unfunded actuarial accrued liability	\$786.7	\$2,275.4
• Funded Status of pension (401(a))	98.4%	92.5%
• Funded Status of health (401(h))	69.0%	69.7%
• Funded Status of total plan	96.8%	91.2%
• Calculated contribution rate	6.96%	7.75%
• Statutory contribution rate	5.20%	7.75%
• Employee and employer contributions	\$375.5	\$866.0
• Benefit and refunded payments	\$1,162.8	\$1,326.4
• Net external cash flow	\$(808.7)	\$(484.1)
• PBI		
Additional liability for July 1 st PBI	\$341.9	\$381.7
Percentage increase	4.0%	4.0%
Per year of service factor	\$35.43	\$35.30
PBI reserve before July 1 st PBI	\$728.8	\$305.5

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**Section 1
continued**

	2003	2004
• Actuarial gains (losses)		
Assets	\$(1,168)	\$(1,265)
Liability experience	218	\$(132)
Legislative and administrative changes	(31)	\$97
Assumption changes	(417)	N/A
Method change	N/A	N/A
Total	\$(1,398)	\$(1,300)
• GASB 25 disclosure (401(a) pension only)		
Actuarial Accrued Liability (AAL)	\$22,935	\$24,506
Unfunded AAL (Surplus)	\$363	\$1,847
Actuarial Value of Assets as % of AAL	98.4%	92.5%
Unfunded AAL (Surplus) as % of payroll	5.0%	24.7%

• Changes in contribution rate:

Item	Contribution Rate	Change in Rate
1. 2003 valuation	6.96%	–
2. Delay in contribution rate change	7.05%	+.09%
3. 2003 / 2004 liability experience	7.40%	+.35%
4. 2003 / 2004 asset experience	8.09%	+.69%
5. Legislative and administrative changes	7.76%	-.33%
6. Rounding to the nearest 0.05%	7.75%	-.01%

Split of Total Contribution Rate:

Item	401(a) Account	401(h) Account	Total
1. Employee Contribution Rates	7.75%	0.00%	7.75%
2. Employer Contribution Rates	<u>6.61%</u>	<u>1.14%</u>	<u>7.75%</u>
3. Total Contribution Rates	14.36%	1.14%	15.50%

- Asset Amounts and Returns on Assets

Asset Amounts	2003		2004	
	Market Value	Actuarial Value	Market Value	Actuarial Value
Pension 401(a)	\$17,419	\$22,572	\$19,941	\$22,659
Health 401(h)	\$698	\$ 945	\$ 808	\$ 984
Total Plan	\$18,117	\$23,517	\$20,749	\$23,643
Asset Yields	Market Value	Actuarial Value	Market Value	Actuarial Value
Pension 401(a)	1.83%	2.88%	17.37%	2.46%
Health 401(h)	1.31%	4.66%	16.39%	4.53%
Total Plan	1.81%	2.96%	17.33%	2.55%

Introduction

The primary purpose of the actuarial valuation is to determine the required member and employer contribution rates in accordance with the actuarial funding policy specified in Section 38-737 of the Arizona Revised Statutes, to describe the current financial condition of the Plan, and to analyze changes in the Plan's condition. In addition, the report provides information that ASRS requires in connection with Governmental Accounting Standards Board Statement Number 25 (GASB No. 25), and it summarizes census data. The valuation covers both the 401(a) pension plan and the 401(h) health supplement plan.

The actuarial valuation of the Plan as of June 30, 2004, determines the contribution rate for fiscal years 2006 and 2007. Based on the results of the 2004 Plan valuation, the matching contribution rate for the fiscal year beginning July 1, 2005, will increase from the current rate of 5.20% to 7.75% of compensation.

Assets

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

Market Value of Assets

The market value of assets represents the fair market value of assets as of June 30, 2003, and June 30, 2004, as reported by ASRS.

Actuarial Value of Assets

The actuarial value of assets method starts with the market value of assets and is modified by the difference between expected investment return and actual investment return. Effective June 30, 2002, only 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. The Board adopted this actuarial valuation method on November 15, 2002, by Board action. The phase-in period was five-years prior to June 30, 2002.

The market value of assets as of June 30, 2004, was \$20,748,573,247 and the actuarial value of assets under this method was \$23,642,904,763, or about 114% of market value as of June 30, 2004. The combined 401(a) and 401(h) deferral amount for the year is -\$2.894 billion. That is, \$2.894 billion of investment losses will be recognized in future valuations.

Asset Returns

To determine the estimated yield for the year, the traditional insurance company measurement of yield has been used. This equation is:

$$2I / (A + B - I).$$

In this equation, I is net investment income for the asset valuation method, A is the beginning of the year asset value, and B is the end of the year asset value. This equation essentially assumes that income, revenue, and expenditures are evenly distributed throughout the year.

During the twelve months ended June 30, 2004, the Plan has an estimated yield of 2.46% on the 401(a) actuarial assets and 4.53% on the 401(h) actuarial assets for the year, compared to the actuarial assumed rate of 8%. The Plan assets had an investment return of 17.37% on the 401(a) market assets and 16.39% on the 401(h) market assets.

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

Item	401(a) Account	401(h) Account	Total
1. Market Value of Assets	\$19,940,524,999	\$808,048,248	\$20,748,573,247
2. Actuarial Value of Assets	\$22,659,396,325	\$983,508,438	\$23,642,904,763

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

	Year Ending June 30, 2003	Year Ending June 30, 2004
1. Market value, beginning of year	\$ 17,812,242,996	\$ 17,418,714,865
2. Contributions and receipts during the year		
a. Employee contributions	141,878,562	377,002,851
b. Employer contributions	137,622,205	297,268,473
c. Member reimbursements of employee contributions	91,567,731	12,032,535
d. Member reimbursements of employer contributions	0	0
e. Other miscellaneous receipts	197,474	
f. Total	<u>371,265,972</u>	<u>786,303,859</u>
3. Investment income for the year (net of investment expenses)	344,259,669	3,007,854,981
4. Benefit payments		
a. Retirement and disability benefits	(1,026,433,839)	(1,194,978,543)
b. Death benefits	(15,861,343)	(13,726,243)
c. Total	<u>(1,042,295,182)</u>	<u>(1,208,704,786)</u>
5. Refunds of contributions	(35,948,463)	(34,006,055)
6. Employer adjustments	0	0
7. Administrative expenses	(20,538,703)	(22,791,105)
8. Miscellaneous	(4,798,782)	(6,416,693)
9. Other		
a. Transfers from Plan	1,984,281	1,905,568
b. Reimbursements and lump sums	0	0
c. Transfers to PSPRS	(7,456,910)	(2,335,638)
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	<u>(5,472,629)</u>	<u>(430,070)</u>
10. Change in audited assets, beginning of year	<u>0</u>	<u>0</u>
11. Total change in market value	<u>(393,528,118)</u>	<u>2,521,810,131</u>
12. Market value, end of year	<u><u>\$ 17,418,714,877</u></u>	<u><u>\$ 19,940,524,999</u></u>

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

	Year Ending June 30, 2003	Year Ending June 30, 2004
1. Market value, beginning of year	\$ 768,846,996	\$ 698,106,059
2. Contributions and receipts during the year		
a. Employee contributions	0	0
b. Employer contributions	4,256,357	79,662,201
c. Member reimbursements of employee contributions	0	0
d. Member reimbursements of employer contributions	0	0
e. Other miscellaneous receipts	0	0
f. Total	4,256,357	79,662,201
3. Investment income for the year (net of investment expenses)	10,393,667	114,905,472
4. Benefit payments	(84,533,693)	(83,680,261)
5. Refunds of contributions	0	0
6. Employer adjustments	0	0
7. Administrative expenses	(857,269)	(853,105)
8. Miscellaneous	0	(92,117)
9. Other	0	0
10. Change in audited assets, beginning of year	0	0
11. Total change in market value	(70,740,938)	109,942,190
12. Market value, end of year	\$ 698,106,058	\$ 808,048,248

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

Item	Plan Year Ending June 30,			
	2001	2002	2003	2004
1. Calculation of unrealized gain/(loss) for year, based on market value				
a. Market value over book value (end of year)	\$ 1,915,917,421	\$ (751,653,970)	N/A	N/A
b. Market value over book value (beginning of year)	4,240,641,488	1,915,917,421	N/A	N/A
c. Unrealized gain/(loss) during the year	(2,324,724,067)	(2,667,571,391)	N/A	N/A
2. Net investment income for year (based on market value since 2003, book value in other years)	1,507,819,089	325,570,564	\$ 339,460,887	\$ 3,007,854,981
3. Expenses and fees for year	9,843,046	15,375,486	20,538,703	22,791,105
4. Actual net investment income based on market value of assets (Item 1.c. + Item 2 - Item 3)	(826,748,024)	(2,357,376,313)	318,922,184	2,985,063,876
5. Market value of assets, beginning of year	22,285,375,387	20,820,944,803	17,812,242,996	17,418,714,865
6. Contributions during year	310,882,741	317,734,923	371,265,972	786,303,859
7. Benefits paid during year	(788,045,300)	(910,299,052)	(1,042,295,182)	(1,208,704,786)
8. Refunds paid during year	(91,824,591)	(42,765,105)	(34,948,463)	(34,006,055)
9. Expenses for year	0	0	0	0
10. LTD management fees for year	0	0	0	0
11. Other changes and net transfers	(68,074,200)	(7,149,384)	(5,472,629)	(6,846,763)
12. Expected net investment income at 8%				
a. Market value of assets, beginning of year	1,782,830,031	1,665,675,584	1,424,979,440	1,393,497,189
b. Contributions	12,435,310	12,709,397	14,850,639	31,452,154
c. Benefits	(34,148,630)	(39,446,292)	(45,166,125)	(52,377,207)
d. Refunds	(3,672,984)	(1,710,604)	(1,437,939)	(1,360,242)
e. Expenses	0	0	0	0
f. LTD management fees	0	0	0	0
g. Other	(2,722,968)	(285,975)	(218,905)	(273,871)
h. Total	1,754,720,759	1,636,942,109	1,393,007,110	1,370,938,023
13. Excess investment income for year (Item 4 - Item 12.h.)	\$ (2,581,468,783)	\$ (3,994,318,422)	\$ (1,074,084,926)	\$ 1,614,125,853

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

Item	Plan Year Ending June 30,			
	2001	2002	2003	2004
1. Calculation of unrealized gain/(loss) for year, based on market value				
a. Market value over book value (end of year)	\$ 63,030,160	\$ (161,063,629)	N/A	N/A
b. Market value over book value (beginning of year)	136,961,959	63,030,160	N/A	N/A
c. Unrealized gain/(loss) during the year	(73,931,799)	(224,093,789)	N/A	N/A
2. Net investment income for year (based on market value since 2003, book value in other years)	207,918,926	16,944,493	\$ 10,393,667	\$ 114,905,472
3. Expenses and fees for year	0	0	857,269	853,105
4. Actual net investment income based on market value of assets (Item 1.c. + Item 2 - Item 3)	133,987,127	(209,149,296)	9,536,398	114,052,367
5. Market value of assets, beginning of year	902,176,526	1,051,971,617	768,846,996	698,106,059
6. Contributions during year	56,308,301	4,040,650	4,256,357	79,662,201
7. Benefits paid during year	(40,500,337)	(75,989,584)	(84,533,693)	(83,680,261)
8. Refunds paid during year	0	0	0	0
9. Expenses for year	0	0	0	0
10. LTD management fees for year	0	0	0	0
11. Other changes and net transfers	0	0	0	(92,117)
12. Expected net investment income at 8%				
a. Market value of assets, beginning of year	72,174,122	84,157,729	61,507,760	55,848,485
b. Contributions	2,252,332	161,626	170,254	3,186,488
c. Benefits	(1,755,015)	(3,292,882)	(3,663,127)	(3,626,145)
d. Refunds	0	0	0	0
e. Expenses	0	0	0	0
f. LTD management fees	0	0	0	0
g. Other	0	0	0	(3,685)
h. Total	72,671,439	81,026,473	58,014,887	55,405,143
13. Excess investment income for year (Item 4 - Item 12.h.)	\$ 61,315,688	\$ (288,175,769)	\$ (48,478,489)	\$ 58,647,224

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

Item	Valuation as of June 30, 2003	Valuation as of June 30, 2004
1. Excess (shortfall) of investment income for current year and previous three years (see Table 9a):		
a. Current year	\$ (1,074,084,926)	\$ 1,614,125,853
b. Current year - 1	(3,994,318,422)	(1,074,084,926)
c. Current year - 2	(2,581,468,783)	(3,994,318,422)
d. Current year - 3	207,131,363	(2,581,468,783)
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ (966,676,434)	\$ 1,452,713,268
b. Current year - 1 (80% deferral)	(3,195,494,738)	(859,267,941)
c. Current year - 2 ¹	(1,032,587,513)	(2,796,022,896)
d. Current year - 3 (20% deferral)	41,426,273	(516,293,757)
e. Total deferred for year	\$ (5,153,292,412)	\$ (2,718,871,326)
3. Market value of plan assets, end of year	\$ 17,418,714,877	\$ 19,940,524,999
4. Actuarial value of plan assets, end of year (Item 3 - Item 2.e.)	\$ 22,572,007,289	\$ 22,659,396,325

¹ 40% deferral for 6/30/2003, 70% deferral for 6/30/2004.

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

Item	Valuation as of June 30, 2003	Valuation as of June 30, 2004
1. Excess (shortfall) of investment income for current year and previous three years (see Table 9b):		
a. Current year	\$ (48,478,489)	\$ 58,647,224
b. Current year - 1	(288,175,769)	(48,478,489)
c. Current year - 2	61,315,688	(288,175,769)
d. Current year - 3	14,299,080	61,315,688
2. Deferral of excess (shortfall) of investment income for:		
a. Current year (90% deferral)	\$ (43,630,640)	\$ 52,782,502
b. Current year - 1 (80% deferral)	(230,540,615)	(38,782,791)
c. Current year - 2 ¹	24,526,275	(201,723,039)
d. Current year - 3 (20% deferral)	2,859,816	12,263,138
e. Total deferred for year	\$ (246,785,164)	\$ (175,460,190)
3. Market value of plan assets, end of year	\$ 698,106,058	\$ 808,048,248
4. Actuarial value of plan assets, end of year (Item 3 - Item 2.e.)	\$ 944,891,222	\$ 983,508,438

¹ 40% deferral for 6/30/2003, 70% deferral for 6/30/2004.

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

Item	Valuation as of June 30, 2003	Valuation as of June 30, 2004
1. Actuarial assets, beginning of year	\$ 22,641,693,322	\$ 22,572,007,289
2. Total contributions during year	371,265,972	786,303,859
3. Benefits paid during year	(1,042,295,182)	(1,208,704,786)
4. Refunds paid during year	(35,948,463)	(34,006,055)
5. Expenses (other than investment) for the year	0	0
6. Other changes and net transfers	(5,472,629)	(6,846,763)
7. Assumed net investment income at 8%		
a. Beginning of year assets	1,811,335,466	1,805,760,583
b. Contributions	14,850,639	31,452,154
c. Benefits	(45,166,125)	(52,377,207)
d. Refunds	(1,437,939)	(1,360,242)
e. Expenses	0	0
f. Other	(218,905)	(273,871)
g. Total	\$ 1,779,363,136	\$ 1,783,201,417
8. Expected actuarial assets, end of year (Sum of Items 1 through 7)	\$ 23,708,606,156	\$ 23,891,954,961
9. Actual actuarial assets, end of year	\$ 22,572,007,289	\$ 22,659,396,325
10. Asset gain/(loss) for year (Item 9 - Item 8)	\$ (1,136,598,867)	\$ (1,232,558,636)

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

Item	Valuation as of June 30, 2003	Valuation as of June 30, 2004
1. Actuarial assets, beginning of year	\$ 981,322,647	\$ 944,891,222
2. Total contributions during year	4,256,357	79,662,201
3. Benefits paid during year	(84,533,693)	(83,680,261)
4. Refunds paid during year	0	0
5. Expenses (other than investment) for the year	0	0
6. Other changes and net transfers	0	(92,117)
7. Assumed net investment income at 8%		
a. Beginning of year assets	78,505,812	75,591,298
b. Contributions	170,254	3,186,488
c. Benefits	(3,663,127)	(3,626,145)
d. Refunds	0	0
e. Expenses	0	0
f. Other	<u>0</u>	<u>(3,685)</u>
g. Total	\$ 75,012,939	\$ 75,147,956
8. Expected actuarial assets, end of year (Sum of Items 1 through 7)	\$ 976,058,250	\$ 1,015,929,001
9. Actual actuarial assets, end of year	\$ 944,891,222	\$ 983,508,438
10. Asset gain/(loss) for year (Item 9 - Item 8)	\$ (31,167,028)	\$ (32,420,563)

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

Item	Basis of Assets	
	Market Value	Actuarial Value
1. Net investment income for the year (including net realized gains and net of investment expenses)	\$ 3,007,854,981	\$ 573,433,886
2. Administrative expenses for the year	\$ 22,791,105	\$ 22,791,105
3. Net investment income for the asset valuation method (Item 1 - Item 2 = I)	\$ 2,985,063,876	\$ 550,642,781
4. Beginning of year asset value (A)	\$ 17,418,714,865	\$ 22,572,007,289
5. End of year asset value (B)	\$ 19,940,524,999	\$ 22,659,396,325
6. Estimated yield based on $2I / (A + B - I)$	17.37%	2.46%

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

Item	Basis of Assets	
	Market Value	Actuarial Value
1. Net investment income for the year (including net realized gains and net of investment expenses)	\$ 114,905,472	\$ 43,580,498
2. Administrative expenses for the year	\$ 853,105	\$ 853,105
3. Net investment income for the asset valuation method (Item 1 - Item 2 = I)	\$ 114,052,367	\$ 42,727,393
4. Beginning of year asset value (A)	\$ 698,106,059	\$ 944,891,222
5. End of year asset value (B)	\$ 808,048,248	\$ 983,508,438
6. Estimated yield based on $2I / (A + B - I)$	16.39%	4.53%

Exhibit 3.6 - History of Cash Flow

Year Ending June 30,	Expenditures During the Year					External Cash Flow for the Year	End of Year Market Value of Assets	External Cash Flow as Percentage of Market
	Contributions for the Year	Benefit Payments	Refunds of Contributions	Administrative Expenses ¹	Total			
1988	\$ 226,391,986	\$(184,014,825)	\$(32,440,739)	\$(1,858,980)	\$(218,314,544)	\$ 8,077,442	\$ 6,354,326,735	0.1%
1989	309,456,756	(211,706,362)	(32,763,953)	(2,796,196)	(247,266,511)	62,190,245	7,314,715,626	0.9%
1990	129,780,928	(291,865,604)	(31,871,455)	(3,016,679)	(326,753,738)	(196,972,810)	7,784,051,423	(2.5%)
1991	267,194,502	(313,739,121)	(27,329,212)	(4,889,991)	(345,958,324)	(78,763,822)	8,298,777,637	(0.9%)
1992	265,305,634	(351,219,516)	(24,689,694)	(6,282,138)	(382,191,348)	(116,885,714)	9,375,565,917	(1.2%)
1993	278,158,497	(414,519,290)	(21,419,534)	(5,774,866)	(441,713,690)	(163,555,193)	10,712,781,278	(1.5%)
1994	256,841,228	(445,763,795)	(22,516,743)	(5,222,224)	(473,502,762)	(216,661,534)	10,680,073,807	(2.0%)
1995	326,663,838	(484,729,970)	(24,364,930)	(5,826,425)	(514,921,325)	(188,257,487)	12,356,078,492	(1.5%)
1996 ²	299,724,778	(510,236,051)	(26,307,534)	(5,345,583)	(541,889,168)	(242,164,390)	13,917,637,400	(1.7%)
1997 ²	309,394,448	(550,078,719)	(30,838,244)	(6,740,459)	(587,657,422)	(278,262,974)	16,397,938,329	(1.7%)
1998 ²	321,349,998	(598,804,992)	(29,749,907)	(8,386,901)	(636,941,800)	(315,591,802)	19,389,956,806	(1.6%)
1999 ²	347,970,526	(652,854,456)	(26,089,213)	(9,932,871)	(688,876,540)	(340,906,014)	21,836,381,722	(1.6%)
2000 ²	283,772,496	(723,611,965)	(64,976,507)	(10,775,218)	(799,363,690)	(515,591,194)	23,187,551,913	(2.2%)
2001 ²	367,191,042	(828,545,637)	(91,824,591)	(9,843,046)	(930,213,274)	(563,022,232)	21,872,916,420	(2.6%)
2002 ²	321,775,573	(986,288,636)	(42,765,105)	(15,375,486)	(1,044,429,227)	(722,653,654)	18,594,856,337	(3.9%)
2003 ²	375,522,329	(1,126,828,875)	(35,948,463)	(21,395,972)	(1,184,173,310)	(808,650,981)	18,116,820,935	(4.5%)
2004 ²	865,986,060	(1,292,412,047)	(34,006,055)	(23,644,210)	(1,350,062,312)	(484,076,252)	20,748,573,247	(2.3%)

¹ Including LTD management fees prior to 1996.

² 401(a) assets and 401(h) assets combined

Actuarial Balance Sheet

The results of the actuarial valuation of the Plan as of June 30, 2003, and June 30, 2004, are summarized in the actuarial balance sheet in Exhibit 4.1. The results for 2004 are based on the benefit provisions of the Plan as of June 30, 2004, as summarized in Section 11, and on the actuarial assumptions and methods shown in Section 9.

Exhibit 4.1 - Actuarial Balance Sheet

ACTUARIAL ASSETS

	June 30,	
	2003	2004
I <u>Present Assets At Actuarial Value:</u>		
1. Reserve for retired members and beneficiaries	\$ 10,017,088,581	\$ 11,374,777,957
2. Reserve for disabled members	328,285,163	348,086,799
3. Reserve for other-than-plan retirees	12,589,518	11,867,731
4. Reserve for PBI COLAs		
(a) Reserve for July 1st COLA	341,858,732	381,740,815
(b) Reserve for future COLAs	728,830,020	305,477,344
5. Employee contributions		
(a) Plan members	3,110,690,039	3,407,611,954
(b) System members	N/A	N/A
6. Employer contributions		
(a) Plan	2,930,889,933	3,189,664,820
(b) System	N/A	N/A
7. Other miscellaneous		
(a) ASRS building and land	0	0
(b) Other	0	0
8. Additional assets	<u>646,588,950</u>	<u>1,729,345,827</u>
9. Total present assets	\$ 18,116,820,936	\$ 20,748,573,247
10. Adjustment to book value due to actuarial asset valuation method	<u>5,400,077,575</u>	<u>2,894,331,516</u>
11. Total actuarial value of present assets	\$ 23,516,898,511	\$ 23,642,904,763
II <u>Prospective Assets:</u>		
12. Unfunded actuarial accrued liability	786,740,936	2,275,424,742
13. TOTAL ACTUARIAL ASSETS	<u>\$ 24,303,639,447</u>	<u>\$ 25,918,329,505</u>

Exhibit 4.1 - Actuarial Balance Sheet

ACTUARIAL LIABILITIES

	June 30,	
	2003	2004
<u>III Present Value of Benefits Presently Being Paid:</u>		
14. (a) Benefits for retired members and beneficiaries	\$ 9,543,520,373	\$ 10,878,680,558
(b) Health insurance premium supplement	473,568,208	496,097,399
15. (a) Benefits for disabled members	292,804,436	319,249,085
(b) Health insurance premium supplement	35,480,727	28,837,714
16. (a) Benefits for other-than-plan participants	4,127,973	3,618,883
(b) Health insurance premium supplement	8,461,545	8,248,848
17. Total present value of benefits presently being paid	\$ 10,357,963,262	\$ 11,734,732,487
<u>IV Present Value of Benefits Payable In the Future</u>		
<u>To Present Members:</u>		
18. Active members		
(a) Service retirement benefits	\$ 10,435,386,360	\$ 10,893,474,050
(b) Health insurance premium supplement	851,386,523	878,900,986
(c) Disability retirement benefits	207,034,730	214,579,320
(d) Pre-retirement death benefits	236,526,342	248,143,268
(e) Withdrawal benefits	324,951,254	342,756,931
(f) Total active members	\$ 12,055,285,209	\$ 12,577,854,555
19. Inactive members	819,702,224	918,524,304
20. Total	\$ 23,232,950,695	\$ 25,231,111,346
<u>V Other Liabilities And Reserves:</u>		
21. Reserve for other miscellaneous liabilities and reserves	0	0
22. Reserve for PBI COLAs	\$ 1,070,688,752	\$ 687,218,159
23. TOTAL ACTUARIAL LIABILITIES	\$ 24,303,639,447	\$ 25,918,329,505

Exhibit 4.2 - Relative Size of Unfunded Actuarial Accrued Liability

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

Contribution Rates

Normal Cost

Exhibit 5.1 indicates that the normal cost as of June 30, 2004, is 13.02% of pay, compared to 13.03% in the 2003 valuation. This normal cost is developed based on the prescribed Projected Unit Credit (PUC) actuarial valuation method. It includes both employer and member components.

Summary of Cost Items

Exhibit 5.2 compares a number of the key actuarial items for the 2004 valuation with the corresponding items for the 2003 valuation.

Contribution Rates

The employer and member contribution rates are 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 June 30, 2004, valuation, the normal cost of the Plan is 13.02% and the amortization of the UAAL is 2.50%. So the calculated employer and member rates are equal to:

$$\frac{1}{2} \times (13.02\% + 2.50\%) = 7.76\%.$$

The contribution rates are then rounded to the nearest 0.05% to 7.75% for each employee and employer.

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

$$\frac{1}{2} \times (13.02\% - 0.00\%) = 6.51\%.$$

This difference of 1.25% (i.e., 7.76% - 6.51%) is due totally to the UAAL of the Plan. Thus, the current UAAL of the Plan is equivalent to a 1.25% increases in the employer and member contribution rates determined by the 2004 valuation.

The member and employer contribution rates determined by the 2004 valuation are each 7.75% 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 employee contributions will be contributed to the 401(a) account. This assumption is made to avoid any possible qualification problems due to refunds of employee contributions. The contribution rates may be allocated as shown below:

Item	401(a) Account	401(h) Account	Total
1. Employee Contribution Rates	7.75%	0.00%	7.75%
2. Employer Contribution Rates	<u>6.61%</u>	<u>1.14%</u>	<u>7.75%</u>
3. Total Contribution Rates	14.36%	1.14%	15.50%

Exhibit 5.1 - Analysis of Normal Cost by Component

Benefit Component	Normal Cost as % of Pay	
	2003	2004
1. Retirement benefits	10.41%	10.27%
2. Health insurance premium supplement	0.69%	0.67%
3. Disability benefits (Deferred Retirement)	0.40%	0.39%
4. Death benefits	0.29%	0.31%
5. Termination benefits		
a. Refunds	0.29%	0.34%
b. Vested deferred benefits	0.95%	1.04%
c. Total	1.24%	1.38%
6. Total	13.03%	13.02%

Exhibit 5.2 - Summary of Cost Items

	Valuation as of June 30, 2003		Valuation as of June 30, 2004	
	Cost Item	Cost as % of Pay	Cost Item	Cost as % of Pay
1. Participants				
a. Active members	202,398		205,482	
b. Inactive members	123,365		136,435	
c. Retired members and beneficiaries	64,697		69,049	
d. Disabled retirees	4,561		4,684	
e. Total	395,021		415,650	
f. Other-than-plan retirees receiving benefit increases from the Plan	769		705	
2. Covered Payroll	\$ 7,296,827,756		\$ 7,485,590,038	
3. Averages for active members				
a. Average age	44.6		44.7	
b. Average years of service	8.5		8.6	
c. Average pay	33,998		34,372	
4. Normal cost rate	13.03%		13.02%	
5. Actuarial accrued liability				
a. Retired members and beneficiaries	\$ 10,017,088,581		\$ 11,374,777,957	
b. Disabled members	328,285,163		348,086,799	
c. Benefits for other- than-plan retirees	12,589,518		11,867,731	
d. Active members	12,055,285,209		12,577,854,555	
e. Inactive members	819,702,224		918,524,304	
f. Other miscellaneous	0		0	
g. Reserve for PBI COLAs	1,070,688,752		687,218,159	
h. Total	\$ 24,303,639,447	333.1%	\$ 25,918,329,505	346.2%
6. Present actuarial assets	\$ 23,516,898,511	322.3%	\$ 23,642,904,763	315.8%
7. Unfunded actuarial accrued liability	\$ 786,740,936	10.8%	\$ 2,275,424,742	30.4%

Exhibit 5.2 - Summary of Cost Items

	Valuation as of June 30, 2003		Valuation as of June 30, 2004	
	Cost Item	Cost as % of Pay	Cost Item	Cost as % of Pay
8. Section 38-737 funding period	30 years		30 years	
9. Section 38-737 contribution rate				
A. 401(a) Account				
a. Employee	6.96%		7.75%	
b. Employer	5.79%		6.61%	
c. Total	12.75%		14.36%	
B. 401(h) Account				
a. Employee	0.00%		0.00%	
b. Employer	1.17%		1.14%	
c. Total	1.17%		1.14%	
C. Total of Combined Accounts				
a. Employee	6.96%		7.75%	
b. Employer	6.96%		7.75%	
c. Total	13.92%		15.50%	
10. Estimated yield on 401(a) actuarial assets	2.88%		2.46%	
11. Relative size of unfunded actuarial accrued liability				
a. As percentage of actuarial assets	3.3%		9.6%	
b. As percentage of covered payroll	10.8%		30.4%	
c. As percentage of total actuarial accrued liability	3.2%		8.8%	

Exhibit 5.3 - History of Contribution Rates

Fiscal Year Beginning July 1	Calculated Rates		Actual Rates		Total Rate	
	Employee	Employer	Employee	Employer	Calculated	Actual
1980	7.00	6.28	7.00	7.00	13.28	14.00
1981	7.00	6.29	7.00	7.00	13.29	14.00
1982	7.00	5.79	7.00	7.00	12.79	14.00
1983	7.00	6.04	7.00	7.00	13.04	14.00
1984	6.27	6.27	6.27	6.27	12.54	12.54
1985	5.67	5.67	5.67	5.67	11.34	11.34
1986	5.53	5.53	5.53	5.53	11.06	11.06
1987	5.16	5.16	4.00	4.00	10.32	8.00
1988	5.09	5.09	5.09	5.09	10.18	10.18
1989	4.69	4.69	2.00	2.00	9.38	4.00
1990	3.82	3.82	3.82	3.82	7.64	7.64
1991	3.60	3.60	3.60	3.60	7.20	7.20
1992	3.59	3.59	3.59	3.59	7.18	7.18
1993	4.09	4.09	3.14	3.14	8.18	6.28
1994	3.75	3.75	3.75	3.75	7.50	7.50
1995	3.95	3.95	3.36	3.36	7.90	6.72
1996	3.20	3.20	3.20	3.20	6.40	6.40
1997	3.05	3.05	3.05	3.05	6.10	6.10
1998	2.85	2.85	2.85	2.85	5.70	5.70
1999	2.17	2.17	2.17	2.17	4.34	4.34
2000	2.73 ¹	2.73 ¹	2.17	2.17	5.46 ¹	4.34
2001	1.92	1.92	2.00	2.00	3.84	4.00
2002	3.86 ¹	3.86 ¹	2.00	2.00	7.72 ¹	4.00
2003	5.20	5.20	5.20	5.20	10.40	10.40
2004	6.96 ¹	6.96 ¹	5.20	5.20	13.92 ¹	10.40
2005	7.75	7.75	7.75	7.75	15.50	15.50

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

Actuarial Gains and Losses

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

The valuation of the Plan reflects a loss on the investment return on the actuarial value of assets of \$1,265 million. This loss is not due to the investment experience of fiscal 2004. Rather it is due to delayed recognition of losses that have occurred in earlier years. Investment losses are now recognized in actuarial assets over a ten-year period. The yield rate on actuarial assets for the 2004 fiscal year is 2.46% on the pension assets (401(a)) and 4.53% on the health supplement assets (401(h)), compared to last year's returns of 2.88% and 4.66%, respectively. The actuarially assumed rate of return is 8%. There was also a small loss of \$132 million on the liability experience, mostly due to the delay in implementing new contribution rates and to the increased value of contribution refunds for withdrawing members.

Exhibit 6.1 - Actuarial Gain or Loss for the Year

Item	Valuation as of June 30, 2003	Valuation as of June 30, 2004
A. Calculation of Total Actuarial Gain or Loss		
1. Unfunded actuarial accrued liability (UAAL), previous year	\$ (1,036,095,218)	\$ 786,740,936
2. Normal cost for the year	\$ 831,731,341	\$ 950,776,657
3. Contributions for the year	\$ (375,522,329)	\$ (865,966,060)
4. Interest at 8%		
a. On UAAL	(82,887,617)	62,939,275
b. On normal cost	66,538,507	76,062,133
c. On contributions	(15,020,893)	(34,638,642)
d. Total	\$ (31,370,003)	\$ 104,362,766
5. Expected UAAL (Sum of Items 1 - 4)	\$ (611,256,209)	\$ 975,914,299
6. Actual UAAL	\$ 786,740,936	\$ 2,275,424,742
7. Gain/(loss) for the year (Item 5 - Item 6)	\$ (1,397,997,145)	\$ (1,299,510,443)
B. Source of Gains and Losses		
8. Asset gain/(loss) for the year (Tables 5a and 5b, Item 10)		
a. Experience asset gain/(loss)	\$ (1,167,765,895)	\$ (1,264,979,199)
b. Asset valuation method change	\$ 0	\$ 0
c. Total asset gain/(loss) for the year	\$ (1,167,765,895)	\$ (1,264,979,199)
9. Asset gain/(loss) as a percentage of actuarial assets	(5.0%)	(5.4%)
10. PBI Cola		
a. Excess Earnings Reserve for Fiscal Year 2003	\$ 0	\$ 0
b. Excess Earnings Reserve for Fiscal Year 2004	\$ 0	\$ 0
11. Total actuarial accrued liability gain/(loss) for the year (Item 7 - Item 8c - Item 10)	\$ (230,231,250)	\$ (34,531,244)
12. Analysis of actuarial accrued liability gain/(loss)		
a. Legislative changes	\$ (31,033,200)	\$ 97,212,411
b. Assumption changes	\$ (417,590,319)	\$ 0
c. Experience liability gain/(loss) for the year	\$ 218,392,269	\$ (131,743,655)
d. Total actuarial accrued liability gain/(loss)	\$ (230,231,250)	\$ (34,531,244)
13. Experience liability gain/(loss) as percentage of total actuarial liability (Item 12c as % of Item 5h of Exhibit 5.2)	0.90%	(0.51%)

Exhibit 6.2 - Analysis of Change in Contribution Rate

Basis	Unfunded Actuarial Accrued Liability (\$ Millions)	Statutory Employer/Employee Contribution Rate	Change in Contribution Rate
1. Valuation as of June 30, 2003	787	6.96%	—
2. Delay in contribution rate change	976	7.05%	0.09%
3. 2003 / 2004 liability experience	1,108	7.40%	0.35%
4. 2003 / 2004 asset experience	2,372	8.09%	0.69%
5. 2003 / 2004 legislative and administrative changes	2,275	7.76%	(0.33%)
6. Rounding to the nearest 0.05%	2,275	7.75%	(0.01%)

Permanent Benefit Increase

Exhibit 7.1 shows the determination of the PBI for 2004. The statuses used \$381.7 million in excess earnings to pay for the 2004 PBI. The per-year-of-service factor for the 2004 PBI is \$35.30. The determination of the "Excess Investment Earnings" held in reserve for future PBIs is shown in Items 11 through 13. As shown in Item 13c, \$305.5 million in assets are being held for 2005 PBIs. Since the actuarial investment return (on the actuarial value of assets) of 2.46% is below 8% for fiscal year 2004, there are no additional "Excess Investment Earnings" to be allocated for Permanent Benefit Increases (PBIs). The current excess investment earnings reserve will allow the granting of only one more PBI, effective July 1, 2005.

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

Determination of July 1, 2004 PBI COLA:

1. Actuarial Present Value (APV) for all Retirees and Beneficiaries as of June 30, 2003	\$ 9,543,520,373
2. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2003	2.67%
3. Excess Earnings Available for COLA	
a. Carry-over From Prior Year	\$ 728,830,020
b. Restated carry-over From Prior Year*	687,218,159
c. Current Year (Item 1 x [Item 2 - 8%])	0
d. Total Excess Earnings Available for COLA (Item 3.b + Item 3.c.)	\$ 687,218,159
4. One Percent of APV of all Retirees and Beneficiaries as of June 30, 2003	\$ 95,435,204
5. Preliminary COLA % (Item 3.d / Item 4 x 0.01)	7.2%
6. Actual COLA % (Item 5, but not greater than 4% and equal to 0% if less than 1%)	4.0%
7. Target Cost of 2004 COLA (Item 4 x Item 6)	\$ 381,740,815
8. APV of \$1 Per Year of Service for Eligible Group	\$ 10,815,102
9. Per Year of Service Factor for 2004 COLA	\$ 35.30
10. Excess Investment Earnings to be Carried Forward to Next Year	\$ 305,477,344

Determination of Reserves for Future PBI COLAs:

11. Actuarial Present Value (APV) for all Retirees and Beneficiaries as of June 30, 2004	\$ 10,878,680,558
12. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2004	2.46%
13. Excess Earnings Reserves for Future COLAs	
a. Carry Over From Prior Year (Item 10)	\$ 305,477,344
b. Current Year (Item 11 x [Item 12 - 8%])	0
c. Total Excess Earnings Reserves for Future COLAs	\$ 305,477,344

* Restated amount reflects prospective correction of over-allocation to PBI reserve due to overstatement of market assets in 2001 valuation report. Market assets as of June 30, 2001, were overstated by \$574,977,521. As a result, the yield on actuarial assets for that year was calculated to be 10.98%. With corrected asset data, the yield on actuarial assets for fiscal 2001 becomes 10.41%. Accordingly, the allocation to the PBI pool for fiscal 2001 was overstated by \$41,611,861. The restatement of the carry-over amount in Item 26 b above corrects this error as of June 30, 2004.

GASB Disclosure and CAFR Information

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

GASB 25 Schedule of Funding Progress

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

GASB 25 Schedule of Employer Contributions

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

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

Retiree and Beneficiary Experience

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

Solvency Test

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

Actuarial Certification
ARIZONA STATE RETIREMENT PLAN
Actuarial Certification Statement

This is to certify that Mellon Human Resources & Investor Solutions has prepared an actuarial valuation of the Arizona State Retirement Plan as of June 30, 2004.

Actuarial calculations have been made with respect to a total of 415,650 members – 205,482 active employees, 136,435 inactive members, and 69,049 retired members and beneficiaries, and 4,684 members on long term disability. In addition, there are 705 System retirees receiving ad hoc benefits from Plan assets.

The actuarial calculations establish a total benefit cost of 15.50% of the annual compensation of employees. The total normal cost rate is 13.02% of compensation, and the required amortization payment determined in accordance with Section 38-737 is 2.50% of compensation.

The actuarial cost factors as of June 30, 2004 are as follows:

I. Actuarial accrued liabilities			
A. Liabilities due to member's benefits			
1. Active members			
a. Retirement benefits	\$10,893,474,050		
b. Health insurance premium supplement	878,900,986		
c. Disability deferred retirement benefits	214,579,320		
d. Pre-retirement death benefits	248,143,268		
e. Withdrawal benefits	<u>342,756,931</u>		
f. Total active members		\$12,577,854,555	
2. Inactive members		918,524,304	
3. Retired members and beneficiaries		11,374,777,957	
4. Disabled members (deferred retirement)		348,086,799	
5. Benefit increases for other-than-plan participants		<u>11,867,731</u>	
6. Total present value of benefits		\$25,231,111,346	
B. Other miscellaneous liabilities and reserves		0	
C. Reserve for future PBIs		<u>687,218,159</u>	
D. Total actuarial accrued liability			\$25,918,329,505
II. Actuarial value of assets			23,642,904,763
III. Unfunded actuarial accrued liability (Item I -- Item II)			2,275,424,742
IV. Amortization of unfunded actuarial accrued liability (per Section 38-737)		187,139,751	
V. Normal cost for the year		<u>974,455,203</u>	
VI. Total contribution for the year (Item IV + Item V)			1,161,594,954
VII. Total covered payroll (projected to 2004 / 2005 plan year)			7,485,590,038
VIII. Total contribution for fiscal years 2006 and 2007 as a percentage of covered payroll			
A. Employee Portion	<u>401(a) Account</u>	<u>401(h) Account</u>	<u>Total</u>
B. Employer Portion	7.75%	0.00%	7.75%
C. Total	6.61%	1.14%	7.75%
	14.36%	1.14%	15.50%

The Board adopted a new asset valuation method on November 15, 2002, to be effective for valuations on and after June 30, 2002.

On November 21, 2003, the Board adopted assumptions to be effective for valuations on and after June 30, 2003. These assumptions are as follows:

1. Investment yield - 8% per annum.

2. Salary increases

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

3. Rates of disability

Age	Males	Females
20	0.06%	0.07%
30	0.07%	0.10%
40	0.21%	0.21%
50	0.51%	0.49%
60	1.20%	1.09%

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

Age	Years of Service				
	Male Members				
	1	2	5	8	10+
20	36.42%	28.95%	13.64%	7.11%	12.77%
30	20.55	16.12	9.43	5.14	5.65
40	16.98	10.11	6.65	4.00	2.27
50	16.92	9.04	5.02	3.45	1.55
60	18.24	9.63	3.71	2.61	1.08

Age	Years of Service				
	Female Members				
	1	2	5	8	10+
20	30.53%	26.40%	20.77%	13.80%	21.48%
30	19.37	16.52	10.89	8.11	8.21
40	16.93	11.74	6.61	4.61	2.39
50	14.57	9.27	5.22	2.87	1.67
60	14.32	9.39	4.66	2.37	0.88

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

Age	Years of Service				
	10-14	20-24	25	30	31+
50	3.00%	4.00%	7.00%	17.50%	12.50%
55	3.00	6.00	16.25	17.50	12.50
60	7.00	23.75	26.75	35.00	30.00
62	30.00	40.00	43.00	55.00	50.00
65	30.00	30.00	33.00	35.00	30.00
66 and above	30.00	30.00	33.00	35.00	30.00

6. Mortality rates – 1994 GAM – Static, Projected to 2005 with Projection Scale AA, with no setback.
7. Mortality rates after disability – Post disablement mortality rates are based on experience of other large public sector system and ASRS’ own experience.
8. Valuation assets – Market value less ten year phase-in of Excess (Shortfall) Investment income.
9. Funding method – Projected unit-credit.

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

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



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

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

Valuation Date	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2) / (3)	Annual Covered Payroll	UAAL as % of Payroll (4) / (6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
06/30/1993	\$ 9,770	\$ 8,921	\$ (849)	109.5%	\$ 3,748	(22.7%)
06/30/1994	10,549	9,668	(872)	109.0%	4,126	(21.1%)
06/30/1995	11,521	10,304	(1,217)	111.8%	4,432	(27.5%)
06/30/1996	12,579	11,111	(1,468)	113.2%	4,632	(31.7%)
06/30/1997	13,692	11,694	(1,998)	117.1%	4,836	(41.3%)
06/30/1998	15,577	12,910	(2,667)	120.7%	5,164	(51.7%)
06/30/1999	18,043	15,476	(2,567)	116.6%	5,488	(46.8%)
06/30/2000	20,292	16,854	(3,438)	120.4%	5,894	(58.3%)
06/30/2001	21,888	19,012	(2,876)	115.1%	6,357	(45.2%)
06/30/2002	22,642	21,285	(1,357)	106.4%	6,989	(19.4%)
06/30/2003	22,572	22,935	363	98.4%	7,297	5.0%
06/30/2004	22,659	24,506	1,847	92.5%	7,486	24.7%

Note: Dollar amounts in millions.
 Values shown for valuation dates on or after June 30, 1996 are for the 401(a) plans only.

**Exhibit 8.2 - Schedule of Employer Contributions
(as required by GASB #25)**

<u>Fiscal Year</u>	<u>Annual Required Contribution</u>	<u>Percentage Contributed</u>
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%

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

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, 2004
Actuarial cost method	Projected Unit Credit
Amortization method	Level dollar, 30 years
Payroll growth rate for amortization	N/A
Asset valuation method	10-year smoothed market
Actuarial assumptions:	
Investment rate of return*	8.00%
Projected salary increases	4.50% to 9.50%
*Includes inflation at	4.25%
Cost-of-living adjustments	Permanent Benefit Increase COLA reserve of \$ 687 million as of June 30, 2004

Exhibit 8.4 - Components of Normal Cost

Components of the normal cost are as follows:

Retirement benefits	10.27%
Health insurance premium supplement	0.67%
Survivor benefits	0.31%
Withdrawals	1.38%
Long-term disability benefit	<u>0.39%</u>
Total, normal cost	13.02%
Amortization of the UAAL	<u>2.50%</u>
Required contribution rate for FY 2005/2006 Shared by employee and employer	15.52%
Required contribution rate for FY 2005/2006 Shared by employee and employer	15.52%
Required matching contribution rate	<u>7.76%</u>
Rounded contribution rate shared by employee and employer to the nearest 0.05%	<u>7.75%</u>

Exhibit 8.5 – Schedule of Plan Active Member Valuation Data

Contributing Active Members

<u>Valuation As of June 30</u>	<u>Number</u>	<u>Annual Payroll</u>	<u>Annual* Average Pay</u>	<u>Increase in Average Pay</u>
2004	205,482	7,485,590,038	36,429	1.0

Exhibit 8.6 – Schedule of Plan Retirees Added to and Removed from Rolls

<u>Year Ended</u>	<u>Retirants and Beneficiaries Added to Rolls</u>	<u>Retirants and Beneficiaries Removed from Rolls</u>	<u>Retirants and Beneficiaries at End of Year</u>	<u>Percentage Increase in Average Allowances</u>	<u>Average Annual Allowances</u>
2004	6,430	2,196	68,931	6.1%	17,844

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

<u>Year Ended June 30</u>	<u>Aggregate Accrued Liabilities Plan</u>	<u>Actuarial Value of Net Plan Assets</u>	<u>Assets as a % of Accrued Liabilities Plan</u>	<u>Unfunded (over) Accrued Liabilities – Plan (UAL)</u>	<u>Active Member Payroll</u>	<u>UAL as a % of Active Member Payroll</u>
2004	25,918,329,505	23,642,904,763	91	2,275,424,742	7,485,590,038	30.4

Exhibit 8.8 – Solvency Test

Aggregate Accrued Liabilities for							
Year Ended June 30	(1)	(2)	(3)	Net Assets Available for Benefits	Portion of Accrued Liabilities Covered by Net Assets Available for Benefits		
	Active Member Contributions	Retirees and Beneficiaries	Active Members (Employer Financed Portion)		(1)	(2)	(3)
2004	3,407,611,954	12,421,950,646	10,088,766,905	23,642,904,763	100	100	77.4

Exhibit 8.9 – Schedule of Recommended Versus Actual Plan Contributions

Year Ended June 30	Active Member Payroll	Employee Contributions	Employer Retirement Contribution Rate – Actual	Actuary Recommended Contribution
2004	7,486,000,000	377,436,100	5.20%	5.20%

Exhibit 8.10 – Analysis of Financial Experience for the Plan

(millions)

Year Ended June 30	Unfunded Actuarial Liability (UAAL), Prior Year	Normal Cost for the Year	Contributions for the Year	Interest at 8% on UAAL	On Normal cost	On Contributions	Total	Expected UAAL	Actual UAAL	Gain (Loss) for the Year
2004	786.74	950.78	(865.97)	62.94	76.06	(34.64)	104.36	975.91	2,275.42	(1,299.51)

Summary of Actuarial Method and Assumptions

**Summary of Actuarial Methods and Assumptions
 (Adopted by Board Action on November 21, 2003)
 (Effective as of June 30, 2004)**

A. Actuarial Assumptions

1. Investment Yield Rate

8% per annum, compounded annually.

2. Mortality

a. Pre-retirement

1994 GAM – Static, Projected to 2005 with Projection Scale AA, with no setback. Rates at representative ages are shown below.

Age	Rates of Mortality (Active)	
	Male Participants	Female Participants
20	0.000411	0.000238
25	0.000592	0.000249
30	0.000758	0.000314
35	0.000805	0.000423
40	0.000981	0.000600
45	0.001366	0.000815
50	0.002112	0.001183
55	0.003583	0.002100
60	0.006679	0.004201
65	0.012447	0.008173
70	0.020095	0.012993

b. Post-retirement

Non-Disabled rates are based on the 1994 GAM – Static, Projected to 2005 with Projection Scale AA with no setback. Disabled rates are based on the experience of other large public sector retirement systems and ASRS' own experience. Rates at representative ages are shown below.

Age	Rates of Mortality			
	Non-Disabled	Disabled	Non-Disabled	Disabled
	Male Participants		Female Participants	
20	0.000411	0.034940	0.000238	0.026939
25	0.000592	0.038887	0.000249	0.027444
30	0.000758	0.051102	0.000314	0.038302
35	0.000805	0.063544	0.000423	0.053927
40	0.000981	0.058807	0.000600	0.056984
45	0.001366	0.040921	0.000815	0.037586
50	0.002112	0.034742	0.001183	0.025696
55	0.003583	0.031356	0.002100	0.022836
60	0.006679	0.031109	0.004201	0.018029
65	0.012447	0.030861	0.008173	0.013934
70	0.020095	0.033730	0.012993	0.012993

3. Disability Rates

Sample rates are shown below.

Age	Rates of Decrement due to Disability	
	Male Participants	Female Participants
20	.000575	.000734
25	.000638	.000804
30	.000730	.001014
35	.001096	.001563
40	.002111	.002111
45	.003358	.003171
50	.005128	.004865
55	.007715	.007022
60	.011992	.010913

4. Withdrawal Rates

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

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

Rates of Decrement due to Withdrawal											
Years of Service											
Age	0	1	2	3	4	5	6	7	8	9	10+
<u>Male Employees</u>											
20	.3731	.3642	.2895	.2545	.1508	.1364	.091	.084	.071	.076	.1277
30	.2267	.2055	.1612	.1547	.0917	.0943	.071	.068	.051	.051	.0565
40	.1931	.1698	.1011	.1015	.0601	.0665	.055	.054	.040	.038	.0227
50	.1892	.1692	.0904	.0820	.0458	.0502	.046	.035	.034	.031	.0155
60	.2219	.1824	.0963	.0848	.0445	.0371	.033	.033	.026	.024	.0108
70	.2604	.2282	.1320	.1229	.0616	.0549	.036	.031	.022	.020	.0180
<u>Female Employees</u>											
20	.3116	.3053	.2640	.2596	.2101	.2077	.1680	.1405	.1380	.1285	.2148
30	.2015	.1937	.1652	.1456	.1094	.1089	.0930	.0813	.0811	.0760	.0821
40	.1720	.1693	.1174	.0930	.0666	.0661	.0563	.0482	.0461	.0417	.0239
50	.1698	.1457	.0927	.0722	.0528	.0522	.0426	.0335	.0287	.0227	.0167
60	.1805	.1432	.0939	.0731	.0508	.0466	.0357	.0275	.0237	.0190	.0088
70	.1916	.1666	.1199	.0955	.0622	.0508	.0363	.0293	.0311	.0358	.0144

5. Salary Scales

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

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

* Total salary increase rate = inflation (or growth) rate (4.25%)
+ productivity increase rate (0.25%)
+ merit component

6. Retirement Age:

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

Age	Rates of Decrement Due to Retirement								
	Years of Service								
	0-4	5-9	10-14	15-19	20-24	25	26-29	30	31+
50	0.000	0.020	0.030	0.035	0.0400	0.0700	0.0625	0.175	0.125
55	0.000	0.020	0.030	0.035	0.0600	0.1625	0.1300	0.175	0.125
60	0.000	0.040	0.070	0.090	0.2375	0.2675	0.2000	0.350	0.300
62	0.000	0.050	0.300	0.340	0.4000	0.4300	0.4000	0.550	0.500
65	0.030	0.100	0.300	0.300	0.3000	0.3300	0.3000	0.350	0.300
66+	0.030	0.100	0.300	0.300	0.3000	0.3300	0.3000	0.350	0.300

7. Future Retirees Eligible for the Health Insurance Premium Supplement

It is assumed that 75% of future retirees will be eligible to receive the post-retirement health insurance premium supplement and that 60% of those retirees will be eligible for the dependent premium supplement.

8. Proportion of Vested Termination Members Who Will Not Withdraw Their Contributions

It is assumed that members who terminate with 5 or more years of service (but prior to eligibility for retirement) 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 employees are assumed to elect to receive the deferred benefit. If the employee is assumed to elect the enhanced refund option, then it is also assumed that the employee forfeits the supplement.

Employees who terminate with less than five years of service are assumed to withdraw their employee contributions with interest.

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

9. Service Purchase

Members can buy service at average normal cost rate, although members who buy service are above average in age. We assume a load of 2.15% on years of credit service earned per year.

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.

C. Actuarial Funding Method

Costs are determined under the projected unit-credit method. The unfunded actuarial accrued liability is funded on a level dollar basis over the period of time described in Section 38-737. For the June 30, 2003 actuarial valuation, the period is 30 years.

D. Data for Valuation

In preparing the June 30, 2003 actuarial valuation, the actuary has relied on data and assets provided by the staff of the Arizona State Retirement System. While not verifying the data at their source, the actuary has performed tests for consistency and reasonableness.

Member Data

The June 30, 2004 actuarial valuation of the Plan was based on the following data. For comparison, we also show a summary of the June 30, 2003 statistical information.

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

ACTIVE PLAN MEMBERS

Employee Group	Number of Active Plan Members		Average Age		Average Years of Service		Average Annual Salary	
	As of June 30, 2004	As of June 30, 2003	As of June 30, 2004	As of June 30, 2003	As of June 30, 2004	As of June 30, 2003	As of June 30, 2004	As of June 30, 2003
State Employees:								
Men	16,708	16,799	46.5	46.5	9.7	9.5	\$ 40,268	\$ 40,235
Women	27,881	27,693	44.8	44.6	8.8	8.5	32,582	32,245
Total	44,589	44,492	45.4	45.3	9.1	8.9	\$ 35,461	\$ 35,262
Teachers:								
Men	16,329	16,081	44.7	44.8	10.5	10.7	\$ 43,579	\$ 43,803
Women	49,638	48,325	43.8	43.9	10.2	10.2	39,158	38,893
Total	65,967	64,406	44.0	44.1	10.2	10.3	\$ 40,253	\$ 40,119
Political Subdivision Employees:								
Men	35,538	34,969	45.6	45.5	7.8	7.7	\$ 36,198	\$ 35,577
Women	59,388	58,531	44.3	44.1	6.8	6.6	25,931	25,360
Total	94,926	93,500	44.8	44.6	7.2	7.0	\$ 29,775	\$ 29,181
All Active Plan Members:								
Men	68,575	67,849	45.6	45.6	8.9	8.8	\$ 38,947	\$ 38,680
Women	136,907	134,549	44.2	44.1	8.4	8.3	32,081	31,637
Total	205,482	202,398	44.7	44.6	8.6	8.5	\$ 34,372	\$ 33,998

Exhibit 10.2 – Summary of Retired Membership

	June 30, 2003	June 30, 2004	Percentage Change During the Period
STATE EMPLOYEES			
Number	16,714	17,591	5.2%
Total Monthly Allowance	\$ 20,774,471	\$ 22,991,837	10.7%
Average Monthly Allowance	\$ 1,243	\$ 1,307	5.1%
Average Age	70.9	70.3	(0.8%)
Average Years of Service	17.4	17.6	1.1%
TEACHERS			
Number	19,852	21,276	7.2%
Total Monthly Allowance	\$ 39,978,718	\$ 45,197,534	13.1%
Average Monthly Allowance	\$ 2,014	\$ 2,124	5.5%
Average Age	68.5	67.8	(1.0%)
Average Years of Service	23.3	23.5	0.9%
POLITICAL SUBDIVISION			
Number	28,131	30,064	6.9%
Total Monthly Allowance	\$ 30,055,651	\$ 34,312,783	14.2%
Average Monthly Allowance	\$ 1,068	\$ 1,141	6.8%
Average Age	70.5	69.8	(1.0%)
Average Years of Service	16.6	16.9	1.8%
TOTAL			
Number ¹	64,697	68,931	6.5%
Total Monthly Allowance ²	\$ 90,808,840	\$ 102,502,155	12.9%
Average Monthly Allowance	\$ 1,404	\$ 1,487	5.9%
Average Age	70.0	69.3	(1.0%)
Average Years of Service	18.9	19.1	1.1%

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

² Allowance includes estimated PBI and Enhanced PBI effective July 1.

Exhibit 10.3 – Summary of Inactive Membership

	June 30, 2003	June 30, 2004	Percentage Change During the Period
STATE EMPLOYEES			
Number	29,829	31,980	7.2%
TEACHERS			
Number	21,261	23,153	8.9%
POLITICAL SUBDIVISION			
Number	72,275	81,302	12.5%
TOTAL			
Number	123,365	136,435	10.6%

Exhibit 10.4a
Distribution of Active Employees by Average Age, Average Years of Service and Average Salary
State Employees
as of June 30, 2004

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	129	0	0	0	0	0	0	0	129
	13,322	0	0	0	0	0	0	0	13,322
20-24	1,457	89	0	0	0	0	0	0	1,546
	20,839	26,729	0	0	0	0	0	0	21,178
25-29	2,694	729	16	0	0	0	0	0	3,439
	25,881	30,471	30,539	0	0	0	0	0	26,876
30-34	2,330	1,553	347	23	0	0	0	0	4,253
	28,808	34,421	35,363	36,736	0	0	0	0	31,435
35-39	1,903	1,582	867	338	21	0	0	0	4,711
	29,387	34,665	38,573	39,645	33,530	0	0	0	33,604
40-44	2,052	1,653	1,135	946	309	36	0	0	6,131
	30,096	34,383	39,175	42,388	41,394	41,246	0	0	35,464
45-49	2,030	1,695	1,300	1,150	637	325	25	0	7,162
	30,356	35,015	38,944	42,881	45,507	46,087	49,463	0	37,157
50-54	1,762	1,473	1,314	1,221	791	586	162	7	7,316
	30,963	35,027	38,985	42,820	46,966	51,673	53,704	51,419	39,113
55-59	1,295	1,233	1,107	989	658	410	253	36	5,981
	31,526	36,523	38,794	41,088	44,521	55,785	58,532	59,796	39,888
60-64	596	613	609	551	267	182	109	62	2,989
	30,594	35,701	36,881	40,245	45,017	57,193	57,511	64,765	39,300
65-69	142	143	157	121	49	38	20	28	698
	31,321	37,280	35,606	39,372	40,320	47,116	65,208	85,463	39,536
70 & Over	36	44	51	43	17	12	13	18	234
	26,957	33,078	36,877	33,891	34,175	50,479	56,139	70,597	38,253
TOTAL	16,426	10,807	6,903	5,382	2,749	1,589	582	151	44,589
	28,447	34,642	38,446	41,801	44,927	51,870	56,783	67,495	35,461

Exhibit 10.4b
Distribution of Active Employees by Average Age, Average Years of Service and
Average Salary
Teachers
as of June 30, 2004

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	14
	9,013	0	0	0	0	0	0	0	9,013
20-24	1,839	42	0	0	0	0	0	0	1,881
	28,434	26,696	0	0	0	0	0	0	28,395
25-29	5,481	1,582	15	0	0	0	0	0	7,078
	32,249	36,576	37,508	0	0	0	0	0	33,227
30-34	3,223	3,833	824	9	0	0	0	0	7,889
	32,430	39,094	42,449	38,828	0	0	0	0	36,722
35-39	2,229	2,429	2,051	474	10	0	0	0	7,193
	31,130	38,180	44,646	47,702	32,580	0	0	0	38,459
40-44	2,238	2,222	1,746	1,812	510	17	0	0	8,545
	29,511	36,052	42,735	49,358	50,895	50,530	0	0	39,441
45-49	2,037	2,146	1,865	1,809	1,645	801	16	0	10,319
	29,945	36,503	41,519	47,864	53,445	56,005	51,836	0	42,345
50-54	1,784	1,903	2,089	2,094	1,624	1,738	528	6	11,766
	30,684	37,440	42,161	47,564	52,394	58,489	64,140	57,361	45,437
55-59	1,280	1,148	1,337	1,530	1,183	756	452	86	7,772
	31,361	38,119	42,353	47,327	50,529	56,102	65,156	65,605	45,062
60-64	557	501	449	486	358	245	134	79	2,809
	28,968	36,783	41,348	45,733	48,265	50,663	58,237	63,230	41,953
65-69	161	111	77	64	47	26	15	15	516
	25,867	31,294	38,221	41,715	48,984	45,455	55,053	58,033	35,720
70 & Over	58	44	31	21	12	9	2	8	185
	26,097	23,939	24,104	25,744	38,559	33,634	46,738	60,893	28,113
TOTAL	20,901	15,961	10,484	8,299	5,389	3,592	1,147	194	65,967
	30,947	37,465	42,552	47,768	51,792	56,705	63,530	63,603	40,253

Exhibit 10.4c
Distribution of Active Employees by Average Age, Average Years of Service and
Average Salary
Political Subdivision Employees
as of June 30, 2004

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	662	0	0	0	0	0	0	0	662
	10,477	0	0	0	0	0	0	0	10,477
20-24	4,211	260	0	0	0	0	0	0	4,471
	16,825	22,950	0	0	0	0	0	0	17,181
25-29	5,285	1,528	54	0	0	0	0	0	6,867
	23,538	29,210	31,797	0	0	0	0	0	24,865
30-34	5,412	2,746	588	53	0	0	0	0	8,799
	24,221	32,985	35,609	39,559	0	0	0	0	27,809
35-39	5,612	3,158	1,296	605	50	0	0	0	10,721
	23,208	32,505	39,235	41,025	45,469	0	0	0	28,993
40-44	6,309	3,888	1,921	1,314	482	66	0	0	13,980
	22,164	30,485	39,426	46,294	46,145	46,544	0	0	30,060
45-49	5,936	4,099	2,378	1,743	922	471	56	0	15,605
	23,500	30,168	36,653	44,839	50,366	48,729	52,689	0	32,093
50-54	4,970	3,392	2,322	1,851	1,091	716	201	8	14,551
	23,820	31,159	36,283	43,020	49,456	53,615	54,386	57,898	33,791
55-59	3,799	2,414	1,684	1,559	925	457	246	40	11,124
	23,115	31,250	36,216	41,945	46,553	51,842	64,344	56,723	33,664
60-64	1,887	1,339	830	708	392	231	109	47	5,543
	20,328	28,488	33,912	39,478	44,956	47,177	59,132	74,462	30,862
65-69	820	420	242	137	68	43	23	12	1,765
	16,228	22,997	30,536	38,437	43,409	45,352	50,237	66,706	24,068
70 & Over	376	255	95	63	30	10	6	3	838
	13,854	16,789	22,655	32,188	30,362	42,552	56,638	76,923	18,589
TOTAL	45,279	23,499	11,410	8,033	3,960	1,994	641	110	94,926
	22,216	30,607	36,751	43,093	47,842	50,841	58,739	66,028	29,775

Exhibit 10.4d
Distribution of Active Employees by Average Age, Average Years of Service and
Average Salary
Total Active Employees
as of June 30, 2004

CURRENT AGE	YEARS OF SERVICE								TOTAL
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35 & Over	
Below 19	805	0	0	0	0	0	0	0	805
	10,908	0	0	0	0	0	0	0	10,908
20-24	7,507	391	0	0	0	0	0	0	7,898
	20,448	24,212	0	0	0	0	0	0	20,634
25-29	13,460	3,839	85	0	0	0	0	0	17,384
	27,554	32,485	32,568	0	0	0	0	0	28,667
30-34	10,965	8,132	1,759	85	0	0	0	0	20,941
	27,609	36,139	38,764	38,718	0	0	0	0	31,904
35-39	9,744	7,169	4,214	1,417	81	0	0	0	22,625
	26,227	34,904	41,733	42,929	40,782	0	0	0	32,963
40-44	10,599	7,763	4,802	4,072	1,301	119	0	0	28,656
	25,251	32,908	40,570	46,750	46,879	45,511	0	0	34,013
45-49	10,003	7,940	5,543	4,702	3,204	1,597	97	0	33,086
	26,204	32,915	38,828	45,524	50,981	51,841	51,717	0	36,387
50-54	8,516	6,768	5,725	5,166	3,506	3,040	891	21	33,633
	26,736	33,767	39,048	44,815	50,255	56,027	60,042	55,585	39,023
55-59	6,374	4,795	4,128	4,078	2,766	1,623	951	162	24,877
	26,480	34,251	38,895	43,756	47,770	54,823	63,184	62,121	38,721
60-64	3,040	2,453	1,888	1,745	1,017	658	352	188	11,341
	23,924	31,985	36,638	41,462	46,137	51,245	58,289	66,544	35,833
65-69	1,123	674	476	322	164	107	58	55	2,979
	19,518	27,394	33,452	39,440	44,084	46,004	56,645	73,890	29,710
70 & Over	470	343	177	127	59	31	21	29	1,257
	16,368	19,796	27,007	31,699	33,128	43,031	55,386	68,574	23,651
TOTAL	82,606	50,267	28,797	21,714	12,098	7,175	2,370	455	205,482
	25,664	33,652	39,269	44,560	48,939	54,004	60,577	65,481	34,372

Exhibit 10.5a
Distribution of Retired Employees by Average Age, Average Years of Service and
Average Monthly Annuity
State Employees
as of June 30, 2004

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	46	81	339	124	0	0	0	0	0	0	0	590
	961	523	1,615	2,337	0	0	0	0	0	0	0	1,566
55-59	4	189	249	911	214	0	0	0	0	0	0	1,567
	129	267	546	2,165	2,240	0	0	0	0	0	0	1,684
60-64	2	394	569	430	1,208	174	0	0	0	0	0	2,777
	161	320	632	954	2,162	2,449	0	0	0	0	0	1,417
65-69	101	600	866	680	573	757	65	0	0	0	0	3,642
	144	357	704	1,054	1,548	2,687	3,012	0	0	0	0	1,283
70-74	150	672	772	567	457	341	266	17	0	0	0	3,242
	139	365	745	1,126	1,690	2,358	3,130	3,308	0	0	0	1,217
75-79	85	525	612	477	333	265	160	74	2	0	0	2,533
	162	386	772	1,188	1,707	2,336	2,869	3,702	2,655	0	0	1,256
80-84	49	358	494	460	307	165	108	45	10	0	0	1,996
	146	394	808	1,211	1,539	2,231	2,679	2,694	4,097	0	0	1,201
85-89	23	188	220	209	113	86	50	18	9	1	0	917
	181	415	842	1,096	1,534	1,826	2,030	2,373	3,156	3,731	0	1,094
90-94	13	71	79	50	33	21	15	2	1	0	0	285
	184	387	813	1,117	1,366	1,493	1,696	2,170	1,797	0	0	905
95 & Over	2	10	11	7	6	2	3	0	1	0	0	42
	300	415	810	1,078	1,319	1,469	1,280	0	1,854	0	0	899
TOTAL	475	3,088	4,211	3,915	3,244	1,811	667	156	23	1	0	17,591
	228	366	797	1,390	1,855	2,453	2,860	3,195	3,406	3,731	0	1,307

Exhibit 10.5b
Distribution of Retired Employees by Average Age, Average Years of Service and
Average Monthly Annuity
Teachers
as of June 30, 2004

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	53	55	652	400	0	0	0	0	0	0	0	1,160
	974	411	2,606	2,906	0	0	0	0	0	0	0	2,531
55-59	0	127	208	2,656	623	0	0	0	0	0	0	3,614
	0	280	598	2,834	2,828	0	0	0	0	0	0	2,615
60-64	2	217	348	359	2,810	366	0	0	0	0	0	4,102
	107	331	794	1,175	2,688	2,984	0	0	0	0	0	2,295
65-69	74	257	447	489	851	1,624	160	0	0	0	0	3,902
	131	407	819	1,311	1,964	2,915	3,285	0	0	0	0	2,064
70-74	64	213	368	457	646	739	745	26	0	0	0	3,258
	135	403	885	1,379	1,933	2,538	3,179	3,751	0	0	0	2,038
75-79	34	142	264	363	570	618	324	128	1	0	0	2,444
	135	415	890	1,323	1,802	2,278	2,788	3,457	3,497	0	0	1,867
80-84	21	102	181	311	376	318	174	62	15	0	0	1,560
	167	404	845	1,280	1,623	2,016	2,467	2,723	3,274	0	0	1,599
85-89	5	45	102	172	209	137	76	43	15	0	0	804
	181	424	842	1,167	1,443	1,753	2,001	2,200	2,464	0	0	1,408
90-94	3	32	54	70	66	36	23	17	12	2	2	315
	228	421	843	1,101	1,329	1,549	1,786	1,962	1,972	2,341	0	1,216
95 & Over	3	12	23	31	19	13	4	5	5	2	2	117
	249	341	821	1,105	1,292	1,439	1,561	1,816	1,951	2,209	0	1,117
TOTAL	259	1,202	2,647	5,308	6,170	3,851	1,506	281	48	4	21,276	
	311	380	1,258	2,180	2,315	2,614	2,939	3,010	2,562	2,275	2,124	

Exhibit 10.5c
Distribution of Retired Employees by Average Age, Average Years of Service and
Average Monthly Annuity
Political Subdivision Employees
as of June 30, 2004

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	76	136	573	224	0	0	0	0	0	0	0	1,009
	686	372	1,700	2,288	0	0	0	0	0	0	0	1,575
55-59	1	303	410	1,579	394	0	0	0	0	0	0	2,687
	121	248	490	2,155	2,259	0	0	0	0	0	0	1,700
60-64	3	742	913	817	2,409	260	0	0	0	0	0	5,144
	87	277	580	908	1,973	2,424	0	0	0	0	0	1,334
65-69	258	1,096	1,549	1,330	1,279	1,066	63	0	0	0	0	6,641
	106	292	652	1,011	1,452	2,401	3,067	0	0	0	0	1,101
70-74	265	1,154	1,335	1,116	893	507	248	8	0	0	0	5,526
	108	318	686	1,063	1,476	2,091	2,953	3,219	0	0	0	1,020
75-79	183	917	1,213	843	598	298	132	56	1	0	0	4,241
	118	323	712	1,073	1,445	1,990	2,546	3,222	2,872	0	0	958
80-84	87	689	797	615	412	196	74	41	4	0	0	2,915
	122	333	733	1,032	1,353	1,739	2,247	2,494	3,388	0	0	905
85-89	34	337	392	289	189	83	37	9	5	0	0	1,375
	175	359	735	1,046	1,295	1,512	1,697	2,280	2,288	0	0	860
90-94	14	101	116	97	54	31	11	7	0	0	0	431
	212	364	785	1,066	1,256	1,478	1,755	1,563	0	0	0	877
95 & Over	2	22	28	18	8	7	3	3	3	1	1	95
	229	322	822	1,055	1,317	1,379	1,452	1,674	1,649	2,142	907	
TOTAL	923	5,497	7,326	6,928	6,236	2,448	568	124	13	1	30,064	
	163	311	748	1,321	1,694	2,191	2,666	2,782	2,524	2,142	1,141	

Exhibit 10.5d
Distribution of Retired Employees by Average Age, Average Years of Service and
Average Monthly Annuity
All Groups
as of June 30, 2004

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	175	272	1,564	748	0	0	0	0	0	0	0	2,759
	845	425	2,060	2,627	0	0	0	0	0	0	0	1,975
55-59	5	619	867	5,146	1,231	0	0	0	0	0	0	7,868
	127	260	532	2,508	2,544	0	0	0	0	0	0	2,118
60-64	7	1,353	1,830	1,606	6,427	800	0	0	0	0	0	12,023
	114	298	637	980	2,321	2,686	0	0	0	0	0	1,681
65-69	433	1,953	2,862	2,499	2,703	3,447	288	0	0	0	0	14,185
	119	327	694	1,081	1,634	2,706	3,175	0	0	0	0	1,413
70-74	479	2,039	2,475	2,140	1,996	1,587	1,259	51	0	0	0	12,026
	121	342	734	1,147	1,673	2,357	3,124	3,520	0	0	0	1,349
75-79	302	1,584	2,089	1,683	1,501	1,181	616	258	4	0	0	9,218
	132	352	752	1,160	1,639	2,218	2,758	3,476	2,920	0	0	1,281
80-84	157	1,149	1,472	1,386	1,095	679	356	148	29	0	0	6,471
	135	358	772	1,147	1,498	1,988	2,486	2,651	3,574	0	0	1,164
85-89	62	570	714	670	511	306	163	70	29	1	0	3,096
	178	382	784	1,093	1,408	1,708	1,941	2,255	2,648	3,731	0	1,072
90-94	30	204	249	217	153	88	49	26	13	2	0	1,031
	202	381	807	1,089	1,311	1,511	1,752	1,870	1,958	2,341	0	989
95 & Over	7	44	62	56	33	22	10	8	9	3	0	254
	258	348	819	1,086	1,303	1,422	1,444	1,763	1,839	2,186	0	1,003
TOTAL	1,657	9,787	14,184	16,151	15,650	8,110	2,741	561	84	6	0	68,931
	204	337	858	1,620	1,972	2,450	2,863	3,011	2,787	2,495	0	1,487

Exhibit 10.5e
Distribution of Retired Employees by Average Age, Average Years of Service and
Average Monthly Annuity
Retirement Benefits Awarded Under the Plan During Year Ended
June 30, 2004

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	33	86	686	264	0	0	0	0	0	0	0	1,069
	951	380	2,258	2,627	0	0	0	0	0	0	0	2,158
55-59	0	152	196	1,242	221	0	0	0	0	0	0	1,811
	0	266	580	2,418	2,287	0	0	0	0	0	0	2,022
60-64	3	262	359	399	906	68	0	0	0	0	0	1,997
	104	285	614	977	2,189	2,348	0	0	0	0	0	1,416
65-69	159	195	207	185	103	186	6	0	0	0	0	1,041
	100	279	655	942	1,312	2,399	2,368	0	0	0	0	937
70-74	54	71	57	38	18	16	20	0	0	0	0	274
	55	220	555	920	1,268	1,708	3,476	0	0	0	0	748
75-79	14	26	26	15	12	13	7	8	1	0	0	122
	59	221	587	749	1,259	1,350	2,166	3,035	2,872	0	0	886
80-84	6	17	16	18	13	6	2	4	0	0	0	82
	56	301	530	972	1,148	1,539	2,063	1,827	0	0	0	817
85-89	1	4	2	10	4	4	1	0	0	0	0	26
	211	306	577	1,000	1,305	1,871	1,263	0	0	0	0	1,021
90-94	0	3	1	1	1	1	0	0	0	0	0	7
	0	374	110	693	1,609	1,602	0	0	0	0	0	734
95 & Over	0	0	0	1	0	0	0	0	0	0	0	1
	0	0	0	686	0	0	0	0	0	0	0	686
TOTAL	270	816	1,550	2,173	1,278	294	36	12	1	0	0	6,430
	192	283	1,339	1,995	2,100	2,276	2,897	2,632	2,872	0	0	1,584

Exhibit 10.6
Employees in Active Service as of June 30, 2004 by Annual Salary

Annual Salary	Number of Employees	Percent of All Employees
Less than \$10,000	13,777	6.7%
\$10,000-\$14,999	16,716	8.1%
\$15,000-\$19,999	16,515	8.0%
\$20,000-\$24,999	20,081	9.8%
\$25,000-\$29,999	22,608	11.0%
\$30,000-\$34,999	25,194	12.3%
\$35,000-\$39,999	23,917	11.6%
\$40,000-\$44,999	18,071	8.8%
\$45,000-\$49,999	13,645	6.7%
\$50,000-\$54,999	9,904	4.8%
\$55,000-\$59,999	7,457	3.6%
\$60,000 and over	17,597	8.6%
Total	205,482	100.0%

Exhibit 10.7
Retirement Benefits in Force on June 30, 2004 by Monthly Amount

Monthly Amount	Number of Retirees	Percentage of All Retirees
Under \$300	6,757	9.8%
\$300-\$499	6,922	10.0%
\$500-\$999	16,102	23.4%
\$1,000-\$1,499	12,136	17.6%
\$1,500-\$1,999	7,768	11.3%
\$2,000-\$2,499	6,233	9.0%
\$2,500-\$2,999	5,310	7.7%
\$3,000 and over	7,703	11.2%
Total	68,931*	100.0%

* Excludes 118 System beneficiaries receiving COLA benefit from the Plan.

Exhibit 10.8 - Number of Retirees by Benefit Options

Amount of Monthly Benefit	Optional Form of benefit						
	1	2	3	4	5	6	7
\$1 - \$299	4,609	326	449	530	1,400	135	220
\$300 - \$499	4,004	369	612	438	1,290	184	252
\$500 - \$999	8,807	926	1,715	919	2,648	667	933
\$1000 - \$1499	5,721	757	1,348	535	2,007	623	859
\$1500 - \$1999	3,409	414	684	409	1,391	502	682
\$2000 and over	8,556	617	1,081	1,149	3,681	1,437	1,754
Total	35,106	3,409	5,889	3,980	12,417	3,548	4,700

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

Exhibit 10.9
Growth of Covered Payroll and Active Participants

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

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

² Compared to previous year's amount described in ¹

**Exhibit 10.10
Growth of Retired Participants**

Year Ending June 30,	New Retirees		New Disabled Members on LTD Program		All Retirees		All Disabled Members on LTD Program	
	Number	Average Monthly Benefit	Number	Average Monthly Benefit	Number	Average Monthly Benefit	Number	Average Monthly Benefit
1984	4,743	\$ 684	—	—	23,166	\$ 410	—	—
1985	802	304	—	—	23,686	447	—	—
1986	1,952	541	—	—	25,213	469	—	—
1987	1,677	707	—	—	26,577	505	—	—
1988	1,938	792	—	—	28,575	535	—	—
1989	3,405	1,105	—	—	31,396	603	—	—
1990	2,117	859	346	\$ 986	33,385	659	346	\$ 986
1991	2,209	825	215	941	34,907	687	699	957
1992	2,303	861	517	958	36,490	703	1,104	973
1993	3,954	1,173	519	865	39,684	812	1,455	919
1994	2,280	934	503	860	41,044	852	1,780	892
1995	3,223	1,008	617	951	43,378	878	2,130	878
1996	3,845	1,121	704	928	45,975	920	2,507	929
1997	3,578	1,097	599	1,036	49,743	945	2,746	954
1998	3,353	1,062	669	1,150	51,917	982	3,063	983
1999	4,380	1,326	819	1,141	55,104	1,024	3,680	1,023
2000	4,822	1,490	547	1,425	58,038	1,125	3,595	1,070
2001	4,224	1,465	632	1,455	58,920	1,211	3,904	1,151
2002	3,954	1,677	626	1,281	60,346	1,371	4,485	1,077
2003	5,955	1,578	1,001	1,106	64,697	1,401	4,561	1,027
2004	6,430	1,565	865	1,388	68,931	1,432	4,684	1,091

**Summary of the Benefit Provisions of the
Retirement Plan as of June 30, 2004**

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

A. RETIREMENT BENEFITS

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

- (a) an employee's sixty-fifth birthday,
- (b) an employee'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 employee's age and his years of total credited service equals eighty.

2. Monthly Life Annuity

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

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

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

3. Normal Retirement Benefits

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

4. Early Retirement

Age 50 with 5 or more years of credited service.

5. Early Retirement Benefits

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

Years of Service	AGE AT DATE OF RETIREMENT															
	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65
5-10	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	88%	91%	94%	97%	100%
10-19	44%	49%	54%	59%	64%	69%	74%	79%	84%	89%	94%	97%	100%	100%	100%	100%
20+	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%	100%	100%	100%	100%	100%

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

6. Normal Form of Benefit

Straight life annuity 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 participant,
- (b) period certain and life annuity with either five or ten years of payments guaranteed, or
- (c) a social security leveling option combined with any of the other forms of payment.

8. Minimum Benefit

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

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

1. Long Term Disability

Monthly benefit equal to two-thirds of monthly compensation, reduced by any social security disability or workers' compensation benefits, payable commencing six months after date of disability until the earlier of:

- (a) date of cessation of total disability, or

(b) normal retirement date.

This benefit is paid by a separate LTD plan.

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

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

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

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

1. Eligibility

Age 50 with 5 years of service.

2. Benefit Amount

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

D. PRE-RETIREMENT DEATH BENEFITS

1. Eligibility

Applicable if death occurs prior to retirement.

2. Benefit

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

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

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

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

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

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

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

E. VESTING OF BENEFITS

1. Vesting

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

2. Benefits Upon Vesting

A fully vested participant is entitled to either:

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

The enhanced refund option allows employees who terminate prior to eligibility for retirement to receive a refund of their employee contributions with interest. In addition, if an employee 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 employees with five years of service and increases 15% for each additional year of service up to a maximum of 100% for ten or more years of service. The Board reduced the interest rate to be credited on refund of contributions from 8% to 4%, effective June 30, 2005.

F. RETIREE HEALTH INSURANCE PREMIUM SUPPLEMENT

1. Eligibility

Retirement or disability after 5 years of credited service and covered by an employer-sponsored group insurance program for which the retired or disabled member must pay part of the cost. Employees 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 participant is responsible. The maximum benefits for participants with 10 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's dependents are under age 65
- \$170 per month if the member dependent is 65 or over
- \$215 per month if the member is over age 65 and the dependent is under age 65
- \$215 per month if the member is under age 65 and the dependent is over age 65

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

See Section W for a discussion of the temporary benefit payable to retirees in "Rural" coverage areas.

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

Permanent Benefit Increase (PBI)

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

Permanent Benefit Increase Enhancement

Provides retired members with at least ten years of service who have been retired five or more years an additional benefit. For each complete 5-year period the member has been retired an incremental benefit is paid if monies to pay the benefit are available. This benefit is funded by an interest credit of 8.0% of the reserve for future PBIs.

H. EMPLOYEE AND EMPLOYER CONTRIBUTIONS

The contribution rate for the biennium beginning on July 1st of the odd numbered year is based on the results of the most recent actuarial valuation as of the last day of the even numbered plan year preceding the biennium. Participants' contribution rate is equal to the required employer contribution rate. For the biennium July 1, 2003 to June 30, 2005, the required contribution rate is 5.20%. For the biennium July 1, 2005 to June 30, 2007, the required contribution rate is 7.75%.

I. 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 employee 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 10 years of credited service using a minimum average compensation of one thousand dollars per month.

3. 2.0% Ad Hoc COLAs

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

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

1. Rule of 82

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

K. 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 10 years of service who retired prior to June 30, 1985 shall have his or her benefit recomputed. The recomputed benefit shall be equal to 2% 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.

L. 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 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 employee and employer contributions (accumulated with interest) which 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 employee and employer contribution (accumulated with interest) which would have been contributed during the member's period of unemployment.

6. Change in Section 38-781.05 Funding Method

Section 38-781.05 of the plan was amended so that the funding period for the Plan would continue to be the period between 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.

M. 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%.

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

1. Minimum LTD Benefit

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

2. Minimum Retiree Benefit

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

3. Pop-up Benefit

Members who retired prior to January 1, 1992, and who elected a Joint and Survivor option shall receive a "Pop-up" in their retirement income if their beneficiary pre-deceases them.

4. Excess Investment Earnings COLA

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

5. Change in Section 38-737 Funding Period

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

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

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

The maximum COLA payable from Excess Investment Earnings was increased from 50% 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.

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

1. No material changes.

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

1. Creation of family Health Supplement. Allows unused portion of the Health Supplement of a member or dependent to be used to pay the other 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.

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

1. No material changes.

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

1. Enhanced Refund Option

Employees who terminate prior to eligibility for retirement may elect to receive a refund of their employee contributions with interest. If the employee has at least five years of service, the employee is also entitled to a share of the employer contributions with interest. 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.

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.

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

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

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

1. Health Insurance Premium Benefit Increase

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

- Benefit for Medicare eligible member with member only coverage 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 employee 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 10 years of service and who have been retired at least five years. The increase is incremental for each five years of retirement.

5. Temporary Rural Health Insurance Premium Benefit

In addition to the premium benefit paid to ASRS retired and disabled members, the Legislature granted a temporary benefit for retired and disabled members who live in areas of the state not served by a managed care program (HMO) and who have 10 years of credited service in the following amounts:

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

6. Partial Lump Sum Option

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

7. Maximum Benefit

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

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

1. No material changes.

W. 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 10 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.

Rural Health Insurance Subsidy July 1, 2003 – June 30, 2005	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.

X. 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 employees must notify ASRS of the incentives. ASRS will determine the cost of the incentives and the employers will pay the cost.