## Arizona State Retirement System

Actuarial Report on the
Valuation of the Plan
As of June 30, 2006
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January 12, 2007

Retirement Board
Arizona State Retirement System
3300 North Central Avenue
$14^{\text {th }}$ Floor
Phoenix, Arizona 85012
Dear Retirement Board Members:

## Actuarial Valuation of the Plan as of June 30, 2006

We certify that the information contained in the attached 2006 actuarial valuation report is accurate and fairly presents the actuarial position of the Arizona State Retirement Plan (the Plan) as of June 30, 2006.

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, members of the American Academy of Actuaries and Fellows of the Society 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 Numbers 25 and 43 (GASB Nos. 25 and 43), and it summarizes census data.

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

## Funding Objectives

The actuarial valuation calculates the contribution rates payable by members and participating employers. These rates, when applied to payroll, yield contribution amounts sufficient to provide for the normal cost and to amortize the Unfunded Actuarial Accrued Liability (UAAL) over the period specified in the statutes. The rate calculated becomes effective for the next Plan year. For example, the rate calculated in the June 30, 2006, valuation report ( $9.10 \%$ for each member and each employer) is applicable for the fiscal year beginning July 1, 2007.

## Funding Progress

The Legislature adopted a stair-step approach to increasing contribution rates, and set the rate at $6.9 \%$ for fiscal 2006 and $8.6 \%$ for fiscal 2007. The 2006 valuation calculates a rate of $9.10 \%$, to become effective July 1, 2007. 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, except for fiscal 2006 and 2007, continue to contribute the actuarially determined amounts. Contributing these amounts ensures the realization of funding objectives.

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

## Benefit Provisions

This valuation reflects the following changes in Plan provisions:
1 Legislature limited the ability of ASRS retirees to rescind their elections after retirement. Specifically, members who have chosen a form with a death benefit can "pop up" once to the single life form, but are then not allowed to "pop down" to a death benefit form.
2 State statutes were modified to conform to federal regulations regarding military service purchases, optional forms of retirement benefits, and minimum required distributions.
3 The legislature repealed the modified Deferred Retirement Option Plan (DROP).
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 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 Nos. 25 and 43.

## Data

ASRS staff supplied census data for retired, active, and inactive participants as of June 30, 2006. We have not audited these data, but have examined them for reasonableness and consistency with the prior year's data. ASRS staff also supplied asset information.

## Trend Data and Supporting Schedules

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

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


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


Matthew A. Strow, FSA, MAAA, EA
Senior Consultant

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## Executive Summary

Attached is a table summarizing the key results of the June 30, 2006, actuarial valuation of the Arizona State Retirement Plan (the Plan).

## Demographic Changes

The number of active members has increased from 212,202 to 217,676, a $2.6 \%$ increase. Valuation payroll has increased $3.5 \%$ from $\$ 8.032$ billion to $\$ 8.312$ billion. The payroll for fiscal year 2007 was calculated by projecting the payroll reported for fiscal year 2006 forward one-half year with the salary scale.

## Gains and Losses

The valuation of the Plan reflects a loss on the investment return on the actuarial value of assets of $\$ 479$ million. This loss is not due to the investment experience of fiscal 2006. 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 2006 fiscal year is $6.03 \%$ on the pension assets (401(a)) and $4.26 \%$ on the health supplement assets (401(h)), compared to last year's returns of $3.20 \%$ and $4.99 \%$, respectively. The actuarially assumed rate of return is $8 \%$. There was also a small loss of $\$ 386$ million on the liability experience, mostly due to the demographic experience of non-retired members and to the increased value of contribution refunds for withdrawing members.

## Changes in Plan Provisions

This valuation reflects the following changes in Plan provisions:

- Introduced in the 2006 legislative session, Senate Bill 1167 limits the ability of ASRS retirees to rescind their elections after retirement. Specifically, members who have chosen a form with a death benefit can "pop up" once to the single life form, but are then not allowed to "pop down" to a death benefit form.
- Senate Bill 1168 modified state statutes to conform with federal regulations regarding military service purchases, optional forms of retirement benefits, and minimum required distributions.
- House Bill 2103 changed the term "retirement incentive program" to "termination incentive program" in the statutes that require employers that sponsor such programs to pay for them.
- House Bill 2340 repealed the modified Deferred Retirement Option Plan (DROP).


## Effect on Contribution Rates and Funded Status

The contribution rate calculated in this valuation will become effective on July 1, 2007, and remain in effect through June 30, 2008. The investment loss on actuarial assets, and the loss on liability experience have caused the Plan's calculated contribution rate to increase. The net result is that the calculated contribution rate will increase from a rate of $8.70 \%$ determined in the 2005 valuation report to a rate of $9.10 \%$ in this report. Later sections of this report give a detailed explanation of the change in contribution rates.

The recognition of losses has caused the funded status of the total plan (the ratio of actuarial assets to actuarial accrued liabilities) to decrease from $85.3 \%$ as of June 30, 2005, to $83.7 \%$ as of June 30, 2006. The unfunded actuarial accrued liability has grown during this period from $\$ 4,106.1$ million to $\$ 4,845.1$ 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., $6.71 \%$, instead of $9.10 \%$.

## Reserve for Permanent Benefit Increases

Since the actuarial investment return (on the actuarial value of assets) of $6.03 \%$ is below 8\% for fiscal year 2006, there are no additional "Excess Investment Earnings" to be allocated for Permanent Benefit Increases (PBIs).

## Outlook for Contribution Rates and Permanent Benefit Increases

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

| Contribution Rate for Each <br> Member and Employer |  |  |
| :---: | :---: | :---: |
| Effective Date | Closed Group | Open Group |
| $2007 / 2008$ | $9.10 \%$ | $9.10 \%$ |
| $2008 / 2009$ | $9.34 \%$ | $8.93 \%$ |
| $2009 / 2010$ | $9.53 \%$ | $8.90 \%$ |
| $2010 / 2011$ | $9.70 \%$ | $8.86 \%$ |
| $2011 / 2012$ | $9.86 \%$ | $8.81 \%$ |
| $2012 / 2013$ | $10.01 \%$ | $8.76 \%$ |
| $2013 / 2014$ | $9.92 \%$ | $8.56 \%$ |
| $2014 / 2015$ | $9.77 \%$ | $8.42 \%$ |
| $2015 / 2016$ | $9.70 \%$ | $8.28 \%$ |
| $2016 / 2017$ | $9.64 \%$ | $8.16 \%$ |

The closed-group forecast brings total asset and liability amounts forward with $8 \%$ interest, and adjusts for cash flows, the value of benefits earned, and unrecognized investment gains and losses. The open-group forecast ages the population, anticipates both inward and outward migration and status changes, and performs closed-group valuations for each fiscal year. It anticipates a $2.5 \%$ annual growth rate in the active work force.

Even if annual returns on the market value of Plan assets are 9\% per annum, we project no Permanent Benefit Increases until after 2012.

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):

|  | 2005 | 2006 |
| :---: | :---: | :---: |
| Demographic Information <br> - Number of Members |  |  |
|  |  |  |
| Actives | 212,202 | 217,676 |
| Inactives | 149,768 | 163,527 |
| Receiving benefits | 73,853 | 78,498 |
| Disabled (LTD) | 4,939 | 5,018 |
| Total | 440,762 | 464,719 |
| - Covered projected payroll | \$8,032 | \$8,312 |
| - Average age for actives | 44.7 | 44.7 |
| - Average pay for actives | \$37,853 | \$38,185 |
| - Average monthly benefit for retirees and beneficiaries | \$1,508 | \$1,566 |
| - Average age for retirees and beneficiaries | 69.6 | 69.6 |
| Financial Information |  |  |
| - Total normal cost rate | 13.16\% | 13.41\% |
| - Unfunded actuarial accrued liability | \$4,106.1 | \$4,845.1 |
| - Funded Status of pension (401(a)) | 86.1\% | 84.3\% |
| - Funded Status of health (401(h)) | 70.6\% | 72.1\% |
| - Funded Status of total plan | 85.3\% | 83.7\% |
| - Calculated contribution rate | 8.70\% | 9.10\% |
| - Statutory contribution rate | 8.70\% | 9.10\% |
| - Employee and employer contributions | \$946.7 | \$1,265.2 |
| - Benefit and refunded payments | \$1,510.7 | \$1,652.6 |
| - Administrative expenses | \$22.2 | \$27.6 |
| - Net external cash flow | \$(586.2) | \$(415.0) |
| - PBI |  |  |
| Additional liability for July $1^{\text {st }}$ PBI | \$305.5 | \$0.0 |
| Percentage increase | 2.8\% | 0.0\% |
| Per year of service factor | \$25.90 | \$0.0 |
| PBI reserve before July $1^{\text {st }} \mathrm{PBI}$ | \$0.0 | \$0.0 |


|  | 2005 | 2006 |
| :---: | :---: | :---: |
| - Actuarial gains (losses) |  |  |
| Assets | \$(1,100) | \$(479) |
| Liability experience | \$(435) | \$(386) |
| Legislative and administrative changes | \$(7) | \$(300) |
| Assumption changes | N/A | N/A |
| Method change | N/A | N/A |
| Total | \$(1,542) | \$(565) |
| - GASB 25 disclosure (401(a) pension only) |  |  |
| Actuarial Accrued Liability (AAL) | \$26,486 | \$28,192 |
| Unfunded AAL (Surplus) | \$3,678 | \$4,426 |
| Actuarial Value of Assets as \% of AAL | 86.1\% | 84.3\% |
| Unfunded AAL (Surplus) as \% of payroll | 45.8\% | 53.2\% |
| - GASB 43 disclosure (401(h) plan only) |  |  |
| Actuarial Accrued Liability (AAL) | \$1,456 | \$1,505 |
| Unfunded AAL (Surplus) | \$428 | \$420 |
| Actuarial Value of Assets as \% of AAL | 70.6\% | 72.1\% |
| Unfunded AAL (Surplus) as \% of payroll | 5.3\% | 5.0\% |
| - Changes in contribution rate: |  |  |
| Item | Contribution Rate | Change in Rate |
| 1. 2005 valuation | 8.68\% | - |
| 2. Delay in contribution rate change | 8.64\% | -.04\% |
| 3. 2005 / 2006 liability experience | 8.92\% | +.28\% |
| 4. 2005 / 2006 asset experience | 9.15\% | +.23\% |
| 5. Legislative changes | 9.15\% | +.00\% |
| 6. Administrative changes (Payroll Projection) | 9.10\% | -.05\% |
| 7. Rounding to the nearest 0.05\% | 9.10\% | +.00\% |


| Split of Total Contribution Rate: |  |  |  |  |
| :--- | ---: | ---: | ---: | :---: |
| Item | 401(a) <br> Account | 401(h) <br> Account | Total |  |
| 1. Employee Contribution Rates | $9.10 \%$ | $0.00 \%$ | $9.10 \%$ |  |
| 2. Employer Contribution Rates | $\underline{8.05 \%}$ | $\underline{1.05 \%}$ | $\underline{9.10 \%}$ |  |
| 3. Total Contribution Rates | $17.15 \%$ | $1.05 \%$ | $18.20 \%$ |  |

- Asset Amounts, Returns on Assets, and Funded Status

|  | 2005 |  | 2006 |  |
| :---: | :---: | :---: | :---: | :---: |
| Asset Amounts | Market Value | Actuarial Value | Market Value | Actuarial Value |
| Pension 401(a) | \$21,029 | \$22,808 | \$22,671 | \$23,767 |
| Health 401(h) | \$ 872 | \$1,028 | \$ 970 | \$1,085 |
| Total Plan | \$21,901 | \$23,836 | \$23,641 | \$24,852 |
| Asset Yields | Market Value | Actuarial Value | Market Value | Actuarial Value |
| Pension 401(a) | 8.42\% | 3.20\% | 9.83\% | 6.03\% |
| Health 401(h) | 8.42\% | 4.99\% | 9.74\% | 4.26\% |
| Total Plan | 8.42\% | 3.27\% | 9.82\% | 5.95\% |
| Liabilities |  |  |  |  |
| Pension 401(a) | \$26,486 | \$26,486 | \$28,192 | \$28,192 |
| Health 401(h) | \$1,456 | \$1,456 | \$1,505 | \$1,505 |
| Total Plan | \$27,943 | \$27,943 | \$29,697 | \$29,697 |
| Funded Status | Market Value | Actuarial Value | Market Value | Actuarial Value |
| Pension 401(a) | 79.4\% | 86.1\% | 80.4\% | 84.3\% |
| Health 401(h) | 59.8\% | 70.6\% | 64.5\% | 72.1\% |
| Total Plan | 78.4\% | 85.3\% | 79.6\% | 83.7\% |

## 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 Statues, to describe the current financial condition of the Plan, and to analyze changes in the Plan's condition. In addition, the report provides information that ASRS requires in connection with Governmental Accounting Standards Board Statement Numbers 25 and 43 (GASB Nos. 25 and 43), and it summarizes census data. The valuation covers both the 401(a) pension plan and the 401(h) health supplement plan.

The actuarial valuation of the Plan as of June 30, 2006, determines the contribution rate for fiscal year 2008. Based on the results of the 2006 Plan valuation, the contribution rate for the fiscal year beginning July 1, 2007 would increase from the $8.60 \%$ rate fixed by legislative action to $9.10 \%$ of compensation. Legislative action fixed the rates for fiscal 2006 and 2007 at $6.90 \%$ and $8.60 \%$, respectively.


#### Abstract

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, 2005, and June 30, 2006, 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, 10\% of this difference is recognized in the valuation immediately following the year in which it occurs. The remaining $90 \%$ is deferred until future valuations, with an additional 10\% recognized in each subsequent valuation, until $100 \%$ of the difference is recognized in the tenth year. There is no corridor requiring the actuarial value to be within a given percentage of the market value. The Board adopted this actuarial valuation method on November 15, 2002. The phase-in period was five-years and there was a 20\% corridor around market values prior to June 30, 2002.

The market value of assets as of June 30, 2006, was $\$ 23,641,112,938$ and the actuarial value of assets under this method was $\$ 24,851,522,776$, or about $105 \%$ of market value as of June 30, 2006. The combined 401(a) and 401(h) deferral amount for the year is $-\$ 1.210$ billion. That is, $\$ 1.210$ 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:

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

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, 2006, the Plan has an estimated yield of 6.03\% on the 401(a) actuarial assets and $4.26 \%$ on the $401(\mathrm{~h})$ actuarial assets for the year, compared to the actuarial assumed rate of $8 \%$. The Plan assets had an investment return of $9.83 \%$ on the 401(a) market assets and $9.74 \%$ 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 | $\$ 22,671,365,333$ | $\$ 969,747,605$ | $\$ 23,641,112,938$ |
| 2. Actuarial Value of Assets | $\$ 23,766,572,590$ | $\$ 1,084,950,186$ | $\$ 24,851,522,776$ |

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

|  | Year Ending June 30, 2005 | Year Ending June 30, 2006 |
| :---: | :---: | :---: |
| 1. Market value, beginning of year | \$19,940,524,999 | \$21,029,388,861 |
| 2. Contributions and receipts during the year |  |  |
| a. Employee contributions | 403,269,191 | 570,581,044 |
| b. Employer contributions | 317,919,116 | 477,119,869 |
| c. Member reimbursements of employee contributions | 140,158,838 | 124,023,872 |
| d. Member reimbursements of employer contributions | 0 | 0 |
| e. Other miscellaneous receipts |  |  |
| f. Total | 861,347,145 | 1,171,724,785 |
| 3. Investment income for the year (net of investment expenses) | 1,676,324,824 | 2,073,186,347 |
| 4. Benefit payments |  |  |
| a. Retirement and disability benefits | $(1,360,661,231)$ | $(1,495,179,977)$ |
| b. Death benefits | $(18,402,496)$ | $(16,944,649)$ |
| c. Total | $(1,379,063,727)$ | $(1,512,124,626)$ |
| 5. Refunds of contributions | $(42,026,148)$ | $(59,696,449)$ |
| 6. Employer adjustments | 0 | 0 |
| 7. Administrative expenses | $(21,373,984)$ | $(26,555,563)$ |
| 8. Miscellaneous | $(3,536,089)$ | $(1,155,568)$ |
| 9. Other |  |  |
| a. Transfers from Plan | 1,773,298 | 1,726,971 |
| b. Reimbursements and lump sums | 0 | 0 |
| c. Transfers to PSPRS | $(4,581,457)$ | $(5,129,425)$ |
| d. Increase System retired reserves | 0 | 0 |
| e. Employer contributions released | 0 | 0 |
| f. Supplemental credits | N/A | N/A |
| g. Transfers from System | 0 | 0 |
| h. Total | $(2,808,159)$ | $(3,402,454)$ |
| 10. Change in audited assets, beginning of year | 0 | 0 |
| 11. Total change in market value | 1,088,863,862 | 1,641,976,472 |
| 12. Market value, end of year | \$21,029,388,861 | \$22,671,365,333 |

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

|  | Year Ending June 30, 2005 | Year Ending June 30, 2006 |
| :---: | :---: | :---: |
| 1. Market value, beginning of year <br> 2. Contributions and receipts during the year <br> a. Employee contributions <br> b. Employer contributions <br> c. Member reimbursements of employee contributions <br> d. Member reimbursements of employer contributions <br> e. Other miscellaneous receipts | $\begin{array}{\|r} \hline \$ 808,048,248 \\ \\ 85,350,074 \\ 0 \\ 0 \\ 0 \end{array}$ | \$ 871,636,743 |
| f. Total | 85,350,074 | 93,461,175 |
| 3. Investment income for the year (net of investment expenses) <br> 4. Benefit payments | $\begin{gathered} 68,749,368 \\ (89,602,086) \end{gathered}$ | $\begin{gathered} 86,550,526 \\ (80,827,041) \end{gathered}$ |
| 5. Refunds of contributions | 0 | 0 |
| 6. Employer adjustments | 0 | 0 |
| 7. Administrative expenses | $(875,018)$ | $(1,073,798)$ |
| 8. Miscellaneous | $(33,844)$ | 0 |
| 9. Other | 0 | 0 |
| 10. Change in audited assets, beginning of year | 0 | 0 |
| 11. Total change in market value | 63,588,494 | 98,110,862 |
| 12. Market value, end of year | \$ 871,636,743 | \$ 969,747,605 |

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

| Item | Plan Year Ending June 30, |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2003 |  | 2004 |  | 2005 |  | 2006 |  |
| 1. Market value of assets, beginning of year |  | 17,812,242,996 |  | 17,418,714,865 |  | 19,940,524,999 |  | 21,029,388,861 |
| 2. Contributions during year |  | 371,265,972 |  | 786,303,859 |  | 861,347,145 |  | 1,171,724,785 |
| 3. Benefits paid during year |  | $(1,042,295,182)$ |  | (1,208,704,786) |  | $(1,379,063,727)$ |  | $(1,512,124,626)$ |
| 4. Refunds paid during year |  | $(34,948,463)$ |  | $(34,006,055)$ |  | $(42,026,148)$ |  | $(59,696,449)$ |
| 5. Administrative expenses, assumed end of year |  | $(20,538,703)$ |  | $(22,791,105)$ |  | $(21,373,984)$ |  | $(26,555,563)$ |
| 6. Other changes and net transfers |  | $(5,472,629)$ |  | $(6,846,763)$ |  | $(6,338,562)$ |  | $(4,558,022)$ |
| 7. Net investment income for year |  | 318,922,184 |  | 2,985,063,876 |  | 1,654,950,840 |  | 2,046,630,784 |
| 8. Expected net investment income at 8\% |  |  |  |  |  |  |  |  |
| a. Market value of assets, beginning of year |  | 1,424,979,440 |  | 1,393,497,189 |  | 1,595,242,000 |  | 1,682,351,109 |
| b. Contributions |  | 14,850,639 |  | 31,452,154 |  | 34,453,886 |  | 46,868,991 |
| c. Benefits |  | $(45,166,125)$ |  | (52,377,207) |  | $(59,759,428)$ |  | $(65,525,400)$ |
| d. Refunds |  | $(1,437,939)$ |  | $(1,360,242)$ |  | $(1,681,046)$ |  | $(2,387,858)$ |
| e. Administrative expenses |  | 0 |  | 0 |  | 0 |  | 0 |
| f. Other |  | $(218,905)$ |  | $(273,871)$ |  | $(253,542)$ |  | $(182,321)$ |
| g. Total |  | 1,393,007,110 |  | 1,370,938,023 |  | 1,568,001,870 |  | 1,661,124,521 |
| 9. Excess investment income for year (Item 7 - Item 8.g.) |  | $(1,074,084,926)$ | \$ | 1,614,125,853 | \$ | 86,948,970 | \$ | 385,506,263 |

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

| Item | Plan Year Ending June 30, |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2003 |  | 2004 |  | 2005 |  | 2006 |  |
| 1. Market value of assets, beginning of year |  | 768,846,996 |  | 698,106,059 |  | 808,048,248 |  | 871,636,743 |
| 2. Contributions during year |  | 4,256,357 |  | 79,662,201 |  | 85,350,074 |  | 93,461,175 |
| 3. Benefits paid during year |  | $(84,533,693)$ |  | (83,680,261) |  | (89,602,086) |  | $(80,827,041)$ |
| 4. Refunds paid during year |  | 0 |  | 0 |  | 0 |  | 0 |
| 5. Administrative expenses, assumed end of year |  | $(857,269)$ |  | $(853,105)$ |  | $(875,018)$ |  | $(1,073,798)$ |
| 6. Other changes and net transfers |  | 0 |  | $(92,117)$ |  | $(33,844)$ |  | 0 |
| 7. Net investment income for year |  | 9,536,398 |  | 114,052,367 |  | 67,874,350 |  | 85,476,728 |
| 8. Expected net investment income at 8\% |  |  |  |  |  |  |  |  |
| a. Market value of assets, beginning of year |  | 61,507,760 |  | 55,848,485 |  | 64,643,860 |  | 69,730,939 |
| b. Contributions |  | 170,254 |  | 3,186,488 |  | 3,414,003 |  | 3,738,447 |
| c. Benefits |  | $(3,663,127)$ |  | $(3,626,145)$ |  | $(3,882,757)$ |  | $(3,502,505)$ |
| d. Refunds |  | 0 |  | 0 |  | 0 |  | 0 |
| e. Administrative expenses |  | 0 |  | 0 |  | 0 |  | 0 |
| f. Other |  | 0 |  | $(3,685)$ |  | $(1,354)$ |  | $(1,354)$ |
| g. Total |  | 58,014,887 |  | 55,405,143 |  | 64,173,752 |  | 69,966,881 |
| 9. Excess investment income for year (Item 7 - Item 8.g.) | \$ | $(48,478,489)$ | \$ | 58,647,224 | \$ | 3,700,598 | \$ | 15,509,847 |

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

| Item | Valuation as of June 30, 2005 | Valuation as of June 30, 2006 |
| :---: | :---: | :---: |
| 1. Excess (shortfall) of investment income for current year and previous three years: |  |  |
| a. Current year | \$ 86,948,970 | \$ 385,506,263 |
| b. Current year - 1 | 1,614,125,853 | 86,948,970 |
| c. Current year - 2 | (1,074,084,926) | 1,614,125,853 |
| d. Current year - 3 | $(3,994,318,422)$ | (1,074,084,926) |
| e. Current year - 4 |  | $(3,994,318,422)$ |
| 2. Deferral of excess (shortfall) of investment income for: |  |  |
| a. Current year (90\% deferral) | \$ 78,254,073 | \$ 346,955,637 |
| b. Current year - 1 (80\% deferral) | 1,291,300,682 | 69,559,176 |
| c. Current year - 2 (70\% deferral) | $(751,859,448)$ | 1,129,888,097 |
| d. Current year - 3 (60\% deferral) | $(2,396,591,053)$ | (644,450,956) |
| e. Current year - 4 (50\% deferral) |  | $(1,997,159,211)$ |
| f. Total deferred for year | \$(1,778,895,746) | \$(1,095,207,257) |
| 3. Market value of plan assets, end of year | \$21,029,394,547 | \$22,671,365,333 |
| 4. Actuarial value of plan assets, end of year (Item 3 - Item 2.e.) | \$22,808,290,293 | \$23,766,572,590 |

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

| Item | Valuation as of June 30, 2005 | Valuation as of June 30, 2006 |
| :---: | :---: | :---: |
| 1. Excess (shortfall) of investment income for current year and previous three years (see Table 9b): |  |  |
| a. Current year | \$ 3,700,598 | \$ 15,509,847 |
| b. Current year - 1 | 58,647,224 | 3,700,598 |
| c. Current year - 2 | $(48,478,489)$ | 58,647,224 |
| d. Current year - 3 | $(288,175,769)$ | $(48,478,488)$ |
| e. Current year - 4 |  | $(288,175,769)$ |
| 2. Deferral of excess (shortfall) of investment income for: |  |  |
| a. Current year (90\% deferral) | \$ 3,330,538 | \$ 13,958,862 |
| b. Current year - 1 (80\% deferral) | 46,917,779 | 2,960,478 |
| c. Current year - 2 (70\% deferral) | $(33,934,942)$ | 41,053,057 |
| d. Current year - 3 (60\% deferral) | $(172,905,462)$ | $(29,087,093)$ |
| e. Current year - 4 ( $50 \%$ deferral) |  | $(144,087,885)$ |
| f. Total deferred for year | \$ $(156,592,087)$ | \$ (115,202,581) |
| 3. Market value of plan assets, end of year | \$ 871,636,743 | \$ 969,747,605 |
| 4. Actuarial value of plan assets, end of year (Item 3 - Item 2.e.) | \$1,028,228,830 | \$1,084,950,186 |

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

| Item | Valuation as of June 30, 2005 | Valuation as of June 30, 2006 |
| :---: | :---: | :---: |
| 1. Actuarial assets, beginning of year | \$22,659,396,325 | \$22,808,290,293 |
| 2. Total contributions during year | 861,347,145 | 1,171,724,785 |
| 3. Benefits paid during year | $(1,379,063,727)$ | $(1,512,124,626)$ |
| 4. Refunds paid during year | $(42,026,148)$ | $(59,696,449)$ |
| 5. Expenses (other than investment) for the year | 0 | 0 |
| 6. Other changes and net transfers | $(6,338,562)$ | $(4,558,022)$ |
| 7. Assumed net investment income at 8\% |  |  |
| a. Beginning of year assets | 1,812,751,706 | 1,824,663,223 |
| b. Contributions | 34,453,886 | 46,868,991 |
| c. Benefits | $(59,759,428)$ | $(65,525,400)$ |
| d. Refunds | $(1,681,046)$ | $(2,387,858)$ |
| e. Expenses | 0 | 0 |
| f. Other | $(253,542)$ | $(182,321)$ |
| g. Total | \$1,785,511,576 | \$1,803,436,635 |
| 8. Expected actuarial assets, end of year (Sum of Items 1 through 7) | \$23,878,826,609 | \$24,207,072,616 |
| 9. Actual actuarial assets, end of year | \$22,808,290,293 | \$23,766,572,590 |
| 10. Asset gain/(loss) for year (Item 9 - Item 8) | \$(1,070,536,316) | \$ (440,500,026) |

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

| Item | Valuation as of June 30, 2005 | Valuation as of June 30, 2006 |
| :---: | :---: | :---: |
| 1. Actuarial assets, beginning of year | \$ 983,508,438 | \$1,028,228,830 |
| 2. Total contributions during year | 85,350,074 | 93,461,175 |
| 3. Benefits paid during year | $(89,602,086)$ | $(80,827,041)$ |
| 4. Refunds paid during year | 0 | 0 |
| 5. Expenses (other than investment) for the year | 0 | 0 |
| 6. Other changes and net transfers | $(33,844)$ | 0 |
| 7. Assumed net investment income at 8\% |  |  |
| a. Beginning of year assets | 78,680,675 | 82,258,306 |
| b. Contributions | 3,414,003 | 3,738,447 |
| c. Benefits | $(3,882,757)$ | $(3,502,505)$ |
| d. Refunds | 0 | 0 |
| e. Expenses | 0 | 0 |
| f. Other | $(1,354)$ | 0 |
| g. Total | \$ 78,210,567 | \$ 82,494,248 |
| 8. Expected actuarial assets, end of year (Sum of Items 1 through 7) | \$1,057,433,149 | \$1,123,357,212 |
| 9. Actual actuarial assets, end of year | \$1,028,228,830 | \$1,084,950,186 |
| 10. Asset gain/(loss) for year (Item 9 - Item 8) | \$ $(29,204,319)$ | \$ $(38,407,026)$ |

## 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) | \$ 2,073,186,347 | \$ 1,389,492,172 |
| 2. Administrative expenses for the year | \$ 26,555,563 | \$ 26,555,563 |
| 3. Net investment income for the asset valuation method (Item $1-$ Item $2=1$ ) | \$ 2,046,630,784 | \$ 1,362,936,609 |
| 4. Beginning of year asset value (A) | \$21,029,388,861 | \$22,808,290,293 |
| 5. End of year asset value (B) | \$22,671,365,333 | \$23,766,572,590 |
| 6. Estimated yield based on $21 /(A+B-I)$ | 9.83\% | 6.03\% |

## 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) | \$ 86,550,526 | \$ 45,161,020 |
| 2. Administrative expenses for the year | \$ 1,073,798 | \$ 1,073,798 |
| 3. Net investment income for the asset valuation method (Item 1 - Item $2=1$ ) | \$ 85,476,728 | \$ 44,087,222 |
| 4. Beginning of year asset value (A) | \$ 871,636,743 | \$ 1,028,228,830 |
| 5. End of year asset value (B) | \$ 969,747,605 | \$ 1,084,950,186 |
| 6. Estimated yield based on $21 /(A+B-I)$ | 9.74\% | 4.26\% |

Exhibit 3.6 - History of Cash Flow

|  |  | Expenditures During the Year |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year Ending June 30 , | Contributions for the Year | Benefit Payments | Refunds of Contributions |  | Administrative Expenses ${ }^{1}$ |  | Total |  | External Cash Flow for the Year |  | End of Year Market Value of Assets | External Cash Flow as Percentage of Market |
| 1988 | \$ 226,391,986 | \$ (184,014, 225 ) | \$ (32,440,739) | \$ | $(1,858,980)$ | \$ | $(218,314,544)$ | \$ | 8,077,442 | \$ | 6,354,326,735 | 0.1\% |
| 1989 | 309,456,756 | $(211,706,362)$ | $(32,763,953)$ |  | $(2,796,196)$ |  | $(247,266,511)$ |  | 62,190,245 |  | 7,314,715,626 | 0.9\% |
| 1990 | 129,780,928 | $(291,865,604)$ | $(31,871,455)$ |  | $(3,016,679)$ |  | $(326,753,738)$ |  | $(196,972,810)$ |  | 7,784,051,423 | (2.5\%) |
| 1991 | 267,194,502 | $(313,739,121)$ | $(27,329,212)$ |  | $(4,889,991)$ |  | $(345,958,324)$ |  | $(78,763,822)$ |  | 8,298,777,637 | (0.9\%) |
| 1992 | 265,305,634 | $(351,219,516)$ | $(24,689,694)$ |  | $(6,282,138)$ |  | $(382,191,348)$ |  | $(116,885,714)$ |  | 9,375,565,917 | (1.2\%) |
| 1993 | 278,158,497 | $(414,519,290)$ | $(21,419,534)$ |  | $(5,774,866)$ |  | $(441,713,690)$ |  | $(163,555,193)$ |  | 10,712,781,278 | (1.5\%) |
| 1994 | 256,841,228 | $(445,763,795)$ | $(22,516,743)$ |  | $(5,222,224)$ |  | $(473,502,762)$ |  | $(216,661,534)$ |  | 10,680,073,807 | (2.0\%) |
| 1995 | 326,663,838 | $(484,729,970)$ | $(24,364,930)$ |  | $(5,826,425)$ |  | $(514,921,325)$ |  | $(188,257,487)$ |  | 12,356,078,492 | (1.5\%) |
| $1996{ }^{2}$ | 299,724,778 | $(510,236,051)$ | $(26,307,534)$ |  | $(5,345,583)$ |  | $(541,889,168)$ |  | $(242,164,390)$ |  | 13,917,637,400 | (1.7\%) |
| $1997{ }^{2}$ | 309,394,448 | $(550,078,719)$ | $(30,838,244)$ |  | $(6,740,459)$ |  | $(587,657,422)$ |  | $(278,262,974)$ |  | 16,397,938,329 | (1.7\%) |
| $1998{ }^{2}$ | 321,349,998 | $(598,804,992)$ | $(29,749,907)$ |  | $(8,386,901)$ |  | $(636,941,800)$ |  | $(315,591,802)$ |  | 19,389,956,806 | (1.6\%) |
| $1999{ }^{2}$ | 347,970,526 | $(652,854,456)$ | $(26,089,213)$ |  | $(9,932,871)$ |  | $(688,876,540)$ |  | $(340,906,014)$ |  | 21,836,381,722 | (1.6\%) |
| $2000{ }^{2}$ | 283,772,496 | $(723,611,965)$ | $(64,976,507)$ |  | $(10,775,218)$ |  | $(799,363,690)$ |  | $(515,591,194)$ |  | 23,187,551,913 | (2.2\%) |
| $2001^{2}$ | 367,191,042 | $(828,545,637)$ | $(91,824,591)$ |  | $(9,843,046)$ |  | $(930,213,274)$ |  | $(563,022,232)$ |  | 21,872,916,420 | (2.6\%) |
| $2002{ }^{2}$ | 321,775,573 | $(986,288,636)$ | $(42,765,105)$ |  | $(15,375,486)$ |  | $(1,044,429,227)$ |  | $(722,653,654)$ |  | 18,594,856,337 | (3.9\%) |
| $2003^{2}$ | 375,522,329 | $(1,126,828,875)$ | $(35,948,463)$ |  | $(21,395,972)$ |  | $(1,184,173,310)$ |  | $(808,650,981)$ |  | 18,116,820,935 | (4.5\%) |
| $2004{ }^{2}$ | 865,966,060 | $(1,292,412,047)$ | $(34,006,055)$ |  | $(23,644,210)$ |  | $(1,350,062,312)$ |  | $(484,076,252)$ |  | 20,748,573,247 | (2.3\%) |
| $2005^{2}$ | 946,697,219 | $(1,468,665,813)$ | $(42,026,148)$ |  | $(22,249,002)$ |  | $(1,532,940,963)$ |  | $(586,243,744)$ |  | 21,901,025,604 | (2.7\%) |
| $2006{ }^{2}$ | 1,265,185,960 | $(1,592,951,667)$ | $(59,696,449)$ |  | $(27,629,361)$ |  | $(1,680,277,477)$ |  | $(415,091,517)$ |  | 23,641,112,938 | (1.8\%) |

[^0]
## Actuarial Balance Sheet

The results of the actuarial valuation of the Plan as of June 30, 2005, and June 30, 2006, are summarized in the actuarial balance sheet in Exhibit 4.1. The results for 2006 are based on the benefit provisions of the Plan as of June 30, 2006, as summarized in Section 11, and on the actuarial assumptions and methods shown in Section 9.

## Exhibit 4.1 - Actuarial Balance Sheet

## ACTUARIAL ASSETS



## Exhibit 4.1 - Actuarial Balance Sheet

## ACTUARIAL LIABILITIES

|  | June 30, |  |
| :---: | :---: | :---: |
|  | 2005 | 2006 |
| III Present Value of Benefits Presently Being Paid: |  |  |
|  |  |  |
| 14. (a) Benefits for retired members and beneficiaries | \$12,316,501,912 | \$13,632,850,197 |
| (b) Health insurance premium supplement | 515,223,564 | 542,240,347 |
| 15. (a) Benefits for disabled members | 345,385,807 | 362,552,747 |
| (b) Health insurance premium supplement | 29,116,606 | 28,800,768 |
| 16. (a) Benefits for other-than-plan participants | 3,255,636 | 2,783,868 |
| (b) Health insurance premium supplement | 7,944,859 | 7,519,328 |
| 17. Total present value of benefits presently Being paid | \$13,217,428,384 | \$14,576,747,255 |
| IV Present Value of Benefits Payable In the |  |  |
|  |  |  |
| 18. Active members |  |  |
| (a) Service retirement benefits | \$11,605,799,504 | \$12,081,068,875 |
| (b) Health insurance premium supplement | 904,119,388 | 925,980,765 |
| (c) Disability retirement benefits | 226,127,610 | 231,056,573 |
| (d) Pre-retirement death benefits | 266,206,539 | 281,283,613 |
| (e) Withdrawal benefits | 387,484,834 | 465,307,150 |
| (f) Total active members | \$13,389,737,875 | \$13,984,696,976 |
| 19. Inactive members | 1,029,957,682 | 1,135,187,031 |
| 20. Total | \$27,637,123,941 | \$29,696,631,262 |
| $\checkmark$ Other Liabilities And Reserves: |  |  |
| 21. Reserve for other miscellaneous liabilities and reserves | 0 | 0 |
| 22. Reserve for PBI COLAs | \$305,477,344 | \$0 |
| 23. TOTAL ACTUARIAL LIABILITIES | \$27,942,601,285 | \$29,696,631,262 |

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

## Contribution Rates

## Normal Cost

Exhibit 5.1 indicates that the normal cost as of June 30, 2006, is $13.41 \%$ of pay, compared to $13.16 \%$ in the 2005 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 2006 valuation with the corresponding items for the 2005 valuation.

## Contribution Rates

The employer and member contribution rates are each determined as one-half of the percent of pay needed to pay the normal cost of the Plan and to amortize the Unfunded Actuarial Accrued Liability (UAAL). For the June 30, 2006, valuation, the normal cost of the Plan is $13.41 \%$ and the amortization of the UAAL is $4.79 \%$. So the calculated employer and member rates are equal to:

$$
1 / 2 \times(13.41 \%+4.79 \%)=9.10 \% .
$$

The contribution rates are then rounded to the nearest $0.05 \%$, i.e., to $9.10 \%$ for each employee and employer.

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

$$
1 / 2 \times(13.41 \%-0.00 \%)=6.71 \% .
$$

This difference of $2.39 \%$ (i.e., $9.10 \%-6.71 \%$ ) is due totally to the UAAL of the Plan. Thus, the current UAAL of the Plan is equivalent to a $2.39 \%$ increase in the employer and member contribution rates determined by the 2006 valuation.

The member and employer contribution rates determined by the 2006 valuation are each $9.10 \%$ of compensation. Because of the separation of the health premium supplement into the 401(h) account, we must split the contribution rates into 401(a) and 401(h) portions. We have assumed that all member contributions will be contributed to the 401(a) account. This assumption is made to avoid any possible qualification problems due to refunds of employee contributions. The contribution rates may be allocated as shown below:

| Item | 401(a) Account | 401(h) Account | Total |
| :--- | :---: | :---: | :---: |
| 1. Member Contribution Rates | $9.10 \%$ | $0.00 \%$ | $9.10 \%$ |
| 2. Employer Contribution Rates | $\underline{8.05 \%}$ | $\underline{1.05 \%}$ | $\underline{9.10 \%}$ |
| 3. Total Contribution Rates | $17.15 \%$ | $1.05 \%$ | $18.20 \%$ |

Exhibit 5.1 - Analysis of Normal Cost by Component

| Benefit Component | Normal Cost as \% of Pay |  |
| :--- | :---: | :---: |
|  | 2005 | 2006 |
| 1. Retirement benefits | $10.22 \%$ | $10.21 \%$ |
| 2. Health insurance premium supplement | $0.64 \%$ | $0.63 \%$ |
| 3. Disability benefits (Deferred Retirement) | $0.39 \%$ | $0.38 \%$ |
| 4. Death benefits | $0.32 \%$ | $0.35 \%$ |
| 5. Termination benefits | $0.40 \%$ |  |
| a. Refunds | $1.19 \%$ | $0.46 \%$ |
| b. Vested deferred benefits | $1.59 \%$ | $1.38 \%$ |
| c. Total | $13.16 \%$ | $1.84 \%$ |
| 6. Total |  | $13.41 \%$ |

## Exhibit 5.2-Summary of Cost Items



## Exhibit 5.2 - Summary of Cost Items

|  | Valuation as of June 30, 2005 |  | Valuation as of June 30, 2006 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Cost Item | Cost as \% of Pay | Cost Item | Cost as \% of Pay |
| 8. Section 38-737 funding period <br> 9. Section 38-737 contribution rate <br> A. 401(a) Account <br> a. Employee <br> b. Employer <br> c. Total <br> B. 401(h) Account <br> a. Employee <br> b. Employer <br> c. Total <br> C. Total of Combined Accounts <br> a. Employee <br> b. Employer <br> c. Total <br> 10. Estimated yield on 401(a) actuarial assets <br> 11. Relative size of unfunded actuarial accrued liability <br> a. As percentage of actuarial assets <br> b. As percentage of covered payroll <br> c. As percentage of total actuarial accrued liability | 30 years <br>  <br>  <br>  <br> $8.70 \%$ <br> $7.62 \%$ <br> $16.32 \%$ <br>  <br> $0.00 \%$ <br> $1.08 \%$ <br> $1.08 \%$ <br>  <br> $8.70 \%$ <br> $8.70 \%$ <br> $17.40 \%$ <br> $3.20 \%$ <br>  <br> $17.2 \%$ <br> $51.1 \%$ |  | 30 years <br> 19.5\% <br> 58.3\% <br> $16.3 \%$ |  |

Exhibit 5.3-History of Contribution Rates

|  | Calculated Rates  Actual Rates  Total Rate  <br> Fiscal <br> Year <br> Beginning <br> July 1      <br> 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 | $6.90^{2}$ | $6.90^{2}$ | 15.50 | $13.80^{2}$ |
| 2006 | $8.70^{1}$ | $8.70^{1}$ | $8.60^{2}$ | $8.60^{2}$ | $17.40^{1}$ | $17.20^{2}$ |
| 2007 | 9.10 | 9.10 | 9.10 | 9.10 | 18.20 | 18.20 |
|  |  |  |  |  |  |  |

[^1]
## 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 $\$ 479$ million. This loss is not due to the investment experience of fiscal 2006. 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 2005 fiscal year is $6.03 \%$ on the pension assets (401(a)) and $4.26 \%$ on the health supplement assets (401(h)), compared to last year's returns of $3.20 \%$ and $4.99 \%$, respectively. The actuarially assumed rate of return is $8 \%$. There was also a small loss of $\$ 386$ million on the liability experience, mostly due to the demographic experience of non-retired members 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, 2005 | Valuation as of June 30, 2006 |
| :---: | :---: | :---: |
| A. Calculation of Total Actuarial Gain or Loss <br> 1. Unfunded actuarial accrued liability (UAAL), previous year <br> 2. Normal cost for the year <br> 3. Contributions for the year <br> 4. Interest at 8\% <br> a. On UAAL <br> b. On normal cost <br> c. On contributions | $\begin{array}{\|lr} \hline \$ & 2,275,424,742 \\ \$ & 1,010,224,924 \\ \$ & (946,697,219) \\ & \\ & 182,033,979 \\ & 80,817,994 \\ & (37,867,889) \\ \hline \end{array}$ | $\begin{array}{r} \$ 4,106,082,162 \\ \$ 1,075,456,754 \\ \$(1,265,185,960) \\ \\ \\ 328,486,573 \\ 86,036,540 \\ \\ (50,607,438) \end{array}$ |
|  | \$ 224,984,084 | \$ 363,915,675 |
| 5. Expected UAAL (Sum of Items 1-4) | \$ 2,563,936,531 | \$ 4,280,268,631 |
| 6. Actual UAAL | \$ 4,106,082,162 | \$ 4,845,108,486 |
| 7. Gain/(loss) for the year (Item 5 | \$(1,542,145,631) | \$ (564,839,855) |
| B. Source of Gains and Losse |  |  |
| 8. Asset gain/(loss) for the year (Tables 5a and 5b, Item 10) | \$(1,099,740,635) | \$ (478,907,502) |
| 9. Asset gain/(loss) as a percentage of actuarial assets | (4.6\%) | (1.9\%) |
| 10. PBI Cola |  |  |
| a. Excess Earnings Reser for Fiscal Year 2005 | \$ 0 | \$ 0 |
| b. Excess Earnings Reserve for Fiscal Year 2006 | $\$$ $0$ |  |
| 11. Total actuarial accrued liability gain/(loss) for the year (Item 7 - Item 8 -Item 10) | \$ (442,404,996) | \$ $(85,932,803)$ |
| 12. Analysis of actuarial accrued liability gain/(loss) |  |  |
| a. Legislative changes (Rural HIB) | \$ $(7,628,000)$ | \$ 0 |
| b. Assumption changes (Payroll projection reduced) |  | \$ 300,511,125 |
| c. Experience liability gain/(loss) <br> i. Pay increases less/(greater) than expected | N/A | \$ (119,184,970) |
| ii. Non-retired demographic gain/(loss) | N/A | $(456,641,660)$ |
| iii. Post-retirement mortality gain/(loss) | N/A | 102,928,332 |
| iv. Other | N/A | 86,454,370 |
| v. Total for th | \$ (434,776,996) | \$ (386,443,928) |
| d. Total actuarial accrued liability gain/(loss) | \$ (442,404,996) | \$ $(85,932,803)$ |
| 13. Experience liability gain/(Ioss) as percentage of total actuarial liability (Item 12 c as \% of Item 5h of Exhibit 5.2) | (1.56\%) | (1.30\%) |

Exhibit 6.2 - Analysis of Change in Contribution Rate

| Basis | Unfunded Actuarial <br> Accrued Liability <br> (\$ Millions) | Employer/Employee <br> Contribution Rate | Change in <br> Contribution <br> Rate |
| :--- | :---: | :---: | :---: |
| 1. Valuation as of June 30, 2005 | 4,106 | $8.68 \%$ | - |
| 2. Delay in contribution rate change | 4,280 | $8.64 \%$ | $(0.04 \%)$ |
| 3. 2005 / 2006 liability experience | 4,666 | $8.92 \%$ | $0.28 \%$ |
| 4. 2005 / 2006 asset experience | 5,145 | $9.15 \%$ | $0.23 \%$ |
| 5. $2005 / 2006$ legislative change | 5,145 | $9.15 \%$ | $0.00 \%$ |
| 6. $2005 / 2006$ administrative change | 4,845 | $9.10 \%$ | $(0.05 \%)$ |
| 7. Rounding to the nearest $0.05 \%$ | 4,845 | $9.10 \%$ | $0.00 \%$ |

## Permanent Benefit Increase

Exhibit 7.1 shows the determination of the PBI for 2006. The determination of the "Excess Investment Earnings" held in reserve for future PBIs is shown in Items 11 thorough 13. As shown in Item 13c, no more assets are available for future PBIs after the granting of the PBI effective July 1, 2006. Since the actuarial investment return (on the actuarial value of assets) of $6.03 \%$ is below $8 \%$ for fiscal year 2006, there are no additional "Excess Investment Earnings" to be allocated for Permanent Benefit Increases (PBIs).

## Exhibit 7.1 - Determination of Permanent Benefit Increase (PBI) COLA

Determination of July 1, 2006 PBI COLA:

1. Actuarial Present Value (APV) for all Retirees and Beneficiaries as of June 30, 2005
2. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2005
3. Excess Earnings Available for COLA
a. Carry-over From Prior Year
b. Current Year (Item $1 \times$ [Item 2-8\%])
c. Total Excess Earnings Available for COLA (Item 3.a + Item 3.b.)
4. One Percent of APV of all Retirees and Beneficiaries as of June 30, 2005
5. Preliminary COLA \% (Item 3.c / Item $4 \times 0.01$ )
6. Actual COLA \% (Item 5, but not greater than $4 \%$ and equal to $0 \%$ if less than 1\%)
7. Target Cost of 2006 COLA (Item $4 \times$ Item 6)
8. APV of $\$ 1$ Per Year of Service for Eligible Group
9. Per Year of Service Factor for 2006 COLA
10. Excess Investment Earnings to be Carried Forward to Next Year

Determination of Reserves for Future PBI COLAs:
11. Actuarial Present Value (APV) for all Retirees and Beneficiaries as of June 30, 2006
12. Rate of Return on Actuarial Value of Assets for Fiscal Year Ending June 30, 2006
13. Excess Earnings Reserves for Future COLAs
a. Carry Over From Prior Year (Item 10)
b. Current Year (Item $11 \times[$ Item 12-8\%, minimum 0])
c. Total Excess Earnings Reserves for Future COLAs
\$ 12,316,501,912

| $3.20 \%$ |
| ---: |
| $\$ 0$ |
| 0 |
| $\$ 0$ |

## GASB Disclosure and CAFR Information

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

## GASB 25 Schedule of Funding Progress

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

## GASB 25 Schedule of Employer Contributions

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

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

## GASB 43 Schedule of Funding Progress

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

## GASB 43 Schedule of Employer Contributions

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

## Retiree and Beneficiary Experience

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

## Solvency Test

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

## Actuarial Certification ARIZONA STATE RETIREMENT PLAN Actuarial Certification Statement

This is to certify that Buck Consultants has prepared an actuarial valuation of the Arizona State Retirement Plan as of June 30, 2006.

Actuarial calculations have been made with respect to a total of 464,719 members 217,676 active employees, 163,527 inactive members, and 78,498 retired members and beneficiaries, and 5,018 members on long term disability. In addition, there are 686 System retirees receiving ad hoc benefits from Plan assets.

The actuarial calculations establish a total benefit cost of $18.20 \%$ of the annual compensation of employees. The total normal cost rate is $13.41 \%$ of compensation, and the required amortization payment determined in accordance with Section 38-737 is 4.79\% of compensation.

The actuarial cost factors as of June 30, 2006, for the total Plan, are as follows:

| I. Actuarial accrued liabilities |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| A. Liabilities due to member's benefits |  |  |  |  |
| 1. Active members |  |  |  |  |
| a. Retirement benefits | \$12,081,068,875 |  |  |  |
| b. Health insurance premium supplement | 925,980,765 |  |  |  |
| c. Disability deferred retirement benefits | 231,056,573 |  |  |  |
| d. Pre-retirement death benefits | 281,283,613 |  |  |  |
| e. Withdrawal benefits | 465,307,150 |  |  |  |
| f. Total active members |  | \$13,984,696,976 |  |  |
| 2. Inactive members |  | 1,135,187,031 |  |  |
| 3. Retired members and beneficiaries |  | 14,175,090,544 |  |  |
| 4. Disabled members (deferred retirement) |  | 391,353,515 |  |  |
| 5. Benefit increases for other-than-plan participants |  | 10,303,196 |  |  |
| 6. Total present value of benefits |  |  | \$29,696,631,262 |  |
| B. Other miscellaneous liabilities and reserves |  |  | 0 |  |
| C. Reserve for future PBIs |  |  | 0 |  |
| D. Total actuarial accrued liability |  |  |  | \$29,696,631,262 |
| II. Actuarial value of assets |  |  |  | 24,851,522,776 |
| III. Unfunded actuarial accrued liability (Item I -- Item II) |  |  |  | 4,845,108,486 |
| IV. Amortization of unfunded actuarial accrued liability (per Section 38-737) |  |  | 398,500,483 |  |
| V. Normal cost for the year |  |  | 1,113,619,050 |  |
| VI. Total contribution for the year (Item IV + Item V) |  |  |  | 1,512,119,533 |
| VII. Total covered payroll (projected to 2005 / 2006 plan year) |  |  |  | 8,311,869,615 |
| /III. Total contribution for fiscal year 2008 as a percentage of covered payroll |  | 401(a) Account | 401(h) Account | Total |
| A. Employee Portion |  | 9.10\% | 0.00\% | 9.10\% |
| B. Employer Portion |  | 8.05\% | 1.05\% | 9.10\% |
| C. Total |  | 17.15\% | 1.05\% | 18.20\% |

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

On November 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
$\left.\begin{array}{cccc}\begin{array}{c}\text { Years of } \\ \text { Service }\end{array} & & \begin{array}{c}\text { Merit } \\ \text { Component }\end{array} & \end{array} \begin{array}{c}\text { Total Salary } \\ \text { Increase }\end{array}\right]$
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

| Years of Service |
| :---: |
| Male Members |


| Age | 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 | 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.

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

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

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

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


[^2]
## Exhibit 8.1a - Schedule of Funding Progress <br> (401(a) Plan , as required by GASB \#25)

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

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

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

| Fiscal <br> Year | Annual Required <br> Contribution | Percentage <br> Contributed |
| :---: | :---: | :---: |
| 1993 | $\$ 135,644,868$ | $100.0 \%$ |
| 1994 | $162,452,872$ | $76.8 \%$ |
| 1995 | $158,559,931$ | $100.0 \%$ |
| 1996 | $78,608,439$ | $100.0 \%$ |
| 1997 | $89,756,995$ | $100.0 \%$ |
| 1998 | $78,004,461$ | $100.0 \%$ |
| 1999 | $85,964,481$ | $100.0 \%$ |
| 2000 | $195,810,628$ | $100.0 \%$ |
| 2001 | $209,320,281$ | $100.0 \%$ |
| 2002 | $130,647,669$ | $100.0 \%$ |
| 2003 | $137,622,205$ | $100.0 \%$ |
| 2004 | $297,268,473$ | $100.0 \%$ |
| 2005 | $317,919,116$ | $100.0 \%$ |
| 2006 | $477,119,869$ | $100.0 \%{ }^{*}$ |

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

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


## Exhibit 8.2a - Schedule of Funding Progress

(401(h) Plan, as required by GASB \#43)

| Valuation Date | Actuarial Value of Assets (AVA) | Actuarial Accrued Liability (AAL) | Unfunded Actuarial Accrued Liability (UAAL) (3) - (2) | Funded (2) / (3) | Annual Covered Payroll | UAAL as \% of Payroll (4) / (6) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| 06/30/2005 | \$ 1,028 | \$ 1,456 | \$ 428 | 70.6\% | \$ 8,032 | 5.3\% |
| 06/30/2006 | \$ 1,085 | \$ 1,505 | \$ 420 | 72.1\% | \$ 8,312 | 5.1\% |

Note: Dollar amounts in millions.

## Exhibit 8.2b - Schedule of Employer Contributions <br> (401(h) Plan, as required by GASB \#43)

| Fiscal <br> Year | Annual Required <br> Contribution | Percentage <br> Contributed |
| :---: | :---: | :---: |
| 2005 | $\$ 85,350,074$ | $100.0 \%$ |
| 2006 | $\$ 93,461,175$ | $100.0 \%^{*}$ |

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


## Exhibit 8.3 - Notes to Required Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:
Valuation Date ..... June 30, 2006
Actuarial cost method
Amortization method
Payroll growth rate for amortizationProjected Unit CreditLevel dollar, 30 years
Asset valuation method
Actuarial assumptions:
Investment rate of return* ..... 8.00\%
Projected salary increases ..... 4.50\% to $9.50 \%$*Includes inflation at4.25\%
Cost-of-living adjustments ..... N/A

## Exhibit 8.4 - Components of Normal Cost

|  | 2006 |
| :--- | ---: |
| Components of the normal cost are as follows: |  |
| Retirement benefits | $10.21 \%$ |
| Health insurance premium supplement | $0.63 \%$ |
| Survivor benefits | $0.35 \%$ |
| Withdrawals | $\underline{1.84 \%}$ |
| Long-term disability benefit | $\underline{0.38 \%}$ |
| Total, normal cost | $\underline{13.41 \%}$ |
| Amortization of the UAAL | $18.20 \%$ |
| Required contribution rate for FY 2008 | $\underline{\underline{9.10 \%}}$ |
| Shared by employee and employer | $\underline{\underline{9.10 \%}}$ |
| Required matching contribution rate |  |
| Rounded contribution rate shared by employee |  |
| and employer to the nearest 0.05\% |  |

Exhibit 8.5 - Schedule of Plan Active Member Valuation Data

| Valuation <br> As of <br> June 30 | Number | Annual <br> Payroll | Annual <br> Average <br> Pay | Increase <br> in <br> Average <br> Pay |
| :---: | :---: | :---: | :---: | :---: |
| 2004 | 205,482 | $7,485,590,038$ | 36,429 | $1.0 \%$ |
| 2005 | 212,202 | $8,032,457,947$ | 37,853 | $3.9 \%$ |
| 2006 | 217,676 | $8,311,869,615$ | 38,185 | $0.9 \%$ |

Exhibit 8.6 - Schedule of Plan Retirees Added and Removed from Rolls
Schedule of Retiree Data

| Valuation As of June 30 | Added to Roll |  | Removed from Rolls |  | Rolls - End of Year |  | Percent Increase in Annual Allowances | Average Annual Allowances |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Annual* Allowances | Number | Annual* Allowances | Number | Annual Allowances |  |  |
| 2004 | 5,882 | 159,779,107 | 1,733 | 23,506,435 | 64,121 | 1,168,664,755 | 13.2\% | 18,226 |
| 2005 | 6,429 | 129,398,517 | 1,815 | 26,570,628 | 68,735 | 1,271,492,645 | 8.8\% | 18,498 |
| 2006 | 6,522 | 160,698,938 | 2,176 | 29,274,714 | 73,081 | 1,402,916,869 | 10.3\% | 19,197 |

## Schedule of Beneficiary Data

| Valuation As of June 30 | Added to Roll |  | Removed from Rolls |  | Rolls - End of Year |  | Percent Increase in Annual Allowances | Average Annual Allowances |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Annual* Allowances | Number | Annual* Allowances | Number | Annual Allowances |  |  |
| 2004 | 548 | 9,284,219 | 463 | 3,476,244 | 4,810 | 61,361,104 | 10.5\% | 12,757 |
| 2005 | 576 | 6,611,195 | 268 | 2,901,597 | 5,118 | 65,070,702 | 6.0\% | 12,714 |
| 2006 | 621 | 10,168,738 | 322 | 3,442,543 | 5,417 | 71,796,897 | 10.3\% | 13,254 |

Schedule of Retiree and Beneficiary Data

| Valuation <br> As of June 30 | Added to Roll |  | Removed from Rolls |  | Rolls - End of Year |  | Percent Increase in Annual Allowances | Average Annual Allowances |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Number | Annual* Allowances | Number | Annual* Allowances | Number | Annual Allowances |  |  |
| 2004 | 6,430 | 169,063,326 | 2,196 | 26,982,679 | 68,931 | 1,230,025,859 | 13.1\% | 17,844 |
| 2005 | 7,005 | 136,009,712 | 2,083 | 29,472,225 | 73,853 | 1,336,563,347 | 8.7\% | 18,098 |
| 2006 | 7,143 | 170,867,676 | 2,498 | 32,717,257 | 78,498 | 1,474,713,766 | 10.3\% | 18,787 |

* Cost of Living Increases included here

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

| Year Ended June 30 | Aggregate Accrued Liabilities Plan | Actuarial Value of Net Plan Assets | Assets as a \% of Accrued Liabilities Plan | Unfunded (over) <br> Accrued Liabilities Plan (UAL) | Active Member Payroll | UAL as a \% of Active Member Payroll |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2004 | 25,918,329,505 | 23,642,904,763 | 91.2\% | 2,275,424,742 | 7,485,590,038 | 30.4\% |
| 2005 | 27,942,601,285 | 23,836,519,123 | 85.3\% | 4,106,082,162 | 8,032,457,947 | 51.1\% |
| 2006 | 29,696,631,262 | 24,851,522,776 | 83.7\% | 4,845,108,486 | 8,311,869,615 | 58.3\% |

Exhibit 8.8 - Solvency Test

| Year Ended June 30 | Aggregate Accrued Liabilities for |  |  | Net Assets Available for Benefits |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | (1) | (2) | (3) |  |  |  |  |
|  |  |  | Active Members |  | Por | of A |  |
|  | Active | Retirees | (Employer |  | Liabi | es Co |  |
|  | Member | and | Financed |  |  | Ass |  |
|  | Contributions | Beneficiaries | Portion) |  | Availa | for |  |
| 2004 | 3,407,611,954 | 12,421,950,646 | 10,088,766,905 | 23,642,904,763 | 100 | 100 | 77.4 |
| 2005 | 3,717,945,957 | 13,522,905,728 | 10,701,749,600 | 23,836,519,123 | 100 | 100 | 61.6 |
| 2006 | 4,168,243,157 | 14,576,747,255 | 10,951,640,850 | 24,851,522,776 | 100 | 100 | 55.8 |

Exhibit 8.9 - Schedule of Recommended Versus Actual Plan Contributions

| Year <br> Ended <br> June 30 | Active <br> Member <br> Payroll | Employee <br> Contributions | Retirement <br> Contribution <br> Rate - Actual | Actuary <br> Recommended <br> Contribution |
| :---: | :---: | :---: | :---: | :---: |
| 2004 | $7,486,000,000$ | $377,436,100$ | $5.20 \%$ | $5.20 \%$ |
| 2005 | $8,032,000,000$ | $403,269,191$ | $5.20 \%$ | $5.20 \%$ |
| 2006 | $8,312,000,000$ | $570,581,044$ | $6.90 \%$ | $7.75 \%$ |

Exhibit 8.10 - Analysis of Financial Experience for the Plan (millions)

| Year <br> Ended <br> June 30 | Unfunded <br> Actuarial <br> Liability <br> (UAAL), <br> Prior Year | Normal <br> Cost <br> for the <br> Year | Contributions <br> for the <br> Year | Interest <br> at 8\% <br> on UAAL | On <br> Normal <br> Cost | On <br> Contributions | Total | Oxpected <br> UAAL | Actual <br> UAAL | Gain <br> (Loss) <br> for the <br> Year |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2004 | 786.74 | 950.78 | $(865.97)$ | 62.94 | 76.06 | $(34.64)$ | 104.36 | 975.91 | $2,275.42$ | $(1,299.51)$ |
| 2005 | $2,275.42$ | $1,010.22$ | $(946.70)$ | 182.03 | 80.82 | $(37.87)$ | 224.98 | $2,563.94$ | $4,106.08$ | $(1,542.15)$ |
| 2006 | $4,106.08$ | $1,075.46$ | $(1265.19)$ | 328.49 | 86.04 | $(50.61)$ | 363.92 | $4,280.27$ | $4,845.11$ | $(564.84)$ |

## 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
2. Mortality
a. Pre-retirement

8\% per annum, compounded annually.

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

Rates of Mortality (Active)

| Age | 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 |

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.

Rates of Mortality

| 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.

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

4. Withdrawal Rates
(for causes other than death, disability, Select and ultimate withdrawal rates are or retirement) 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+ |
|  |  |  |  |  | Male Employees |  |  |  |  |  |  |
| 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 |
|  |  |  |  |  | Female Employees |  |  |  |  |  |  |
| 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\% |
| $\begin{aligned} \text { * Total salary increase rate }=\text { inflation } & \text { (or growth) rate }(4.25 \%) \\ & + \text { productivity increase rate }(0.25 \%) \\ & + \text { merit component } \end{aligned}$ |  |  |

## 6. Retirement Age:

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

|  | Rates of Decrement Due to Retirement |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Age | $0-4$ | $5-9$ | $10-14$ | $15-19$ | $20-24$ | 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.

## 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. There is no corridor around market value within which the actuarial value is required to fall.

## C. Actuarial Funding Method

Costs are determined under the projected unit-credit method. The unfunded actuarial accrued liability is funded on a level dollar basis over the period of time described in Section 38-737. For the June 30, 2006 actuarial valuation, the period is 30 years.

## D. Data for Valuation

In preparing the June 30, 2006 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, 2006 actuarial valuation of the Plan was based on the following data. For comparison, we also show a summary of the June 30, 2005 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 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { As of } \\ \text { June } 30 \text {, } \\ 2005 \end{gathered}$ | As of June 30, 2006 | As of June 30, 2005 | As of June 30, 2006 | As of June 30, 2005 | As of June 30, 2006 | As of June 30, 2005 | $\begin{gathered} \text { As of } \\ \text { June } 30, \\ 2006 \\ \hline \end{gathered}$ |
| State |  |  |  |  |  |  |  |  |
| Employees: |  |  |  |  |  |  |  |  |
| Male | 16,983 | 17,072 | 46.7 | 46.6 | 9.6 | 9.5 | \$ 45,738 | \$ 45,623 |
| Female | 28,908 | 29,436 | 44.8 | 44.8 | 8.7 | 8.8 | 37,057 | 37,257 |
| Total | 45,891 | 46,508 | 45.5 | 45.4 | 9.0 | 9.0 | \$ 40,270 | \$ 40,328 |
| Teachers: |  |  |  |  |  |  |  |  |
| Male | 16,894 | 17,587 | 44.5 | 44.4 | 10.2 | 10.0 | \$ 46,767 | \$ 47, 147 |
| Female | 51,543 | 53,591 | 43.7 | 43.5 | 10.0 | 9.9 | 42,227 | 42,662 |
| Total | 68,437 | 71,178 | 43.9 | 43.7 | 10.1 | 9.9 | \$ 43,348 | \$ 43,770 |
| Political Subdivision Employees: |  |  |  |  |  |  |  |  |
| Male | 36,626 | 37,035 | 45.7 | 45.8 | 7.8 | 7.9 | \$ 39,864 | \$ 40,574 |
| Female | 61,248 | 62,955 | 44.5 | 44.6 | 6.9 | 6.9 | 28,699 | 28,880 |
| Total | 97,874 | 99,990 | 45.0 | 45.0 | 7.2 | 7.3 | \$ 32,877 | \$ 33,211 |
| All Active <br> Plan <br> Members: |  |  |  |  |  |  |  |  |
| Male | 70,503 | 71,694 | 45.7 | 45.6 | 8.8 | 8.8 | \$ 42,933 | \$ 43,389 |
| Female | 141,699 | 145,982 | 44.3 | 44.2 | 8.4 | 8.4 | 35,325 | 35,629 |
| Total | 212,202 | 217,676 | 44.7 | 44.7 | 8.5 | 8.5 | \$ 37,853 | \$ 38,185 |

Exhibit 10.2 - Summary of Retired Membership

|  | June 30, 2005 | June 30, 2006 | Percentage Change During the Period |
| :---: | :---: | :---: | :---: |
| STATE EMPLOYEES |  |  |  |
| Number | 18,683 | 19,646 | 5.2\% |
| Total Monthly Allowance | \$ 24,701,837 | \$ 26,927,569 | 9.0\% |
| Average Monthly Allowance | \$ 1,322 | \$ 1,371 | 3.7\% |
| Average Age | 70.4 | 70.6 | 0.3\% |
| Average Years of Service | 17.8 | 18.0 | 1.1\% |
| TEACHERS |  |  |  |
| Number | 22,970 | 24,446 | 6.4\% |
| Total Monthly Allowance | \$ 49,436,236 | \$ 54,276,736 | 9.8\% |
| Average Monthly Allowance | \$ 2,152 | \$ 2,220 | 3.2\% |
| Average Age | 68.0 | 68.0 | 0.0\% |
| Average Years of Service | 23.6 | 23.7 | 0.4\% |
| POLITICAL SUBDIVISION |  |  |  |
| Number | 32,200 | 34,406 | 6.9\% |
| Total Monthly Allowance | \$ 37,242,206 | \$ 41,688,510 | 11.9\% |
| Average Monthly Allowance | \$ 1,157 | \$ 1,212 | 4.8\% |
| Average Age | 70.2 | 70.1 | (0.1)\% |
| Average Years of Service | 17.0 | 17.2 | 1.2\% |
| TOTAL |  |  |  |
| Number ${ }^{1}$ | 73,853 | 78,498 | 6.3\% |
| Total Monthly Allowance ${ }^{2}$ | \$111,380,280 | \$122,892,815 | 10.3\% |
| Average Monthly Allowance | \$ 1,508 | \$ 1,566 | 3.8\% |
| Average Age | 69.6 | 69.6 | 0.0\% |
| Average Years of Service | 19.3 | 19.4 | 0.5\% |

[^3]Exhibit 10.3 - Summary of Inactive Membership

|  |  |  | Percentage <br> Change <br> During the <br> Period |
| :--- | :---: | :---: | :---: |
| STATE EMPLOYEES <br> Number <br> TEACHERS <br> Number <br> POLITICAL SUBDIVISION <br> Number <br> TOTAL <br> Number | 34,454 | 36,882 | June 30, 2006 |

## Exhibit 10.4a

Distribution of Active Employees by Average Age, Average Years of Service and Average Salary

State Employees
as of June 30, 2006

| YEARS OF SERVICE |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CURRENT AGE | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35 \& Over | TOTAL |
| Below 19 | 170 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 |
|  | 18,315 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18,315 |
| 20-24 | 1,642 | 104 | 0 | 0 | 0 | 0 | 0 | 0 | 1,746 |
|  | 25,271 | 31,266 | 0 | 0 | 0 | 0 | 0 | 0 | 25,628 |
| 25-29 | 3,037 | 886 | 29 | 0 | 0 | 0 | 0 | 0 | 3,952 |
|  | 30,667 | 34,652 | 36,933 | 0 | 0 | 0 | 0 | 0 | 31,606 |
| 30-34 | 2,365 | 1,540 | 375 | 20 | 0 | 0 | 0 | 0 | 4,300 |
|  | 33,381 | 38,347 | 39,226 | 41,384 | 0 | 0 | 0 | 0 | 35,706 |
| 35-39 | 2,144 | 1,614 | 966 | 304 | 16 | 0 | 0 | 0 | 5,044 |
|  | 35,036 | 40,122 | 43,417 | 43,832 | 38,544 | 0 | 0 | 0 | 38,810 |
| 40-44 | 1,988 | 1,529 | 1,087 | 856 | 310 | 34 | 0 | 0 | 5,804 |
|  | 35,018 | 39,101 | 44,032 | 48,567 | 47,739 | 43,921 | 0 | 0 | 40,512 |
| 45-49 | 1,992 | 1,694 | 1,208 | 1,152 | 717 | 325 | 21 | 0 | 7,109 |
|  | 35,855 | 39,398 | 42,223 | 47,942 | 49,994 | 49,852 | 46,315 | 0 | 41,837 |
| 50-54 | 1,789 | 1,567 | 1,233 | 1,244 | 865 | 613 | 166 | 9 | 7,486 |
|  | 37,420 | 39,465 | 43,024 | 47,306 | 52,087 | 56,692 | 57,068 | 45,203 | 44,132 |
| 55-59 | 1,428 | 1,228 | 1,122 | 1,148 | 800 | 471 | 256 | 68 | 6,521 |
|  | 37,609 | 40,482 | 42,930 | 45,685 | 48,987 | 57,917 | 65,601 | 63,596 | 44,720 |
| 60-64 | 576 | 716 | 570 | 616 | 386 | 206 | 148 | 75 | 3,293 |
|  | 37,922 | 40,943 | 43,728 | 45,260 | 49,080 | 57,036 | 66,721 | 69,196 | 45,467 |
| 65-69 | 140 | 192 | 171 | 152 | 73 | 42 | 34 | 30 | 834 |
|  | 42,525 | 38,706 | 40,783 | 44,339 | 44,906 | 56,103 | 73,507 | 95,719 | 45,688 |
| 70 \& Over | 47 | 50 | 49 | 50 | 13 | 10 | 11 | 19 | 249 |
|  | 40,795 | 36,160 | 43,957 | 41,184 | 46,646 | 44,531 | 59,095 | 80,062 | 44,825 |
| TOTAL | 17,318 | 11,120 | 6,810 | 5,542 | 3,180 | 1,701 | 636 | 201 | 46,508 |
|  | 33,677 | 39,065 | 42,857 | 46,721 | 49,791 | 55,425 | 63,308 | 71,213 | 40,328 |

## Exhibit 10.4b

Distribution of Active Employees by Average Age, Average Years of Service and Average Salary

Teachers
as of June 30, 2006

| YEARS OF SERVICE |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CURRENT AGE | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35 \& Over | TOTAL |
| Below 19 | 41 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 |
|  | 12,052 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,052 |
| 20-24 | 2,444 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 2,492 |
|  | 32,501 | 24,312 | 0 | 0 | 0 | 0 | 0 | 0 | 32,343 |
| 25-29 | 6,202 | 2,003 | 15 | 0 | 0 | 0 | 0 | 0 | 8,220 |
|  | 36,472 | 40,473 | 35,136 | 0 | 0 | 0 | 0 | 0 | 37,445 |
| 30-34 | 3,470 | 4,026 | 878 | 5 | 0 | 0 | 0 | 0 | 8,379 |
|  | 36,176 | 43,236 | 47,368 | 36,420 | 0 | 0 | 0 | 0 | 40,741 |
| 35-39 | 2,614 | 2,900 | 2,516 | 515 | 9 | 0 | 0 | 0 | 8,554 |
|  | 34,855 | 42,379 | 49,769 | 52,559 | 45,056 | 0 | 0 | 0 | 42,869 |
| 40-44 | 2,318 | 2,319 | 1,820 | 1,669 | 566 | 19 | 0 | 0 | 8,711 |
|  | 33,358 | 39,690 | 47,377 | 54,433 | 56,385 | 45,469 | 0 | 0 | 43,533 |
| 45-49 | 2,176 | 2,260 | 1,927 | 1,649 | 1,668 | 714 | 19 | 0 | 10,413 |
|  | 32,711 | 38,870 | 45,610 | 51,524 | 58,489 | 60,569 | 55,836 | 0 | 45,496 |
| 50-54 | 1,860 | 1,959 | 1,960 | 1,924 | 1,602 | 1,650 | 443 | 5 | 11,403 |
|  | 33,859 | 40,645 | 45,625 | 49,953 | 56,326 | 63,324 | 68,542 | 64,177 | 48,543 |
| 55-59 | 1,460 | 1,432 | 1,446 | 1,652 | 1,428 | 846 | 509 | 96 | 8,869 |
|  | 34,700 | 42,327 | 46,233 | 50,736 | 55,423 | 60,034 | 66,790 | 76,027 | 48,841 |
| 60-64 | 591 | 626 | 553 | 606 | 415 | 264 | 114 | 83 | 3,252 |
|  | 31,097 | 40,162 | 44,870 | 49,436 | 52,649 | 54,927 | 64,383 | 67,710 | 45,388 |
| 65-69 | 182 | 164 | 77 | 81 | 55 | 38 | 16 | 15 | 628 |
|  | 25,377 | 37,216 | 46,776 | 46,294 | 49,329 | 52,772 | 68,977 | 65,356 | 39,611 |
| 70 \& Over | 77 | 48 | 30 | 12 | 21 | 11 | 5 | 12 | 216 |
|  | 19,186 | 30,075 | 33,426 | 40,302 | 30,693 | 33,468 | 41,068 | 62,787 | 29,532 |
| TOTAL | 23,435 | 17,785 | 11,222 | 8,113 | 5,764 | 3,542 | 1,106 | 211 | 71,178 |
|  | 34,537 | 41,159 | 46,974 | 51,421 | 56,292 | 61,055 | 66,971 | 70,963 | 43,770 |

## Exhibit 10.4c

Distribution of Active Employees by Average Age, Average Years of Service and Average Salary Political Subdivision Employees as of June 30, 2006

| YEARS OF SERVICE |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CURRENT <br> AGE | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35 \& Over | TOTAL |
| Below 19 | 854 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 854 |
|  | 11,784 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11,784 |
| 20-24 | 4,560 | 322 | 0 | 0 | 0 | 0 | 0 | 0 | 4,882 |
|  | 18,525 | 24,969 | 0 | 0 | 0 | 0 | 0 | 0 | 18,950 |
| 25-29 | 5,446 | 1,822 | 88 | 0 | 0 | 0 | 0 | 0 | 7,356 |
|  | 26,423 | 31,503 | 36,014 | 0 | 0 | 0 | 0 | 0 | 27,796 |
| 30-34 | 5,314 | 2,938 | 659 | 39 | 0 | 0 | 0 | 0 | 8,950 |
|  | 26,908 | 37,363 | 39,080 | 42,287 | 0 | 0 | 0 | 0 | 31,303 |
| 35-39 | 5,700 | 3,354 | 1,498 | 539 | 60 | 0 | 0 | 0 | 11,151 |
|  | 25,194 | 36,749 | 44,460 | 45,001 | 48,337 | 0 | 0 | 0 | 32,340 |
| 40-44 | 6,015 | 3,944 | 1,902 | 1,235 | 500 | 72 | 0 | 0 | 13,668 |
|  | 24,354 | 33,315 | 43,015 | 51,586 | 52,545 | 49,813 | 0 | 0 | 33,163 |
| 45-49 | 5,867 | 4,359 | 2,409 | 1,717 | 1,094 | 486 | 49 | 0 | 15,981 |
|  | 25,101 | 33,770 | 40,396 | 50,030 | 56,420 | 54,921 | 56,098 | 0 | 35,595 |
| 50-54 | 4,759 | 3,793 | 2,442 | 1,888 | 1,344 | 706 | 259 | 7 | 15,198 |
|  | 26,275 | 34,552 | 39,670 | 46,830 | 54,643 | 59,431 | 57,459 | 54,783 | 37,640 |
| 55-59 | 3,972 | 3,036 | 2,004 | 1,738 | 1,145 | 565 | 269 | 56 | 12,785 |
|  | 26,072 | 34,328 | 40,310 | 46,507 | 53,503 | 58,995 | 68,937 | 75,494 | 38,072 |
| 60-64 | 1,973 | 1,574 | 925 | 775 | 480 | 310 | 121 | 59 | 6,217 |
|  | 22,157 | 32,129 | 39,071 | 44,315 | 51,883 | 53,336 | 67,746 | 77,751 | 35,225 |
| 65-69 | 857 | 549 | 273 | 148 | 92 | 49 | 34 | 23 | 2,025 |
|  | 17,670 | 26,858 | 31,870 | 41,130 | 48,148 | 46,696 | 47,919 | 66,397 | 26,938 |
| 70 \& Over | 380 | 305 | 129 | 58 | 33 | 13 | 0 | 5 | 923 |
|  | 14,378 | 20,011 | 22,407 | 30,160 | 40,173 | 45,066 | 0 | 75,642 | 20,040 |
| TOTAL | 45,697 | 25,996 | 12,329 | 8,137 | 4,748 | 2,201 | 732 | 150 | 99,990 |
|  | 24,328 | 33,996 | 40,558 | 47,553 | 53,971 | 56,782 | 62,843 | 74,025 | 33,211 |

## Exhibit 10.4d

Distribution of Active Employees by Average Age, Average Years of Service and Average Salary

Total Active Employees
as of June 30, 2006

| YEARS OF SERVICE |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CURRENT AGE | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35 \& Over | TOTAL |
| Below 19 | 1,065 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1,065 |
|  | 12,837 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12,837 |
| 20-24 | 8,646 | 474 | 0 | 0 | 0 | 0 | 0 | 0 | 9,120 |
|  | 23,757 | 26,284 | 0 | 0 | 0 | 0 | 0 | 0 | 23,888 |
| 25-29 | 14,685 | 4,711 | 132 | 0 | 0 | 0 | 0 | 0 | 19,528 |
|  | 31,545 | 35,909 | 36,116 | 0 | 0 | 0 | 0 | 0 | 32,629 |
| 30-34 | 11,149 | 8,504 | 1,912 | 64 | 0 | 0 | 0 | 0 | 21,629 |
|  | 31,166 | 40,322 | 42,914 | 41,547 | 0 | 0 | 0 | 0 | 35,835 |
| 35-39 | 10,458 | 7,868 | 4,980 | 1,358 | 85 | 0 | 0 | 0 | 24,749 |
|  | 29,626 | 39,516 | 46,940 | 47,605 | 46,146 | 0 | 0 | 0 | 37,297 |
| 40-44 | 10,321 | 7,792 | 4,809 | 3,760 | 1,376 | 125 | 0 | 0 | 28,183 |
|  | 28,430 | 36,347 | 44,896 | 52,163 | 53,042 | 47,550 | 0 | 0 | 37,881 |
| 45-49 | 10,035 | 8,313 | 5,544 | 4,518 | 3,479 | 1,525 | 89 | 0 | 33,503 |
|  | 28,886 | 36,303 | 42,607 | 50,043 | 56,088 | 56,485 | 53,734 | 0 | 39,997 |
| 50-54 | 8,408 | 7,319 | 5,635 | 5,056 | 3,811 | 2,969 | 868 | 21 | 34,087 |
|  | 30,324 | 37,234 | 42,475 | 48,136 | 54,770 | 61,029 | 63,041 | 52,914 | 42,713 |
| 55-59 | 6,860 | 5,696 | 4,572 | 4,538 | 3,373 | 1,882 | 1,034 | 220 | 28,175 |
|  | 30,310 | 37,666 | 42,826 | 47,839 | 53,245 | 59,192 | 67,055 | 72,049 | 43,001 |
| 60-64 | 3,140 | 2,916 | 2,048 | 1,997 | 1,281 | 780 | 383 | 217 | 12,762 |
|  | 26,731 | 36,018 | 41,933 | 46,160 | 51,287 | 54,851 | 66,349 | 70,953 | 40,457 |
| 65-69 | 1,179 | 905 | 521 | 381 | 220 | 129 | 84 | 68 | 3,487 |
|  | 21,811 | 31,249 | 36,998 | 43,508 | 47,368 | 51,549 | 62,287 | 79,103 | 33,705 |
| 70 \& Over | 504 | 403 | 208 | 120 | 67 | 34 | 16 | 36 | 1,388 |
|  | 17,576 | 23,213 | 29,073 | 35,767 | 38,458 | 41,156 | 53,461 | 73,689 | 25,963 |
| TOTAL | 86,450 | 54,901 | 30,361 | 21,792 | 13,692 | 7,444 | 2,474 | 562 | 217,676 |
|  | 28,968 | 37,343 | 43,445 | 48,782 | 53,977 | 58,505 | 64,808 | 71,870 | 38,185 |

## Exhibit 10.5a

Distribution of Retired Employees by Average Age, Average Years of Service and Average Monthly Annuity

State Employees as of June 30, 2006

| YEARS OF SERVICE |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CURRENT AGE | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45+ | TOTAL |
| Under 55 | 3 | 83 | 116 | 470 | 0 | 0 | 0 | 0 | 0 | 0 | 672 |
|  | 71 | 318 | 383 | 1,929 | 0 | 0 | 0 | 0 | 0 | 0 | 1,455 |
| 55-59 | 4 | 206 | 286 | 1,145 | 324 | 0 | 0 | 0 | 0 | 0 | 1,965 |
|  | 458 | 263 | 559 | 2,277 | 2,514 | 0 | 0 | 0 | 0 | 0 | 1,851 |
| 60-64 | 7 | 441 | 598 | 520 | 1,463 | 210 | 0 | 0 | 0 | 0 | 3,239 |
|  | 175 | 333 | 644 | 940 | 2,184 | 2,746 | 0 | 0 | 0 | 0 | 1,480 |
| 65-69 | 120 | 621 | 924 | 731 | 651 | 899 | 89 | 0 | 0 | 0 | 4,035 |
|  | 137 | 354 | 696 | 1,057 | 1,562 | 2,650 | 3,367 | 0 | 0 | 0 | 1,326 |
| 70-74 | 146 | 659 | 816 | 635 | 527 | 362 | 313 | 15 | 0 | 0 | 3,473 |
|  | 136 | 386 | 727 | 1,100 | 1,663 | 2,374 | 3,343 | 3,580 | 0 | 0 | 1,267 |
| 75-79 | 114 | 562 | 646 | 497 | 348 | 274 | 181 | 80 | 2 | 0 | 2,704 |
|  | 150 | 388 | 806 | 1,202 | 1,751 | 2,471 | 2,865 | 3,770 | 6,640 | 0 | 1,284 |
| 80-84 | 55 | 377 | 512 | 415 | 322 | 183 | 122 | 45 | 7 | 0 | 2,038 |
|  | 174 | 406 | 815 | 1,246 | 1,647 | 2,276 | 2,879 | 3,186 | 4,166 | 0 | 1,260 |
| 85-89 | 32 | 223 | 245 | 255 | 145 | 97 | 65 | 25 | 11 | 1 | 1,099 |
|  | 171 | 415 | 869 | 1,175 | 1,580 | 2,068 | 2,333 | 2,360 | 3,996 | 3,832 | 1,182 |
| 90-94 | 13 | 77 | 103 | 74 | 40 | 29 | 14 | 10 | 3 | 0 | 363 |
|  | 209 | 418 | 842 | 1,128 | 1,453 | 1,803 | 1,747 | 2,462 | 2,240 | 0 | 1,023 |
| 95 \& Over | 0 | 18 | 13 | 12 | 4 | 7 | 2 | 1 | 1 | 0 | 58 |
|  | 0 | 402 | 849 | 1,229 | 1,270 | 1,445 | 1,431 | 2,401 | 1,950 | 0 | 956 |
| TOTAL | 494 | 3,267 | 4,259 | 4,754 | 3,824 | 2,061 | 786 | 176 | 24 | 1 | 19,646 |
|  | 151 | 369 | 722 | 1,470 | 1,918 | 2,511 | 3,047 | 3,322 | 3,961 | 3,832 | 1,371 |

## Exhibit 10.5b

Distribution of Retired Employees by Average Age, Average Years of Service and Average Monthly Annuity Teachers as of June 30, 2006

| YEARS OF SERVICE |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CURRENT AGE | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45+ | TOTAL |
| Under 55 | 1 | 42 | 69 | 1,094 | 0 | 0 | 0 | 0 | 0 | 0 | 1,206 |
|  | 73 | 178 | 399 | 2,871 | 0 | 0 | 0 | 0 | 0 | 0 | 2,633 |
| 55-59 | 0 | 164 | 226 | 3,086 | 1,037 | 0 | 0 | 0 | 0 | 0 | 4,513 |
|  | 0 | 280 | 604 | 2,936 | 2,959 | 0 | 0 | 0 | 0 | 0 | 2,728 |
| 60-64 | 3 | 266 | 423 | 451 | 3,430 | 512 | 0 | 0 | 0 | 0 | 5,085 |
|  | 162 | 336 | 754 | 1,149 | 2,782 | 3,085 | 0 | 0 | 0 | 0 | 2,369 |
| 65-69 | 118 | 312 | 475 | 527 | 901 | 1,814 | 180 | 0 | 0 | 0 | 4,327 |
|  | 122 | 380 | 830 | 1,297 | 1,969 | 3,003 | 3,354 | 0 | 0 | 0 | 2,088 |
| 70-74 | 86 | 234 | 419 | 442 | 701 | 784 | 788 | 23 | 0 | 0 | 3,477 |
|  | 133 | 427 | 876 | 1,413 | 2,018 | 2,623 | 3,310 | 3,883 | 0 | 0 | 2,091 |
| 75-79 | 56 | 189 | 292 | 416 | 587 | 678 | 412 | 128 | 2 | 0 | 2,760 |
|  | 137 | 419 | 929 | 1,392 | 1,882 | 2,471 | 2,963 | 3,654 | 4,013 | 0 | 1,962 |
| 80-84 | 22 | 96 | 170 | 315 | 415 | 398 | 200 | 66 | 16 | 0 | 1,698 |
|  | 167 | 422 | 886 | 1,334 | 1,742 | 2,184 | 2,689 | 3,154 | 4,069 | 0 | 1,778 |
| 85-89 | 8 | 53 | 117 | 194 | 242 | 181 | 85 | 39 | 12 | 0 | 931 |
|  | 174 | 427 | 877 | 1,227 | 1,557 | 1,908 | 2,219 | 2,578 | 2,591 | 0 | 1,511 |
| 90-94 | 3 | 25 | 46 | 72 | 81 | 39 | 37 | 27 | 9 | 1 | 340 |
|  | 220 | 422 | 875 | 1,141 | 1,432 | 1,665 | 1,925 | 2,098 | 2,238 | 2,677 | 1,368 |
| 95 \& Over | 1 | 12 | 17 | 31 | 18 | 14 | 6 | 4 | 6 | 0 | 109 |
|  | 248 | 381 | 862 | 1,094 | 1,352 | 1,570 | 1,686 | 1,936 | 2,095 | 0 | 1,194 |
| TOTAL | 298 | 1,393 | 2,254 | 6,628 | 7,412 | 4,420 | 1,708 | 287 | 45 | 1 | 24,446 |
|  | 134 | 372 | 809 | 2,321 | 2,448 | 2,729 | 3,068 | 3,241 | 3,043 | 2,677 | 2,220 |

## 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, 2006

| YEARS OF SERVICE |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CURRENT AGE | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45+ | TOTAL |
| Under 55 | 4 | 133 | 169 | 880 | 0 | 0 | 0 | 0 | 0 | 0 | 1,186 |
|  | 129 | 164 | 377 | 2,255 | 0 | 0 | 0 | 0 | 0 | 0 | 1,746 |
| 55-59 | 2 | 363 | 429 | 2,031 | 626 | 0 | 0 | 0 | 0 | 0 | 3,451 |
|  | 135 | 243 | 496 | 2,250 | 2,440 | 0 | 0 | 0 | 0 | 0 | 1,854 |
| 60-64 | 3 | 809 | 1,052 | 878 | 2,849 | 357 | 0 | 0 | 0 | 0 | 5,948 |
|  | 110 | 285 | 562 | 886 | 2,105 | 2,470 | 0 | 0 | 0 | 0 | 1,426 |
| 65-69 | 347 | 1,310 | 1,579 | 1,389 | 1,496 | 1,295 | 106 | 0 | 0 | 0 | 7,522 |
|  | 106 | 286 | 639 | 1,013 | 1,470 | 2,480 | 2,944 | 0 | 0 | 0 | 1,137 |
| 70-74 | 344 | 1,223 | 1,505 | 1,236 | 1,024 | 564 | 317 | 11 | 0 | 0 | 6,224 |
|  | 106 | 315 | 685 | 1,058 | 1,506 | 2,121 | 3,019 | 3,517 | 0 | 0 | 1,043 |
| 75-79 | 220 | 1,041 | 1,223 | 933 | 694 | 371 | 149 | 56 | 0 | 0 | 4,687 |
|  | 116 | 322 | 712 | 1,100 | 1,501 | 2,085 | 2,784 | 3,201 | 0 | 0 | 996 |
| 80-84 | 123 | 713 | 907 | 633 | 449 | 213 | 91 | 43 | 5 | 0 | 3,177 |
|  | 121 | 345 | 755 | 1,082 | 1,420 | 1,933 | 2,387 | 2,627 | 5,285 | 0 | 956 |
| 85-89 | 34 | 369 | 447 | 342 | 228 | 98 | 37 | 12 | 5 | 0 | 1,572 |
|  | 134 | 360 | 748 | 1,064 | 1,344 | 1,675 | 1,991 | 2,483 | 3,110 | 0 | 907 |
| 90-94 | 18 | 150 | 135 | 120 | 66 | 35 | 16 | 5 | 1 | 0 | 546 |
|  | 216 | 375 | 772 | 1,068 | 1,322 | 1,555 | 1,871 | 1,883 | 1,679 | 0 | 870 |
| 95 \& Over | 2 | 18 | 27 | 21 | 12 | 5 | 5 | 2 | 1 | 0 | 93 |
|  | 250 | 363 | 838 | 1,074 | 1,342 | 1,428 | 1,517 | 1,746 | 1,951 | 0 | 951 |
| TOTAL | 1,097 | 6,129 | 7,473 | 8,463 | 7,444 | 2,938 | 721 | 129 | 12 | 0 | 34,406 |
|  | 113 | 306 | 659 | 1,450 | 1,794 | 2,281 | 2,791 | 2,896 | 3,800 | 0 | 1,212 |

## Exhibit 10.5d

Distribution of Retired Employees by Average Age, Average Years of Service and Average Monthly Annuity All Groups
as of June 30, 2006

| YEARS OF SERVICE |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CURRENT AGE | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45+ | TOTAL |
| Under 55 | 8 | 258 | 354 | 2,444 | 0 | 0 | 0 | 0 | 0 | 0 | 3,064 |
|  | 100 | 216 | 383 | 2,468 | 0 | 0 | 0 | 0 | 0 | 0 | 2,031 |
| 55-59 | 6 | 733 | 941 | 6,262 | 1,987 | 0 | 0 | 0 | 0 | 0 | 9,929 |
|  | 350 | 257 | 541 | 2,593 | 2,723 | 0 | 0 | 0 | 0 | 0 | 2,251 |
| 60-64 | 13 | 1,516 | 2,073 | 1,849 | 7,742 | 1,079 | 0 | 0 | 0 | 0 | 14,272 |
|  | 157 | 308 | 625 | 965 | 2,420 | 2,816 | 0 | 0 | 0 | 0 | 1,774 |
| 65-69 | 585 | 2,243 | 2,978 | 2,647 | 3,048 | 4,008 | 375 | 0 | 0 | 0 | 15,884 |
|  | 116 | 318 | 687 | 1,082 | 1,637 | 2,755 | 3,241 | 0 | 0 | 0 | 1,444 |
| 70-74 | 576 | 2,116 | 2,740 | 2,313 | 2,252 | 1,710 | 1,418 | 49 | 0 | 0 | 13,174 |
|  | 118 | 350 | 727 | 1,138 | 1,702 | 2,404 | 3,252 | 3,708 | 0 | 0 | 1,379 |
| 75-79 | 390 | 1,792 | 2,161 | 1,846 | 1,629 | 1,323 | 742 | 264 | 4 | 0 | 10,151 |
|  | 129 | 353 | 769 | 1,193 | 1,692 | 2,363 | 2,903 | 3,593 | 5,326 | 0 | 1,335 |
| 80-84 | 200 | 1,186 | 1,589 | 1,363 | 1,186 | 794 | 413 | 154 | 28 | 0 | 6,913 |
|  | 141 | 371 | 788 | 1,190 | 1,594 | 2,138 | 2,678 | 3,016 | 4,310 | 0 | 1,247 |
| 85-89 | 74 | 645 | 809 | 791 | 615 | 376 | 187 | 76 | 28 | 1 | 3,602 |
|  | 154 | 384 | 803 | 1,140 | 1,484 | 1,888 | 2,213 | 2,492 | 3,236 | 3,832 | 1,147 |
| 90-94 | 34 | 252 | 284 | 266 | 187 | 103 | 67 | 42 | 13 | 1 | 1,249 |
|  | 214 | 393 | 814 | 1,104 | 1,398 | 1,667 | 1,875 | 2,159 | 2,196 | 2,677 | 1,050 |
| 95 \& Over | 3 | 48 | 57 | 64 | 34 | 26 | 13 | 7 | 8 | 0 | 260 |
|  | 249 | 382 | 848 | 1,113 | 1,339 | 1,509 | 1,582 | 1,948 | 2,059 | 0 | 1,054 |
| TOTAL | 1,889 | 10,789 | 13,986 | 19,845 | 18,680 | 9,419 | 3,215 | 592 | 81 | 2 | 78,498 |
|  | 126 | 334 | 702 | 1,746 | 2,079 | 2,541 | 3,001 | 3,190 | 3,427 | 3,255 | 1,566 |

## 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, 2006

| YEARS OF SERVICE |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CURRENT AGE | 0-4 | 5-9 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45+ | TOTAL |
| Under 55 | 2 | 84 | 102 | 916 | 0 | 0 | 0 | 0 | 0 | 0 | 1,104 |
|  | 72 | 163 | 386 | 2,607 | 0 | 0 | 0 | 0 | 0 | 0 | 2,211 |
| 55-59 | 1 | 177 | 188 | 1,350 | 306 | 0 | 0 | 0 | 0 | 0 | 2,022 |
|  | 43 | 284 | 609 | 2,453 | 2,465 | 0 | 0 | 0 | 0 | 0 | 2,092 |
| 60-64 | 5 | 307 | 419 | 461 | 909 | 55 | 0 | 0 | 0 | 0 | 2,156 |
|  | 190 | 320 | 643 | 1,006 | 2,159 | 2,701 | 0 | 0 | 0 | 0 | 1,365 |
| 65-69 | 187 | 283 | 237 | 169 | 136 | 183 | 11 | 0 | 0 | 0 | 1,206 |
|  | 101 | 297 | 632 | 954 | 1,376 | 2,568 | 4,221 | 0 | 0 | 0 | 927 |
| 70-74 | 72 | 86 | 76 | 50 | 35 | 18 | 21 | 1 | 0 | 0 | 359 |
|  | 73 | 227 | 524 | 957 | 1,399 | 2,030 | 3,174 | 2,628 | 0 | 0 | 744 |
| 75-79 | 9 | 52 | 25 | 23 | 16 | 18 | 10 | 8 | 0 | 0 | 161 |
|  | 110 | 210 | 533 | 836 | 1,207 | 1,742 | 1,850 | 3,674 | 0 | 0 | 888 |
| 80-84 | 6 | 18 | 17 | 22 | 18 | 7 | 7 | 1 | 1 | 0 | 97 |
|  | 53 | 257 | 788 | 999 | 1,240 | 1,892 | 2,073 | 1,899 | 2,882 | 0 | 981 |
| 85-89 | 2 | 4 | 6 | 4 | 5 | 4 | 1 | 1 | 0 | 0 | 27 |
|  | 69 | 434 | 564 | 506 | 841 | 2,042 | 3,210 | 1,927 | 0 | 0 | 918 |
| 90-94 | 0 | 2 | 2 | 1 | 3 | 0 | 1 | 2 | 0 | 0 | 11 |
|  | 0 | 512 | 439 | 1,075 | 1,409 | 0 | 966 | 1,994 | 0 | 0 | 1,105 |
| 95 \& Over | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 284 | 1,013 | 1,072 | 2,996 | 1,428 | 285 | 51 | 13 | 1 | 0 | 7,143 |
|  | 94 | 280 | 601 | 2,142 | 2,103 | 2,484 | 2,947 | 3,064 | 2,882 | 0 | 1,578 |

## Exhibit 10.6

Employees in Active Service as of June 30, 2006, by Annual Salary

| Annual Salary | Number of <br> Employees | Percent of All <br> Employees |
| :--- | :---: | :---: |
| Less than $\$ 10,000$ | 11,976 | $5.5 \%$ |
| $\$ 10,000-\$ 14,999$ | 15,593 | $7.2 \%$ |
| $\$ 15,000-\$ 19,999$ | 14,466 | $6.7 \%$ |
| $\$ 20,000-\$ 24,999$ | 17,178 | $7.9 \%$ |
| $\$ 25,000-\$ 29,999$ | 20,035 | $9.2 \%$ |
| $\$ 30,000-\$ 34,999$ | 21,531 | $9.9 \%$ |
| $\$ 35,000-\$ 39,999$ | 25,745 | $11.8 \%$ |
| $\$ 40,000-\$ 44,999$ | 23,132 | $10.6 \%$ |
| $\$ 45,000-\$ 49,999$ | 17,614 | $8.1 \%$ |
| $\$ 50,000-\$ 54,999$ | 13,262 | $6.1 \%$ |
| $\$ 55,000-\$ 59,999$ | 9,646 | $4.4 \%$ |
| $\$ 60,000$ and over | 27,498 | $12.6 \%$ |
| Total | 217,676 | $100.0 \%$ |

## Exhibit 10.7

Retirement Benefits in Force on June 30, 2006, by Monthly Amount

| Monthly Amount | Number of Retirees | Percentage of All <br> Retirees |
| :--- | :---: | :---: |
| Under $\$ 300$ | 7,956 | $10.1 \%$ |
| $\$ 300-\$ 499$ | 7,649 | $9.7 \%$ |
| $\$ 500-\$ 999$ | 17,132 | $21.8 \%$ |
| $\$ 1,000-\$ 1,499$ | 13,005 | $16.6 \%$ |
| $\$ 1,500-\$ 1,999$ | 8,805 | $11.2 \%$ |
| $\$ 2,000-\$ 2,499$ | 7,198 | $9.2 \%$ |
| $\$ 2,500-\$ 2,999$ | 6,177 | $7.9 \%$ |
| $\$ 3,000$ and over | 10,576 | $13.5 \%$ |
| Total | $78,498^{*}$ | $100.0 \%$ |

* Excludes 100 System beneficiaries receiving COLA benefit from the Plan.

Exhibit 10.8 - Number of Retirees by Benefit Options

|  | Optional Form of benefit |  |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Amount of <br> Monthly Benefit | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ |  | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ | $\mathbf{7}$ | Total |
| $\$ 1-\$ 299$ | 5,031 | 294 | 351 | 546 | 1,397 | 122 | 215 | 7,956 |  |
| $\$ 300-\$ 499$ | 4,368 | 386 | 551 | 457 | 1,432 | 171 | 284 | 7,649 |  |
| $\$ 500-\$ 999$ | 9,524 | 877 | 1,406 | 970 | 2,772 | 612 | 971 | 17,132 |  |
| $\$ 1000-\$ 1499$ | 6,500 | 760 | 1,238 | 599 | 2,308 | 666 | 934 | 13,005 |  |
| $\$ 1500-\$ 1999$ | 4,073 | 469 | 695 | 441 | 1,739 | 589 | 799 | 8,805 |  |
| $\$ 2000$ and over | 11,120 | 879 | 1,275 | 1,380 | 5,081 | 1,846 | 2,370 | 23,951 |  |
| Total | 40,616 | 3,665 | 5,516 | 4,393 | 14,729 | 4,006 | 5,573 | 78,498 |  |

## Optional form

| $\mathbf{1}$ | Life annuity |
| :--- | :--- |
| $\mathbf{2}$ | Life annuity - 5 years certain and life |
| $\mathbf{3}$ | Life annuity - 10 years certain and life |
| $\mathbf{4}$ | Life annuity - 15 years certain and life |
| $\mathbf{5}$ | Joint annuity $-100 \%$ to contingent survivor |
| $\mathbf{6}$ | Joint annuity $-662 / 3 \%$ to contingent survivor |
| $\mathbf{7}$ | Joint annuity $-50 \%$ to contingent survivor |

## Exhibit 10.9

Growth of Covered Payroll and Active Participants

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

[^4]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 | 1,487 | 4,684 | 1,091 |
| 2005 | 7,005 | 1,597 | 926 | 1,426 | 73,853 | 1,508 | 4,939 | 1,107 |
| 2006 | 7,143 | 1,578 | 840 | 1,589 | 78,498 | 1,566 | 5,018 | 1,068 |

Exhibit 10.11
Arizona State Retirement System Data Reconciliation

|  | Active Participants | Deferred Vested | Retirees \& Beneficiaries | Total |
| :---: | :---: | :---: | :---: | :---: |
| Total at June 30, 2005 | 212,202 | 149,768 | 73,853 | 435,823 |
| Vested Terminations | $(19,328)$ | 19,328 |  | 0 |
| Nonvested Terminations \& Refund | $(4,480)$ | $(3,762)$ |  | $(8,242)$ |
| Transfer Out | (89) | (111) |  | (200) |
| Disabled | (657) | (195) |  | (852) |
| Retirements \& New Beneficiary | $(5,401)$ | (774) | 7,143 | 968 |
| Deaths (with \& without Ben) | (196) | (237) | $(2,101)$ | $(2,534)$ |
| Benefit Termination |  |  | (99) | (99) |
| Data Adjustments |  | 16 | (298) | (282) |
| Pickup |  | 236 |  | 236 |
| New Entrants Terminated with Account Balance |  | 4,896 |  | 4,896 |
| Rehires | 5,638 | $(5,638)$ |  | 0 |
| New Entrants | 29,987 |  |  | 29,987 |
| Net Change | 5,474 | 13,759 | 4,645 | 23,878 |
| Total at June 30, 2006 | 217,676 | 163,527 | 78,498 | 459,701 |

## Summary of the Benefit Provisions of the Retirement Plan as of June 30, 2006

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. Members who commenced membership prior to 1984 can use a 60-month average and include additional types of compensation, if doing so produces a larger result.

| Years of Credited Service |  | Benefit Multiplier |
| :---: | :---: | :---: |
| Less than 20 |  | $2.10 \%$ |
| 20.0 to 24.99 | $2.15 \%$ |  |
| 25.0 to 29.99 | $2.20 \%$ |  |
| 30 or more |  | $2.30 \%$ |

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:

AGE AT DATE OF RETIREMENT

| Years <br> of <br> Service | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $5-10$ | $35 \%$ | $40 \%$ | $45 \%$ | $50 \%$ | $55 \%$ | $60 \%$ | $65 \%$ | $70 \%$ | $75 \%$ | $80 \%$ | $85 \%$ | $88 \%$ | $91 \%$ | $94 \%$ | $97 \%$ | $100 \%$ |
| $10-19$ | $44 \%$ | $49 \%$ | $54 \%$ | $59 \%$ | $64 \%$ | $69 \%$ | $74 \%$ | $79 \%$ | $84 \%$ | $89 \%$ | $94 \%$ | $97 \%$ | $100 \%$ | $100 \%$ | $100 \%$ | $100 \%$ |
| $20+$ | $50 \%$ | $55 \%$ | $60 \%$ | $65 \%$ | $70 \%$ | $75 \%$ | $80 \%$ | $85 \%$ | $90 \%$ | $95 \%$ | $100 \%$ | $100 \%$ | $100 \%$ | $100 \%$ | $100 \%$ | $100 \%$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## 6. Normal Form of Benefit

Straight life annuity with cash refund feature payable monthly with benefits commencing on the day following the date of termination of employment.
7. Optional Forms:
(a) joint and contingent annuity (with Pop-up) with either $100 \%, 66-2 / 3 \%$ or $50 \%$ of the reduced retirement income payable for the life of the contingent annuitant upon the death of the retiring participant,
(b) period certain and life annuity (with Pop-up) with five, ten, or fifteen years of payments guaranteed, or
(c) a social security leveling option combined with any of the other forms of payment.
8. Minimum Benefit

The minimum monthly benefit payable to a retired member who is at least age 75 and who has 20 or more years of service is $\$ 600$.
B. DISABILITY BENEFITS (for disability after June 30, 1988)

1. Long Term Disability

Monthly benefit equal to two-thirds of monthly compensation, reduced by 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

 DateMonthly 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 fiscal year beginning on July $1^{\text {st }}$ is based on the results of the most recent actuarial valuation as of the last day of the preceding plan year. Participants' contribution rate is equal to the required employer contribution rate. Legislative action pegged the contribution rate for fiscal 2006 and 2007 at $6.90 \%$ and $8.60 \%$, respectively. For the fiscal year beginning July 1, 2007, the required contribution rate will be $9.10 \%$, based on the 2006 actuarial valuation.

## 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 ore 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) that would have been contributed during the member's period of forfeited service.

## 5. Repurchase of Service Due to Reduction in Force

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

## 6. Change in Section $38-781.05$ Funding Method

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

## 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 predeceases them.

## 4. Excess Investment Earnings COLA

Retirees at least age 55 who have been retired at least one year and members on long-term disability are eligible to receive a cost-of-living adjustment equal to onehalf 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 30years.

## 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
2. 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.
3. The calculation methodology for the Excess Investment Earnings COLA was modified.
4. 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
5. 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.

|  | Insurance Coverage <br> Without Medicare Parts <br> A \& B |  | Insurance Coverage <br> With Medicare Parts A <br>  |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Single | Family | Single | Family |
| Required Minimum <br> Out-of-Pocket Payment | $\$ 125$ | $\$ 425$ | $\$ 100$ | $\$ 200$ |
| Rural Health Insurance <br> 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.

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

## 1. Temporary Rural Health Insurance Premium Benefit

The Legislature extended the temporary Rural Health Insurance Subsidy for the next two years, from July 1, 2005, to June 30, 2007. The benefit is provided to Medicareeligible retirees and disabled members who live in Arizona counties with no Health Maintenance Organization (HMO) service area and who have 10 years of credited service.

## 2. Contribution Rates

The legislature pegged the contribution rates for fiscal 2006 and 2007 at $6.90 \%$ and $8.60 \%$, respectively. After fiscal 2007, contribution rates are to be determined annually.

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

## 1. Elections After Retirement

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

## 2. Conformance with Certain Federal Regulations

State statutes were modified to conform to federal regulations regarding military service purchases, optional forms of retirement benefits, and minimum required distributions.
3. Repeal of Deferred Retirement Option Plan

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


[^0]:    ${ }_{2}^{1}$ Including LTD management fees prior to 1996
    ${ }^{2}$ 401(a) assets and 401(h) assets combined

[^1]:    1 Hypothetical rate. The actual contribution rate was set by the prior year valuation.
    ${ }^{2}$ Legislative action has fixed the rates for fiscal 2006 and 2007 at $6.90 \%$ and $8.60 \%$, respectively.

[^2]:    Charles E. Chittenden, FSA, EA, MAAA
    Principal and Consulting Actuary

[^3]:    ${ }_{2}^{1}$ Excludes Other-than-plan retirees receiving benefit increases from the Plan.
    ${ }^{2}$ Allowance includes estimated PBI effective July 1, 2005

[^4]:    ${ }^{1}$ 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 ${ }^{1}$

