

*Maine State
Retirement System
State Employee and Teacher Plan
Actuarial Valuation
as of June 30, 2002*

A MILLIMAN GLOBAL FIRM

December 2002



Milliman USA
Consultants and Actuaries

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December 13, 2002

Board of Trustees
Maine State Retirement System
#46 State House Station
Augusta, ME 04333-0046

Dear Members of the Board:

At your request, we have conducted our annual actuarial valuation of the State Employee and Teacher Plan of the Maine State Retirement System. The results of the valuation are contained in the following report. Any distribution of this report must be in its entirety including this cover letter, unless prior written consent from Milliman USA is obtained.

The actuarial assumptions used in performing this valuation have been recommended by the actuary and adopted by the Board of Trustees based on Milliman's most recent review of the System's experience completed during Fiscal Year 1998. We believe the assumptions used, in the aggregate, reflect our best estimate of anticipated future experience of the plan. The results of this report are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from these assumptions, the true cost of the plan could vary from our results. The Board of Trustees has the final decision regarding the appropriateness of the assumptions.

The assumptions and methods used in performing this valuation meet the parameters set by Government Accounting Standards Board (GASB) Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contributions Plans*.

In preparing our report we relied, without audit, on information (some oral and some written) supplied by the Retirement System. This information includes, but is not limited to, plan provisions, employee census data and financial information. We reviewed the census data for reasonableness, and for consistency with the prior year's data. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.



Board of Trustees
Maine State Retirement System
December 13, 2002
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We hereby certify that, to the best of our knowledge, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the applicable Guides to Professional Conduct, Amplifying Opinions, and Supporting Recommendations and Interpretations of the American Academy of Actuaries.

Sincerely,

Milliman USA

I, Theresa Leatherbury, am a consulting actuary for Milliman USA. I am also a member of the American Academy of Actuaries and meet their Qualification Standards to render the actuarial opinion contained herein.

Theresa Leatherbury, F.S.A.
Principal

I, Althea Schwartz, am a consulting actuary for Milliman USA. I am also a member of the American Academy of Actuaries and meet their Qualification Standards to render the actuarial opinion contained herein.

Althea Schwartz, F.S.A.
Principal

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SECTION I

BOARD SUMMARY

BOARD SUMMARY

This report presents the results of the June 30, 2002 actuarial valuation of the State Employee and Teacher Plan of the Maine State Retirement System (MSRS). The primary purposes of performing the annual actuarial valuation are to:

- 1) **determine the contributions** that, will be paid by the State effective July 1, 2003 (fiscal year 2004), and effective July 1, 2004 (fiscal year 2005);
- 2) **measure and disclose**, as of the valuation date, the financial condition of the Plan;
- 3) **indicate trends** in the financial progress of the Plan;
- 4) **provide specific information** and documentation required by the Government Accounting Standards Board (GASB).

In this section of the report, we present a summary of the above information in the form of:

- the actuary's comments;
- the prior year's experience of the Plan's assets, liabilities, contributions, and membership;
- a series of graphs highlighting key trends experienced by the Plan; and
- a tabular summary, intended for quick reference purposes, of all the principal results from this year's valuation, compared to the prior year's.

Actuary's Comments

As a result of assets earning a negative return, **(7.55%)**, considerably below the 8% investment return assumption, the Plan has an unfunded actuarial liability of **\$2,593** million as of June 30, 2002 compared to an unfunded actuarial liability of **\$2,157** million measured at the June 30, 2001 valuation. This experience results in an increase in the State contribution rate of 2.02% of payroll, from **17.30%** at June 30, 2001, to **19.32%** at June 30, 2002.

However, thanks to the Plan's asset smoothing method adopted by the Board, which dampened the prior decade's asset run-up, the resulting impact from this year's investment performance was somewhat mitigated. The actuarial, or smoothed, rate of return measured from this past year was a positive **1.18%**, or 6.8% less than our assumption. This explains why the overall Plan funding ratio of assets to liabilities decreased only slightly from **72.9%** at June 30, 2001, to **69.4%** at June 30, 2002.

The State contribution rate increase was mainly attributable to the investment loss, relative to the assumed investment return of 8% and, on a smoothed basis, of **\$402 million**. Combined with a liability loss of **\$34** million, due largely to pay increases above assumed levels, this resulted in a Plan experience net loss of **\$436** million.

Finally, while the results are not on the favorable side this year, we emphasize again, as we have so often in the past, that the financing of any retirement plan is a long term proposition, and that annual fluctuations are to be expected and should not by themselves be cause for concern. We continue to maintain that the overall financial condition of the Plan is healthy, and that there are procedures, assumptions and methods in place, which in our opinion adequately and appropriately finance the emerging long-term liabilities of the Plan.

The balance of this section summarizes Plan trends, and provides the principal details on this year's experience.

Prior Year Experience

ASSETS

The actuarial value of assets is calculated on the total invested assets of the System, that is, assets attributable to the State Employee and Teacher Plan, the Judicial Plan, the Legislative Plan and the participating local district plans, Consolidated and non-consolidated.

Total System assets are measured on both a market value and an actuarial or smoothed value basis. The actuarial smoothing method, described in Appendix B, reflects 33% of a current year's actual market performance. In periods of high returns, this method significantly dampens the amount of asset gains above the assumed return of 8%. Conversely, in periods of returns less than the assumed return, losses are dampened. The primary advantage of this smoothing technique is contribution stability.

As stated earlier, for the year ending June 30, 2002, while the total assets of the System earned a negative **7.55%** on a market value basis, on a smoothed basis the return was a positive **1.18%**. Compared to an expected asset growth, using the 8% investment return assumption, the market value of assets fell short by **\$1,098** million. A similar comparison using actuarial or smoothed basis produced a loss of **\$508** million. The specific changes between the prior year and this year, for the System's plans combined, are presented below.

BOARD SUMMARY

| All Plans of System | | |
|-----------------------------------|--------------|-----------------|
| Item (In Millions) | Market Value | Actuarial Value |
| June 30, 2001 value | \$ 6,994 | \$ 7,390 |
| Employer Contributions | 415 | 415 |
| Member Contributions | 123 | 123 |
| Benefit Payments | (403) | (403) |
| Expected Investment Earnings (8%) | 565 | 596 |
| Expected Value June 30, 2002 | \$ 7,694 | \$ 8,121 |
| INVESTMENT GAIN (LOSS) | (1,098) | (508) |
| June 30, 2002 value | \$ 6,596 | \$ 7,613 |

Market value, actuarial value and asset loss (or gain) are next allocated to the separate plans. For the State Employee and Teacher Plan, the market value of assets at June 30, 2002 was \$5,092 million and the corresponding actuarial value was \$5,877 million. The Plan's share of the \$508 million loss on the actuarial assets was \$402 million.

The specific changes for the State Employee and Teacher Plan are presented below.

| State Employee and Teacher Plan | | |
|-----------------------------------|--------------|-----------------|
| Item (In Millions) | Market Value | Actuarial Value |
| June 30, 2001 value | \$ 5,491 | \$ 5,801 |
| Employer Contributions | 242 | 242 |
| Member Contributions | 104 | 104 |
| Benefit Payments | (333) | (333) |
| Expected Investment Earnings (8%) | 440 | 465 |
| Expected Value June 30, 2002 | \$ 5,944 | \$ 6,279 |
| INVESTMENT GAIN (LOSS) | (852) | (402) |
| June 30, 2002 value | \$ 5,092 | \$ 5,877 |

LIABILITIES

Three different measures of liabilities are calculated for the Plan: a present value of future obligations (PVB), an actuarial liability (using the Entry Age Normal, or EAN, actuarial method), and an accounting, or accrued benefit, liability (PVAB). Section III of this report describes the development of each. Only the actuarial liability is analyzed in terms of gain and/or loss experience, which then is used to determine the Plan's funding and accounting (GASB) disclosures. During the plan year ending June 30, 2002, the actuarial liabilities experienced an overall loss of **\$34 million**, which is **0.5%** of the Plan's measured actuarial liability. The primary cause for liability experience being worse than anticipated this past year was pay increases greater than expected by the relevant assumption. We will continue to monitor gains and losses to assure that no significant new patterns emerge unexpectedly.

| LIABILITIES (In Millions) | Total Value (PVB) | Actuarial (EAN) | Accounting (PVAB) |
|---------------------------|-------------------|-----------------|-------------------|
| June 30, 2001 | \$9,340 | \$7,959 | \$6,393 |
| June 30, 2002 | \$9,923 | \$8,470 | \$6,992 |

UNFUNDED LIABILITIES AND FUNDING RATIOS

When a retirement plan's benefit liabilities are greater than its assets, the difference between the two is the unfunded liability. This difference is measured in two ways: unfunded *actuarial liabilities*, which compares the actuarial liabilities to the actuarial asset value, and unfunded *accrued benefits*, which compares the present value of benefits accrued as of the valuation date to the market value of assets. These measures are shown below for the State Employee and Teacher Plan at June 30, 2001 and June 30, 2002, as well as the corresponding funding ratios (assets divided by liabilities) at each date.

| (In Millions) | Actuarial | Accrued (PVAB) |
|----------------------------------|-----------|----------------|
| 6/30/2001 Net (Surplus) Unfunded | \$ 2,157 | \$ 902 |
| Funding Ratio | 72.9% | 85.9% |
| 6/30/2002 Net (Surplus) Unfunded | \$ 2,593 | \$1,899 |
| Funding Ratio | 69.4% | 72.8% |

Because the accrued benefit, or PVAB, measure reflects the full (unsmoothed) impact of investment gains and losses, changes in this related funding ratio are also unsmoothed, appearing as larger movements.

BOARD SUMMARY

CONTRIBUTIONS

In Section IV, we show the various contribution rates by plans within the State Employee and Teacher Plan. Below we present overall the State contribution rate for all of these plans, and compare it to the rate developed in the June 30, 2001 actuarial valuation. In summary, due to both investment losses and liability losses, the overall State contribution rate has increased by **2.02%** of payroll. Because of the State's biennial budgeting practice, contribution rates resulting from this valuation will set rates for the next (FY 2004 and FY 2005) biennium.

| Rate as Percent of Covered Payroll | |
|---------------------------------------|--------|
| June 30, 2001 State Contribution Rate | 17.30% |
| Increase due to Investment Loss | 1.89% |
| Increase due to Liability Loss | 0.13% |
| June 30, 2002 State Contribution Rate | 19.32% |

MEMBERSHIP

There are three types of plan participants: current active members, terminated members who retain a right to a deferred "vested" benefit, and benefit recipients, who may be retired former members, disabled members or beneficiaries of deceased active, retired or disabled members. In Appendix A, we present extensive details on membership statistics. Below, we compare totals in each group between June 30, 2001 and 2002.

As shown below, there was an overall increase in participation during the year of **2%**.

| | 6/30/2002 | 6/30/2001 | Change |
|-----------------------------|-----------|-----------|--------|
| Active Members | 43,246 | 42,575 | 1.6% |
| Terminated "Vested" Members | 2,448 | 1,894 | 29.3% |
| Benefit Recipients | 23,228 | 22,819 | 1.8% |
| TOTAL | 68,922 | 67,288 | 2.4% |

Trends

One of the best ways to measure or evaluate the financial condition of a retirement plan is to examine the historical trends that are evolving. Below, we present three charts which present 10 years worth of trend information on the assets and liabilities of the State Employee and Teacher Plan, annual cash flows in and out, and the State's overall contribution rate. Our comments on each follow.

Chart A: ASSETS / LIABILITIES – State & Teacher Only

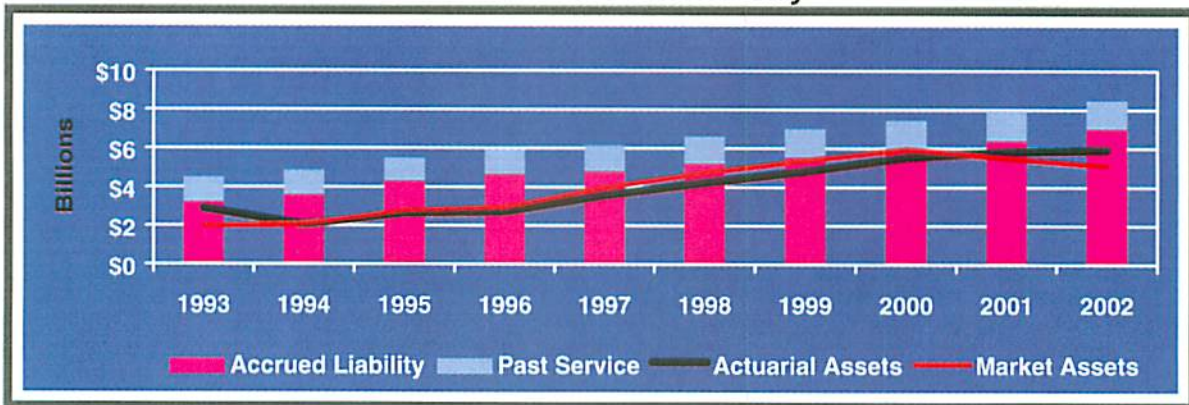


Chart B: CASH FLOWS – Total System

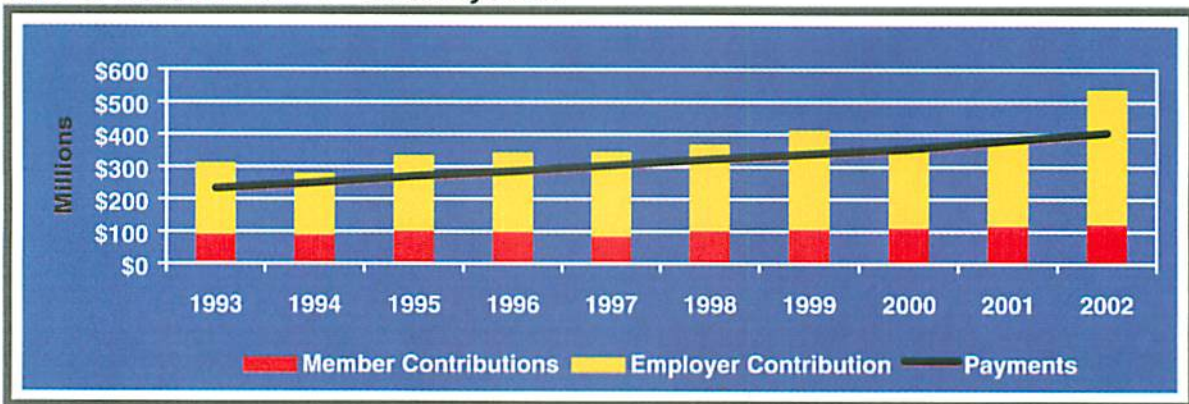
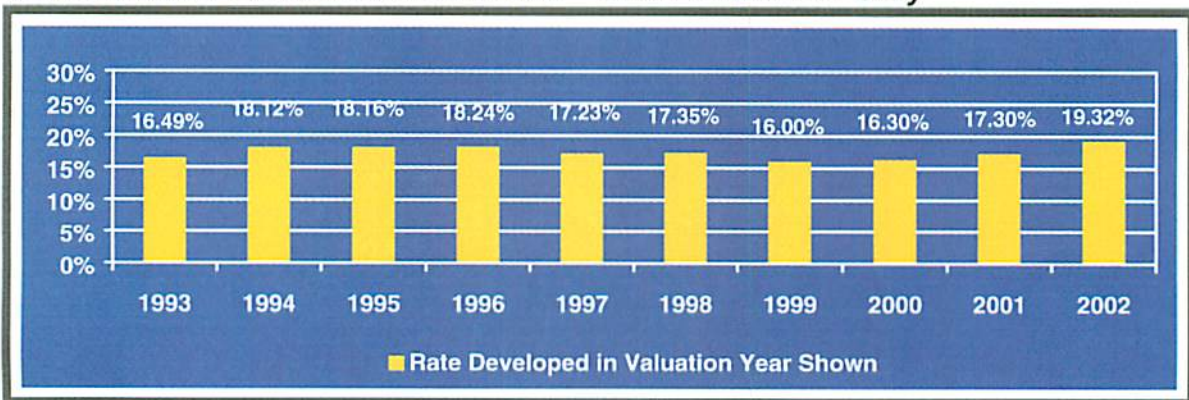


Chart C: STATE CONTRIBUTION RATE – State & Teacher Only



Comments

Chart A depicts the aforementioned investment and liability performance losses of the year ending June 30, 2002. Despite those losses, the ratio of assets to liabilities, which has continuously improved since early 1980's, is the third best ever for the State Employee and Teacher Plan.

Chart B presents an emerging trend being faced by many retirement systems with the aging of the baby boomer generation. Payments to retirees are on the increase, while cash into plans from employer and employee contributions is stable or declining. This is not unanticipated, and essentially is the reason for funding and investment strategies that seek to build plan assets in earlier years when contributions being paid in exceed benefit payments out. The 2002 entry reflects the one-time impact of several of the State's participating local districts paying off their unfunded liability obligations to the System's Consolidated Plan for Participating Local Districts.

Finally, Chart C, looks at changes in the State's overall contribution rate for the State Employee and Teacher Plan. It shows the impact of the past decade's sustained investment gains. After two years of market downturn, this year's rate is the highest of the range shown.

BOARD SUMMARY

| TOTAL STATE EMPLOYEE AND TEACHER PLAN | | | |
|---|------------------|------------------|----------|
| SUMMARY OF PRINCIPAL RESULTS | | | |
| Valuation As Of --> | 6/30/2002 | 6/30/2001 | % change |
| PARTICIPANT COUNTS | | | |
| Actives | 43,246 | 42,575 | 1.6% |
| Retired Members | 15,916 | 15,563 | 2.3% |
| Beneficiaries of Retirees | 4,674 | 4,605 | 1.5% |
| Survivors of Deceased Members | 843 | 908 | -7.2% |
| Disabled Members | 1,795 | 1,743 | 3.0% |
| Deferred "Vested" Members | 2,448 | 1,894 | 29.3% |
| TOTAL | 68,922 | 67,288 | 2.4% |
| Annual Salaries of Active Members | \$ 1,405,943,887 | \$ 1,318,999,535 | 6.6% |
| Annual Payments to Benefit Recipients | \$ 330,969,987 | \$ 309,844,558 | 6.8% |
| ASSETS & LIABILITIES | | | |
| Total Actuarial Liability | \$ 8,469,835,410 | \$ 7,958,809,863 | 6.4% |
| Assets /Actuarial (Smoothed) | 5,877,158,371 | 5,801,422,994 | 1.3% |
| Unfunded Actuarial Liability | \$ 2,592,677,039 | \$ 2,157,386,869 | 20.2% |
| Funding Ratio | 69.39% | 72.89% | N/A |
| Present Value of Accrued Benefits | \$ 6,991,657,417 | \$ 6,393,493,572 | 9.4% |
| Assets/Market Value | 5,092,119,785 | 5,490,520,609 | -7.3% |
| Unfunded PVAB | \$ 1,899,537,632 | \$ 902,972,963 | 110.4% |
| Accrued Benefit Funding Ratio | 72.83% | 85.88% | N/A |
| CONTRIBUTIONS AS % OF PAYROLL | | | |
| | Fiscal Year 2004 | Fiscal Year 2003 | |
| Normal Cost Contribution | 6.17% | 6.16% | |
| Unfunded Actuarial Liability Contribution | 13.15 | 11.14 | |
| Total State Contribution | 19.32% | 17.30% | |

BOARD SUMMARY

| TEACHERS | | | |
|---|----------------------|----------------------|----------|
| SUMMARY OF PRINCIPAL RESULTS | | | |
| Valuation As Of --> | 6/30/2002 | 6/30/2001 | % change |
| PARTICIPANT COUNTS | | | |
| Actives | 28,344 | 27,905 | 1.6% |
| Retired Members | 8,864 | 8,541 | 3.8% |
| Beneficiaries of Retirees | 1,892 | 1,820 | 4.0% |
| Survivors of Deceased Members | 279 | 308 | - 9.4% |
| Disabled Members | 699 | 674 | 3.7% |
| Deferred "Vested" Members | <u>1,446</u> | <u>1,092</u> | 32.4% |
| TOTAL | 41,524 | 40,340 | 2.9% |
| Annual Salaries of Active Members | \$ 889,647,463 | \$ 843,950,689 | 5.4% |
| Annual Payments to Benefit Recipients | \$ 184,710,816 | \$ 170,243,549 | 8.5% |
| ASSETS & LIABILITIES | | | |
| Total Actuarial Liability | \$ 5,442,042,898 | \$ 5,102,063,770 | 6.7% |
| Assets/Actuarial (Smoothed) | <u>3,600,534,614</u> | <u>3,509,918,347</u> | 2.6% |
| Unfunded Actuarial Liability | \$ 1,841,508,284 | \$ 1,592,145,423 | 15.7% |
| Funding Ratio | 66.16% | 68.79% | N/A |
| Present Value of Accrued Benefits | \$ 4,279,369,714 | \$ 3,970,997,626 | 7.8% |
| Assets/Market Value | <u>3,119,594,945</u> | <u>3,321,819,326</u> | -6.1% |
| Unfunded PVAB | \$ 1,159,774,769 | \$ 649,178,300 | 78.7% |
| Accrued Benefit Funding Ratio | 72.90% | 83.65% | N/A |
| CONTRIBUTIONS AS % OF PAYROLL | | | |
| | Fiscal Year 2004 | Fiscal Year 2003 | |
| Normal Cost Contribution | 6.04% | 6.04% | |
| Unfunded Actuarial Liability Contribution | <u>14.76</u> | <u>12.84</u> | |
| Total State Contribution | 20.80% | 18.88% | |

BOARD SUMMARY

| TOTAL STATE EMPLOYEES (Regular and Special Plans) | | | |
|---|----------------------|----------------------|-------------|
| SUMMARY OF PRINCIPAL RESULTS | | | |
| Valuation As Of --> | 6/30/2002 | 6/30/2001 | % change |
| PARTICIPANT COUNTS | | | |
| Actives | 14,902 | 14,670 | 1.6% |
| Retired Members | 7,052 | 7,022 | 0.4% |
| Beneficiaries of Retirees | 2,782 | 2,785 | -0.1% |
| Survivors of Deceased Members | 564 | 600 | -6.0% |
| Disabled Members | 1,096 | 1,069 | 2.5% |
| Deferred "Vested" Members | <u>1,002</u> | <u>802</u> | 24.9% |
| TOTAL | 27,398 | 26,948 | 1.7% |
| Annual Salaries of Active Members | \$ 516,296,424 | \$ 475,048,847 | 8.7% |
| Annual Payments to Benefit Recipients | \$ 146,259,171 | \$ 139,601,009 | 4.8% |
| ASSETS & LIABILITIES | | | |
| Total Actuarial Liability | \$ 3,027,792,512 | \$ 2,856,746,093 | 6.0% |
| Assets/Actuarial (Smoothed) | <u>2,276,623,757</u> | <u>2,291,504,647</u> | -0.6% |
| Unfunded Actuarial Liability | \$ 751,168,755 | \$ 565,241,446 | 32.9% |
| Funding Ratio | 75.19% | 80.21% | N/A |
| Present Value of Accrued Benefits | \$ 2,712,287,703 | \$2,422,495,946 | 12.0% |
| Assets/Market Value | <u>1,972,524,840</u> | <u>2,168,701,283</u> | -9.0% |
| Unfunded PVAB | \$ 739,762,863 | \$ 253,794,663 | 191.5% |
| Accrued Benefit Funding Ratio | 72.73% | 89.52% | N/A |
| CONTRIBUTIONS AS % OF PAYROLL | | | |
| | Fiscal Year 2004 | Fiscal Year 2003 | |
| Normal Cost Contribution | 6.39% | 6.38% | |
| Unfunded Actuarial Liability Contribution | <u>10.38</u> | <u>8.10</u> | |
| Total State Contribution | 16.77% | 14.48% | |

BOARD SUMMARY

| STATE EMPLOYEE REGULAR PLAN SUMMARY OF PRINCIPAL RESULTS | | | |
|---|----------------------|----------------------|----------|
| Valuation As Of --> | 6/30/2002 | 6/30/2001 | % change |
| PARTICIPANT COUNTS | | | |
| Actives | 12,921 | 12,831 | 0.7% |
| Retired Members | 6,396 | 6,375 | 0.3% |
| Beneficiaries of Retirees | 2,516 | 2,530 | -0.6% |
| Survivors of Deceased Members | 561 | 596 | -5.9% |
| Disabled Members | 1,072 | 1,050 | 2.1% |
| Deferred "Vested" Members | <u>1,002</u> | <u>802</u> | 24.9% |
| TOTAL | 24,468 | 24,184 | 1.2% |
| Annual Salaries of Active Members | \$ 436,276,144 | \$ 405,661,653 | 7.5% |
| Annual Payments to Benefit Recipients | \$ 127,701,103 | \$ 121,997,834 | 4.7% |
| ASSETS & LIABILITIES | | | |
| Total Actuarial Liability | \$ 2,565,431,125 | \$ 2,433,381,539 | 5.4% |
| Assets/Actuarial (Smoothed) | <u>1,965,408,425</u> | <u>1,976,450,779</u> | -0.6% |
| Unfunded Actuarial Liability | \$ 600,022,700 | \$ 456,930,760 | 31.3% |
| Funding Ratio | 76.61% | 81.22% | N/A |
| Present Value of Accrued Benefits | \$ 2,148,384,393 | \$ 2,039,057,299 | 5.4% |
| Assets/Market Value | <u>1,702,879,946</u> | <u>1,870,531,375</u> | -9.0% |
| Unfunded PVAB | \$ 445,504,447 | \$ 168,525,924 | 164% |
| Accrued Benefit Funding Ratio | 79.26% | 91.74% | N/A |
| CONTRIBUTIONS AS % OF PAYROLL | | | |
| | Fiscal Year 2004 | Fiscal Year 2003 | |
| Normal Cost Contribution | 6.04% | 6.04% | |
| Unfunded Actuarial Liability Contribution | <u>9.81</u> | <u>7.67</u> | |
| Total State Contribution | 15.85% | 13.71% | |

BOARD SUMMARY

| STATE EMPLOYEE SPECIAL PLANS (COMPOSITE) | | | |
|---|--------------------|--------------------|-------------|
| SUMMARY OF PRINCIPAL RESULTS | | | |
| Valuation As Of --> | 6/30/2002 | 6/30/2001 | % change |
| PARTICIPANT COUNTS | | | |
| Actives | 1,981 | 1,839 | 7.7% |
| Retired Members | 656 | 647 | 1.4% |
| Beneficiaries of Retirees | 266 | 255 | 4.3% |
| Survivors of Deceased Members | 3 | 4 | -25% |
| Disabled Members | 24 | 19 | 26.3% |
| Deferred "Vested" Members | <u>0</u> | <u>0</u> | 0.0% |
| TOTAL | 2,930 | 2,764 | 6.0% |
| Annual Salaries of Active Members | \$ 80,020,280 | \$ 69,387,194 | 15.3% |
| Annual Payments to Benefit Recipients | \$ 18,558,068 | \$ 17,603,175 | 5.4% |
| ASSETS & LIABILITIES | | | |
| Total Actuarial Liability | \$ 462,361,387 | \$ 423,364,554 | 9.2% |
| Assets/Actuarial (Smoothed) | <u>311,215,332</u> | <u>315,053,868</u> | -1.2% |
| Unfunded Actuarial Liability | \$ 151,146,055 | \$ 108,310,686 | 39.5% |
| Funding Ratio | 67.31% | 74.42% | N/A |
| Present Value of Accrued Benefits | \$ 563,903,310 | \$ 383,438,647 | 47.1% |
| Assets/Market Value | <u>269,644,894</u> | <u>298,169,908</u> | -9.6% |
| Unfunded PVAB | \$ 294,258,416 | \$ 85,268,739 | 245% |
| Accrued Benefit Funding Ratio | 47.82% | 77.76% | N/A |
| CONTRIBUTIONS AS % OF PAYROLL | | | |
| | Fiscal Year 2004 | Fiscal Year 2003 | |
| Normal Cost Contribution | 8.29% | 8.37% | |
| Unfunded Actuarial Liability Contribution | <u>13.47</u> | <u>10.63</u> | |
| Total State Contribution | 21.76% | 19.00% | |

SECTION II

ASSETS

The purpose of an actuarial valuation is to assess the funded status of a pension plan at a certain date and to establish, on the basis of that assessment, the plan's funding requirements. On the asset side of a plan's funded status, the relevant measure is net assets available for benefits. "Assets" includes the System's investment portfolio, committed for investment management to outside professionals, buildings and land owned by the System outside of the investment portfolio, and cash managed by the System outside of the investment portfolio.

The investment portfolio is by far the largest of these assets in dollar value, so much so, that its value is often used, in contexts, other than the actuarial valuation, as a kind of proxy for total assets. The investment policy of the System's Board of Trustees governs the investment portfolio and it is to the portfolio that the Trustees' asset allocation policy applies. However, for purposes of evaluating fairly the relationship of plan assets to plan liabilities, the value of all assets is properly to be included.

The value of plan assets for actuarial valuation purposes must be established and disclosed on a market value basis. Thereafter, for purposes of establishing rational plan funding requirements, the market value may be, and in the case of the System's plans is, smoothed. Market value represents a "snap-shot" or "cash-out" value which provides a basis for measuring investment performance from one year to the next. Market value, however, can fluctuate widely, particularly in the short term. As a result, market value is usually not suitable for long range planning.

In an ongoing pension plan, the long range is the important perspective. Actuarial value, or "carrying value" is market value that has been smoothed and is the actuary's best estimate of long term asset value, providing a more useful evaluation of the fund's ongoing ability to meet its obligations. The actuarial smoothing methodology employed in the valuation of the System's plans is explained later in this section.

In this section we present the following information on assets:

- **Disclosure** of the value of plan assets on a market basis as measured at June 30, 2002 and June 30, 2001;
- Statement of the **changes** in asset value on a market basis during the year;
- Application to market value of the actuarial smoothing methodology that results in the **actuarial value of assets**;
- **Attribution** of the actuarial value of assets among the System's plans; and
- A statement of the **return on plan assets** for the year, on both a market value basis and an actuarial value basis.

Disclosure of Plan Market Value Of Assets

| STATEMENT OF ASSETS AT MARKET VALUE (In Millions) | | |
|--|------------------------|------------------------|
| | June 30, | |
| | 2002 | 2001* |
| Net Value of Investment Portfolio | \$ 6,566 | \$ 6,992 |
| Buildings, land | 3 | 2 |
| Cash external to portfolio | 27 | 0 |
| Net Assets Available for Benefits | <u>\$ 6,596</u> | <u>\$ 6,994</u> |

* Characterization of assets differs from 6/30/2001 valuation because of clarifications and corrections. Total amount of Net Assets Available for benefits is unchanged.

Changes in Asset Value (market value based) in Valuation Year:

The components of asset change are:

- Contributions received from members and employers
- Benefits paid out
- Investment Income/(Loss) (realized and unrealized)

The specific changes during 2002 are presented below:

| CHANGES IN MARKET VALUES | |
|--|----------------------|
| Plan Assets/Market Value – June 30, 2001 | \$ 6,993,547,146 |
| Member Contributions Received | 122,613,975 |
| Employer Contributions Received | 415,551,283 |
| Benefits Paid Out | (403,208,003) |
| Investment Income/(Loss) | <u>(532,832,468)</u> |
| Plan Assets/Market Value – June 30, 2002 | \$6,595,671,933 |

Application to Market Value of Smoothing Methodology to Produce the Actuarial Value of Assets:

The Actuarial Value of Assets represents a "smoothed" value developed by the actuary to reduce the volatility evident in the investment markets, particularly over short time periods. Because the System's plans are properly regarded as virtually perpetual in nature, it is appropriate to manage their funding with strategies that in effect require that short term events be seen within the longer perspective. For the System, the actuarial value of assets at a given valuation date is calculated by adding to the Adjusted Actuarial Value as Expected at the given valuation date an amount that is 33% of the difference between the Adjusted Actuarial Value as Expected at the valuation date and the Market Value of Assets at that date. The following table illustrates the calculation of the Actuarial Value of Assets for the June 30, 2002 valuation.

| DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS AS OF JUNE 30, 2002 | | |
|---|---|------------------|
| 1. | Actuarial Value of Assets at June 30, 2001 | \$ 7,389,558,863 |
| 2. | Amount in (1) with interest to June 30, 2002 at 8.00% per year | 7,980,723,572 |
| 3. | Employer & member contributions for the Plan Year ended June 30, 2002 | 538,165,258 |
| 4. | Interest on contributions assuming payments made uniformly throughout the year to June 30, 2002 at 8.00% per year | 20,920,977 |
| 5. | Disbursements from Trust during the period June 30, 2001 through June 30, 2002 | 403,208,003 |
| 6. | Interest on disbursements to June 30, 2002 at 8.00% per year | 15,674,029 |
| 7. | Expected adjusted Actuarial Value of Assets at June 30, 2002 = (2) + (3) + (4) - (5) - (6) | 8,120,927,775 |
| 8. | Actual Market Value of Assets at June 30, 2002 | 6,595,671,933 |
| 9. | Difference Between (8) and (7) | (1,525,255,842) |
| 10. | Actuarial Value of Assets at June 30, 2002 = (7) + 33% of (9) | \$7,612,509,160 |

Allocation of Actuarial Value of Assets:

In the investment portfolio, assets for all of the System’s plans are commingled for investment purposes. Other assets are in effect commingled in that their value is attributed across all of the plans. The actuarial smoothing methodology is applied on the market value of total assets. This produces a smoothing factor which is then applied to the market value of assets attributable to each of the plans. The smoothing factor derived in this valuation is 1.15417 ($\$7,612,509,160 \div \$6,595,671,933$). The allocation of actuarial value of assets to each of the System’s plans is shown in the following chart.

| ALLOCATION OF ACTUARIAL VALUE OF ASSETS AS OF JUNE 30, 2002 | | |
|---|-------------------------|-------------------------|
| | Market Value | Actuarial Value |
| Teachers | \$ 3,119,594,945 | \$ 3,600,534,614 |
| State (Regular and Special) | 1,972,524,840 | 2,276,623,757 |
| Judges | 32,119,276 | 37,071,019 |
| Legislators | 5,411,908 | 6,246,247 |
| Participating Local Districts (Consolidated and Non-Consolidated) | 1,466,020,964 | 1,692,033,523 |
| Total Fund | \$ 6,595,671,933 | \$ 7,612,509,160 |

Investment Performance:

The Market Value of Assets (MVA) returned (7.6%) during 2002. This is lower than the plan’s assumed return of 8% but not unexpected in a year, the second in a row, in which investment markets performed poorly.

On the basis of the actuarial value of assets, the return at June 30, 2002 was 1.2%. This return, as compared to the return on a market value basis, demonstrates the effect of smoothing which, while dampening the effect of market gains in good times, serves to cushion the effect of losses in periods of market decline.

SECTION III

LIABILITIES

In this section we present detailed information on liabilities of the State Employee and Teacher Plan including:

- **Disclosure** of Plan liabilities as measured at June 30, 2002 and June 30, 2001;
- Statement of **changes** in these liabilities during the year; and
- A **projection** of future liabilities.

Disclosure:

Several types of liabilities are calculated and presented in this report. Each type reflects the needs of persons ultimately using the figures and the purpose for which they are using them.

- **Total Future Obligations:** Used for analyzing the financial outlook of the Plan, this represents the amount of money needed today to fully pay off all future benefits and expenses of the Plan, assuming participants continue to accrue benefits.
- **Actuarial Liabilities:** Used for funding calculations and GASB disclosures, this liability is calculated by taking the Total Future Obligations above and subtracting the present value of future Member Contributions and future Employer Normal Costs under an acceptable actuarial funding method. The method employed for the State Employee and Teacher Plan is referred to as the **Entry Age Normal** funding method.
- **Accrued Liabilities:** Used for communicating the current level of liabilities, this liability represents the total amount of money needed today to fully pay off the current accrued obligations of the Plan, assuming no future accruals of benefits. These liabilities are also required for accounting purposes (FAS 35) and are used to assess whether a plan can meet its current benefit commitments.

LIABILITIES

The table below discloses each of these liabilities for the current, and prior, State Employee and Teacher Plan valuation. With respect to each disclosure, a subtraction of the appropriate value of Plan assets yields, for each respective type, a **net surplus** or an **unfunded liability**.

| LIABILITIES/NET (SURPLUS) UNFUNDED | 6/30/2002 | 6/30/2001 |
|--|-------------------------|-------------------------|
| Total Obligations | | |
| Active Participant Benefits | \$ 6,208,946,580 | \$ 5,840,233,305 |
| Retiree and Inactive Benefits | 3,714,368,070 | 3,499,338,199 |
| Total Obligations | \$ 9,923,314,650 | \$ 9,339,571,504 |
| Market Value of Assets | 5,092,119,785 | 5,490,520,609 |
| Future Member Contributions | 810,325,166 | 770,137,523 |
| Future State Contributions | 4,020,869,699 | 3,078,913,372 |
| Total Resources | \$ 9,923,314,650 | \$ 9,339,571,504 |
| Actuarial Liability | | |
| Total Liabilities | \$ 9,923,314,650 | \$ 9,339,571,504 |
| Present Value of Future Normal Costs Under Entry Age Method | 643,154,074 | 610,624,118 |
| Present Value Of Future Member Contributions | 810,325,166 | 770,137,523 |
| Actuarial Liability | \$ 8,469,835,410 | \$ 7,958,809,863 |
| Actuarial Value of Assets | 5,877,158,371 | 5,801,422,994 |
| Net (Surplus) Unfunded | \$ 2,592,677,039 | \$ 2,157,386,869 |
| Accrued Liability | | |
| Total Liabilities | \$ 9,923,314,650 | \$ 9,339,571,504 |
| Less Present Value of Future Benefit Accruals | (2,931,657,233) | (2,946,077,932) |
| Accrued Liability | \$ 6,991,657,417 | \$ 6,393,493,572 |
| Market Value of Assets | 5,092,119,785 | 5,490,520,609 |
| Net (Surplus) Unfunded | \$ 1,899,537,632 | \$ 902,972,963 |

Changes in Liabilities:

Each of the liabilities disclosed in the prior table is expected to change at each valuation. The components of that change, depending upon which liability is analyzed, can include:

- new hires since the last valuation;
- benefits accrued since the last valuation;
- plan amendments increasing benefits;
- passage of time during which interest accrues to the prior liability;
- benefits paid to retirees since the last valuation;
- participants retiring, terminating, or dying at rates different than expected;
- a change in actuarial or investment assumptions; and
- a change in the actuarial funding method.

Unfunded liabilities or surpluses will change because of all the above, and also due to changes in fund assets resulting from:

- employer contributions different than expected;
- investment earnings different than expected; and
- a change in the method used to measure plan assets.

In each valuation we report on those elements of change which are of particular significance, potentially affecting the long-term financial outlook of the Plan. Below we present the key changes in liabilities since the last valuation.

| | \$ in Millions | | |
|---|---------------------|------------------------|----------------------|
| | TOTAL OBLIGATION | ACTUARIAL LIABILITY | ACCRUED LIABILITY |
| Liabilities 6/30/2001 | \$ 9,340 | \$ 7,959 | \$ 6,393 |
| Liabilities 6/30/2002 | \$ 9,923 | \$ 8,470 | \$ 6,992 |
| Liability Increase (Decrease) | \$ 583 | \$ 511 | \$ 599 |
| Change due to: | | | |
| Plan Amendment | \$ 0 | \$ 0 | \$ 0 |
| Assumption Change | \$ 0 | \$ 0 | \$ 0 |
| Actuarial (Gain)/Loss | N/A | \$ 34 | N/A |
| Benefits Accumulated and Other Sources | \$ 583 | \$ 477 | \$ 599 |

ACTUARIAL LIABILITY
AS OF JUNE 30, 2002

| | Total Plan | Teachers | State Regular | Special Plans |
|--|-------------------------|-------------------------|-----------------------|-----------------------|
| 1. Actuarial Liabilities for: | | | | |
| a. Active Members | \$ 4,755,467,340 | \$ 3,288,166,790 | \$ 1,232,012,787 | \$ 235,287,763 |
| b. Retired, Disabled and Beneficiary Members | 3,594,668,294 | 2,079,988,493 | 1,287,606,177 | 227,073,624 |
| c. Vested Deferred and Inactive Status Members | <u>119,699,776</u> | <u>73,887,615</u> | <u>45,812,161</u> | <u>0</u> |
| 2. Total Actuarial Liability (1(a) + 1(b) + 1(c)) | \$ 8,469,835,410 | \$ 5,442,042,898 | \$ 2,565,431,125 | \$ 462,361,387 |
| 3. Actuarial Value of Assets | <u>5,877,158,371</u> | <u>3,600,534,614</u> | <u>1,965,408,425</u> | <u>311,215,332</u> |
| 4. Unfunded Actuarial Liability (2 - 3) | <u>\$ 2,592,677,039</u> | <u>\$ 1,841,508,284</u> | <u>\$ 600,022,700</u> | <u>\$ 151,146,055</u> |

SECTION IV

CONTRIBUTIONS

CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly fund the plan. Typically, the actuarial process will utilize a funding approach that will result in a pattern of contributions that is both stable and predictable.

For this Plan, the funding approach employed is the **Entry Age Normal Actuarial Cost Method**. Under this method there are two components to the total contribution, a **normal cost** and, given the Plan's unfunded actuarial liability, an **amortization payment**. A normal cost is determined for each individual participant which, when added up for all participants, represents the Plan's total normal cost. Each year's normal cost represents the cost to fund that portion of the total future obligations which has been allocated to the current year, based upon the actuarial cost method in use.

The amortization payment, on the other hand, is not calculated for individual participants but calculated for the Plan as a whole, and represents an annual installment to fund the **unfunded actuarial liability (UAL)** for the Plan. The UAL represents the amount of additional funds that would have been accumulated by the valuation date had all prior normal cost contributions been made and all actuarial assumptions been realized.

In Appendix B we describe more fully this technical topic.

The table below presents and compares the actuarially determined contributions for the Plan for this valuation and the prior one, and includes a calculation of the average annual normal cost rate per participant for each year.

| ACTUARIALLY DETERMINED CONTRIBUTION | 7/1/2002 | 7/1/2001 |
|-------------------------------------|---------------|---------------|
| Entry Age Normal Cost | 6.17% | 6.16% |
| Amortization Payment | <u>13.15%</u> | <u>11.14%</u> |
| Actuarially Determined Contribution | 19.32% | 17.30% |

On the following pages we display the contribution rates developed for each of the member/plan groups within the Plan.

**TABLE IV-1
STATE EMPLOYER CONTRIBUTION RATES
FISCAL YEAR 2004 – ENTRY AGE NORMAL**

| | Total State | Teachers | State Regular | State Police Marine Resources Inland Fish & Wildlife (Closed Plans) | Prison Employees | Liquor Inspectors | Forest Rangers | 25 & Out Plan | 1998 Special Plan |
|---|---------------|---------------|---------------|---|------------------|-------------------|----------------|---------------|-------------------|
| New Entrant Normal Cost Contributions as Percent of Payroll | 6.17% | 6.04% | 6.04% | 17.84% | 9.04% | 8.24% | 7.34% | 9.15% | 6.89% |
| Unfunded Actuarial Liability Contribution as Percent of Payroll | <u>13.15</u> | <u>14.76</u> | <u>9.81</u> | <u>28.98</u> | <u>14.68</u> | <u>13.39</u> | <u>11.92</u> | <u>14.86</u> | <u>11.19</u> |
| Total Contributions as Percent of Payroll | <u>19.32%</u> | <u>20.80%</u> | <u>15.85%</u> | <u>46.82%</u> | <u>23.72%</u> | <u>21.63%</u> | <u>19.26%</u> | <u>24.01%</u> | <u>18.08%</u> |

**TABLE IV-2
DERIVATION OF UNFUNDED ACTUARIAL LIABILITY RATES**

| Valuation Date June 30 | Teachers | State Regular | State Police, Marine Resource & Inland Fish | Prison Employees | Liquor Inspectors | Forest Rangers | 25 & Out Plan | 1998 Special Plan |
|---|---------------|------------------|---|---------------------|----------------------|-------------------|------------------|-------------------------|
| 1. Present Value of Future Benefits | 6,396,854,754 | 2,997,227,558 | 238,421,827 | 41,143,610 | 4,662,903 | 22,996,479 | 54,584,473 | 167,423,046 |
| 2. Normal Cost Rate | 6.04% | 6.04% | 17.84% | 9.04% | 8.24% | 7.34% | 9.15% | 6.89% |
| 3. Present Value of Future Payroll | 6,974,520,498 | 3,154,101,051 | 472,620 | 3,957,300 | 690,888 | 3,358,376 | 130,669,585 | 271,169,470 |
| 4. Present Value of Future Normal Cost (2) x (3) | 421,261,038 | 190,507,703 | 84,315 | 357,740 | 56,929 | 246,505 | 11,956,267 | 18,683,576 |
| 5. Present Value of Future Member Contributions | 533,550,818 | 241,288,730 | 40,881 | 342,306 | 52,853 | 290,500 | 11,302,919 | 23,456,159 |
| 6. Actuarial Liability: (1) – (4) – (5) | 5,442,042,898 | 2,565,431,125 | 238,296,631 | 40,443,564 | 4,553,121 | 22,459,474 | 31,325,287 | 125,283,311 |
| 7. Actuarial Value of Assets | 3,600,534,614 | 1,965,408,425 | 213,778,033 | 35,631,323 | 3,988,634 | 20,024,042 | (5,590,789) | 43,384,090 |
| 8. Unfunded Actuarial Liability: (6) – (7) | 1,841,508,284 | 600,022,700 | 24,518,598 | 4,812,241 | 564,487 | 2,435,432 | 36,916,076 | 81,899,221 |
| 9. Estimated Payroll | 889,647,463 | 436,276,144 | 6,033,323 | 2,336,871 | 300,734 | 1,456,585 | 17,711,292 | 52,181,475 |
| 10. Amortization Factor | 14.0232 | 14.0232 | 14.0232 | 14.0232 | 14.0232 | 14.0232 | 14.0232 | 14.0232 |
| 11. Unfunded Actuarial Liability Rate: (8)/(9)/(10) | 14.76% | 9.81% | 28.98% | 14.68% | 13.39% | 11.92% | 14.86% | 11.19% |

SECTION V

**ACCOUNTING STATEMENT
INFORMATION**

ACCOUNTING STATEMENT INFORMATION

Statement No. 35 of the Financial Accounting Standards Board (FASB) requires the System to disclose certain information regarding the Plan's funded status. Statement No. 25 of the Governmental Standards Board (GASB) establishes standards for disclosure of pension information by public employee retirement systems (PERS) and governmental employers in notes to financial statements and supplementary information.

The FASB-35 disclosures are intended to provide a "snap shot" view of how the Plan's assets compare to its liabilities if contributions stopped and accrued benefit claims had to be satisfied. However, due to potential legal requirements and the possibility that alternative interest rates would have to be used to determine the liabilities, these values may not be a good indication of the amount of money it would take to satisfy these claims if the Plan were to terminate.

The GASB 25 actuarial accrued liability is the same as the actuarial liability amount calculated for funding purposes.

Both the present value of accrued benefits (FASB-35) and the actuarial accrued liability (GASB-25) are determined assuming that the plan is ongoing and participants continue to terminate employment, retire, and otherwise act in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 8% per annum.

FASB Statement No. 35 specifies that a comparison of the present value of accrued (accumulated) benefits to the market value of the assets as of the valuation date must be provided. GASB Statement No. 25 requires the actuarial accrued liability to be compared with the actuarial value of assets for funding purposes. The relevant amounts as of June 30, 2002 are exhibited in Table V-1, Table V-2, and Table V-3. As directed by FASB-35, the liabilities shown in Section A of Table V-1 and Table V-2 do not include any projection for future service and salary. Finally, Table V-4 reconciles the FASB-35 liabilities determined as of the prior valuation, June 30, 2001, to the liabilities as of June 30, 2002.

ACCOUNTING STATEMENT INFORMATION

TABLE V-1
ACCOUNTING STATEMENT INFORMATION
STATE EMPLOYEE AND TEACHER PLAN TOTAL

| | 2002 | 2001 |
|---|-------------------------|-------------------------|
| A. FASB No. 35 Basis | | |
| 1. Present Value of Benefits Accrued to Date: | | |
| a. Members Currently Receiving Payments | \$ 3,594,668,294 | \$ 3,374,950,025 |
| b. Former Vested Members | 119,699,776 | 124,388,174 |
| c. Active Members | <u>3,277,289,347</u> | <u>2,894,155,373</u> |
| 2. Total Present Value of Accrued Benefits (1(a) + 1(b) + 1(c)) | <u>\$ 6,991,657,417</u> | <u>\$ 6,393,493,572</u> |
| 3. Assets at Market Value | <u>5,092,119,785</u> | <u>\$ 5,490,520,609</u> |
| 4. Unfunded Value of Benefits (2) – (3) | \$ 1,899,537,632 | \$ 902,972,963 |
| 5. Ratio of Assets to Value of Benefits (3)/(2) | 72.83% | 85.88% |
| B. GASB No. 25 Basis | | |
| 1. Actuarial accrued liabilities for retirees and beneficiaries currently receiving benefits and terminated employees not yet receiving benefits | \$ 3,714,368,070 | \$ 3,499,338,199 |
| 2. Actuarial accrued liabilities for current employees | <u>4,755,467,340</u> | <u>4,459,471,664</u> |
| 3. Total actuarial accrued liability (1)+(2) | \$ 8,469,835,410 | \$ 7,958,809,863 |
| 4. Net actuarial assets available for benefits | <u>5,877,158,371</u> | <u>5,801,422,994</u> |
| 5. Unfunded actuarial accrued liability (3)-(4) | <u>\$ 2,592,677,039</u> | <u>\$ 2,157,386,869</u> |

TABLE V-2
ACCOUNTING STATEMENT INFORMATION – FASB NO. 35
AS OF JUNE 30, 2002

| | Total System | Teachers | State Regular | State Special |
|---|-------------------------|-------------------------|-----------------------|-----------------------|
| 1. Present Value of Benefits Accrued to Date: | | | | |
| a. Members Currently Receiving Payments | \$ 3,594,668,294 | \$ 2,079,988,493 | \$ 1,287,606,177 | \$ 227,073,624 |
| b. Former Vested Members | 119,699,776 | 73,887,615 | 65,812,161 | 0 |
| c. Active Members | <u>3,277,289,347</u> | <u>2,125,493,606</u> | <u>814,966,055</u> | <u>336,829,686</u> |
| 2. Total Present Value of Accrued Benefits (1(a) + 1(b) + 1(c)) | \$ 6,991,657,417 | \$ 4,279,369,714 | \$ 2,148,384,393 | \$ 563,903,310 |
| 3. Assets at Market Value | <u>5,092,119,785</u> | <u>3,119,594,945</u> | <u>1,702,879,946</u> | <u>269,644,894</u> |
| 4. Unfunded Value of Accrued Benefits (2)–(3) | <u>\$ 1,899,537,632</u> | <u>\$ 1,159,774,769</u> | <u>\$ 445,504,447</u> | <u>\$ 294,258,416</u> |
| 5. Ratio of Assets to Value of Accrued Benefits (3)/(2) | 72.83% | 72.90% | 79.26% | 47.82% |

TABLE V-3
ACCOUNTING STATEMENT INFORMATION – GASB NO. 25
AS OF JUNE 30, 2002

| | Total System | Teachers | State Regular | State Special |
|--|-------------------------|-------------------------|-----------------------|-----------------------|
| 1. Actuarial Accrued Liability: | | | | |
| a. Members Currently Receiving Payments | \$ 3,594,668,294 | \$ 2,079,988,493 | \$ 1,287,606,177 | \$ 227,073,624 |
| b. Former Vested Members | 119,699,776 | 73,887,615 | 45,812,161 | 0 |
| c. Active Members | <u>4,755,467,340</u> | <u>3,288,166,790</u> | <u>1,232,012,787</u> | <u>235,287,763</u> |
| 2. Total Actuarial Accrued Liability (1(a) + 1(b) + 1(c)) | \$ 8,469,835,410 | \$ 5,442,042,898 | \$ 2,565,431,125 | \$ 462,361,387 |
| 3. Actuarial Value of Assets | 5,877,158,371 | 3,600,534,614 | 1,965,408,425 | 311,215,332 |
| 4. Unfunded Actuarial Accrued Liability (2 – 3) | <u>\$ 2,592,677,039</u> | <u>\$ 1,841,508,284</u> | <u>\$ 600,022,700</u> | <u>\$ 151,146,055</u> |
| 5. Funded Ratio | 69.39% | 66.16% | 76.61% | 67.31% |
| 6. Annual Payroll | \$ 1,405,943,887 | \$ 889,647,463 | \$ 436,276,144 | \$ 80,020,280 |
| 7. UAAL as % of Payroll | 184.41% | 206.99% | 137.53% | 188.88% |

ACCOUNTING STATEMENT INFORMATION

TABLE V-4
Statement of Changes in Total Actuarial
Present Value of All Accrued Benefits

| (In millions) | Accumulated Benefit Obligation (FASB No. 35) |
|---|--|
| Actuarial Present Value of Accrued Benefits at June 30, 2001 | \$ 6,393 |
| Increase (Decrease) During years Attributable to: | |
| Passage of Time (Interest Accrual) | 498 |
| Benefits Paid – FY 2002 | (333) |
| Benefits Accrued, Other Gains/Losses | 434 |
| Plan Amendment | <u>0</u> |
| Net Increase (Decrease) | 599 |
| Actuarial Present Value of Accrued Benefits at June 30, 2002 | <u>\$ 6,992</u> |

APPENDIX A

MEMBERSHIP INFORMATION

APPENDIX A – MEMBERSHIP INFORMATION

| MAINE STATE RETIREMENT SYSTEM ACTIVE MEMBER DATA AS OF JUNE 30, 2002 | |
|---|-----------|
| TEACHERS | |
| Count | 28,344 |
| Average Current Age | 44.9 |
| Average Service | 13.5 |
| Average Valuation Pay | \$ 31,388 |
| STATE REGULAR | |
| Count | 12,921 |
| Average Current Age | 45.5 |
| Average Service | 12.7 |
| Average Valuation Pay | \$ 33,765 |
| FOREST RANGERS (CLOSED PLAN) | |
| Count | 32 |
| Average Current Age | 48.3 |
| Average Service | 24.9 |
| Average Valuation Pay | \$ 45,518 |
| INLAND FISHERIES & WILDLIFE OFFICERS (CLOSED PLAN) | |
| Count | 26 |
| Average Current Age | 51.3 |
| Average Service | 27.7 |
| Average Valuation Pay | \$ 48,420 |
| LIQUOR INSPECTORS (CLOSED PLAN) | |
| Count | 7 |
| Average Current Age | 52.3 |
| Average Service | 26.2 |
| Average Valuation Pay | \$ 42,962 |

APPENDIX A – MEMBERSHIP INFORMATION

| MAINE STATE RETIREMENT SYSTEM ACTIVE MEMBER DATA AS OF JUNE 30, 2002 | |
|---|-----------|
| PRISON EMPLOYEES (CLOSED PLAN) | |
| Count | 50 |
| Average Current Age | 51.1 |
| Average Service | 23.6 |
| Average Valuation Pay | \$ 46,737 |
| STATE POLICE (CLOSED PLAN) | |
| Count | 73 |
| Average Current Age | 47.8 |
| Average Service | 23.2 |
| Average Valuation Pay | \$ 59,003 |
| MARINE RESOURCES OFFICERS (CLOSED PLAN) | |
| Count | 9 |
| Average Current Age | 48.6 |
| Average Service | 24.5 |
| Average Valuation Pay | \$ 51,915 |
| 25 & OUT PLAN | |
| Count | 387 |
| Average Current Age | 35.5 |
| Average Service | 9.3 |
| Average Valuation Pay | \$ 45,766 |
| 1998 SPECIAL PLAN | |
| Count | 1,397 |
| Average Current Age | 42.2 |
| Average Service | 9.4 |
| Average Valuation Pay | \$ 37,353 |

APPENDIX A – MEMBERSHIP INFORMATION

| MAINE STATE RETIREMENT SYSTEM ACTIVE MEMBER DATA AS OF JUNE 30, 2002 | |
|---|----------|
| STATE TOTALS (EXCLUDES TEACHERS) | |
| Count | 14,902 |
| Average Current Age | 45.0 |
| Average Service | 12.5 |
| Average Valuation Pay | \$34,646 |

APPENDIX A – MEMBERSHIP INFORMATION

| MAINE STATE RETIREMENT SYSTEM NON-ACTIVE MEMBER DATA AS OF JUNE 30, 2002 TEACHERS | | | |
|---|-------|----------------------|------------------------|
| | Count | Total Annual Benefit | Average Annual Benefit |
| Retired | | | |
| (Option 0-4) | 8,864 | \$ 155,557,732 | \$ 17,549 |
| (Option 4 Concurrent Beneficiary) | 1,196 | \$ 5,040,682 | \$ 4,215 |
| Disabilities/1122 | 7 | \$ 137,848 | \$ 19,693 |
| Disabilities/3 and 3-A | 692 | \$ 14,132,360 | \$ 20,422 |
| Beneficiaries | 696 | \$ 8,427,848 | \$ 12,109 |
| Pre-Retirement Death Benefits | 279 | \$ 1,414,346 | \$ 5,069 |
| Terminated Vested | 1,446 | \$ 10,403,086 | \$ 7,194 |

| MAINE STATE RETIREMENT SYSTEM NON-ACTIVE MEMBER DATA AS OF JUNE 30, 2002 STATE REGULAR | | | |
|--|-------|----------------------|------------------------|
| | Count | Total Annual Benefit | Average Annual Benefit |
| Retired | | | |
| (Option 0-4) | 6,396 | \$ 90,957,022 | \$ 14,221 |
| (Option 4 Concurrent Beneficiary) | 1,137 | \$ 4,329,929 | \$ 3,808 |
| Disabilities/1122 | 14 | \$ 213,772 | \$ 15,269 |
| Disabilities/3 and 3-A | 1,058 | \$ 16,218,480 | \$ 15,329 |
| Beneficiaries | 1,379 | \$ 13,176,996 | \$ 9,555 |
| Pre-Retirement Death Benefits | 561 | \$ 2,804,904 | \$ 5,000 |
| Terminated Vested | 1,002 | \$ 8,052,750 | \$ 8,037 |

APPENDIX A – MEMBERSHIP INFORMATION

| MAINE STATE RETIREMENT SYSTEM NON-ACTIVE MEMBER DATA AS OF JUNE 30, 2002 SPECIAL PLANS | | | |
|--|-------|-------------------------|---------------------------|
| | Count | Total Annual Benefit | Average Annual Benefit |
| Retired | | | |
| (Option 0-4) | 656 | \$ 16,009,283 | \$ 24,404 |
| (Option 4 Concurrent Beneficiary) | 143 | \$ 616,091 | \$ 4,308 |
| Disabilities/1122 | 3 | \$ 44,119 | \$ 14,706 |
| Disabilities/3 and 3-A | 21 | \$ 375,053 | \$ 17,860 |
| Beneficiaries | 123 | \$ 1,471,664 | \$ 11,965 |
| Pre-Retirement Death Benefits | 3 | \$ 41,858 | \$ 13,953 |
| Terminated Vested | 0 | \$ 0 | \$ 0 |

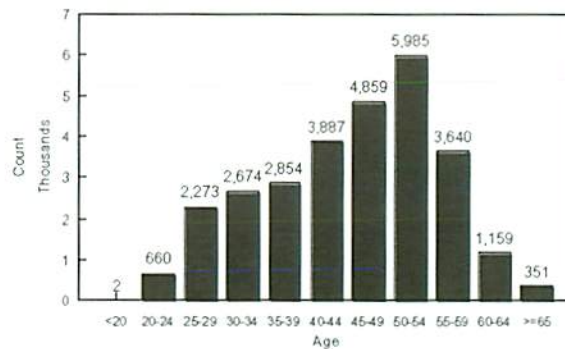
APPENDIX A – MEMBERSHIP INFORMATION

MAINE STATE RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS as of June 30, 2002

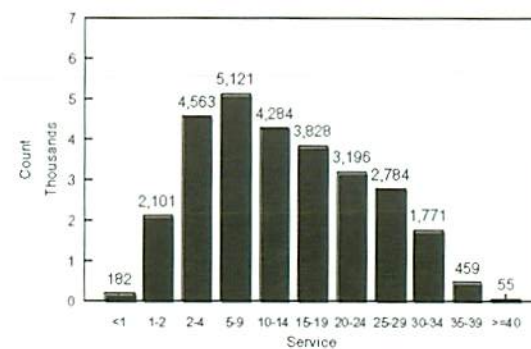
Teachers

| Age | Years of Service | | | | | | | | | | | Total |
|--------------|------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|-----------|---------------|
| | Under 1 | 1 TO 2 | 2 TO 4 | 5 TO 9 | 10 TO 14 | 15 TO 19 | 20 TO 24 | 25 TO 29 | 30 TO 34 | 35 TO 39 | 40 & UP | |
| Under 20 | | 2 | | | | | | | | | | 2 |
| 20 TO 24 | 35 | 296 | 305 | 24 | | | | | | | | 660 |
| 25 TO 29 | 36 | 406 | 963 | 848 | 20 | | | | | | | 2,273 |
| 30 TO 34 | 26 | 277 | 616 | 1,110 | 638 | 7 | | | | | | 2,674 |
| 35 TO 39 | 16 | 296 | 600 | 573 | 819 | 542 | 8 | | | | | 2,854 |
| 40 TO 44 | 21 | 289 | 702 | 748 | 597 | 943 | 578 | 9 | | | | 3,887 |
| 45 TO 49 | 14 | 213 | 560 | 803 | 780 | 666 | 1,094 | 724 | 5 | | | 4,859 |
| 50 TO 54 | 18 | 169 | 432 | 603 | 860 | 882 | 741 | 1,418 | 853 | 9 | | 5,985 |
| 55 TO 59 | 9 | 92 | 233 | 263 | 419 | 561 | 535 | 445 | 792 | 291 | | 3,640 |
| 60 TO 64 | 5 | 35 | 104 | 89 | 116 | 189 | 192 | 155 | 97 | 144 | 33 | 1,159 |
| 65 & UP | 2 | 26 | 48 | 60 | 35 | 38 | 48 | 33 | 24 | 15 | 22 | 351 |
| Total | 182 | 2,101 | 4,563 | 5,121 | 4,284 | 3,828 | 3,196 | 2,784 | 1,771 | 459 | 55 | 28,344 |

Age Distribution



Service Distribution



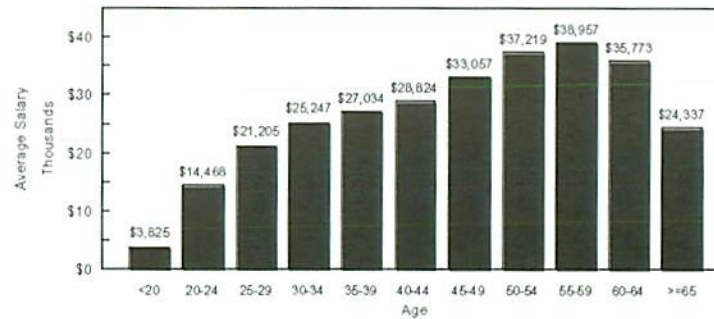
APPENDIX A – MEMBERSHIP INFORMATION

MAINE STATE RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS as of June 30, 2002

Teachers

| Age | Average Salary Years of Service | | | | | | | | | | | Total | |
|----------|------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-------|----------|
| | Under 1 | 1 TO 2 | 2 TO 4 | 5 TO 9 | 10 TO 14 | 15 TO 19 | 20 TO 24 | 25 TO 29 | 30 TO 34 | 35 TO 39 | 40 & UP | | |
| Under 20 | | 3,825 | | | | | | | | | | | \$3,825 |
| 20 TO 24 | 9,879 | 13,854 | 15,239 | 18,931 | | | | | | | | | \$14,468 |
| 25 TO 29 | 13,708 | 17,193 | 20,894 | 23,685 | 25,921 | | | | | | | | \$21,205 |
| 30 TO 34 | 11,098 | 17,419 | 21,586 | 26,823 | 30,003 | 26,355 | | | | | | | \$25,247 |
| 35 TO 39 | 12,059 | 14,963 | 18,668 | 26,355 | 32,894 | 35,164 | 28,953 | | | | | | \$27,034 |
| 40 TO 44 | 9,068 | 16,187 | 17,560 | 23,943 | 32,226 | 36,689 | 39,274 | 44,333 | | | | | \$28,824 |
| 45 TO 49 | 12,785 | 15,976 | 18,772 | 24,023 | 31,883 | 36,906 | 41,568 | 44,357 | 40,258 | | | | \$33,057 |
| 50 TO 54 | 14,853 | 18,924 | 21,762 | 27,086 | 31,708 | 36,359 | 40,399 | 45,597 | 46,019 | 41,083 | | | \$37,219 |
| 55 TO 59 | 6,262 | 18,900 | 20,920 | 29,129 | 31,244 | 36,083 | 40,051 | 45,576 | 48,321 | 48,666 | | | \$38,957 |
| 60 TO 64 | 15,749 | 14,371 | 17,545 | 22,860 | 27,839 | 34,722 | 39,530 | 42,282 | 44,324 | 49,269 | 51,236 | | \$35,773 |
| 65 & UP | 2,873 | 9,264 | 7,199 | 14,009 | 25,247 | 30,232 | 27,112 | 30,025 | 43,866 | 45,784 | 47,514 | | \$24,337 |
| Total | \$11,529 | \$16,233 | \$19,407 | \$25,285 | \$31,555 | \$36,166 | \$40,257 | \$44,898 | \$46,910 | \$48,613 | \$49,748 | | \$31,388 |

Average Salary Distribution



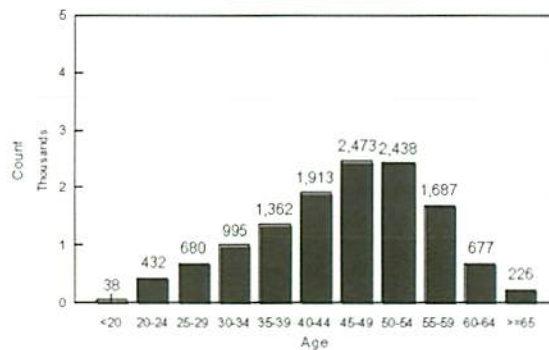
APPENDIX A – MEMBERSHIP INFORMATION

MAINE STATE RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS as of June 30, 2002

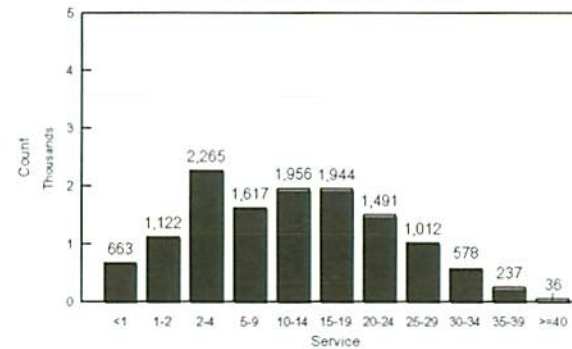
State

| Age | Years of Service | | | | | | | | | | | Total | |
|--------------|------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|------------|-----------|-------|---------------|
| | Under 1 | 1 TO 2 | 2 TO 4 | 5 TO 9 | 10 TO 14 | 15 TO 19 | 20 TO 24 | 25 TO 29 | 30 TO 34 | 35 TO 39 | 40 & UP | | |
| Under 20 | 26 | 12 | | | | | | | | | | | 38 |
| 20 TO 24 | 153 | 150 | 123 | 6 | | | | | | | | | 432 |
| 25 TO 29 | 85 | 183 | 327 | 75 | 10 | | | | | | | | 680 |
| 30 TO 34 | 72 | 146 | 352 | 224 | 180 | 21 | | | | | | | 995 |
| 35 TO 39 | 65 | 149 | 326 | 228 | 328 | 240 | 26 | | | | | | 1,362 |
| 40 TO 44 | 68 | 122 | 333 | 263 | 379 | 411 | 287 | 50 | | | | | 1,913 |
| 45 TO 49 | 77 | 148 | 324 | 311 | 350 | 438 | 465 | 322 | 38 | | | | 2,473 |
| 50 TO 54 | 58 | 123 | 248 | 240 | 332 | 419 | 329 | 379 | 269 | 41 | | | 2,438 |
| 55 TO 59 | 37 | 63 | 150 | 177 | 219 | 245 | 268 | 181 | 207 | 138 | 2 | | 1,687 |
| 60 TO 64 | 15 | 16 | 68 | 70 | 125 | 131 | 90 | 48 | 50 | 47 | 17 | | 677 |
| 65 & UP | 7 | 10 | 14 | 23 | 33 | 39 | 26 | 32 | 14 | 11 | 17 | | 226 |
| Total | 663 | 1,122 | 2,265 | 1,617 | 1,956 | 1,944 | 1,491 | 1,012 | 578 | 237 | 36 | | 12,921 |

Age Distribution



Service Distribution



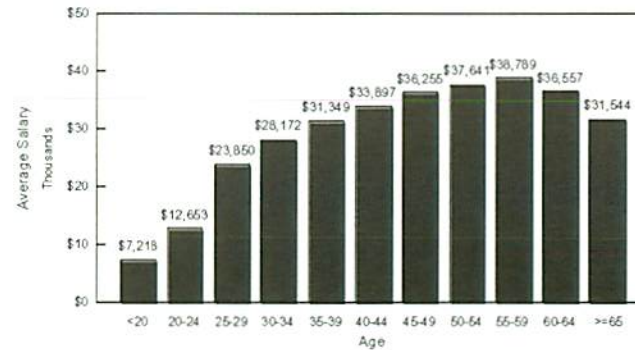
APPENDIX A – MEMBERSHIP INFORMATION

MAINE STATE RETIREMENT SYSTEM DISTRIBUTION OF ACTIVE MEMBERS as of June 30, 2002

State

| Age | Average Salary Years of Service | | | | | | | | | | Total | |
|----------|------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Under 1 | 1 TO 2 | 2 TO 4 | 5 TO 9 | 10 TO 14 | 15 TO 19 | 20 TO 24 | 25 TO 29 | 30 TO 34 | 35 TO 39 | | 40 & UP |
| Under 20 | 7,615 | 6,358 | | | | | | | | | | \$7,218 |
| 20 TO 24 | 8,024 | 14,862 | 15,308 | 21,003 | | | | | | | | \$12,653 |
| 25 TO 29 | 17,149 | 22,074 | 25,914 | 26,021 | 29,508 | | | | | | | \$23,850 |
| 30 TO 34 | 15,840 | 25,242 | 27,159 | 31,951 | 32,211 | 32,882 | | | | | | \$28,172 |
| 35 TO 39 | 18,796 | 26,717 | 26,251 | 33,595 | 35,788 | 35,892 | 35,592 | | | | | \$31,349 |
| 40 TO 44 | 20,221 | 24,325 | 28,016 | 35,341 | 35,760 | 38,305 | 37,669 | 35,438 | | | | \$33,897 |
| 45 TO 49 | 18,933 | 27,080 | 30,475 | 33,211 | 38,474 | 38,468 | 42,812 | 38,235 | 38,316 | | | \$36,255 |
| 50 TO 54 | 18,781 | 27,121 | 30,466 | 34,904 | 37,440 | 38,671 | 42,173 | 42,409 | 41,473 | 40,845 | | \$37,641 |
| 55 TO 59 | 18,781 | 27,734 | 29,213 | 35,007 | 36,696 | 37,146 | 40,186 | 44,221 | 48,479 | 46,288 | 41,170 | \$38,789 |
| 60 TO 64 | 24,249 | 29,211 | 25,846 | 35,039 | 35,425 | 37,082 | 38,122 | 41,378 | 44,107 | 42,839 | 46,211 | \$36,557 |
| 65 & UP | 8,652 | 5,782 | 14,958 | 33,569 | 27,784 | 28,467 | 33,776 | 37,495 | 43,418 | 36,584 | 53,742 | \$31,544 |
| Total | \$15,516 | \$23,703 | \$27,189 | \$33,590 | \$36,126 | \$37,638 | \$40,643 | \$40,856 | \$44,050 | \$44,212 | \$49,487 | \$33,765 |

Average Salary Distribution



APPENDIX A – MEMBERSHIP INFORMATION

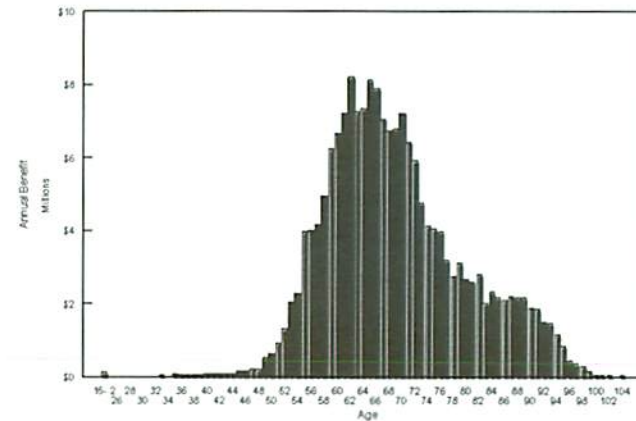
MAINE STATE RETIREMENT SYSTEM
DISTRIBUTION OF RETIREES, DISABLED MEMBERS,
BENEFICIARIES AND SURVIVORS
as of June 30, 2002

Teachers

| Age | Count | Annual Benefit | Age | Count | Annual Benefit |
|----------|-------|----------------|----------|-------|----------------|
| Under 25 | 30 | \$123,736 | 65 | 464 | \$8,119,527 |
| 25 | 1 | 1,789 | 66 | 444 | 7,906,443 |
| 26 | 1 | 7,941 | 67 | 414 | 7,083,070 |
| 27 | 2 | 11,985 | 68 | 435 | 6,774,071 |
| 28 | 0 | 0 | 69 | 409 | 6,806,403 |
| 29 | 1 | 3,498 | 70 | 430 | 7,206,012 |
| 30 | 3 | 13,972 | 71 | 411 | 6,446,460 |
| 31 | 2 | 7,889 | 72 | 388 | 5,941,954 |
| 32 | 0 | 0 | 73 | 339 | 4,739,437 |
| 33 | 6 | 28,303 | 74 | 303 | 4,132,040 |
| 34 | 1 | 16,274 | 75 | 281 | 4,031,047 |
| 35 | 5 | 57,062 | 76 | 297 | 3,981,000 |
| 36 | 5 | 47,891 | 77 | 253 | 3,192,118 |
| 37 | 4 | 21,435 | 78 | 222 | 2,744,089 |
| 38 | 5 | 22,783 | 79 | 251 | 3,115,803 |
| 39 | 3 | 55,738 | 80 | 211 | 2,670,136 |
| 40 | 6 | 71,349 | 81 | 214 | 2,609,700 |
| 41 | 5 | 58,196 | 82 | 229 | 2,792,786 |
| 42 | 8 | 75,787 | 83 | 173 | 2,009,706 |
| 43 | 8 | 76,361 | 84 | 180 | 2,328,632 |
| 44 | 7 | 81,224 | 85 | 164 | 2,158,378 |
| 45 | 12 | 151,355 | 86 | 171 | 2,080,690 |
| 46 | 10 | 168,066 | 87 | 164 | 2,191,430 |
| 47 | 15 | 213,180 | 88 | 156 | 2,138,569 |
| 48 | 16 | 195,867 | 89 | 171 | 2,155,708 |
| 49 | 28 | 514,365 | 90 | 140 | 1,893,690 |
| 50 | 38 | 622,955 | 91 | 131 | 1,851,316 |
| 51 | 63 | 909,498 | 92 | 109 | 1,507,875 |
| 52 | 85 | 1,310,664 | 93 | 117 | 1,459,241 |
| 53 | 123 | 2,044,620 | 94 | 83 | 1,149,435 |
| 54 | 139 | 2,281,201 | 95 | 58 | 826,575 |
| 55 | 220 | 3,953,949 | 96 | 38 | 426,579 |
| 56 | 223 | 3,994,513 | 97 | 31 | 358,552 |
| 57 | 218 | 4,179,269 | 98 | 23 | 276,731 |
| 58 | 266 | 4,963,238 | 99 | 11 | 164,652 |
| 59 | 319 | 6,249,046 | 100 | 4 | 29,059 |
| 60 | 319 | 6,671,412 | 101 | 3 | 43,466 |
| 61 | 392 | 7,236,795 | 102 | 3 | 26,060 |
| 62 | 408 | 8,188,156 | 103 | 1 | 7,295 |
| 63 | 398 | 7,273,188 | 104 | 2 | 29,700 |
| 64 | 403 | 7,339,115 | over 104 | 7 | 57,989 |

Total 11,733 \$184,707,089

Annual Benefit Distribution

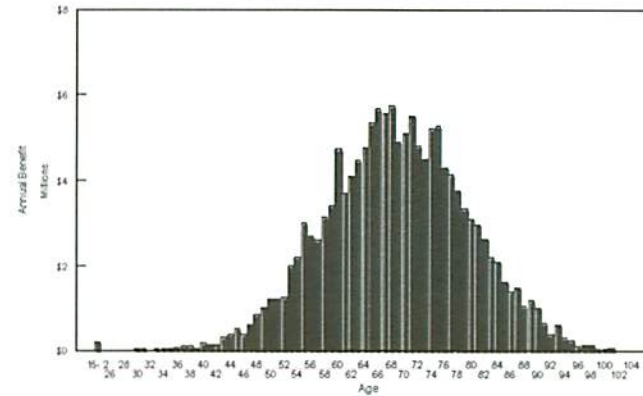


APPENDIX A – MEMBERSHIP INFORMATION

MAINE STATE RETIREMENT SYSTEM
 DISTRIBUTION OF RETIREES, DISABLED MEMBERS,
 BENEFICIARIES AND SURVIVORS
 as of June 30, 2002

| State | | | | | |
|----------|-------|----------------|----------------------|-------|----------------|
| Age | Count | Annual Benefit | Age | Count | Annual Benefit |
| Under 25 | 54 | \$210,522 | 65 | 364 | \$5,335,237 |
| 25 | 2 | 11,748 | 66 | 388 | 5,675,328 |
| 26 | 3 | 6,555 | 67 | 390 | 5,557,974 |
| 27 | 2 | 5,640 | 68 | 423 | 5,749,924 |
| 28 | 2 | 4,939 | 69 | 370 | 4,886,939 |
| 29 | 0 | 0 | 70 | 401 | 5,094,916 |
| 30 | 4 | 26,482 | 71 | 399 | 5,492,228 |
| 31 | 5 | 37,583 | 72 | 374 | 4,816,116 |
| 32 | 1 | 4,133 | 73 | 368 | 4,489,149 |
| 33 | 8 | 31,632 | 74 | 415 | 5,196,003 |
| 34 | 4 | 57,149 | 75 | 414 | 5,257,778 |
| 35 | 6 | 45,784 | 76 | 364 | 4,304,194 |
| 36 | 12 | 83,500 | 77 | 363 | 4,139,628 |
| 37 | 12 | 106,322 | 78 | 342 | 3,754,675 |
| 38 | 12 | 121,547 | 79 | 299 | 3,319,356 |
| 39 | 11 | 49,379 | 80 | 296 | 3,091,500 |
| 40 | 22 | 164,186 | 81 | 283 | 2,954,037 |
| 41 | 16 | 141,023 | 82 | 258 | 2,635,130 |
| 42 | 12 | 145,016 | 83 | 223 | 2,191,282 |
| 43 | 21 | 309,062 | 84 | 211 | 2,101,911 |
| 44 | 32 | 369,651 | 85 | 175 | 1,628,000 |
| 45 | 49 | 515,824 | 86 | 157 | 1,399,340 |
| 46 | 34 | 376,167 | 87 | 169 | 1,484,181 |
| 47 | 46 | 626,699 | 88 | 114 | 1,050,725 |
| 48 | 62 | 855,241 | 89 | 113 | 1,184,205 |
| 49 | 67 | 1,015,428 | 90 | 110 | 1,005,915 |
| 50 | 84 | 1,212,328 | 91 | 84 | 633,237 |
| 51 | 91 | 1,220,519 | 92 | 54 | 383,958 |
| 52 | 87 | 1,236,369 | 93 | 56 | 613,253 |
| 53 | 130 | 1,986,353 | 94 | 37 | 321,793 |
| 54 | 133 | 2,173,183 | 95 | 27 | 238,973 |
| 55 | 190 | 3,003,410 | 96 | 21 | 93,392 |
| 56 | 175 | 2,681,855 | 97 | 15 | 145,956 |
| 57 | 147 | 2,599,395 | 98 | 15 | 137,689 |
| 58 | 204 | 3,116,327 | 99 | 4 | 50,758 |
| 59 | 216 | 3,410,700 | 100 | 6 | 46,618 |
| 60 | 279 | 4,721,906 | 101 | 11 | 61,678 |
| 61 | 230 | 3,702,357 | 102 | 2 | 4,563 |
| 62 | 272 | 4,105,273 | 103 | 0 | 0 |
| 63 | 307 | 4,465,886 | 104 | 0 | 0 |
| 64 | 331 | 4,759,556 | over 104 | 4 | 15,001 |
| Total | | | 11,494 \$146,259,173 | | |

Annual Benefit Distribution



APPENDIX B ACTUARIAL ASSUMPTIONS AND METHODS

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions

| | State Employees | Teachers |
|---|-----------------|---------------------------------|
| 1. Rate of Investment Return | 8.0% | 8.0% |
| 2. Cost-of-Living Increases in Benefits | 4.0% | 4.0% |
| 3. Rates of Salary Increase (% at Selected Ages) | Age | State Employees and Teachers |
| | 20 | 9.5 |
| | 25 | 8.3 |
| | 30 | 7.2 |
| | 35 | 6.7 |
| | 40 | 6.2 |
| | 45 | 5.7 |
| | 50 | 5.5 |
| | 55 | 5.5 |
| | 60 | 5.5 |
| | 65 | 5.5 |

The above rates include a 5½% across-the-board increase at each age.

Calculations have been adjusted to account for the 5% per year/10% over three-years cap on final pay.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

| | Age | State Employees Service | | | Teachers Service | | |
|---|-----|-------------------------|------|------|------------------|------|------|
| | | 0-1 | 1-2 | 2+ | 0-1 | 1-2 | 2+ |
| 4. Rates of Termination at Select and Ultimate Service (% at Selected Ages) * | 20 | 25.0 | 17.5 | 18.8 | 33.0 | 24.0 | 18.8 |
| | 25 | 25.0 | 17.5 | 12.5 | 27.5 | 24.0 | 12.5 |
| | 30 | 25.0 | 17.5 | 10.0 | 27.5 | 24.0 | 10.4 |
| | 35 | 25.0 | 17.5 | 7.5 | 27.5 | 24.0 | 8.3 |
| | 40 | 25.0 | 17.5 | 5.0 | 27.5 | 24.0 | 6.1 |
| | 45 | 25.0 | 17.5 | 5.0 | 27.5 | 24.0 | 4.0 |
| | 50 | 25.0 | 17.5 | 5.0 | 27.5 | 24.0 | 4.0 |
| | 55 | 20.0 | 17.5 | 5.0 | 27.5 | 24.0 | 4.0 |

* Members with ten or more years of service and whose age plus service totals 60 or more are assumed to elect deferred vested benefits; other terminations are assumed to elect refunds

| 5. Rates of Active Healthy Life Mortality at Selected Ages (number of deaths per 10,000 members)* | Age | Male | Female | Male | Female |
|---|-----|------|--------|------|--------|
| | | 20 | 5 | 3 | 5 |
| | 25 | 7 | 3 | 6 | 3 |
| | 30 | 9 | 4 | 7 | 3 |
| | 35 | 9 | 5 | 8 | 4 |
| | 40 | 12 | 8 | 10 | 6 |
| | 45 | 17 | 10 | 14 | 9 |
| | 50 | 28 | 15 | 24 | 13 |
| | 55 | 48 | 25 | 40 | 21 |
| | 60 | 86 | 48 | 73 | 41 |
| | 65 | 156 | 93 | 133 | 79 |
| | 70 | 255 | 148 | 217 | 125 |

* For State Regular and Teachers 5% of deaths assumed to arise out of and in the course of employment; for State Special 20% of deaths are assumed to arise out of and in the course of employment.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

| | Age | State Employees | | Teachers | |
|---|-----|-----------------|--------|----------|--------|
| | | Male | Female | Male | Female |
| 6. Rates of Inactive Health/Life Mortality at Selected Ages (number of deaths per 10,000 members) | 20 | 5 | 3 | 5 | 2 |
| | 25 | 6 | 3 | 6 | 3 |
| | 30 | 8 | 5 | 7 | 4 |
| | 35 | 11 | 7 | 10 | 6 |
| | 40 | 16 | 9 | 14 | 8 |
| | 45 | 29 | 14 | 23 | 12 |
| | 50 | 53 | 22 | 42 | 18 |
| | 55 | 85 | 33 | 71 | 27 |
| | 60 | 131 | 55 | 109 | 44 |
| | 65 | 213 | 96 | 174 | 77 |
| | 70 | 361 | 165 | 292 | 129 |

| | Age | State Employees | | Teachers | |
|---|-----|-----------------|--------|----------|--------|
| | | Male | Female | Male | Female |
| 7. Rates of Mortality for Future Anticipated Disableds at Selected Ages (number of deaths per 10,000 members) | 25 | 92 | 72 | 92 | 72 |
| | 30 | 112 | 89 | 112 | 89 |
| | 35 | 134 | 109 | 134 | 109 |
| | 40 | 160 | 126 | 160 | 126 |
| | 45 | 193 | 144 | 193 | 144 |
| | 50 | 236 | 165 | 236 | 165 |
| | 55 | 295 | 191 | 295 | 191 |
| | 60 | 362 | 226 | 362 | 226 |
| | 65 | 446 | 272 | 446 | 272 |
| | 70 | 576 | 331 | 576 | 331 |

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

| | Age | State Employees | | Teachers | |
|---|-----|-----------------|--------|----------|--------|
| | | Male | Female | Male | Female |
| 8. Rates of Inactive Disabled Life Mortality at Selected Ages (number of deaths per 10,000 members) | 25 | 391 | 528 | 391 | 528 |
| | 30 | 315 | 467 | 315 | 467 |
| | 35 | 321 | 326 | 321 | 326 |
| | 40 | 332 | 215 | 332 | 215 |
| | 45 | 349 | 191 | 349 | 191 |
| | 50 | 376 | 207 | 376 | 207 |
| | 55 | 420 | 240 | 420 | 240 |
| | 60 | 488 | 288 | 488 | 288 |
| | 65 | 595 | 366 | 595 | 366 |
| | 70 | 763 | 487 | 763 | 487 |

| | Age | State | Teachers |
|---|-----|------------|----------|
| | | Employees* | |
| 9. Rates of Retirement at Selected Ages (number retiring per 1,000 members) | 45 | 35 | 25 |
| | 50 | 57 | 25 |
| | 55 | 150 | 113 |
| | 59 | 180 | 183 |
| | 60 | 350 | 350 |
| | 61 | 350 | 350 |
| | 62 | 350 | 350 |
| | 63 | 350 | 350 |
| | 64 | 350 | 350 |
| | 65 | 350 | 350 |
| | 70 | 1000 | 1000 |

* Members of Special Groups are assumed to retire when first eligible for unreduced benefits

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

| | Age | State Employees | Teachers |
|---|-----|--------------------|----------|
| 10. Rates of Disability at Selected Ages (members becoming disabled per 10,000 members)** | 25 | 6.8 | 4.6 |
| | 30 | 7.6 | 5.0 |
| | 35 | 10.2 | 5.0 |
| | 40 | 19.0 | 6.8 |
| | 45 | 27.9 | 15.5 |
| | 50 | 42.7 | 24.3 |
| | 55 | 81.0 | 33.0 |
| | 60 | 119.3 | 41.8 |

** 10% assumed to receive Workers Compensation benefits offsetting disability benefit; also, rates for State Special groups are higher by 7 per 10,000 at all ages.

11. Family Composition Assumptions 80% of active members are married and have two children born when the member is 24 and 28; children are dependent until age 18; female spouse is three years younger than male spouse; member has no dependent parents; unmarried members have beneficiaries entitled to benefits worth 80% as much as those of married members' beneficiaries.

12. Vacation/Sick Leave Credits For members who had 10 years of service on July 1, 1993, credits for unused vacation and sick leave may be used to increase final average compensation and/or creditable service. In order to reflect this, projected benefits are increased by 1.0% for state employees and 1.3% for teachers.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Methods

1. Funding Method

The Entry Age Normal method is used to determine costs. Under this funding method, a total contribution rate is determined which consists of two elements, the normal cost rate and the unfunded actuarial liability (UAL) rate.

For Teachers and State Employees, including each of the State Special Plans, a normal cost rate is determined for a typical new entrant. This rate is determined by taking the value, as of age at entry into the plan, of the member's projected future benefits, reducing it by the value of future member contributions, and dividing it by the value, also as of the member's entry age, of the member's expected future salary.

In addition to contributions required to meet the System's normal cost, contributions are required to fund the System's unfunded actuarial liability. The actuarial liability is defined as the present value of future benefits less the present value of future normal costs and future member contributions. The unfunded actuarial liability is the total of the actuarial liability for all members less the actuarial value of the System's assets. The actuarial liability includes projections of future member pay increases and future service credits and should not be confused with the Accrued Benefit Liability.

The unfunded actuarial liability is amortized by annual payments over an 17 year period from July 1, 2002. The payments are determined so that they will be a level percentage of pay, assuming payroll increases 5.5% per year.

2. Asset Valuation Method

For purposes of this June 30, 2002 actuarial valuation, assets are valued at an "actuarial value" as described in Part II.

APPENDIX C

SUMMARY OF PLAN PROVISIONS

APPENDIX C – SUMMARY OF PLAN PROVISIONS

State Employees and Teachers

1. Membership

Membership is a condition of employment for state employees and teachers, and optional for elected and appointed officials.

Membership ceases on the earlier of withdrawal of contributions, retirement, or death.

2. Member Contributions

Except as otherwise described below, members are required to contribute 7.65% of earnable compensation.

Contribution requirements for special groups:

State police, inland fisheries and wildlife officers, and marine resources officers employed before 9/1/84 – 8.65% of earnable compensation for 20 years; 7.65% thereafter.

Forest rangers and state prison employees employed before 9/1/84 – 8.65% of earnable compensation until eligible for retirement; 7.65% thereafter.

1998 Special Plan employees employed after 8/31/84 which include state prison employees, airplane pilots, forest rangers, inland fisheries and wildlife officers, marine resources officers, liquor inspectors and defense, veterans and emergency management firefighters employed at Bangor International Airport – 8.65% of earnable compensation for 25 years; 7.65% thereafter.

State police employed on or after 9/16/84 and special agent investigators hired before 6/21/82 – 8.65% of earnable compensation for 25 years; 7.65% thereafter.

3. Average Final Compensation

For purposes of determining benefits payable under the System, average final compensation is the average annual rate of earnable compensation for the three years of creditable service (not necessarily consecutive) which produce the highest such average.

For compensation paid on or after July 1, 1993, increases in earnable compensation of greater than 5% per year or 10% over the highest three years are not included in calculating average final compensation unless the employer pays the cost of including such compensation.

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Earnable compensation does not include sick and vacation pay for those members who had less than 10 years of service at July 1, 1993. For members for whom sick and vacation pay is includible in earnable compensation, these payments are included in applying the caps described in the preceding paragraph.

4. Creditable Service

Creditable service includes service while a member, certain service prior to the establishment of the System, purchased military service credit, other purchased service credit, and service while receiving disability benefits under the System.

5. Service Retirement Benefits

A. *Regular Plan (State Employees and Teachers)*

Eligibility for members with at least 10 years of creditable service on July 1, 1993

Normal Retirement Age: 60

Eligibility for members in active service and inactive members: 25 years of creditable service.

Eligibility alternative for members in active service: at least one year of creditable service immediately before retirement and at least normal retirement age.

Eligibility for members not in active service at retirement, and not in active service on or after October 1, 1999: at least 10 years of creditable service and at least normal retirement age.

Eligibility for members not in active service at retirement, but in active service on or after October 1, 1999: at least 5 years of creditable service and at least normal retirement age.

Benefit – $1/50$ of average final compensation multiplied by years of membership service up to 25 years of prior service, reduced by approximately $2\text{-}1/4\%$ for each year retirement age is less than age 60.

Form of payment – life annuity.

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Eligibility for members with less than 10 years of creditable service on July 1, 1993

Normal Retirement Age: 62

Eligibility for members in active service and inactive members: 25 years of creditable service.

Eligibility alternative for members in active service: at least one year of creditable service immediately before retirement age and at least normal retirement age.

Eligibility for members not in active service at retirement, and not in active service on or after October 1, 1999: at least 10 years of creditable service and at least normal retirement age.

Eligibility for members not in active service at retirement, but in active service on or after October 1, 1999: at least 5 years of creditable service and at least normal retirement age.

Benefit – $\frac{1}{50}$ of average final compensation multiplied by years of membership service and up to 25 years of prior service, reduced by 6% for each year retirement age is less than age 62.

Form of payment - life annuity.

B. *Special Plans (state employees)*

State police employed before 9/16/84; inland fisheries and wildlife officers and marine resource officers employed before 9/1/84:

Eligibility – 20 years of creditable service in named positions.

Benefit – $\frac{1}{2}$ of average final compensation plus 2% for each year of service in excess of 20. If greater, the pro-rated portion of the benefit for service before July 1, 1976 is based on annual pay instead of average final pay.

Form of payment – 50% joint and survivor annuity, or life annuity.

Forest rangers employed before 9/1/84:

Eligibility – age 50 with 25 years of creditable service as a forest ranger.

Benefit – $\frac{1}{2}$ of average final compensation plus 2% for each year of service earned after qualification for retirement. If greater, the pro-rated portion of

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the benefit for service before July 1, 1976 is based on annual pay instead of average final pay.

Form of payment – life annuity.

Airplane pilots employed before 9/1/84:

Eligibility – age 55 and 25 years of creditable service as an airplane pilot.

Benefit – greater of (1) $\frac{1}{2}$ of average final compensation plus 2% for each year of service earned after qualification for retirement, and (2) if retiring after age 60, the benefit under the general formula.

Form of payment – life annuity.

Liquor inspectors employed before 9/1/84:

Eligibility – age 55 and 25 years of creditable service as a liquor inspector.

Benefit – $\frac{1}{2}$ of average final compensation plus 2% for each year of service earned after qualification for retirement. If greater, the pro-rated portion of the benefit for service before July 1, 1976 is based on annual pay instead of average final pay.

Form of payment – life annuity.

State prison employees employed before 9/1/84:

Eligibility – age 50 and 20 years of creditable service as a prison employee.

Benefit – $\frac{1}{2}$ of average final compensation plus 2% for each year of service earned after qualification for retirement.

Form of payment – life annuity.

1998 Special Plan

1998 entrants: State prison employees, airline pilots, forest rangers and liquor inspectors, employed after 8/31/84; defense, veterans and emergency management firefighters employed on and after 7/1/98.

2001 entrants: Baxter State Park Authority rangers, correctional employees and state fire marshals employed on or after 1/1/2001.

2002 entrants: Capitol security officers.

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Eligibility – 10 years of creditable service under the 1998 Special Plan in one or a combination of the covered capacities after June 30, 1998 (1998 entrants) or after December 31, 1999 (2001 entrants), and the attainment of age 55 – OR – 25 years of creditable service in one or a combination of the covered capacities.

Benefit – for service prior to July 1, 1998 (1998 entrants) or prior to January 1, 2001 (2001 entrants), 1/50 of average final compensation multiplied by years of service reduced for retirement before age 60 or 62, except state police and certain prison employee benefits are reduced for retirement before age 55.

-AND-

for service starting on July 1, 1998 (1998 entrants) or on January 1, 2001 (2001 entrants), 1/50 of average final compensation multiplied by years of service reduced for retirement before age 55.

Form of payment – life annuity.

25 & Out Plan

1998 entrants: State police employed on or after 9/16/84 and special agent investigators hired before 6/21/82.

2002 entrants: Inland fisheries and wildlife officers and marine resources officers employed on and after 8/31/84.

Eligibility – 25 years of creditable service in named positions.

Benefit – 1/50 of average final compensation multiplied by years of service.

Form of payment – life annuity.

Members in Special Plans who fail to qualify for special plan benefits can receive regular plan benefits when and as eligible and qualified.

6. Disability Retirement Benefits other than No Age Benefits

Eligibility – disabled as defined in the MSRS statutes, prior to normal retirement age; employed prior to October 16, 1992 and did not elect No Age Disability Benefits.

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Benefit – 66-2/3% of average final compensation, reduced by employment earnings over the specified statutory limit, and to the extent that the benefit, in combination with worker's compensation and Social Security, exceeds 80% of average final compensation.

Form of payment – payment begins on termination of service and ceases on cessation of disability or after five or two years, depending on disability plan, unless the member is unable to engage in any substantially gainful activity; in which case payments cease on the earlier of 10 years following normal retirement age or date the service retirement benefit equals or exceeds the disability benefit.

Conversion to service retirement – during the period of disability average final compensation is increased with cost-of-living adjustments and service is credited. On the date when service benefits reach a level of 66 2/3% of average final compensation or 10 years after the normal retirement date, if earlier, the disability benefit converts to a service retirement benefit based on service and average final compensation at that point.

7. No Age Disability Retirement Benefits

Eligibility – disabled as defined in the MSRS statutes; employed on or after October 16, 1992 or employed prior to October 16, 1992 and elected the provisions of No Age Disability.

Benefit – 59% of average final compensation, reduced by employment earnings over the specified statutory limit, and to the extent that the benefit, in combination with worker's compensation and Social Security, exceeds 80% of average final compensation.

Form of payment – payment begins on termination of service and ceases on cessation of disability or after five or two years, depending on disability plan, unless the member is unable to engage in any substantially gainful activity; in which case payments cease on the date the service retirement benefit equals or exceeds the disability benefit.

Conversion to service retirement – during the period of disability average final compensation is increased with cost-of-living adjustments and service is credited. On the date when service benefits reach a level of 59% of average final compensation the disability benefit converts to a service retirement benefit based on service and average final compensation at that point.

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8. Pre-Retirement Ordinary Death Benefits

Eligibility – death while active, inactive eligible to retire, or disabled.

Benefit – designated beneficiary, spouse, child(ren), or parents entitled to benefit calculated as if deceased member had retired under Option 2 (see item 12); however, beneficiary may elect survivor benefits payable to a surviving spouse, dependent child(ren), parent, or other designated beneficiaries in monthly amounts varying by status of beneficiary and number of eligible survivors. Otherwise accumulated contributions with interest are payable to designated beneficiary, spouse, child(ren), older parents, or estate.

9. Pre-Retirement Accidental Death Benefits

Eligibility – death while active or disabled resulting from an injury received in the line of duty.

Benefit – if the member leaves no dependent children, 2/3 of the member's average final compensation to the surviving spouse until death.

- if the member is survived by a spouse who has the care of dependent child(ren) of the member, the surviving spouse shall receive an annual sum equal to the member's average final compensation. When there is no longer any dependent child, the surviving spouse shall receive 2/3 of member's average final compensation until death.
- if the member is survived by a spouse who does not have the care of the member's dependent child(ren), the surviving spouse and dependent child(ren) shall share equally an annual sum equal to the member's average final compensation. When there is no longer any dependent child the surviving spouse shall receive 2/3 of member's average final compensation until death.
- if the member leaves no spouse, the dependent child(ren) shall be paid an annual sum equal to the member's average final compensation. Benefits will cease when the last dependent child no longer meets the definition of "dependent child".

10. Refund of Contributions

Eligibility – termination of service without retirement or death.

Benefit – member's accumulated contributions with interest.

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11. Cost-of-Living Adjustments

All service and disability retirement and survivor benefits are adjusted each year that there is a percentage change in the Consumer Price Index, based on the Index.

Cost-of-living adjustments are effective September 1 and are applied to all benefits which have been in payment for twelve months. The maximum annual increase or decrease is 4%. Average final compensation used in determining disability benefits for disabled members is similarly adjusted for purposes of determining the recipient's service retirement benefit if and when the recipient moves to service retirement.

Members on service retirement who did not have 10 years of service on July 1, 1993 will not receive a cost-of-living adjustment until 12 months after their normal retirement age.

12. Methods of Payment of Service Retirement Benefits

At retirement, a member who retires with a benefit must choose from the following methods of payment:

Full Benefit: Unadjusted benefit paid for the life of the member only.

Option 1: Cash refund equal to the remaining employee contribution balance, if any, at the date of death (where the employee contribution balance has been reduced each month by the portion of the monthly benefit deemed to be provided by employee contributions.)

Option 2: 100% joint and survivor annuity.

Option 3: 50% joint and survivor annuity.

Option 4: Joint and survivor annuity at any percentage other than those available under Option 2 and Option 3.

Option 5: Designated percentage of the benefit (not less than 51%) payable to the member, with the remaining percentage (the two to equal 100%) payable to a beneficiary (may only be a sole beneficiary) while both are alive. At the death of either, the higher of the two percentages is paid to the survivor for the survivor's life, and the lower-percentage benefit ceases to be paid.

Option 6: 100% joint and survivor annuity with pop-up*.

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Option 7: 50% joint and survivor annuity with pop-up*.

Option 8: Option 4 with pop-up*.

* The “pop-up” feature attached to a given Option means that in the case of a beneficiary predeceasing the member, the member’s benefit will be revised prospectively to the amount that the benefit would have been had the member selected Full Benefit payment upon retirement.