



**IOWA PEACE OFFICERS'  
RETIREMENT, ACCIDENT AND  
DISABILITY SYSTEM**

Actuarial Valuation Report  
as of July 1, 2003

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**ACTUARIAL VALUATION  
OF THE  
IOWA PEACE OFFICERS'  
RETIREMENT, ACCIDENT AND DISABILITY SYSTEM**

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October 22, 2003

Board of Trustees  
Iowa Peace Officers' Retirement, Accident and Disability System  
Wallace State Office Building  
Des Moines, IA 50319

Dear Members of the Board:

At your request, we have conducted our annual valuation of the Iowa Peace Officers' Retirement, Accident and Disability System as of July 1, 2003. The results of the valuation are contained in this report. The plan provisions and actuarial assumptions are the same as those used in last year's valuation.

In preparing our report, we relied, without audit, on information (some oral and some written) supplied by the System's staff. This information includes, but is not limited to, statutory provisions, member data and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted principles and practices which are consistent with the principles prescribed by the Actuarial Standards Board (ASB) and the Code of Professional Conduct and Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries.

We hereby further certify that all costs, liabilities, rates of interest and other factors for the System have been determined on the basis of actuarial assumptions and methods which are internally consistent, individually reasonable (taking into account the experience of the Plan and reasonable expectations of future experience); and which, in combination, offer our best estimate of anticipated experience under the Plan. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that projected by the actuarial assumptions. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in Appendix C.



Actuarial computations presented in this report are for purposes of determining the actuarial contribution rates for funding the System. Determinations for purposes other than this may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes. Any distribution of this report must be in its entirety including this cover letter, unless prior written consent from Milliman USA is obtained.

I, Patrice A. Beckham, F.S.A., am a member of the American Academy of Actuaries and a Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

I, Brent A. Banister, F.S.A., am a member of the American Academy of Actuaries and a Fellow of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

MILLIMAN USA, INC.

Patrice A. Beckham, F.S.A.  
Consulting Actuary

Brent A. Banister, F.S.A.  
Actuary

## SECTION 1

### EXECUTIVE SUMMARY

#### Purpose of the Report

This report presents the results of the July 1, 2003 actuarial valuation of the Iowa Peace Officers' Retirement, Accident and Disability System (PORS). The primary purposes of performing the valuation are as follows:

- to determine the normal contribution rate payable by the State under Section 97A.8(1b) of the Code of Iowa.
- to satisfy the reporting requirements under Chapter 97A.8 of the Code of Iowa.
- to disclose asset and liability measures indicating the current funded status of the System as of the valuation date.
- to analyze and report on trends in System contributions, assets, and liabilities over the past several years.
- to provide financial reporting information in accordance with Statements No. 25 and 27 of the Governmental Accounting Standards Board.

The law governing the Peace Officers' Retirement, Accident and Disability System requires the actuary, as the technical advisor to the Board of Trustees, to make "an annual valuation of the assets and liabilities of the funds of the System created by this Chapter." [Chapter 97A, Section 5].

The valuation results provide a "snapshot" view of the System's financial condition on July 1, 2003. The 2003 valuation is based on the same benefit provisions, actuarial assumptions and methods as last year's valuation.

The State's normal contribution rate increased significantly from 24.03% in last year's valuation to 28.61% this year based on a member contribution rate of 9.35%. This rate exceeds the State's appropriated contribution rate of 17% by 11.61%. Milliman did not make any assumption regarding the operation of Chapter 97A relating to the Board's ability to raise member contribution rates. Several factors contributed to the increase in the normal contribution rate:

- investment return on the actuarial value of assets below the expected rate
- actual contributions below the actuarial rate.
- aging of the active members due to no new entrants.

Changes in both the System's assets and liabilities impact the contribution rate. Experience which is more favorable than anticipated, based on actuarial assumptions, will lower the contribution rate and experience less favorable than expected will increase the contribution rate. The member's contribution rate is fixed. Therefore, the entire change in the total contribution rate is reflected in the State's normal contribution rate, which creates more volatility.

## Contribution Rates

The total contribution rate for the Plan Year beginning July 1, 2003 is 37.96% of covered payroll. The State's portion is 28.61%. This exceeds the prior year's rate by 4.58%. The sources of change are as follows:

|  | Plan Year Beginning |                     |
|--|---------------------|---------------------|
|  | <u>July 1, 2003</u> | <u>July 1, 2002</u> |
| Prior year total contribution rate                                 | 33.38%              | 26.12%              |
| • change due to clarification of flat escalator                    | 0.00%               | 2.65%               |
| • change due to asset gains/losses                                 | 4.46%               | 3.26%               |
| • change due to other actuarial experience                         | (0.40)%             | 1.37%               |
| • change due to actual contribution rate other than actuarial rate | 0.52%               | (0.02%)             |
| Current year total contribution rate                               | 37.96%              | 33.38%              |
| Members' contribution rate   | <u>9.35%</u>        | <u>9.35%</u>        |
| State's normal contribution rate                                   | <b>28.61%</b>       | <b>24.03%</b>       |

## Liabilities

The liabilities of the System are future benefit payment promised to current members. There are different measurements of liability, depending on which type of future benefits are being valued. The standard measurements include:

- **Actuarial Balance Sheet Liability** is used in developing the total contribution rate. This liability is calculated based on both future salary projections and service credits to retirement or other separation from service. It represents the present value of all benefits expected to be paid to all current System participants (retired, active and deferred vested) in the future. The difference between the actuarial balance sheet liability and the actuarial value of assets is the present value of future contributions to the System, which ultimately determines the total contribution rate.
- **Projected Benefit Obligation (PBO)** was a liability measurement used for reporting purposes under GASB No. 5. New GASB standards replaced this reporting basis, but POR continues to report for GASB purposes using the PBO. The PBO represents the present value of benefits based on future payroll projections but only reflecting service credits as of June 30, 2003. This measure of the funded status of the plan does not impact the normal contribution rate.
- **Liability for Accrued Benefits** is used only for informational purposes. It does not impact the total contribution rate for the System. This liability represents the present value of benefits earned to date, based on service and salary as of June 30, 2003. The liability for accrued benefits is often used as a measure of the funded status since it represents the amount required to pay all accrued benefits if the fund were to liquidate on the measurement date.

Each liability measurement discussed above is used for a different purpose. Therefore, the relative importance of the measurement will depend on the perspective of the person using the information. From an actuarial viewpoint, the actuarial balance sheet liability is the most critical because it, along with the actuarial value of assets, ultimately determines the total contribution rate for the System. The other liability figures are valuable because they provide useful comparisons of assets and liabilities, but the actuarial balance sheet liability is the driving force in determining the contribution rate.

A comparison of System liabilities between July 1, 2002 and July 1, 2003 are summarized below:

|                                   | July 1        |               | Change |
|-----------------------------------|---------------|---------------|--------|
|                                   | 2003          | 2002          |        |
| Actuarial Balance Sheet Liability | \$413,255,179 | \$401,249,369 | 3.0%   |
| PBO                               | 306,098,170   | 294,514,429   | 3.9%   |
| Liability for Accrued Benefits    | 260,106,713   | 247,567,108   | 5.1%   |

**Assets**

As of July 1, 2003, the System had total funds, measured on a market value basis, of \$215,254,539. This was a decrease of \$4,119,016 from last year's market value. The components of the change in the market value of assets are shown below:

|                                     | Market Value  |
|-------------------------------------|---------------|
| Assets, July 1, 2002                | \$219,373,555 |
| • Employer and Member Contributions | 8,587,098     |
| • Benefit Payments                  | (13,352,934)  |
| • Expenses                          | (76,611)      |
| • Investment Income                 | 923,383       |
| Assets, July 1, 2003                | \$215,454,491 |

The dollar weighted rate of return on the market value of assets, net of expenses, was 0.4%.

The market value of assets is not used directly in the calculation of the contribution rate. The System uses an asset valuation method to smooth the effects of market fluctuations. The actuarial value of assets spreads the difference between the actual return and the expected return (based on the actuarial assumption) over four years. See page 12 for a detailed development of the actuarial value of assets. The smoothing method was first implemented with the July 1, 2001 valuation.

Between July 1, 2002 and July 1, 2003, the actuarial value of assets decreased by \$4.5 million.

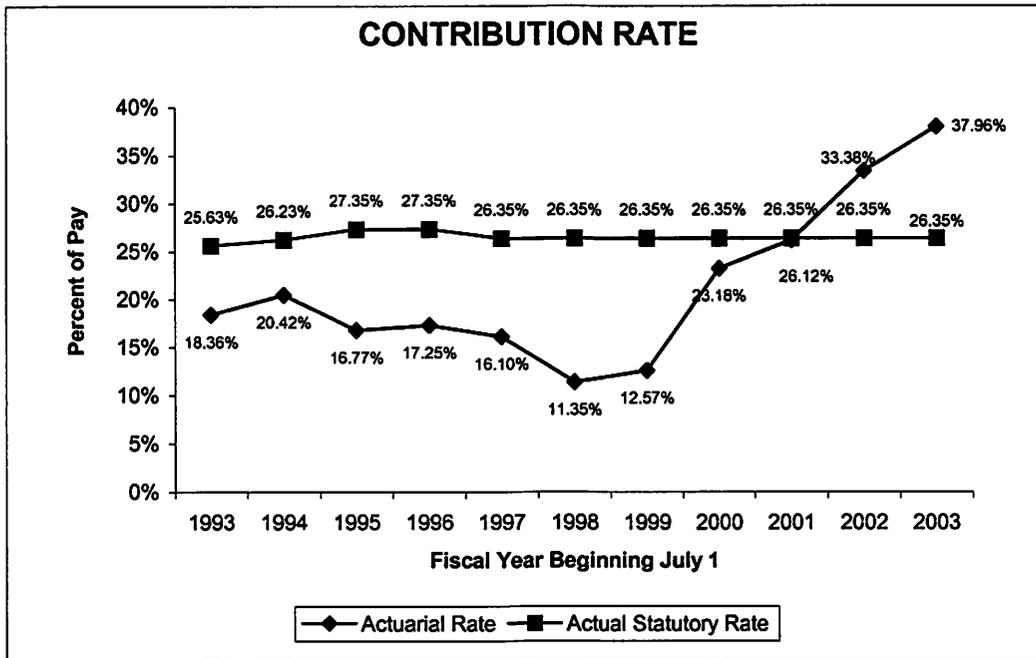
|   | Plan Year Ending June 30 |               |
|---|--------------------------|---------------|
|   | 2003                     | 2002          |
| Actuarial Value of Net Assets at the beginning of the plan year | \$250,914,077            | \$249,226,895 |
| Change in Assets  |                          |               |
| • Contributions (including lump sum)                            | 8,587,098                | 8,472,827     |
| • Benefits and Refunds  | (13,352,934)             | (11,904,733)  |
| • Administrative Expenses                                       | (76,611)                 | (70,372)      |
| • Actual Investment Return                                      | 923,383                  | (4,526,465)   |
| • Deferred (Gain)/Loss  | (551,353)                | 9,715,925     |
| Total Changes   | (4,470,417)              | 1,687,182     |
| Actuarial Value of Net Assets at the end of the plan year       | \$246,443,660            | \$250,914,077 |

The expected investment earnings on the actuarial value of assets for the plan year ending June 30, 2003 are based on an assumed rate of return of 8.0%. The actual rate of return on the actuarial value of assets, was + 0.1%, resulting in an actuarial loss of \$19,598,718 and a corresponding increase in the contribution rate of 4.46%. More detail on the System assets is presented in Section 2 of this report.

Due to the use of an asset smoothing method, there is approximately \$31 million of deferred actuarial investment loss that has not yet been recognized. Without investment returns significantly in excess of the 8% actuarial assumption in the next few years to offset this deferred investment loss, it will gradually be reflected in the actuarial value of assets over the next three years. As this occurs through the asset smoothing method, future valuations are expected to reflect an increase in the normal contribution rate. If the entire amount of deferred loss was recognized immediately in the 2003 valuation, it would increase the contribution rate reported herein by 7.05% to total employer contribution rate of 35.66%.

## Comparison of Major Valuation Results

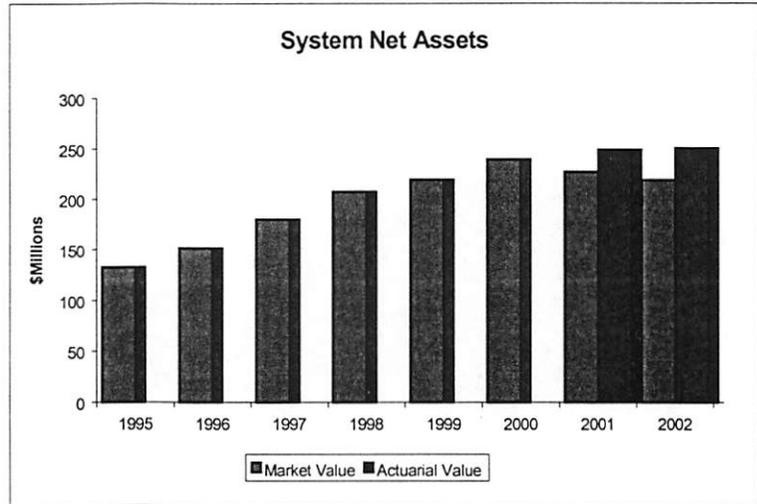
The major findings of the 2003 valuation compared with prior valuation results are summarized and compared in the following charts.



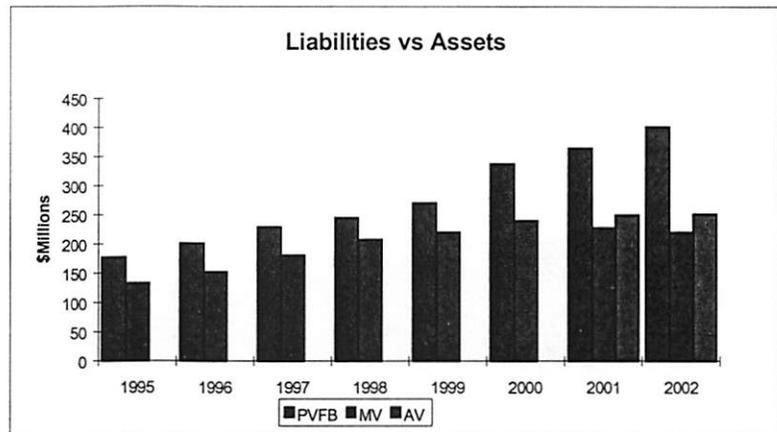
*The statutory contribution rate has generally exceeded the actuarial contribution rate in the past decade. The poor investment returns for the last three years have increased the actuarial rate above the statutory rate. Due to the deferred (unrecognized) investment loss, the actuarial rate is expected to increase in future years. However, the investment return in the next few years will determine by how much the actuarial rate will continue to exceed the statutory rate.*

The System's assets have grown considerably due to investment performance and contributions.

An asset smoothing method was implemented with the 2001 valuation. Actual investment performance below the 8% assumption resulted in the actuarial value of assets exceeding the market value since 2001.



Projected liabilities and assets have increased during this period. Poor investment experience since FYE 2001 resulted in a decrease in the market value of assets and a lower than expected value for the actuarial value of assets.



PVFB = Present Value of Future Benefits (Actuarial Balance Sheet Liability)  
 MV = Market Value of Assets  
 AV = Actuarial Value of Assets

**COMPARISON OF  
PRINCIPAL VALUATION RESULTS**

|                                     | July 1, 2003  | July 1, 2002  | % Chg |
|-------------------------------------|---------------|---------------|-------|
| <b>SYSTEM MEMBERSHIP</b>            |               |               |       |
| 1. Active Membership                |               |               |       |
| - Number of Participants            | 600           | 628           | (4.5) |
| - Projected Covered Payroll         | \$ 33,019,306 | \$ 32,808,486 | 0.6   |
| - Average Salary                    | 55,032        | 52,330        | 5.2   |
| - Average Attained Age              | 38.8          | 37.9          | 2.4   |
| - Average Service                   | 13.6          | 12.7          | 7.1   |
| 2. Inactive Membership              |               |               |       |
| - Number of Vested Deferred Members | 26            | 19            | 36.8  |
| - Number of Retired Members         | 472           | 461           | 2.4   |
| - Average Annual Benefit            | \$ 28,734     | \$ 27,356     | 5.0   |
| <b>ASSETS AND LIABILITIES</b>       |               |               |       |
| 1. Net Assets                       |               |               |       |
| - Market Value                      | \$215,454,491 | \$219,373,555 | (1.8) |
| - Actuarial Value                   | \$246,443,660 | \$250,914,077 | (1.8) |
| 2. Projected Liabilities            |               |               |       |
| - Annuity Savings Fund              | \$ 0          | \$ 0          | 0.0   |
| - Pension Reserve Fund              | 182,680,225   | 172,079,286   | 6.2   |
| - Annuity Reserve Fund              | 0             | 0             | 0.0   |
| - Pension Accumulation Fund         | 230,574,954   | 229,170,083   | 0.6   |
| - Total                             | \$413,255,179 | \$401,249,369 | 3.0   |
| <b>SYSTEM CONTRIBUTIONS</b>         |               |               |       |
| Total Contribution Rate             | 37.96%        | 33.38%        | 13.8  |
| Member's Contribution Rate          | 9.35%         | 9.35%         | 0.0   |
| State's Normal Contribution Rate    | 28.61%        | 24.03%        | 19.1  |
| Appropriated Contribution Rate      | 17.00%        | 17.00%        | 0.0   |
| Excess (Shortfall)                  | (11.61)%      | (7.03)%       | 65.3  |

## **SECTION 2**

### **SYSTEM ASSETS**

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is July 1, 2003. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, which are generally in excess of assets. The actuarial process leads to a method of determining the contributions needed by members and the employer in the future to balance the System assets and liabilities.

#### **Market Value of Assets**

The current market value represents the “snapshot” or “cash-out” value of System assets as of the valuation date. In addition, market values of assets provide a basis for measuring investment performance from time to time. At July 1, 2003 the market value of assets for the Retirement System was \$215,454,491. Table 1 is a comparison, at market values, of System assets as of July 1, 2002 and July 1, 2003, in total and by investment category. Table 2 summarizes the change in the market value of assets from July 1, 2002 to July 1, 2003 by System.

#### **Actuarial Value of Assets**

Neither the market value of assets, representing a ‘cash-out’ value of System assets, nor the book value of assets, representing the cost of investments, may be the best measure of the System’s ongoing ability to meet its obligations.

To arrive at a suitable value for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens swings in the market value while still indirectly recognizing market values. The actuarial value of assets is equal to the market value of assets less a four year phase-in of the excess (shortfall) between expected investment return and actual investment return.

Tables 3 and 4 show the development of the actuarial value of assets (AVA) as of July 1, 2003. Due to the negative rate of return on the market value of assets over the last three years, the actuarial value of assets exceeds the market value as of the valuation date.

**TABLE 1**  
**ANALYSIS OF NET ASSETS AT MARKET VALUE**

|                                  | July 1, 2003         |               | July 1, 2002         |               |
|----------------------------------|----------------------|---------------|----------------------|---------------|
|                                  | Amount               | % of<br>Total | Amount               | % of<br>Total |
| Pooled Cash                      | \$ 3,798,559         | 1.4           | \$ 3,957,740         | 1.8           |
| Receivables                      | 4,048,612            | 1.6           | 2,752,635            | 1.2           |
| Common Stocks                    | 113,521,457          | 43.5          | 122,590,093          | 54.5          |
| Foreign Currency                 | 0                    | 0.0           | 586,887              | 0.3           |
| Security Lending Cash Collateral | 41,425,351           | 15.9          | 3,449,011            | 1.5           |
| Bonds                            | <u>98,000,905</u>    | <u>37.6</u>   | <u>91,719,143</u>    | <u>40.7</u>   |
| <b>Subtotal</b>                  | \$260,794,884        | 100.0%        | \$225,055,509        | 100.0%        |
| Payables                         | <u>45,340,393</u>    |               | <u>5,681,954</u>     |               |
| <b>NET ASSETS</b>                | <u>\$215,454,491</u> |               | <u>\$219,373,555</u> |               |

**TABLE 2**  
**SUMMARY OF FUND ACTIVITY**  
(Market Value)

|                                      |                       |
|--------------------------------------|-----------------------|
| <b>1. NET ASSETS ON JULY 1, 2002</b> | <b>\$219,373,555</b>  |
| <b>2. CONTRIBUTIONS</b>              |                       |
| a. Member Contributions              | \$ 3,046,982          |
| b. Employer Contributions            | 5,540,116             |
| c. Lump Sum Contributions            | <u>0</u>              |
| <b>d. Total Contributions</b>        | <b>\$ 8,587,098</b>   |
| <b>3. BENEFIT PAYMENTS</b>           |                       |
| a. Pension and annuity payments      | \$ 13,345,261         |
| b. Refunds                           | <u>7,673</u>          |
| <b>c. Total Benefit Payments</b>     | <b>\$ 13,352,934</b>  |
| <b>4. ADMINISTRATIVE EXPENSE</b>     | <b>\$ 76,611</b>      |
| <b>5. INVESTMENT INCOME</b>          | <b>\$ 923,383</b>     |
| <b>6. NET ASSETS ON JULY 1, 2003</b> |                       |
| (1) + (2d) – (3c) – (4) + (5)        | <b>\$ 215,454,491</b> |

**TABLE 3**

**CALCULATION OF EXCESS (SHORTFALL) INVESTMENT INCOME FOR  
ACTUARIAL VALUE OF ASSETS**

|  | <u>Plan Year Ending June 30</u> |               |               |
|--|---------------------------------|---------------|---------------|
|  | <u>2003</u>                     | <u>2002</u>   | <u>2001</u>   |
| 1. Market value of assets, beginning of year                     | \$219,373,555                   | \$227,402,298 | \$239,568,583 |
| 2. Contributions during year                                     |                                 |               |               |
| a. Member  | 3,046,982                       | 3,006,461     | 2,891,537     |
| b. Employer  | 5,540,116                       | 5,466,366     | 5,291,371     |
| c. Lump sum payments   | <u>0</u>                        | <u>0</u>      | <u>0</u>      |
| d. Total   | 8,587,098                       | 8,472,827     | 8,182,908     |
| 3. Benefits paid during year                                     | 13,345,261                      | 11,889,295    | 10,327,898    |
| 4. Refunds paid during year                                      | 7,673                           | 15,438        | 3,050         |
| 5. Expected net investment income at 8%                          |                                 |               |               |
| a. Market value of assets, beginning of year                     | 17,549,884                      | 18,192,182    | 19,165,486    |
| b. Contributions   | 336,876                         | 332,389       | 321,015       |
| c. Benefits  | (523,541)                       | (466,417)     | (405,163)     |
| d. Refunds   | <u>(301)</u>                    | <u>(605)</u>  | <u>(120)</u>  |
| e. Total   | 17,362,918                      | 18,057,549    | 19,081,218    |
| 6. Expected Value of Assets<br>(1) + (2d) – (3) – (4) + (5e)     | 231,970,637                     | 242,027,941   | 256,501,761   |
| 7. Market value of assets, end of year                           | 215,454,491                     | 219,373,555   | 227,402,298   |
| 8. Excess (shortfall) of investment income for Year<br>(7) – (6) | (16,516,146)                    | (22,654,386)  | (29,099,463)  |

**TABLE 4**

**DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS**

| <u>Item</u>  | <u>Plan Year Ending June 30</u> |                |
|--|---------------------------------|----------------|
|  | <u>2003</u>                     | <u>2002</u>    |
| 1. Excess (Shortfall) of investment income<br>for current and previous 2 years |                                 |                |
| a. Current year  | \$(16,516,146)                  | \$(22,654,386) |
| b. Current year - 1  | (22,654,386)                    | (29,099,463)   |
| c. Current year - 2  | <u>(29,099,463)</u>             | <u>N/A*</u>    |
| d. Total   | (68,269,995)                    | (51,753,849)   |
| 2. Deferral of excess (shortfall) of investment<br>income                      |                                 |                |
| a. Current year (75%)  | (12,387,110)                    | (16,990,790)   |
| b. Current year - 1 (50%)  | (11,327,193)                    | (14,549,732)   |
| c. Current year - 2 (25%)  | <u>(7,274,866)</u>              | <u>N/A*</u>    |
| d. Total deferred  | (30,989,169)                    | (31,540,822)   |
| 3. Market value of plan net assets, end of year                                | 215,454,491                     | 219,373,535    |
| 4. Actuarial value of plan assets, end of year<br>(Item 3 - Item 2d)           | \$246,443,660                   | \$250,914,077  |
| 5. Actuarial value divided by market value                                     | 114.4%                          | 114.4%         |

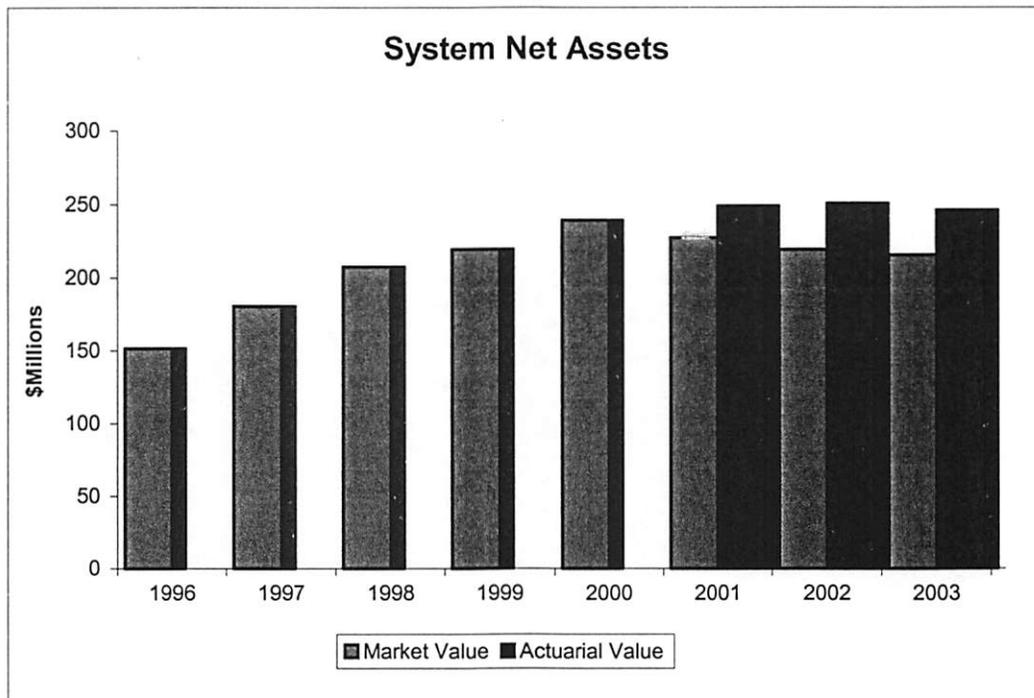
\*The asset valuation method was first implemented with the July 1, 2001 actuarial valuation.

**TABLE 5**  
**HISTORICAL COMPARISON**

| <u>Value As of</u> | <u>Market Value of Net Assets</u> | <u>Estimated Rate of Return (MVA)*</u> | <u>Actuarial Value of Assets**</u> | <u>Estimated Rate of Return (AVA)</u> |
|--------------------|-----------------------------------|--|------------------------------------|---------------------------------------|
| July 1, 1996       | 151,753,761                       | 13.8%                                  |                                    |                                       |
| July 1, 1997       | 180,551,242                       | 18.9%                                  |                                    |                                       |
| July 1, 1998       | 207,649,859                       | 15.3%                                  |                                    |                                       |
| July 1, 1999       | 219,462,509                       | 6.2%                                   |                                    |                                       |
| July 1, 2000       | 239,568,583                       | 10.2%                                  |                                    |                                       |
| July 1, 2001       | 227,402,298                       | -4.2%                                  | 249,226,895                        | 4.9%                                  |
| July 1, 2002       | 219,373,555                       | -2.0%                                  | 250,914,077                        | 2.1%                                  |
| July 1, 2003       | 215,454,491                       | 0.4%                                   | 246,443,660                        | 0.1%                                  |

\*Net of Expenses - Information prior to 1996 not readily available.

\*\*A smoothing method for actuarial value of assets was implemented July 1, 2001



## SECTION 3

### SYSTEM LIABILITIES

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the System as of the valuation date, July 1, 2003. In this section, the discussion will focus on the commitments of the System, which are referred to as its liabilities.

Table 6 contains an analysis of the actuarial present value of all future benefits (PVFB) for contributing members, inactive members, retirees and their beneficiaries. These liabilities include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes measures of both benefits already earned and future benefits to be earned. For all members, active and retired, the value extends over benefits earnable and payable for the rest of their lives and, if an optional benefit is chosen, for the lives of the surviving beneficiaries.

The actuarial assumptions used to determine liabilities are based on the results of an Experience Study prepared for the System. The assumptions, as adopted by the Board, are shown in Appendix C.

All liabilities reflect the benefit structure in place July 1, 2003.

#### Explanation of Fund Accounts

The **Annuity Savings Fund** liability represents the accumulated contributions of the individual members and of inactive members who have withdrawn with vested pension rights. Prior amendments have allowed members to withdraw their balance after July 1, 1979.

The **Pension Accumulation Fund** liability represents the estimated present value of future benefits payable by the State to present active members and their beneficiaries and to any inactive members with vested pension rights.

The **Annuity Reserve Fund** liability represents the estimated present value of future annuity benefits payable to members and their beneficiaries now receiving such benefits. The annuity benefits, provided by accumulated contributions of the members, remain constant as they are not adjusted annually under the "half-escalator" provision.

The **Pension Reserve Fund** liability represents the estimated present value of future pension benefits payable to members and their beneficiaries now receiving such benefits. These benefits are assumed to increase according to the "half-escalator" plus fixed dollar amount provision excluding members who terminated with vested benefits whose benefits remain constant.

Chapter 97A.8 states that the actuary shall annually determine the amounts required in the Pension Reserve and Annuity Reserve Funds. If the amount required is less than the amount in the particular reserve fund, the Board of Trustees shall transfer the excess funds from the particular reserve fund to the pension accumulation fund. If the amount required is more than the amount in the particular reserve fund, the respective Board of Trustees shall transfer the additional amount prescribed by the actuary to the particular reserve fund from the pension accumulation fund.

The basic valuation results calculated under the Aggregate Actuarial Cost Method show the required liabilities to be carried in the Pension Reserve Fund and the Annuity Reserve Fund on June 30, 2003. These amounts should be compared with the assets carried in such funds on June 30, 2003 and transfers to or from the Pension Accumulation Fund should then be made to adjust the asset balances so that they equal the required liabilities.

**TABLE 6**  
**ACTUARIAL BALANCE SHEET LIABILITIES**

The actuarial balance sheet liabilities represent the present value of all future benefits expected to be paid from the fund for current members, including both future salary projections and service credits.

|  | <u>July 1, 2003</u> | <u>July 1, 2002</u> |
|--|---------------------|---------------------|
| Present Value of Projected Future Benefits |                     |                     |
| 1. Annuity Savings Fund                    | \$ 0                | \$ 0                |
| 2. Pension Accumulation Fund               | 230,574,954         | 223,153,651         |
| 3. Annuity Reserve Fund                    | 0                   | 0                   |
| 4. Pension Reserve Fund                    | <u>182,680,225</u>  | <u>172,079,286</u>  |
| Total                                      | \$413,255,179       | \$401,249,369       |

**TABLE 7****PRESENT VALUE OF ACCRUED BENEFITS**

The present value of accrued benefits represents the lump sum value, as of the valuation date, of benefits earned to date based on service and salary as of the valuation date.

| <u>Present Value of Accrued Benefits</u>                   | <u>July 1, 2003</u> | <u>July 1, 2002</u> |
|--|---------------------|---------------------|
| 1. Vested Benefits   |                     |                     |
| a. Participants currently receiving payments               | \$182,680,225       | \$172,079,286       |
| b. Deferred vested members                                 | 1,279,921           | 1,026,537           |
| c. Active members  | <u>73,343,426</u>   | <u>71,064,660</u>   |
| d. Total vested benefits                                   | \$257,303,572       | \$244,170,483       |
| 2. Nonvested Benefits                                      | \$ 2,803,141        | \$ 3,396,625        |
| 3. Total present value of accrued benefits                 | \$260,106,713       | \$247,567,108       |
| 4. Market Value of Assets                                  | \$215,454,491       | \$219,373,555       |
| 5. Unfunded (Surplus) Present Value of<br>Accrued benefits | \$ 44,652,222       | \$ 28,193,553       |
| 6. Funded Percentage                                       | 82.8%               | 88.6%               |

## **SECTION 4**

### **SYSTEM CONTRIBUTIONS**

The previous two sections were devoted to a discussion of the assets and liabilities of the System. A comparison of Tables 6 and 4 indicates that current assets fall short of meeting the present value of future benefits (total System liability). This is expected in all but a fully closed down fund, where no further contributions are anticipated.

In an active system, there will almost always be a difference between the actuarial value of assets and total liabilities. This deficiency has to be made up by future contributions and investment returns. An actuarial valuation sets out a schedule of future contributions that will deal with this deficiency in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. Under an actuarial cost method the contributions required to meet the difference between current assets and current liabilities are allocated to each year of service, and are called the normal cost.

The actuarial funding method used to determine System costs is the Aggregate Cost method. A more detailed description of this method can be found in Appendix C.

**TABLE 8**  
**ACTUARIAL BALANCE SHEET**  
as of  
**July 1, 2003**

**ASSETS**

|                                       |           |                    |
|---------------------------------------|-----------|--------------------|
| Actuarial value of assets             | \$        | 246,443,660        |
| Present value of future contributions |           | <u>166,811,519</u> |
| <b><u>Total Net Assets</u></b>        | <b>\$</b> | <b>413,255,179</b> |

**LIABILITIES**

**Present Value of Projected Benefits**

|                                   |           |                    |
|-----------------------------------|-----------|--------------------|
| Retired Members and Beneficiaries | \$        | 182,680,225        |
| Active Members                    |           |                    |
| Retirement                        | \$        | 201,775,822        |
| Ordinary death                    |           | 7,647,689          |
| Accidental death                  |           | 3,664,486          |
| Accidental disability             |           | 8,357,810          |
| Ordinary disability               |           | 7,808,995          |
| Termination                       |           | 40,231             |
| Total                             |           | 229,295,033        |
| Inactive Vested Members           |           | <u>1,279,921</u>   |
| <b><u>Total Liabilities</u></b>   | <b>\$</b> | <b>413,255,179</b> |

## SECTION 5

### PLAN ACCOUNTING INFORMATION

One liability measurement for evaluating the funded status of the Plan is the standardized "pension benefit obligation". This value (known as the actuarial present value of credited projected benefits) is that portion of the present value of all projected pension benefits, adjusted for the effects of projected salary increases, estimated to be payable in the future as a result of employee service to date under the projected unit credit actuarial cost method. The measure is independent of the actuarial funding method used to determine contributions to the System.

The pension benefit obligation as determined for both this year and last year is summarized below:

|  | <u>7/1/03</u>    | <u>7/1/02</u>    |
|--|------------------|------------------|
| <b>Pension Benefit Obligation</b>  |                  |                  |
| Former Members (in pay status or deferred)   | \$ 183,960,146   | \$ 173,105,822   |
| Current Employees:   |                  |                  |
| - Estimated accumulated employee contributions including allocated investment earnings | 41,170,800       | 37,571,356       |
| - Employer-financed vested obligation  | 73,050,368       | 74,574,830       |
| - Employer-financed nonvested obligation   | <u>7,916,856</u> | <u>9,262,421</u> |
| Total Pension Benefit Obligation   | \$ 306,098,170   | \$ 294,514,429   |
| <br>   |                  |                  |
| Net Market Value of Assets Available for Benefits                                      | \$ 215,454,491   | \$ 219,373,555   |
| <br>   |                  |                  |
| Unfunded Pension Benefit Obligation  | \$ 90,643,679    | \$ 75,140,874    |
| <br>   |                  |                  |
| Funded Percentage  | 70.4%            | 74.5%            |

The actuarial assumptions used to determine the pension benefit obligation are the same as those used in the respective valuations (see the Actuarial Assumptions section).

**TABLE 9**  
**DEVELOPMENT OF THE**  
**NORMAL CONTRIBUTION RATE**

|  | <u>7/1/03</u>  | <u>7/1/02</u>  |
|--|----------------|----------------|
| <b>1. Actuarial Present Value of Projected Benefits</b>  | \$ 413,255,179 | \$ 401,249,369 |
| <b>2. Actuarial Value of Plan Assets</b>   | 246,443,660    | 250,914,077    |
| <b>3. Actuarial Present Value of Future Contributions</b><br>The excess of the actuarial present value of projected pension benefits over the actuarial value of assets) (the amount used to determine normal cost). | 166,811,519    | 150,335,292    |
| <b>4. Actuarial Present Value of Future Valuation Earnings of Active Members</b>   | 439,419,957    | 450,436,241    |
| <b>5. Total Normal Contribution Rate</b><br>The actuarial present value of future contributions divided by the actuarial present value of future earnings.   | 37.96%         | 33.38%         |
| <b>6. Member's Contribution Rate</b>   | 9.35%          | 9.35%          |
| <b>7. State's Normal Contribution Rate (5) - (6)</b>   | 28.61%         | 24.03%         |
| <b>8. Contribution Rate Appropriated</b>   | 17.00%         | 17.00%         |
| <b>9. Excess (Shortfall)</b><br>The excess of the appropriated contribution rate over the State's normal contribution rate:<br>(8) - (7)   | (11.61%)       | (7.03)%        |
| <b>10. Projected Covered Payroll</b>   | \$ 33,019,306  | \$ 32,808,486  |
| <b>11. Estimated Amount of State's Contribution</b>  |                |                |
| (a) Normal Contribution: (7) x (10)  | 9,446,823      | 7,883,879      |
| (b) Appropriated Contribution: (8) x (10)  | 5,613,282      | 5,577,443      |
| (c) Excess (Shortfall): (11b) - (11a)  | (3,833,541)    | (2,306,436)    |

In an effort to enhance the understandability and usefulness of the pension information that is included in the financial reports of pension plans for state and local governments, the Governmental Accounting Standards Board (GASB) issued Statement No. 25 - Financial Reporting for Defined Benefit Pension Plans and Statement No. 27 - Accounting for Pensions by State and Local Governmental Employers.

GASB Statement No. 25 establishes a financial reporting framework for defined benefit plans. In addition to two required statements regarding plan assets, the statement requires two schedules and accompanying notes disclosing information relative to the funded status of the plan and historical contribution patterns.

- The Schedule of Funding Progress is not required for plans which use the Aggregate Method to determine the annual required contribution. Since the information shown in the schedule is similar to the information formerly required under GASB Statement No. 5, the Peace Officers' Retirement, Accident, and Disability System has elected to prepare the schedule based on the Projected Unit Credit method. The system uses an asset smoothing method, which was first implemented with the July 1, 2001 valuation.
- The Schedule of Employer Contributions provides historical information about the annual required contribution (ARC) and the percentage of the ARC that was actually contributed. For the Peace Officers' Retirement, Accident and Disability System, the ARC is equal to State's Normal Contribution Rate multiplied by the expected covered payroll for the fiscal year.

GASB Statement No. 27 establishes standards for the measurement, recognition, and display of pension expense and related liabilities. Annual pension cost is measured and disclosed on the accrual basis of accounting. In general, the annual pension cost is equal to the ARC with adjustments for past under-contributions or over-contributions. These adjustments are based on the net pension obligation (NPO) that represents the cumulative difference between the annual pension cost and the actual contributions to the plan. The first adjustment is equal to interest on the NPO which is added to the ARC. The second adjustment is an amortization of the NPO which is deducted from the ARC. Because the system uses the Aggregate method to determine the ARC, the amortization basis is a level percentage of payroll over the average remaining service life of active members.

These statements were adopted by the Peace Officers' Retirement System for the 1996 fiscal year. A transition pension liability (asset) was developed under Statement No. 27 equal to the cumulative difference between the actuarially determined funding requirement and the actual amount contributed for fiscal years 1988 through 1995. As of the adoption date, all outstanding pension liabilities (assets) were adjusted to equal the transition NPO.

Based on the NPO of \$(17,495,537) as of June 30, 2002 and the annual required contribution for the 2003 fiscal year of \$7,883,879, the annual pension cost for fiscal year end 2003 is \$7,831,041. The actual employer contribution was \$5,540,116. The effect of the smaller contribution is to increase the net pension obligation by \$2,290,925 to \$(15,204,612) as of June 30, 2003. As a result, the annual pension cost for the 2004 fiscal year is \$9,465,385 based on the annual required contribution of \$9,446,823.

**TABLE 10**  
**SCHEDULE OF FUNDING PROGRESS**

In accordance with Statement No. 25 of the Governmental Accounting Standards Board

| Actuarial<br>Valuation<br>Date | Actuarial<br>Value of<br>Assets**<br>(a) | Actuarial<br>Accrued<br>Liability (AAL)*<br>(b) | Unfunded<br>AAL<br>(UAAL)<br>(b-a) | Funded<br>Ratio<br>(a/b) | Covered<br>Payroll (P/R)<br>(c) | UAAL as a<br>Percentage of<br>Covered P/R<br>[(b-a)/c] |
|--------------------------------|--|---|------------------------------------|--------------------------|---------------------------------|--|
| 6/30/94                        | \$115,966,733                            | \$130,157,882                                   | \$14,191,149                       | 89.10%                   | \$20,512,937                    | 69.18%   |
| 6/30/95                        | 132,708,760                              | 140,803,526                                     | 8,094,766                          | 94.25%                   | 23,765,267                      | 34.06%   |
| 6/30/96                        | 151,753,761                              | 160,781,808                                     | 9,028,047                          | 94.38%                   | 25,272,192                      | 35.72%   |
| 6/30/97                        | 180,551,242                              | 166,700,726                                     | (13,850,516)                       | 108.31%                  | 26,277,703                      | (52.71%)   |
| 6/30/98                        | 207,649,859                              | 178,631,341                                     | (29,018,518)                       | 116.24%                  | 26,954,246                      | (107.66%)  |
| 6/30/99                        | 219,462,509                              | 187,312,171                                     | (32,150,338)                       | 117.16%                  | 28,059,369                      | (114.58%)  |
| 6/30/00                        | 239,568,583                              | 240,785,081                                     | 1,216,498                          | 99.49%                   | 30,292,856                      | 4.02%  |
| 6/30/01                        | 249,226,895                              | 263,001,999                                     | 13,775,104                         | 94.76%                   | 30,925,529                      | 44.54%   |
| 6/30/02                        | 250,914,077                              | 294,514,429                                     | 43,600,352                         | 85.20%                   | 32,154,663                      | 135.60%  |
| 6/30/03                        | 246,443,660                              | 306,098,170                                     | 59,654,510                         | 80.51%                   | 33,019,306                      | 180.67%  |

\*The Aggregate method, which does not directly develop an actuarial accrued liability, is used to determine the actuarial required contribution. The actuarial accrued liability shown here is based on the Projected Unit Credit Cost method.

\*\*Beginning with the 6/30/01 valuation, a smoothing method was used to determine the actuarial (market related) value of assets. Prior to this, market value was used.

**TABLE 11****SCHEDULE OF EMPLOYER CONTRIBUTIONS**

In accordance with Statement No. 25 of the Governmental Accounting Standards Board

| <b>Fiscal Year Ending</b> | <b>Annual Required Contribution (a)</b> | <b>Total Employer Contribution (b)</b> | <b>Percentage of ARC Contribution (b / a)</b> |
|---------------------------|---|--|---|
| 6/30/94                   | \$2,177,401                             | \$3,670,513                            | 168.57%                                       |
| 6/30/95                   | 2,500,527                               | 4,035,053                              | 161.37%                                       |
| 6/30/96                   | 1,763,383                               | 4,390,688                              | 248.99%                                       |
| 6/30/97                   | 1,996,503                               | 4,597,867                              | 230.30%                                       |
| 6/30/98                   | 1,773,145                               | 4,588,667                              | 258.79%                                       |
| 6/30/99                   | 556,317                                 | 4,860,834                              | 873.75%                                       |
| 6/30/00                   | 948,875                                 | 3,990,488                              | 420.55%                                       |
| 6/30/01                   | 4,231,914                               | 5,291,371                              | 125.03%                                       |
| 6/30/02                   | 5,332,844                               | 5,466,366                              | 102.50%                                       |
| 6/30/03                   | 7,883,879                               | 5,540,116                              | 70.27%  |

**Notes to the Required Schedules:**

1. The cost method used to determine the ARC is the Aggregate Cost Method. This method does not identify or separately amortize unfunded actuarial liabilities.
2. The assets are shown at fair market value prior to 6/30/01 and at market related (actuarial) value thereafter.
3. Economic assumptions are as follows:
  - Payroll growth of 4.00%
  - Investment return rate of 8.00%
  - Salary increase rate of 10% the first year, 5% for each of the next 4 years and 5.5% thereafter.
  - Post-retirement benefit increases are based on expected payroll growth and provisions of the law.
4. The amortization method is an open period, level percentage of payroll. The average remaining service life of active members is 17 years as of 6/30/03.

**TABLE 12**

**Development of the Net Pension Obligation**

**In Accordance with Statement No. 27 of the  
Governmental Accounting Standards Board**

| <b>Fiscal Year:</b>                  | <b><u>1995*</u></b> | <b><u>1996</u></b> | <b><u>1997</u></b> | <b><u>1998</u></b> | <b><u>1999</u></b> |
|--------------------------------------|---------------------|--------------------|--------------------|--------------------|--------------------|
| <b>Assumptions and Method:</b>       |                     |                    |                    |                    |                    |
| Interest Rate                        | 8.00%               | 8.00%              | 8.00%              | 8.00%              | 8.00%              |
| Inflation Rate                       | 4.00%               | 4.00%              | 4.00%              | 4.00%              | 4.00%              |
| Amortization Period (years)          | 15                  | 15                 | 14                 | 14                 | 14                 |
| Cost Method                          | Aggregate           | Aggregate          | Aggregate          | Aggregate          | Aggregate          |
| <b>Annual Pension Cost:</b>          |                     |                    |                    |                    |                    |
| Annual Required Contribution (ARC)   | \$2,500,527         | \$1,763,383        | \$1,996,503        | \$1,773,145        | \$556,317          |
| Interest on NPO                      | 35,934              | (87,183)           | (296,503)          | (500,547)          | (718,926)          |
| Adjustment to ARC                    | <u>(40,394)</u>     | <u>98,004</u>      | <u>347,316</u>     | <u>586,328</u>     | <u>842,132</u>     |
| Annual Pension Cost                  | \$2,496,067         | \$1,774,204        | \$2,047,316        | \$1,858,926        | 679,523            |
| <b>Contribution for the Year:</b>    | \$4,035,053         | \$4,390,688        | \$4,597,867        | 4,588,667          | 4,860,834          |
| <b>Net Pension Obligation (NPO):</b> |                     |                    |                    |                    |                    |
| NPO at beginning of year             | \$ 449,181          | \$(1,089,005)      | \$(3,706,289)      | \$(6,256,840)      | \$(8,986,581)      |
| Annual Pension Cost for year         | 2,496,067           | 1,774,204          | 2,047,316          | 1,858,926          | 679,523            |
| Contributions for year               | <u>(4,035,053)</u>  | <u>(4,390,688)</u> | <u>(4,597,867)</u> | <u>(4,588,667)</u> | <u>(4,860,834)</u> |
| NPO at end of year                   | \$(1,089,805)       | \$(3,706,289)      | \$(6,256,840)      | \$(8,986,581)      | \$(13,167,892)     |
| <hr/>                                |                     |                    |                    |                    |                    |
| <b>Fiscal Year:</b>                  | <b><u>2000</u></b>  | <b><u>2001</u></b> | <b><u>2002</u></b> | <b><u>2003</u></b> | <b><u>2004</u></b> |
| <b>Assumptions and Method:</b>       |                     |                    |                    |                    |                    |
| Interest Rate                        | 8.00%               | 8.00%              | 8.00%              | 8.00%              | 8.00%              |
| Inflation Rate                       | 4.00%               | 4.00%              | 4.00%              | 4.00%              | 4.00%              |
| Amortization Period (years)          | 18                  | 18                 | 18                 | 18                 | 17                 |
| Cost Method                          | Aggregate           | Aggregate          | Aggregate          | Aggregate          | Aggregate          |
| <b>Annual Pension Cost:</b>          |                     |                    |                    |                    |                    |
| Annual Required Contribution (ARC)   | \$948,875           | \$4,231,914        | \$5,332,844        | \$7,883,879        | \$9,446,823        |
| Interest on NPO                      | (1,053,431)         | (1,298,858)        | (1,386,201)        | (1,399,643)        | (1,216,369)        |
| Adjustment to ARC                    | <u>1,027,211</u>    | <u>1,266,529</u>   | <u>1,351,697</u>   | <u>1,346,805</u>   | <u>1,234,931</u>   |
| Annual Pension Cost                  | \$922,655           | \$4,199,585        | \$5,298,340        | \$7,831,041        | \$9,465,385        |
| <b>Contribution for the Year:</b>    | 3,990,488           | 5,291,371          | \$5,466,366        | 5,540,116          | **                 |
| <b>Net Pension Obligation (NPO):</b> |                     |                    |                    |                    |                    |
| NPO at beginning of year             | \$(13,167,892)      | \$(16,235,725)     | \$(17,327,511)     | (17,495,537)       |                    |
| Annual Pension Cost for year         | 922,655             | 4,199,585          | 5,298,340          | 7,831,041          |                    |
| Contributions for year               | <u>(3,990,488)</u>  | <u>(5,291,371)</u> | <u>(5,466,366)</u> | <u>(5,540,116)</u> | **                 |
| NPO at end of year                   | (16,235,725)        | (17,327,511)       | (17,495,537)       | (15,204,612)       |                    |

\* As calculated by the System.

\*\* Will not be determined until the end of Fiscal Year 2004.

**APPENDIX A**

**SYSTEM MEMBERSHIP  
INFORMATION**

**AGE AND SERVICE DISTRIBUTION AS OF JULY 1, 2003 FOR ACTIVE PARTICIPANTS**  
**Males and Females**

***Years of Service***

| Age           | <u>0 to 4</u> |               | <u>5 to 9</u> |               | <u>10 to 14</u> |               | <u>15 to 19</u> |               | <u>20 to 24</u> |               | <u>25 to 29</u> |               | <u>30 to 34</u> |               | <u>35 to 39</u> |           | <u>40 and over</u> |           | <u>Total</u> |               |
|---------------|---------------|---------------|---------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|---------------|-----------------|-----------|--------------------|-----------|--------------|---------------|
|               | Avg.          |               | Avg.          |               | Avg.            |               | Avg.            |               | Avg.            |               | Avg.            |               | Avg.            |               | Avg.            |           | Avg.               |           | Avg.         |               |
|               | No.           | Salary        | No.           | Salary        | No.             | Salary        | No.             | Salary        | No.             | Salary        | No.             | Salary        | No.             | Salary        | No.             | Salary    | No.                | Salary    | No.          | Salary        |
| Under 25      | 7             | 37,626        | 0             | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA        | 0                  | NA        | 7            | 37,626        |
| 25-29         | 52            | 41,793        | 23            | 45,987        | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA        | 0                  | NA        | 75           | 43,079        |
| 30-34         | 33            | 42,568        | 88            | 50,572        | 25              | 55,367        | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA        | 0                  | NA        | 146          | 49,584        |
| 35-39         | 5             | 40,131        | 38            | 52,810        | 59              | 57,185        | 16              | 57,272        | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA        | 0                  | NA        | 118          | 55,065        |
| 40-44         | 0             | NA            | 9             | 51,462        | 27              | 57,741        | 37              | 60,089        | 15              | 63,619        | 0               | NA            | 0               | NA            | 0               | NA        | 0                  | NA        | 88           | 59,088        |
| 45-49         | 0             | NA            | 2             | 58,122        | 10              | 59,738        | 23              | 60,199        | 24              | 62,760        | 11              | 67,838        | 0               | NA            | 0               | NA        | 0                  | NA        | 70           | 62,152        |
| 50-54         | 0             | NA            | 0             | NA            | 0               | NA            | 3               | 68,293        | 13              | 61,409        | 43              | 65,243        | 13              | 66,774        | 0               | NA        | 0                  | NA        | 72           | 64,954        |
| 55-59         | 1             | 41,025        | 0             | NA            | 0               | NA            | 1               | 77,244        | 2               | 59,531        | 11              | 65,429        | 8               | 68,527        | 0               | NA        | 0                  | NA        | 23           | 65,446        |
| 60-64         | 0             | NA            | 0             | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 1               | 55,662        | 0               | NA        | 0                  | NA        | 1            | 55,662        |
| 65-69         | 0             | NA            | 0             | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA        | 0                  | NA        | 0            | NA            |
| 70 & over     | 0             | NA            | 0             | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA            | 0               | NA        | 0                  | NA        | 0            | NA            |
| <b>Totals</b> | <b>98</b>     | <b>41,664</b> | <b>160</b>    | <b>50,589</b> | <b>121</b>      | <b>57,144</b> | <b>80</b>       | <b>60,079</b> | <b>54</b>       | <b>62,554</b> | <b>65</b>       | <b>65,714</b> | <b>22</b>       | <b>66,907</b> | <b>0</b>        | <b>NA</b> | <b>0</b>           | <b>NA</b> | <b>600</b>   | <b>55,033</b> |

**ANALYSIS OF RETIREES AND BENEFICIARIES**  
**as of July 1, 2003**  
**Males and Females**

| <u>Age</u>    | <b>Number of Participants</b> |                              |                            |                          |                          |                               |                        | <u>Total</u> |
|---------------|-------------------------------|------------------------------|----------------------------|--------------------------|--------------------------|-------------------------------|------------------------|--------------|
|               | <u>Service Retirement</u>     | <u>Accidental Disability</u> | <u>Ordinary Disability</u> | <u>Vested Retirement</u> | <u>Child Beneficiary</u> | <u>Contingent Beneficiary</u> | <u>Deferred Vested</u> |              |
| Under 40      | 2                             | 0                            | 0                          | 0                        | 12                       | 0                             | 12                     | 26           |
| 40 to 44      | 1                             | 4                            | 0                          | 0                        | 0                        | 0                             | 2                      | 7            |
| 45 to 49      | 1                             | 2                            | 0                          | 0                        | 0                        | 2                             | 6                      | 11           |
| 50 to 54      | 0                             | 4                            | 1                          | 0                        | 0                        | 3                             | 3                      | 11           |
| 55 to 59      | 0                             | 9                            | 2                          | 0                        | 0                        | 2                             | 2                      | 15           |
| 60 to 64      | 38                            | 12                           | 5                          | 5                        | 0                        | 7                             | 0                      | 67           |
| 65 to 69      | 67                            | 27                           | 1                          | 7                        | 0                        | 7                             | 1                      | 110          |
| 70 to 74      | 55                            | 15                           | 1                          | 3                        | 0                        | 7                             | 0                      | 81           |
| 75 to 79      | 40                            | 7                            | 2                          | 1                        | 0                        | 17                            | 0                      | 67           |
| 80 to 84      | 46                            | 4                            | 0                          | 0                        | 0                        | 10                            | 0                      | 60           |
| 85 to 89      | 11                            | 0                            | 1                          | 0                        | 0                        | 8                             | 0                      | 20           |
| 90 to 94      | 4                             | 1                            | 0                          | 0                        | 0                        | 7                             | 0                      | 12           |
| 95 to 99      | 0                             | 0                            | 0                          | 0                        | 0                        | 11                            | 0                      | 11           |
| 100 & over    | 0                             | 0                            | 0                          | 0                        | 0                        | 0                             | 0                      | 0            |
| <b>Totals</b> | <b>265</b>                    | <b>85</b>                    | <b>13</b>                  | <b>16</b>                | <b>12</b>                | <b>81</b>                     | <b>26</b>              | <b>498</b>   |

**ANALYSIS OF RETIREES AND BENEFICIARIES**  
**as of July 1, 2003**  
**Males and Females**

**Average Annual Benefits of Participants**

| <u>Age</u>    | <u>Service Retirement</u> | <u>Accidental Disability</u> | <u>Ordinary Disability</u> | <u>Vested Retirement</u> | <u>Child Beneficiary</u> | <u>Contingent Beneficiary</u> | <u>Deferred Vested</u> |
|---------------|---------------------------|------------------------------|----------------------------|--------------------------|--------------------------|-------------------------------|------------------------|
| Under 40      | 71,649                    | NA                           | NA                         | NA                       | 4,368                    | NA                            | 10,696                 |
| 40 to 44      | 58,614                    | 31,035                       | NA                         | NA                       | NA                       | NA                            | 10,730                 |
| 45 to 49      | 13,854                    | 28,988                       | NA                         | NA                       | NA                       | 20,922                        | 14,671                 |
| 50 to 54      | NA                        | 29,251                       | 24,542                     | NA                       | NA                       | 13,671                        | 22,476                 |
| 55 to 59      | NA                        | 38,762                       | 30,220                     | NA                       | NA                       | 21,934                        | 10,600                 |
| 60 to 64      | 46,577                    | 36,334                       | 34,035                     | 10,557                   | NA                       | 20,621                        | NA                     |
| 65 to 69      | 40,387                    | 34,314                       | 29,161                     | 13,225                   | NA                       | 16,796                        | 7,586                  |
| 70 to 74      | 34,237                    | 30,908                       | 23,659                     | 6,667                    | NA                       | 16,813                        | NA                     |
| 75 to 79      | 28,353                    | 31,528                       | 20,745                     | 5,616                    | NA                       | 15,917                        | NA                     |
| 80 to 84      | 26,716                    | 28,714                       | NA                         | NA                       | NA                       | 16,563                        | NA                     |
| 85 to 89      | 23,675                    | NA                           | 14,094                     | NA                       | NA                       | 14,923                        | NA                     |
| 90 to 94      | 22,303                    | 23,062                       | NA                         | NA                       | NA                       | 17,222                        | NA                     |
| 95 to 99      | NA                        | NA                           | NA                         | NA                       | NA                       | 15,106                        | NA                     |
| 100 & over    | NA                        | NA                           | NA                         | NA                       | NA                       | NA                            | NA                     |
| <b>Totals</b> | <b>34,825</b>             | <b>33,326</b>                | <b>27,966</b>              | <b>10,686</b>            | <b>4,368</b>             | <b>16,650</b>                 | <b>12,023</b>          |

**APPENDIX B**

**SUMMARY OF PLAN PROVISIONS**

Chapter 97A of the Iowa code sets out the benefit provisions of the Iowa Peace Officers' Retirement, Accident and Disability System, which are briefly summarized as follows:

**Retirement Benefit**

***Eligibility***

Age 55 with 22 years of service.

***Monthly Annuity***

The sum of (1) and (2):

- (1)
  - a. For retirement prior to July 1, 1990, 50% of average final compensation at retirement. Average final compensation equals average of highest three years of compensation.
  - b. For retirement after June 30, 1990 and before July 1, 1992, 54% of average final compensation at retirement.
  - c. For retirement after June 30, 1992 and before July 1, 1993, 56% of average final compensation at retirement.
  - d. For retirement after June 30, 1993 and before July 1, 1994, 58% of average final compensation at retirement.
  - e. For retirement after June 30, 1994, and before July 1, 2000, 60% of average final compensation at retirement.
  - f. For retirement after July 1, 2000, 60.5% of average final compensation at retirement.
- (2) For members who do not withdraw member contributions:
  - a. For retirement after June 30, 1990 and before July 1, 1991, 0.3% of average final compensation for each year of service over 22 years (up to 8 years). Service after age 55 is excluded.
  - b. For retirement after June 30, 1991 and before October 16, 1992, 0.6% of average final compensation for each year of service over 22 years (up to 8 years). Service after age 55 is excluded.

- c. For retirement after October 15, 1992 and before July 1, 1996, 0.6% of average final compensation for each year of service over 22 years (up to 8 years).
- d. For retirement after June 30, 1996, 1.5% of average final compensation for each year of service over 22 years (up to 8 years).
- e. For retirement after June 30, 1998, 1.5% of average final compensation for each year of service over 22 years (up to 10 years).
- f. For retirement after June 30, 2000, 2.75% of average final compensation for each year of service over 22 years (up to 10 years).

**Early Retirement Benefit**

***Eligibility***

Effective July 1, 1996, age 50 (but not age 55) with 22 years of service.

***Monthly Annuity***

The benefit provided as a retirement benefit actuarially reduced for commencement prior to age 55.

**Deferred Vested Benefit**

***Eligibility***

Four years of service.

***Monthly Annuity***

At age 55. The benefit provided as a retirement benefit at termination times a service ratio. The service ratio equals service at termination divided by 22 (not greater than 1.0).

**Ordinary Disability Benefit**

***Eligibility***

None.

***Benefit***

- (1) If service at disability is greater than or equal to 5 years, 50% of average final compensation at disability.

- (2) If service at disability is greater than or equal to 22 years, the greater of (1) or the benefit amount calculated under a service retirement. Effective July 1, 1998, the service requirement does not apply.
- (3) If service at disability is less than 5 years, 25% of average final compensation at disability.

### **Accidental Disability Benefit**

#### ***Eligibility***

None.

#### ***Benefit***

- (1) For retirement prior to July 1, 1990, 66-2/3% of average final compensation at disability.
- (2) For retirement after June 30, 1990, 60% of average final compensation at disability. If the service amount at disability is greater than or equal to 22 years, the greater of 60% of average final compensation at disability or the benefit amount calculated under a service retirement.

### **Ordinary Death Benefit**

#### ***Eligibility***

For member in service: None.

For member not in service: Four years of service.

#### ***Benefit***

- (1) A lump sum equal to 50% of compensation during the last year of employment, or
- (2) A pension based on 40% of average final compensation but not less than 25% of compensation paid to an active member having the rank of senior patrol officer of the Iowa Highway Safety Patrol. For members not in service, benefit is multiplied by the ratio of service at termination to 22 years (not greater than 1.0).
- (3) Additional benefit for members in service of 6% of compensation payable to an active member having the rank of senior patrol officer of the Iowa Highway Safety Patrol for each child.

***Payment Date***

- (1) For members in service: Immediately upon death of member.
- (2) For member not in service: Payable when member would have been age 55. If there are children of the member, payable commencing at the member's death until children reach age 18 or 22. Pension resumes when member would have been age 55.

**Accidental Death Benefit**

***Eligibility***

In actual performance of duty.

***Benefit***

- (1) 50% of average final compensation payable to surviving spouse, children or dependent parents.
- (2) If there is not surviving spouse, children or dependent parents, or if accidental death occurs while not in the actual performance of duty, an Ordinary Death Benefit is payable.
- (3) Additional benefit for members in service of 6% of compensation payable to an active member having the rank of senior patrol officer of the Iowa Highway Safety Patrol, for each child.
- (4) If the death meets specified criteria, a lump sum of \$100,000 payable to surviving spouse, children, dependent parents, or estate.

**Death After Retirement**

***Benefit***

- (1) 50% of retirement allowance of retired member but not less than 25% of compensation paid to an active member having the rank of senior patrol officer of the Iowa Highway Safety Patrol.
- (2) Additional benefit of 6% of compensation payable to an active member having the rank of senior patrol officer of the Iowa Highway Safety Patrol, for each child.

**Adjustments to Pensions**

Each July 1 the following adjustments are made: Monthly earnable compensation payable to an active member, of the same rank and position in the salary scale as was held by the retired or deceased member at the time of the member's retirement or death, for July of the current year less that of the preceding July, times the following percentages:

- (1) 40% for members receiving a service retirement allowance and for beneficiaries receiving an accidental death benefit.
- (2) 40% for members with five or more years of membership who are receiving an ordinary disability benefit.
- (3) 40% for member receiving an accidental disability benefit.
- (4) 24% for members with less than five years of membership who are receiving an ordinary disability benefit and for beneficiaries receiving an ordinary death benefit.
- (5) 50% of the amount which would have been added to the benefit of the retired member, for surviving spouses, but not less than 25% of the monthly earnable compensation paid to an active member having the rank of senior patrol officer.

Additionally, the following aggregate amounts will be added to a member or beneficiary monthly pension as follows:

| <u>Years Since Retired</u> | <u>Increase Per Year</u> |
|----------------------------|--------------------------|
| 1-4                        | \$15                     |
| 5-9                        | 20                       |
| 10-14                      | 25                       |
| 15-19                      | 30                       |
| 20 or more                 | 35                       |

Surviving children's pensions are adjusted each July to equal 6% of monthly earnable compensation payable to an active member having the rank of senior patrol officer of the Iowa Highway Safety Patrol.

**Member Contributions**

- (1) The following percentage of earnable compensation will be paid as member contributions:

| <u>Period</u>                   | <u>Member Contribution Rate</u> |
|---------------------------------|---------------------------------|
| January 1, 1995 - June 30, 1995 | 8.35%                           |
| July 1, 1995 forward            | 9.35%                           |

- (2) Beginning July 1, 1996 and each fiscal year thereafter, the system will increase the member contribution rate as necessary to cover the increased cost to the system resulting from statutory changes enacted by any session of the general assembly after January 1, 1995 if such increase cannot be absorbed within the contribution rate otherwise established, subject to a maximum member contribution rate of 11.3%. After this maximum rate is reached, 60% of any additional costs due to statutory changes will be absorbed by the employer and 40% will be paid by the members.

**Withdrawal of Member Contributions**

Effective July 1, 1990, members who terminate service, other than by death or disability, can elect to withdraw their accumulated contributions with interest in lieu of any benefits to which the member may be entitled from the System.

**Transfers With Statewide Fire and Police Retirement System**

Beginning July 1, 1996, vested members of an eligible retirement system who terminate employment and, within 60 days, commence covered employment under another eligible retirement system, may elect to transfer the average accrued benefit earned from the former system to the current system. Once such transfer is completed, service under the former system shall be treated as membership service under the current system.

## **APPENDIX C**

### **ACTUARIAL METHOD AND ASSUMPTIONS**

## **Actuarial Cost Method**

The Aggregate Actuarial Cost Method has been used in this valuation. Under this method, the normal cost (the portion of the total cost of pension benefits under this plan allocated to the current year under this actuarial cost method) is determined by multiplying the normal cost accrual rate for the current year by the total valuation earnings for active participants under the assumed retirement age on the current valuation date.

An actuarial accrued liability, as such, is not determined under the Aggregate Actuarial Cost Method; all past and future costs are funded over the future. The normal cost accrual rate for the current year is:

1. the actuarial present value of projected pension benefits for all participants determined using the assumptions shown below for normal cost, minus the actuarial value of assets (as reported by the System), both as of the current valuation date, divided by
2. the actuarial present value of the expected future valuation earnings for all active participants from the current valuation date to the assumed retirement age.

Actuarial gains and losses are reflected in this accrual rate and are spread over the current and future years' normal costs. Experience gains will reduce and experience losses will increase future normal cost accrual rates.

## **Actuarial Assumptions**

### ***Active Members:***

- |                               |   |
|-------------------------------|---|
| 1. Ordinary death rate        | 1983 Group Annuity Mortality Table.   |
| 2. Accidental death rate      | 8.5 deaths per 10,000 exposed for one year.   |
| 3. Ordinary disability rate   | 1970-71 Industry Experience on Male Lives (Occupational Group II).  |
| 4. Accidental disability rate | 1970-71 Industry Experience on Male Lives (Occupational Group II) increased by 50% for age 35 and younger, grading up 1% per age to 69% for age 54. |
| 5. Withdrawal rate            | 5% for first year of employment, grading down 1% a year to 0% in sixth and following years.   |

6. Retirement age

| <u>Age</u> | <u>Probability of Retirement</u> |
|------------|----------------------------------|
| 55         | 45%                              |
| 56         | 30%                              |
| 57-58      | 20%                              |
| 59-60      | 25%                              |
| 61         | 33%                              |
| 62         | 100%                             |

7. Salary scale

Annual increases: 10% the first year, 5% for each of the next 4 years, and 5.5% thereafter.

8. Post-retirement adjustments

Same as for retired members.

***Retired Members and Other Beneficiaries:***

1. Mortality rate

Service retirements and beneficiaries: 1983 Group Annuity Mortality (GAM) Tables - Male and Female.

2. Mortality rate

Disability retirements: 1983 GAM Tables - Male and Female rated up 5 years in age.

3. Annual readjustment of pensions

Wages for the same rank are assumed to increase 4%.

***Dependency Ratios:***

1. Ordinary death benefit

Alternate benefits payable to widow and minor children in 90% of cases.

2. Pension to spouse and children of deceased pensioned member

In 90% of cases.

***Interest Rate:***

8% per year.

***Inflation:***

3.5% per year.

***Wage Growth:***

4.0% per year.

**Reconciliation of Member Status**  
**From July 1, 2002 to July 1, 2003**

|  | Active<br>Members | Members &<br>Beneficiaries<br>Receiving<br>Benefits | Former<br>Members<br>with Deferred<br>Benefits | Children<br>Receiving<br>Benefits | Total        |
|--|-------------------|---|--|-----------------------------------|--------------|
| <b>Members as of July 1, 2002</b>  | <b>628</b>        | <b>449</b>  | <b>19</b>                                      | <b>12</b>                         | <b>1,108</b> |
| Began Receiving Benefits   | (11)              | 16  | (1)  | 2                                 | 6            |
| Terminated Without Further Benefit<br>Eligibility (including refunds of contributions) | (8)               | 0   | (1)  | 0                                 | (9)          |
| Terminated With Benefit Eligibility  | (9)               | 0   | +9   | 0                                 | 0            |
| Returned to Active Status  | 0                 | 0   | 0  | 0                                 | 0            |
| Deceased   | 0                 | (5)   | 0  | 0                                 | (5)          |
| Benefits Ended   | 0                 | 0   | 0  | (2)                               | (2)          |
| Newly Hired  | 0                 | 0   | 0  | 0                                 | 0            |
| <b>Members as of July 1, 2003</b>  | <b>600</b>        | <b>460</b>  | <b>26</b>                                      | <b>12</b>                         | <b>1,098</b> |