# IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Actuarial Valuation Report
as of June 30, 1997
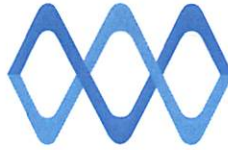
November 6, 1997

Iowa Public Employees' Retirement System
600 E. Court Avenue
Des Moines, IA  50306

### Re:  Iowa Public Employees' Retirement System

To:   Linda Hanson, Director of the Department of Personnel;
        Greg Cusack, Chief Benefits Officer;
        Nancy Goerdel, Chief Investment Officer:

We have performed an actuarial valuation of the Iowa Public Employees' Retirement System (System) as of June 30, 1997.  An actuarial valuation is prepared annually to determine the contribution rate necessary to fund the benefits being credited for membership service and to amortize the System's unfunded actuarial accrued liability within the parameters set out in IPERS funding policy.

The member and employer contribution rates are established by law.  The combined employee and employer rate for the majority of the System's members is 9.45%.  Certain employees in protection occupation classifications and their employers contribute at slightly higher rates as required by law.  Based on the System's funding policy and the current actuarial assumptions, the statutory 9.45% contribution rate is sufficient to fund the current benefit structure and to amortize the unfunded actuarial accrued liability over 9 years.
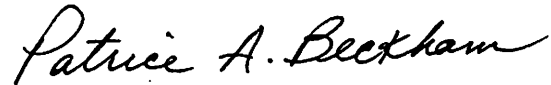
Actuarial assumptions are needed to estimate future economic and demographic experience of the System, which affect future System benefit payments and investment earnings.  Any deviation between actual and expected future experience will result in corresponding changes in the on-going costs of the System.  The demographic actuarial assumptions were developed both from the experience of the System and from standard actuarial sources.  We believe the actuarial assumptions used in the valuation are reasonable, as related to the experience of the System.

In performing the valuation, we have relied upon membership and financial data reported to us by the System.  We did not verify the accuracy of the information but did review it for reasonableness in relation to the data submitted for previous years.

This report has been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with 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.

Respectfully Submitted,

MILLIMAN & ROBERTSON, INC.

*Patrice A. Beckham*

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

## ACTUARIAL VALUATION OF THE IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

# TABLE OF CONTENTS

## APPENDICES

# SECTION I

# EXECUTIVE SUMMARY

## Introduction

This report presents the results of the June 30, 1997 actuarial valuation of the Iowa Public Employees' Retirement System (IPERS). The primary purposes of performing the valuation are as follows:

- to certify that the contribution rate to be paid by the members and employers for the Fiscal Year beginning July 1, 1997 is sufficient to fund the benefits expected to be paid to members and meets the criteria set out in the funding policy established by IPERS,

- to disclose various asset and liability measures as of June 30, 1997, and

- to analyze and report on trends in System contributions, assets, and liabilities over the past several years.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on June 30, 1997. The actuarial assumptions and benefit provisions were unchanged from the 1996 valuation. The Rule of 88 was effective July 1, 1997 (previously Rule of 90) but its implementation had been reflected in last year's numbers. The valuation results reflect overall favorable experience for the past plan year. The unfunded actuarial liability decreased by $500 million, largely due to an investment return on the actuarial value of assets in excess of the 7.5% assumed. As a result, the amortization period declined from 20 to 9 years.

## Contribution Rate

The Iowa statutes provide that most IPERS members shall contribute 3.7% of pay and employers shall contribute 5.75%, for a total of 9.45%. The valuation is performed to determine whether that rate will be sufficient to fund the future benefits expected to be paid by the System within the guidelines established in IPERS funding policy (maximum amortization period of 30 years). The statutory rate is first applied to fund the normal cost rate. The remaining contribution rate is used to amortize the unfunded actuarial accrued liability as a level percentage of payroll. The current valuation results indicate the statutory rate results in an amortization period less than the funding policy's maximum of 30 years.

## Experience

Numerous factors contributed to the change in the Systems' asset, liabilities and remaining amortization period for the unfunded actuarial liability between June 30, 1996 and June 30, 1997. The components are examined in the following discussions.

Actuarial gains/losses result from actual experience which is more/less favorable than anticipated based on the actuarial assumptions. These "experience" or actuarial gains/losses are reflected and measured as the difference between the expected unfunded actuarial liability (UAL) and the actual unfunded actuarial liability. Overall, the System experienced a net actuarial gain of $499 million. The change in the unfunded actuarial liability between June 30, 1996 and 1997 are shown below (in millions):

| | |
|---|---|
| Unfunded Actuarial Liability, June 30, 1996 | $1,161 |
| • Expected change in UAL | (1) |
| • Investment gain | (474) |
| • Liability gain from actual experience | (25) |
| Unfunded Actuarial Liability, June 30, 1997 | $ 661 |

## Assets

As of June 30, 1997, the System had total funds of $11.5 billion, when measured on a market value basis. This was an increase of $1.9 billion from the prior year. The components of this change are shown below:

| | Market Value |
|---|---|
| Net Assets, June 30, 1996 | $ 9,587 |
| • Employer and Member Contributions | + 365 |
| • Benefit Payments | - 374 |
| • Administrative Expenses | - 4 |
| • Investment Income (Expected) | + 706 |
| • Investment Gain/(Loss) | + 1,254 |
| Net Assets, June 30, 1997 | $11,534 |

The market value of assets is not used directly in the calculation of contribution rates and amortization period. The actuarial value of assets is equal to the expected asset value based on the assumed interest rate plus 25% of the difference between the actual market value and the expected asset value. The dollar weighted rate of return measured on the actuarial value of assets was 12.8%.

## Liabilities

There are four different measurements of liabilities discussed in this section.

- *Actuarial Balance Sheet Liability* is the present value of all future benefits (PVFB) expected to be paid from the System to current members (retired, active and deferred vested). This liability is calculated based on both future payroll projections and service credits to retirement or other separation from service.

- *Actuarial Accrued Liability* is the portion of the present value of future benefits (actuarial balance sheet liability) that will not be paid by future normal costs. It is also defined as the portion of the actuarial balance sheet liability allocated to service before the valuation date by the actuarial cost method.

- *Projected Benefit Obligation (PBO)* was previously used for financial reporting purposes under GASB No. 5 (since superseded by GASB 25). It represents the present value of benefits based on future payroll projections but only reflecting service credits as of the valuation date. This measure of the funded status of the plan does not directly impact the contribution rate or amortization period. It is not uncommon for the PBO to exceed the actuarial value of assets, since the PBO reflects future assumed salary increases.

- *Present Value of Accrued Benefits* (PVAB) is used only for informational purposes. It does not directly impact the contribution rate or amortization period for the System. This liability represents the present value of benefits earned to date, based on service and salary as of the valuation date. The PVAB can be used as a measure of the funded status of the System since it more closely represents the amount required to pay all accrued benefits if the fund were to liquidate on the measurement date. In a well funded System, the expectation would be that the assets would be equal to or exceed the PVAB.

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 and the actuarial accrued liability are the most critical because, along with the actuarial value of assets, they ultimately determine whether the statutory contribution rate for the System is sufficient to provide the current benefit structure, within the parameters set out in IPERS' funding policy. The other liability figures are valuable because they provide useful comparisons of assets and liabilities.

The System liabilities (in millions) as of June 30, 1997 and June 30, 1996 are summarized below:

|  | June 30 | | Change |
| --- | --- | --- | --- |
|  | 1997 | 1996 |  |
| Actuarial Balance Sheet Liability (PVFB) | $13,124 | $12,394 | 5.9% |
| Actuarial Accrued Liability | 10,774 | 10,136 | 6.3% |
| PBO | 9,582 | 9,001 | 6.5% |
| Present Value of Accrued Benefits (PVAB) | 7,889 | 7,362 | 7.2% |

## Comparison of Major Valuation Results

The major findings of the 1997 valuation compared with prior valuation results are summarized and compared on the following pages.
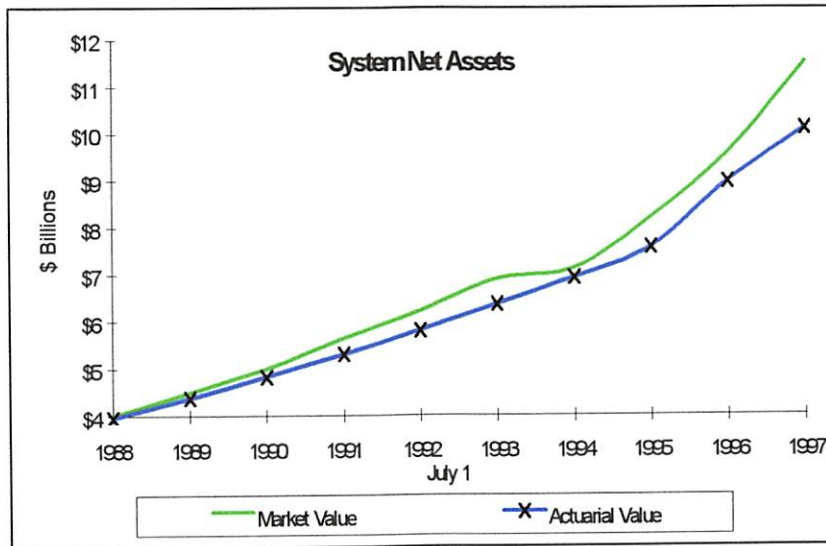


*The System's assets have grown faster than expected due to investment performance in excess of the actuarial assumption.*

System liabilities have increased each year, which is to be expected.

The ratio of market value of assets to the PVAB and PBO measurements has increased due to investment performance in excess of the assumed rate.



**Assets & Liabilities**
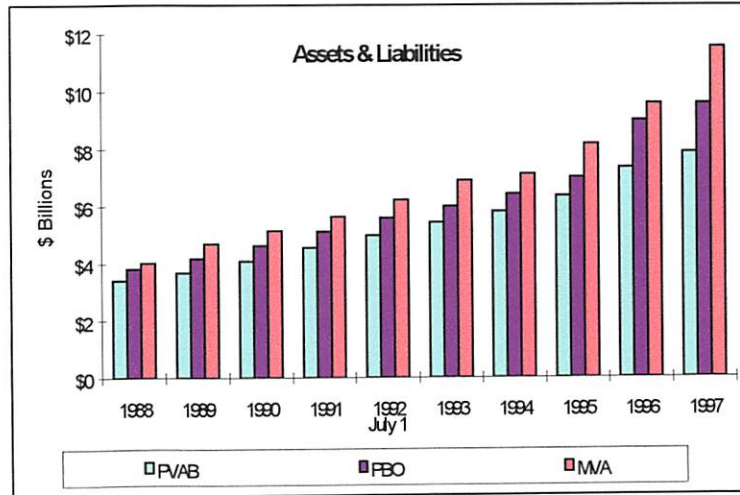
PVAB = Present Value of Accrued Benefits
PBO = Projected Benefit Obligation
MVA = Market Value of Assets



**Assets & Liabilities**
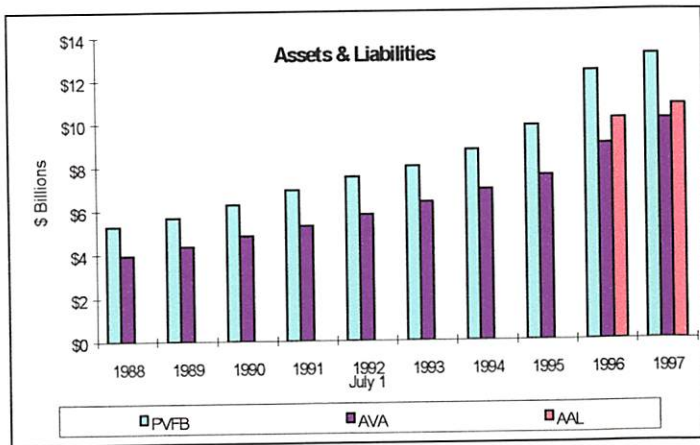
Historical information for AAL before 1996 is not appropriate to disclose since the aggregate cost method (which does not develop an actuarial accrued liability) was used in those years.

There was a significant decrease in unfunded actuarial accrued liability (the difference between the actuarial accrued liability and the actuarial value of assets) from 1996 to 1997.

PVFB = Present Value of Future Benefits (Actuarial Balance Sheet Liabilities)
AAL = Actuarial Accrued Liability
AVA = Actuarial Value of Assets

## SUMMARY

IPERS continues to be funded on an actuarially sound basis. Based on the current benefit structure, the unfunded actuarial accrued liability will be amortized in 9 years, if all actuarial assumptions are met. This amortization period is 15 years less than the average for public retirement systems of comparable membership size*. Over the long term, the statutory rate of 9.45% is more than will be necessary to provide the benefits set out in the current benefit structure.

The net result of all changes was a decrease in the unfunded actuarial accrued liability (UAAL) from $1.161 billion to $661 million. The funded percentage, measured as the ratio of actuarial value of assets to actuarial accrued liability, is 93.9% as of June 30, 1997. This compares with an average funded percentage of 88.1% for public retirement systems of similar size.*

Based on the valuation results, IPERS is well funded and compares favorably with other major public retirement systems. In concluding this executive summary, we present on the following page comparative statistics and actuarial information on both the June 30, 1996 and June 30, 1997 valuations.

*Data from "1995 Survey of State and Government Employee Retirement Systems" prepared by Paul Zorn for the Public Pension Coordinating Committee.

## IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
### PRINCIPAL RESULTS

| | June 30, 1997* | June 30, 1996* | % Chg |
|---|---|---|---|
| **SYSTEM MEMBERSHIP** | | | |
| 1. Active Membership | | | |
| - Number of Participants | 147,736 | 147,431 | .2 |
| - Projected Payroll for Fiscal Year End | 3,925M | 3,787M | 3.6 |
| - Average Salary | 26,055 | 25,218 | 3.3 |
| 2. Inactive Membership | | | |
| - Number of Vested Deferred Members | 17,301 | 16,546 | 4.6 |
| - Number of Nonvested Members | 66,461 | 62,865 | 5.7 |
| - Number of Retirees/Beneficiaries | 59,320 | 57,914 | 2.4 |
| - Average Annual Benefit | 6,018 | 5,645 | 6.6 |
| **ASSETS AND LIABILITIES** | | | |
| 1. Net Assets | | | |
| - Market Value | 11,534M | 9,587M | 20.3 |
| - Actuarial Value | 10,113M | 8,975M | 12.7 |
| 2. Projected Liabilities | | | |
| - Retired | 3,366M | 3,077M | 9.4 |
| - Inactive Members | 256M | 245M | 4.5 |
| - Active Members | 9,502M | 9,072M | 4.7 |
| - Total Liability | 13,124M | 12,394M | 5.9 |
| 3. Actuarial Accrued Liability | 10,774M | 10,136M | 6.3 |
| 4. Unfunded Actuarial Accrued Liability | 661M | 1,161M | (43.1) |
| 5. Funded Ratio (Actuarial Value Assets/Actuarial Accrued Liability) | 93.9% | 88.5% | 6.1 |
| **SYSTEM CONTRIBUTIONS** | | | |
| Required Contribution Rate | 9.45% | 9.45% | 0.0 |
| Years Required to Amortize Unfunded Actuarial Liability | 9 years | 20 years | (55.0) |

\* These membership figures are based on March 31 data.

M = ($)Millions

# SECTION II

# SYSTEM ASSETS

In this section, the values assigned to the assets held by the System are presented. These assets are valued on two different bases: the market value and the actuarial value.

## Market Value of Net Assets

For certain accounting statement purposes, System assets are valued at current market rates. These values represent the "snapshot" or "cash-out" value of System assets as of the valuation date. In addition, the market value of assets provides a reference point to compare to various liability calculations.

## Actuarial Value of Net Assets

The market value of assets, representing a "cash-out" value of System assets, may not necessarily 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 volatility in the market value while still indirectly recognizing market value. The specific technique follows:

**Step 1:** Determine the expected value of plan assets at the current valuation date using the actuarial assumption for investment return and the actual receipts and disbursements of the fund for the previous 12 months.

**Step 2:** Subtract the expected value determined in Step 1 from the total market value of the Fund at the current valuation date.

**Step 3:** Multiply the difference between market and expected values determined in Step 2 by 25%.

**Step 4:** Add the expected value of Step 1 and the product of Step 3 to determine the actuarial value of assets.

| Section II |
| --- |
| System Assets |

Information regarding the actuarial and market values of System assets as of June 30, 1997 is presented on the following pages:

# ANALYSIS OF NET ASSETS AT MARKET VALUES

|  | ($ Millions) | | | |
|  | June 30, 1997 | | June 30, 1996 | |
|  | Amount | % of Total | Amount | % of Total |
|---|---|---|---|---|
| Cash & Equivalents | 120 | 1.0 | 166 | 1.7 |
| Fixed Assets, Receivables and Payables | (942) | (8.2) | (657) | (6.8) |
| Domestic Fixed Income | 3,359 | 29.1 | 3,148 | 32.8 |
| Domestic Equity | 3,886 | 33.7 | 3,011 | 31.4 |
| International Equity | 1,017 | 8.8 | 717 | 7.5 |
| Global Fixed Income | 753 | 6.5 | 576 | 6.0 |
| Tactical Asset Funds | 1,273 | 11.1 | 1,008 | 10.5 |
| Real Estate Funds | 410 | 3.6 | 340 | 3.5 |
| Private Equity/Debt | 1,023 | 8.9 | 925 | 9.7 |
| Collateral Pool | 635 | 5.5 | 353 | 3.7 |
| **NET ASSETS** | 11,534 | 100.0 | 9,587 | 100.0 |

# Allocation of IPERS Investments

## As of June 30, 1997
## (% of Market Value by Type)



- Collateral Pool 5%
- Private Equity/Debt 8%
- Domestic Fixed 28%
- Tactical 10%
- Global Fixed 6%
- Realestate 3%
- International Equity 8%
- Domestic Equity 32%
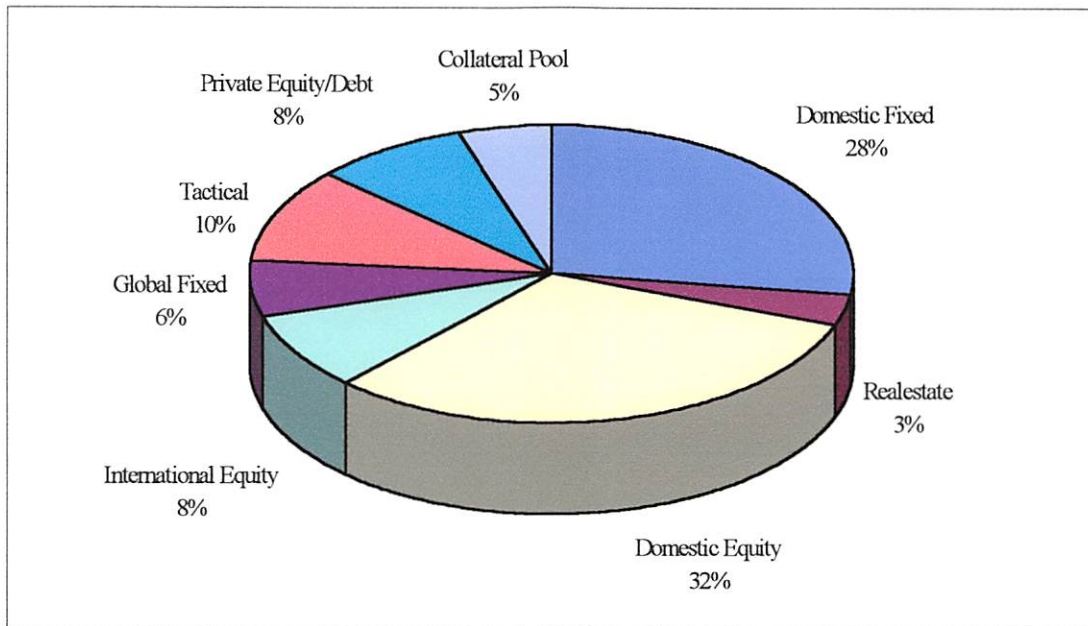
# SUMMARY OF FUND ACTIVITY
## (Market Value)

| | |
|---|---|
| **NET ASSETS ON 6/30/96** | $ 9,587,104,982 |

**REVENUE**

| | |
|---|---|
| Employer Contributions | 214,967,348 |
| Member Contributions | 143,311,565 |
| Service Purchase | 6,638,079 |
| Investment income | 2,004,280,490 |
| **Total Revenue** | $ 2,369,197,482 |

**DISBURSEMENTS**

| | |
|---|---|
| Benefit payments | 348,536,733 |
| Member and employer refunds | 25,285,487 |
| Administrative expense | 3,828,712 |
| Investment expense | 44,682,609 |
| **Total Expenses** | $ 422,333,541 |
| **NET ASSETS ON 6/30/97** | $11,533,968,923 |

# ACTUARIAL VALUE OF NET ASSETS

1. Actuarial value of assets as of June 30, 1996                              $8,975,396,251

2. Actual Receipts/Disbursements

   a.  Contributions                                                            364,916,992
   b.  Benefit Payments                                                         373,822,220
   c.  Net Change                                                               (8,905,228)

3. Expected Value of Assets as of June 30, 1997                                9,639,311,796
   [(1) x 1.075] + [(2c) x (1 + .075/2)]

4. Market Value of Assets as of June 30, 1997                                 11,533,968,923

5. Difference Between Market and Expected Values                               1,894,657,127
   (4) - (5)

6. Actuarial Value of Assets as of June 30, 1997                              10,112,976,077
   (3) + [(5) x 25%]

# HISTORICAL COMPARISON (ACTUARIAL AND MARKET)

| Value As of | Actuarial Value of Net Assets | Market Value of Net Assets |
|---|---|---|
| June 30, 1988 | 3,956,669,479 | 4,018,936,215 |
| June 30, 1989 | 4,380,355,689 | 4,692,880,788 |
| June 30, 1990 | 4,829,933,406 | 5,154,615,631 |
| June 30, 1991 | 5,304,320,455 | 5,638,657,050 |
| June 30, 1992 | 5,805,210,929 | 6,225,257,155 |
| June 30, 1993 | 6,365,169,296 | 6,899,590,868 |
| June 30, 1994 | 6,926,678,212 | 7,126,124,256 |
| June 30, 1995 | 7,574,159,776 | 8,199,217,051 |
| June 30, 1996* | 8,975,396,251 | 9,587,104,982 |
| June 30, 1997 | 10,112,976,077 | 11,533,968,923 |

*In order to implement the new asset valuation method, the June 30, 1995 actuarial value of assets was revised to the actual market value on that date.
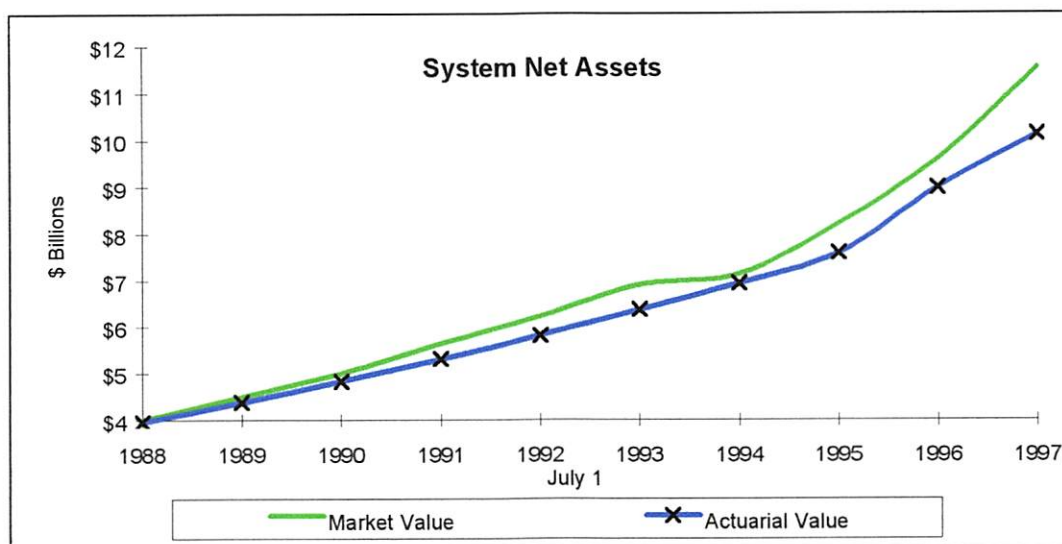
# SECTION III

# SYSTEM LIABILITIES

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. There are several methods which are used to allocate the cost of benefits to members' working lifetimes. These mathematical techniques are called actuarial cost methods.

The method used for this valuation is referred to as the "entry age normal" actuarial cost method. Under this method, a contribution which is a level percent of pay is determined for each member which, if paid from date of hire to retirement date, will finance all future benefit payments. The level percent of pay which is developed is called the **"normal cost" rate**. The sum of the individual normal cost dollar amounts is divided by covered payroll to determine the normal cost rate for the System.

The actuarial accrued liability is that portion of the total liability or present value of future benefits (PVFB) that will not be paid by future normal costs. The difference between this liability and the actuarial value of assets as of the same date is referred to as the **unfunded actuarial accrued liability (UAAL)**. If contributions exceed the normal cost for the year, after allowing for interest on the previous balance of the UAAL, this liability will be reduced. Benefit improvements, experience gains and losses, and changes in actuarial assumptions or procedures will also have an effect on the total actuarial accrued liability and on the portion of it that is unfunded.

Once the amount of the UAAL has been calculated, the period over which the current statutory contribution rate (less the normal cost rate) will amortize the UAAL is determined.

On the following pages we have summarized, as of June 30, 1997, the actuarial accrued liability. It is important to note that the actuarial accrued liability differs from the present value of accrued benefits (PVAB) and the pension benefit obligation (PBO). The actuarial accrued liability is determined for funding purposes and includes some element of future pay increases and service credits. The PVAB represents the value of the benefits accrued as of the valuation date, assuming each member terminates employment at that time. As a result, there are no projections of future salary increases and service credits in these figures. Finally, the PBO value differs from the PVAB value in that while service accruals are similarly frozen, anticipated future salary increases are reflected.

## Section III
## System Liabilities

The tables in this section present System liabilities as follows:

16

# UNFUNDED ACTUARIAL ACCRUED LIABILITY
## as of June 30, 1997

1.  Present Value of Future Benefits

    a.   Liability for Retired Members
        and Beneficiaries                                  $3,366,088,472

    b.   Inactive Members Liability                          255,549,153

    c.   Active Members Liability                        9,502,384,043

    d.   Total System Liability                         13,124,021,668

2.  Present Value of Future Normal Costs          2,349,805,196

3.  Actuarial Accrued Liability (1) - (2)          10,774,216,472

4.  Actuarial Value of Net Assets              10,112,976,077

5.  Unfunded Actuarial Accrued Liability (3) - (4)    661,240,395

# PRESENT VALUE OF ACCRUED BENEFITS

The actuarial present value of accrued benefits represents the value of benefits earned as of the valuation date, based on service and salary to date. This is equivalent to assuming each member terminates employment.

Present Value of Accrued Benefits (as of June 30, 1997)

| | | | |
|---|---|---|---|
| 1. | Present value of vested accrued benefits for active plan members | $ | 4,232,752,801 |
| | Present value of vested benefits being paid to plan retirees and beneficiaries | | 3,366,088,472 |
| | Present value of vested benefits to terminated plan members not yet in pay status (deferred vested) | | 241,858,187 |
| | Accumulated employee account balance of nonvested inactive members | | 13,690,966 |
| | Total present value of vested accrued benefits | $ | 7,854,390,426 |
| 2. | Present value of nonvested accrued benefits | $ | 34,935,270 |
| 3. | Total present value of all accrued benefits | $ | 7,889,325,696 |

# PENSION BENEFIT OBLIGATION

One measurement commonly used and, in fact required before GASB No. 25, for evaluating the funded status of retirement systems is the "pension benefit obligation" as set forth in GASB Statement No. 5. This value is that portion of the actuarial 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. This measurement 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:

| Pension Benefit Obligation | JUNE 30, 1997 | JUNE 30, 1996 |
|---|---|---|
| Retired Members and Beneficiaries | $ 3,366,088,472 | $ 3,076,721,751 |
| Deferred Vested Members | 241,858,187 | 232,423,280 |
| Nonvested Members | 13,690,966 | 13,327,380 |
| Active Members | | |
| - Accumulated employee contributions with interest | 1,933,363,854 | 1,797,120,005 |
| - Employer-financed vested portion | 3,952,499,340 | 3,835,382,096 |
| - Employer-financed non-vested portion | 74,815,976 | 45,874,982 |
| - Total | 5,960,679,170 | 5,678,377,083 |
| Total System Obligation | 9,582,316,795 | 9,000,849,494 |
| Net Assets Available for Benefits | $11,533,968,923 | $ 9,587,104,982 |
| Unfunded Pension Benefit Obligation | (1,951,652,128) | (586,255,488) |
| Funded Percentage | 120.4% | 106.5% |

19

# SECTION IV

# SYSTEM CONTRIBUTIONS

# SECTION IV

# SYSTEM CONTRIBUTIONS

Under the funding method described in Appendix C, the contribution rate consists of two elements: the normal cost rate and the contribution rate to amortize the unfunded actuarial accrued liability as a level percent of payroll. The unfunded actuarial accrued liability represents the difference between the portion of the present value of future benefits allocated to service credited prior to the valuation date by the actuarial cost method and the actuarial value of assets as of that date.

In the following pages we present information on System contributions as follows:

20

# ACTUARIAL BALANCE SHEET
## JUNE 30, 1997

### ASSETS

| | | |
|---|---|---:|
| Actuarial value of assets | $ | 10,112,976,077 |
| Present value of future normal costs | | 2,349,805,196 |
| Present value of future contributions to amortize unfunded actuarial accrued liability | | 661,240,395 |
| Total Net Assets | $ | 13,124,021,668 |

### LIABILITIES

Present Value of Future IPERS Benefits

Retired Members and Beneficiaries
Annuity benefits being paid and contingent
payments upon death ........................................ 3,366,088,472

Active Members
Retirement allowances ..................................... 8,101,620,558
Death benefits ................................................ 160,751,498
Termination benefits ......................................... 1,158,995,781
Future Buybacks ............................................... 81,016,206

Inactive Members
Retirement allowances & death
benefits for vested members .............................. 241,858,187

Accumulated employee account balances
for nonvested members ...................................... 13,690,966

Total Liabilities ........................................... $ 13,124,021,668

21

# ANALYSIS OF CONTRIBUTION RATE

The actuarial cost method used to determine the required level of annual contributions by the members and the employers to support the benefits for all service to retirement is the Entry Age Normal Cost Method. Under this method, the total cost is comprised of the normal cost rate and the unfunded actuarial liability payment. The statutory contribution rate is first applied to the normal cost rate. The remaining contribution is used to amortize the unfunded actuarial accrued liability as a level percentage of payroll, which determines the period necessary to amortize the unfunded actuarial liability. According to IPERS funding policy, the amortization period shall never exceed 30 years.

| | | |
|---|---|---:|
| 1. | Statutory Total Contribution Rate | 9.45% |
| 2. | Normal Cost Rate | 7.26% |
| 3. | Contribution Toward Unfunded Actuarial Accrued Liability (UAAL) | 2.19% |
| 4. | Unfunded Actuarial Accrued Liability at Valuation Date | 661,240,395 |
| 5. | Amortization period necessary to finance UAAL as a level percent of payroll at contribution rate shown in (3) | 9 years* |

* This assumes all actuarial assumptions are met.

# SECTION V

# ACCOUNTING INFORMATION

## SECTION V

## PLAN ACCOUNTING INFORMATION

Historically, Government Accounting Standards Board (GASB) Statement No. 5, "Disclosure of Pension Information by Public Employee Retirement Systems and State and Local Government Employers", required the disclosure of the funded status of the Plan on an annual basis using the pension benefit obligation (PBO).

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. This Statement, along with GASB Statement No. 27 supersede GASB Statement No. 5.

GASB Statement No. 25, effective for fiscal years beginning after June 15, 1996, establishes financial reporting standards for defined benefit pension 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 provides information about whether the financial strength of the Plan is improving or deteriorating over time.

- The Schedule of Employer Contributions provides historical information about the annual required contribution (ARC) and the percentage of the ARC that was actually contributed.

# SUMMARY OF MEMBERSHIP

|  | JUNE 30, 1997 | JUNE 30, 1996 |
|---|---|---|
| **Active Employees:** | | |
| Vested | 107,080 | 111,680 |
| Not yet vested | 40,656 | 35,751 |
| Total active employees | 147,736 | 147,431 |
| | | |
| Retirees and beneficiaries currently receiving benefits: | | |
| Membership service | 59,320 | 57,914 |
| Terminated employees entitled to benefits but not yet receiving them: | 17,301 | 16,546 |

# IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
# SCHEDULE OF FUNDING PROGRESS

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

| Actuarial Valuation Date | Net Actuarial Value of Assets (a) | Actuarial Accrued Liability (AAL)* (b) | Unfunded AAL (UAAL) (b-a) | Funded Ratio (a/b) | Covered Payroll (P/R) (c) | UAAL as a Percentage of Covered P/R [(b-a)/c] |
|---|---|---|---|---|---|---|
| 6/30/94 | $6,926,678,212 | -- | -- | -- | $3,175,877,083 | -- |
| 6/30/95 | 7,574,159,776 | -- | -- | -- | 3,352,992,969 | -- |
| 6/30/96 | 8,975,396,251 | 10,136,356,814 | 1,160,960,563 | 88.55% | 3,463,455,913 | 33.52% |
| 6/30/97 | 10,112,976,077 | 10,774,216,472 | 661,240,395 | 94.12% | 3,640,257,177 | 18.16% |

*Prior to 6/30/96 the aggregate cost method was used which does not generate an actuarial accrued liability.

Actuarial Assumptions:
    Actuarial cost method: Entry age normal cost method
    Amortization method: Open period, level percent of pay
    Asset valuation method: Expected value +25% of difference between market and expected value
    Investment Rate of Return: 7.5%
    Inflation Rate: 4.0%
    Salary Increases: 4.0 - 10.0% varying by age

# IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
## SCHEDULE OF EMPLOYER CONTRIBUTIONS

(All dollar amounts in millions)

| Fiscal Year Ending | Covered Employee Payroll | Actual Employer Contributions | Actual Employer Contribution % | Annual Required Contribution (ARC) % | Percentage of ARC Contribution |
|---|---|---|---|---|---|
| 6/30/92 | $2,857.1 | $169.1 | 5.92% | 5.130% | |
| 6/30/93 | 3,019.4 | 176.4 | 5.84 | 5.273 | |
| 6/30/94 | 3,175.9 | 183.5 | 5.78 | 4.967 | |
| 6/30/95 | 3,353.0 | 196.7 | 5.87 | 4.753 | |
| 6/30/96 | 3,463.5 | 204.9 | 5.92 | 5.110 | |
| 6/30/97 | 3,640.3 | 215.0 | 5.91 | | |

In general, employer contribution as a percentage of covered payroll will exceed the normal statutory rate of 5.75% because of higher contribution rates for employees of certain law enforcement, fire safety, and protection occupations.

# APPENDIX A

# SUMMARY STATISTICS ON SYSTEM MEMBERSHIP

## TABLE OF CONTENTS

# SUMMARY OF ACTIVE MEMBERSHIP DATA

We received data on a total of 147,736 active members, excluding those retired and reemployed members. Some of the active records submitted to us were missing data or had invalid dates of birth and/or hire. Assumptions were made in these situations so all membership data was used. The following analysis compares this data with the June 30, 1996 data.

|  | 7/1/97* | 7/1/96* | Change | Percent Change |
|---|---|---|---|---|
| Total Employees | 147,736 | 147,431 | 305 | .2 |
| Projected Covered Payroll** (millions) | $3,925 | $3,787 | $138 | 3.6 |
| Average Age | 44.6 | 44.5 | .1 | .2 |
| Average Entry Age | 33.1 | 33.2 | (.1) | (.3) |
| Average Earnings** | $26,031 | $25,218 | $813 | 3.2 |

\* Data includes part time and retired/re-employed workers which may make some of the average statistics appear artificially low.

\*\* Payroll figures as of July 1 are actual amounts paid during the first quarter of the calendar year, increased by an assumed salary increase factor for a quarter of a year, annualized and projected for the fiscal year.

## Number of Actives



27

# SUMMARY OF INACTIVE MEMBERSHIP DATA

|  | 7/1/97 | 7/1/96 | Change | Percent Change |
|---|---|---|---|---|
| Retirees and Beneficiaries | 59,320 | 57,914 | 1,406 | 2.4 |
| Deferred Vested Members | 17,301 | 16,546 | 755 | 4.6 |

## AGE AND SERVICE DISTRIBUTION AS OF JULY 1, 1997 FOR ACTIVE PARTICIPANTS
### Males and Females

Years of Service

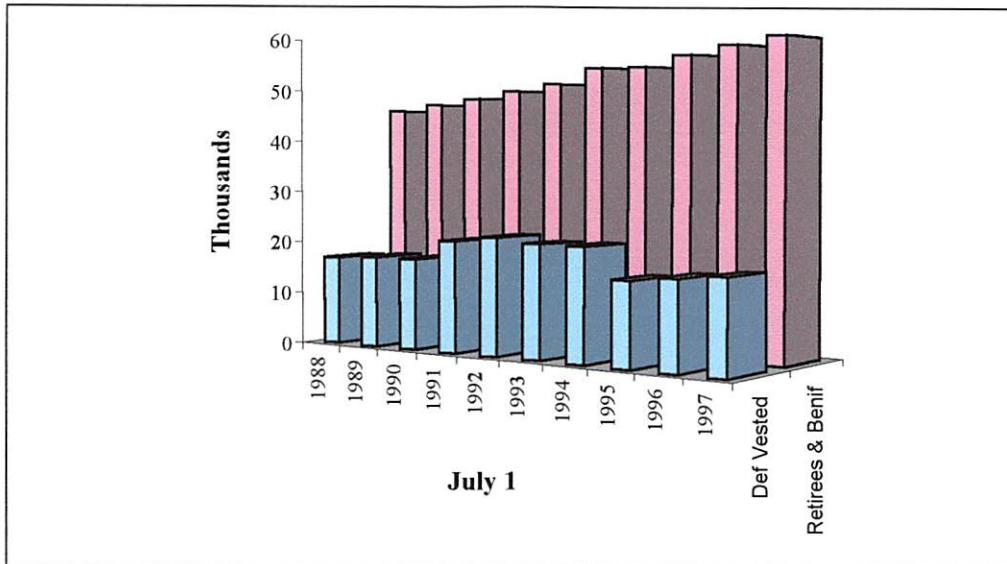| Age | Under 1 No. | Avg. Salary | 1 to 4 No. | Avg. Salary | 5 to 9 No. | Avg. Salary | 10 to 14 No. | Avg. Salary | 15 to 19 No. | Avg. Salary | 20 to 24 No. | Avg. Salary | 25 to 29 No. | Avg. Salary | 30 to 34 No. | Avg. Salary | 35 to 39 No. | Avg. Salary | 40 and over No. | Avg. Salary | Total No. | Avg. Salary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Under 25 | 2 | 3,534 | 3,031 | 13,571 | 64 | 18,011 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 3,097 | 13,656 |
| 25-29 | 0 | NA | 8,000 | 20,078 | 2,278 | 25,135 | 41 | 24,115 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 10,319 | 21,210 |
| 30-34 | 0 | NA | 5,642 | 18,706 | 5,350 | 27,848 | 1,885 | 30,577 | 81 | 28,152 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 12,958 | 24,266 |
| 35-39 | 0 | NA | 6,488 | 16,397 | 4,971 | 24,589 | 4,639 | 32,239 | 2,795 | 32,160 | 207 | 29,413 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 19,100 | 24,825 |
| 40-44 | 0 | NA | 10,062 | 13,657 | 5,831 | 22,489 | 4,247 | 29,930 | 4,874 | 34,874 | 3,262 | 35,415 | 106 | 33,925 | 0 | NA | 0 | NA | 0 | NA | 28,382 | 24,128 |
| 45-49 | 1 | 2,558 | 4,344 | 17,293 | 5,343 | 23,311 | 4,551 | 28,676 | 3,813 | 33,372 | 5,549 | 38,809 | 2,724 | 39,956 | 78 | 34,436 | 0 | NA | 0 | NA | 26,403 | 29,705 |
| 50-54 | 0 | NA | 2,767 | 16,354 | 3,242 | 22,716 | 3,294 | 27,535 | 2,996 | 30,095 | 3,081 | 35,317 | 3,670 | 41,757 | 1,426 | 41,834 | 31 | 40,464 | 0 | NA | 20,507 | 30,367 |
| 55-59 | 4 | 28,521 | 1,719 | 14,152 | 1,926 | 20,263 | 2,029 | 24,979 | 2,111 | 27,026 | 2,314 | 30,086 | 1,846 | 37,691 | 2,012 | 42,550 | 689 | 43,368 | 41 | 38,459 | 14,691 | 29,097 |
| 60-64 | 10 | 22,232 | 1,125 | 11,696 | 1,234 | 17,060 | 1,215 | 21,954 | 1,107 | 25,565 | 1,279 | 26,276 | 1,117 | 32,349 | 813 | 38,697 | 556 | 46,199 | 165 | 42,606 | 8,621 | 25,905 |
| 65-69 | 7 | 22,234 | 693 | 7,595 | 607 | 11,567 | 391 | 17,224 | 288 | 21,013 | 257 | 21,537 | 187 | 26,739 | 118 | 33,659 | 61 | 42,104 | 55 | 44,818 | 2,664 | 16,804 |
| 70 & over | 2 | 20,844 | 427 | 5,314 | 331 | 6,993 | 93 | 13,655 | 61 | 13,373 | 42 | 14,078 | 15 | 33,259 | 14 | 24,353 | 4 | 26,028 | 5 | 49,971 | 994 | 8,547 |
| Totals | 26 | 20,898 | 44,298 | 16,174 | 31,177 | 23,362 | 22,385 | 28,674 | 18,126 | 31,544 | 15,991 | 34,715 | 9,665 | 38,996 | 4,461 | 41,185 | 1,341 | 44,365 | 266 | 42,563 | 147,736 | 26,031 |

29

## AGE AND SERVICE DISTRIBUTION AS OF JULY 1, 1997 FOR ACTIVE PARTICIPANTS
### Males and Females

| | Under 1 | | 1 to 4 | | 5 to 9 | | 10 to 14 | | 15 to 19 | | 20 to 24 | | 25 to 29 | | 30 to 34 | | 35 to 39 | | 40 and over | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. |
| Under 2 | 2 | 32 | 3,031 | 589 | 64 | 3,076 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 3,097 | 640 |
| 25-29 | 0 | NA | 8,000 | 1,408 | 2,278 | 4,992 | 41 | 8,224 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 10,319 | 2,226 |
| 30-34 | 0 | NA | 5,642 | 1,347 | 5,350 | 6,578 | 1,885 | 11,868 | 81 | 14,695 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 12,958 | 5,121 |
| 35-39 | 0 | NA | 6,488 | 1,135 | 4,971 | 5,753 | 4,639 | 13,132 | 2,795 | 19,037 | 207 | 22,884 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 19,100 | 8,106 |
| 40-44 | 0 | NA | 10,062 | 843 | 5,831 | 5,046 | 4,247 | 11,914 | 4,874 | 21,564 | 3,262 | 27,728 | 106 | 31,277 | 0 | NA | 0 | NA | 0 | NA | 28,382 | 10,125 |
| 45-49 | 1 | 23 | 4,344 | 1,229 | 5,343 | 5,251 | 4,551 | 11,327 | 3,813 | 20,222 | 5,549 | 30,992 | 2,724 | 37,642 | 78 | 38,567 | 0 | NA | 0 | NA | 26,403 | 16,648 |
| 50-54 | 0 | NA | 2,767 | 1,180 | 3,242 | 5,216 | 3,294 | 10,880 | 2,996 | 18,040 | 3,081 | 28,291 | 3,670 | 41,352 | 1,426 | 47,044 | 31 | 48,225 | 0 | NA | 20,507 | 20,362 |
| 55-59 | 4 | 351 | 1,719 | 998 | 1,926 | 4,719 | 2,029 | 10,117 | 2,111 | 16,676 | 2,314 | 24,197 | 1,846 | 37,322 | 2,012 | 49,629 | 689 | 55,464 | 41 | 55,952 | 14,691 | 22,584 |
| 60-64 | 10 | 72 | 1,125 | 773 | 1,234 | 3,915 | 1,215 | 9,095 | 1,107 | 15,739 | 1,279 | 21,664 | 1,117 | 32,604 | 813 | 44,591 | 556 | 56,548 | 165 | 59,725 | 8,621 | 20,398 |
| 65-69 | 7 | 278 | 693 | 547 | 607 | 2,616 | 391 | 7,237 | 288 | 12,731 | 257 | 17,868 | 187 | 26,446 | 118 | 35,855 | 61 | 48,944 | 55 | 60,392 | 2,664 | 10,714 |
| 0 & over | 2 | 163 | 427 | 399 | 331 | 1,507 | 93 | 5,506 | 61 | 14,102 | 42 | 10,669 | 15 | 25,125 | 14 | 28,686 | 4 | 38,526 | 5 | 65,609 | 994 | 3,773 |
| Totals | 26 | 173 | 44,298 | 1,089 | 31,177 | 5,317 | 22,385 | 11,460 | 18,126 | 19,188 | 15,991 | 27,707 | 9,665 | 38,102 | 4,461 | 47,261 | 1,341 | 55,399 | 266 | 59,392 | 147,736 | 13,069 |

*Years of Service*

## AGE AND SERVICE DISTRIBUTION AS OF JULY 1, 1997 FOR DEFERRED VESTED PARTICIPANTS
Males and Females

Years of Service

| Age | Under 1 | | 1 to 4 | | 5 to 9 | | 10 to 14 | | 15 to 19 | | 20 to 24 | | 25 to 29 | | 30 to 34 | | 35 to 39 | | 40 and over | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. | No. | Avg. EE Bal. |
| Under 2 | 0 | NA | 5 | 860 | 2 | 1,425 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 7 | 1,021 |
| 25-29 | 0 | NA | 48 | 3,065 | 121 | 3,841 | 2 | 137 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 171 | 3,580 |
| 30-34 | 0 | NA | 145 | 3,125 | 647 | 5,275 | 60 | 9,276 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 852 | 5,191 |
| 35-39 | 0 | NA | 177 | 3,157 | 1,154 | 5,932 | 369 | 11,524 | 75 | 16,259 | 1 | 24,099 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 1,776 | 7,264 |
| 40-44 | 0 | NA | 220 | 3,332 | 1,435 | 6,233 | 707 | 13,115 | 321 | 19,673 | 48 | 25,202 | 0 | NA | 0 | NA | 0 | NA | 0 | NA | 2,731 | 9,694 |
| 45-49 | 0 | NA | 260 | 3,124 | 1,585 | 6,389 | 909 | 13,823 | 533 | 22,068 | 197 | 29,626 | 33 | 36,247 | 0 | NA | 0 | NA | 0 | NA | 3,517 | 12,027 |
| 50-54 | 0 | NA | 209 | 2,950 | 1,438 | 6,442 | 892 | 13,010 | 530 | 22,019 | 289 | 30,813 | 121 | 40,816 | 22 | 46,749 | 0 | NA | 0 | NA | 3,501 | 13,718 |
| 55-59 | 0 | NA | 119 | 3,002 | 924 | 5,806 | 616 | 12,269 | 339 | 20,603 | 189 | 30,703 | 70 | 40,003 | 36 | 46,306 | 1 | 42,761 | 0 | NA | 2,294 | 13,329 |
| 60-64 | 0 | NA | 85 | 2,153 | 556 | 5,290 | 311 | 11,745 | 163 | 17,887 | 92 | 29,116 | 31 | 36,374 | 12 | 39,082 | 2 | 56,654 | 3 | 55,831 | 1,255 | 11,353 |
| 65-69 | 0 | NA | 51 | 1,973 | 201 | 3,981 | 69 | 10,450 | 33 | 16,671 | 21 | 22,856 | 4 | 36,732 | 3 | 46,956 | 0 | NA | 1 | 63,404 | 383 | 7,841 |
| 0 & over | 0 | NA | 80 | 1,231 | 433 | 1,764 | 163 | 3,397 | 98 | 3,914 | 32 | 8,035 | 1 | 39,006 | 2 | 24,477 | 0 | NA | 5 | 15,044 | 814 | 2,727 |
| Totals | 0 | #DIV/0! | 1,399 | 2,905 | 8,496 | 5,759 | 4,098 | 12,381 | 2,092 | 19,981 | 869 | 28,991 | 260 | 39,418 | 75 | 44,724 | 3 | 52,023 | 9 | 34,013 | 17,301 | 10,682 |

31

## ANALYSIS OF RETIREES AND BENEFICIARIES
### Males and Females

**Number of Participants**

| Age | Chapt 97 | Option 1 | Option 2 | Option 3 | Option 4 | Contingent Beneficiary | Option 5 | Per Cert Beneficiary | Total |
|---|---|---|---|---|---|---|---|---|---|
| Under 40 | 0 | 8 | 2 | 0 | 2 | 6 | 3 | 1 | 22 |
| 40 to 44 | 0 | 17 | 4 | 5 | 15 | 11 | 2 | 1 | 55 |
| 45 to 49 | 0 | 43 | 4 | 8 | 23 | 11 | 7 | 2 | 98 |
| 50 to 54 | 0 | 66 | 12 | 8 | 46 | 23 | 13 | 3 | 171 |
| 55 to 59 | 0 | 615 | 276 | 209 | 343 | 39 | 273 | 6 | 1,761 |
| 60 to 64 | 0 | 2,077 | 1,351 | 657 | 1,397 | 144 | 943 | 24 | 6,593 |
| 65 to 69 | 0 | 4,227 | 2,870 | 1,092 | 2,343 | 236 | 1,381 | 74 | 12,223 |
| 70 to 74 | 0 | 4,737 | 3,042 | 1,188 | 1,846 | 370 | 1,410 | 92 | 12,685 |
| 75 to 79 | 2 | 4,979 | 1,750 | 841 | 1,138 | 309 | 1,864 | 44 | 10,927 |
| 80 to 84 | 5 | 4,052 | 692 | 646 | 436 | 186 | 1,592 | 5 | 7,614 |
| 85 to 89 | 20 | 2,719 | 255 | 440 | 101 | 131 | 856 | 1 | 4,523 |
| 90 to 94 | 18 | 1,312 | 120 | 294 | 52 | 50 | 241 | 0 | 2,087 |
| 95 to 99 | 13 | 234 | 85 | 113 | 8 | 20 | 7 | 0 | 480 |
| 100 & over | 10 | 12 | 44 | 10 | 0 | 5 | 0 | 0 | 81 |
| Totals | 68 | 25,098 | 10,507 | 5,511 | 7,750 | 1,541 | 8,592 | 253 | 59,320 |

## ANALYSIS OF RETIREES AND BENEFICIARIES
### Males and Females

#### Average Annual Benefits of Participants

| Age | Chapt 97 | Option 1 | Option 2 | Option 3 | Option 4 | Contingent Beneficiary | Option 5 | Per Cert Beneficiary |
|---|---|---|---|---|---|---|---|---|
| Under 40 | 0 | 3,952 | 1,797 | 0 | 2,919 | 6,040 | 5,056 | 5,728 |
| 40 to 44 | 0 | 4,510 | 6,395 | 6,148 | 5,626 | 5,770 | 3,224 | 1,951 |
| 45 to 49 | 0 | 6,251 | 8,030 | 6,408 | 5,435 | 4,881 | 5,815 | 2,960 |
| 50 to 54 | 0 | 6,938 | 5,087 | 7,939 | 9,747 | 6,517 | 8,357 | 2,560 |
| 55 to 59 | 0 | 7,488 | 8,825 | 9,922 | 11,992 | 7,140 | 9,153 | 6,847 |
| 60 to 64 | 0 | 8,461 | 9,769 | 9,608 | 13,383 | 7,925 | 10,948 | 7,842 |
| 65 to 69 | 0 | 6,904 | 8,049 | 6,946 | 10,381 | 6,031 | 7,632 | 6,016 |
| 70 to 74 | 0 | 4,939 | 5,907 | 4,738 | 6,949 | 4,471 | 4,887 | 4,282 |
| 75 to 79 | 1,181 | 3,946 | 4,902 | 3,981 | 5,193 | 3,707 | 3,809 | 3,186 |
| 80 to 84 | 1,156 | 3,274 | 3,721 | 3,083 | 4,167 | 2,802 | 3,174 | 5,216 |
| 85 to 89 | 1,058 | 2,859 | 3,122 | 3,093 | 3,026 | 2,475 | 2,835 | 427 |
| 90 to 94 | 1,440 | 3,050 | 3,457 | 3,668 | 3,321 | 2,267 | 3,183 | 0 |
| 95 to 99 | 1,286 | 2,998 | 3,471 | 3,749 | 4,310 | 2,473 | 3,190 | 0 |
| 100 & over | 984 | 2,811 | 3,705 | 4,107 | 0 | 3,315 | 0 | 0 |
| Totals | 1,203 | 4,822 | 6,629 | 5,442 | 8,886 | 4,523 | 5,330 | 4,966 |

# APPENDIX B

# SUMMARY OF PLAN PROVISIONS

# IOWA PUBLIC EMPLOYEES'
# RETIREMENT SYSTEM

Chapter 97B of the Iowa code sets out the IPERS provisions, which are briefly summarized as follows (the special provisions applicable to certain peace officer groups are not reflected in this summary):

Participation:
In general, the System covers people in non-federal public employment within the State of Iowa. Exceptions to this are set out in the law. A notable exception are those covered by another public system in Iowa (such as judges, state patrol, and policemen and firemen in cities having civil service), employees of the Regents' institutions, and employees of the community colleges who elect alternative coverage under TIAA. Membership is mandatory if a person is in covered employment.

Final Average Salary:
The average of <u>covered</u> salaries for the highest paid three years of the member's service.

Provided however, for retirements between 1997 and 2002 (for certain retirees), the following provisions apply:

| If 3-Year Average Wage Exceeds | Date of Retirement | Final Average Salary |
|---|---|---|
| $48,000 | 1997 | Average of four highest years, or $48,000 if greater |
| 52,000 | 1998 | Average of five highest years, or $52,000 if greater |
| 55,000 | 1999 | Average of six highest years, or $55,000 if greater |
| 55,000 | 2000-2002 | Average of seven highest years, or $55,000 if greater |

Effective January 1, 1997, the covered wage ceiling is lifted. It continues to apply to salary for all years prior to 1997.

**Age and Service Requirements for Benefits:**

| | |
|---|---|
| Normal Retirement | First day of the month of the member's 65th birthday or Rule of 88 (age plus service equals/exceeds 88), with a minimum age 55. Age 55 for sheriffs, deputies and protection occupation members. |
| Early Retirement | First day of any month starting with the month of the member's 55th birthday but preceding the normal retirement date. |
| Late Retirement | After normal retirement date. |
| Deferred Vested Benefit | Before age 55 with at least four years of service. |
| Death Benefit | Upon death of a member before benefits have started. |

**Retirement Benefits:**

| | |
|---|---|
| Normal Retirement | An annual annuity equal to 2% of Final Average Salary (FAS) for each year of service up to 30 years plus 1% of FAS for each of the next 5 years of service. Maximum years of service recognized for benefit accrual purposes is 35. |
| | Members who are sheriffs or deputies receive 60% of FAS after completion of 22 years of service, plus an additional 1% of FAS for years of service greater than 22 but not more than 27. Members of the protection occupation groups receive 60% of FAS after completion of 25 years of service plus an additional 1% of FAS for each year of service greater than 25, but not more than 30. |
| Early Retirement | An annuity, payable at the normal retirement date, determined in the same manner as for normal retirement. A reduction of .25% per month is applied for each month the benefit commences prior to normal retirement age. |

Late Retirement

An annuity, payable after covered employment ends, determined as for normal retirement.

Form of Annuity:

The base form, or normal form, is a life annuity with a guaranteed return of employee contributions. Optional forms include a straight life annuity, a ten year certain and life thereafter annuity, and joint and survivor annuities (with 25%, 50% or 100% to the surviving joint annuitant).

Termination Benefits:

Before age 55, with less than four years of service

A refund of the members contributions under the plan with interest.

Before age 55 with four or more years of service

At the member's election either

(1)   a refund of the employee's contributions under the plan with interest, or

(2)   a deferred retirement income determined as for normal retirement. Payments can be started in accordance with normal or early retirement.

NOTE:   A person eligible for, and receiving, federal social security disability may begin IPERS benefits, unreduced, at any age.

Post-retirement Benefit Increases:

Annual dividends are paid to those retired prior to July, 1990. Effective with the November 1997 dividend payment, the dividend will be adjusted by the least of the following percentages: (1) 80% of the change in the CPI, (2) percentage certified to by the actuary as affordable by the System, and (3) 3%.

36

Death Benefits: A lump sum equal to the member's contributions with interest, plus 1/30 of the member's salary times years of membership service.

Source of Funds:

General Membership:

| | |
|---|---|
| Member Contributions | 3.7% of covered pay. |
| Employer Contributions | 5.75% of covered pay. |

Sheriffs and Deputies:

| | |
|---|---|
| Member Contributions* | Not yet determined. |
| Employer Contributions* | Not yet determined. |

Protection Occupation:

| | |
|---|---|
| Member Contributions* | Not yet determined. |
| Employer Contributions* | Not yet determined. |

*Actuarial contribution rates which are determined every year.

# APPENDIX C

# ACTUARIAL METHOD AND ASSUMPTIONS

Sound financing of any retirement system requires that benefits accruing to its members shall be paid for during their active working lifetime so that when a member (or his beneficiary) becomes entitled to a benefit, the monies necessary to provide such benefit shall be on hand. In this way, the cost of benefits for present active members will not become a liability to future taxpayers.

The principal purpose of an actuarial valuation is to calculate, on the basis of certain assumptions, the present value of benefits that are payable in the future from the system to present members (and their beneficiaries) and the present value of future contributions to be made by the members and their employers. Having calculated such present values, the level of annual contribution to the system required to fund (or pay for) the benefits, in accordance with the above stated principle of sound financing, may be determined.

The assumptions and methods used in the actuarial valuation and the resulting liabilities are presented in this Section II.

## PART A - VALUATION ASSUMPTIONS

Retirement System contribution requirements and actuarial present values are calculated by applying experience assumptions to the benefit provisions and census (member) information of the Retirement System, using the actuarial cost method.

The principal areas of risk which require experience assumptions about future activities of the Retirement System are:

- long-term rates of investment return to be generated by the assets of the system
- patterns of pay increases to members
- rates of mortality among members, retirants and beneficiaries
- rates of withdrawal of active members
- rates of disability among active members
- the age patterns of actual retirements

In making a valuation, the monetary effect of each assumption is calculated for as long as a present member survives – a period of time which can be as long as a century.

Actual experience of the Retirement System will not coincide exactly with assumed experience. Each valuation provides a complete recalculation of assumed future experience and takes into account all past differences between assumed and actual experiences. The result is a continual series of adjustments (usually small) to the computed contribution rate, or alternatively to the amortization period for the unfunded actuarial accrued liability.

From time to time one or more of the assumptions are modified to reflect experience trends (but not random or temporary year to year fluctuations). A complete review of the actuarial assumptions was completed in 1993 and a review of the investment return assumption was completed in late 1995.

## *Rate of Investment Return*

7.50% per annum, compounded annually, net of expenses.

## *Rates of Mortality*

1977 IPERS Unisex Mortality Table is used for retired member mortality. Pre-retirement mortality for active and vested members is based on the 1983 Group Annuity Mortality Table with a blend of 60% female mortality and 40% male mortality. The 1983 Group Annuity Mortality Table for females is used to anticipate beneficiary mortality. Sample rates from all mortality tables are shown below:

| Member Pre-Retirement | | Member Post-Retirement | | Beneficiary |
| --- | --- | --- | --- | --- |
| | Annual Rate of Death per | | Annual Rate of Death per | Annual Rate of Death per |
| Age | 1,000 Members | Age | 1,000 Members | 1,000 Members |
| 20 | 0.3 | 55 | 4.634 | 2.541 |
| 25 | 0.3 | 60 | 7.138 | 4.241 |
| 30 | 0.4 | 65 | 11.813 | 7.064 |
| 35 | 0.6 | 70 | 19.947 | 12.385 |
| 40 | 0.9 | 75 | 33.635 | 23.992 |
| 45 | 1.5 | 80 | 56.338 | 42.945 |
| 50 | 2.6 | 85 | 89.208 | 69.918 |

### Rates of Withdrawal

For determining the present value of retirement allowances and termination benefits payable in the future to current active members and for determining the present value of future covered payroll for current active members, the withdrawal rates are as follows:

| Age | Annual Rate of Withdrawals Per 1,000 Members |
|---|---|
| 22 | 291.0 |
| 27 | 147.5 |
| 32 | 109.6 |
| 37 | 85.7 |
| 42 | 71.8 |
| 47 | 63.4 |
| 52 | 51.6 |
| 55 & Over | 0.0 |

### Rate of Election of Return of Contributions by Vested Members:

| Age | Annual Rate Per 1,000 Members |
|---|---|
| 25 | 1000 |
| 30 | 900 |
| 35 | 800 |
| 40 | 600 |
| 45 | 500 |
| 50 | 100 |
| 55 | 100 |

### Rates of Salary Increase

For determining the present value of retirement allowances and termination benefits payable in the future to current active members and for determining the present value of future covered payroll for current active members, the rates of salary increases are as follows:

| Age | Annual Increase |
|-----|-----------------|
| 22  | 10.0%           |
| 27  | 8.1             |
| 32  | 7.1             |
| 37  | 6.4             |
| 42  | 6.1             |
| 47  | 5.7             |
| 52  | 5.5             |
| 57  | 5.1             |
| 62  | 4.5             |

### Retirement Rates

Upon meeting the requirements for early retirement (but not for unreduced benefits), the following rates apply:

| Age | Assumed Retirement Rate |
|-----|-------------------------|
| 55  | 5%                      |
| 58  | 8                       |
| 60  | 10                      |
| 62  | 35                      |
| 64  | 20                      |

Upon reaching the requirements for unreduced retirement benefits (effective July 1, 1997), it is assumed that the probability of retiring as follows:

| | Assumed Retirement Rates | |
|-----|----------------------|----------------|
| Age | 1st Year Eligible | After 1st Year |
| 55-59 | 25% | 10% |
| 60 | 40 | 15 |
| 61 | 40 | 20 |
| 62 | 50 | 35 |
| 63 | 50 | 20 |
| 64 | 50 | 20 |
| 65 | 50 | 50 |
| 66-70 | 50 | 30 |

41

Those not satisfying Rule of 88 are assumed to retire as follows:

| Age | Assumed Retirement Rate |
|-----|-------------------------|
| 65  | 50%                     |
| 66  | 30                      |
| 67  | 30                      |
| 68  | 30                      |
| 69  | 45                      |
| 70  | 100                     |

Terminated vested members are assumed to retire at age 63.

### Age of Spouses For Joint and Survivor Retirees

The male of the couple is assumed to be three years older than the female.

### Rate of Crediting Interest on Contribution Balances

5.5% per annum, compounded annually.

### Rate of Inflation

4.0% per annum.

### Valuation of Assets

For actuarial purposes, assets are valued at the expected value at the valuation date (based on the assumed rate of investment return) plus 25% of the difference between the market value and expected value.

## ACTUARIAL COST METHOD

The actuarial cost method is a procedure for allocating the actuarial present value of pension plan benefits and expenses to time periods. The method used for the valuation is known as the entry age normal actuarial cost method. Under this method, a total contribution rate is determined which consists of two parts: (i) the normal cost rate and (ii) the unfunded actuarial accrued liability (UAAL) rate. The entry age normal cost method has the following characteristics:

(i) The annual normal costs for each individual active member are sufficient to accumulate the value of the member's pension at time of retirement.

(ii) Each annual normal cost is a constant percentage of the member's year by year projected compensation.

The entry age normal actuarial cost method allocates the actuarial present value of each member's projected benefits on a level basis over the member's compensation between the entry age of the member and the assumed exit ages.

The portion of the actuarial present value allocated to the valuation year is called the normal cost. The portion of the actuarial present value not provided for by the actuarial present value of future normal costs is called the actuarial accrued liability. Deducting the actuarial value of assets from the actuarial accrued liability determines the unfunded actuarial accrued liability (UAAL). The difference between the statutory contribution rate (9.45%) and the normal cost rate is used to finance the UAAL and the number of years necessary to finance the unfunded actuarial accrued liability as a level percent of member payroll is determined.

43

# DEFINITION OF TERMS

**Actuarial Accrued Liability**

The difference between the actuarial present value of system benefits and the actuarial value of future normal costs. Also referred to as "accrued liability" or "actuarial liability."

**Actuarial Assumptions**

Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

**Accrued Service**

Service credited under the system which was rendered before the date of the actuarial valuation.

**Actuarial Equivalent**

A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.

**Actuarial Cost Method**

A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of retirement system benefit between future normal cost and actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

**Experience Gain(Loss)**

The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.

**Actuarial Present Value**

The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.

| | |
|---|---|
| **Amortization** | Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment. |
| **Normal Cost** | The actuarial present value of retirement system benefits allocated to the current year by the actuarial cost method. |
| **Unfunded Actuarial Accrued Liability** | The difference between actuarial accrued liability and the valuation assets. Sometimes referred to as "unfunded accrued liability" or "unfunded liability". |

Most retirement systems have unfunded actuarial accrued liability. They arise anytime new benefits are added and anytime an actuarial loss is realized.

The existence of unfunded actuarial accrued liability is not in itself bad, any more than a mortgage on a house is bad. Unfunded actuarial accrued liability does not represent a debt that is payable today. What is important is the ability to amortize the unfunded actuarial accrued liability and make payments to finance it. Also of importance are trends in the amount or duration of payment.