IOWA PUBLIC EMPLOYEES'
RETIREMENT SYSTEM

Actuarial Valuation Report
as of June 30, 1998

ACTUARIAL VALUATION OF THE IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
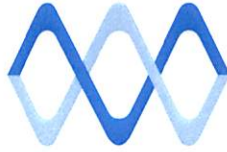
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APPENDICES

MILLIMAN & ROBERTSON, INC.
Actuaries & Consultants
Internationally WOODROW MILLIMAN

November 10, 1998

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, 1998. 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 8 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.

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

Brent A. Banister, A.S.A.
Associate Actuary

Introduction

This report presents the results of the June 30, 1998 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, 1998 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, 1998, and

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

The valuation report reflects several changes in benefit provisions since the 1997 valuation. Legislation passed in 1998 included the following benefit enhancements:

- Unreduced retirement benefits for members retiring at age 62 with 20 or more years of service (and early retirement reduction factors applied from age 62 instead of 65 for those with 20 or more years of service).

- Retiree *ad hoc* increases beginning January 1, 1999 as follows:
  (1)   Members retired prior to 7/1/86:   15%
  (2)   Members retired on/after 7/1/86 but before 7/1/90:   7%

- Partial refund (years of service divided by 30) of employer contributions with interest for vested members who terminate employment and elect a refund of member contributions.

- Creation/initial funding of the Favorable Experience Dividend reserve account.

- Creation of Active Member Supplemental Accounts. This provision had no impact on the valuation results.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on June 30, 1998. The valuation results reflect overall favorable experience for the past plan year. Despite the benefit enhancements granted by the 1998 Legislature, the unfunded actuarial liability decreased by over $100 million, due to a significant actuarial gain on investment return. As a result, the amortization period declined from 9 to 8 years. The normal cost increased as a result of the benefit enhancements, resulting in a smaller percentage of the contribution being available for payment on the unfunded actuarial liability.

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. As a result the remaining amortization period varies with each valuation. The current valuation results indicate the statutory rate results in an amortization period of 8 years, which is less than the funding policy's maximum of 30 years.

The following chart and graph illustrate the remaining amortization period for the last three valuations. Prior to 1996 a different actuarial cost method was used which did not directly calculate an actuarial liability so comparable statistics are not available.

Amortization Period

| July 1	Years
1996	20
1997	9
1998	8
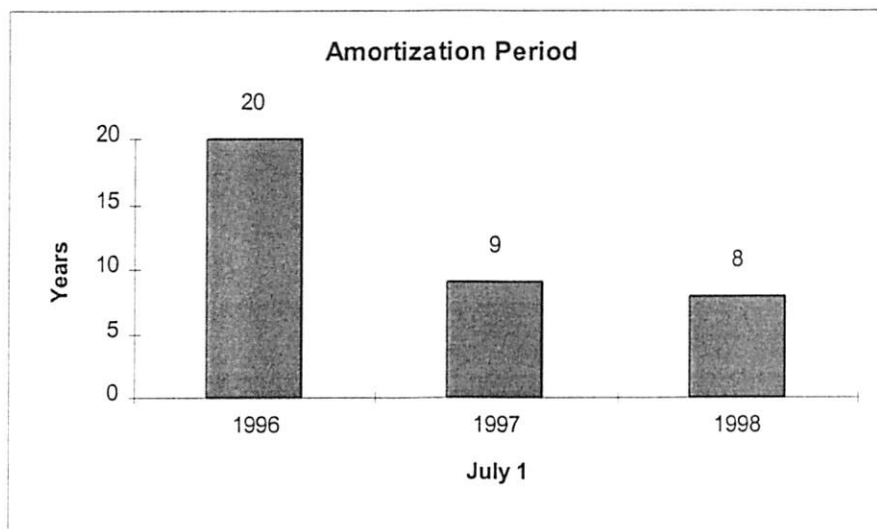
Experience

Numerous factors contributed to the change in the Systems' asset, liabilities and remaining amortization period for the unfunded actuarial liability between June 30, 1997 and June 30, 1998. 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 in the UAL and are measured as the difference between the expected unfunded actuarial liability (UAL) and the actual unfunded actuarial liability, taking into account changes due to assumption or benefit provision changes. Overall, the System experienced a net actuarial gain of $598 million. The change in the unfunded actuarial liability between June 30, 1997 and 1998 is shown below (in millions):

Unfunded Actuarial Liability, June 30, 1997	$ 661
• Expected change in UAL due to amortization payment	(43)
• Investment gain	(716)
• Liability loss from actual experience	118
• Benefit enhancements (excluding FED)	342
• Initial funding for FED	193
Unfunded Actuarial Liability, June 30, 1998	$ 555

The following summarizes the unfunded actuarial liability for IPERS over the last three valuations. Prior to that time, a different actuarial cost method was used which did not directly calculate an actuarial liability. Therefore, comparable statistics for years prior to 1996 are not available.

Unfunded Actuarial Liability

$1,161 (1996), $661 (1997), $555 (1998)

(chart, $ Millions vs. July 1)

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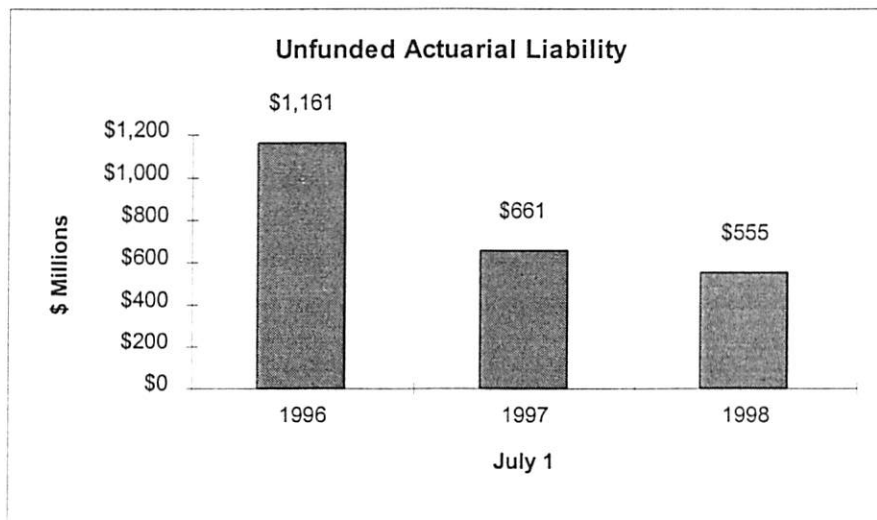
Assets

As of June 30, 1998, the System had total funds of $13.7 billion, when measured on a market value basis, before the adjustment for initial funding of the Favorable Experience Dividend (FED) reserve account. This was an increase of $2.2 billion from the prior year. The components of this change are shown below:

	Market Value
Net Assets, June 30, 1997	$ 11,534
• Employer and Member Contributions	+ 387
• Benefit Payments	- 427
• Administrative Expenses	- 4
• Investment Income (Expected)	+ 863
• Investment Gain/(Loss)	+ 1,340
Net Assets, June 30, 1998	$13,693

The market value of assets is not used directly in the calculation of the contribution rate 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 change in the actuarial value of assets, before adjustment for the initial funding of the FED reserve account, from June 30, 1997 to June 30, 1998 is shown below:

Actuarial Value of Assets June 30, 1997	$ 10,113
• Employer and Member Contributions	+ 387
• Benefit Payments	- 427
• Investment Income (Expected)	+ 757
• Investment Gain/(Loss)	+ 716
Actuarial Value of Assets June 30, 1998	$11,546*

*The actuarial value used in developing costs was decreased by $193 million to reflect the funding of the FED, which is expected to occur during the current plan year.

The dollar weighted rate of return measured on the actuarial value of assets was 14.6%.

A comparison of asset values on both the market and actuarial basis is shown below:

	June 30		Change
	1998	1997	
Market Value of Assets	13,693	11,534	18.7%
Actuarial Value of Assets	11,546	10,113	14.2%

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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 fund 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, 1998 and June 30, 1997 are summarized below:

	June 30		
	1998	**1997**	**Change**
Actuarial Balance Sheet Liability (PVFB)	$14,404	$13,124	9.8%
Actuarial Accrued Liability	11,907	10,774	10.5%
PBO	10,635	9,582	11.0%
Present Value of Accrued Benefits (PVAB)	8,866	7,889	12.4%

Comparison of Major Valuation Results

The major findings of the 1998 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 Net Assets
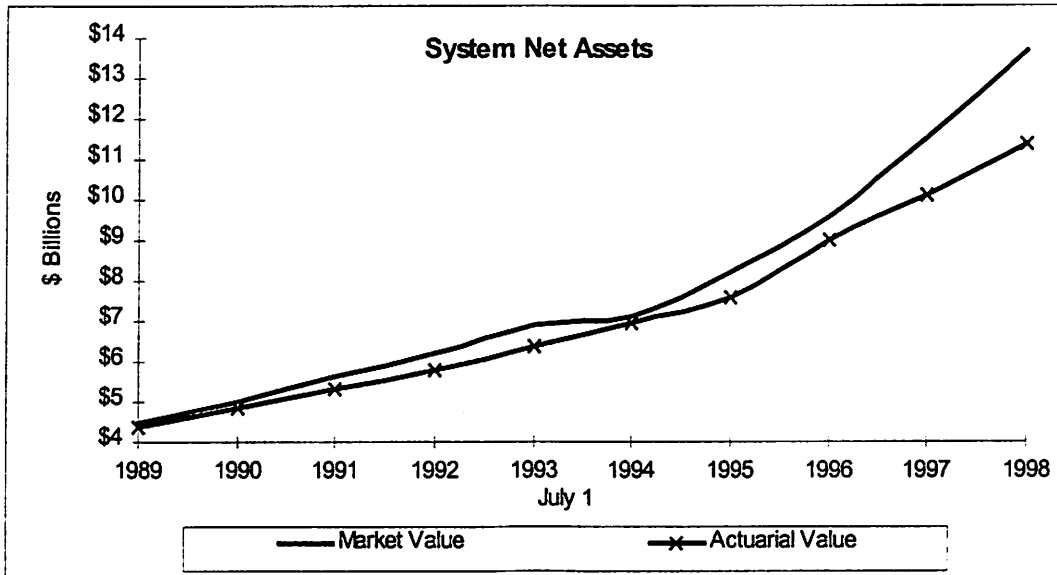
System liabilities have increased each year, which is to be expected.

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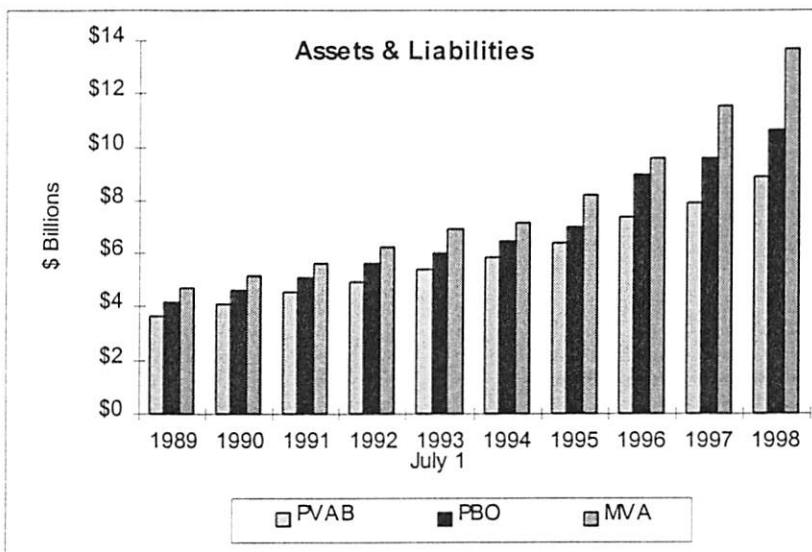
PVAB = Present Value of Accrued Benefits
PBO = Projected Benefit Obligation
MVA = Market Value of Assets

Assets & Liabilities

Historical information for the 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 decrease in the unfunded actuarial accrued liability (the difference between the actuarial accrued liability and the actuarial value of assets) from 1997 to 1998 due to investment gains, despite the enactment of benefit improvements by the 1998 Legislature.

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

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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 8 years, if all actuarial assumptions are met. This period is one year less than the amortization period in the 1997 valuation, even with the benefit enhancements granted by the 1998 Legislature. This amortization period is 15 years less than the average for public retirement systems of comparable membership size*.

The net result of all changes was a decrease in the unfunded actuarial accrued liability (UAAL) from $661 billion to $555 million. The funded percentage, measured as the ratio of actuarial value of assets to actuarial accrued liability, is 95.3% as of June 30, 1998, as compared to 93.9% as of June 30, 1997. This compares with an average funded percentage of 88.7% for public retirement systems.*

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, 1997 and June 30, 1998 valuations.

*Data from "1997 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, 1998*	June 30, 1997*	% Chg
SYSTEM MEMBERSHIP			
1. Active Membership			
- Number of Participants	148,917	147,736	.8
- Projected Payroll for Fiscal Year End	4,104M	3,925M	4.6
- Average Salary	26,767	26,055	2.7
2. Inactive Membership			
- Number Not in Pay Status	88,823	83,762	6.0
- Number of Retirees/Beneficiaries	61,648	59,320	3.9
- Average Annual Benefit	6,819	6,018	13.3
ASSETS AND LIABILITIES			
1. Net Assets			
- Market Value	13,693M	11,534M	18.7
- Actuarial Value	11,352M	10,113M	12.3
2. Projected Liabilities			
- Retired Members	3,866M	3,366M	14.9
- Inactive Members	308M	256M	20.3
- Active Members	10,230M	9,502M	7.7
- Total Liability	14,404M	13,124M	9.8
3. Actuarial Accrued Liability	11,907M	10,774M	10.5
4. Unfunded Actuarial Accrued Liability	555M	661M	(16.0)
5. Funded Ratio (Actuarial Value Assets/Actuarial Accrued Liability)	95.3%	93.9%	1.5
SYSTEM CONTRIBUTIONS			
Required Contribution Rate**	9.45%	9.45%	0.0
Years Required to Amortize Unfunded Actuarial Liability	8 years	9 years	(11.1)

M = ($)Millions

* These membership figures are based on March 31 data.

** Contribution for certain special groups (3.3% of the membership) are not fixed at 9.45% but are determined separately each year.

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.

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Section II
System Assets

Information regarding the actuarial and market values of System assets as of June 30, 1998 is presented on the following pages:

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ANALYSIS OF NET ASSETS AT MARKET VALUES

	($ Millions)			
	June 30, 1998		June 30, 1997	
	Amount	% of Total	Amount	% of Total
Cash & Equivalents	35	0.3	120	1.0
Fixed Assets, Receivables and Payables	(1,225)	(8.9)	(942)	(8.2)
Domestic Fixed Income	4,142	30.2	3,359	29.1
Domestic Equity	4,654	34.0	3,886	33.7
International Equity	1,209	8.8	1,017	8.8
International Fixed Income	931	6.8	753	6.5
Tactical Asset Funds	1,626	11.9	1,273	11.1
Real Estate Funds	492	3.6	410	3.6
Private Equity/Debt	1,171	8.5	1,023	8.9
Collateral Pool	658	4.8	635	5.5
NET ASSETS	13,693	100.0	11,534	100.0

Allocation of IPERS Investments

As of June 30, 1998
(% of Market Value by Type)

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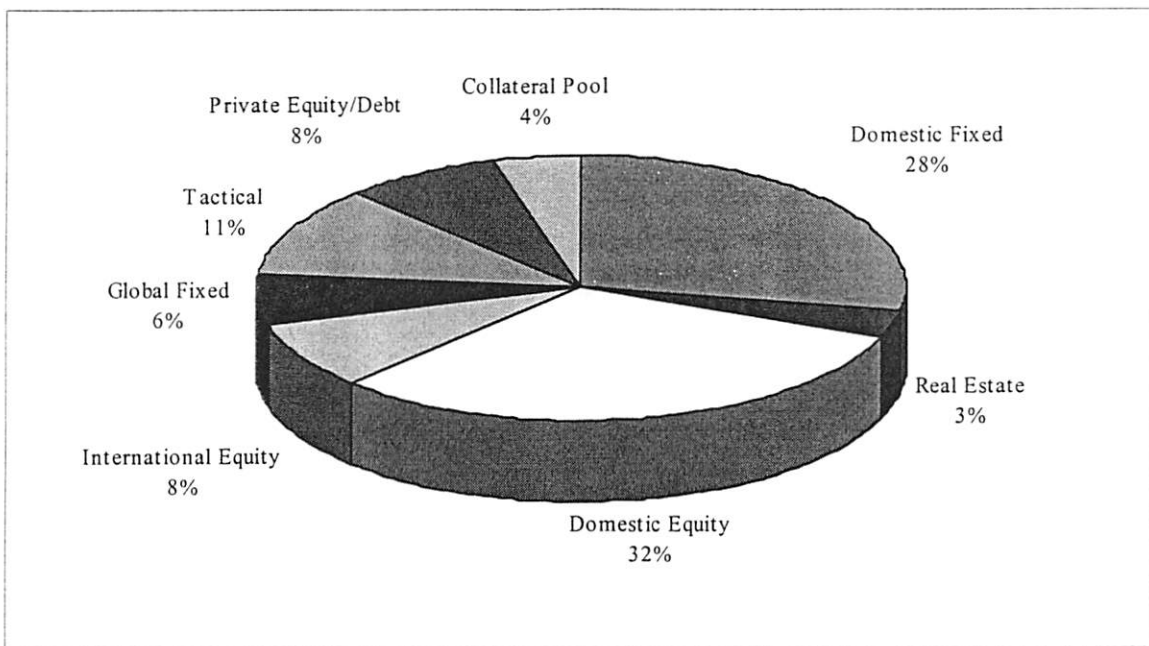
SUMMARY OF FUND ACTIVITY
(Market Value)

NET ASSETS ON 6/30/97	**$ 11,533,968,923**

REVENUE

Employer Contributions	227,772,773
Member Contributions	151,848,515
Service Purchase	7,581,962
Investment income	2,258,859,382
Total Revenue	**$ 2,646,062,632**

DISBURSEMENTS

Benefit payments	402,544,698
Member and employer refunds	24,557,597
Administrative expense	4,012,736
Investment expense	56,016,692
Total Expenses	**$ 487,131,723**

NET ASSETS ON 6/30/98	**$13,692,899,832***

* Does not reflect the reduction for the $229 million initial funding of the Favorable Experience Dividend reserve account.

ACTUARIAL VALUE OF NET ASSETS

1.	Actuarial value of Assets as of June 30, 1997	$10,112,976,077
2.	Actual Receipts/Disbursements	
	a. Contributions	387,203,250
	b. Benefit Payments	427,102,295
	c. Net Change	(39,899,045)
3.	Expected Value of Assets as of June 30, 1998 [(1) x 1.075] + [(2c) x (1 + .075/2)]	10,830,054,024
4.	Market Value of Assets as of June 30, 1998	13,692,899,832
5.	Difference Between Market and Expected Values (4) - (5)	2,862,845,808
6.	Actuarial Value of Assets as of June 30, 1998 (3) + [(5) x 25%]	11,545,765,476
7.	Adjustment for Initial Funding of the Favorable Experience Dividend Reserve Account	(193,091,334)
8.	Actuarial Value of Assets for June 30, 1998 Actuarial Valuation	11,352,674,142

HISTORICAL COMPARISON (ACTUARIAL AND MARKET)

Value As of	Actuarial Value of Net Assets	Market Value of Net Assets
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
June 30, 1998**	11,352,674,142	13,463,899,832

*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.

**Reflects reduction for initial funding of Favorable Experience Dividend Reserve Account.

System Net Assets

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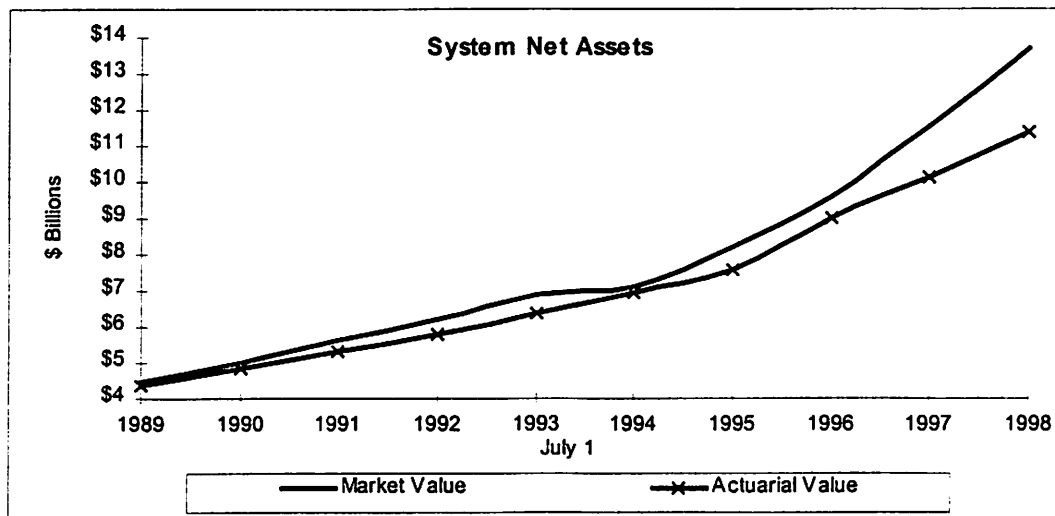
SECTION III

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, 1998, 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:

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UNFUNDED ACTUARIAL ACCRUED LIABILITY
as of June 30, 1998

1. Present Value of Future Benefits

    a.   Liability for Retired Members
        and Beneficiaries $3,866,369,340

    b.   Inactive Members Liability   307,613,143

    c.   Active Members Liability   10,230,299,484

    d.   Total System Liability   14,404,281,967

2. Present Value of Future Normal Costs   2,497,061,550

3. Actuarial Accrued Liability (1) - (2)   11,907,220,417

4. Actuarial Value of Net Assets   11,352,674,142

5. Unfunded Actuarial Accrued Liability (3) - (4)   554,546,275

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, 1998)

1.	Present value of vested accrued benefits for active plan members	$	4,660,686,505
	Present value of vested benefits being paid to plan retirees and beneficiaries		3,866,369,340
	Present value of vested benefits to terminated plan members not yet in pay status (deferred vested)		294,936,523
	Accumulated employee account balance of nonvested inactive members		12,676,620
	Total present value of vested accrued benefits	$	8,834,668,988
2.	Present value of nonvested accrued benefits	$	31,601,888
3.	Total present value of all accrued benefits	$	8,866,270,876

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, 1998	JUNE 30, 1997
Retired Members and Beneficiaries	$ 3,866,369,340	$ 3,366,088,472
Deferred Vested Members	294,936,523	241,858,187
Nonvested Members	12,676,620	13,690,966
Active Members		
- Accumulated employee contributions with interest	2,012,398,849	1,933,363,854
- Employer-financed vested portion	4,382,433,941	3,952,499,340
- Employer-financed non-vested portion	66,465,754	74,815,976
- Total	6,461,298,544	5,960,679,170
Total System Obligation	10,635,281,027	9,582,316,795
Net Assets Available for Benefits	$13,463,899,832*	$11,533,968,923
Unfunded Pension Benefit Obligation	(2,828,618,805)	(1,951,652,128)
Funded Percentage	126.6%	120.4%

*Market value shown has been decreased by $229 million which is allocated to the initial funding of the Favorable Experience Dividend Reserve Account.

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:

Page	Contents
23	Actuarial Balance Sheet
24	Analysis of Contribution Rate

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ACTUARIAL BALANCE SHEET
JUNE 30, 1998

ASSETS

Actuarial value of assets	$	11,352,674,142
Present value of future normal costs		2,497,061,550
Present value of future contributions to amortize unfunded actuarial accrued liability		554,546,275
Total Net Assets	$	14,404,281,967

LIABILITIES

Present Value of Future IPERS Benefits

Retired Members and Beneficiaries
Annuity benefits being paid and contingent
payments upon death 3,866,369,340

Active Members
Retirement allowances 8,615,679,060
Death benefits 168,218,782
Termination benefits 1,436,401,642
Service Purchases in Current Year 10,000,000

Inactive Members
Retirement allowances & death
benefits for vested members 294,936,523

Accumulated employee account balances
for nonvested members 12,676,620

Total Liabilities	$	14,404,281,967

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	7.63%
3.	Contribution Toward Unfunded Actuarial Accrued Liability (UAAL)	1.82%
4.	Unfunded Actuarial Accrued Liability at Valuation Date	554,546,275
5.	Amortization period necessary to finance UAAL as a level percent of payroll at contribution rate shown in (3)	8 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, 1998	JUNE 30, 1997
Active Employees:		
Vested	111,284	107,080
Not yet vested	37,633	40,656
Total active employees	148,917*	147,736*
Retirees and beneficiaries currently receiving benefits:		
Membership service	61,648	59,320
Terminated employees entitled to benefits but not yet receiving them:	31,202	28,377

*Excludes retired/reemployed members

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%
6/30/98	11,352,674,142	11,907,220,417	554,546,275	95.34%	3,908,471,056	14.19%

*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%	115.40%
6/30/93	3,019.4	176.4	5.84	5.273	110.75
6/30/94	3,175.9	183.5	5.78	4.967	116.37
6/30/95	3,353.0	196.7	5.87	4.753	123.50
6/30/96	3,463.5	204.9	5.92	5.110	115.85
6/30/97	3,640.3	215.0	5.91	5.91	100.00
6/30/98	3,908.5	227.8	5.83	5.83	100.00

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

APPENDIX A
SUMMARY STATISTICS ON SYSTEM MEMBERSHIP

TABLE OF CONTENTS

SUMMARY OF ACTIVE MEMBERSHIP DATA

We received data on a total of 148,917 active members, excluding those retired and reemployed members. Some of the active records submitted in the data 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, 1997 data.

	7/1/98	7/1/97	Change	Percent Change
Total Employees	148,917	147,736	1,181	.8
Projected Covered Payroll* (millions)	$4,104	$3,925	$179	4.6
Average Age	44.7	44.6	.1	.2
Average Entry Age	33.2	33.1	.1	.3
Average Earnings*	$26,767	$26,055	$712	2.7

*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
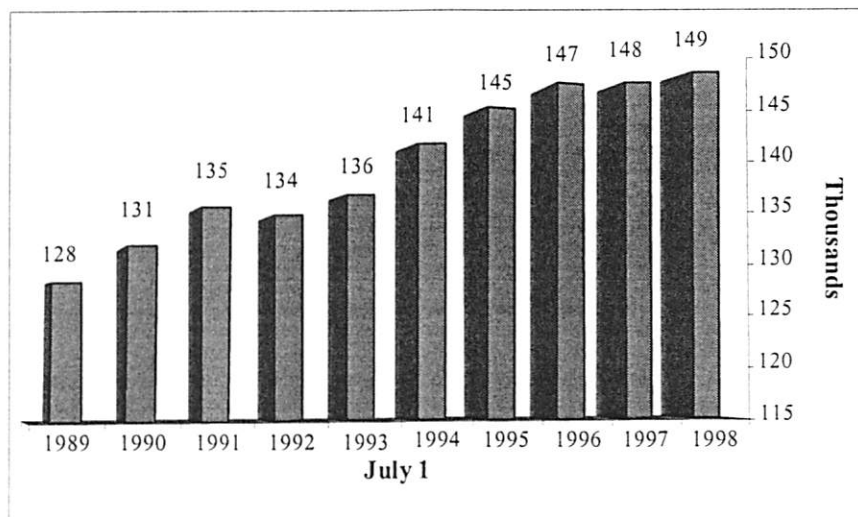
SUMMARY OF INACTIVE MEMBERSHIP DATA

	7/1/98	7/1/97	Change	Percent Change
Retirees and Beneficiaries	61,648	59,320	2,328	3.9
Deferred Vested Members	31,202	28,377	2,825	10.0

AGE AND SERVICE DISTRIBUTION AS OF JULY 1, 1998 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. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary
Under 25	3	1,660	3,202	14,683	59	18,471	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	3,264	14,739
25-29	2	6,285	7,903	21,232	2,284	26,002	42	25,304	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	10,231	22,311
30-34	0	NA	5,532	19,897	5,225	28,704	1,785	31,272	77	29,291	0	NA	0	NA	0	NA	0	NA	0	NA	12,619	25,210
35-39	0	NA	6,413	17,635	4,784	25,122	4,580	33,165	2,485	33,478	236	30,660	0	NA	0	NA	0	NA	0	NA	18,498	25,711
40-44	4	9,076	11,119	14,115	5,794	22,675	4,256	30,547	4,437	35,998	3,303	35,727	128	33,772	0	NA	0	NA	0	NA	29,041	24,118
45-49	1	0	4,382	18,201	5,157	23,543	4,686	28,985	3,737	34,166	5,595	39,411	2,897	40,615	96	34,442	0	NA	0	NA	26,551	30,362
50-54	1	0	2,769	17,830	3,398	22,884	3,680	28,369	2,976	31,468	3,345	36,110	4,112	42,855	1,588	42,604	43	38,398	0	NA	21,912	31,558
55-59	13	22,442	1,854	15,560	1,948	20,492	2,094	26,232	2,026	28,303	2,435	30,588	2,000	38,973	2,072	44,288	550	45,191	31	41,310	15,023	30,064
60-64	34	19,043	1,683	15,080	1,248	17,518	1,210	22,938	986	26,388	1,368	27,081	1,038	32,721	680	38,962	464	46,105	181	43,730	8,892	25,695
65-69	103	7,668	1,534	11,105	762	10,747	391	17,760	254	21,424	263	22,340	165	28,283	90	34,938	58	41,795	49	43,523	3,669	15,438
70 & over	649	3,790	1,749	9,042	775	9,417	116	12,729	50	11,761	35	14,524	20	24,822	13	22,681	3	37,029	6	56,817	3,416	8,604
Totals	810	5,238	48,140	16,849	31,434	23,493	22,840	29,340	17,028	32,646	16,580	35,250	10,360	40,085	4,539	42,446	1,118	45,111	267	43,705	153,116	26,348

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AGE AND SERVICE DISTRIBUTION AS OF JULY 1, 1998 FOR ACTIVE PARTICIPANTS
Males and Females

Years of Service

Age	Under 1 No.	Under 1 Avg. EE Bal.	1 to 4 No.	1 to 4 Avg. EE Bal.	5 to 9 No.	5 to 9 Avg. EE Bal.	10 to 14 No.	10 to 14 Avg. EE Bal.	15 to 19 No.	15 to 19 Avg. EE Bal.	20 to 24 No.	20 to 24 Avg. EE Bal.	25 to 29 No.	25 to 29 Avg. EE Bal.	30 to 34 No.	30 to 34 Avg. EE Bal.	35 to 39 No.	35 to 39 Avg. EE Bal.	40 and over No.	40 and over Avg. EE Bal.	Total No.	Total Avg. EE Bal.
Under 25	3	50	3,202	606	59	2,903	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	3,264	647
25-29	2	134	7,903	1,486	2,284	4,945	42	8,737	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	10,231	2,287
30-34	0	NA	5,532	1,431	5,225	6,772	1,785	12,027	77	15,135	0	NA	0	NA	0	NA	0	NA	0	NA	12,619	5,225
35-39	0	NA	6,413	1,240	4,784	5,814	4,580	13,619	2,485	19,623	236	23,214	0	NA	0	NA	0	NA	0	NA	18,498	8,238
40-44	4	116	11,119	852	5,794	5,112	4,256	12,255	4,437	22,099	3,303	28,300	128	31,959	0	NA	0	NA	0	NA	29,041	9,878
45-49	1	0	4,382	1,305	5,157	5,322	4,686	11,508	3,737	20,616	5,595	31,829	2,897	38,924	96	38,687	0	NA	0	NA	26,551	17,276
50-54	1	0	2,769	1,290	3,398	5,220	3,680	11,326	2,976	18,744	3,345	29,099	4,112	43,006	1,588	49,134	43	46,789	0	NA	21,912	21,586
55-59	13	119	1,854	1,034	1,948	4,818	2,094	10,587	2,026	17,318	2,435	24,717	2,000	39,044	2,072	51,954	550	58,351	31	59,469	15,023	23,192
60-64	34	147	1,683	631	1,248	3,992	1,210	9,621	986	16,115	1,368	22,334	1,038	33,039	680	46,442	464	59,024	181	62,928	8,892	18,982
65-69	103	177	1,534	439	762	2,400	391	7,388	254	12,806	263	18,076	165	27,235	90	37,138	58	49,583	49	62,531	3,669	7,411
70 & over	649	521	1,749	571	775	2,147	116	5,214	50	7,730	35	11,312	20	20,270	13	20,406	3	28,097	6	70,325	3,416	1,629
Totals	810	449	48,140	1,100	31,434	5,323	22,840	11,790	17,028	19,698	16,580	28,363	10,360	39,670	4,539	49,477	1,118	57,650	267	62,620	153,116	13,144

Age Distribution of Active Members

Service Distribution of Active Members
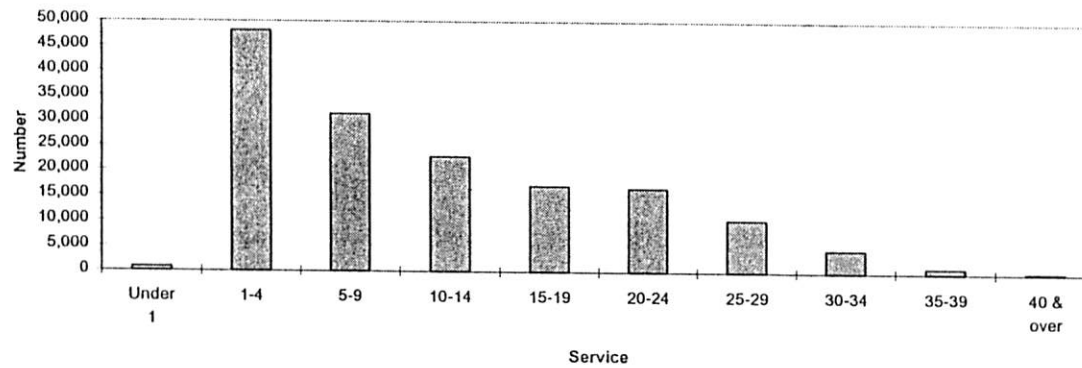
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AGE AND SERVICE DISTRIBUTION AS OF JULY 1, 1998 FOR DEFERRED VESTED PARTICIPANTS
Males and Females

Years of Service

Age	Under 1 No.	Avg. EE Bal.	1 to 4 No.	Avg. EE Bal.	5 to 9 No.	Avg. EE Bal.	10 to 14 No.	Avg. EE Bal.	15 to 19 No.	Avg. EE Bal.	20 to 24 No.	Avg. EE Bal.	25 to 29 No.	Avg. EE Bal.	30 to 34 No.	Avg. EE Bal.	35 to 39 No.	Avg. EE Bal.	40 and over No.	Avg. EE Bal.	Total No.	Avg. EE Bal.
Under 25	2	5,471	11	2,624	12	2,858	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	25	2,964
25-29	0	NA	74	3,086	131	3,924	2	144	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	207	3,588
30-34	0	NA	150	3,068	686	5,503	58	10,281	1	142	0	NA	0	NA	0	NA	0	NA	0	NA	895	5,398
35-39	0	NA	214	3,075	1,190	5,798	390	11,877	76	16,871	0	NA	0	NA	0	NA	0	NA	0	NA	1,870	7,204
40-44	0	NA	231	3,185	1,479	6,239	727	12,802	303	20,058	50	25,804	0	NA	0	NA	0	NA	0	NA	2,790	9,548
45-49	0	NA	291	3,265	1,796	6,226	984	13,818	576	21,257	234	29,547	41	37,436	3	12,390	0	NA	0	NA	3,925	11,837
50-54	0	NA	253	2,870	1,564	6,698	961	13,613	593	22,933	301	31,865	132	41,963	25	46,804	0	NA	0	NA	3,829	14,150
55-59	1,400	33	3,117	426	993	5,903	625	12,790	336	20,899	157	31,998	74	41,748	28	51,024	1	44,862	0	NA	6,731	4,730
60-64	1,026	32	2,122	427	583	5,298	309	11,747	166	19,328	110	29,996	27	35,803	9	41,282	1	58,878	0	NA	4,353	3,575
65-69	747	34	1,426	336	201	4,339	79	10,511	37	17,020	17	27,220	0	NA	3	50,358	0	NA	2	58,913	2,512	1,421
70 & over	1,367	113	2,079	368	382	1,930	139	3,849	70	5,646	23	10,085	1	40,923	1	43,571	0	NA	3	22,208	4,085	731
Totals	4,542	60	9,968	729	9,017	5,841	4,274	12,682	2,158	20,602	892	30,060	275	40,621	69	46,408	2	51,870	5	36,890	31,202	6,422

Age Distribution of Deferred Vested Members

Service Distribution of Deferred Vested Members
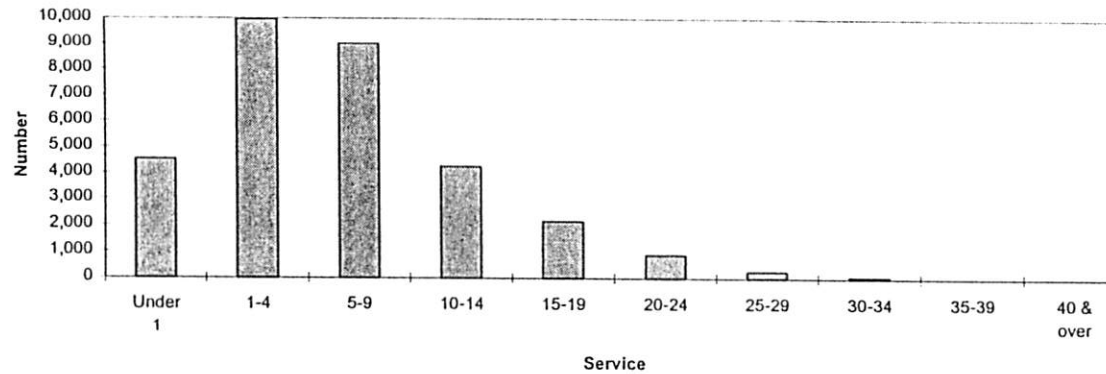
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ANALYSIS OF RETIREES AND BENEFICIARIES
Males and Females

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	10	0	1	3	9	2	1	26
40 to 44	0	19	6	4	11	10	2	0	52
45 to 49	1	40	8	10	25	14	11	4	113
50 to 54	0	79	18	15	56	29	15	3	215
55 to 59	1	718	353	260	436	48	335	17	2,168
60 to 64	0	2,305	1,418	730	1,521	156	1,136	38	7,304
65 to 69	4	4,116	2,770	1,135	2,489	257	1,459	76	12,306
70 to 74	4	4,714	3,168	1,200	1,969	396	1,425	70	12,946
75 to 79	10	4,733	2,046	921	1,240	334	1,697	33	11,014
80 to 84	9	4,154	782	682	501	216	1,594	10	7,948
85 to 89	16	2,767	310	411	128	147	960	0	4,739
90 to 94	18	1,375	118	285	43	54	285	0	2,178
95 to 99	13	302	71	120	10	20	21	0	557
100 & over	8	14	43	9	0	7	1	0	82
Totals	84	25,346	11,111	5,783	8,432	1,697	8,943	252	61,648

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	6,660	0	2,111	6,166	5,116	7,086	147,427
40 to 44	0	4,158	4,443	5,921	4,653	6,440	2,909	0
45 to 49	1,890	5,970	6,816	6,098	5,922	4,213	3,828	151,334
50 to 54	0	6,942	8,214	7,237	9,276	8,131	9,941	569,731
55 to 59	911	8,402	10,004	11,748	13,745	7,706	11,304	1,339,373
60 to 64	0	9,542	10,729	10,814	14,369	8,196	12,161	2,159,222
65 to 69	2,199	7,336	8,635	7,392	11,280	6,512	8,340	1,374,047
70 to 74	1,440	5,300	6,141	5,148	7,526	4,897	5,188	1,068,136
75 to 79	1,619	4,098	5,086	4,048	5,397	4,000	3,864	1,458,572
80 to 84	1,334	3,399	3,954	3,344	4,444	3,089	3,390	2,779,949
85 to 89	1,052	2,890	3,257	2,913	3,382	2,435	2,861	0
90 to 94	1,374	3,010	3,347	3,544	3,397	2,300	3,121	0
95 to 99	1,414	3,118	3,510	3,741	3,916	2,280	3,568	0
100 & over	1,016	2,539	3,556	4,097	0	2,491	434	0
Totals	1,353	5,159	6,989	5,951	9,608	4,841	5,931	1,528,644

* Averages based on data reported by the System as of June 30, 1998 and exclude dividend payments.

Age Distribution of Retirees & Beneficiaries
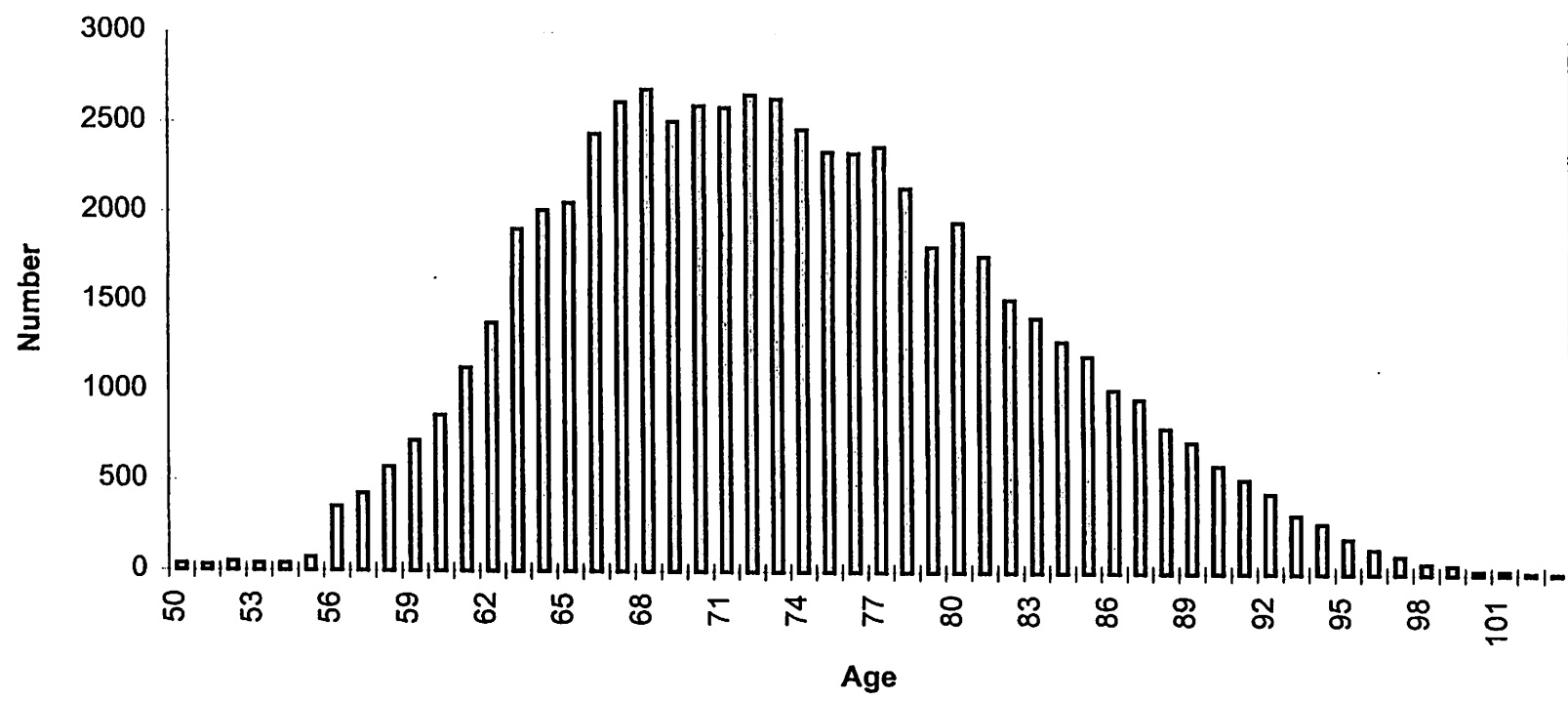
APPENDIX B

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.

Appendix B
Summary of Plan Provisions

Age and Service Requirements for Benefits:

Normal Retirement	Earliest of the first day of the month of the member's 65th birthday, age 62 with 20 years of service 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.

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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 plus a portion(years of service divided by 30) of the employer's contributions with interest, or

(2)   a deferred retirement income determined as for normal retirement. Payments can be e 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%.

Appendix B
Summary of Plan Provisions

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.

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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		Annual Rate	Annual Rate
	of Death per		of Death per	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

Appendix C
Actuarial Method and Assumptions

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

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.

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.