

**IOWA PUBLIC EMPLOYEES'  
RETIREMENT SYSTEM**

**Actuarial Valuation Report  
as of June 30, 2002**

**ACTUARIAL VALUATION OF THE IOWA PUBLIC EMPLOYEES’  
RETIREMENT SYSTEM**

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A MILLIMAN GLOBAL FIRM

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November 11, 2002

Investment Board  
Iowa Public Employees' Retirement System  
7401 Register Drive  
Des Moines, IA 50321

**Re: Iowa Public Employees' Retirement System**

Dear Board Members:

We have performed an actuarial valuation of the Iowa Public Employees' Retirement System (System) as of June 30, 2002. The major findings of the valuation are contained in this report. The report reflects one change in benefit provisions from last year's report. Members employed as Conservation Officers are Special Services Group 2 members, effective July 1, 2002. There was no other change in plan provisions or actuarial methods from the last valuation. The report reflects the changes in the actuarial assumptions, as recommended by Milliman USA based on the 1998 - 2001 Experience Study and adopted by the Investment Board in September, 2002.

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

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

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



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

We would like to express our appreciation to IPERS' Staff, who gave substantial assistance in supplying the data on which this report is based.

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

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

We respectfully submit the following report and look forward to discussing it with you.

MILLIMAN USA, Inc.

Sincerely,

A handwritten signature in cursive script that reads "Patrice Beckham".

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

A handwritten signature in cursive script that reads "Brent A. Banister".

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

# SECTION I

## EXECUTIVE SUMMARY

### *INTRODUCTION*

This report presents the results of the June 30, 2002 actuarial valuation of the Iowa Public Employees' Retirement System (IPERS). The primary purposes of performing the valuation are as follows:

- to evaluate the sufficiency of the statutory contribution rate structure to fund the benefits expected to be paid to members in the future and to determine if the Plan's funding meets the criteria set out in the funding policy established by IPERS,
- to evaluate the funded status of the System and disclose various asset and liability measures as of June 30, 2002, and
- to analyze and report on trends in System contributions, assets, and liabilities over the past several years.

The benefit provisions and actuarial methods reflected in this report are unchanged from last year's report, with one exception. This report reflects the movement of members working as "Conservation Officers" from the general membership to Special Services Group 2, effective July 1, 2002. The assumptions used in this valuation have changed from those used last year. Based on the results of the 1998-2001 Experience Study and our recommendations, the Investment Board adopted a new set of actuarial assumptions in September, 2002. The more significant changes in the actuarial assumptions are listed below:

- Change to the RP-2000 Mortality Table, with age adjustments as appropriate.
- Decrease in the assumed interest rate credited on contribution balances from 5.50% to 4.25%.
- Change in the assumption that vested members will elect a refund from an age-based to a service-based assumption.

Other minor changes were made in the "ultimate" retirement rates and the termination of employment rates for general members. The following assumptions for Special Services members were also changed: retirement, termination of employment, mortality and election of refund by vested members.

The actuarial valuation results provide a "snapshot" view of the System's financial condition on June 30, 2002. The results reflect net unfavorable experience for the past plan year as demonstrated by an unfunded actuarial liability (UAL) that was higher than expected, after taking into account the increase due to the new actuarial assumptions. The UAL on June 30, 2002 is \$1.255 billion as compared to an expected UAL of \$588 million. The unfavorable experience was the net impact of an experience loss of \$409 million on the actuarial value of assets and \$258 million on System liabilities.

The System's normal cost rate (cost allocated to the current year of service worked by active members) this year is 9.03%, which represents an increase from the normal cost rate in the 2001 valuation of 8.93% largely due to the change in assumptions. With the normal cost rate at its current level, only a small part of the total contribution rate is available to fund the UAL.

The significant increase in the UAL, coupled with the increase in the normal cost rate (which effectively reduces the payment to the UAL), has created a situation where the amortization period is infinite (UAL cannot be amortized). This is analogous to a mortgage or loan where the payment is not large enough to pay the interest on the outstanding debt. Consequently, the amount of the debt increases each year. In such a situation, even if all actuarial assumptions are met in future years, the current statutory contribution rate of 9.45% will not be sufficient to provide all of the future benefits promised to current members.

In 1998, legislation was passed to create the Favorable Experience Dividend (FED) reserve. The law provides that a portion of the favorable actuarial experience, if any, in subsequent years may be transferred to the FED reserve. Legislation passed in 2000 capped the FED reserve at ten years of expected payouts at the maximum level. Based on the results of the June 30, 2002 valuation, favorable actuarial experience did not occur for the System and, therefore, there is no transfer to the FED reserve. The current FED reserve is projected to be sufficient to make the maximum potential payment of 3% times years retired for the next five years (including the January 2003 payment), plus a reduced payment in the sixth year, if all assumptions are met in future years. The FED calculations are based on pure market value of assets so investment experience is fully reflected in each valuation. This has the potential to change the remaining years of payment from year to year.

### ***CONTRIBUTION RATE***

The Iowa statutes provide that most IPERS members (general members who represent 96.5% of total active members) shall contribute 3.7% of pay and employers shall contribute 5.75%, for a total of 9.45%. The Special Service groups contribute at an actuarially determined rate that changes each year.

IPERS adopted its Funding Policy in 1996 (see Appendix D for a copy of the Funding Policy). The purpose of the Funding Policy is to provide a basis for the evaluation of the System's funded status and to provide a set of safeguards to help ensure the financial solvency of the System. The Funding Policy defines the term "fully funded" to mean the current actuarial value of assets plus the present value of future expected contributions is equal to or greater than the present value of future benefit payments. There is an additional requirement that the amortization period not exceed 30 years in order for the System to be "fully funded".

One of the purposes of the actuarial valuation is to determine whether the contribution rate for the general membership will be sufficient to fund the future benefits expected to be paid by the System within the guidelines established in IPERS' Funding Policy. The statutory contribution rate is first applied to fund the normal cost rate. The remaining contribution rate is used to amortize the unfunded actuarial liability (UAL) as a level percentage of payroll, which in turn determines the amortization period. As a result, the remaining amortization period varies with each actuarial valuation. Because the normal cost rate for the general membership (9.03%) is so close to the statutory contribution rate of 9.45%, the remaining 0.42% of payroll available for payment toward the UAL is very small. Based on the current UAL amount and amortization payment, the amortization period is infinite. In order for the System to be "fully funded" in the current valuation (the amortization period to be 30 years), the contribution rate for the current year would have increased 1.01% to 10.46% of payroll. However, this rate could only remain stable (level) if all actuarial assumptions, including a 7.5% rate of return on the actuarial value of assets, are met each year in the future, which is unlikely to occur.

When the current assets plus the present value of future expected contributions are not equal to the present value of future benefits for the current membership, the System is not in "actuarial balance". IPERS' Funding Policy provides a set of criteria to assist in deciding whether an increase in the

contribution rate should be considered. If either of the following occurs in at least three of any five consecutive years, the Funding Policy recommends a contribution increase be considered:

- (1) the normal cost rate is within 0.50% of the statutory contribution rate of 9.45% (which first occurred in the 2002 valuation).
- (2) the amortization period exceeds 29 years (which it did for both the 2001 and 2002 valuations).

Based on the Funding Policy alone, there would be no action taken to increase contribution rates as a result of the 2002 valuation. However, based upon a number of factors discussed in the following paragraphs, we recommend action be taken now.

Although the determination that the System is not in “actuarial balance” is based on the assumption that actual experience in the future will unfold exactly as predicted by the actuarial assumptions, it almost certainly will not. Experience gains/losses will occur from year to year, particularly with respect to investment return. Because IPERS utilizes an asset smoothing method, investment experience greater/less than the assumed rate of return of 7.5% is spread over a number of years. As a result, there is currently a difference between actuarial and market value of assets of \$1.2 billion, excluding the FED reserve. Given the amount of unrecognized or deferred actuarial investment loss (actual investment returns below the assumed rate of 7.5%) and the volatility of the current market, it is likely there will be actuarial losses on the investment return assumption over the next few years. As the deferred actuarial investment loss is recognized over the next few years, it will exacerbate the funding shortfall first manifested in this year’s report.

Given the current normal cost rate, the unfunded actuarial liability, and the amount of the unrecognized actuarial investment loss, we believe some type of additional contributions will be necessary in the future. While it is in the System’s best interest for additional contributions to be made sooner instead of later, we recognize the budget and planning considerations of raising contribution rates. There are at least four choices:

- Option 1: “Wait and See”.* The System could wait a few years and see if future experience unfolds to offset the recent negative experience.
- Option 2: “Immediate Change in Contribution Rates”.* This option would make an immediate one-time change in the current contribution rates, based solely on information in the current valuation.
- Option 3: “Temporary Increase”.* This option would implement an immediate increase in contribution rates to infuse additional dollars into the System as soon as possible, while recognizing that additional changes to contribution rates, benefit plan design or both will likely be necessary.
- Option 4: “Further Study”.* This option would study the long term funding of the System, including various results based on capital market assumptions, to determine what change in the contribution structure, if any, is necessary.

Given the extremely small difference between the normal cost rate and the statutory rate, coupled with the significant amount of deferred actuarial investment loss (\$1.2 billion), we do not believe Option 1 is the best choice. Time is not likely to resolve the long term funding issues.

**The fact that the System is not in actuarial balance does not create an immediate funding concern for the System. System assets are sufficient to make future projected benefit payments for many years. The shortfall between assets and liabilities that is indicated by this year’s valuation is a long term funding issue.** Given the infrequent adjustment of contribution rates in the past, we believe the possibility of

increasing contribution rates is a serious matter and one of interest to many different parties. Based on this valuation report alone, there is insufficient information for us to recommend the precise, permanent revision to the current contribution structure. Therefore, even though it infuses additional contribution dollars into the System immediately, Option 2 is not our recommended approach.

However, it is in the System's best interest for additional contributions to be made sooner instead of later. Furthermore, the earlier additional contributions are made, the lower the cost will be. Option 3 would increase the System's funding immediately but recognize that further adjustments will be necessary.

As mentioned earlier there is inadequate information available at this time to recommend new fixed contribution rates. Given the long term nature of the issue, there is adequate time to study the situation thoroughly and make the best possible decision. Future investment experience will have a dramatic impact on the contribution needs of the System so various possibilities need to be modeled to determine the range of probable outcomes. If a change is to be made to the contribution rates, it is in everyone's best interest for the new contribution rate structure to be adequate so rates will not have to be adjusted again in the short term. Therefore, our recommendation would be to select Option 3 and Option 4 or Option 4 alone.

IPERS plans to complete an Asset/Liability Study during fiscal year 2003. We recommend the long term funding issue and the determination of a new contribution rate structure be studied as an extension of that project. This approach will provide more sophisticated modeling techniques, based on statistical analysis and capital market assumptions, which will assist in quantifying the shortfall of the current contribution rate under various scenarios. It will also reflect potential changes in the future demographics of the active membership and possible changes in benefit plan design, which are also important parts of the System's long term funding.

### ***EXPERIENCE FOR LAST PLAN YEAR***

Numerous factors contributed to the change in the Systems' assets, liabilities and remaining amortization period for the unfunded actuarial liability between June 30, 2001 and June 30, 2002. The components are examined in the following discussion.

### **ASSETS**

As of June 30, 2002, the System had total assets of \$14.4 billion, when measured on a market value basis, **excluding the Favorable Experience Dividend (FED) reserve account**. This was a decrease of \$ 1.0 billion from the prior year. The components of this change are shown below:

	<b>Market Value (\$M)</b>
<b>Net Assets, June 30, 2001</b>	<b>\$ 15,358</b>
• Employer and Member Contributions	+ 469
• Benefit Payments and Refunds	- 686
• Administrative Expenses	- 8
• Expected Investment Income (Based on 7.5% assumption)	+ 1,144
• Actuarial Gain/(Loss) on Investment Return	- 1,889
<b>Net Assets, June 30, 2002 Before FED Transfer</b>	<b>\$ 14,388</b>
• FED Transfer Payable January 15, 2003	- 0
<b>Net Assets, June 30, 2002 After FED Transfer</b>	<b>\$ 14,388</b>



On a market value basis, the rate of return was - 4.9%. 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 of 7.5% plus 25% of the difference between the actual market value and the expected asset value.

The change in the actuarial value of assets from June 30, 2001 to June 30, 2002 (which also excludes the FED reserve account) is shown below:

	<b>Actuarial Value (\$M)</b>
<b>Actuarial Assets, June 30, 2001</b>	<b>\$ 15,112</b>
• Employer and Member Contributions	+ 469
• Benefit Payments and Refunds	- 686
• Expected Investment Income* (Based on 7.5% assumption)	+ 1,127
• Investment Gain/(Loss)	- 409
<b>Actuarial Assets, June 30, 2002 Before FED Transfer</b>	<b>\$ 15,613</b>
• FED Transfer Payable January 15, 2003	- 0
<b>Actuarial Assets, June 30, 2002 After FED Transfer</b>	<b>\$ 15,613</b>

\*net of expenses

The dollar-weighted rate of return, net of investment and administrative expenses, measured on the actuarial value of assets was 4.8%. Due to the use of an asset smoothing method, there is currently \$1.2 billion of deferred actuarial investment loss that has not been recognized in the valuation process. Absent investment returns significantly above the 7.5% assumption in the next few years, the deferred actuarial investment loss will gradually be reflected in the actuarial value of assets. As this occurs through the smoothing method, the valuation results will show an actuarial loss on investment experience, which will contribute toward an increase in the unfunded actuarial liability.

The following table shows our projection of the next five valuations based on all future experience following the actuarial assumptions and using generally accepted actuarial techniques. Based on this analysis, and market returns of 7.5% per year, the System's funded ratio declines to 86% by 2007.

(\$Millions)	Projections of Future Valuation Results					
	<u>2002 Valuation</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>
<b>Market Value</b>	\$14,388	\$15,166	\$15,990	\$16,864	\$17,790	\$18,772
<b>Actuarial Liability</b>	16,866	17,809	18,811	19,874	21,002	22,201
<b>Actuarial Value</b>	<u>(15,613)</u>	<u>(16,153)</u>	<u>(16,787)</u>	<u>(17,506)</u>	<u>(18,308)</u>	<u>(19,189)</u>
<b>UAL</b>	\$ 1,253	\$ 1,656	\$ 2,024	\$ 2,368	\$ 2,694	\$ 3,012
<b>Funded Ratio</b>	92.6%	90.7%	89.2%	88.1%	87.2%	86.4%

In order for the funded status not to deteriorate, there will need to be significant investment gains to offset the currently unrecognized \$1.2 billion deferred actuarial investment loss (absent other changes). To illustrate, we estimate the following:

- A market return of approximately 17% in 2002-03 will bring the actuarial value of assets back to market value at that time or,
- Market returns of approximately 11% in 2002-03 and 2003-04 will bring the actuarial value of assets back to market value at that time.

Even if one of these events occurs, the amortization period will remain infinite.

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

<i>(\$Millions excluding FED Reserve)</i>	<b>June 30</b>		
	<b><u>2002</u></b>	<b><u>2001</u></b>	<b><u>2000</u></b>
Market Value of Assets	14,388	15,358	16,474
Actuarial Value of Assets	15,613	15,112	14,145
Actuarial Value/Market Value	108.5%	98.4%	85.9%

## **LIABILITIES**

The actuarial liability is that portion of the present value of future benefits that will not be paid by future normal costs. The difference between this liability and the actuarial value of assets at the same date is called the unfunded actuarial liability (UAL). The dollar amount of unfunded actuarial liability is reduced if the contributions to the System exceed the normal cost for the year plus interest on the previous UAL.

The unfunded actuarial liability by group is shown below:

<i>(\$Millions)</i>	<b><u>General Membership</u></b>	<b><u>Special Services 1</u></b>	<b><u>Special Services 2</u></b>	<b><u>Total</u></b>
Actuarial Liability	\$16,257	\$218	\$393	\$16,868
Actuarial Value of Assets	14,960	233	420	15,613
Unfunded Actuarial Liability	1,297	(15)	(27)	1,255

See Exhibits 6 and 7 in Section 2 of the report for the detailed development of the unfunded actuarial liability for the System.

Actuarial gains (losses) result from actual experience that is more (less) favorable than anticipated based on the actuarial assumptions. These “experience” (or actuarial) gains or losses are reflected in the UAL and are measured as the difference between the expected unfunded actuarial liability and the actual unfunded actuarial liability, taking into account any changes due to assumption or benefit provision changes. Overall, the System experienced a net actuarial loss of \$667 million (see page 25 for a detailed development).

The change in the unfunded actuarial liability between June 30, 2001 and 2002 is shown below (in millions):

<b>Unfunded Actuarial Liability, June 30, 2001</b>	\$ 441
• Expected change in UAL	+ 3
• Investment experience	+ 409
• Liability and other experience	+ 258
• Benefit enhancements	+ 3
• Change in actuarial assumptions	+ 141
<b>Unfunded Actuarial Liability <u>before</u> FED transfer, June 30, 2002</b>	\$ 1,255
• FED Transfer	+ 0
<b>Unfunded Actuarial Liability <u>after</u> FED transfer, June 30, 2002</b>	\$ 1,255

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 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) and is provided here for comparative purposes only. 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.

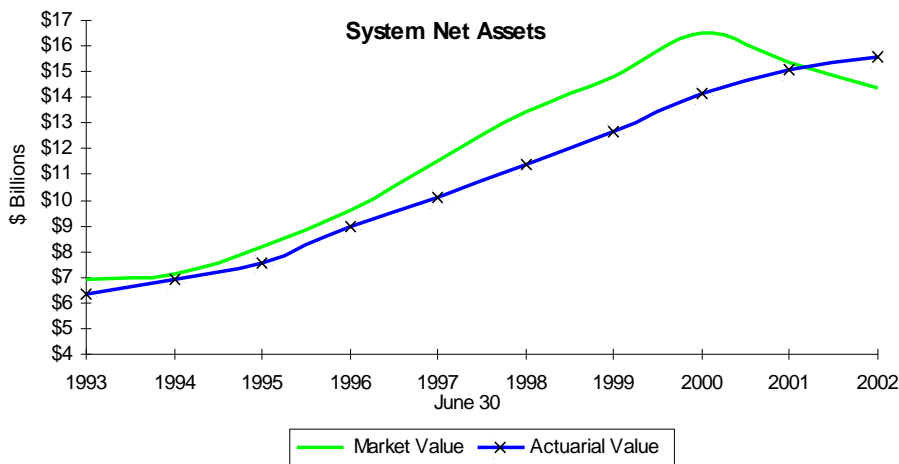
Each liability measurement discussed above is used for a different purpose. Therefore, the relative importance of the measurement will depend on the perspective of the person using the information. From an actuarial viewpoint, the actuarial balance sheet liability and the actuarial liability are the 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, 2002 and June 30, 2001 are summarized below:

	<b>June 30</b>	
	<b>2002</b>	<b>2001</b>
<b>Actuarial Balance Sheet Liability (PVFB)</b>	\$20,936	\$19,314
<b>Actuarial Liability</b>	16,868	15,553
<b>PBO</b>	15,345	14,157
<b>Present Value of Accrued Benefits (PVAB)</b>	13,155	12,233

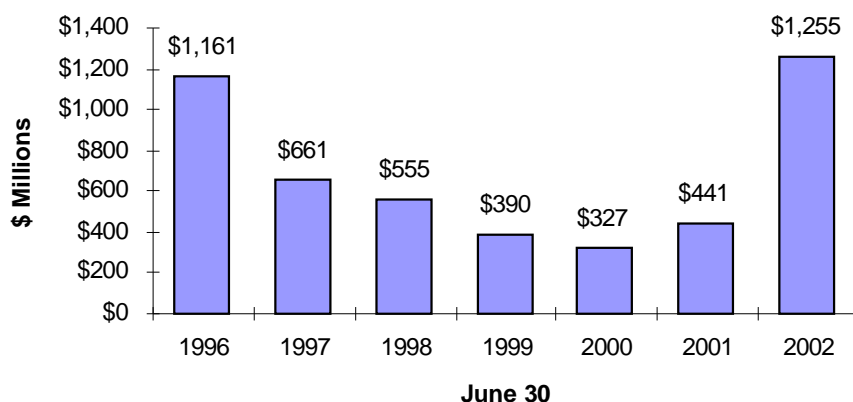
### COMPARISON OF MAJOR VALUATION RESULTS

The major findings of the 2002 valuation compared with prior valuation results are summarized and compared on the following pages.



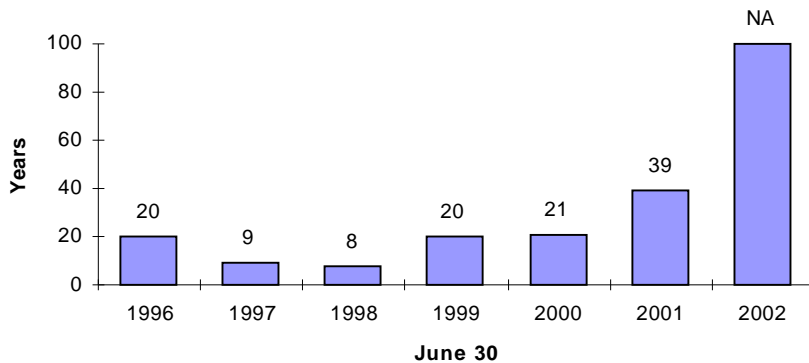
The market performance in the last two years has eliminated the surplus of market value over the actuarial value of assets. Currently the actuarial value exceeds the market value of assets by \$1.2 billion. Absent significant gains in the next few years, the deferred losses will flow through to the actuarial value of assets.

### Unfunded Actuarial Liability



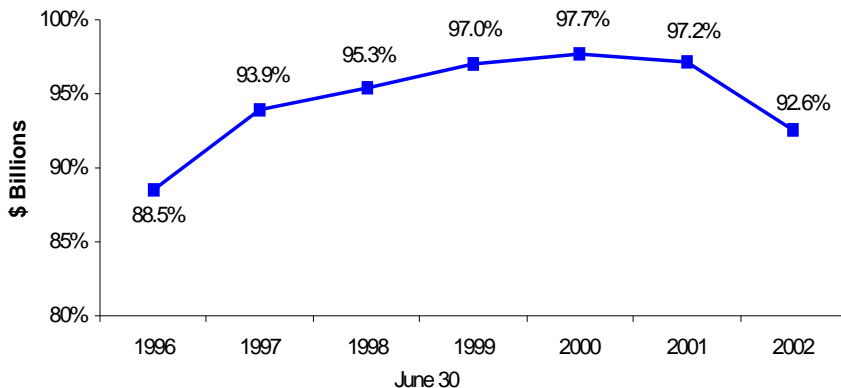
The unfunded actuarial liability reflects both asset and liability experience as well as changes due to benefit enhancements or changes in actuarial assumptions. The large increase in 2002 is the combined impact of an experience loss on assets and liabilities and an increase due to assumption changes.

### Amortization Period



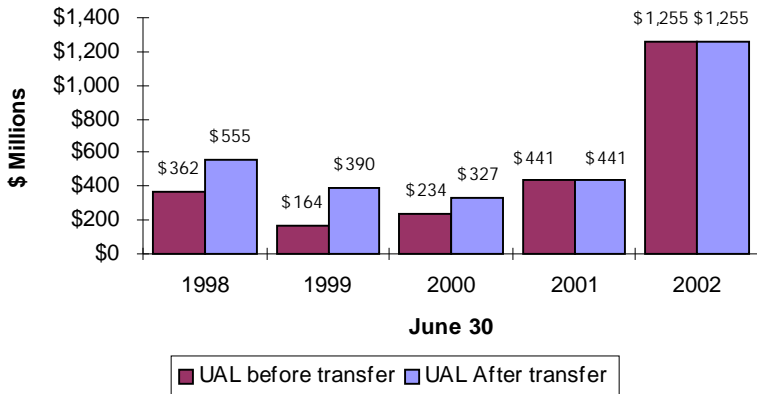
The amortization period reflects the size of the UAL as well as the increase in normal cost rate.

### Funded Percentage



The funded ratio for IPERS increased, steadily from 1996 to 2000. Investment performance and liability increases combined to lower the funded ratio in 2002.

### Impact of FED Transfer on Unfunded Actuarial Liability



The law provides for a portion of the favorable experience to be used to fund the FED Reserve. The amount transferred is dependent upon the funded status of IPERS. When such transfer occurs, there is an increase in the unfunded actuarial liability. No transfer has occurred in the last two years.

## SUMMARY

IPERS, like most retirement plans in the United States (both public and private) is feeling the impact of nearly three years of record low market returns. This, coupled with negative demographic experience and a recent change in actuarial assumptions that increased liabilities, significantly increased the unfunded actuarial liability (UAL) of the System. For most members, IPERS is funded by a fixed (statutory) contribution rate of 9.45%. Given the small 0.42% difference between the 9.45% statutory rate and the 9.03% normal cost rate (cost allocated to the current year of service worked by active members), the increase in the unfunded actuarial liability this year resulted in an infinite amortization period. Despite the unfavorable experience on both the asset and liability side, the System remains nearly 93% funded. If the contribution rate were determined in this year's valuation with an amortization period of 30 years (which is the requirement in IPERS' Funding Policy for the System to be "fully funded"), the contribution rate would be 10.46% of payroll. However, this implicitly assumes all assumptions are met in the future, including a 7.5% rate of return on the actuarial value of assets.

The System faces challenges similar to other large retirement systems. Like most large Systems, IPERS uses an asset smoothing method. This methodology delays recognition of investment gains and losses on a fair (market) value basis. If there is a net deferred investment gain, the actuarial value of assets will be less than the fair value and the funded status will improve in the future if experience follows the assumptions. On the other hand, if there is a net deferred actuarial investment loss, the actuarial value of assets will be greater than the fair value, and the funded status will deteriorate over time if experience follows the assumptions. The current deferred actuarial investment loss for IPERS is \$1.2 billion. Absent market returns significantly in excess of 7.5% in the next few years, the deferred loss will flow into the actuarial value of assets and be recognized in the actuarial valuation process. They will be reflected as experience losses, with a resulting increase in the unfunded actuarial liability. Potentially the UAL could double over the next five years.

The small portion of the total contribution rate that is used to pay down the unfunded actuarial liability exacerbates the situation with the deferred actuarial investment loss. Currently, only 0.42% of payroll is available for payment toward the UAL. With the expectation that additional losses will flow through to the actuarial value of assets, causing the UAL in future years to increase, it appears nearly impossible for the System to be able to pay off the UAL over any reasonable time period without an increase in future contributions. Earlier in this report, we outlined our recommendation with respect to the current funded status and contribution rates. As the System's actuary, we recommend the long term funding of the System be studied, beginning with the Asset/Liability Study scheduled for fiscal year 2003. There is sufficient time to thoroughly analyze the contribution requirements of the System over the long term, taking into consideration the probabilities of different investment returns in the future, potential changes in the demographics of the active members, and possible benefit design changes. Any change in the benefit or contribution rate structure of IPERS is an extremely important decision and we believe all resources available should be used to provide the decision-makers with adequate information. Milliman USA intends to be an active participant in this process.

We conclude this executive summary by providing certain historical and comparative information for the System. The following page reflects recent historical impacts on IPERS' unfunded actuarial liability. The final page of this executive summary present comparative statistics and actuarial information on both the June 30, 2002 and June 30, 2001 valuations. All figures shown include the general membership and the two special service groups.

**SUMMARY OF HISTORICAL CHANGE  
IN  
IPERS UNFUNDED ACTUARIAL LIABILITY**

<u>(\$Millions)</u>	<u>1996-97</u>	<u>1997-98</u>	<u>1998-99</u>	<u>1999-2000</u>	<u>2000-01</u>	<u>2001-02</u>	<u>Total</u>
<b>Unfunded Actuarial Liability (BOY<sup>1</sup>)</b>	1,161	661	555	390	327	441	N/A
• <b>Expected Change</b>	(1)	(43)	(37)	(32)	(22)	3	(132)
• <b>Investment Experience</b>	(474)	(716)	(730)	(781)	(81)	409	(2,373)
• <b>Liability and Other Experience</b>	(25)	118	(211)	515	217	258	872
• <b>Benefit Enhancements</b>	0	342	0	142	0	3	487
• <b>Change in Assumptions</b>	0	0	587	0	0	141	728
• <b>FED Transfer</b>	0	193	226	93	0	0	512
<b>Unfunded Actuarial Liability (EOY<sup>2</sup>)</b>	661	555	390	327	441	1,255	N/A
<b>Amortization Years</b>	9	8	20	21	39	*	

\*Infinite

1 = Beginning in Year

2 = End of Year

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

	June 30, 2002*	June 30, 2001	% Chg
<b>SYSTEM MEMBERSHIP</b>			
1. Active Membership			
- Number of Members	158,467	154,610	2.5
- Projected Payroll for Fiscal Year	\$5,090M	\$4,691M	8.5
- Average Salary	\$32,119	\$30,341	5.9
2. Inactive Membership			
- Number Not in Pay Status	98,228	96,105	2.2
- Number of Retirees/Beneficiaries	71,715	68,703	4.4
- Average Annual Benefit	\$9,091	\$8,221	10.6
<b>ASSETS AND LIABILITIES</b>			
1. Net Assets (excluding FED reserve)			
- Market Value	\$14,388M	\$15,358M	-6.3
- Actuarial Value	15,613M	15,112M	3.3
2. Projected Liabilities			
- Retired Members	\$6,207M	\$5,448M	13.9
- Inactive Members	426M	407M	4.7
- Active Members	14,303M	13,459M	6.3
- Total Liability	20,936M	19,314M	8.4
3. Actuarial Liability	\$16,869M	\$15,553M	8.5
4. Unfunded Actuarial Liability	\$1,255M	\$441M	184.6
5. Funded Ratio (Actuarial Value Assets/Actuarial Liability)	92.56%	97.16%	-4.7
<b>SYSTEM CONTRIBUTIONS</b>			
Required Contribution Rate**	9.45%	9.45%	0.0
Years Required to Amortize Unfunded Actuarial Liability	Infinite	39 years	N/A

M = (\$)Millions

\* These membership figures are based on June 30 data.

\*\* Contribution for certain special groups (3.5% of the membership) are not fixed at 9.45% but are actuarially determined each year.



**SECTION II**  
**SYSTEM ASSETS**

## 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.

Information regarding the actuarial and market values of System assets as of June 30, 2002 is presented on the following pages:

<b><u>Page</u></b>	<b><u>Contents</u></b>
15	Analysis of Net Assets
16	Graph of Asset Allocation
17	Summary of Fund Activity – Market Value
18	Actuarial Value of Net Assets
19	Historical Comparison (Actuarial and Market)
20	Summary of Favorable Experience Dividend Reserve

## EXHIBIT 1

### ANALYSIS OF NET ASSETS AT MARKET VALUES

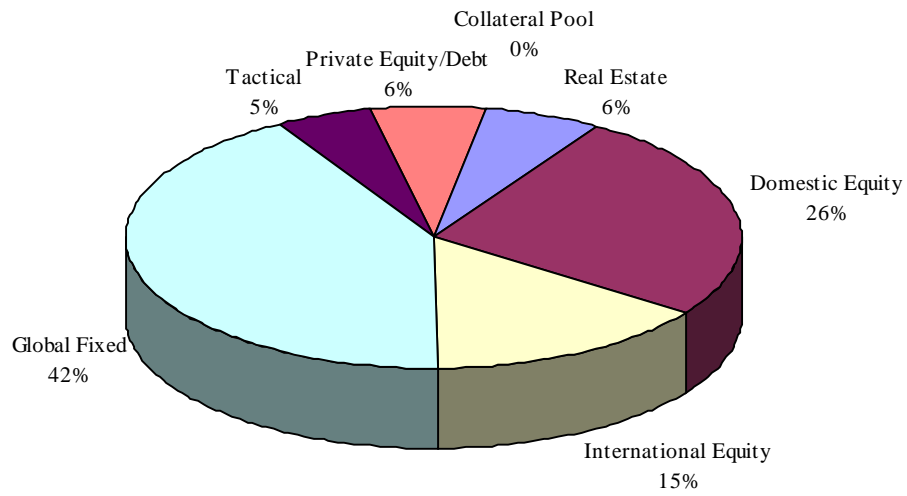
(\$ Millions)

	June 30, 2002		June 30, 2001	
	<u>Amount</u>	<u>% of Total</u>	Amount	<u>% of Total</u>
Cash & Equivalents	\$56	0.4%	\$114	0.7%
Fixed Assets, Receivables and Payables	(446)	(3.0)	(1,039)	(6.5)
Domestic Equity	3,962	26.6	4,588	28.8
International Equity	2,302	15.5	2,245	14.1
Global Fixed Income	6,383	42.9	6,479	40.7
Tactical Asset Funds	749	5.0	813	5.1
Real Estate Funds	944	6.3	885	5.6
Private Equity/Debt	848	5.7	1,189	7.5
Collateral Pool	76	0.5	655	4.1
TOTAL ASSETS	\$14,874	100.0%	\$15,929	100.0%
FED Reserve (Before current year transfer)	486		571	
Net Retirement System Assets	\$14,388		\$15,358	
Allocation of Net Assets:				
General Membership	\$ 13,780			
Special Services Group 1	217			
Special Services Group 2	391			
Total Net Assets	\$ 14,388			

## EXHIBIT 2

### ALLOCATION OF IPERS INVESTMENTS

As of June 30, 2002  
(% Of Market Value by Type)



**EXHIBIT 3**  
**SUMMARY OF FUND ACTIVITY**  
(Market Value)

	<b>General Membership</b>	<b>Special Service Group 1 *</b>	<b>Special Service Group 2 **</b>	<b>FED Reserve</b>	<b>Total</b>
<b>NET RETIREMENT SYSTEM ASSETS ON JUNE 30, 2001</b>	14,745,271,491	223,740,662	388,507,203	571,027,811	15,928,547,167
<b>REVENUE</b>					
FED Transfer	-	-	-	-	-
Employer contributions	260,092,800	5,555,677	13,034,268	-	278,682,745
Member contributions	173,395,200	3,703,785	8,689,511	-	185,788,496
Service purchase	4,650,397	99,440	233,497	-	4,983,334
Investment income	(680,591,342)	(10,501,418)	(18,365,038)	(25,226,025)	(734,683,823)
<b>Total Revenue</b>	(\$242,452,945)	(\$1,142,516)	\$3,592,238	(\$25,226,025)	(\$265,229,248)
<b>DISBURSEMENTS</b>					
Benefit payments	636,237,099	4,194,154	7,446,430	57,890,007	705,767,690
Member and employer refunds	34,524,325	1,274,595	2,116,279	-	37,915,199
Administrative expense	7,424,934	40,938	115,233	-	7,581,105
Investment expense	34,863,803	537,943	940,763	1,292,222	37,634,731
<b>Total Expenses</b>	\$713,050,161	\$6,047,630	\$10,618,705	\$59,182,229	788,898,725
<b>NET RETIREMENT SYSTEM ASSETS ON JUNE 30, 2002</b>	\$13,789,768,385	\$216,550,516	\$381,480,736	\$486,619,557	14,874,419,194
<b>DISTRIBUTION TO FED ON JANUARY 2003</b>	\$0	\$0	\$0	\$0	\$0
<b>TRANSFER FOR CONSERVATION OFFICERS</b>	(\$9,137,443)	\$0	\$9,137,443	\$0	\$0
<b>ADJUSTED ASSETS ON JUNE 30, 2002</b>	\$13,780,630,942	\$216,550,516	\$390,618,179	\$486,619,557	\$14,874,419,194

\* Includes Sheriffs, Deputies and Airport Firefighters

\*\* Includes all other public safety members

## EXHIBIT 4

### ACTUARIAL VALUE OF NET ASSETS

	General Membership	Special Service Group 1 *	Special Service Group 2 **	Total
1. Actuarial Value of Assets as of June 30, 2001	\$14,516,660,213	\$217,630,176	\$378,134,340	\$15,112,424,729
2. Actual Receipts/Disbursements				
a. Contributions	438,138,397	9,358,902	21,957,276	469,454,575
b. Benefit Payments and Refunds	670,761,424	5,468,749	9,562,709	685,792,882
c. Net Change	(232,623,027)	3,890,153	12,394,567	(216,338,307)
3. Expected Value of Assets as of June 30, 2002 [(1) x 1.075] + [(2c) x (1.075) <sup>5</sup> ]	15,364,221,041	237,985,836	419,345,376	16,021,552,253
4. Market Value of Assets as of June 30, 2002	13,789,768,385	216,550,516	381,480,736	14,387,799,637
5. Difference Between Market and Expected Values (4) - (3)	(1,574,452,656)	(21,435,320)	(37,864,640)	(1,633,752,616)
6. Actuarial Value of Assets as of June 30, 2002 (3) + [(5) x 25%]	14,970,607,877	232,627,006	409,879,216	15,613,114,099
7. Adjustment for Transfer to the Favorable Experience Dividend Reserve Account	0	0	0	0
8. Transfer for Conservation Officers	(9,919,897)	0	9,919,897	0
9. Actuarial Value of Assets for June 30, 2002 Actuarial Valuation	\$14,960,687,980	\$232,627,006	\$419,799,113	\$15,613,114,099

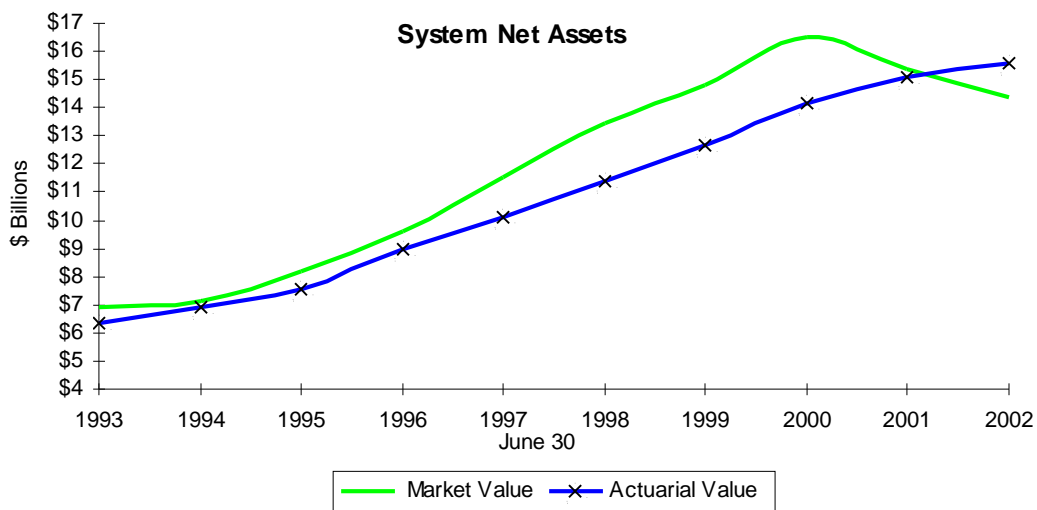
## EXHIBIT 5 HISTORICAL COMPARISON (ACTUARIAL AND MARKET)

Value As of <u>June 30</u>	Actuarial Value of Net Assets (AVA)	Market Value of Net Assets (MVA)	<u>MVA/AVA</u>
1993	6,365,169,296	6,899,590,868	92%
1994	6,926,678,212	7,126,124,256	97%
1995	7,574,159,776	8,199,217,051	92%
1996 *	8,975,396,251	9,587,104,982	94%
1997	10,112,976,077	11,533,968,923	88%
1998 **	11,352,674,142	13,463,899,832	84%
1999 **	12,664,031,437	14,814,311,451	85%
2000 **	14,145,141,535	16,473,516,141	86%
2001 **	15,112,424,729	15,357,519,356	98%
2002 **	15,613,114,099	14,387,799,637	109%

Values are for combined general membership and special service groups but exclude the Favorable Experience Dividend Reserve Account.

\*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 transfers, if any, to the Favorable Experience Dividend Reserve Account.





## EXHIBIT 6

### SUMMARY OF FAVORABLE EXPERIENCE DIVIDEND RESERVE

Market Value of FED Reserve as of June 30, 2002	\$	486,619,557
Transfer Payable on January 15, 2003 Based on June 30, 2002 Valuation Results	\$	0
Total Value of FED Reserve as of June 30, 2002	\$	486,619,557

Payments to retirees from the FED reserve account are not a guaranteed benefit. The System Administration determines each year whether payments will be made and the percentage multiplier factor to be used for each year of retirement, up to the maximum 3% allowed by law. Factors considered by the Administration in this determination include, but are not limited to, the current value of the FED reserve account, past year payments from the reserve, and the likelihood of future credits to and payments from the reserve.

Based on the June 30, 2002 balance in the FED reserve and assuming (1) a 7.5% rate of return on the market value of assets in the future, (2) all other assumptions are exactly met, and (3) the Administration determines the maximum payments will be made each year, the FED reserve is projected to be sufficient to make payments through January 2007.

Estimated Potential Payments (in millions) from the FED on January 31 \*

2003	\$70.9
2004	86.7
2005	103.9
2006	122.6
2007	143.2
2008 **	86.5

\* Based on the maximum payment of 3% for each year since retirement

\*\* Payment is equal to the remaining FED reserve balance.

**SECTION III**  
**SYSTEM LIABILITIES**

## 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 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 that 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 that is developed is called the "**normal cost**". 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 liability (UAL)**. If contributions exceed the normal cost for the year, after allowing for interest on the previous balance of the UAL, 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 liability and on the portion of it that is unfunded.

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

On the following pages we have summarized, as of June 30, 2002, various measurements of liability. It is important to note that the actuarial liability differs from the present value of accrued benefits (PVAB) and the pension benefit obligation (PBO). The actuarial 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.

The tables in this section present System liabilities as follows:

<b><u>Page</u></b>	<b><u>Contents</u></b>
23	Present Value of Future Benefits
24	Unfunded Actuarial Accrued Liability
25	Development of FED Transfer
26	Present Value of Accrued Benefits
27	Pension Benefit Obligation

## EXHIBIT 7

### PRESENT VALUE OF FUTURE BENEFITS as of June 30, 2002

The actuarial present value of future benefits represents the current value of benefits expected to ultimately be earned by the current members of the System as of the valuation date.

	General Membership	Special Service Group 1 *	Special Service Group 2 **	Total
Present Value of Future Benefits:				
Active Members				
Retirement benefits	\$12,067,326,238	\$114,832,782	\$241,218,404	\$12,423,377,424
Death benefits	177,722,470	6,217,474	12,119,400	196,059,344
Termination benefits	881,395,105	46,880,990	88,088,241	1,016,364,336
Disability benefits	398,246,222	85,458,494	183,879,187	667,583,903
Inactive Members				
Vested members	388,456,763	5,523,979	8,668,718	402,649,460
Nonvested members	22,550,062	87,740	374,738	23,012,540
Retired Members and Beneficiaries	6,081,348,774	47,676,344	78,326,426	6,207,351,544
<b>Total Present Value of Future Benefits</b>	<b>\$20,017,045,634</b>	<b>\$306,677,803</b>	<b>\$612,675,114</b>	<b>\$20,936,398,551</b>

\* Includes Sheriffs, Deputies and Airport Firefighters

\*\* Includes all other public safety members

## EXHIBIT 8

### UNFUNDED ACTUARIAL LIABILITY as of June 30, 2002

	<b>General Membership</b>	<b>Special Services Group 1 *</b>	<b>Special Services Group 2 **</b>	<b>Total</b>
1. Present Value of Future Benefits	\$20,017,045,634	\$306,677,803	\$612,675,114	\$20,936,398,551
2. Present Value of Future Normal Costs	3,759,242,696	89,074,237	219,522,433	4,067,839,366
3. Actuarial Liability (1) - (2)	16,257,802,938	217,603,566	393,152,681	16,868,559,185
4. Actuarial Value of Net Assets	14,960,687,980	232,627,006	419,799,113	15,613,114,099
5. Unfunded Actuarial Liability (3) - (4)	1,297,114,958	(15,023,440)	(26,646,432)	1,255,445,086

\* Includes Sheriffs, Deputies and Airport Firefighters

\*\* Includes all other public safety members

## EXHIBIT 9

### DEVELOPMENT OF AMOUNT TO BE TRANSFERRED TO THE FAVORABLE EXPERIENCE DIVIDEND RESERVE Based on the June 30, 2002 Actuarial Valuation

1. June 30, 2001 Unfunded Actuarial Liability	\$	440,954,575
2. Normal Cost as of June 30, 2001		420,050,699
3. Employer and Member Contributions *		464,471,241
4. Increase due to assumption changes		141,442,371
5. Increase due to benefit improvements		2,704,011
6. Expected Unfunded Actuarial Liability as of June 30, 2002 [(1)+(2)] * 1.075 - [(3) * (1.075) <sup>.5</sup> ] + (4) + (5)		588,153,019
7. Actual Unfunded Actuarial Liability as of June 30, 2002		1,255,445,086
8. (Gain)/loss (7)-(6)		667,292,067
9. Portion of gain to transfer to FED		N/A
10. Amount of Actuarial Value of Assets to transfer to FED	\$	0
11. Market value of FED transfer	\$	0

\* Does not include service purchases

## EXHIBIT 10

### PRESENT VALUE OF ACCRUED BENEFITS as of June 30, 2002

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 on the valuation date.

	General Membership	Special Services Group 1 *	Special Services Group 2 **	Total
1. Present value of vested accrued benefits for active plan members	\$ 6,117,137,302	\$ 125,830,956	\$ 229,800,757	\$ 6,472,769,015
Present value of vested benefits being paid to plan retirees and beneficiaries	6,081,348,774	47,676,344	78,326,426	6,207,351,544
Present value of vested benefits to terminated plan members not yet in pay status (deferred vested)	388,456,763	5,523,979	8,668,718	402,649,460
Accumulated employee account balance of nonvested inactive members	22,550,062	87,740	374,738	23,012,540
Total present value of vested accrued benefits	\$ 12,609,492,901	\$ 179,119,019	\$ 317,170,639	\$ 13,105,782,559
2. Present value of nonvested accrued benefits	45,771,450	478,406	3,141,447	49,391,303
3. Total present value of all accrued benefits	\$ 12,655,264,351	\$ 179,597,425	\$ 320,312,086	\$ 13,155,173,862

\* Includes Sheriffs, Deputies and Airport Firefighters

\*\* Includes all other public safety members



## EXHIBIT 11

### PENSION BENEFIT OBLIGATION

One liability measurement commonly used, and in fact required before GASB No. 25, for evaluating the funded status of retirement systems is the “pension benefit obligation”. 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 for the System in total (general membership plus special service groups as determined for both this year and last year is summarized below:

	<u>June 30, 2002</u>	<u>June 30, 2001</u>
Pension Benefit Obligation		
Retired Members and Beneficiaries	\$ 6,207,351,544	\$ 5,448,405,616
Terminated Vested Members	402,649,460	386,124,321
Nonvested Members	23,012,540	20,480,638
Active Members		
-Accumulated employee contributions with interest	2,626,787,528	2,519,313,788
-Employer-financed vested portion	5,961,928,888	5,673,219,621
-Employer-financed non-vested portion	123,115,918	109,723,615
-Total	8,711,832,334	8,302,257,024
Total System Obligation	15,344,845,878	14,157,267,599
Net Assets Available for Benefits	\$14,874,419,194	\$15,928,547,167
Unfunded Pension Benefit Obligation	470,426,684	(1,771,279,568)
Funded Percentage	96.93%	112.51%

**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:

<b><u>Page</u></b>	<b><u>Contents</u></b>
29	Actuarial Balance Sheet
30	Analysis of Contribution Rate
31	Calculation of Contribution Rates for Special Services Groups

## EXHIBIT 12

### ACTUARIAL BALANCE SHEET as of June 30, 2002

	General Membership	Special Services Group 1 *	Special Services Group 2 **	Total
<b><u>ASSETS</u></b>				
Actuarial value of assets	\$14,960,687,980	\$232,627,006	\$419,799,113	\$15,613,114,099
Present value of future normal costs	3,759,242,696	89,074,237	219,522,433	4,067,839,366
Present value of future contributions to amortize unfunded actuarial liability	1,297,114,958	(15,023,440)	(26,646,432)	1,255,445,086
<b>Total Net Assets</b>	<b>\$20,017,045,634</b>	<b>\$306,677,803</b>	<b>\$612,675,114</b>	<b>\$20,936,398,551</b>
<b><u>LIABILITIES</u></b>				
Present Value of Future Benefits:				
Retired Members and Beneficiaries	\$6,081,348,774	\$47,676,344	\$78,326,426	\$6,207,351,544
Active Members	13,524,690,035	253,389,740	525,305,232	14,303,385,007
Inactive Members	411,006,825	5,611,719	9,043,456	425,662,000
<b>Total Liabilities</b>	<b>\$20,017,045,634</b>	<b>\$306,677,803</b>	<b>\$612,675,114</b>	<b>\$20,936,398,551</b>

## EXHIBIT 13

### 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 expected benefits 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 payment of the normal cost rate. The remaining contribution is used to amortize the unfunded actuarial liability as a level percentage of payroll, which determines the period necessary to amortize the unfunded actuarial liability. According to IPERS funding policy, the System is considered to be “fully funded” if the amortization period does not exceed 30 years.

	<b>General Membership</b>
1. (a) Normal Cost, Adjusted to Mid-year	\$ 429,828,473
(b) Expected Covered Payroll for Members Under Assumed Retirement Age	\$ 4,761,458,849
(c) Normal Cost Rate (a) / (b)	9.03%
2. Unfunded Actuarial Liability at Valuation Date	\$ 1,297,114,958
3. Contribution Toward Unfunded Actuarial Liability (UAL)	0.42%
4. Expected Payroll for FYE 2003	\$ 4,873,811,027
5. UAL Contribution Adjusted to Mid-year (3) x (4) / (1.075) <sup>-5</sup>	\$ 19,743,027
6. Amortization Factor (2) / (5)	65.6999
7. Amortization Period Necessary to Finance UAL as a Level Percent of Payroll at Contribution Rate Shown in (3)*	Cannot be amortized

\* Assuming all actuarial assumptions are met in the future.

## EXHIBIT 14

### CALCULATION OF CONTRIBUTION RATES FOR SPECIAL SERVICES GROUPS

The actuarial cost method used to determine the actuarial contribution rate to be paid by the members and the employers to support the expected benefits is the Entry Age Normal Cost Method. Under this method, the total cost is comprised of the normal cost rate plus the unfunded actuarial liability payment. The payment to amortize the unfunded actuarial liability is determined as a level percentage of payroll, with an amortization period of 30 years.

	<b>Special Services Group 1 *</b>	<b>Special Services Group 2 **</b>
1. (a) Normal Cost, Adjusted to Mid-year	\$ 9,476,270	\$ 24,312,319
(b) Expected Covered Payroll for Members Under Assumed Retirement Age	\$ 69,581,420	\$ 153,794,546
(c) Normal Cost Rate (a) / (b)	13.62%	15.81%
2. Unfunded Actuarial Liability at Valuation Date	\$ (15,023,440)	\$ (26,646,432)
3. Amortization Period to Fund the UAL as a Level Percent of Payroll	30 years	30 years
4. Amortization Factor	19.33574	19.33574
5. UAL Contribution Adjusted to Mid-year [(2) / (4)] * (1.075) <sup>5</sup>		
6. Expected Payroll for FYE 2003	\$ 70,035,207	\$ 145,995,015
7. Contribution Rate Toward the UAL (5) / (6)	-1.15%	-0.98%
8. Total Contribution Rate Effective July 1, 2003 (1c) + (7)	12.47%	14.83%
Employer Contribution Rate (60%)	7.48%	8.90%
Employee Contribution Rate (40%)	4.99%	5.93%

\* Includes Sheriffs, Deputies and Airport Firefighters

\*\* Includes all other public safety members

**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, supersedes 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.

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33	Summary of Membership
34	Schedule of Funding Progress
35	Schedule of Employer Contributions



## EXHIBIT 15

### SUMMARY OF MEMBERSHIP

	<u>June 30, 2002</u>	<u>June 30, 2001</u>
Active Employees:		
Vested	115,987	114,278
Not yet vested	<u>42,480</u>	<u>40,332</u>
Total active employees *	158,467	154,610
Retirees and beneficiaries currently receiving benefits:	71,715	68,703
Terminated employees entitled to benefits but not yet receiving them:	34,792	32,650

\*Excludes retired/reemployed members

## EXHIBIT 16

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

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

Actuarial Valuation <u>Date</u>	Net Actuarial Value of Assets <u>(a)</u>	Actuarial Liability (AL) <u>(b)</u>	Unfunded AL (UAL) <u>(b-a)</u>	Funded Ratio <u>(a/b)</u>	Covered Payroll (P/R) <u>(c)</u>	UAL as a Percentage of Covered P/R <u>[(b-a)/c]</u>
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	93.86%	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%
6/30/99	12,664,031,437	13,053,655,753	389,624,316	97.02%	4,086,572,426	9.53%
6/30/00	14,145,141,535	14,471,650,757	326,509,222	97.74%	4,365,451,325	7.48%
6/30/01	15,112,424,729	15,553,379,304	440,954,575	97.16%	4,551,432,690	9.69%
6/30/02	15,613,114,099	16,868,559,185	1,255,445,086	92.56%	4,743,576,424	26.47%

Actuarial Assumptions: See Appendix C

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: 3.5% for prices, 4.0% for wages

Salary Increases: 4.0 - 10.0% varying by age

## EXHIBIT 17

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

(All dollar amounts in millions)

<b>Fiscal Year Ending</b>	<b>Covered Employee Payroll</b>	<b>Actual Employer Contributions</b>	<b>Actual Employer Contribution %</b>	<b>Required Contribution (ARC) %</b>	<b>Percentage of ARC Contribution</b>
6/30/93	3,019.40	176.40	5.84	5.27	110.75
6/30/94	3,175.90	183.50	5.78	4.97	116.37
6/30/95	3,353.00	196.70	5.87	4.75	123.50
6/30/96	3,463.50	204.90	5.92	5.11	115.85
6/30/97	3,640.30	215.00	5.91	5.91	100.00
6/30/98	3,908.50	227.80	5.83	5.83	100.00
6/30/99	4,086.57	246.23	6.03	6.03	100.00
6/30/00	4,365.45	253.27	5.80	5.80	100.00
6/30/01	4,551.43	268.32	5.90	5.90	100.00
6/30/02	4,743.58	278.68	5.87	5.87	100.00

In general, employer contributions 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

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## SUMMARY OF ACTIVE MEMBERS

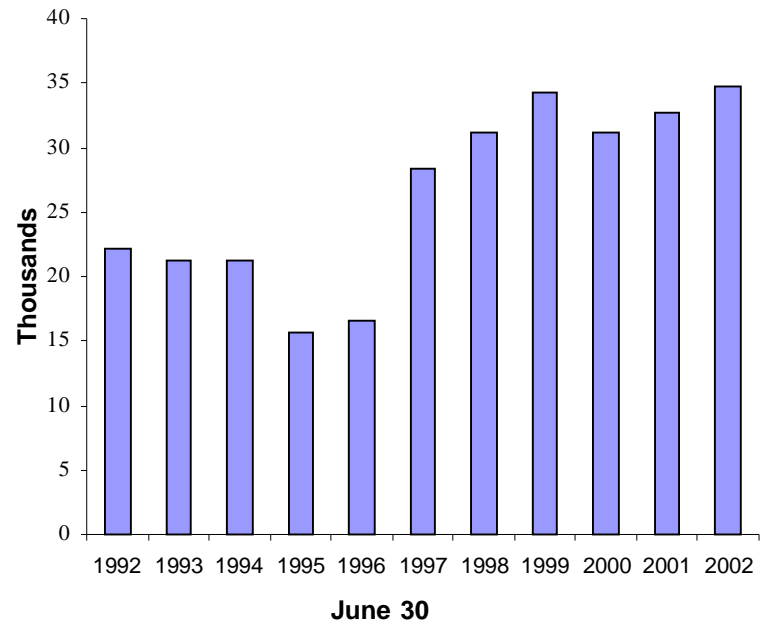
The data we received for the June 30, 2002 valuation contained information as of June 30, 2002.

	General	Special Service Groups		Total	6/30/01	Percent Change
	Membership	Group 1	Group 2	6/30/02		
Total Employees	152,829	1,483	4,155	158,467	154,610	2.5
Projected Covered						
Payroll* (millions)	\$4,874	\$70	\$146	\$5,090	\$4,691	8.5
Average Age	45.2	41.1	41.2	45.1	45.0	0.2
Average Entry Age	33.9	27.0	30.8	33.8	33.5	0.9
Average Earnings*	\$31,891	\$47,225	\$35,137	\$32,119	\$30,341	5.9
Retired Reemployed	5,366	4	17	5,387	4,886	10.3

\*Payroll figures as of July 1 are actual amounts paid during the prior fiscal year, increased by an assumed salary increase factor for the coming fiscal year.

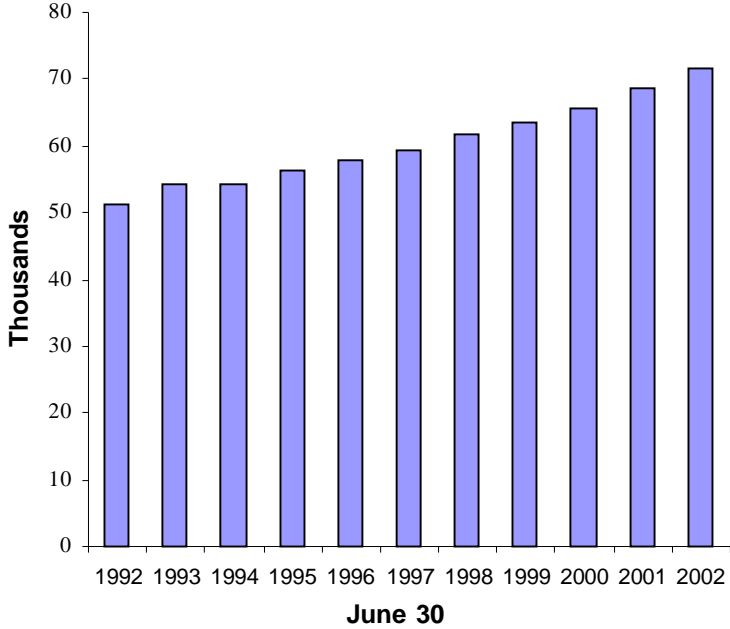
## SUMMARY OF INACTIVE VESTED MEMBERS

General Membership	Special Services		Total		
	Group 1	Group 2	6/30/02	6/30/01	% Change
34,488	77	227	34,792	32,650	6.6%



# SUMMARY OF RETIRED MEMBERS AND BENEFICIARIES

General Membership	Special Services		Total		
	Group 1	Group 2	6/30/02	6/30/01	% Change
70,896	268	551	71,715	68,703	4.4%





## AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2002 FOR ACTIVE MEMBERS\*

Males and Females

Age	<i>Years of Service</i>																				<u>Total</u>			
	<u>Under 1</u>		<u>1 to 4</u>		<u>5 to 9</u>		<u>10 to 14</u>		<u>15 to 19</u>		<u>20 to 24</u>		<u>25 to 29</u>		<u>30 to 34</u>		<u>35 to 39</u>		<u>40 and over</u>		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	No.	Avg. Salary		
Under 25	564	13,337	4,387	16,620	81	21,292	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	5,032	16,327
25-29	325	21,595	8,629	24,081	2,424	29,895	29	28,483	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	11,407	25,257
30-34	252	21,713	6,467	22,987	5,952	31,962	1,625	35,274	31	30,847	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	14,327	28,104
35-39	258	19,076	6,476	19,990	4,490	28,719	4,158	37,302	1,551	38,975	64	33,644	0	NA	0	NA	0	NA	0	NA	0	NA	16,997	28,301
40-44	1,315	13,809	7,151	18,566	5,505	25,729	3,858	33,153	4,026	40,746	2,516	39,574	195	35,947	0	NA	0	NA	0	NA	0	NA	24,566	28,132
45-49	220	24,403	5,638	19,443	5,079	25,059	4,405	30,282	3,606	37,610	4,457	42,523	3,057	42,820	98	40,042	0	NA	0	NA	0	NA	26,560	31,462
50-54	170	22,674	4,043	20,303	3,780	25,738	4,210	30,311	3,813	35,027	3,435	40,317	5,309	46,305	2,706	47,094	69	39,394	0	NA	0	NA	27,535	34,824
55-59	206	20,009	3,020	19,077	2,358	23,455	2,450	28,297	2,563	32,987	2,361	35,906	2,517	42,115	2,626	49,529	667	49,546	18	54,069	18,786	33,311		
60-64	208	14,605	2,442	12,295	1,408	18,294	1,220	24,026	1,220	30,399	1,101	31,497	1,066	34,646	610	43,500	446	50,576	135	49,260	9,856	25,626		
65-69	149	8,275	2,115	7,714	912	11,202	468	16,606	306	22,550	217	27,195	212	26,760	104	33,696	47	41,753	60	51,694	4,590	13,634		
70 & over	239	4,330	2,639	6,983	1,039	8,027	191	10,854	32	17,228	20	16,863	19	17,277	8	27,583	4	23,891	7	46,196	4,198	7,559		
<b>Totals</b>	<b>3,906</b>	<b>15,807</b>	<b>53,007</b>	<b>18,972</b>	<b>33,028</b>	<b>26,014</b>	<b>22,614</b>	<b>31,425</b>	<b>17,148</b>	<b>36,372</b>	<b>14,171</b>	<b>39,195</b>	<b>12,375</b>	<b>43,045</b>	<b>6,152</b>	<b>47,413</b>	<b>1,233</b>	<b>48,970</b>	<b>220</b>	<b>50,220</b>	<b>163,854</b>	<b>28,758</b>		

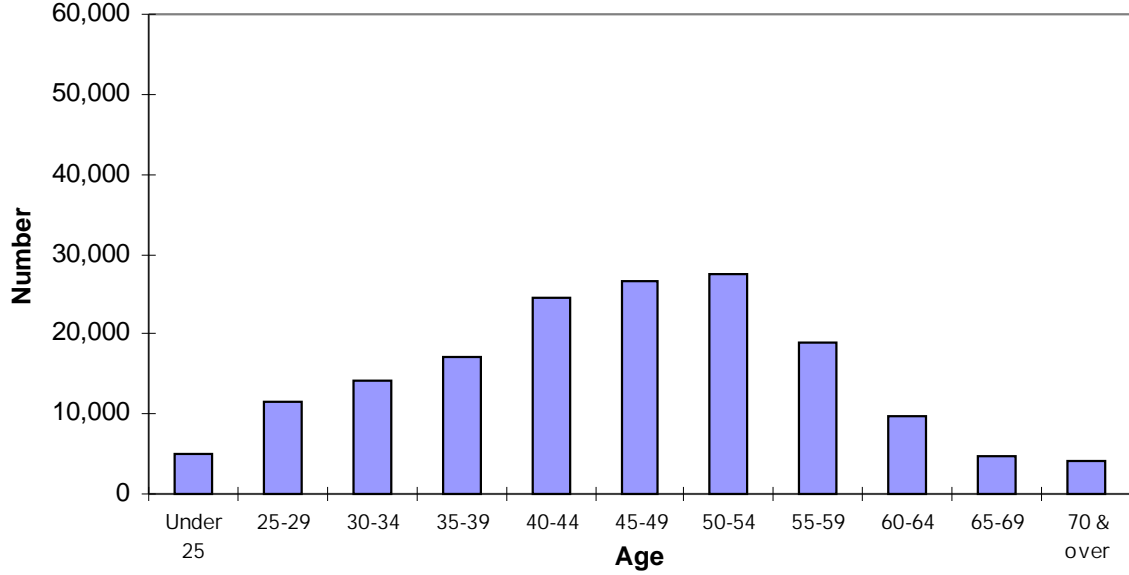
\*Including retired/reemployed members

## AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2002 FOR ACTIVE MEMBERS\*

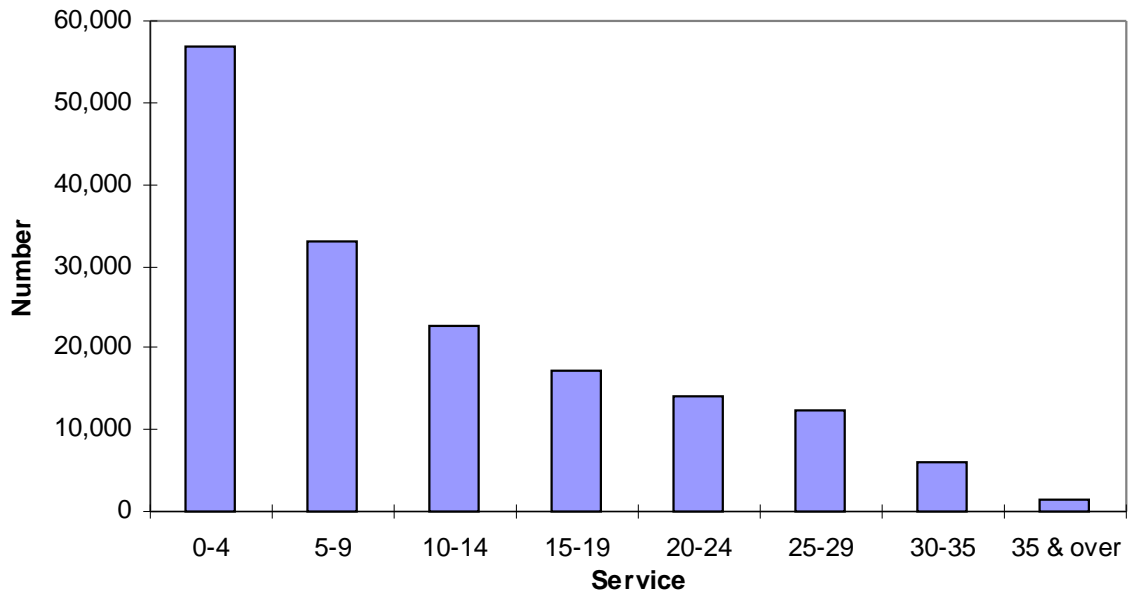
Males and Females

Age	<i>Years of Service</i>																					
	<u>Under 1</u>		<u>1 to 4</u>		<u>5 to 9</u>		<u>10 to 14</u>		<u>15 to 19</u>		<u>20 to 24</u>		<u>25 to 29</u>		<u>30 to 34</u>		<u>35 to 39</u>		<u>40 and over</u>		<u>Total</u>	
	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.	No.	Avg.
Under 25	564	87	4,387	1,012	81	3,842	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	5,032	954
25-29	325	152	8,629	2,143	2,424	6,204	29	10,668	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	11,407	2,971
30-34	252	153	6,467	2,148	5,952	8,022	1,625	14,461	31	17,322	0	NA	0	NA	0	NA	0	NA	0	NA	14,327	5,982
35-39	258	136	6,476	1,831	4,490	7,326	4,158	17,108	1,551	24,806	64	27,849	0	NA	0	NA	0	NA	0	NA	16,997	9,189
40-44	1,315	76	7,151	1,706	5,505	6,310	3,858	15,092	4,026	26,863	2,516	34,608	195	38,818	0	NA	0	NA	0	NA	24,566	12,540
45-49	220	163	5,638	1,788	5,079	6,233	4,405	13,605	3,606	24,702	4,457	38,698	3,057	46,957	98	51,048	0	NA	0	NA	26,560	19,270
50-54	170	172	4,043	1,873	3,780	6,459	4,210	13,730	3,813	23,155	3,435	36,535	5,309	52,273	2,706	61,306	69	61,018	0	NA	27,535	27,283
55-59	206	161	3,020	1,635	2,358	6,087	2,450	13,060	2,563	22,031	2,361	32,354	2,517	47,486	2,626	66,103	667	73,185	18	75,456	18,786	28,077
60-64	208	137	2,442	1,073	1,408	4,819	1,220	11,369	1,220	20,632	1,101	29,162	1,066	39,185	610	57,996	446	76,626	135	82,355	9,856	20,599
65-69	149	81	2,115	699	912	2,948	468	8,046	306	15,818	217	24,319	212	30,314	104	44,831	47	61,349	60	87,134	4,590	8,118
70 & over	239	136	2,639	731	1,039	2,255	191	4,979	32	12,078	20	18,079	19	22,416	8	35,342	4	45,747	7	74,872	4,198	1,768
Totals	3,906	114	53,007	1,688	33,028	6,448	22,614	14,216	17,148	23,990	14,171	35,351	12,375	48,225	6,152	62,550	1,233	73,209	220	82,856	163,854	16,032

**Age Distribution of Active Members**



**Service Distribution of Active Members**

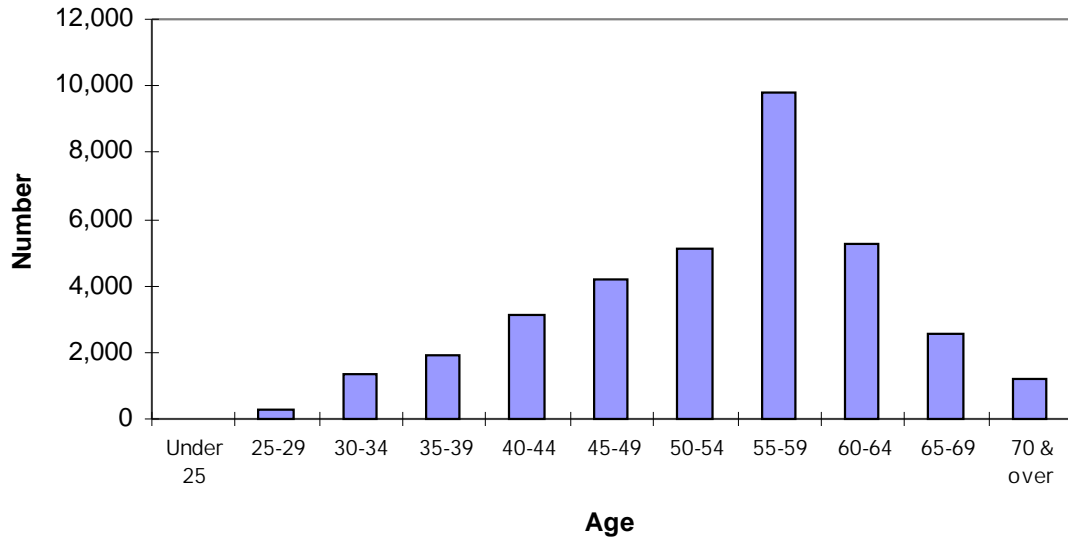


## AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2002 FOR INACTIVE VESTED MEMBERS

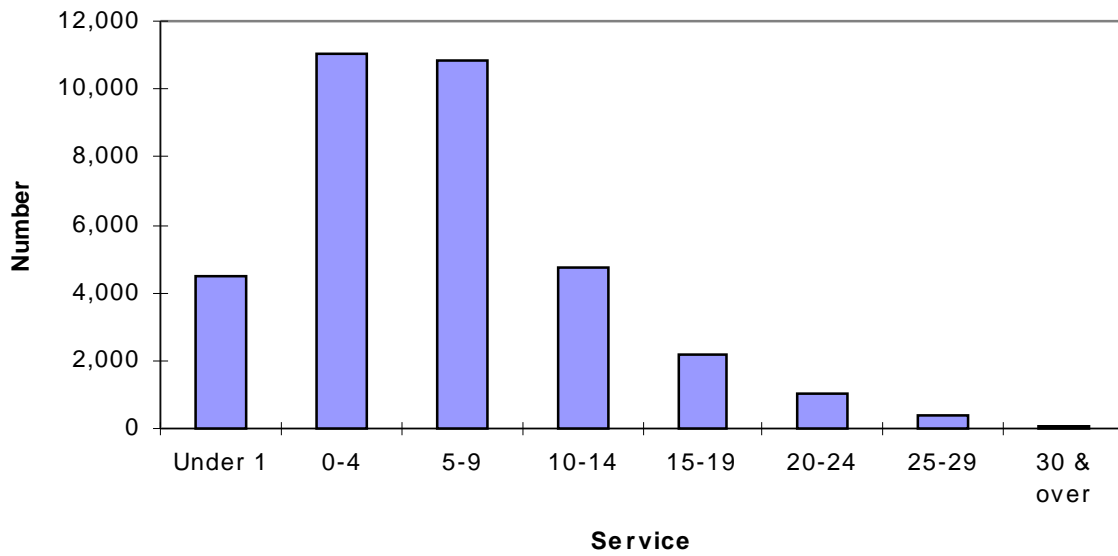
Males and Females

Age	<i>Years of Service</i>																						<i>Total</i>	
	<u>Under 1</u>		<u>1 to 4</u>		<u>5 to 9</u>		<u>10 to 14</u>		<u>15 to 19</u>		<u>20 to 24</u>		<u>25 to 29</u>		<u>30 to 34</u>		<u>35 to 39</u>		<u>40 and over</u>					
	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 25	0	NA	14	1,635	7	1,927	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	21	1,733
25-29	0	NA	122	3,430	190	4,225	1	18,870	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	313	3,962
30-34	0	NA	233	3,574	1,024	6,176	70	12,096	2	187	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	1,329	6,022
35-39	0	NA	254	3,676	1,265	6,677	377	15,014	37	22,202	3	8,692	0	NA	0	NA	0	NA	0	NA	0	NA	1,936	8,207
40-44	0	NA	282	3,470	1,754	6,397	719	14,835	282	24,008	65	29,478	2	60,913	0	NA	0	NA	0	NA	0	NA	3,104	10,204
45-49	0	NA	329	3,591	2,006	6,898	1,059	15,152	495	25,263	262	34,707	48	46,780	2	50,044	0	NA	0	NA	0	NA	4,201	13,094
50-54	0	NA	320	3,860	2,117	7,181	1,256	16,342	755	26,871	401	37,185	194	51,217	38	57,957	2	57,095	0	NA	0	NA	5,083	16,607
55-59	2,185	41	4,566	569	1,495	7,434	789	15,642	425	26,130	218	37,561	90	52,250	27	66,803	4	68,078	0	NA	0	NA	9,799	5,328
60-64	1,198	36	2,730	539	717	6,657	348	14,655	154	25,425	66	34,886	25	43,758	6	54,884	3	58,121	0	NA	0	NA	5,247	3,660
65-69	745	39	1,449	440	226	4,242	68	12,430	26	18,613	18	27,024	2	23,841	1	13,394	0	NA	0	NA	0	NA	2,535	1,381
70 & over	339	77	746	509	73	2,351	34	4,868	20	6,566	9	20,395	1	62,078	0	NA	0	NA	2	7,971	1,224	928		
<b>Totals</b>	<b>4,467</b>	<b>42</b>	<b>11,045</b>	<b>968</b>	<b>10,874</b>	<b>6,701</b>	<b>4,721</b>	<b>15,297</b>	<b>2,196</b>	<b>25,511</b>	<b>1,042</b>	<b>35,611</b>	<b>362</b>	<b>50,302</b>	<b>74</b>	<b>60,119</b>	<b>9</b>	<b>62,318</b>	<b>2</b>	<b>7,971</b>	<b>1,224</b>	<b>928</b>	<b>34,792</b>	<b>7,828</b>

### Age Distribution of Inactive Vested Members



### Service Distribution of Inactive Vested Members



## ANALYSIS OF RETIREES AND BENEFICIARIES

### Males and Females

#### Number of Members and Beneficiaries

<u>Age</u>	<u>Chapt 97</u>	<u>Option 1</u>	<u>Option 2</u>	<u>Option 3</u>	<u>Option 4</u>	<u>Contingent Beneficiary</u>	<u>Option 5</u>	<u>Option 6</u>	<u>Period Certain Beneficiary</u>	<u>Total</u>
Under 40	0	14	3	0	3	10	2	1	17	50
40 to 44	0	35	4	6	7	13	6	2	8	81
45 to 49	0	60	15	18	39	33	7	9	5	186
50 to 54	0	119	29	30	67	58	23	14	7	347
55 to 59	0	1,204	805	591	697	104	605	438	19	4,463
60 to 64	0	2,838	1,812	1,309	1,824	177	1,432	458	49	9,899
65 to 69	0	4,295	2,774	1,544	2,804	336	1,835	115	70	13,773
70 to 74	0	4,640	3,264	1,370	2,459	467	1,651	31	69	13,951
75 to 79	0	4,312	2,865	1,153	1,611	542	1,328	0	36	11,847
80 to 84	1	3,970	1,497	724	858	411	1,452	0	9	8,922
85 to 89	5	2,673	502	456	273	187	1,024	0	2	5,122
90 to 94	15	1,374	138	241	48	90	424	0	0	2,330
95 to 99	5	435	42	84	10	14	65	0	1	656
100 & over	6	46	15	19	2	0	0	0	0	88
Totals	32	26,015	13,765	7,545	10,702	2,442	9,854	1,068	292	71,715

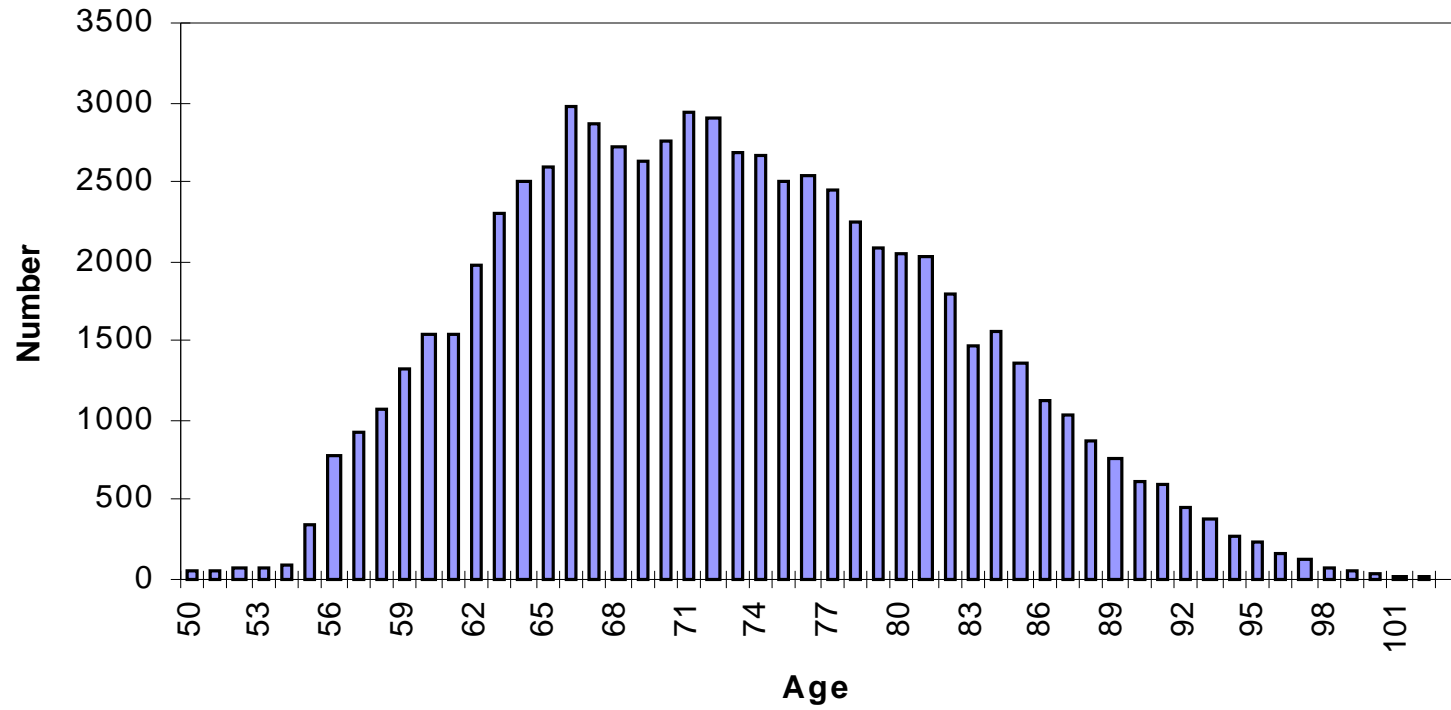
**ANALYSIS OF RETIREES AND BENEFICIARIES**  
**Males and Females**

**Average Annual Benefits of Members and Beneficiaries\***

<u>Age</u>	<u>Chapt 97</u>	<u>Option 1</u>	<u>Option 2</u>	<u>Option 3</u>	<u>Option 4</u>	<u>Contingent Beneficiary</u>	<u>Option 5</u>	<u>Option 6</u>	<u>Period Certain Beneficiary</u>
Under 40	0	4,468	3,581	0	3,925	4,166	2,185	3,302	7,299
40 to 44	0	6,635	7,734	5,870	6,032	8,492	5,237	14,800	4,606
45 to 49	0	7,331	9,599	6,143	7,794	7,315	7,600	11,479	4,254
50 to 54	0	7,772	10,701	7,974	11,230	9,180	9,663	17,017	5,804
55 to 59	0	13,334	15,729	17,628	16,715	10,533	18,999	23,339	9,770
60 to 64	0	12,262	13,805	14,361	17,967	10,704	15,790	21,766	10,831
65 to 69	0	9,841	10,326	10,432	14,978	9,016	11,896	18,141	8,585
70 to 74	0	6,972	7,832	6,633	10,457	6,690	7,376	9,851	6,748
75 to 79	0	5,198	6,065	4,822	7,349	5,055	5,028	0	3,751
80 to 84	1,290	4,527	5,395	4,419	5,938	4,369	4,346	0	7,398
85 to 89	1,269	3,856	4,256	3,562	5,056	3,285	3,737	0	682
90 to 94	1,257	3,313	3,689	3,494	3,756	2,763	3,375	0	0
95 to 99	1,573	3,608	3,917	4,058	3,963	2,880	3,786	0	347
100 & over	1,386	3,485	4,390	3,727	5,079	0	0	0	0
Totals	1,334	7,077	8,769	8,805	12,314	6,351	8,820	566,954	7,565

\* Averages based on data reported by the System as of June 30, 2002 and exclude dividend payments.

## Age Distribution of Retirees & Beneficiaries





## **APPENDIX B**

### **SUMMARY OF PLAN PROVISIONS**

**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:

**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 covered 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 <u>Exceeds</u>	<u>Date of Retirement</u>	<u>Final Average Salary</u>
\$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
\$65,000	2000	Average of six highest years, or \$65,000 if greater
\$75,000	2001	Average of six highest years, or \$75,000 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	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 Special Services 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	<p>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.</p> <p>Members who are sheriffs, deputies, or airport firefighters (Special Services Group 1) receive 60% of FAS after completion of 22 years of service, plus an additional 1.5% of FAS for years of service greater than 22 but not more than 30. Members of the other special service groups receive 60% of FAS after completion of 22 years of service plus an additional 1% (1.5% beginning in 2003) of FAS for each additional year up to a total of 30.</p>
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, joint and survivor annuities (with 25%, 50%, 75% or 100% to the surviving joint annuitant), and joint and survivor annuities with a pop-up.

Termination Benefits:

Before age 55, with less  
four years of service

A refund of the member's contributions with interest.

Before age 55 with four or  
more years of service

At the member's election either:

- (1) a refund of the member'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 benefit determined as for normal retirement. Payments can begin at normal or early retirement.

NOTE: A person eligible for, and receiving, federal social security disability benefits 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 2000 dividend payment, the dividend will be adjusted by the least of the following percentages: (1) the change in the CPI, (2) percentage certified to by the actuary as affordable by the System, and (3) 3%.

Death Benefits:

A lump sum equal to the greater of 1) the member's contributions with interest, plus 1/30 of the member's salary times years of membership service (up to 30) and 2) the present value of the member's accrued benefit. The beneficiary may optionally elect to receive an actuarially equivalent lifetime annuity.

Special service members killed in the line of duty are entitled to an additional lump sum payment of \$100,000.

Disability Benefits:

An annuity, payable immediately, equal to the Normal Retirement Benefit.

For Special Service Members, the benefit is the greater of the Normal Retirement Benefit and either 50% (for ordinary disability) or 60% (for in-service disability) of Final Average Earnings.

Source of Funds:

General Membership:

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

Sheriffs and Deputies:

Member Contributions	Actuarially determined.
Employer Contributions	Actuarially determined.

Protection Occupation:

Member Contributions	Actuarially determined.
Employer Contributions	Actuarially determined.

## **APPENDIX C**

### **ACTUARIAL METHOD AND ASSUMPTIONS**

## 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 2002, based on experience from 1998-2001.

**Rate of Investment Return (effective June 30, 1996)**

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

**Rates of Mortality (effective June 30, 2002)**

	<u>General Membership</u>	<u>Special Services</u>
Males:	Inactive Lives: RP-2000 Healthy Annuitant Table, Set Forward One Year	RP-2000 Healthy Annuitant Table Set Forward Three Years
	Active Lives: RP-2000 Employee Table, Set Forward One Year	RP-2000 Employee Table Set Forward Three Years
Females:	Inactive Lives: RP-2000 Healthy Annuitant Table, Set Back Two Years	RP-2000 Healthy Annuitant Table No Age Adjustment
	Active Lives: RP-2000 Employee Table, Set Back Two Years	RP-2000 Employee Table No Age Adjustment
Disabled Members:	Annual rates are the greater of 3% or 2.5% plus the corresponding non-disabled rate (no set forward or set back applied)	Same as healthy members set forward 6 years
Beneficiaries:	Same as members	Same as members

**Rates of Disablement (effective June 30, 1999)**

	<b>Annual Rate Per 1,000 Members</b>		
<u>Age</u>	<u>Males</u>	<u>Females</u>	<u>Special Services</u>
27	0.2%	0.2%	0.2%
32	0.2%	0.2%	0.2%
37	0.4%	0.3%	0.4%
42	0.7%	0.5%	0.7%
47	1.4%	0.9%	1.3%
52	3.3%	2.2%	2.35%
57	6.3%	3.9%	5.2%
62	9.0%	6.2%	9.8%



**Rates of Termination of Employment (effective June 30, 2002)**

**General Membership**

		<b>Annual Rate of Withdrawals Per 1,000 Members</b>					
<b><u>Males:</u></b>							
	<b><u>Age</u></b>	<b><u>Years 0-1</u></b>	<b><u>Year 2</u></b>	<b><u>Year 3</u></b>	<b><u>Years 4-6</u></b>	<b><u>Years 7-8</u></b>	<b><u>Years 9+</u></b>
	22	330.0	250.0	220.0	99.0	88.0	66.0
	27	231.0	145.0	121.0	99.0	88.0	66.0
	32	198.0	145.0	110.0	74.8	55.0	39.0
	37	195.8	140.0	110.0	74.8	49.5	33.0
	42	195.8	140.0	110.0	74.8	49.5	25.3
	47	195.8	130.0	99.0	74.8	49.5	19.8
	52	176.0	110.0	77.0	74.8	49.5	19.8
	55+	165.0	110.0	55.0	74.8	49.5	19.8
<b><u>Females:</u></b>							
	<b><u>Age</u></b>	<b><u>Years 0-1</u></b>	<b><u>Year 2</u></b>	<b><u>Year 3</u></b>	<b><u>Years 4-6</u></b>	<b><u>Years 7-8</u></b>	<b><u>Years 9+</u></b>
	22	330.0	250.0	220.0	110.0	99.0	55.0
	27	275.0	170.0	140.0	110.0	99.0	55.0
	32	247.5	170.0	140.0	105.5	72.0	49.5
	37	198.0	150.0	140.0	105.5	66.0	36.3
	42	198.0	150.0	140.0	88.0	61.0	30.8
	47	198.0	130.0	140.0	82.5	49.5	25.3
	52	198.0	130.0	140.0	82.5	49.5	25.3
	55+	198.0	130.0	140.0	82.5	49.5	25.3

**Special Services**

	<b>Annual Rate of Withdrawals Per 1,000 Members</b>
<b>Age</b>	
22	100
27	70
32	35
37	35
42	35
47	35
52	30

**Rate of Election of Return of Contributions by Vested Members (effective June 30, 2002)**

<u>Years of Service</u>	<u>General Membership</u>		<u>Special Services</u>
	<u>Males</u>	<u>Females</u>	
5	39%	30%	47%
10	34%	27%	35%
15	29%	20%	15%
20	24%	15%	5%
25	20%	10%	0%
30	15%	5%	0%

**Rates of Salary Increase (effective June 30, 1999)**

**Annual Rate of Increase Per 1,000 Members (%)**

<u>Age</u>	<u>Years 0-1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Years 4-5</u>	<u>Years 6-7</u>	<u>Years 8-10</u>	<u>Years 11-15</u>	<u>Years 16-20</u>	<u>Years 21+</u>
22	18.5	12.5	8.5	8.0	7.5	6.0	5.5	5.0	4.9
27	15.5	10.0	8.3	7.0	6.5	6.0	5.5	5.0	4.9
32	14.8	9.8	8.0	7.0	6.5	6.0	5.5	5.0	4.9
37	14.7	9.8	8.0	7.0	6.3	6.0	5.5	5.0	4.9
42	14.7	9.2	8.0	7.0	6.2	6.0	5.5	4.9	4.9
47	14.2	9.0	8.0	7.0	6.2	5.5	5.2	4.8	4.2
52	13.3	8.3	6.9	7.0	6.2	5.5	5.0	4.5	4.2
57	12.5	7.7	6.9	7.0	5.7	5.5	4.6	4.5	4.2
62	10.9	7.1	6.7	6.0	4.5	4.5	4.5	4.5	4.0

**Retirement Rates (effective June 30, 2002)**

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

<u>Age</u>	<u>Assumed Retirement Rate</u>
55-59	5%
60	10
61	15
62	25
63-64	20

Upon reaching the requirements for unreduced retirement, the following rates apply:

<u>Assumed Retirement Rates</u>			
<u>Age</u>	<u>1st Year Eligible</u>	<u>After 1st Year</u>	<u>Special Services</u>
55	20%	10%	15%
56	20%	10%	10%
57-59	20%	20%	10%
60	25%	25%	10%
61	35%	30%	20%
62	50%	40%	35%
63	35%	30%	20%
64	35%	35%	35%
65	30%	45%	100%
66	20%	20%	100%
67-68	15%	15%	100%
69	15%	35%	100%
70+	100%	100%	100%

Terminated vested members are assumed to retire at age 62 (55 for special services).  
Retired re-employed members are assumed to retire at a rate of 25% per year until age 80 when all are assumed to retire.

**Rate of Crediting Interest on Contribution Balances (effective June 30, 2002)**

4.25% per annum, compounded annually

**Rate of Inflation (effective June 30, 1999)**

3.5% per annum

**Payroll Growth Assumption (effective June 30, 1999)**

4.0% per annum

## 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

<b>Actuarial Accrued Liability</b>	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.”
<b>Actuarial Assumptions</b>	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.
<b>Accrued Service</b>	Service credited under the system that was rendered before the date of the actuarial valuation.
<b>Actuarial Equivalent</b>	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.
<b>Actuarial Cost Method</b>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of retirement system benefits between future normal cost and actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”
<b>Experience Gain(Loss)</b>	The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.
<b>Actuarial Present Value</b>	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.
<b>Amortization</b>	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment.
<b>Normal Cost</b>	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.

## **APPENDIX D**

### **IPERS Funding Policy**

## APPENDIX D

### IPERS FUNDING POLICY

*This policy was developed by joint action of IPERS' management team and the System's actuarial consultant, and adopted by IPERS management in 1996.*

#### **Purpose**

This funding policy is intended to provide a measure of the funded status of the Iowa Public Employees' Retirement System (System) on a long-term basis and to provide a set of safeguards as guidelines to help ensure the financial solvency of the System.

Recognizing that the System and its environment are not static, periodic review of this policy shall be conducted to ensure its continuing validity.

#### **Primary Goal**

The primary funding goal of the System is to be funded on an actuarially sound basis over the long term by maintaining actuarial contribution rates, given the maximum amortization period, which are equal to or less than the statutory contribution rates.

#### **Definition of "Fully Funded"**

The term "fully funded" is used to describe the situation in which the assets are equal to or greater than the liabilities. The focus of IPERS is to define assets and liabilities on a long term basis; therefore, the IPERS funding policy defines the term "fully funded," as well as the terms "actuarially sound" and "financial solvency," to mean that the current actuarial value of assets along with the future expected contributions will be sufficient to provide the benefits promised to members for both accrued and expected future service (as set forth in Iowa code Chapter 97B) within the parameters established in this funding policy. The minimum standards for the System to be considered fully funded is that the normal cost rate plus the amortization payment on the unfunded actuarial liability may not exceed the statutory combined contribution rate. In determining the amortization payment, the amortization period shall never exceed 30 years.

#### **Safeguards for System to Remain Fully Funded**

The following safeguards are established to ensure that IPERS continues to be funded on an actuarially sound basis over the long term, so that adequate funds will accumulate to provide all benefits promised to members.

1. The **normal cost rate** (the level percentage of salary required to pay the cost of retirement benefits that are allocated to the current year of service), based on the actuarial cost method used to determine the annual funding requirements for the System, shall not exceed the statutory combined employee/employer contribution rate minus 0.5%.



2. Given the statutory combined employer/employee contribution rate, the amortization period for the unfunded liability as reported in the annual valuation shall not exceed 24 years.
3. Any change in the benefit structure of IPERS that results in an increase in the normal cost rate and/or the unfunded actuarial liability, and/or any distribution to eligible members, should not be considered unless (a) the amortization period reported in the last actuarial valuation report is 20 years or less, and either (b) the amortization period has been less than the maximum (24 years) for at least three consecutive years or (c) the amortization period has been less than ten years for at least two consecutive years, subject to the additional constraint that any distribution does not prevent the amortization period of the prior period from declining.
4. Consideration should be given to increasing the statutory contribution rate if either of the following occur at least three years in any five consecutive year period:
  - The normal cost rate exceeds the standard set in item (1) above
  - The amortization period exceeds the standard set in item (2) above by more than 5 years.