

# **IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM**

**Actuarial Valuation Report  
as of June 30, 2007**



A MILLIMAN GLOBAL FIRM

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Consultants and Actuaries

# ACTUARIAL VALUATION OF THE IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

## TABLE OF CONTENTS

### SECTION

-	Certification Letter	
I	Executive Summary .....	1
II	System Assets .....	13
III	System Liabilities.....	19
IV	System Contributions.....	23
V	Plan Accounting Information .....	27

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### APPENDICES

A.	Summary Statistics on System Membership.....	A-1
B.	Summary of Plan Provisions .....	B-1
C.	Actuarial Assumptions and Methods.....	C-1
D.	IPERS Funding Policy.....	D-1





1120 South 101st Street, Suite 400  
Omaha, NE 68124-1088  
Phone: (402) 393-9400  
Fax: (402) 393-1037  
[www.milliman.com](http://www.milliman.com)

November 5, 2007

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

**Re: June 30, 2007 Actuarial Valuation Report**

Dear Board Members:

We have performed an actuarial valuation of the Iowa Public Employees' Retirement System (System) as of June 30, 2007 for determining contribution rates effective for the period July 1, 2008 to June 30, 2009. The major findings of the valuation are contained in this report. The report reflects the benefit provisions and scheduled contribution rates as of the valuation date.

In preparing this 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 reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. 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 actuarial principles and practices which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions, and supporting Recommendations of the American Academy of Actuaries.

We 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 individually reasonable (taking into account the experience of the System and reasonable expectations of future experience); and which, in combination, offer our best estimate of anticipated experience affecting the System. 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 of the dates indicated in Appendix C.

We also hereby certify that the assumptions and methods used for determining the funding requirements used in the preparation of the disclosure information under GASB Statement 25 meet the parameters imposed by the Statement.



Certain retirees in IPERS receive an annual dividend payment each November. Section 97B.49F of the Iowa Code provides that, for members who retired prior to July 1, 1990, the dividend shall be adjusted each year by the lesser of:

- (1) The percentage increase in the Consumer Price Index as published by the Bureau of Labor Statistics for the 12 months ending June 30 of that year,
- (2) The percentage amount that may be paid without requiring an increase in the employer/employee contribution rate, as certified by the actuary, or
- (3) Three percent.

Based on the June 30, 2007 actuarial valuation, no increase in the dividend for the pre-July 1990 retirees may be paid without an increase in the current statutory contribution rate.

Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. Actuarial computations under GASB Statement No. 25 are for purposes of fulfilling financial accounting requirement. The computations prepared for these two purposes may differ as disclosed in our report. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals, and of GASB Statement No. 25. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work product was prepared exclusively for IPERS for a specific and limited purpose. It is a complex, technical analysis that assumes a high level of knowledge concerning IPERS operations, and uses IPERS data, which Milliman has not audited. It is not for the use or benefit of any third party for any purpose. Any third party recipient of Milliman's work product who desires professional guidance should not rely upon Milliman's work product, but should engage qualified professionals for advice appropriate to its own specific needs.

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

We, Patrice A. Beckham, F.S.A., and Brent A. Banister, F.S.A., are members of the American Academy of Actuaries and Fellows 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, Inc.

Sincerely,

Handwritten signature of Patrice A. Beckham in black ink.

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

Handwritten signature of Brent A. Banister in black ink.

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

# SECTION I

## EXECUTIVE SUMMARY

### *INTRODUCTION*

This report presents the results of the June 30, 2007 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 regular 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 determine the actuarial contribution rates for the Special Service Groups,
- to evaluate the funded status of the System and disclose various asset and liability measures as of June 30, 2007,
- to determine the experience of the System since the last valuation, and
- to analyze and report on trends in System contributions, assets, and liabilities over the past several years.

The actuarial assumptions are unchanged from last year's report. As a result of recommendations from the actuarial audit, there were two key changes in the actuarial methodologies since the last valuation. The application of the entry age normal cost method was adjusted to better match projected contributions to the projected salary stream in future years. This change increased the unfunded actuarial liability and the normal cost rate. The second change was to calculate the amortization payment to reflect the one year lag between the valuation date and the date the contribution rate is effective. This increased the UAL payment for the regular membership. Because the Special Service groups are contributing above the actuarial rate, this change decreased their contribution rates.

The statutory contribution rate for regular members was 9.45% (3.70% for members and 5.75% for employers) since 1979. In recent valuations the 9.45% statutory contribution rate has been insufficient to finance the benefits provided by IPERS. In 2006, legislation was passed that increases the statutory contribution rate 0.50% per year for four years commencing on July 1, 2007. The increase each year is shared 40% by the members and 60% by the employers. By July 1, 2010, the statutory contribution rate will reach 11.45% of pay. In the valuation, the scheduled increases in contribution rates are reflected for purposes of analyzing the long term funding of the System. However, for purposes of reporting under Governmental Accounting Standards, future increases in the contribution rate are not reflected. This valuation reflects the first increase in the contribution rate from 9.45% to 9.95%. The change in the contribution rate results in higher projected refunds for members who terminate active employment. The higher benefits translate to higher liabilities and a higher normal cost.

Passage of this legislation was a critical step in addressing the concern over the long term funding of IPERS; however, there is no guarantee that it will be sufficient in the long term. As part of the continuing effort to monitor the System's funding, IPERS completed a comprehensive Asset/Liability Study in 2007. The results of that study indicated that there was a 73% probability that the ultimate fixed contribution rate of 11.45% will be above the actuarial contribution rate in the June 30, 2016 valuation and a 50% probability of a funded ratio at or above 100% at that time. However, the Asset/Liability Study was performed using the June 30, 2006 actuarial valuation results. Since there were refinements in the actuarial methodology in the 2007

actuarial valuation, which increased the normal cost rate, and a liability loss from experience for FYE 2007 the projections using the 2007 actuarial valuation could be less favorable than those shown in the Asset/Liability Study. The situation should continue to be monitored and studied in the coming years.

The actuarial valuation results provide a “snapshot” view of the System’s financial condition on June 30, 2007. The results reflect net favorable experience for the past plan year as demonstrated by an unfunded actuarial liability (UAL) that was lower than expected, based on actuarial assumptions. The UAL on June 30, 2007 for all membership groups covered by IPERS (Regular members and Special Service Groups) is \$2.266 billion as compared to an expected UAL of \$2.664 billion. The favorable experience was the sum of an experience gain of \$622 million on the actuarial value of assets and an experience loss of \$187 million on System liabilities.

The summary of the 2007 valuation results are shown below:

<b>Contribution Rate for FY09</b>			
	<b>Regular Membership</b>	<b>Special Service Group 1*</b>	<b>Special Service Group 2**</b>
1. Normal Cost Rate	9.80%	15.23%	15.26%
2. Amortization of UAL over 30 years	<u>2.22%</u>	<u>(0.19%)</u>	<u>(1.18%)</u>
3. Total Contribution Rate	12.02%	15.04%	14.08%
4. Member Contribution Rate	4.10%	7.52%	5.63%
5. Employer Contribution Rate (3) - (4)	7.92%	7.52%	8.45%
6. Statutory/Expected Contribution	<u>6.35%</u>	<u>7.52%</u>	<u>8.45%</u>
7. Shortfall (5) – (6)	1.57%	0.00%	0.00%
8. Years to Amortize (Based on (6))	Infinite	30	30
9. Unfunded Actuarial Liability (\$M)	\$2,315	(3.0)	(45.0)
10. Funded Ratio	89.5%	100.8%	106.9%
* Includes Sheriffs and Deputies			
** Includes all other public safety members			

### ***EXPERIENCE FOR THE 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, 2006 and June 30, 2007. The components are examined in the following discussion.

## MEMBERSHIP

Below is a summary of the changes in active members (excluding retired re-employed members) between June 30, 2006 and June 30, 2007.

	Regular	Special Service Groups		Total	Expected*
	Membership	Group 1	Group 2		
6/30/2006 Starting count	157,078	1,478	4,496	163,052	
New actives	+ 15,470	+ 48	+ 418	+ 15,936	
Returning actives	+ 3,080	+ 11	+ 80	+ 3,171	
Nonvested Terminations	(5,382)	(4)	(67)	(5,453)	
Elected Refund	(2,620)	(19)	(93)	(2,732)	
Vested Terminations	<u>(3,722)</u>	<u>(18)</u>	<u>(68)</u>	<u>(3,808)</u>	
Total Withdrawals	(11,724)	(41)	(228)	(11,993)	(10,559)
Deaths	(216)	0	(4)	(220)	(248)
Disability Retirements	(83)	(2)	(3)	(88)	(336)
AE Benefits	(391)	0	0	(391)	
Early Retirements	(1,221)	0	(1)	(1,222)	(2,222)
Unreduced Retirements	<u>(2,856)</u>	<u>(46)</u>	<u>(100)</u>	<u>(3,002)</u>	<u>(4,727)</u>
Total Retirements	(4,551)	(48)	(104)	(4,703)	(6,949)
Other/Transfer	(69)	22	20	(27)	0
6/30/2007 Ending count	159,068	1,470	4,678	165,216	

\*Expected counts based on assumptions used in the June 30, 2006 actuarial valuation.

## ASSETS

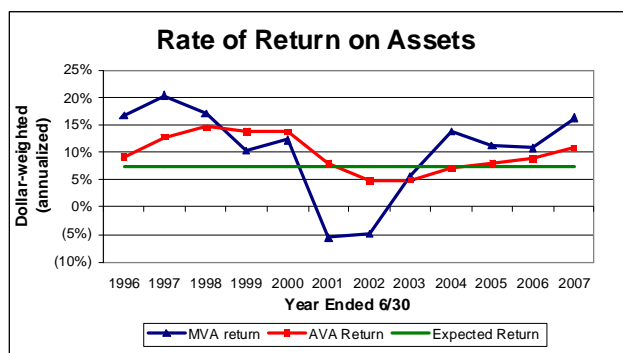
As of June 30, 2007, the System (including Special Service groups) had total assets of \$22.6 billion, when measured on a market value basis, **excluding the Favorable Experience Dividend (FED) reserve account**. This was an increase of \$ 2.8 billion from the prior year. The actuarial value as of June 30, 2007 was \$20.8 billion, an increase of \$1.7 billion. The components of change in the asset values are shown below:

	Market Value (\$M)	Actuarial Value (\$M)
<b>Net Assets, June 30, 2006</b>	\$ <b>19,848</b>	\$ <b>19,144</b>
• Employer and Member Contributions	+ 575	+ 575
• Benefit Payments and Refunds	- 1,001	- 1,001
• Expected Investment Income, net of expenses (Based on 7.5% assumption)	+ 1,473	+ 1,420
• Actuarial Gain/(Loss) on Investment Return	+ 1,729	+ 622
<b>Net Assets, June 30, 2007 Before FED Transfer</b>	\$ <b>22,624</b>	\$ <b>20,760</b>
• FED Transfer Payable January 15, 2007	- 0	- 0
<b>Net Assets, June 30, 2007 After FED Transfer</b>	\$ <b>22,624</b>	\$ <b>20,760</b>

On a market value basis, the rate of return was 16.29% as reported by IPERS. 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 dollar-weighted rate of return, net of investment and administrative expenses, measured on the actuarial value of assets was 10.3%.

Due to the use of an asset smoothing method, as of June 30, 2007, there is \$1.9 billion of deferred actuarial investment gain that has not yet been recognized in the valuation process. Absent investment returns below the 7.5% assumption in the next few years, the deferred actuarial investment gain will gradually be reflected in the actuarial value of assets. As this occurs through the smoothing method, the valuation results will reflect an actuarial gain on investment experience, which will decrease the unfunded actuarial liability.

Please see Exhibits 2 and 3 in Section II of this report for a summary of market and actuarial value of assets by group (Regular, Special Service 1 and Special Service 2) as of June 30, 2007.



*Rates of return on the actuarial value of assets are much smoother than market value returns, illustrating the advantage of using an asset smoothing method.*

## 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 prior year's UAL.

The unfunded actuarial liability by group is shown as of June 30, 2007 below:

(\$Millions)	Regular Membership	Special Service 1	Special Service 2	Total
Actuarial Liability	\$22,024	\$345	\$657	\$23,026
Actuarial Value of Assets	19,709	348	702	20,760
Unfunded Actuarial Liability	2,315	(3)	(45)	2,266

Totals may not add due to rounding.

See Exhibit 7 in Section III of the report for the detailed development of the unfunded actuarial liability for each group.

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 gain of \$425 million.

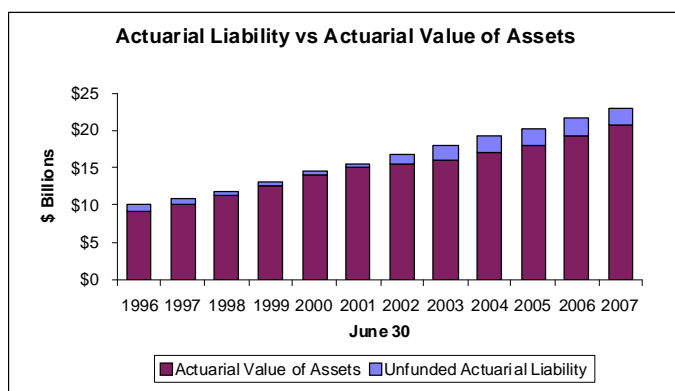




The net actuarial gain may be explained by considering the separate experience of assets and liabilities. As noted in the previous section, assets had a \$622 million gain when measured on an actuarial value basis. The liability loss is \$187 million (or about 0.8% of total actuarial liability) and arises from demographic experience less favorable than anticipated by the actuarial assumptions. The largest component of the actuarial loss was due to actual salary increases for active members that were higher than expected. The average salary for members who were active in both the 2006 and 2007 valuations was 1.4% higher than expected, resulting in an actuarial loss of about \$145 million. There was also a loss from retirement experience. While the number of retirements was less than expected, the members who retired had higher than average liabilities, resulting in an actuarial loss.

The change in the unfunded actuarial liability between June 30, 2006 and 2007 is shown below (in millions):

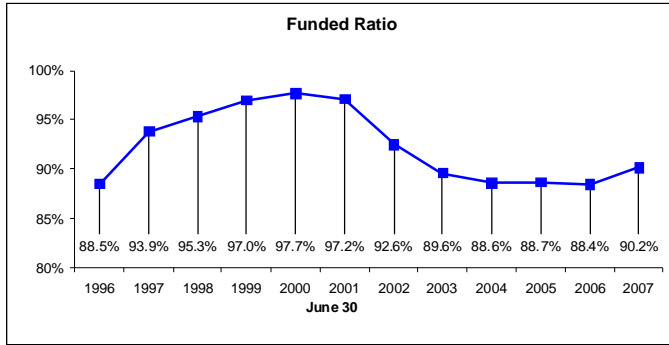
<b>Unfunded Actuarial Liability, June 30, 2006</b>	\$ 2,507
• Expected increase from amortization method	+ 49
• Expected increase from contributions below actuarial rate	+ 118
• Investment experience	+ (622)
• Liability and other experience	+ 187
• Benefit enhancements	+ 0
• Change in actuarial assumptions/methods	+ 27
<b>Unfunded Actuarial Liability <u>before</u> FED transfer, June 30, 2007</b>	\$ 2,266
• FED Transfer	+ 0
<b>Unfunded Actuarial Liability <u>after</u> FED transfer, June 30, 2007</b>	\$ 2,266



*Although it decreased in the most recent year, the dollar amount of the UAL has grown over the past several years due to numerous factors including actual versus expected experience, assumption changes, benefit changes and contributions below the actuarial rate.*

An evaluation of the unfunded actuarial liability on a pure dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both very large numbers) is reflected. Another way to evaluate the unfunded actuarial liability and the progress made in its funding is to track the funded status, the ratio of the actuarial value of assets to the actuarial liability. The funded status information is shown below (in millions).

	6/30/03	6/30/04	6/30/05	6/30/06	6/30/07
Funded Ratio	89.6%	88.6%	88.7%	88.4%	90.2%
Unfunded Actuarial Liability (UAL)	\$1,867	\$2,176	\$2,289	\$2,507	\$2,266



*While there has been a significant decline in the funded ratio, it has stabilized and is starting to increase.*

## **CONTRIBUTION RATE**

Under the Entry Age Normal cost method, the actuarial contribution rate consists of two components:

- a "normal cost" for the portion of projected liabilities allocated by the actuarial cost method to service of members during the year following the valuation date, and
- an "unfunded actuarial liability contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets on hand.

Although the entry age normal cost method develops a normal cost rate that is expected to be relatively level, it will fluctuate from year to year depending on the demographic composition of the active members. Recent experience indicates that the average age of new entrants coming into the System is older than the average entry age of the current membership, and we have seen the normal cost rate increase in past valuations. Again this year, the normal cost rate increased 0.04% from 9.05% to 9.09% due to changes in the demographic composition of the group.

In 2006, legislation was passed that increases the statutory contribution rate as shown in the table below:

<b>Contribution Rates</b>			
<b>Time Period</b>	<b>Member</b>	<b>Employer</b>	<b>Total</b>
Prior to 7/1/07	3.70%	5.75%	9.45%
7/1/07 – 6/30/08	3.90%	6.05%	9.95%
7/1/08 – 6/30/09	4.10%	6.35%	10.45%
7/1/09 – 6/30/10	4.30%	6.65%	10.95%
7/1/10 – 6/30/11 and later	4.50%	6.95%	11.45%

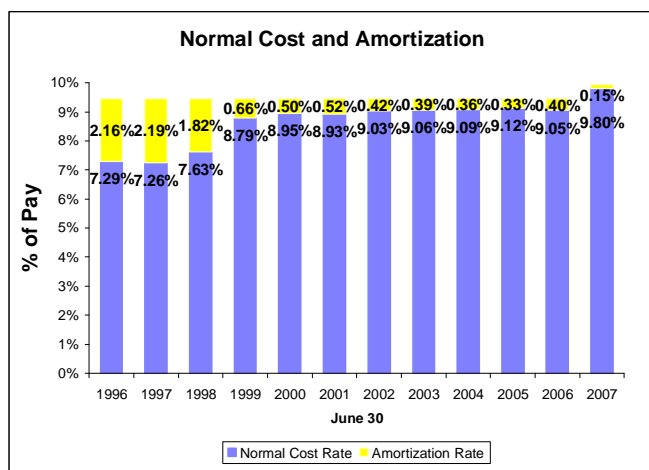
The increased contribution rates result in slightly larger benefits for members who elect a refund of contributions. Therefore, the normal cost rate increased 0.07% from 9.09% to 9.16%.

As a follow-up to recommendations from the actuarial audit, two changes in actuarial methodology were adopted in this valuation. First, the application of the entry age normal cost method was adjusted to better match projected contributions to the projected salary stream in future years. This change increased the normal cost rate for regular members 0.64% from 9.16% to 9.80%. The change in the normal cost rate for



the Special Service Groups was smaller. The second change was to reflect the one year lag between the valuation date and the date the contribution rate is effective in calculating the UAL and the corresponding amortization payment. This change increased the actuarial contribution rate for the regular members by 0.12%. Because the Special Service Groups are contributing above the actuarial rate, this change slightly decreased their contribution rates for FY09.

Even with the 0.50% increase in the statutory contribution rate from 9.45% to 9.95% this year, only a small part of the total contribution rate is available to fund the UAL. If future increases in the statutory contribution rate for regular members are considered, higher contributions are available to fund the UAL. The results of the 2007 Asset/Liability Study indicated that there was a 73% probability that the ultimate fixed contribution rate of 11.45% will be above the actuarial contribution rate in the June 30, 2016 valuation and a 50% probability of a funded ratio at or above 100% at that time. However, the Asset/Liability Study was performed using the June 30, 2006 actuarial valuation results. Since there were changes in the actuarial methodology in the 2007 actuarial valuation, which increased the normal cost rate, and a liability loss from experience for FYE 2007 the projections using the 2007 actuarial valuation could be less favorable than those shown in the Asset/Liability Study. The situation should continue to be monitored and studied in the coming years.



*This graph shows the normal cost rate and the contribution rate available to fund the UAL based on the statutory contribution rate applicable for that plan year.*

*Over the past decade, the normal cost rate has generally increased as a result of benefit improvements, actuarial assumption and method changes, and the increase in entry age. This has left a smaller portion of the contributions to pay down the UAL.*

This valuation calculates the actuarially determined contribution rates effective July 1, 2008 for the year ending June 30, 2009. Most IPERS members (regular members who represent 96% of total active members) have historically contributed 3.7% of pay and employers have contributed 5.75%, for a total of 9.45%. The statutory contribution rates are scheduled to increase as shown in the chart below.

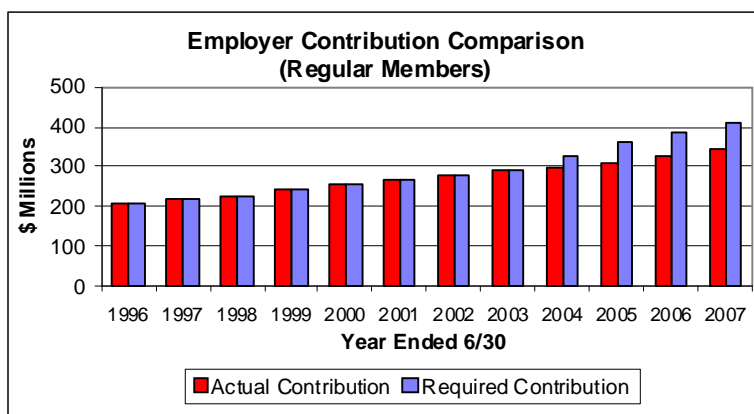
Contribution Rates			
Time Period	Member	Employer	Total
Prior to 7/1/07	3.70%	5.75%	9.45%
7/1/07 – 6/30/08	3.90%	6.05%	9.95%
7/1/08 – 6/30/09	4.10%	6.35%	10.45%
7/1/09 – 6/30/10	4.30%	6.65%	10.95%
7/1/10 – 6/30/11 and later	4.50%	6.95%	11.45%

The remaining 4% of the active members, the Special Service groups, contribute at an actuarially determined rate which changes each year.

See Exhibits 10 and 11 in Section IV for development of these rates which are summarized in the following table:

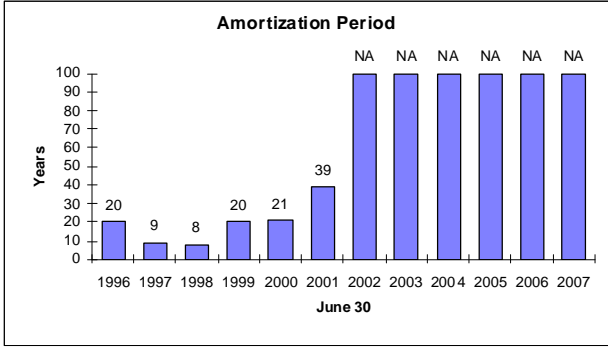
<b>Contribution Rate for FYE 2009</b>	<b>Regular Membership</b>	<b>Special Service 1</b>	<b>Special Service 2</b>
1. Total Actuarial Contribution Rate	12.02%	15.04%	14.08%
2. Member Contribution Rate	<u>4.10%</u>	<u>7.52%</u>	<u>5.63%</u>
3. Employer Contribution Rate (1) – (2)	7.92%	7.52%	8.45%
4. Employer Statutory Contribution Rate	<u>6.35%</u>	<u>7.52%</u>	<u>8.45%</u>
5. Shortfall (3) – (4)	1.57%	0.00%	0.00%

The following graph shows the total actuarially required employer contribution for regular members compared to the amount actually received in the year. The actuarially required contribution equals the System’s normal cost and an amortization payment of the unfunded actuarial liability over 30 years.



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”.

Based on the current UAL amount and amortization payment for FY09, 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 resulting contribution rate would need to increase by 1.57% to 12.02% of payroll. This rate is determined based on the snapshot of the System taken on the valuation date, June 30, 2007, and applies only for the fiscal year beginning July 1, 2008. The rate necessary for the System to continue to be “fully funded” in future years will change each year as the deferred actuarial investment experience is recognized and other experience (both investment and demographic) impacts the System.



*Based on the statutory contribution rate, the period to amortize the UAL has been infinite in the last six valuations. The results of the 2007 Asset/Liability Study indicated that there was a 73% probability that the ultimate fixed contribution rate of 11.45% will be above the actuarial contribution rate in the June 30, 2016 valuation and a 50% probability the funded ratio will be at or above 100%. These projections will change each year as actual experience unfolds.*



## SUMMARY

The System's funded ratio has improved to 90%. 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 FYE 2009 contribution rate would be 12.02% of payroll, as compared to the statutory FYE 2009 contribution rate of 10.45%. This rate is determined based on the snapshot of the System taken on the valuation date, June 30, 2007, and applies only for the fiscal year beginning July 1, 2008. The rate necessary for the System to continue to be "fully funded" in future years will change each year as the deferred actuarial investment experience is recognized and as other experience (both investment and demographic) impacts the System.

The 2006 Legislature passed legislation that increased the statutory contribution rate from 9.45% to 11.45% over a four year period commencing July 1, 2007. This change made a significant improvement to the long term funding of the System by creating a larger contribution amount to be used to pay off the unfunded actuarial liability. In addition, continued favorable investment experience resulted in an actuarial gain on assets for the year and the differential between the market and actuarial value of assets increased to nearly \$2 billion. As part of the continuing effort to monitor the System's funding, IPERS completed a comprehensive Asset/Liability Study in 2007. The results of that study indicated that there was a 73% probability that the ultimate fixed contribution rate of 11.45% will be above the actuarial contribution rate in the June 30, 2016 valuation and a 50% probability of a funded ratio at or above 100% at that time. However, the Asset/Liability Study was performed using the June 30, 2006 actuarial valuation results. Since there were refinements in the actuarial methodology in the 2007 actuarial valuation, which increased the normal cost rate, and a liability loss from experience for FYE 2007 the projections using the 2007 actuarial valuation could be less favorable than those shown in the Asset/Liability Study.

As a follow-up to recommendations from the actuarial audit, two refinements in actuarial methodology were adopted in this valuation. First, the application of the entry age normal cost method was adjusted to better match projected contributions to the projected salary stream in future years. This change increased the normal cost rate for regular members by 0.64%. The change in the normal cost rate for the Special Service Groups was smaller. The second change was to reflect the one year lag between the valuation date and the date the contribution rate is effective in calculating the UAL and the corresponding amortization payment. This change increased the actuarial contribution rate for the regular members by 0.12%. Because the Special Service Groups are contributing above the actuarial rate, this change slightly decreased their contribution rates for FY09.

The Board modified the asset valuation methodology in the last year. The actuarial value of assets must now fall within the corridor of 80% to 120% of the market value of assets (MVA). If it does not, the actuarial value of assets is set equal to appropriate minimum (80% of MVA) or maximum (120% of MVA) amount. This change had no impact on the June 30, 2007 valuation results.

We conclude this executive summary by presenting comparative statistics and actuarial information on both the June 30, 2007 and June 30, 2006 valuations. All figures shown include the regular membership and the two Special Service Groups.

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

(\$Millions)	<u>1996-97</u>	<u>97-98</u>	<u>98-99</u>	<u>99-00</u>	<u>00-01</u>	<u>01-02</u>	<u>02-03</u>	<u>03-04</u>	<u>04-05</u>	<u>05-06</u>	<u>06-07</u>
<b>Unfunded Actuarial Liability (BOY<sup>1</sup>)</b>	1,161	661	555	390	327	441	1,255	1,867	2,176	2,289	2,507
• <b>Expected Change</b>											
- <b>From Amortization Method</b>	(1)	(43)	(37)	(32)	(22)	3	24	36	42	22	49
- <b>Contributions less than Actuarial Rate</b>							61	87	103	125	118
• <b>Investment Experience</b>	(474)	(716)	(730)	(781)	(81)	409	402	75	(89)	(235)	(622)
• <b>Liability and Other Experience</b>	(25)	118	(211)	515	217	258	125	82	57	242	187
• <b>Benefit Enhancements</b>	0	342	0	142	0	3	0	29	0	0	0
• <b>Change in Assumptions/Methods</b>	0	0	587	0	0	141	0	0	0	64	27
• <b>FED Transfer</b>	0	193	226	93	0	0	0	0	0	0	0
<b>Unfunded Actuarial Liability (EOY<sup>2</sup>)</b>	661	555	390	327	441	1,255	1,867	2,176	2,289	2,507	2,266
<b>Amortization Years</b>	9	8	20	21	39	*	*	*	*	*	*

\*Infinite

1 = Beginning of Year

2 = End of Year



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

	June 30, 2007	June 30, 2006	% Chg
<b>SYSTEM MEMBERSHIP</b>			
1. Active Membership			
- Number of Members (excluding Retired/Reemployed)	165,216	163,052	1.3
- Projected Payroll for Upcoming Fiscal Year	\$6,049M	\$5,784M	4.6
- Average Salary	\$36,615	\$35,475	3.2
2. Inactive Membership			
- Number Not in Pay Status	62,291	61,731	0.9
- Number of Retirees/Beneficiaries	84,770	82,037	3.3
- Average Annual Benefit	\$11,404	\$10,818	5.4
<b>ASSETS AND LIABILITIES</b>			
1. Net Assets (excluding FED reserve)			
- Market Value	\$22,624M	\$19,848M	14.0
- Actuarial Value	20,760M	19,144M	8.4
2. Projected Liabilities			
- Retired Members	\$9,217M	\$8,449M	9.1
- Inactive Members	483M	460M	5.0
- Active Members	18,088M	17,181M	5.3
- Total Liability	27,788M	26,090M	6.5
3. Actuarial Liability	\$23,026M	\$21,651M	6.4
4. Unfunded Actuarial Liability	\$2,266M	\$2,507M	-9.6
5. Funded Ratio (Actuarial Value Assets/Actuarial Liability)	90.16%	88.42%	2.0
<b>SYSTEM CONTRIBUTIONS</b>			
Statutory Contribution Rate*	10.45%	9.95%	5.0
Years Required to Amortize Unfunded Actuarial Liability	Infinite	Infinite	N/A
Total Actuarial Contribution Rate	12.02%	11.51%	4.4
Member Contribution Rate	4.10%	3.90%	5.1
Employer Contribution Rate	7.92%	7.61%	4.1

M = (\$)Millions

\* Contribution rates for certain special groups (4% of the membership) are not fixed by statute but are actuarially determined each year. The statutory rate is increasing starting with the fiscal year beginning July 1, 2007.



**SECTION II**

**SYSTEM ASSETS**



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## 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.

#### 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.
- Step 5:** Verify the preliminary actuarial value of assets in Step 4 is not more than 120% of the market value of assets nor less than 80% of the market value. If it is, adjust the actuarial value of assets so it falls within the 80% - 120% corridor.



## EXHIBIT 1

### ANALYSIS OF NET ASSETS AT MARKET VALUES

(\$ Millions)

	June 30, 2007		June 30, 2006	
	<u>Amount</u>	<u>% of Total</u>	<u>Amount</u>	<u>% of Total</u>
Cash & Equivalents	\$ 122	0.5%	\$ 102	0.5%
Capital Assets, Receivables and Payables	(3,510)	(15.1)	(2,321)	(11.4)
Domestic Equity	7,210	31.1	6,249	30.6
International Equity	3,606	15.5	3,151	15.4
Global Fixed Income	9,798	42.2	8,457	41.5
Real Estate Funds	2,075	8.9	1,729	8.5
Private Equity/Debt	1,947	8.4	1,550	7.6
Collateral Pool	1,969	8.5	1,488	7.3
<b>TOTAL ASSETS</b>	<b>\$ 23,217</b>	<b>100.0%</b>	<b>\$ 20,405</b>	<b>100.0%</b>
FED Reserve (Before current year transfer)	(593)		(557)	
Current Year FED Transfer Payable	0		0	
Net Retirement System Assets	\$ 22,624		\$ 19,848	
Allocation of Net Assets:				
Regular Membership	\$ 21,478			
Special Service Group 1	380			
Special Service Group 2	766			
Total Net Assets	\$ 22,624			

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

	<b>Regular 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</b>					
<b>ASSETS ON JUNE 30, 2006</b>	\$18,874,014,285	\$325,888,296	\$647,774,321	\$557,194,144	\$20,404,871,046
<b>REVENUE</b>					
FED Transfer	0	0	0	0	0
Employer contributions	318,762,838	6,577,652	17,722,840	0	343,063,330
Member contributions	205,122,082	6,577,652	11,815,516	0	223,515,250
Service purchase	7,729,421	70,868	225,350	0	8,025,639
Investment income	3,105,481,745	54,339,010	108,835,105	88,502,239	3,357,158,099
<b>Total Revenue</b>	<u>\$3,637,096,086</u>	<u>\$67,565,182</u>	<u>\$138,598,811</u>	<u>\$88,502,239</u>	<u>\$3,931,762,318</u>
<b>DISBURSEMENTS</b>					
Benefit payments	935,979,788	10,600,704	16,014,363	51,378,132	1,013,972,987
Member and employer refunds	34,548,660	1,674,951	1,892,660	0	38,116,271
Administrative expenses	8,830,819	55,272	174,877	0	9,060,968
Investment expenses	53,943,471	943,891	1,890,510	1,537,320	58,315,192
<b>Total Expenses</b>	<u>\$1,033,302,738</u>	<u>\$13,274,818</u>	<u>\$19,972,410</u>	<u>\$52,915,452</u>	<u>\$1,119,465,418</u>
<b>NET RETIREMENT SYSTEM</b>					
<b>ASSETS ON JUNE 30, 2007</b>	\$21,477,807,633	\$380,178,660	\$766,400,722	\$592,780,931	\$23,217,167,946
<b>EXPECTED DISTRIBUTION TO FED</b>					
<b>ON JANUARY 2008</b>	\$0	\$0	\$0	\$0	\$0
<b>ADJUSTED NET ASSETS</b>					
<b>ON JUNE 30, 2007</b>	\$21,477,807,633	\$380,178,660	\$766,400,722	\$592,780,931	\$23,217,167,946

\* Includes Sheriffs and Deputies

\*\* Includes all other public safety members



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## EXHIBIT 3

### ACTUARIAL VALUE OF NET ASSETS

	Regular Membership	Special Service Group 1*	Special Service Group 2**	Total
1. Actuarial Value of Assets as of June 30, 2006	\$18,209,048,069	\$312,911,423	\$622,077,027	\$19,144,036,519
2. Actual Receipts/Disbursements				
a. Contributions	531,614,341	13,226,172	29,763,706	574,604,219
b. Benefit Payments and Refunds	970,528,448	12,275,655	17,907,023	1,000,711,126
c. Net Change	(438,914,107)	950,517	11,856,683	(426,106,907)
3. Expected Value of Assets as of June 30, 2007 [(1) x 1.075] + [(2c) x (1.075) <sup>5</sup> ]	19,119,650,842	337,365,297	681,026,075	20,138,042,214
4. Market Value of Assets as of June 30, 2007	21,477,807,633	380,178,660	766,400,722	22,624,387,015
5. Difference Between Market and Expected Values (4) - (3)	2,358,156,791	42,813,363	85,374,647	2,486,344,801
6. Initial Actuarial Value of Assets as of June 30, 2007 (3) + [(5) x 25%]	19,709,190,040	348,068,638	702,369,737	20,759,628,415
7. Determination of Corridor				
a. 80% of Market Value of Assets	17,182,246,106	304,142,928	613,120,578	18,099,509,612
b. 120% of Market Value of Assets	25,773,369,160	456,214,392	919,680,866	27,149,264,418
c. Limited Actuarial Value of Assets as of June 30, 2007	19,709,190,040	348,068,638	702,369,737	20,759,628,415
8. Adjustment for Transfer to the Favorable Experience Dividend Reserve Account	0	0	0	0
9. Actuarial Value of Assets as of June 30, 2007	\$19,709,190,040	\$348,068,638	\$702,369,737	\$20,759,628,415

\* Includes Sheriffs and Deputies

\*\* Includes all other public safety members



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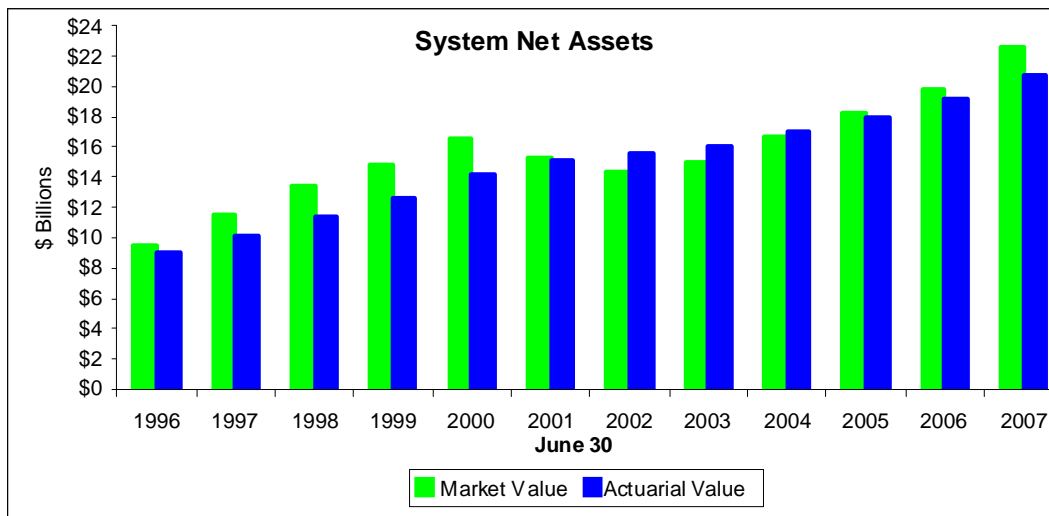
## EXHIBIT 4

### 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>AVA/MVA</u>
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%
2003	16,120,476,011	14,915,941,546	108%
2004	16,951,942,539	16,726,227,853	101%
2005	17,951,490,071	18,224,067,613	99%
2006	19,144,036,519	19,847,676,903	96%
2007	20,759,628,415	22,624,387,015	92%

Values are for combined regular membership and Special Service groups, but exclude the Favorable Experience Dividend Reserve Account.

\*Reflects reduction for transfers to the Favorable Experience Dividend Reserve Account.



## EXHIBIT 5

### SUMMARY OF FAVORABLE EXPERIENCE DIVIDEND RESERVE

Market Value of FED Reserve as of June 30, 2007	\$	592,780,931
Transfer to FED Payable on January 15, 2008 Based on June 30, 2007 Valuation Results	\$	0
Total Value of FED Reserve as of June 30, 2007	\$	592,780,931

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, the likelihood of future credits to and payments from the reserve, and distributions paid as a dividend under 97B.49F(1).

Based on the June 30, 2007 balance in the FED reserve and assuming (1) a 7.5% rate of return on the market value of assets in the future and (2) all other assumptions are exactly met, the FED reserve is projected to be sufficient to make payments through the dates shown below.

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

	<u>Maximum*</u>	<u>Expected**</u>
2008	\$166.4	\$59.4
2009	192.3	68.6
2010	220.6	78.7
2011	102.0 ***	89.6
2012	-	101.5
2013	-	114.1
2014	-	127.7
2015	-	142.1
2016	-	55.4 ***
2017	-	-

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

\*\* Based on 1.07% for each year since retirement.

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



**SECTION III**

**SYSTEM LIABILITIES**



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## SECTION III

### SYSTEM LIABILITIES

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. There are several methods 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. In general, under this method, a contribution that is a level percent of rates 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 liability is that portion of the present value of future benefits (PVFB) that will not be paid by the normal costs in future years. 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.

For the regular membership, 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. For the Special Service groups, who are in a surplus funding position, the surplus is amortized over 30 years. The resulting payment is then applied to reduce the contribution rate. For all groups the UAL is projected to the following year to reflect the time lag from the valuation date to the date the contribution rates are effective.



## EXHIBIT 6

### PRESENT VALUE OF FUTURE BENEFITS as of June 30, 2007

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.

	Regular Membership	Special Service Group 1*	Special Service Group 2**	Total
Present Value of Future Benefits:				
Active Members				
Retirement benefits	\$15,327,908,895	\$252,906,752	\$453,417,157	\$16,034,232,804
Death benefits	276,907,824	4,698,082	17,743,356	299,349,262
Termination benefits	957,338,339	35,112,753	116,216,865	1,108,667,957
Disability benefits	469,302,435	34,972,452	141,588,442	645,863,329
Inactive Members				
Vested members	435,780,903	7,043,200	13,962,822	456,786,925
Nonvested members	25,388,935	132,702	528,330	26,049,967
Retired Members and Beneficiaries	8,941,802,561	105,514,847	169,925,365	9,217,242,773
<b>Total Present Value of Future Benefits</b>	<b>\$26,434,429,892</b>	<b>\$440,380,788</b>	<b>\$913,382,337</b>	<b>\$27,788,193,017</b>

\* Includes Sheriffs and Deputies

\*\* Includes all other public safety members

## EXHIBIT 7

### UNFUNDED ACTUARIAL LIABILITY as of June 30, 2007

	Regular Membership	Special Service Group 1*	Special Service Group 2**	Total
1. Present Value of Future Benefits	\$26,434,429,892	\$440,380,788	\$913,382,337	\$27,788,193,017
2. Present Value of Future Normal Costs	4,410,566,802	95,159,916	256,352,517	4,762,079,235
3. Actuarial Liability (1) - (2)	\$22,023,863,090	\$345,220,872	\$657,029,820	\$23,026,113,782
4. Actuarial Value of Net Assets	19,709,190,040	348,068,638	702,369,737	20,759,628,415
5. Unfunded Actuarial Liability (3) - (4)	\$2,314,673,050	(\$2,847,766)	(\$45,339,917)	\$2,266,485,367

\* Includes Sheriffs and Deputies

\*\* Includes all other public safety members



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## EXHIBIT 8

### CALCULATION OF ACTUARIAL (GAIN)/LOSS AND ANY TRANSFER TO THE FAVORABLE EXPERIENCE DIVIDEND RESERVE Based on the June 30, 2007 Actuarial Valuation

The Favorable Experience Dividend (FED) reserve account was created by legislation in 1998. The main purpose of the account is to help offset the negative impact of postretirement inflation for members who retired after June 30, 1990. The law provided that a portion of the favorable actuarial experience, if any, in subsequent years would be transferred to the FED reserve. Legislation passed in 2000 capped the FED reserve at ten years of expected payouts at the maximum level. Further legislation in 2006 prohibited further transfers to the FED until the System has no remaining UAL. Despite the fact the System experienced a gain for the year, a UAL exists so no transfer is to be made this year.

1. June 30, 2006 Unfunded Actuarial Liability	\$	2,507,085,900
2. Normal Cost as of June 30, 2006		517,926,447
3. Employer and Member Contributions*		566,578,580
4. Increase due to method changes		27,103,339
5. Increase due to plan amendments		0
6. Expected Unfunded Actuarial Liability as of June 30, 2007 [(1) + (2)] * 1.075 - [(3) * (1.075) <sup>-5</sup> ] + (4) + (5)		2,691,550,437
7. Actual Unfunded Actuarial Liability as of June 30, 2007		2,266,485,367
8. (Gain)/loss (7)-(6)		(425,065,070)
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



**SECTION IV**

**SYSTEM CONTRIBUTIONS**



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## 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 liability as a level percent of payroll. The unfunded actuarial 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.

Although the entry age normal cost method develops a normal cost rate that is expected to be relatively level, it will fluctuate from year to year depending on the demographic composition of the active members. Recent experience indicates that the average age of new entrants coming into the System is older than the average entry age of the current membership, and we have seen the normal cost rate increase in past valuations. Again this year, the normal cost rate increased 0.04% from 9.05% to 9.09% due to changes in the demographic composition of the group.

In 2006, legislation was passed that increases the statutory contribution rate as shown in the table below:

<b>Contribution Rates</b>			
<b>Time Period</b>	<b>Member</b>	<b>Employer</b>	<b>Total</b>
Prior to 7/1/07	3.70%	5.75%	9.45%
7/1/07 – 6/30/08	3.90%	6.05%	9.95%
7/1/08 – 6/30/09	4.10%	6.35%	10.45%
7/1/09 – 6/30/10	4.30%	6.65%	10.95%
7/1/10 – 6/30/11 and later	4.50%	6.95%	11.45%

The increased contribution rates result in slightly larger benefits for members who elect a refund of contributions. Therefore, the normal cost rate was 9.16%, while it would have been 9.09% in the absence of this increase.

As a follow-up to recommendations from the actuarial audit, two changes in actuarial methodology were adopted in this valuation. First, the application of the entry age normal cost method was adjusted to better match projected contributions to the projected salary stream in future years. This change increased the normal cost rate for regular members from 9.16% to 9.80%. The change in the normal cost rate for the Special Service Groups was smaller. The second change was to reflect the one year lag between the valuation date and the date the contribution rate is effective in calculating the UAL and the corresponding amortization payment. This change increased the actuarial contribution rate for the regular members by 0.12%. Because the Special Service Groups are contributing above the actuarial rate, this change slightly decreased their contribution rates for FY09.



**EXHIBIT 9**  
**ACTUARIAL BALANCE SHEET**  
**as of June 30, 2007**

	Regular Membership	Special Service Group 1*	Special Service Group 2**	Total
<b><u>ASSETS</u></b>				
Actuarial value of assets	\$19,709,190,040	\$348,068,638	\$702,369,737	\$20,759,628,415
Present value of future normal costs	4,410,566,802	95,159,916	256,352,517	4,762,079,235
Present value of future contributions to amortize unfunded actuarial liability	2,314,673,050	(2,847,766)	(45,339,917)	2,266,485,367
<b>Total Net Assets</b>	<b>\$26,434,429,892</b>	<b>\$440,380,788</b>	<b>\$913,382,337</b>	<b>\$27,788,193,017</b>
<b><u>LIABILITIES</u></b>				
Present Value of Future Benefits:				
Retired Members and Beneficiaries	\$8,941,802,561	\$105,514,847	\$169,925,365	\$9,217,242,773
Active Members	17,031,457,493	327,690,039	728,965,820	18,088,113,352
Inactive Members	461,169,838	7,175,902	14,491,152	482,836,892
<b>Total Liabilities</b>	<b>\$26,434,429,892</b>	<b>\$440,380,788</b>	<b>\$913,382,337</b>	<b>\$27,788,193,017</b>

\* Includes Sheriffs and Deputies

\*\* Includes all other public safety members



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## EXHIBIT 10

### ANALYSIS OF CONTRIBUTION RATE FOR REGULAR MEMBERSHIP

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.

The contribution rate developed in this exhibit is based on the June 30, 2007 actuarial valuation and applies to the fiscal year beginning July 1, 2008 and ending June 30, 2009. The statutory contribution rate for the same period is 10.45%, reflecting the second scheduled increase provided by 2006 legislation.

		<b>Regular Membership</b>
1. FYE 2008 Contribution Rate		9.95%
2. Normal Cost Rate		9.80%
3. Contribution Rate Applied to Fund the UAL for FYE 2008 (1) - (2)		0.15%
4. Unfunded Actuarial Liability(UAL)/Surplus on June 30, 2007	\$	2,314,673,050
5. Expected Payroll for FYE 2008	\$	5,765,593,656
6. Projected UAL on June 30, 2008 [(4) x 1.075] - [(3) x (5) x 1.075 <sup>-5</sup> ]	\$	2,479,306,687
7. Amortization Period to Fund the UAL/Surplus		30 years
8. Amortization Factor (Level % of Pay)		19.33574
9. UAL Contribution Adjusted to Mid-year of FYE 2009 [(6) / (8)] x (1.075) <sup>-5</sup>	\$	132,945,514
10. Expected Payroll for FYE 2009 (5) x 1.04	\$	5,996,217,402
11. UAL Contribution Rate for FYE 2009 (9) / (10)		2.22%
12. Actuarial Contribution Rate for FYE 2009 (2) + (11)		12.02%
13. Amortization Period Necessary to Finance UAL as a Level Percent of Payroll with Contribution Rate of 10.45% *		Cannot be amortized

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

## EXHIBIT 11

### CALCULATION OF CONTRIBUTION RATES FOR SPECIAL SERVICE 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/surplus payment. The payment to amortize the unfunded actuarial liability/(surplus) is determined as a level percentage of payroll, with an amortization period of 30 years.

The contribution rate developed in this exhibit is based on the June 30, 2007 actuarial valuation and applies to the fiscal year beginning July 1, 2008.

	<b>Special Service Group 1*</b>	<b>Special Service Group 2**</b>
1. FYE 2008 Contribution Rate	15.40%	14.11%
2. Normal Cost Rate	15.23%	15.26%
3. Contribution Rate Applied to Fund the UAL (1) - (2)	0.17%	(1.15%)
4. Unfunded Actuarial Liability(UAL)/Surplus on June 30, 2007	\$ (2,847,766)	\$ (45,339,917)
5. Expected Payroll for FYE 2008	\$ 81,729,487	\$ 202,107,511
6. Projected UAL on June 30, 2008 [(4) x 1.075] - [(3) x (5) x 1.075 <sup>-5</sup> ]	\$ (3,205,405)	\$ (46,330,591)
7. Amortization Period to Fund the UAL/Surplus	30 years	30 years
8. Amortization Factor (Level % of Pay)	19.33574	19.33574
9. UAL Contribution Adjusted to Mid-year FYE 2009 [(6) / (8)] x (1.075) <sup>-5</sup>	\$ (171,880)	\$ (2,484,341)
10. Expected Payroll for FYE 2009 (5) x 1.04	\$ 84,998,667	\$ 210,191,811
11. UAL Contribution Rate for FYE 2009 (9) / (10)	(0.19%)	(1.18%)
12. Actuarial Contribution Rate for FYE 2009 (2) + (11)	15.04%	14.08%
Employer Contribution Rate	7.52% (50%)	8.45% (60%)
Employee Contribution Rate	7.52% (50%)	5.63% (40%)

\* Includes Sheriffs and Deputies

\*\* Includes all other public safety members



**SECTION V**

**PLAN ACCOUNTING INFORMATION**



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## SECTION V

### PLAN ACCOUNTING INFORMATION

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.



## EXHIBIT 12

### SUMMARY OF MEMBERSHIP

	<u>June 30, 2007</u>	<u>June 30, 2006</u>
Active Employees:		
Vested	125,140	124,529
Not yet vested	<u>40,076</u>	<u>38,523</u>
Total active employees*	165,216	163,052
Retirees and beneficiaries currently receiving benefits:	84,770	82,037
Inactive vested members entitled to benefits but not yet receiving them:	26,435	25,918

\*Retired/reemployed members are included in retiree counts, but not the active count.  
Counts are 7,848 for 2007 and 8,044 for 2006.





## EXHIBIT 13

### 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>
6/30/98	\$ 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%	4,550,180,113	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%
6/30/03	16,120,476,011	17,987,374,960	1,866,898,949	89.62%	4,881,100,238	38.25%
6/30/04	16,951,942,539	19,128,410,606	2,176,468,067	88.62%	5,072,027,906	42.91%
6/30/05	17,951,490,071	20,240,098,667	2,288,608,596	88.69%	5,236,860,886	43.70%
6/30/06	19,144,036,519	21,651,122,419	2,507,085,900	88.42%	5,523,863,321	45.39%
6/30/07	20,759,628,415	23,026,113,782	2,266,485,367	90.16%	5,781,706,199	39.20%



## EXHIBIT 14

### SCHEDULE OF EMPLOYER CONTRIBUTIONS

The Actuarially Required Employer Contribution (ARC) is determined based on GASB Statement No. 25, Financial Reporting for Defined Benefit Pension Plans. The dollar amount of ARC is calculated by dividing the contributions paid by the Regular Membership for the fiscal year by the statutory contribution rate to determine covered payroll for the year. The covered payroll is then multiplied by the actuarial contribution rate including the normal cost and 30-year amortization of the UAL from the actuarial valuation two years prior (the June 30, 2005 valuation sets the ARC for FY 07). The resulting dollar amount of ARC for the regular Membership is added to the actual contributions paid by the Special Service 1 and the Special Service 2 employers to determine the total ARC for the fiscal year.

Fiscal Year Ending	Actuarially Required Contributions (ARC)				Percentage of ARC Contributed			
	Regular Membership	Special Service Group 1*	Special Service Group 2**	Total	Regular Membership	Special Service Group 1*	Special Service Group 2**	Total
6/30/02				\$278,682,745				100.0%
6/30/03	\$270,363,338	\$5,670,239	\$13,738,478	289,772,054	99.2%	100.0%	100.0%	99.2%
6/30/04	309,006,609	5,489,797	14,263,836	328,760,242	90.3%	100.0%	100.0%	90.9%
6/30/05	341,552,685	6,236,611	15,391,729	363,181,025	84.7%	100.0%	100.0%	85.6%
6/30/06	364,424,911	6,228,675	16,888,833	387,542,419	82.7%	100.0%	100.0%	83.8%
6/30/07	387,578,925	6,577,652	17,723,013	411,879,590	82.2%	100.0%	100.0%	83.3%



## EXHIBIT 15

### EXPECTED BENEFIT PAYMENTS

The following chart shows the expected benefit payments to be made over the next 20 years. These payments include those expected to be made to current retirees and beneficiaries, current active members, and current deferred vested members (included in the active values) if all actuarial assumptions are met in future years. The benefits reflected include expected refunds and death benefits as well as annuity payments.

These payouts do not include any current nonvested inactive members, any future members, or any FED payments.

<u>Fiscal</u> <u>Year End</u>	<u>Actives</u> <u>at 6/30/07</u>	<u>Retirees</u> <u>at 6/30/07</u>	<u>Total</u>
2008	\$ 119,350,000	\$ 964,703,000	\$ 1,084,053,000
2009	225,999,000	948,745,000	1,174,744,000
2010	338,746,000	931,639,000	1,270,385,000
2011	456,873,000	913,424,000	1,370,297,000
2012	581,470,000	893,834,000	1,475,304,000
2013	709,466,000	873,050,000	1,582,516,000
2014	838,713,000	851,298,000	1,690,011,000
2015	968,291,000	828,296,000	1,796,587,000
2016	1,099,289,000	804,400,000	1,903,689,000
2017	1,230,933,000	779,269,000	2,010,202,000
2018	1,362,435,000	753,617,000	2,116,052,000
2019	1,491,973,000	727,394,000	2,219,367,000
2020	1,619,346,000	700,364,000	2,319,710,000
2021	1,743,999,000	672,588,000	2,416,587,000
2022	1,865,965,000	644,138,000	2,510,103,000
2023	1,985,550,000	615,084,000	2,600,634,000
2024	2,100,007,000	585,509,000	2,685,516,000
2025	2,209,074,000	555,494,000	2,764,568,000
2026	2,313,597,000	525,136,000	2,838,733,000
2027	2,414,136,000	494,535,000	2,908,671,000



**APPENDIX A**

**SUMMARY STATISTICS ON**

**SYSTEM MEMBERSHIP**



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**APPENDIX A**  
**SUMMARY STATISTICS ON SYSTEM MEMBERSHIP**

**TABLE OF CONTENTS**

	<u>Page</u>
Historical Summary of Members	A-2
Summary of Active Members	A-3
Summary of Inactive Vested Members	A-4
Summary of Retired Members and Beneficiaries	A-5
Age and Service Distribution	
• Active Members with Salaries	
Regular Membership	A-6
Special Service Group 1	A-7
Special Service Group 2	A-8
• Active Member Age Distribution Graphs	
Regular Membership	A-9
Special Service Group 1	A-10
Special Service Group 2	A-11
• Inactive Vested Members	
Regular Membership	A-12
Special Service Group 1	A-13
Special Service Group 2	A-14
• Inactive Vested Member Age Distribution Graphs	
Regular Membership	A-15
Special Service Group 1	A-16
Special Service Group 2	A-17
Analysis of Retires and Beneficiaries	
• Number	
Regular Membership	A-18
Special Service Group 1	A-19
Special Service Group 2	A-20
• Age Distribution	
Regular Membership	A-21
Special Service Group 1	A-22
Special Service Group 2	A-23
Summary of Data File Reconciliation	A-24



## HISTORICAL SUMMARY OF MEMBERS

The following table displays selected historical data (including regular and both Special Service groups) as available.

Valuation		Active Members						Number			Act/Ret Ratio
		Number	Average				Retired Reemployed	Inactive Vested	Retired		
Date June 30	Total Count		Age	Entry Age	Service	Annual Pay (\$)				Pay Increase	
1991	206,105	135,104	43.7			21,885			49,881	2.71	
1992	207,860	134,485	44.3			22,510	2.9%		51,247	2.62	
1993	211,862	136,409	43.9			22,604	0.4%		54,212	2.52	
1994	216,989	141,423	44.2			22,968	1.6%		54,295	2.60	
1995	216,973	144,912	44.1			23,322	1.5%		56,353	2.57	
1996	221,891	147,431	44.2			25,218	8.1%		57,914	2.55	
1997	224,357	147,736	44.6	33.1	11.5	26,031	3.2%		28,377	59,320	2.49
1998	241,767	148,917	44.7	33.2	11.5	26,767	2.8%		31,202	61,648	2.42
1999	250,168	152,440	44.8	33.4	11.4	27,322	2.1%	4,853	34,332	63,396	2.40
2000	249,970	153,039	44.8	33.2	11.6	29,032	6.3%	5,050	31,219	65,712	2.33
2001	255,963	154,610	45.0	33.5	11.5	30,341	4.5%	4,886	32,650	68,703	2.25
2002	264,974	158,467	45.1	33.8	11.3	32,119	5.9%	5,387	34,792	71,715	2.21
2003	268,813	159,310	45.2	33.8	11.4	31,950	-0.5%	6,126	35,375	74,128	2.15
2004	272,573	160,003	45.4	33.8	11.6	33,082	3.5%	6,438	35,788	76,782	2.08
2005	267,214	160,876	45.6	33.8	11.8	34,066	3.0%	6,592	26,919	79,419	2.03
2006	271,007	163,052	45.7	34.0	11.7	35,475	4.1%	8,044	25,918	82,037	1.99
2007	276,421	165,216	45.7	34.0	11.7	36,618	3.2%	7,848	26,435	84,770	1.95

Note: Retired count includes retired reemployed members.

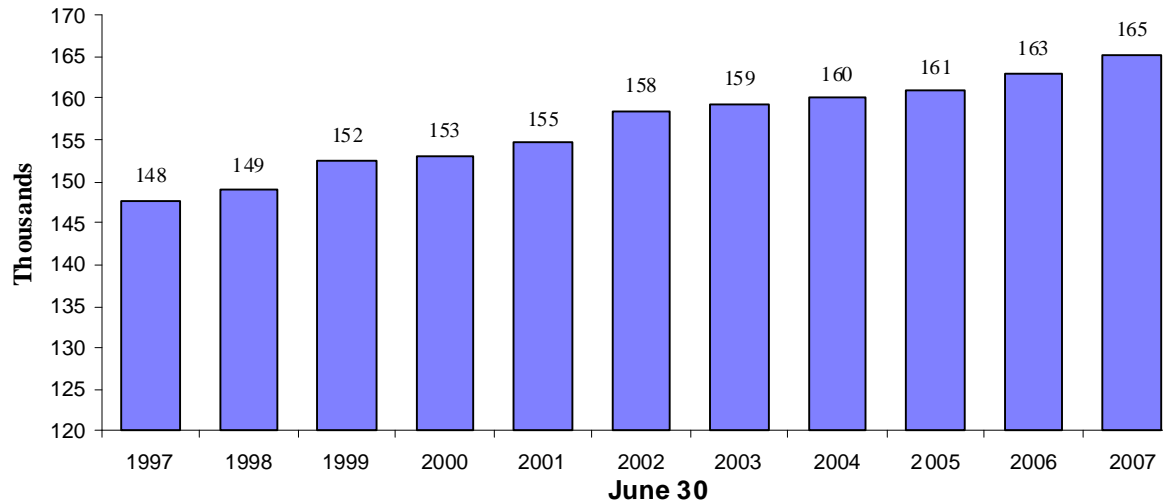




## SUMMARY OF ACTIVE MEMBERS

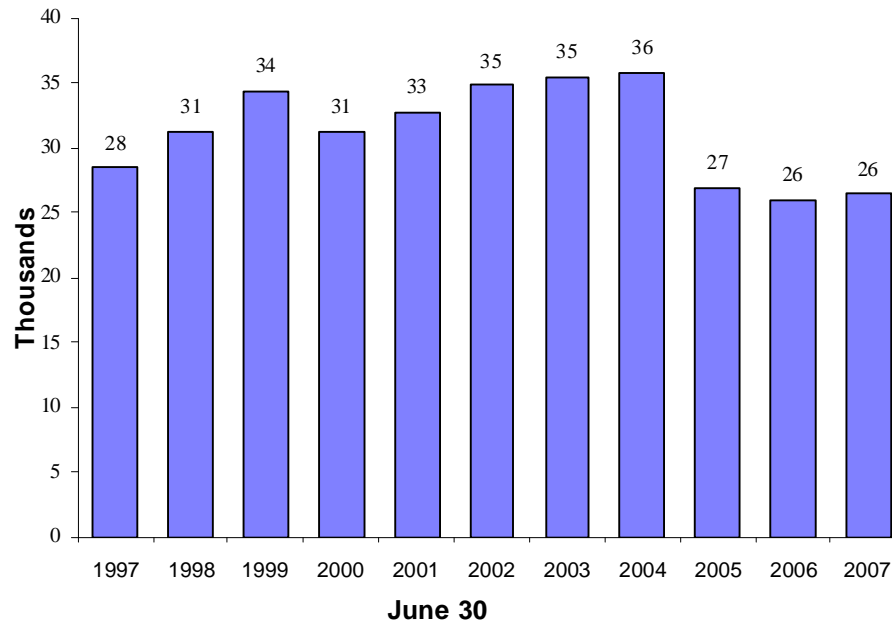
	Regular Membership	Special Service Groups		Total 6/30/2007	Total 6/30/2006	Percent Change
		Group 1	Group 2			
Total Employees	159,068	1,470	4,678	165,216	163,052	1.3
Projected Covered						
Payroll* (millions)	\$5,766	\$82	\$202	\$6,049	\$5,784	4.6
Average Age	45.8	41.2	42.5	45.7	45.7	0.0
Average Entry Age	34.2	26.9	31.1	34.0	34.0	0.0
Average Earnings*	\$36,246	\$55,598	\$43,204	\$36,615	\$35,475	3.2
Retired Reemployed	7,815	11	22	7,848	8,044	-2.4

\*Payroll figures as of June 30 are actual amounts paid during the prior fiscal year, increased by the assumed salary increase factor for the upcoming fiscal year.



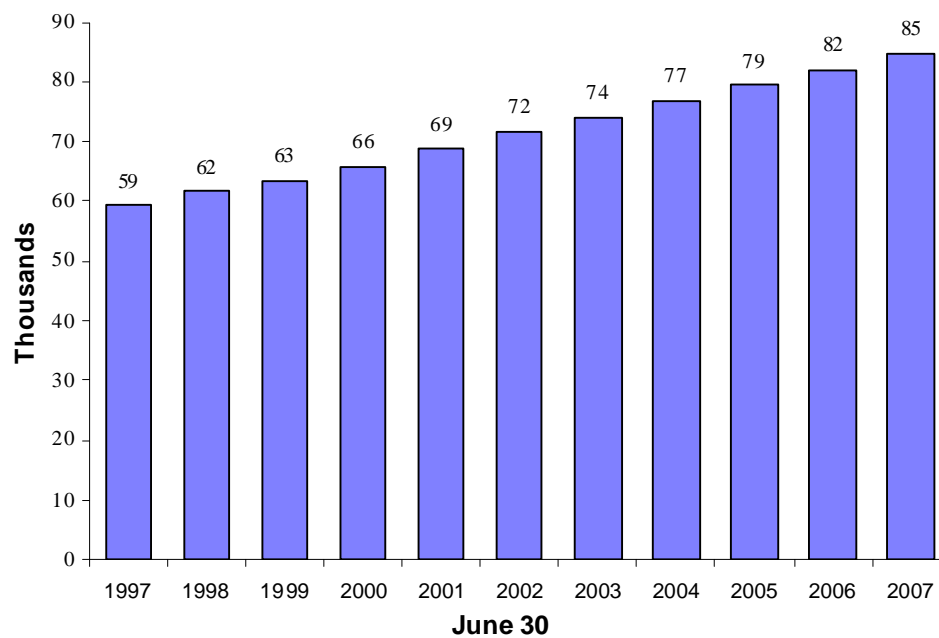
## SUMMARY OF INACTIVE VESTED MEMBERS

Regular Membership	Special Service		Total 6/30/2007	Total 6/30/2006	% Change
	Group 1	Group 2			
26,040	91	304	26,435	25,918	(2.0%)



## SUMMARY OF RETIRED MEMBERS AND BENEFICIARIES

Regular Membership	Special Service		Total 6/30/2007	Total 6/30/2006	% Change
	Group 1	Group 2			
83,488	397	885	84,770	82,037	3.3%



**AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2007 FOR ACTIVE MEMBERS\***  
**Males and Females - Regular Membership**

Age	<i>Years of Service</i>																		<i>Total</i>	
	<u>0 to 4</u>		<u>5 to 9</u>		<u>10 to 14</u>		<u>15 to 19</u>		<u>20 to 24</u>		<u>25 to 29</u>		<u>30 to 34</u>		<u>35 to 39</u>		<u>40 and over</u>		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	6,144	13,720	120	24,250	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	6,264	13,922
25-29	9,677	25,288	2,955	33,311	35	33,284	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	12,667	27,181
30-34	5,581	24,525	5,771	37,119	1,681	41,481	21	31,829	0	NA	0	NA	0	NA	0	NA	0	NA	13,054	32,288
35-39	5,630	22,844	4,624	35,057	4,575	43,680	1,315	46,404	23	39,636	0	NA	0	NA	0	NA	0	NA	16,167	34,173
40-44	5,521	20,387	4,967	30,436	3,444	38,897	3,538	48,087	1,332	48,991	53	42,511	0	NA	0	NA	0	NA	18,855	33,696
45-49	5,006	20,772	5,425	28,052	4,330	34,230	3,241	42,875	3,614	50,998	2,219	48,879	178	44,230	0	NA	0	NA	24,013	35,147
50-54	4,018	20,725	4,410	28,852	4,011	32,919	3,767	38,583	3,137	46,782	3,988	52,046	2,803	52,055	95	49,252	0	NA	26,229	37,851
55-59	3,827	17,266	3,175	28,689	2,898	33,807	3,412	37,759	3,178	43,394	2,846	49,636	3,805	56,883	1,287	56,037	48	46,872	24,476	38,975
60-64	3,599	12,541	2,170	23,629	1,573	29,416	1,678	35,243	1,647	40,451	1,339	44,169	1,010	51,271	819	57,701	248	55,478	14,083	31,271
65-69	2,494	8,043	1,386	13,875	619	21,406	414	26,256	319	34,341	217	34,205	203	37,407	102	49,208	93	57,086	5,847	17,053
70 & over	2,717	9,603	1,839	9,174	479	9,038	106	14,889	29	13,401	17	27,461	16	28,027	13	22,281	12	56,543	5,228	9,782
<b>Totals</b>	<b>54,214</b>	<b>19,398</b>	<b>36,842</b>	<b>29,497</b>	<b>23,645</b>	<b>35,812</b>	<b>17,492</b>	<b>40,964</b>	<b>13,279</b>	<b>46,171</b>	<b>10,679</b>	<b>49,309</b>	<b>8,015</b>	<b>53,656</b>	<b>2,316</b>	<b>55,857</b>	<b>401</b>	<b>54,853</b>	<b>166,883</b>	<b>32,494</b>

\*Including retired/reemployed members



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## AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2007 FOR ACTIVE MEMBERS\*

### Males and Females - Special Service Group 1

Age	0 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 and over		Total	
	No.	Avg. 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	31	33,394	1	39,991	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	32	33,600
25-29	74	41,098	79	47,374	1	58,689	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	154	44,432
30-34	49	39,828	123	49,314	55	50,643	1	45,970	0	NA	0	NA	0	NA	0	NA	0	NA	228	47,581
35-39	29	41,052	70	48,072	112	52,327	46	53,495	0	NA	0	NA	0	NA	0	NA	0	NA	257	50,105
40-44	11	38,169	26	50,550	62	51,607	94	53,966	49	57,695	1	50,654	0	NA	0	NA	0	NA	243	53,022
45-49	1	56,463	26	53,226	34	52,135	42	54,408	59	55,512	48	60,023	6	59,792	0	NA	0	NA	216	55,616
50-54	7	25,780	7	53,306	9	50,836	27	52,968	46	55,005	60	55,933	46	55,748	0	NA	0	NA	202	53,920
55-59	11	27,115	1	55,988	7	43,169	22	50,582	13	53,792	22	54,516	27	59,674	8	58,016	0	NA	111	51,741
60-64	3	12,612	2	69,623	2	43,134	4	42,214	6	47,858	4	54,228	8	57,819	4	78,964	2	48,302	35	51,751
65-69	1	78,884	1	6,855	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	2	42,870
70 & over	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	1	54,340	1	54,340
<b>Totals</b>	<b>217</b>	<b>38,204</b>	<b>336</b>	<b>49,067</b>	<b>282</b>	<b>51,499</b>	<b>236</b>	<b>53,290</b>	<b>173</b>	<b>55,601</b>	<b>135</b>	<b>57,066</b>	<b>87</b>	<b>57,436</b>	<b>12</b>	<b>64,999</b>	<b>3</b>	<b>50,314</b>	<b>1,481</b>	<b>50,727</b>

\*Including retired/reemployed members



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## AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2007 FOR ACTIVE MEMBERS\*

### Males and Females - Special Service Group 2

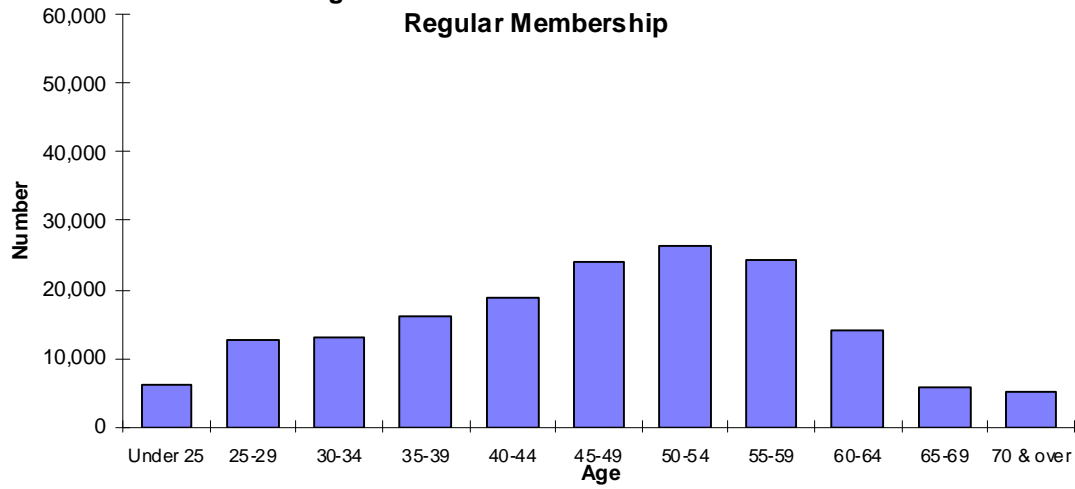
Age	<i>Years of Service</i>																			
	<u>0 to 4</u>		<u>5 to 9</u>		<u>10 to 14</u>		<u>15 to 19</u>		<u>20 to 24</u>		<u>25 to 29</u>		<u>30 to 34</u>		<u>35 to 39</u>		<u>40 and over</u>		<u>Total</u>	
	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary
Under 25	185	22,319	5	30,824	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	190	22,543
25-29	324	25,944	127	38,112	7	41,556	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	458	29,557
30-34	197	25,048	257	40,327	94	44,894	2	51,749	0	NA	0	NA	0	NA	0	NA	0	NA	550	35,677
35-39	180	27,028	199	40,158	245	46,911	77	48,499	1	35,501	0	NA	0	NA	0	NA	0	NA	702	40,056
40-44	132	25,912	167	39,168	160	47,066	150	51,050	67	52,001	1	51,209	0	NA	0	NA	0	NA	677	42,370
45-49	104	25,213	130	38,977	131	48,992	100	48,401	135	52,474	109	54,673	7	55,062	0	NA	0	NA	716	45,218
50-54	77	25,325	104	41,518	106	46,667	79	48,831	106	51,887	142	53,350	74	53,488	1	73,368	0	NA	689	46,705
55-59	51	33,123	64	40,256	95	46,373	62	51,652	72	54,086	64	53,162	61	54,114	22	58,450	0	NA	491	48,385
60-64	18	28,194	45	40,053	35	46,953	22	48,479	31	51,708	19	55,516	10	57,664	3	58,078	1	48,657	184	46,071
65-69	4	34,651	6	39,124	7	35,747	5	57,669	4	47,432	4	50,773	3	54,292	0	NA	0	NA	33	44,473
70 & over	5	12,571	3	24,701	1	54,069	1	1,448	0	NA	0	NA	0	NA	0	NA	0	NA	10	19,248
<b>Totals</b>	<b>1,277</b>	<b>25,626</b>	<b>1,107</b>	<b>39,714</b>	<b>881</b>	<b>46,825</b>	<b>498</b>	<b>49,702</b>	<b>416</b>	<b>52,381</b>	<b>339</b>	<b>53,825</b>	<b>155</b>	<b>54,090</b>	<b>26</b>	<b>58,981</b>	<b>1</b>	<b>48,657</b>	<b>4,700</b>	<b>40,999</b>

\*Including retired/reemployed members

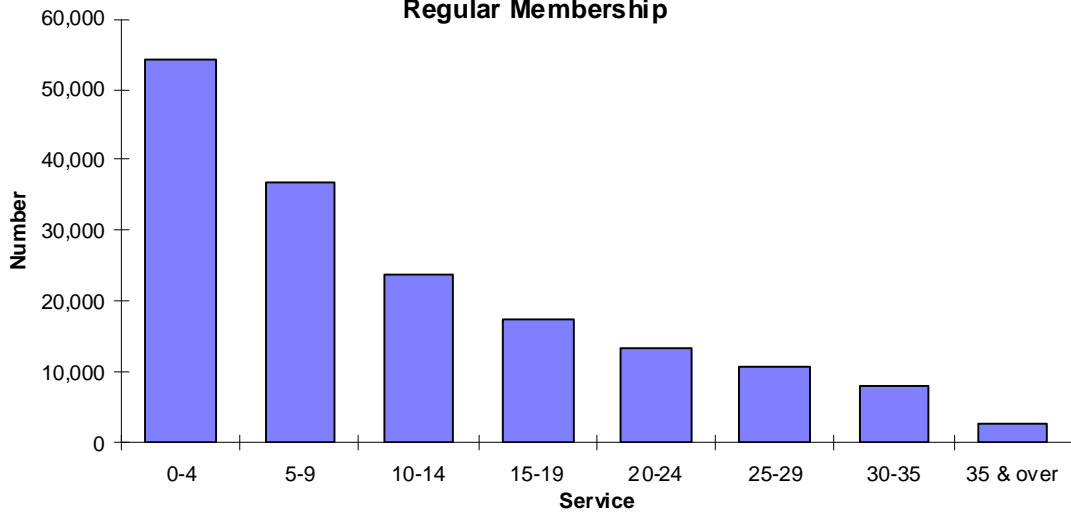


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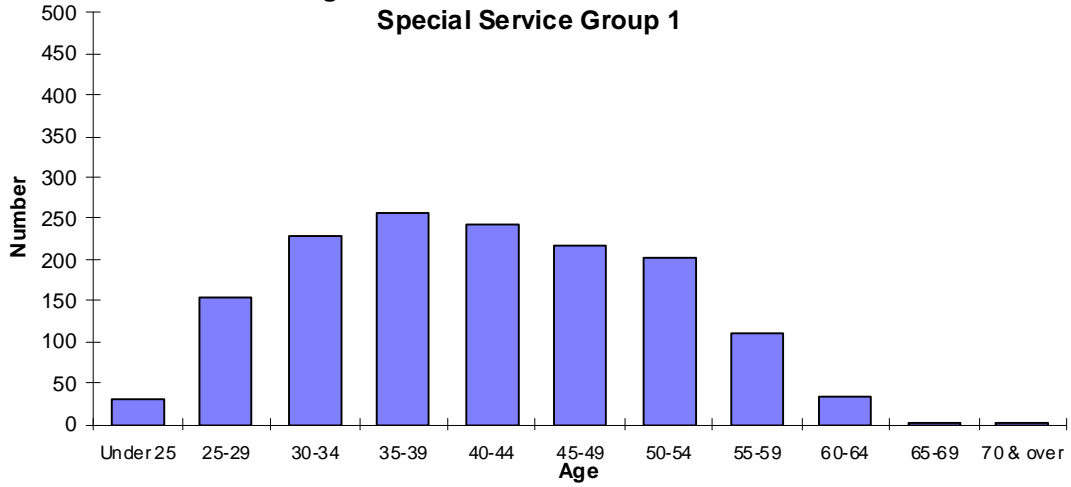
**Age Distribution of Active Members  
Regular Membership**



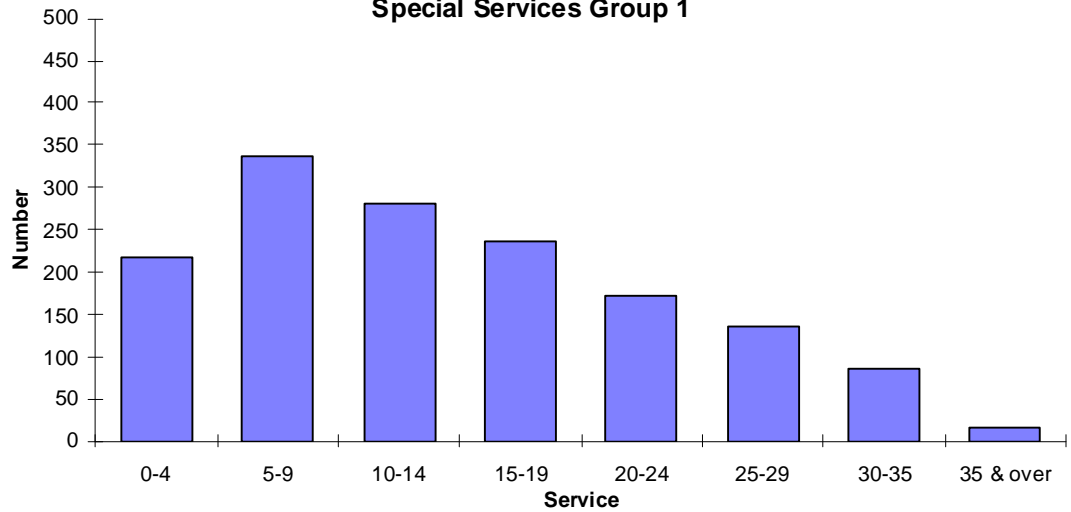
**Service Distribution of Active Members  
Regular Membership**



**Age Distribution of Active Members  
Special Service Group 1**

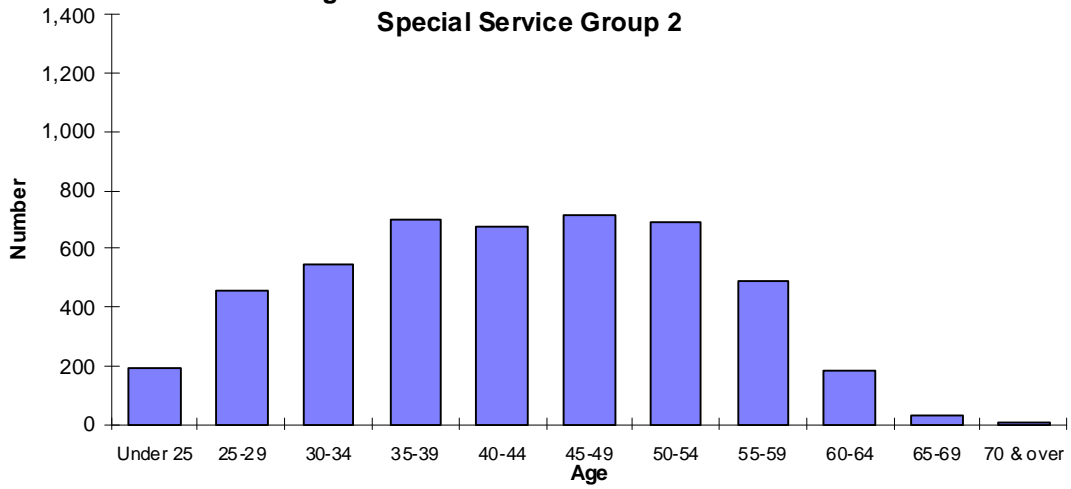


**Service Distribution of Active Members  
Special Services Group 1**

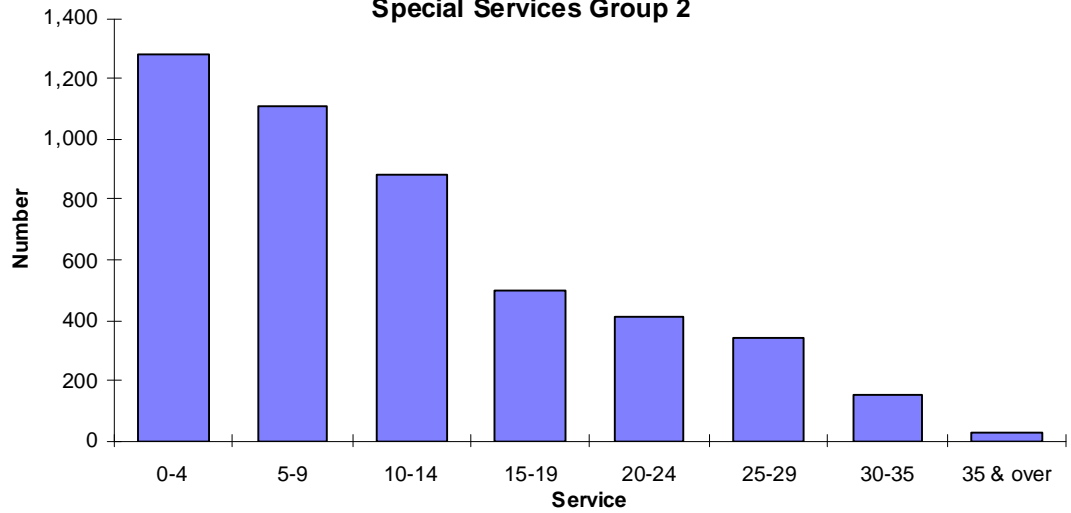




**Age Distribution of Active Members  
Special Service Group 2**



**Service Distribution of Active Members  
Special Services Group 2**



## AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2007 FOR INACTIVE VESTED MEMBERS

Males and Females - Regular Membership

Age	<i>Years of Service</i>																		<u>Total</u>	
	<u>0 to 3</u>		<u>4 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. Hi-3
	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3
Under 25	0	NA	42	7,869	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	42	1,417
25-29	0	NA	405	21,451	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	405	4,303
30-34	0	NA	1,250	24,925	69	11,942	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	1,319	6,339
35-39	0	NA	1,615	23,912	304	14,858	15	29,331	0	NA	0	NA	0	NA	0	NA	0	NA	1,934	8,301
40-44	0	NA	1,872	20,116	538	15,793	153	34,556	23	36,686	0	NA	0	NA	0	NA	0	NA	2,586	9,836
45-49	0	NA	2,381	18,115	900	15,276	387	31,213	169	37,460	32	33,547	0	NA	0	NA	0	NA	3,869	12,311
50-54	0	NA	2,580	17,466	1,304	15,761	671	27,318	353	34,066	150	41,148	37	40,312	0	NA	0	NA	5,095	16,180
55-59	2,099	8,785	2,071	16,316	938	17,724	489	24,655	213	29,325	91	38,467	28	42,378	2	34,703	0	NA	5,931	10,702
60-64	1,304	7,483	946	13,950	353	16,313	177	22,475	63	25,615	27	36,253	7	39,481	0	NA	0	NA	2,877	8,060
65-69	735	6,102	321	8,949	78	13,014	21	15,213	15	19,984	6	14,864	4	25,578	1	25,094	0	NA	1,181	3,786
70 & over	653	2,938	112	4,363	24	7,456	7	4,790	4	14,236	1	1,992	0	NA	0	NA	0	NA	801	1,297
Totals	4,791	7,222	13,595	18,756	4,508	15,908	1,920	27,356	840	32,639	307	38,489	76	40,221	3	31,500	0	NA	26,040	10,519



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**AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2007 FOR INACTIVE VESTED MEMBERS**  
**Males and Females - Special Service Group 1**

Age	<i>Years of Service</i>																			
	<u>0 to 3</u>		<u>4 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. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3
Under 25	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA
25-29	0	NA	4	28,551	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	4	9,944
30-34	0	NA	11	41,301	3	27,947	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	14	19,431
35-39	0	NA	5	36,940	5	28,488	2	46,562	0	NA	0	NA	0	NA	0	NA	0	NA	12	28,012
40-44	0	NA	8	36,171	4	37,004	4	44,199	0	NA	0	NA	0	NA	0	NA	0	NA	16	34,579
45-49	0	NA	2	37,014	8	35,334	4	41,088	2	43,031	1	46,003	0	NA	0	NA	0	NA	17	48,159
50-54	0	NA	5	27,652	1	39,649	3	23,623	5	32,229	4	39,679	1	55,438	0	NA	0	NA	19	59,545
55-59	0	NA	2	20,417	0	NA	4	28,008	1	37,108	0	NA	0	NA	0	NA	0	NA	7	43,905
60-64	1	1,138	0	NA	0	NA	0	NA	0	NA	0	NA	1	41,708	0	NA	0	NA	2	51,035
65-69	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA
70 & over	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA
<b>Totals</b>	<b>1</b>	<b>1,138</b>	<b>37</b>	<b>35,019</b>	<b>21</b>	<b>33,172</b>	<b>17</b>	<b>36,304</b>	<b>8</b>	<b>35,540</b>	<b>5</b>	<b>40,944</b>	<b>2</b>	<b>48,573</b>	<b>0</b>	<b>NA</b>	<b>0</b>	<b>NA</b>	<b>91</b>	<b>39,129</b>

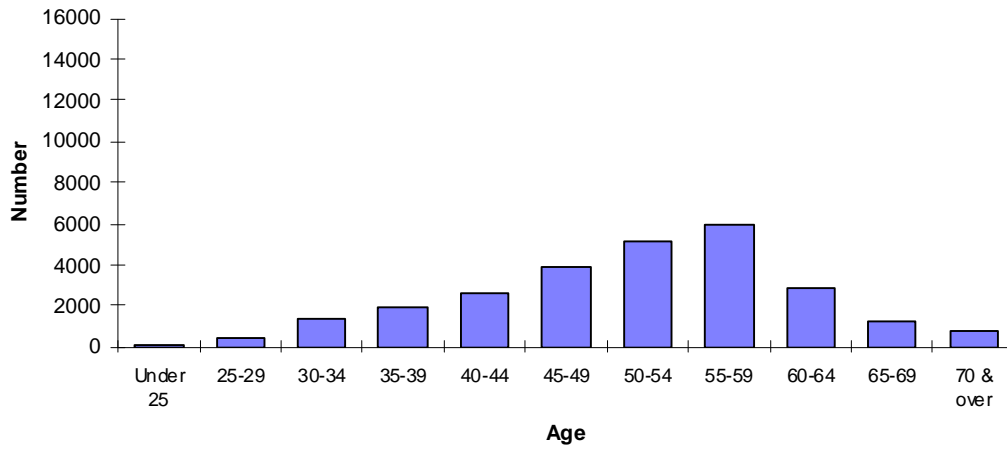


**AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2007 FOR INACTIVE VESTED MEMBERS**  
**Males and Females - Special Service Group 2**

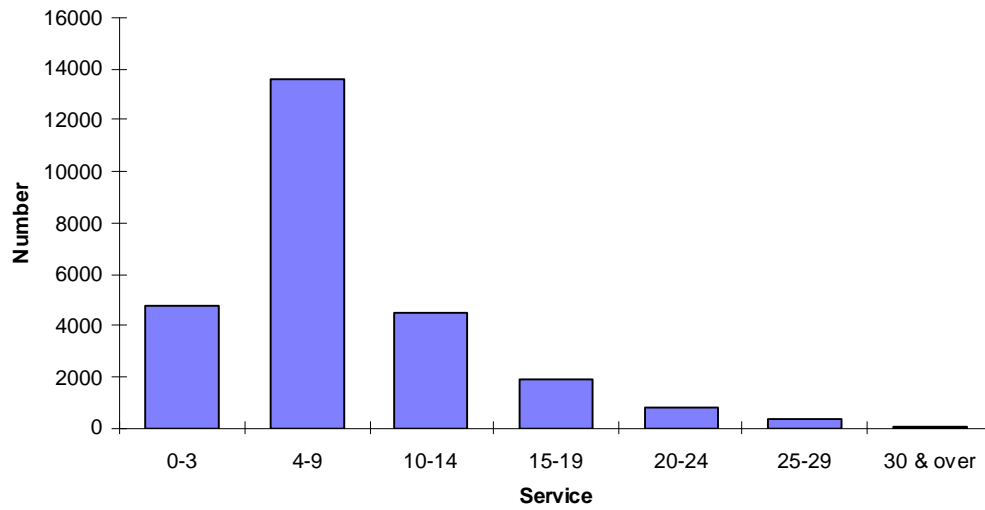
Age	<i>Years of Service</i>																			
	<u>0 to 3</u>		<u>4 to 9</u>		<u>10 to 14</u>		<u>15 to 19</u>		<u>20 to 24</u>		<u>25 to 29</u>		<u>30 to 34</u>		<u>35 to 39</u>		<u>40 and over</u>		<u>Total</u>	
	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3	No.	Avg. Hi-3
Under 25	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA
25-29	0	NA	14	20,916	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	14	6,195
30-34	0	NA	36	19,860	2	30,433	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	38	9,544
35-39	0	NA	40	20,550	6	16,788	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	46	10,893
40-44	0	NA	25	23,641	18	26,516	4	35,397	0	NA	0	NA	0	NA	0	NA	0	NA	47	20,048
45-49	0	NA	30	15,986	11	22,520	6	30,738	4	33,483	3	49,180	0	NA	0	NA	0	NA	54	22,735
50-54	0	NA	28	17,628	11	27,183	10	39,215	9	36,839	3	40,450	2	68,355	0	NA	0	NA	63	32,101
55-59	4	10,443	13	15,778	4	18,272	2	14,667	1	28,052	1	43,643	0	NA	0	NA	0	NA	25	14,719
60-64	6	9,570	3	13,750	3	22,058	0	NA	1	21,824	0	NA	0	NA	0	NA	0	NA	13	11,712
65-69	3	18,406	0	NA	1	1,202	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	4	3,166
70 & over	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA
<b>Totals</b>	<b>13</b>	<b>11,877</b>	<b>189</b>	<b>19,261</b>	<b>56</b>	<b>23,680</b>	<b>22</b>	<b>33,977</b>	<b>15</b>	<b>34,358</b>	<b>7</b>	<b>44,648</b>	<b>2</b>	<b>68,355</b>	<b>0</b>	<b>NA</b>	<b>0</b>	<b>NA</b>	<b>304</b>	<b>18,671</b>



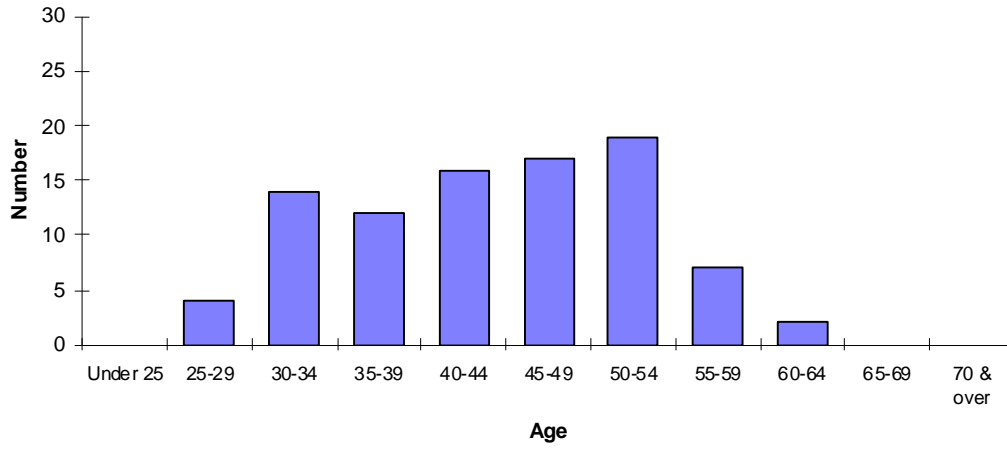
### Age Distribution of Inactive Vested Members Regular Membership



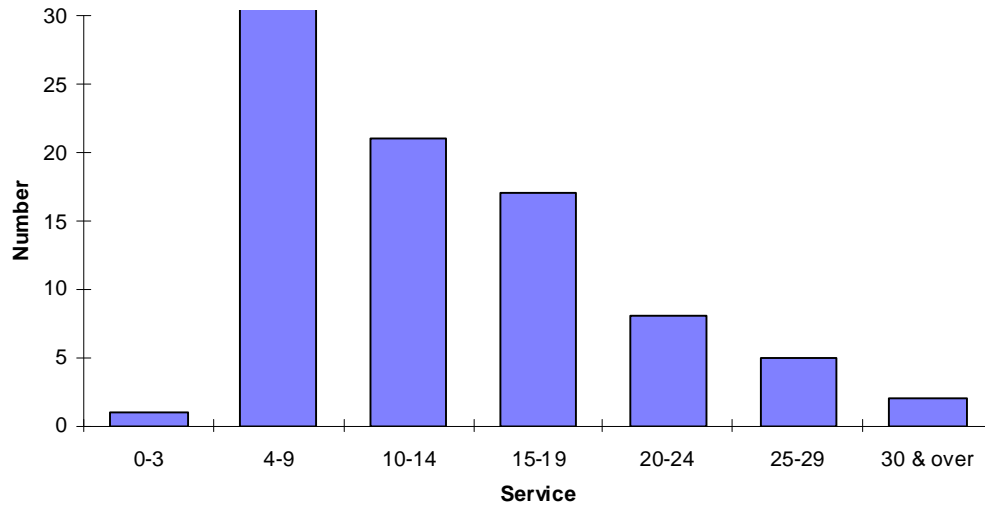
### Service Distribution of Inactive Vested Members Regular Membership



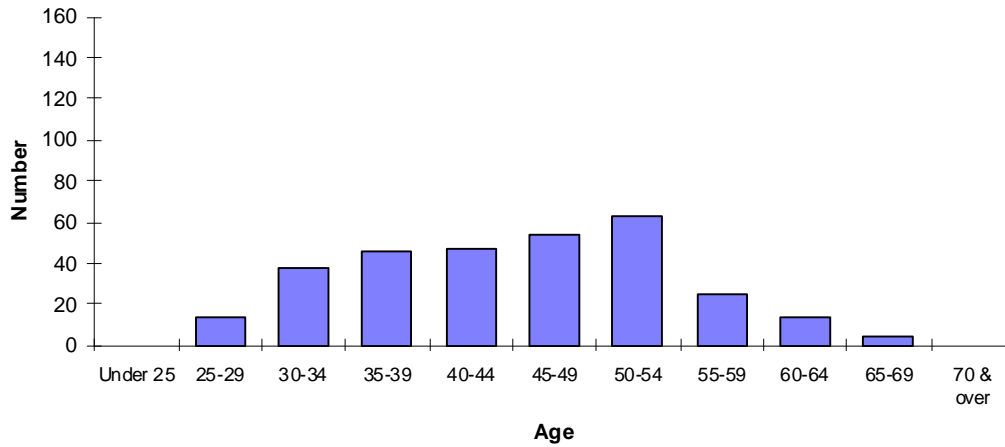
**Age Distribution of Inactive Vested Members  
Special Service Group 1**



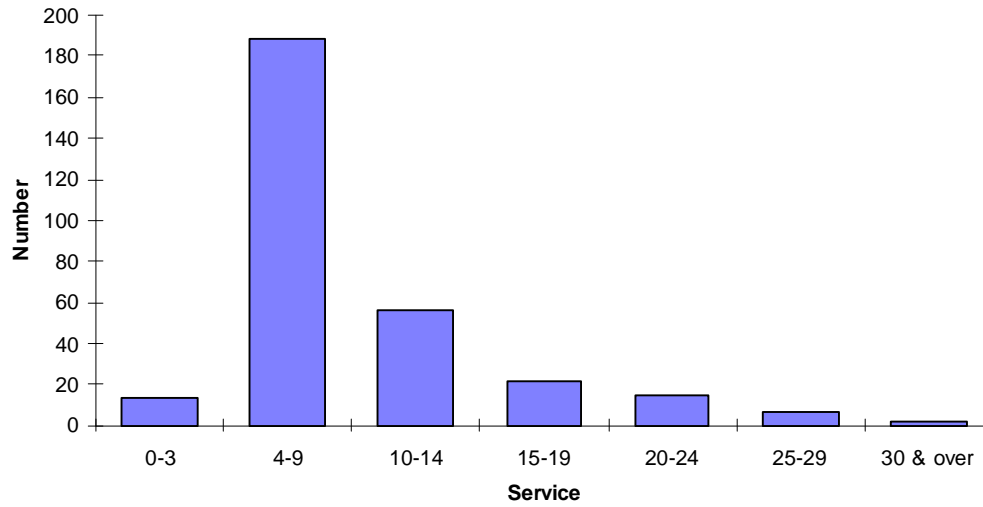
**Service Distribution of Inactive Vested Members  
Special Service Group 1**



### Age Distribution of Inactive Vested Members Special Service Group 2



### Service Distribution of Inactive Vested Members Special Service Group 2



## ANALYSIS OF RETIREES AND BENEFICIARIES

### Males and Females - Regular Membership

Age	Number of Members and Beneficiaries										Average Annual Benefit
	Chapt 97	Option 1	Option 2	Option 3	Option 4	Contingent Beneficiary	Option 5	Option 6	Period Certain	Total	
Under 40	0	9	5	1	3	25	2	2	14	61	\$ 6,857
40 to 44	0	17	6	0	5	10	2	6	6	52	6,272
45 to 49	0	65	12	17	13	36	9	13	6	171	7,463
50 to 54	0	132	41	44	51	79	16	43	6	412	9,596
55 to 59	0	1,414	1,198	926	396	169	655	1,328	20	6,106	18,100
60 to 64	0	3,068	2,693	1,890	1,148	255	1,414	2,300	38	12,806	17,368
65 to 69	0	4,285	3,147	2,267	2,043	386	1,879	1,563	35	15,605	14,169
70 to 74	0	4,608	3,221	1,870	2,641	562	1,957	352	55	15,266	10,705
75 to 79	0	4,205	3,092	1,321	2,133	685	1,533	64	29	13,062	7,702
80 to 84	0	3,484	2,445	992	1,240	664	1,098	3	16	9,942	5,701
85 to 89	0	2,740	1,117	505	555	410	995	2	3	6,327	4,877
90 to 94	4	1,446	283	256	137	121	524	0	1	2,772	3,988
95 to 99	1	465	45	81	11	28	133	0	0	764	3,312
100 & up	1	92	4	21	3	4	17	0	0	142	3,788
Counts	6	26,030	17,309	10,191	10,379	3,434	10,234	5,676	229	83,488	\$11,088
% of Total	0.0%	31.2%	20.7%	12.2%	12.4%	4.1%	12.3%	6.8%	0.3%	100.0%	



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## ANALYSIS OF RETIREES AND BENEFICIARIES

### Males and Females - Special Service Group 1

Age	Number of Members and Beneficiaries										Average Annual Benefit
	Chapt 97	Option 1	Option 2	Option 3	Option 4	Contingent Beneficiary	Option 5	Option 6	Period Certain	Total	
Under 40	0	1	0	0	0	1	0	0	0	2	\$22,065
40 to 44	0	1	0	0	0	1	0	0	0	2	108,479
45 to 49	0	0	0	0	0	2	0	0	0	2	22,699
50 to 54	0	7	4	5	8	0	2	8	0	34	32,090
55 to 59	0	25	12	4	19	2	6	35	0	103	30,841
60 to 64	0	25	9	7	21	2	8	24	0	96	25,883
65 to 69	0	22	9	5	30	7	5	10	0	88	22,911
70 to 74	0	9	5	3	16	4	4	5	0	46	17,944
75 to 79	0	4	2	0	8	5	1	0	1	21	13,221
80 to 84	0	0	0	0	0	3	0	0	0	3	7,926
85 to 89	0	0	0	0	0	0	0	0	0	0	NA
90 to 94	0	0	0	0	0	0	0	0	0	0	NA
95 to 99	0	0	0	0	0	0	0	0	0	0	NA
100 & up	0	0	0	0	0	0	0	0	0	0	NA
Counts	0	94	41	24	102	27	26	82	1	397	\$25,256
% of Total	0.0%	23.7%	10.3%	6.0%	25.7%	6.8%	6.5%	20.7%	0.3%	100.0%	



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## ANALYSIS OF RETIREES AND BENEFICIARIES

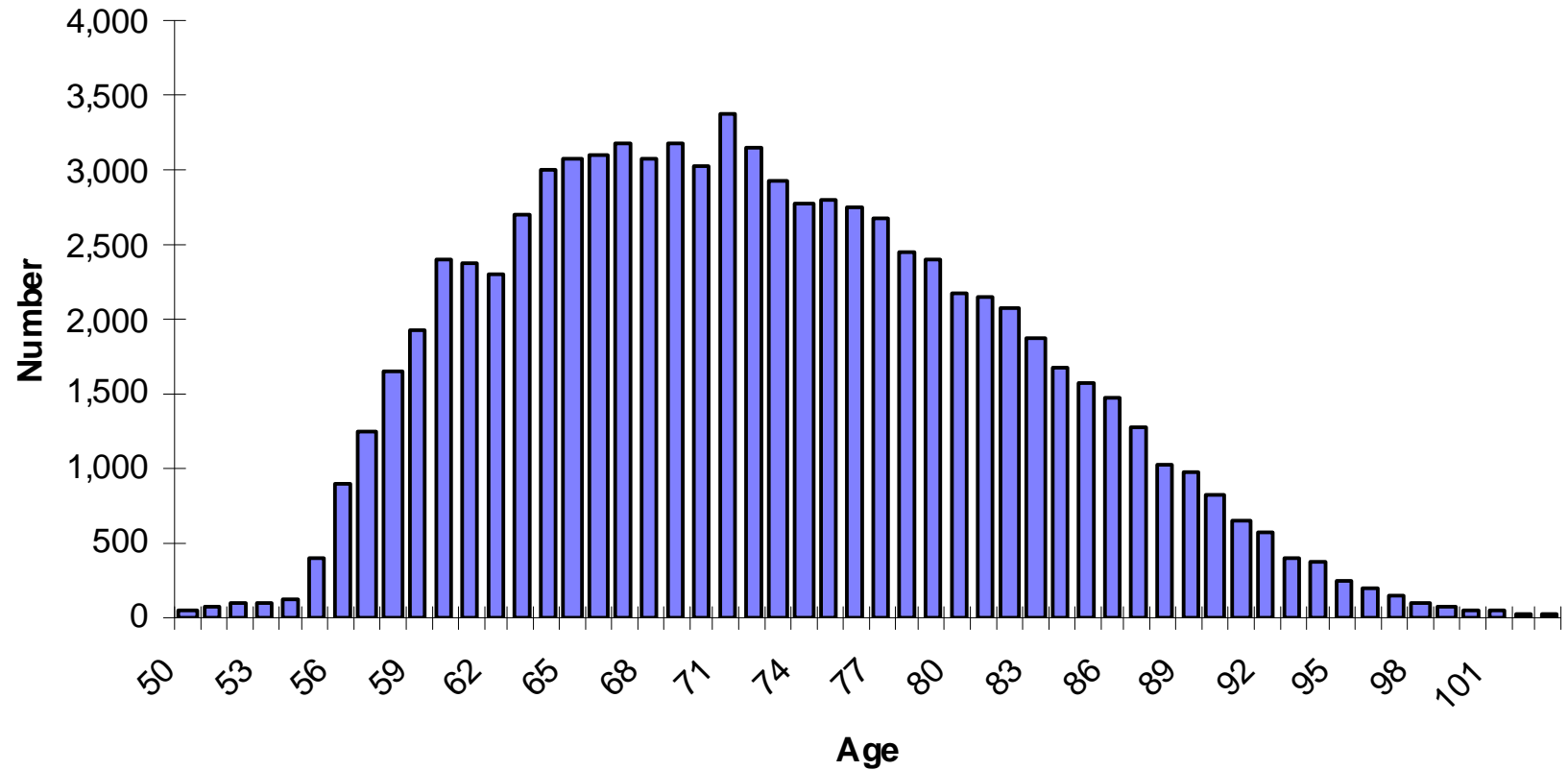
### Males and Females - Special Service Group 2

Age	Number of Members and Beneficiaries										Average Annual Benefit
	Chapt 97	Option 1	Option 2	Option 3	Option 4	Contingent Beneficiary	Option 5	Option 6	Period Certain	Total	
Under 40	0	0	0	0	2	0	0	1	0	3	\$17,280
40 to 44	0	2	0	1	1	1	0	1	0	6	15,171
45 to 49	0	3	1	4	2	1	0	3	0	14	15,422
50 to 54	0	4	1	1	4	2	0	2	0	14	18,445
55 to 59	0	41	26	17	33	5	8	56	0	186	25,026
60 to 64	0	58	32	14	42	8	18	59	0	231	21,327
65 to 69	0	53	32	20	65	7	17	39	2	235	16,259
70 to 74	0	42	10	5	50	8	10	5	1	131	13,825
75 to 79	0	17	6	1	22	5	3	0	0	54	12,910
80 to 84	0	2	0	0	2	4	2	0	0	10	7,980
85 to 89	0	0	0	0	0	0	0	0	0	0	NA
90 to 94	0	0	0	0	0	1	0	0	0	1	7,582
95 to 99	0	0	0	0	0	0	0	0	0	0	NA
100 & up	0	0	0	0	0	0	0	0	0	0	NA
Counts	0	222	108	63	223	42	58	166	3	885	\$18,774
% of Total	0.0%	25.1%	12.2%	7.1%	25.2%	4.7%	6.6%	18.8%	0.3%	100.0%	

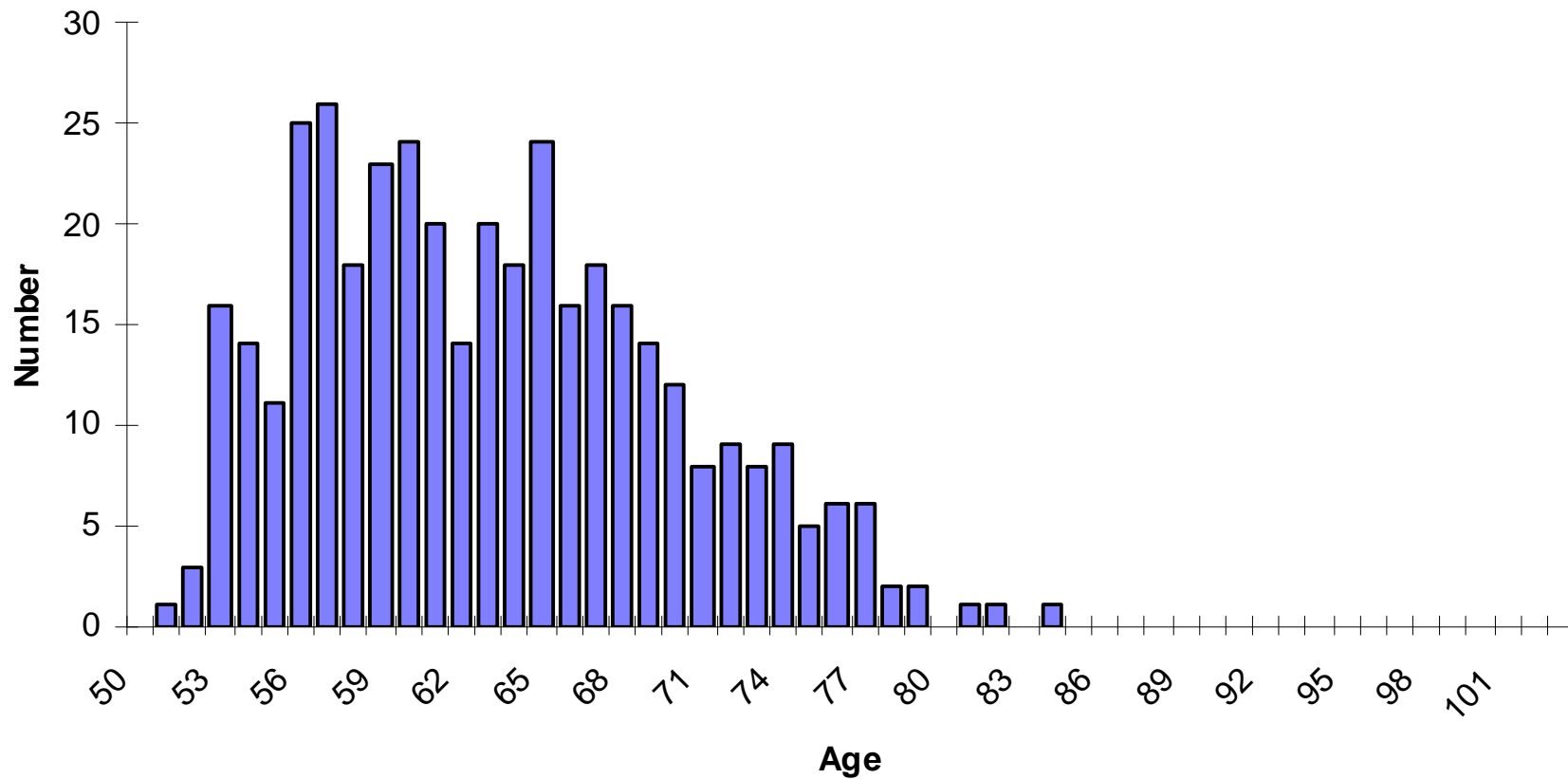


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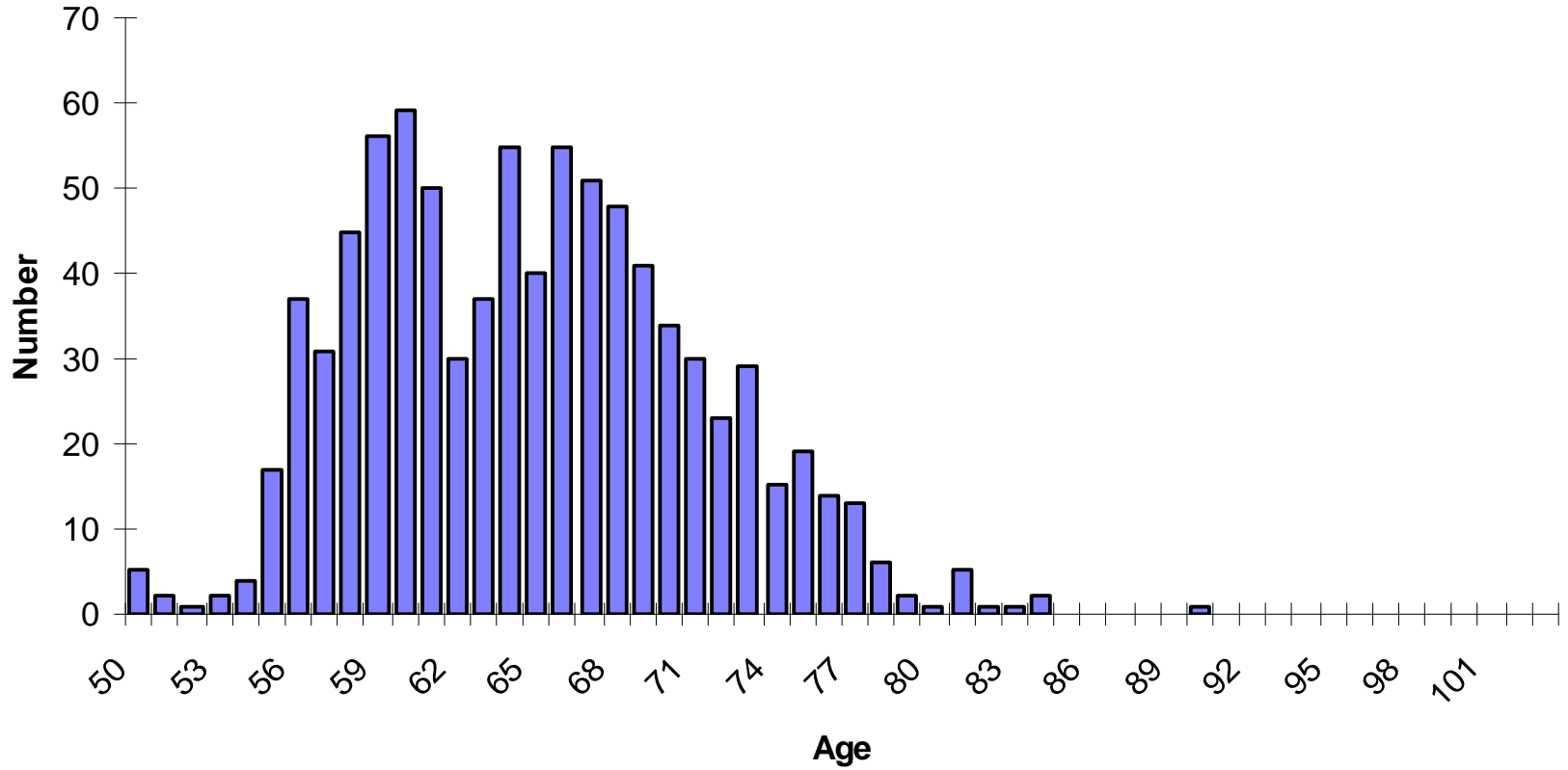
## Age Distribution of Retirees & Beneficiaries Regular Membership



## Age Distribution of Retirees & Beneficiaries Special Service Group 1



## Age Distribution of Retirees & Beneficiaries Special Service Group 2



## SUMMARY OF DATA FILE RECONCILIATION

The following table reconciles the data we received from IPERS to the final membership counts used in the valuation.

Records on the in-pay data file	84,949
Removed deaths prior to 7/1/07	(179)
Records used in the valuation	84,770
Records on the not-in-pay data file	247,108
Records removed because the member has received all benefits	(11,753)
Records used in the valuation	235,355

These records are allocated as follows:

Active members	165,216
Retired, re-employed members	7,848
Vested inactive members	26,435
Nonvested inactive members	<u>35,856</u>
Total	235,355



**APPENDIX B**

**SUMMARY OF PLAN PROVISIONS**



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## APPENDIX B

### SUMMARY OF PLAN PROVISIONS

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. Membership is mandatory if a person is in covered employment. 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.

**Average Salary:** It is the average of the member's highest three years of covered wages.

**Service Credit:** A member will receive membership credit for service rendered after July 4, 1953 (special rules apply to service before this date). Service is counted to the complete quarter of a calendar year. A member will not receive credit for more than four quarters of service in a calendar year regardless of the number of employers reporting covered wages for that member. A calendar year is the 12-month period beginning January 1 and ending December 31.

Members may purchase service under specified conditions. To make such a purchase, the member must pay the actuarial cost of such service.

#### REGULAR MEMBERS:

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 of age 55.
Early Retirement	First day of any month starting with the month of the member's 55th birthday but preceding the normal retirement date.
Inactive Vested Benefit	Four years of service. Prior to July 1, 2005 inactive members could become eligible for a vested benefit merely by reaching age 55.
Pre-retirement Death Benefit	Upon death of a member before benefits have started.
Disability Benefit	Upon meeting requirements to be vested, if the active or inactive member begins receiving federal Social Security disability or Railroad Retirement disability benefits.



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## Retirement Benefits:

Normal Retirement	An annual annuity equal to 2% of Average Salary (AS) for each year of service up to 30 years plus 1% of AS for each of the next 5 years of service. Maximum years of service recognized for benefit accrual purposes is 35 with a resulting maximum benefit of 65% of AS.
Early Retirement	An annuity, determined in the same manner as for normal retirement. However, a reduction of .25% per month is applied for each month the benefit commences prior to normal retirement age (based on service at early retirement).
Pre-retirement Death Benefits	Beneficiaries of members may receive a lump sum determined by a formula that includes how much the member contributed to IPERS, years of service, highest year's salary, and other factors. Beneficiaries may have the option of receiving a monthly benefit based on the present value of the member's accrued benefit at death.
Disability Benefits	An annuity, payable immediately, equal to the Normal Retirement Benefit without an early retirement adjustment.

## Termination Benefits:

Less than four years of Service (Nonvested)	A refund of all of the member's accumulated contributions.
Four or more years of Service (Vested)	At the member's election either: <ol style="list-style-type: none"><li>(1) a refund of all of the member's accumulated contributions plus a portion (years of service divided by 30) of the employer's contributions with interest, or</li><li>(2) a deferred benefit determined in the same manner as for normal retirement. Payments can begin at normal or early retirement.</li></ol>

## Form of Annuity:

The base form, or normal form, is a life annuity with a guaranteed return of employee contributions (Option 2).

## Optional Forms of Payment:

*Option 1:* The member specifies a dollar amount, in \$1,000 increments, that the member wishes to have paid to a designated beneficiary following the death of the member. The death benefit will be in the form of a single payment and cannot exceed the amount of a member's own accumulated contributions to IPERS, and it cannot lower the member's benefit as calculated under Option 2 by more than 50%.

*Option 3:* After the member's death, all benefits cease.



*Option 4:* The member receives a reduced monthly benefit so that a lifetime monthly benefit may be provided after the member's death to the person named by the member as the contingent annuitant. The member specifies what benefit the contingent annuitant will receive after the death of the member. The monthly benefit can be the same as the member's monthly benefit or three-fourths, one-half, or one-fourth of the amount. These choices may be restricted if the contingent annuitant is not the member's spouse and is more than ten years younger than the member.

*Option 5:* If the member dies before ten full years (120 months of payments) have ended, the member's beneficiary will receive a monthly benefit for the remainder of the ten years. Members who have attained age 90 as of the first month of entitlement are not allowed to select this option.

*Option 6:* (effective July 1, 2001) The member receives a reduced monthly benefit so that a lifetime monthly benefit may be provided after the member's death to the person named by the member as the contingent annuitant. In addition, the monthly amounts are also reduced to pay for a pop-up feature. The pop-up feature provides that if the contingent annuitant dies before the member, the member's benefit will pop back up to what it would have been under IPERS Option 2, and death benefits may be payable to the member's designated beneficiary if certain conditions are met.

**Actuarial Equivalent Lump Sum Payment:** If a vested member is entitled to receive a benefit and it is less than \$50 per month under Option 2, the member shall receive a retirement benefit in an actuarial equivalent lump sum payment. The lump sum will include the member's and employer's accumulated contributions.

**Post-retirement Benefit Increases:** Annual dividends are paid to those retired prior to July 1, 1990. Effective with the November 2000 dividend payment, the dividend is 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%.

**Favorable Experience Dividend (FED):** For members who retired after June 30, 1990, a favorable experience dividend (FED) reserve account has been established under Iowa Code §97B.49F(2). The main purpose of this account is to help offset the negative effects of postretirement inflation. All members and beneficiaries who receive a monthly allowance qualify for favorable

experience dividend payments. Each November, IPERS determines if a FED payment should be paid the following January subject to the following conditions:

- The member must be retired one year.
- The FED rate cannot exceed 3%.
- The FED payment will be issued in a lump sum in January.
- The FED payment is not guaranteed.

The formula is as follows:

$$(\text{December's Monthly benefit}) \times (12 \text{ months}) \times (\text{Rate}) \times (\text{Full calendar years retired}) = \text{FED}$$

Source of Funds:

Regular Membership:

**Contribution Rates**

<b>Time Period</b>	<b>Member</b>	<b>Employer</b>	<b>Total</b>
Prior to 7/1/07	3.70%	5.75%	9.45%
7/1/07 – 6/30/08	3.90%	6.05%	9.95%
7/1/08 – 6/30/09	4.10%	6.35%	10.45%
7/1/09 – 6/30/10	4.30%	6.65%	10.95%
7/1/10 – 6/30/11 and later	4.50%	6.95%	11.45%

**SPECIAL SERVICE GROUPS 1 AND 2:**

Age and Service Requirements for Benefits:

Normal Retirement

Generally age 55. However, a member of the Sheriffs and Deputy Sheriffs (Group 1) may retire at age 50 with 22 years of service (phased in from July 1, 2004 through July 1, 2008). The age at which sheriffs and deputy sheriffs with 22 or more years of eligible service first qualify for a retirement benefit is reduced over a five-year period as follows:

- 54 effective July 1, 2004 [FY 2005]
- 53 effective July 1, 2005 [FY 2006]
- 52 effective July 1, 2006 [FY 2007]
- 51 effective July 1, 2007 [FY 2008]
- 50 effective July 1, 2008 [FY 2009]

Inactive Vested Benefit

Four years of service. Prior to July 1, 2005 inactive members could become eligible for vested benefits merely by reaching age 55.

Pre-retirement Death Benefit

Upon death of a member before benefits have started.



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Disability Benefit	Upon meeting requirements to be vested. These benefits must be applied for through IPERS within one (1) year after termination of employment after July 1, 2000. Benefits may be paid for in service disability or ordinary disability.
 Retirement Benefits:	
Normal Retirement	60% of average salary after completion of 22 years of service, plus an additional 1.5% of average salary for years of service greater than 22 but not more than 30. Maximum formula is 72% of average salary.
Pre-retirement Death Benefits	Beneficiaries of members may receive a lump sum determined by a formula that includes how much the member contributed to IPERS, years of service, highest year's salary, and other factors. Beneficiaries may have the option of receiving a monthly benefit based on the present value of the member's accrued benefit at death.
Disability Benefits	An annuity, payable immediately, equal to the Normal Retirement Benefit, without an early retirement adjustment.  The benefit is the greater of the Normal Retirement Benefit and either 50% (for ordinary disability) or 60% (for in-service disability) of Average Salary.
 Termination Benefits:	
Less than four years of Service (Non-vested)	A refund of all of the member's accumulated contributions.
Four or more years of Service (Vested)	At the member's election either:  (1) a refund of all of the member's accumulated contributions plus a portion (years of service divided by 22) of the employer's contributions with interest, or  (2) a deferred benefit determined in the same manner as for normal retirement. Payments begin at normal retirement.
Form of Annuity:	The base form, or normal form, is a life annuity with a guaranteed return of employee contributions (Option 2).
Optional Forms of Payment:	<i>Option 1:</i> The member specifies a dollar amount, in \$1,000 increments, that the member wishes to have paid to a designated beneficiary following the death of the member. The death benefit will be in the form of a single payment and cannot exceed the amount of a member's own accumulated contributions to IPERS, and it cannot lower the member's benefit as calculated under Option 2 by more than 50%.



*Option 3:* After the member's death, all benefits cease.

*Option 4:* The member receives a reduced monthly benefit so that a lifetime monthly benefit may be provided after the member's death to the person named by the member as the contingent annuitant. The member specifies what benefit the contingent annuitant will receive after the death of the member. The monthly benefit can be the same as the member's monthly benefit or three-fourths, one-half, or one-fourth of the amount. These choices may be restricted if the contingent annuitant is not the member's spouse and is more than ten years younger than the member.

*Option 5:* If the member dies before ten full years (120 months of payments) have ended, the member's beneficiary will receive a monthly benefit for the remainder of the ten years. Members who have attained age 90 as of the first month of entitlement are not allowed to select this option.

*Option 6:* (effective July 1, 2001): The member receives a reduced monthly benefit so that a lifetime monthly benefit may be provided after the member's death to the person named by the member as the contingent annuitant. In addition, the monthly amounts are also reduced to pay for a pop-up feature. The pop-up feature provides that if the contingent annuitant dies before the member, the member's benefit will pop back up to what it would have been under IPERS Option 2, and death benefits may be payable to the member's designated beneficiary if certain conditions are met.

*Level Income Payment Option:* A Level Income payment alternative is authorized for special service members. This alternative applies to all IPERS retirement options listed above except Option 6. The Level Income payment alternative permits a special service member to receive a relatively level income both before and after age 62 when benefits from IPERS and Social Security are combined. Higher IPERS benefits are paid prior to age 62. When the member reaches age 62, the member's IPERS benefit is permanently reduced. This amount is determined when the member retires and is not recomputed based on the actual Social Security benefit.

**Actuarial Equivalent Lump Sum Payment:** If a vested member is entitled to receive a benefit and it is less than \$50 per month under Option 2, the member shall receive a retirement benefit in an actuarial equivalent lump sum payment. The lump sum will include the member's and employer's accumulated contributions.

Post-retirement Benefit Increases: Annual dividends are paid to those retired prior to July 1, 1990. Effective with the November 2000 dividend payment, the dividend is 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%.

Favorable Experience Dividend (FED): For members who retired after June 30, 1990, a favorable experience dividend (FED) reserve account has been established under Iowa Code §97B.49F(2). The main purpose of this account is to help offset the negative effects of postretirement inflation. All members and beneficiaries who receive a monthly allowance qualify for favorable experience dividend payments. Each November, IPERS determines if a FED payment should be paid the following January subject to the following conditions:

- The member must be retired one year.
- The FED rate cannot exceed 3%.
- The FED payment will be issued in a lump sum in January.
- The FED payment is not guaranteed.

The formula is as follows:

$(\text{December's Monthly benefit}) \times (12 \text{ months}) \times (\text{Rate}) \times (\text{Full calendar years retired}) = \text{FED}$

Source of Funds:

Special Service Group 1:	Actuarially determined contribution rate. Members contribute 50% and employers contribute 50%.	Members
Special Service Group 2:	Actuarially determined contribution rate. Members contribute 40% and employers contribute 60%.	Members





## **APPENDIX C**

### **ACTUARIAL ASSUMPTIONS AND METHODS**



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**APPENDIX C**  
**ACTUARIAL ASSUMPTIONS AND METHODS**  
**TABLE OF CONTENTS**

	<b><u>Page</u></b>
Valuation Assumptions	C-2
• Economic	C-3
• Demographic	C-3
Methods	
• Actuarial Cost Method	C-7
• Actuarial Value of Assets Smoothing Method	C-7
Technical Valuation Procedures	C-8
Definition of Terms	C-9



## APPENDIX C

### ACTUARIAL ASSUMPTIONS AND METHODS

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.

#### 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 to the computed contribution rate, or alternatively to the amortization period for the unfunded actuarial 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 2006, based on experience from 2001-2005. The Investment Board has adopted and approved the use of the following assumptions and methods.

**ECONOMIC ASSUMPTIONS:**

**Rate of Inflation (effective June 30, 2006)**

3.25% per annum

**Rate of Crediting Interest on Contribution Balances (effective June 30, 2006)**

4.00% per annum, compounded annually

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

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

**Wage Growth Assumption (effective June 30, 1999)\***

4.00% per annum based on 3.25% inflation assumption and 0.75% real wage inflation.

\*Total of 4.0% did not change but the components changed June 30, 2006

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

4.00% per year

**DEMOGRAPHIC ASSUMPTIONS:**

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

		<u>Regular Membership</u>	<u>Special Service Groups</u>
Males:	Retirees:	RP-2000 Healthy Annuitant Table, Set Forward One Year	RP-2000 Healthy Annuitant Table Set Forward Three Years
	Actives:	RP-2000 Employee Table, Set Forward One Year	RP-2000 Employee Table Set Forward Three Years
Females:	Retirees:	RP-2000 Healthy Annuitant Table, Set Back Two Years	RP-2000 Healthy Annuitant Table No Age Adjustment
	Actives:	RP-2000 Employee Table, Set Back Two Years	RP-2000 Employee Table No Age Adjustment
	The RP-2000 Tables are used with generational mortality		
Beneficiaries:	Same as members		Same as members
Disabled Members:	Annual rates are the greater of 3% or 2.5% plus the corresponding non-disabled rate (based on GAM 94 for males, 95% of GAM 94 for females)		Same as healthy members set forward 6 years

For Special Service Groups active members, 5% of deaths are assumed to be service related.

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

Upon meeting the requirements for early retirement, the following rates apply to regular 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 normal retirement, the following rates apply:

<u>Age</u>	<u>Assumed Retirement Rates</u>		
	<u>1st Year Eligible</u>	<u>After 1st Year</u>	<u>Special Service Groups</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%

Special Service Group 1 ages 50 to 55 with 22 years of service: 30%

Terminated vested members are assumed to retire at age 62 (55 for Special Service Groups).

For regular membership, retired re-employed members are assumed to retire at a rate of 25% per year until age 80 when all are assumed to retire.

**Rates of Disablement (effective June 30, 1999 for Regular Membership),  
(effective June 30, 2006 for Special Service Groups)**

<u>Age</u>	<u>Annual Rate Per 1,000 Members</u>		
	<u>Regular Membership</u>		<u>Special Service Groups</u>
	<u>Males</u>	<u>Females</u>	
27	0.2	0.2	1.1
32	0.2	0.2	1.2
37	0.4	0.3	1.8
42	0.7	0.5	3.5
47	1.4	0.9	6.5
52	3.3	2.2	14.6
57	6.3	3.9	26.0
62	9.0	6.2	48.7



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

***Regular 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	165.0	165.0	110.0	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	38.5
	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	220.0	165.0	55.0
	27	275.0	170.0	140.0	110.0	99.0	55.0
	32	247.5	170.0	140.0	104.5	71.5	49.5
	37	198.0	150.0	110.0	104.5	66.0	36.3
	42	198.0	150.0	110.0	88.0	60.5	30.8
	47	198.0	130.0	110.0	82.5	49.5	25.3
	52	198.0	130.0	110.0	82.5	49.5	25.3
	55+	198.0	130.0	110.0	82.5	49.5	25.3

***Special Service Groups***

**Annual Rate of Withdrawals  
Per 1,000 Members**

<b><u>Age</u></b>	<b><u>Per 1,000 Members</u></b>
22	90
27	70
32	35
37	35
42	35
47	35
52	30

**Probability of Electing a Vested Benefit (effective June 30, 2002)**

<b><u>Years of Service</u></b>	<b><u>Regular Membership</u></b>		<b><u>Special Service Groups</u></b>
	<b><u>Males</u></b>	<b><u>Females</u></b>	
5	61%	70%	53%
10	66%	73%	65%
15	71%	80%	85%
20	76%	85%	95%
25	80%	90%	100%
30	80%	90%	100%

**Rates of Salary Increase\* (effective June 30, 2006)**

<b><u>Years of Service</u></b>	<b><u>Annual Increase</u></b>	<b><u>Years of Service</u></b>	<b><u>Annual Increase</u></b>	<b><u>Years of Service</u></b>	<b><u>Annual Increase</u></b>
		11	5.3%	22	4.5%
Under 2	12.0%	12	5.2%	23	4.4%
2	9.5%	13	5.1%	24	4.4%
3	7.7%	14	5.0%	25	4.4%
4	7.1%	15	4.9%	26	4.3%
5	6.6%	16	4.8%	27	4.3%
6	6.1%	17	4.7%	28	4.2%
7	5.9%	18	4.6%	29	4.1%
8	5.7%	19	4.6%	30	4.0%
9	5.5%	20	4.5%	Over 30	4.0%
10	5.4%	21	4.5%		

\*Includes 4.0% wage growth.



## 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 liability (UAL) 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 rates.

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 rates between the entry age of the member and the assumed exit ages. As a follow-up to one of the recommendations in the actuarial audit, the application of the entry age normal cost method was adjusted to better match projected contributions to the projected salary stream in future years. This change increased the normal cost rate for regular members from 9.16% to 9.80%. The change in the normal cost rate for the Special Service Groups was smaller.

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 liability (UAL). For regular members, the difference between the statutory contribution rate and the normal cost rate is used to finance the UAL and the number of years necessary to finance the unfunded actuarial accrued liability as a level percent of member payroll is determined. For Special Service members, the contribution rate is the sum of the normal cost rate and the rate required to amortize the UAL or surplus over 30 years. In response to one of the recommendations in the actuarial audit, the one year lag between the valuation date and the date the contribution rate is effective is reflected in calculating the UAL and the corresponding amortization payment. This change increased the actuarial contribution rate for the regular members by 0.12%. Because the Special Service Groups are contributing above the actuarial rate, this change slightly decreased their contribution rates for FY09.

## ACTUARIAL VALUE OF ASSETS SMOOTHING METHOD

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.
- Step 5:** Verify the preliminary actuarial value of assets in Step 4 is not more than 120% of the market value of assets nor less than 80% of the market value. If it is, adjust the actuarial value of assets so it falls within the 80% - 120% corridor.

## **TECHNICAL VALUATION PROCEDURES**

### **Data Procedures**

#### ***In-pay members:***

If a birth date is not available, the member is assumed to have retired at 65. If a retirement date is also not available, the member is assumed to be 80.

If a beneficiary birth date is needed but not supplied, husband's are assumed to be 3 years older than wives.

#### ***Not in-pay members:***

If a birth date is not available, the member is assumed to be the average age of the members with the same status.

If gender is not provided, regular members are assumed to be female and Special Service members are assumed to be male.

Salaries for first year members are annualized based on the number of quarters with wages.

### **Other Valuation Procedures**

No actuarial accrued liability in excess of the unclaimed member contribution balance is held for nonvested, inactive members. Inactive vested members who have died are treated in the same manner.

The wages used in the projection of benefits and liabilities are considered earnings for the year ending June 30, 2007, increased by the salary scale to develop expected earnings for the current valuation year.

The calculations for the actuarial required contribution are determined as of mid-year. This is a reasonable estimate since contributions are made on a monthly basis throughout the year.

The projected IRC Section 415 limit for active participants was not valued. The impact was assumed to be de minimus.

The compensation limitation under IRC Section 401(a)(17) is considered in this valuation.



## DEFINITION OF TERMS

<b>Accrued Service</b>	Service credited under the system that was rendered before the date of the actuarial valuation.
<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>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>Actuarial Equivalent</b>	A single amount or series of amounts of equal value to another single amount or series of amounts computed on the basis of a given set of actuarial assumptions.
<b>Actuarial 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 accrued liability.”
<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>Experience Gain (Loss)</b>	The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.
<b>Normal Cost</b>	The actuarial present value of retirement system benefits allocated to the current year by the actuarial cost method.

## **Unfunded Actuarial Liability**

The difference between actuarial liability and the valuation assets. Sometimes referred to as “unfunded accrued liability” or “unfunded liability”.

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

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



**APPENDIX D**

**IPERS Funding Policy**



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## 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.

