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IPERS

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IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM

Actuarial Valuation Report as of June 30, 2013

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October 31, 2013

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

Re: June 30, 2013 Actuarial Valuation Report

Dear Board Members:

In this report are submitted the results of the annual valuation of the assets and liabilities of the Iowa Public Employees' Retirement System (System) prepared as of June 30, 2013. The purpose of this report is to provide: (1) a summary of the funded status of the System as of June 30, 2013, (2) the Actuarial Contribution Rate (ACR) based on IPERS' Funding Policy, and (3) the accounting information under Governmental Accounting Standards Board (GASB) Statement No. 25. While not verifying the data at its source, the actuary performed tests for consistency and reasonableness.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, statutory provisions, member data and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different and our calculations may need to be revised.

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); 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 indicated in Appendix C.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

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Some actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. Other actuarial computations presented in this report under GASB Statement No. 25 are for purposes of fulfilling financial accounting requirements. 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, the plan provisions described in Appendix B of this report, and 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.

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 that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonable based on the actual experience of the System. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

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

Patrice Beckham

Brent A. Banister

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

Brent A. Banister, PhD, FSA, EA, FCA, MAAA
Chief Pension Actuary

INTRODUCTION

This report presents the results of the June 30, 2013 actuarial valuation of the Iowa Public Employees' Retirement System (IPERS). The primary purposes of performing the valuation are as follows:

- to determine the Actuarial Contribution Rates (ACR) and the Required Contribution Rate for the Regular Membership, Sheriffs and Deputies, and the Protection Occupation group (all public safety members other than Sheriffs and Deputies) in accordance with IPERS' Contribution Rate Funding Policy (described in Appendix D),
- to evaluate the funded status of the System and disclose various asset and liability measures as of June 30, 2013,
- 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 valuation results provide a "snapshot" view of the System's financial condition on June 30, 2013. The results reflect net favorable experience for the past plan year as demonstrated by an unfunded actuarial liability (UAL) that was lower than expected. The UAL on June 30, 2013 for all three membership groups covered by IPERS is $5.787 billion as compared to an expected UAL of $6.022 billion. The favorable experience was the combination of an experience gain of $15 million on the actuarial value of assets and an experience gain of about $220 million on System liabilities.

Historically, the statutory contribution rate for Regular Members was set by state statute. Effective with the 2011 valuation, IPERS has the authority to set the Required Contribution Rate based on the Actuarial Contribution Rate for the Regular Membership Group developed in the annual actuarial valuation, subject to a change of no more than 1% per year. From 2001 until 2011, the valuations indicated that the Required Contribution Rate was less than the Actuarial Contribution Rate. In the 2012 valuation, the Required Contribution Rate was equal to the ACR for Regular Members. Based on the current Contribution Rate Funding Policy, the Required Contribution Rate for all three groups is greater than the ACR, as shown in the table below:

Contribution Rate for FY 2015			
	Regular Membership	Sheriffs and Deputies	Protection Occupation
1. Normal Cost Rate	10.16%	16.59%	16.02%
2. Amortization of UAL over 30 years	4.44%	2.71%	0.59%
3. Actuarial Contribution Rate	14.60%	19.30%	16.61%
4. Required Contribution Rate	14.88%	19.76%	16.90%
5. Shortfall/(Margin) (3) – (4)	(0.28)%	(0.46)%	(0.29)%
6. Employee Contribution Rate	5.95%	9.88%	6.76%
7. Employer Contribution Rate (4) - (6)	8.93%	9.88%	10.14%
8 Unfunded Actuarial Liability ($M)	$5,699	$50	$37
9. Funded Ratio	80.2%	90.5%	96.8%

Further details on the valuation results can be found in the following sections of this Executive Summary.

EXPERIENCE FOR THE LAST PLAN YEAR

Numerous factors contributed to the change in the Systems' assets, liabilities and the Actuarial Contribution Rate between June 30, 2012 and June 30, 2013. The components are examined in the following discussion.

ASSETS

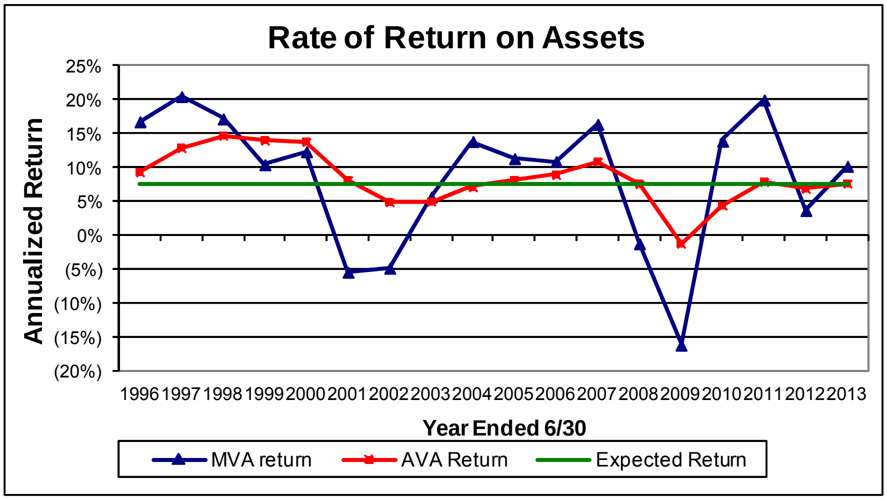
As of June 30, 2013, the System (all membership groups) had total assets of $24.757 billion, when measured on a market value basis, **excluding the Favorable Experience Dividend (FED) Reserve Account**. This was an increase of $1.732 billion from the prior year.

The market value of assets is not used directly in the calculation of the unfunded actuarial liability (UAL) and the Actuarial Contribution Rates. An asset valuation method, which smoothes the effect of market fluctuations, is used to determine the value of assets used in the valuation. This amount, called the "actuarial value of assets", is equal to the expected asset value, based on the actuarial value in the prior year and the assumed rate of return of 7.5%, plus 25% of the difference between the actual market value and the expected asset value. The resulting value must be no less than 80% of market value and no more than 120% of market value (referred to as a "corridor"). The corridor did not apply this year. The actuarial value of assets as of June 30, 2013 was $24.711 billion, an increase of $1.181 billion from the value in the prior year. The components of change in the asset values are shown in the following table:

	Market Value ($M)		Actuarial Value ($M)	
Net Assets, June 30, 2012	$	**23,025**	$	**23,530**
• Employer and Member Contributions	+	1,019	+	1,019
• Benefit Payments and Refunds	-	1,597	-	1,597
• Expected Investment Income, net of expenses (Based on 7.5% assumption)	+	1,706	+	1,744
• Actuarial Gain/(Loss) on Investment Return	+	604	+	15
Net Assets, June 30, 2013 Before FED Transfer	$	**24,757**	$	**24,711**
• FED Transfer Payable January 15, 2014	-	0	-	0
Net Assets, June 30, 2013 After FED Transfer	$	**24,757**	**$**	**24,711**
• Application of Corridor	-	0	-	0
Final Net Assets, June 30, 2013	**$**	**24,757**	**$**	**24,711**

On a market value basis the time-weighted rate of return, as reported by IPERS, was 10.12%. The dollar-weighted rate of return, net of investment and administrative expenses, measured on the actuarial value of assets was approximately 7.57%.

Please see Exhibits 2 and 3 in Section II of this report for a summary of the market and actuarial value of assets by group (Regular, Sheriffs and Deputies, and Protection Occupation group) as of June 30, 2013.



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.

In last year's valuation, there was $505 million in deferred (unrecognized) investment loss. With the favorable investment experience during FY 2013 the deferred loss has been eliminated and a deferred gain of about $46 million now exists. The deferred gain will be recognized in the smoothing method in future years.

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, 2013 in the following table:

($Millions)	**Regular Membership**	**Sheriffs & Deputies**	**Protection Occupation**	**Total***
Actuarial Liability	$28,799	$533	$1,166	$30,498
Actuarial Value of Assets	23,100	483	1,129	24,711
Unfunded Actuarial Liability*	5,699	50	37	5,787
Funded Ratio	80.2%	90.5%	96.8%	81.0%

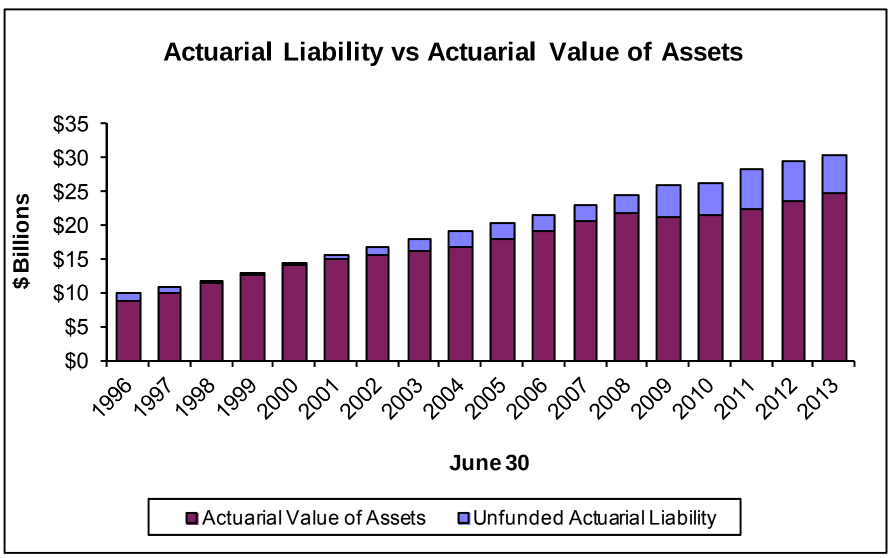
*May not add due to rounding.

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

Changes in the UAL occur for various reasons. The net decrease in the UAL from June 30, 2012 to June 30, 2013 was $129 million. The components of this net change are shown in the following table (in millions):

Unfunded Actuarial Liability, June 30, 2012 ($M)	$	5,916
• Expected increase from amortization method		115
• Expected increase from contributions below actuarial rate		21
• Investment experience		(15)
• Liability experience		(220)
• Other		(30)
Unfunded Actuarial Liability before FED transfer, June 30, 2013	$	5,787
• FED Transfer		0
Unfunded Actuarial Liability after FED transfer, June 30, 2013	$	5,787

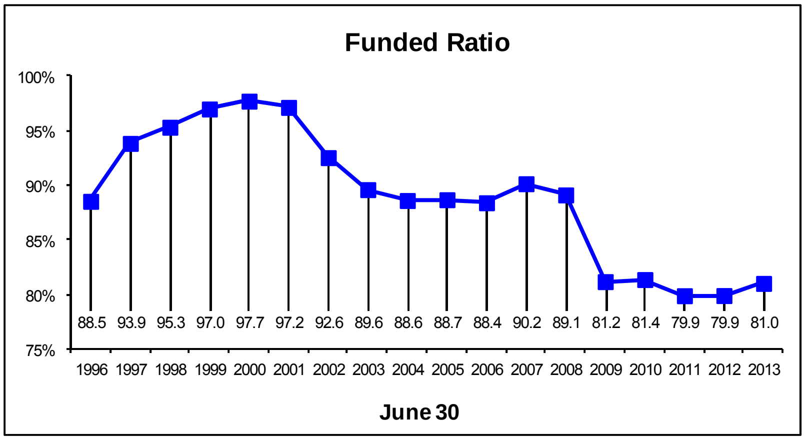
As seen above, various factors impacted the UAL. Actuarial gains (losses), which result from actual experience that is more (less) favorable than anticipated based on the actuarial assumptions, are reflected in the UAL and are measured as the difference between the expected unfunded actuarial liability and the actual unfunded actuarial liability, taking into account any changes due to actuarial assumptions and methods or benefit provision changes. Overall, the System experienced a net actuarial gain of $265 million. The net actuarial gain may be explained by considering the separate experience of assets and liabilities. As noted earlier, there was a $15 million gain as measured on the actuarial value of assets. There was also a gain of $250 million from demographic experience more favorable than anticipated by the actuarial assumptions and other sources. The liability gain was largely the result of salary increases that were lower than expected based on the actuarial assumptions.



The dollar amount of the UAL has grown over the past several years due to numerous factors, the most significant of which have been the investment loss of FY 2009 and contributions below the Actuarial Contribution 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 ratio, the ratio of the actuarial value of assets to the actuarial liability. The funded status information is shown on the next page (in millions).

	6/30/09	6/30/10	6/30/11	6/30/12	6/30/13
Funded Ratio	81.2%	81.4%	79.9%	79.9%	81.0%
Unfunded Actuarial Liability ($M)	$4,895	$4,931	$5,682	$5,916	$5,787



Negative investment experience in FY 2009 caused a significant drop in the funded ratio, which had been stable at around 90% since 2003. The funded ratio stabilized in FY 2010 due to a strong investment return, coupled with changes in the actuarial assumptions and benefit reductions. The funded ratio has remained around 80% in the last few years.

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

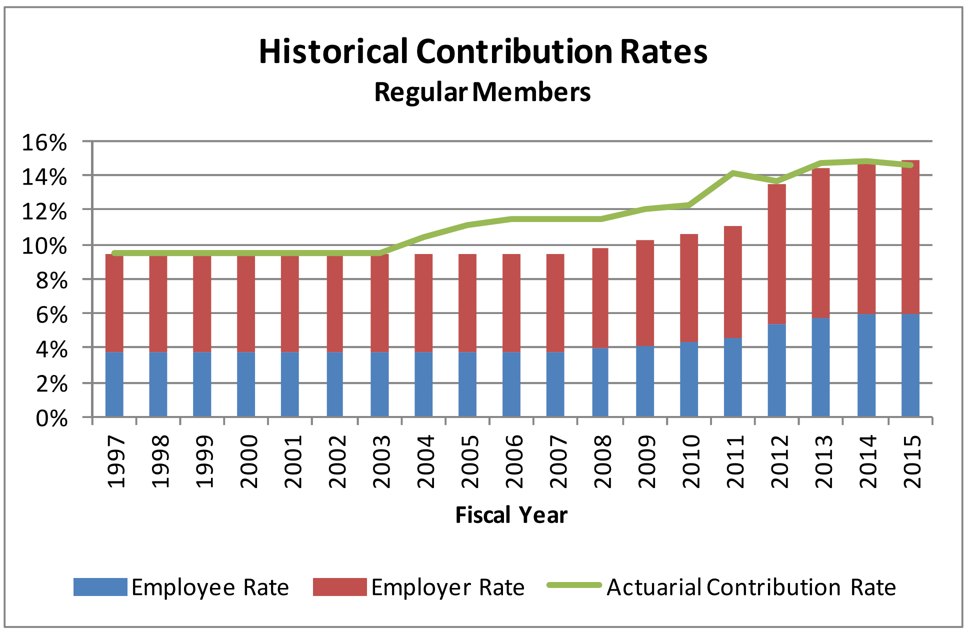
- an "unfunded actuarial liability contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets on hand.

This valuation is used to determine the contribution rates effective July 1, 2014 for the year ending June 30, 2015. Regular Members contributed according to scheduled rates in statute prior to the 2011 valuation at which time IPERS was given the authority to set the Required Contribution Rate for Regular Members, subject to a maximum increase of 1% per year. Last year was the first report since the 2000 valuation that reflected a Required Contribution Rate that was equal to the Actuarial Contribution Rate. Based on IPERS' current Contribution Rate Funding Policy, the Required Contribution Rate in this valuation will remain at the same level as set by last year's report so it exceeds the Actuarial Contribution Rate. The remaining 5% of the active members, the Sheriffs and Deputies group and the Protection Occupation group, have historically contributed at the Actuarial Contribution Rate which was subject to change each year. However, based on the current Contribution Rate Funding Policy, the Required Contribution Rates for both of these groups remain unchanged from last year's report. As a result, the Required Contribution Rate for both the Sheriffs and Deputies and the Protection Occupation groups exceeds the Actuarial Contribution Rate for that group.

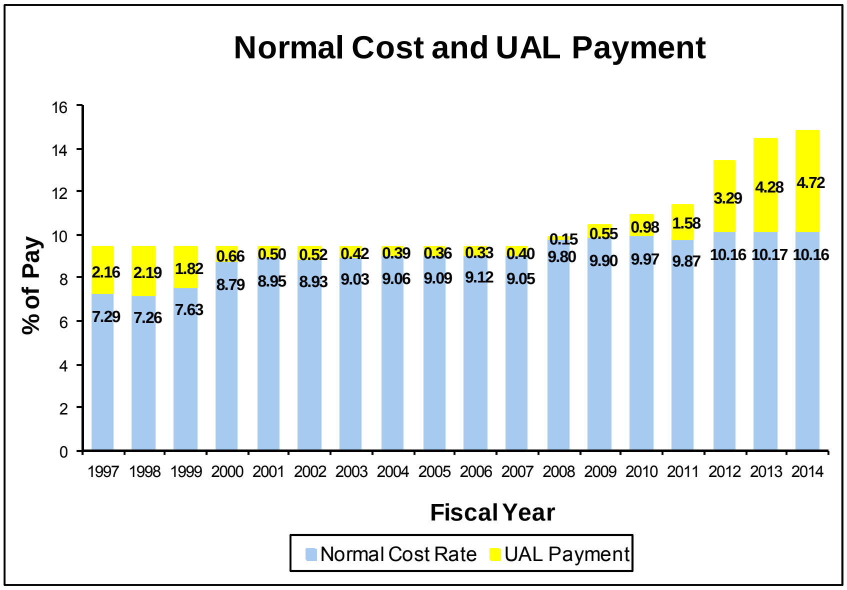
See Exhibits 10 and 11 in Section IV for development of these contribution rates which are summarized in the following table:

Contribution Rate for FY 2015	Regular Membership	Sheriffs & Deputies	Protection Occupation
1. Actuarial Contribution Rate	14.60%	19.30%	16.61%
2. Required Contribution Rate	14.88%	19.76%	16.90%
3. Employee Contribution Rate	5.95%	9.88%	6.76%
4. Employer Contribution Rate (2) – (3)	8.93%	9.88%	10.14%
5. Shortfall/(Margin) (1) – (2)	(0.28)%	(0.46)%	(0.29)%

In 2006 and 2010, legislation was passed that increased the statutory contribution rate for Regular Members. A historical summary of the actual (statutory) contribution rate and the actuarial contribution rate is shown in the graph below:



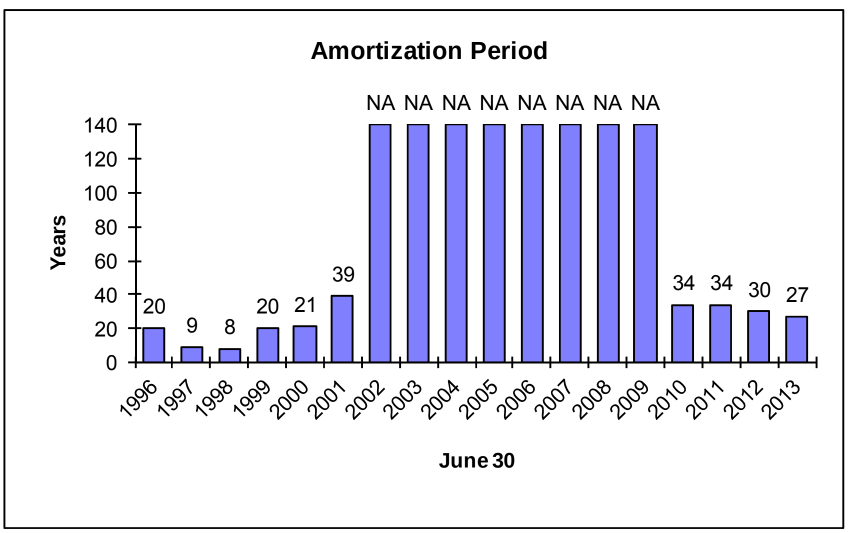
Based on the results of this valuation, the Required Contribution Rate for fiscal year ending June 30, 2015 is 14.88%, which is slightly above the Actuarial Contribution Rate. As a result, a higher stream of contributions in the future is anticipated to fund the UAL. Therefore, the number of years to amortize the UAL, based on the Required Contribution Rate, is less than the amortization period set by the Actuarial Amortization Policy (30 years in this valuation).



This graph shows the normal cost rate and the contribution rate available to fund the UAL based on the statutory contribution rate (Required Contribution Rate) payable in that fiscal year.

For a number of years, only a small portion of the total contribution rate was available to fund the UAL. With recent contribution increases, that portion has increased and the UAL is now projected to be eliminated in 27 years.

The Actuarial Contribution Rate is determined based on the snapshot of the System taken on the valuation date, June 30, 2013, and applies only for the fiscal year beginning July 1, 2014. The Actuarial Contribution Rate 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. The Required Contribution Rate will be set in each future year based on the Actuarial Contribution Rate and the Contribution Rate Funding Policy.



Based on the statutory contribution rate, the period to amortize the UAL was infinite in the 2002 to 2009 valuations. Due to the benefit reductions in 2010 and the increase in the contribution rate beginning in FY 2012, more funds are available to finance the UAL and the years to amortize is finite. Future investment experience will have a significant impact on the System's funding and the years to amortize the UAL.

SUMMARY

The investment return on the market value of assets for FY2013 was 10.12%, as reported by IPERS. As a result of both an experience gain on actuarial assets and liabilities, the System's funded ratio increased slightly from 79.9% in the June 30, 2012 valuation to 81.0% in this valuation.

As mentioned earlier in this section, the System utilizes an asset smoothing method in the valuation process. While this is a common procedure for public retirement systems, it is important to identify the potential impact of the deferred investment experience. The asset smoothing method impacts only the timing of when the actual market experience is recognized in the valuation process. Since there were deferred investment losses in the last valuation, the return on the actuarial value of assets was only 7.57%, despite the return of 10.12% on the market value of assets. Due to this return on the market value of assets, the deferred investment loss has been eliminated and there is now a deferred investment gain of $46 million.

The key valuation results from the June 30, 2013 actuarial valuation are shown below, using both actuarial and market value of assets.

Total System	Actuarial Value	Market Value
Actuarial Contribution Rate		
Regular Members		
Normal Cost	10.16%	10.16%
UAL Contribution	4.44%	4.41%
Total Contribution	14.60%	14.57%
UAL ($M)	$ 5,699	$ 5,662
Funded Ratio	80.2%	80.3%
Sheriffs and Deputies		
Normal Cost	16.59%	16.59%
UAL Contribution	2.71%	2.59%
Total Contribution	19.30%	19.18%
UAL ($M)	$ 50	$ 49
Funded Ratio	90.5%	90.9%
Protection Occupation		
Normal Cost	16.02%	16.02%
UAL Contribution	0.59%	0.48%
Total Contribution	16.61%	16.50%
UAL ($M)	$ 37	$ 31
Funded Ratio	96.8%	97.3%

Based on the Contribution Funding Rate Policy, adopted by the Investment Board, the Required Contribution Rate determined in this year's valuation for Regular Members will remain unchanged from last year, i.e. 14.88%. This rate is slightly higher than the Actuarial Contribution Rate which was calculated using a 30 year open amortization period. The Required Contribution Rate of 14.88% will apply for the fiscal year ending June 30, 2015. The Required Contribution Rate for the Sheriffs and Deputies and the Protection Occupation group in this valuation is also higher than the Actuarial Contribution Rate as a result of applying the Contribution Funding Rate Policy.

This contribution rate is determined based on the snapshot of the System taken on the valuation date, June 30, 2013, and applies only for the fiscal year beginning July 1, 2014. The Actuarial Contribution Rate 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. While the Required Contribution Rate can vary each year, the annual change to the rate is limited to 1.0%. Therefore, depending on actual experience in future years, it is possible the Required Contribution Rate and Actuarial Contribution Rates might not be equal.

The long-term financial health of this retirement system is heavily dependent on two key items: (1) future investment returns and (2) systematic contributions to the System at the full actuarially determined rate. Given the System's current funded status, the Actuarial Contribution Rate, and the Required Contribution Rate, the System's funded ratio is expected to improve over the long term, assuming all actuarial assumptions are met.

We conclude this executive summary by presenting comparative statistics and actuarial information on both the June 30, 2013 and June 30, 2012 valuations. All figures shown include the Regular Membership, Sheriffs and Deputies, and the Protection Occupation Group.

SUMMARY OF HISTORICAL CHANGE
IN
IPERS UNFUNDED ACTUARIAL LIABILITY

($Millions)	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13
Unfunded Actuarial Liability (BOY[1])	327	441	1,255	1,867	2,176	2,289	2,507	2,266	2,665	4,895	4,931	5,682	5,916
• **Expected Change**													
− **From Amortization Method**	(22)	3	24	36	42	22	49	44	52	95	96	110	115
− **Contributions less than Actuarial Rate**			61	87	103	125	118	127	140	248	218	65	21
• **Investment Experience**	(81)	409	402	75	(89)	(235)	(622)	5	1,903	666	(66)	168	(15)
• **Liability and Other Experience**	217	258	125	82	57	242	187	214	135	(185)	(17)	(109)	(250)
• **Benefit Enhancements**	0	3	0	29	0	0	0	6	0	(674)	0	0	0
• **Change in Assumptions/Methods**	0	141	0	0	0	64	27	3	0	(114)	417	0	0
• **Change in Actuarial Software**	0	0	0	0	0	0	0	0	0	0	103	0	0
• **FED Transfer**	0	0	0	0	0	0	0	0	0	0	0	0	0
Unfunded Actuarial Liability (EOY[2])	441	1,255	1,867	2,176	2,289	2,507	2,266	2,665	4,895	4,931	5,682	5,916	5,787

1 = Beginning of Year
2 = End of Year

IOWA PUBLIC EMPLOYEES' RETIREMENT SYSTEM
PRINCIPAL RESULTS

	June 30, 2013	June 30, 2012	% Chg
SYSTEM MEMBERSHIP			
1. Active Membership			
- Number of Members (excluding Retired/Reemployed)	165,095	164,200	0.5
- Projected Payroll for Upcoming Fiscal Year	$7,001M	$6,933M	1.0
- Average Salary	$42,404	$42,223	0.4
2. Inactive Membership			
- Number Not in Pay Status	72,917	69,777	4.5
- Number of Retirees/Beneficiaries	104,640	101,677	2.9
- Average Annual Benefit	$14,883	$14,441	3.1
ASSETS AND LIABILITIES			
1. Net Assets (excluding FED reserve)			
- Market Value	$24,757M	$23,025M	7.5
- Actuarial Value	24,711M	23,530M	5.0
2. Projected Liabilities			
- Retired Members	$15,001M	$14,152M	6.0
- Inactive Members	614M	601M	2.2
- Active Members	21,093M	20,855M	1.1
- Total Liability	$36,708M	$35,608M	3.1
3. Actuarial Liability	$30,498M	$29,446M	3.6
4. Unfunded Actuarial Liability	$5,787M	$5,916M	(2.2)
5. Funded Ratio			
a. Actuarial Value Assets/Actuarial Liability	81.02%	79.91%	1.4
b. Market Value Assets/Actuarial Liability	81.17%	78.19%	3.8
SYSTEM CONTRIBUTIONS			
Required Contribution Rate, Regular Members*	14.88%	14.88%	0.0
Employer Contribution Rate	8.93%	8.93%	0.0
Employee Contribution Rate	5.95%	5.95%	0.0
Total Actuarial Contribution Rate	14.60%	14.88%	(1.9)
Shortfall/(Margin)	(0.28%)	0.00%	NA

M = ($)Millions

* Contribution rates for Sheriffs and Deputies are 9.88% for employers, 9.88% for employees

Contribution rates for Protection Occupation are 10.14% for employers, 6.76% for employees

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SECTION II

SYSTEM ASSETS

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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 prices. These values represent the "snapshot" of the fair value of System assets as of the valuation date.

Actuarial Value of Net Assets

The market value of 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 on the prior actuarial value of assets 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, 2013			June 30, 2012		
		Amount	% of Total		Amount	% of Total
Cash & Equivalents	$	385	1.4%	$	314	1.3%
Capital Assets, Receivables and Payables		(643)	(2.6)		(579)	(2.5)
Domestic Equity		6,812	27.4		6,056	26.1
International Equity		3,688	14.8		3,170	13.6
Fixed Income		7,937	31.9		7,828	33.7
Real Estate		1,969	7.9		2,059	8.9
Real Assets		1,413	5.7		1,187	5.1
Private Equity/Debt		2,860	11.5		2,871	12.4
Securities Lending Collateral Pool		458	1.7		338	1.4
TOTAL NET ASSETS	$	24,879	100.0%	$	23,244	100.0%
FED Reserve (Before current year transfer)		(122)			(219)	
Current Year FED Transfer Payable		0			0	
Net Retirement System Assets	$	24,757		$	23,025	

EXHIBIT 2

SUMMARY OF FUND ACTIVITY
(Market Value)

	Regular Membership	Sheriffs & Deputies	Protection Occupation	FED Reserve	Total
NET RETIREMENT SYSTEM ASSETS ON JUNE 30, 2012	$21,567,465,338	$437,395,612	$1,019,912,796	$218,766,762	$23,243,540,508
REVENUE					
Employer contributions	561,078,464	9,246,766	32,118,873	0	602,444,103
Member contributions	374,015,195	9,246,766	21,391,732	0	404,653,693
Service purchase	11,416,116	245,294	349,735	0	12,011,145
Investment income	2,222,229,123	45,518,722	106,857,818	16,937,271	2,391,542,934
Total Revenue	$3,168,738,898	$64,257,548	$160,718,158	$16,937,271	$3,410,651,875
DISBURSEMENTS					
Benefit payments	1,490,536,416	21,067,730	42,580,769	113,283,944	1,667,468,859
Member and employer refunds	36,590,189	961,279	5,045,964	0	42,597,432
Administrative expenses	11,636,603	83,998	357,600	0	12,078,201
Investment expenses	49,565,425	1,015,266	2,383,396	377,775	53,341,862
Total Expenses	$1,588,328,633	$23,128,273	$50,367,729	$113,661,719	$1,775,486,354
PRELIMINARY NET ASSETS ON JUNE 30, 2013	$23,147,875,603	$478,524,887	$1,130,263,225	$122,042,314	$24,878,706,029
TRANSFERS					
Membership changes	(10,555,950)	5,986,043	4,569,907	0	0
FED Reserve	0	0	0	0	0
ADJUSTED NET ASSETS ON JUNE 30, 2013	$23,137,319,653	$484,510,930	$1,134,833,132	$122,042,314	$24,878,706,029

EXHIBIT 3

ACTUARIAL VALUE OF NET ASSETS

	Regular Membership	Sheriffs & Deputies	Protection Occupation	Total
1. Actuarial Value of Assets as of June 30, 2012	$22,046,553,809	$445,932,747	$1,037,607,905	$23,530,094,461
2. Actual Receipts/Disbursements				
a. Contributions	946,509,775	18,738,826	53,860,340	1,019,108,941
b. Benefit Payments and Refunds	1,527,126,605	22,029,009	47,626,733	1,596,782,347
c. Net Change	(580,616,830)	(3,290,183)	6,233,607	(577,673,406)
3. Expected Value of Assets as of June 30, 2013 [(1) x 1.075] + [(2c) x $(1.075)^{.5}$]	23,098,049,002	475,966,369	1,121,891,639	24,695,907,010
4. Preliminary Market Value of Assets as of June 30, 2013	23,147,875,603	478,524,887	1,130,263,225	24,756,663,715
5. Difference Between Market and Expected Values (4) - (3)	49,826,601	2,558,518	8,371,586	60,756,705
6. Preliminary Actuarial Value of Assets as of June 30, 2013 (3) + [(5) x 25%]	23,110,505,652	476,605,999	1,123,984,536	24,711,096,187
7. Transfers				
a. Membership changes	(10,536,521)	5,975,025	4,561,496	0
b. FED Reserve	0	0	0	0
8. Initial Actuarial Value of Assets as of June 30, 2013	$23,099,969,131	$482,581,024	$1,128,546,032	$24,711,096,187
9. Determination of Corridor				
a. 80% of Market Value of Assets	18,509,855,722	387,608,744	907,866,506	19,805,330,972
b. 120% of Market Value of Assets	27,764,783,584	581,413,116	1,361,799,758	29,707,996,458
10. Final Actuarial Value of Assets as of June 30, 2013 (8), but not less than (9a), nor greater than (9b)	23,099,969,131	482,581,024	1,128,546,032	24,711,096,187

EXHIBIT 4

HISTORICAL COMPARISON (ACTUARIAL AND MARKET)

Value as of June 30		Actuarial Value of Net Assets (AVA)	Market Value of Net Assets (MVA)	AVA/MVA
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%
2008		21,857,423,183	21,844,112,206	100%
2009		21,123,979,941	17,603,316,618	120%
2010		21,537,458,560	19,538,971,423	110%
2011		22,575,309,199	22,772,344,651	99%
2012		23,530,094,461	23,024,773,746	102%
2013		24,711,096,187	24,756,663,715	100%

Values are for all three membership groups, but exclude the Favorable Experience Dividend Reserve Account.

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

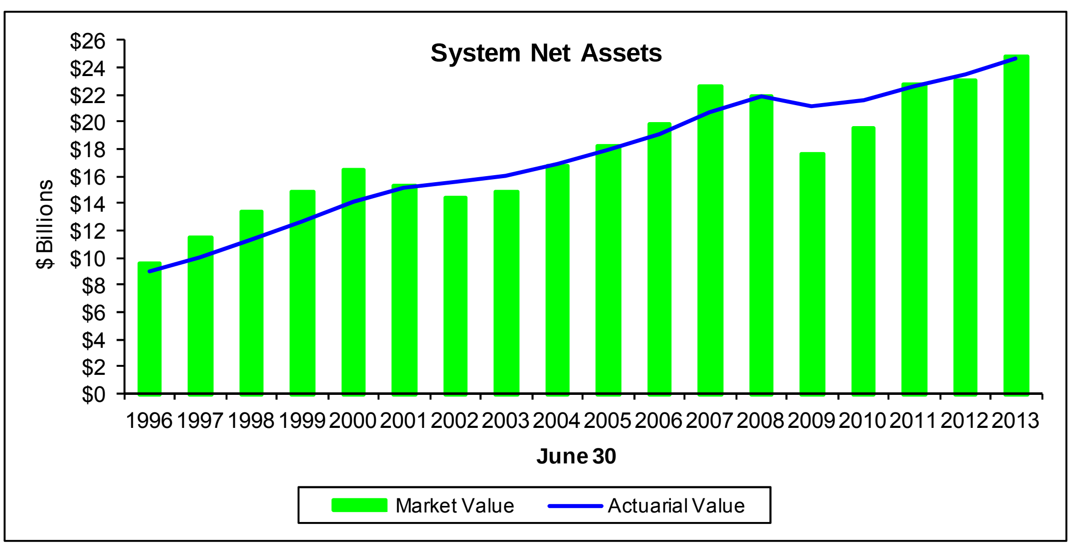

EXHIBIT 5

SUMMARY OF FAVORABLE EXPERIENCE DIVIDEND RESERVE

Market Value of FED Reserve as of June 30, 2013	$	122,042,314
Transfer to FED Payable on January 15, 2014 Based on June 30, 2013 Valuation Results	$	0
Total Value of FED Reserve as of June 30, 2013	$	122,042,314

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, 2013 balance, the FED reserve is projected to be depleted after making the January 2014 payment.

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

	Maximum	Expected
2014	$122.0 *	$122.0 *
2015	-	-

* 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 changes, 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.

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 and is then amortized according to the Actuarial Amortization Method adopted by the Investment Board.

Effective with the June 30, 2008 valuation, a transfer of assets is performed as of June 30th for all employees whose membership group changed since the prior valuation. The purpose behind the transfer is to better match the assets and liabilities for each membership group by having both the assets and liabilities for each member reside in their current membership group. When employees move between membership groups, an asset transfer for valuation purposes is made based on the funded ratio of their former group prior to the transfer. The asset transfer calculation is determined by multiplying the actuarial liability of the employee transferring by the funded ratio of their former group just prior to the transfer. The asset values after the transfers and the liabilities for the employees reside in their current membership group and are used to prepare the final valuation results.

A summary of the number of employees who transferred is shown below:

From	To		
	Regular	Sheriffs and Deputies	Protection Occupation
Regular		20	182
Sheriffs and Deputies			15
Protection Occupation	102	52	

The impact on the UAL from the transfer is shown below:

Regular	Sheriffs and Deputies	Protection Occupation
$(3,506,255)	$1,130,897	$2,622,733

EXHIBIT 6

PRESENT VALUE OF FUTURE BENEFITS
as of June 30, 2013

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	Sheriffs & Deputies	Protection Occupation	Total
Present Value of Future Benefits:				
Active Members				
Retirement benefits	$17,965,807,638	$388,454,923	$966,203,879	$19,320,466,440
Death benefits	200,121,248	4,905,576	23,423,818	228,450,642
Termination benefits	871,407,212	32,594,724	140,985,845	1,044,987,781
Disability benefits	438,755,157	11,437,224	48,817,547	499,009,928
Inactive Members				
Vested members	536,857,917	6,657,880	24,036,507	567,552,304
Nonvested members	45,456,812	166,218	1,296,455	46,919,485
Retired Members and Beneficiaries	14,329,968,181	223,706,198	446,902,048	15,000,576,427
Total Present Value of Future Benefits	$34,388,374,165	$667,922,743	$1,651,666,099	$36,707,963,007

EXHIBIT 7

UNFUNDED ACTUARIAL LIABILITY
as of June 30, 2013

	Regular Membership	Sheriffs & Deputies	Protection Occupation	Total
1. Present Value of Future Benefits	$34,388,374,165	$667,922,743	$1,651,666,099	$36,707,963,007
2. Present Value of Future Normal Costs	5,589,049,227	134,889,305	485,682,155	6,209,620,687
3. Actuarial Liability (1) - (2)	$28,799,324,938	$533,033,438	$1,165,983,944	$30,498,342,320
4. Actuarial Value of Net Assets	23,099,969,131	482,581,024	1,128,546,032	24,711,096,187
5. Unfunded Actuarial Liability (3) - (4)	$5,699,355,807	$50,452,414	$37,437,912	$5,787,246,133
6. Funded Ratio (4) / (3)	80.2%	90.5%	96.8%	81.0%

EXHIBIT 8

CALCULATION OF ACTUARIAL (GAIN)/LOSS AND ANY TRANSFER TO THE FAVORABLE EXPERIENCE DIVIDEND RESERVE
Based on the June 30, 2013 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. The System has a UAL so no transfer is to be made this year.

1. June 30, 2012 Unfunded Actuarial Liability	$	5,916,103,025
2. Normal Cost for year ending June 30, 2013		681,199,544
3. Employer and Employee Contributions*		1,007,097,796
4. Change due to membership transfers		247,375
5. Change due to plan provision changes		0
6. Change due to assumptions and method revisions		0
7. Expected Unfunded Actuarial Liability as of June 30, 2013 (1) * 1.075 + [(2) - (3)] * $(1.075)^{.5}$ + (4) + (5) + (6)		6,022,159,627
8. Actual Unfunded Actuarial Liability as of June 30, 2013		5,787,246,133
9. (Gain)/loss (8) - (7)		(234,913,494)
10. Portion of gain to transfer to FED		N/A
11. Amount of Actuarial Value of Assets to transfer to FED	$	0
12. Market value of FED transfer	$	0

* Does not include service purchases

SECTION IV

SYSTEM CONTRIBUTIONS

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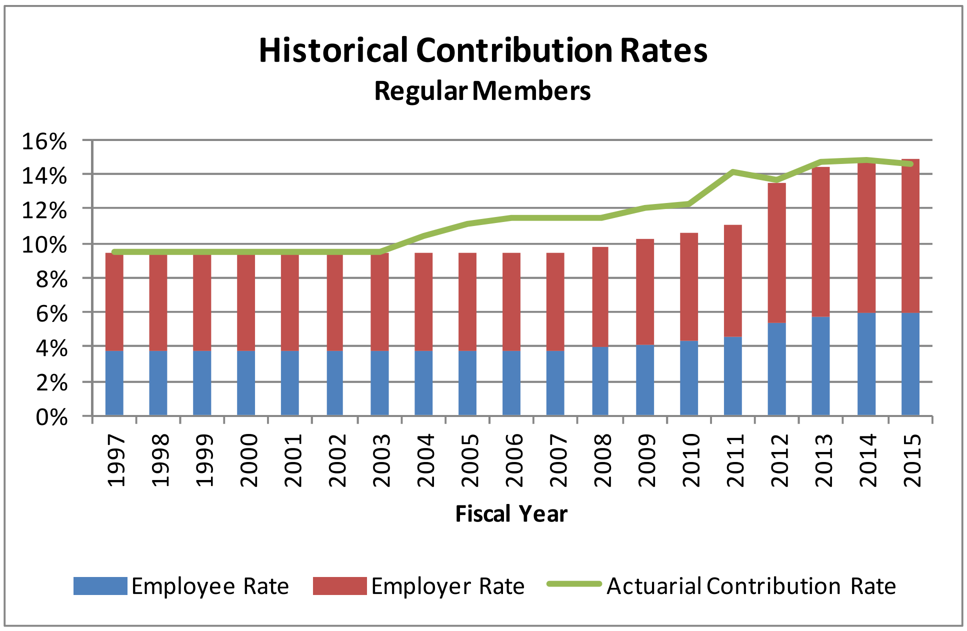
Under the actuarial funding method described in Appendix C, the actuarial contribution rate consists of two elements:

(1) the normal cost rate and
(2) 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.

In 2006 and 2010, legislation was passed that increased the statutory contribution rate for Regular Members. A historical summary of the actual and required rates is shown in the table below:



Effective with the June 30, 2008 valuation, a transfer of assets is performed on June 30th for all split service members (those members with service in more than one membership group) whose membership group changed since the prior valuation. In addition, IPERS also transfers assets for certain split service members who have not changed groups since the last valuation. As a result, all assets and liabilities for each member reside in their current membership group. When members move between membership groups, an asset transfer for valuation purposes is made based on the funded ratio of their former group prior to the transfer. The asset transfer calculation is determined by multiplying the actuarial liability of the members transferring by the funded ratio of their former group just prior to the transfer. The asset values after the transfers and the liabilities for the members reside in their current membership group and are used to prepare the final valuation results.

EXHIBIT 9

ACTUARIAL BALANCE SHEET
as of June 30, 2013

	Regular Membership	Sheriffs & Deputies	Protection Occupation	Total
ASSETS				
Actuarial value of assets	$23,099,969,131	$482,581,024	$1,128,546,032	$24,711,096,187
Present value of future normal costs	5,589,049,227	134,889,305	485,682,155	6,209,620,687
Present value of future contributions to amortize unfunded actuarial liability	5,699,355,807	50,452,414	37,437,912	5,787,246,133
Total Net Assets	$34,388,374,165	$667,922,743	$1,651,666,099	$36,707,963,007
LIABILITIES				
Present Value of Future Benefits:				
Retired Members and Beneficiaries	$14,329,968,181	$223,706,198	$446,902,048	$15,000,576,427
Active Members	19,476,091,255	437,392,447	1,179,431,089	21,092,914,791
Inactive Members	582,314,729	6,824,098	25,332,962	614,471,789
Total Liabilities	$34,388,374,165	$667,922,743	$1,651,666,099	$36,707,963,007

EXHIBIT 10

ANALYSIS OF CONTRIBUTION RATE FOR REGULAR MEMBERSHIP

The actuarial cost method used to determine the required level of annual contributions by the employees 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 payment to amortize the unfunded actuarial liability is determined as a level percentage of payroll, based on the Actuarial Amortization Method, adopted by the Investment Board. This method was revised by the Investment Board in September 2013 (see Appendix C). For the June 30, 2013 actuarial valuation, the amortization period is a 30-year open base.

The contribution rate developed in this exhibit is based on the June 30, 2013 actuarial valuation and applies to the fiscal year beginning July 1, 2014 and ending June 30, 2015. Based on the Contribution Rate Funding Policy, adopted in September 2013, the Required Contribution Rate for FY 2015 will remain at 14.88% (no change from FY 2014).

		Regular Membership
1. FYE 2014 Contribution Rate		14.88%
2. Normal Cost Rate		10.16%
3. Contribution Rate Applied to Fund the UAL for FYE 2014 (1) - (2)		4.72%
4. Unfunded Actuarial Liability(UAL)/Surplus on June 30, 2013	$	5,699,355,807
5. Expected Payroll for FYE 2014	$	6,729,685,170
6. Projected UAL on June 30, 2014 $[(4) \times 1.075] - [(3) \times (5) \times 1.075^{.5}]$	$	5,797,470,149
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 2015 $[(6) / (8)] \times (1.075)^{.5}$	$	310,872,249
10. Expected Payroll for FYE 2015 (5) x 1.04	$	6,998,872,576
11. UAL Contribution Rate for FYE 2015 (9) / (10)		4.44%
12. Actuarial Contribution Rate for FYE 2015 (2) + (11)		14.60%
13. Required Contribution Rate for FYE 2015*		14.88%
Employer Contribution Rate		8.93%
Employee Contribution Rate		5.95%

* Based on the funding policy, the Required Contribution Rate is reduced from the prior year only under certain conditions, which did not occur this year. Consequently, the Required Contribution Rate remains unchanged.

EXHIBIT 11

CALCULATION OF CONTRIBUTION RATES FOR SHERIFFS/DEPUTIES AND PROTECTION OCCUPATION

The actuarial cost method used to determine the required level of annual contributions by the employees 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 payment to amortize the unfunded actuarial liability is determined as a level percentage of payroll, based on the Actuarial Amortization Method, adopted by the Investment Board. This method was revised by the Investment Board in September 2013 (see Appendix C). For the June 30, 2013 actuarial valuation, the amortization period is a 30-year open base.

The Required Contribution rate developed in this exhibit is based on the June 30, 2013 actuarial valuation and applies to the fiscal year ending June 30, 2015. Based on the Contribution Rate Funding Policy, adopted in September 2013, the Required Contribution Rate for both groups for FY 2015 will remain unchanged.

		Sheriffs & Deputies			**Protection Occupation**	
1. FYE 2014 Contribution Rate		19.76%			16.90%	
2. Normal Cost Rate		16.59%			16.02%	
3. Contribution Rate Applied to Fund the UAL (1) - (2)		3.17%			0.88%	
4. Unfunded Actuarial Liability(UAL)/Surplus on June 30, 2013	$	50,452,414		$	37,437,912	
5. Expected Payroll for FYE 2014	$	97,307,592		$	325,064,309	
6. Projected UAL on June 30, 2014 $[(4) \times 1.075] - [(3) \times (5) \times 1.075^{.5}]$	$	51,038,111		$	37,279,858	
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 2015 $[(6) / (8)] \times (1.075)^{.5}$	$	2,736,768		$	1,999,022	
10. Expected Payroll for FYE 2015 (5) x 1.04	$	101,199,896		$	338,066,881	
11. UAL Contribution Rate for FYE 2015 (9) / (10)		2.71%			0.59%	
12. Actuarial Contribution Rate for FYE 2015 (2) + (11)		19.30%			16.61%	
13. Required Contribution Rate for FYE 2015*		19.76%			16.90%	
Employer Contribution Rate		9.88%	(50%)		10.14%	(60%)
Employee Contribution Rate		9.88%	(50%)		6.76%	(40%)

* Based on the funding policy, the Required Contribution Rate is reduced from the prior year only under certain conditions, which did not occur this year. Consequently, the Required Contribution Rate remains unchanged.

SECTION V

PLAN ACCOUNTING INFORMATION

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The Governmental Accounting Standards Board (GASB) issued Statement No. 25, as amended by GASB Statement No. 50, 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.

In 2012, GASB issued the final version of GASB Statements No. 67 and 68 which will supersede GASB No. 25 and 27. GASB 67, which applies to the retirement system, will be effective for IPERS for the fiscal year ending June 30, 2014. GASB No. 68, which applies to participating employers, is first effective for fiscal years beginning after June 15, 2014.

EXHIBIT 12

SUMMARY OF VALUATION MEMBERSHIP

	June 30, 2013	June 30, 2012
Active Employees:		
Vested	130,699	131,586
Not yet vested	34,396	32,614
Total active employees	165,095	164,200
Retirees and beneficiaries currently receiving benefits*	104,640	101,677
Inactive vested members entitled to benefits but not yet receiving them	28,443	29,119
Inactive, nonvested members entitled to a refund of contributions**	44,474	40,658

* Retired/reemployed members are included in retiree counts, but not the active or inactive counts. Counts are 9,925 for 2013 and 9,270 for 2012.

** Includes deceased vested inactive members with employee contributions still held by the System.

EXHIBIT 13

SCHEDULE OF FUNDING PROGRESS

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

Actuarial Valuation Date	Net Actuarial Value of Assets (a)	Actuarial Liability (AL) (b)	Unfunded AL (UAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (P/R) (c)	UAL as a Percentage of Covered P/R [(b-a)/c]
6/30/08	$21,857,423,183	$24,522,216,589	$2,664,793,406	89.13%	$6,131,445,367	43.46%
6/30/09	21,123,979,941	26,018,593,823	4,894,613,882	81.19%	6,438,643,124	76.02%
6/30/10	21,537,458,560	26,468,419,650	4,930,961,090	81.37%	6,571,182,005	75.04%
6/30/11	22,575,309,199	28,257,080,114	5,681,770,915	79.89%	6,574,872,719	86.42%
6/30/12	23,530,094,461	29,446,197,486	5,916,103,025	79.91%	6,786,158,720	87.18%
6/30/13	24,711,096,187	30,498,342,320	5,787,246,133	81.02%	6,880,131,134	84.12%

Actuarial Assumptions: See Appendix C

EXHIBIT 14

SCHEDULE OF EMPLOYER CONTRIBUTIONS

The Employer Annual Required Contribution (ARC) is determined based on GASB Statement No. 25, *Financial Reporting for Defined Benefit Pension Plans*. The dollar amount of the ARC is calculated by dividing the contributions paid by the Regular Membership for the fiscal year by the required contribution rate to determine covered payroll for the year. The covered payroll is then multiplied by the actuarial contribution rate including the normal cost rate and the UAL amortization rate from the actuarial valuation two years prior (the June 30, 2013 valuation sets the ARC for FY 15). The employer contributions are then subtracted to determine the dollar amount of the ARC for the Regular members, which is the resulting dollar amount of ARC for the Regular Membership is added to the actual contributions paid by the Sheriffs and Deputies and the Protection Occupation employers to determine the total dollar amount of the ARC for the fiscal year.

	Actuarially Required Contributions (ARC)				Percentage of ARC Contributed			
Fiscal Year Ending	**Regular Membership**	**Sheriffs & Deputies**	**Protection Occupation**	**Total**	**Regular Membership**	**Sheriffs & Deputies**	**Protection Occupation**	**Total**
6/30/08	$408,882,080	$6,301,171	$17,644,966	$432,828,217	86.4%	100.0%	100.0%	87.2%
6/30/09	441,951,764	6,365,911	24,736,688	473,054,363	86.9%	100.0%	100.0%	87.8%
6/30/10	467,839,274	6,725,778	27,328,184	501,893,236	88.7%	100.0%	100.0%	89.5%
6/30/11	530,692,453	7,994,058	29,711,050	568,397,561	81.1%	100.0%	100.0%	82.3%
6/30/12	528,525,785	8,999,273	30,864,449	568,389,507	98.1%	100.0%	100.0%	98.2%
6/30/13	573,480,969	9,246,766	32,118,873	614,846,608	97.8%	100.0%	100.0%	98.0%

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.

Fiscal Year End	Actives at 6/30/13	Retirees at 6/30/13	Total
2014	$ 136,384,000	$ 1,553,065,000	$ 1,689,449,000
2015	271,905,000	1,528,149,000	1,800,054,000
2016	408,851,000	1,501,886,000	1,910,737,000
2017	543,632,000	1,473,584,000	2,017,216,000
2018	679,625,000	1,443,862,000	2,123,487,000
2019	814,549,000	1,412,288,000	2,226,837,000
2020	949,982,000	1,379,183,000	2,329,165,000
2021	1,087,122,000	1,344,244,000	2,431,366,000
2022	1,224,913,000	1,307,978,000	2,532,891,000
2023	1,362,650,000	1,270,203,000	2,632,853,000
2024	1,498,621,000	1,231,118,000	2,729,739,000
2025	1,633,224,000	1,190,978,000	2,824,202,000
2026	1,767,917,000	1,149,480,000	2,917,397,000
2027	1,902,518,000	1,106,560,000	3,009,078,000
2028	2,035,898,000	1,062,329,000	3,098,227,000
2029	2,167,963,000	1,016,775,000	3,184,738,000
2030	2,298,862,000	970,012,000	3,268,874,000
2031	2,428,342,000	922,128,000	3,350,470,000
2032	2,555,778,000	873,279,000	3,429,057,000
2033	2,684,328,000	823,607,000	3,507,935,000

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APPENDIX A

SUMMARY STATISTICS ON SYSTEM MEMBERSHIP

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APPENDIX A

SUMMARY STATISTICS ON SYSTEM MEMBERSHIP

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RECONCILIATION OF ACTIVE MEMBERS

Below is a summary of the changes in active members (excluding retired reemployed members) between June 30, 2012 and June 30, 2013.

	Regular Membership	Sheriffs & Deputies	Protection Occupation	Total
6/30/2012 Starting count	155,800	1,530	6,870	164,200
New actives	14,570	44	564	15,178
Returning actives	2,585	11	88	2,684
Nonvested Terminations	(4,967)	(2)	(162)	(5,131)
Elected Refund	(2,575)	(14)	(159)	(2,748)
Vested Terminations	(3,686)	(14)	(139)	(3,839)
Total Withdrawals	(11,228)	(30)	(460)	(11,718)
Deaths	(133)	0	(2)	(135)
Disability Retirements	(108)	(5)	(6)	(119)
AE Benefits	(286)	0	(3)	(289)
Service Retirements	(4,383)	(55)	(143)	(4,581)
Total Retirements	(4,777)	(60)	(152)	(4,989)
Other/transfer	(138)	32	(19)	(125)
6/30/2013 Ending count	156,679	1,527	6,889	165,095

HISTORICAL SUMMARY OF MEMBERS

The following table displays selected historical data (including Regular, Sheriffs and Deputies, and Protection Occupation groups) as available.

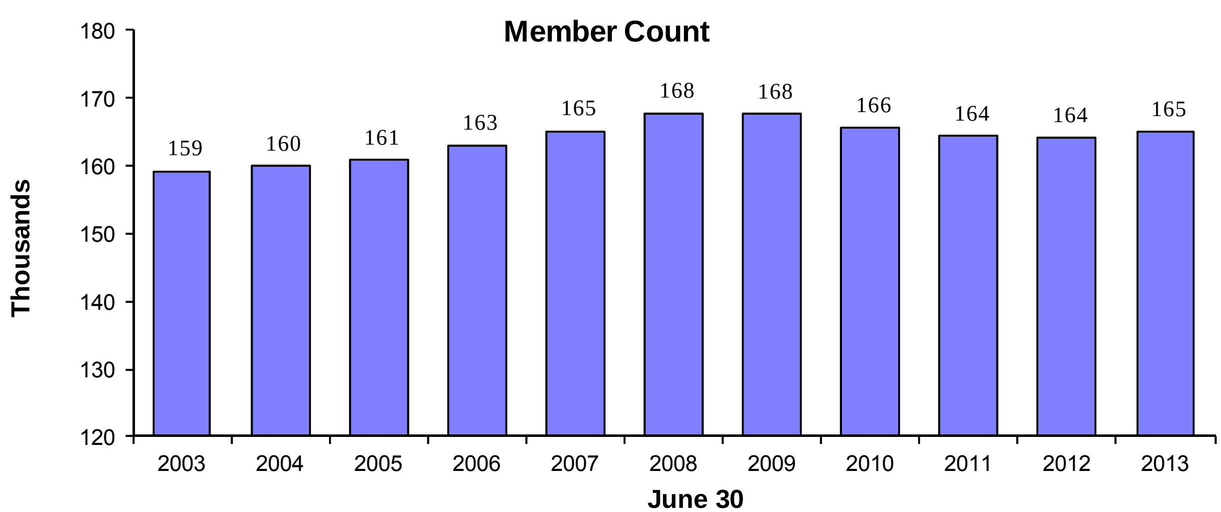
Valuation Date June 30	Total Count	Number	Average					Number			Active/Retired Ratio
			Age	Entry Age	Service	Annual Pay ($)	% Change	Retired Reemployed	Inactive Vested	Retired	
1991	206,105	135,104	43.7			21,885				49,881	2.71
1992	207,860	134,485	44.3			22,510	2.9%			51,247	2.62
1993	211,862	136,409	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	36,615	3.2%	7,848	26,435	84,770	1.95
2008	282,778	167,823	45.7	34.1	11.6	38,515	5.2%	8,523	27,626	87,309	1.92
2009	294,076	167,691	46.0	34.2	11.8	40,326	4.7%	8,427	28,240	89,718	1.87
2010	287,611	165,626	46.0	34.1	11.9	40,635	0.8%	8,347	28,472	93,513	1.77
2011	291,825	164,436	45.8	34.1	11.7	40,782	0.4%	8,321	29,077	98,312	1.67
2012	294,996	164,200	45.8	34.2	11.6	42,223	3.5%	8,265	29,119	101,677	1.61
2013	299,793	165,095	45.7	34.1	11.6	42,404	0.4%	9,925	28,443	104,640	1.58

Note: Retired count includes retired reemployed members.

SUMMARY OF ACTIVE MEMBERS

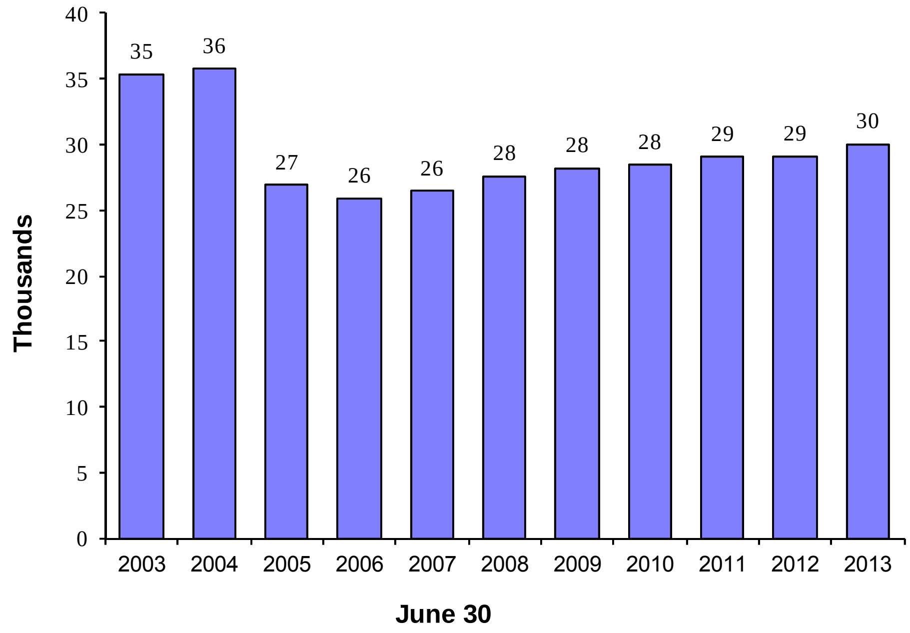
	Regular Membership	Sheriffs & Deputies	Protection Occupations	Total 6/30/2013	Total 6/30/2012	Percent Change
Total Active Members	156,679	1,527	6,889	165,095	164,200	0.5
Projected Covered Payroll* (millions)	$6,584	$97	$320	$7,001	$6,933	1.0
Average Age	45.9	41.7	42.0	45.7	45.8	(0.2)
Average Entry Age	34.3	26.8	31.0	34.1	34.1	0.0
Average Earnings	$42,024	$63,201	$46,436	$42,404	$42,223	0.4
Retired Reemployed	8,216	22	72	8,310	8,265	0.5

*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.



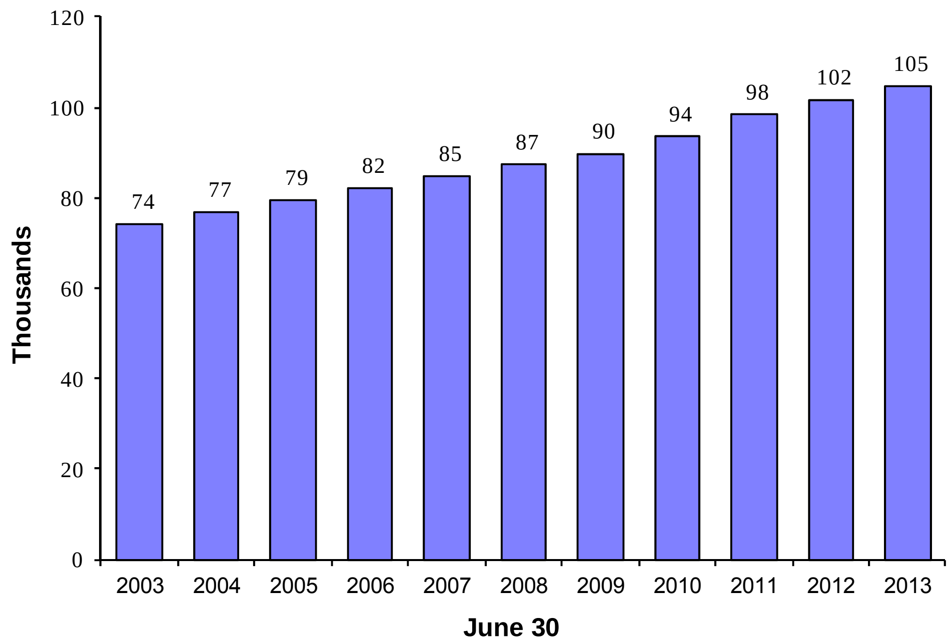
SUMMARY OF INACTIVE VESTED MEMBERS

	Regular Membership	Sheriffs & Deputies	Protection Occupations	Total 6/30/2013	Total 6/30/2012	Percent Change
Inactive Vested	27,723	91	629	28,443	28,114	1.2%
Inactive Retired Reemployed	1,585	3	27	1,615	1,005	60.7%
Total Inactive Vested	29,308	94	656	30,058	29,119	3.2%



SUMMARY OF RETIRED MEMBERS AND BENEFICIARIES

Regular Membership	Sheriffs & Deputies	Protection Occupations	Total 6/30/2013	Total 6/30/2012	Percent Change
101,960	749	1,931	104,640	101,677	2.9%



AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2013 FOR ACTIVE MEMBERS*

Males and Females - Regular Membership

Years of Service

	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	
Age	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary
Under 25	5,939	14,303	103	24,168	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	6,042	14,471
25-29	9,990	28,101	2,873	38,633	41	34,835	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	12,904	30,467
30-34	6,324	28,369	7,113	44,007	2,023	48,706	20	43,167	0	NA	0	NA	0	NA	0	NA	0	NA	15,480	38,231
35-39	5,441	27,347	4,373	42,547	4,967	52,710	1,314	57,151	9	43,605	0	NA	0	NA	0	NA	0	NA	16,104	41,738
40-44	4,989	25,499	4,375	38,698	3,499	49,327	4,207	58,825	1,022	59,397	16	49,052	0	NA	0	NA	0	NA	18,108	42,969
45-49	4,108	23,936	4,277	34,546	3,767	42,604	3,019	52,409	3,241	62,024	1,074	62,578	37	53,168	0	NA	0	NA	19,523	42,770
50-54	3,866	24,968	3,889	33,523	4,109	38,132	3,748	44,732	2,848	53,753	3,314	62,546	1,767	60,316	124	53,957	1	108,014	23,666	43,310
55-59	3,779	22,386	3,085	33,083	3,310	38,018	3,316	42,514	3,057	48,335	2,650	57,198	2,683	63,484	1,264	59,490	33	54,266	23,177	43,152
60-64	4,003	16,413	2,643	27,129	2,190	36,686	2,091	43,011	2,206	46,337	1,733	52,067	1,031	59,666	1,162	66,077	368	61,071	17,427	37,924
65-69	2,532	10,850	1,690	17,635	893	28,717	607	38,676	475	41,026	339	49,677	211	51,715	146	58,115	175	66,551	7,068	24,585
70 & over	2,549	12,971	1,782	11,003	730	11,308	207	12,475	53	27,751	30	32,348	19	37,169	14	36,107	12	50,255	5,396	12,558
Totals	53,520	22,922	36,203	35,444	25,529	42,760	18,529	48,912	12,911	53,144	9,156	58,420	5,748	61,240	2,710	61,866	589	62,177	164,895	38,116

*Including retired/reemployed members

AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2013 FOR ACTIVE MEMBERS*

Males and Females - Sheriffs and Deputies

Years of Service

	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	
Age	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary
Under 25	39	36,040	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	39	36,040
25-29	92	46,372	55	54,697	2	51,480	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	149	49,514
30-34	39	45,860	124	57,006	61	58,381	1	97,313	0	NA	0	NA	0	NA	0	NA	0	NA	225	55,626
35-39	25	45,370	47	57,543	124	60,075	54	64,020	1	45,637	0	NA	0	NA	0	NA	0	NA	251	58,927
40-44	12	50,624	36	55,494	64	61,366	107	63,026	36	67,325	0	NA	0	NA	0	NA	0	NA	255	61,569
45-49	14	46,056	14	59,813	30	61,058	64	63,141	99	66,107	34	67,575	1	72,206	0	NA	0	NA	256	63,552
50-54	4	59,164	4	61,785	19	63,933	37	62,609	35	67,847	56	68,423	13	84,892	2	67,866	0	NA	170	67,416
55-59	13	28,344	1	54,860	13	62,986	4	66,342	23	64,561	36	65,706	25	70,069	22	70,176	0	NA	137	63,164
60-64	7	42,742	6	28,845	2	66,321	2	50,430	14	61,481	8	61,657	10	59,208	7	71,063	4	71,073	60	57,226
65-69	1	129	2	90,105	1	32,144	0	NA	1	65,912	0	NA	0	NA	0	NA	2	81,164	7	62,960
70 & over	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA
Totals	246	43,705	289	56,305	316	60,351	269	63,279	209	66,029	134	67,074	49	71,828	31	70,227	6	74,437	1,549	59,424

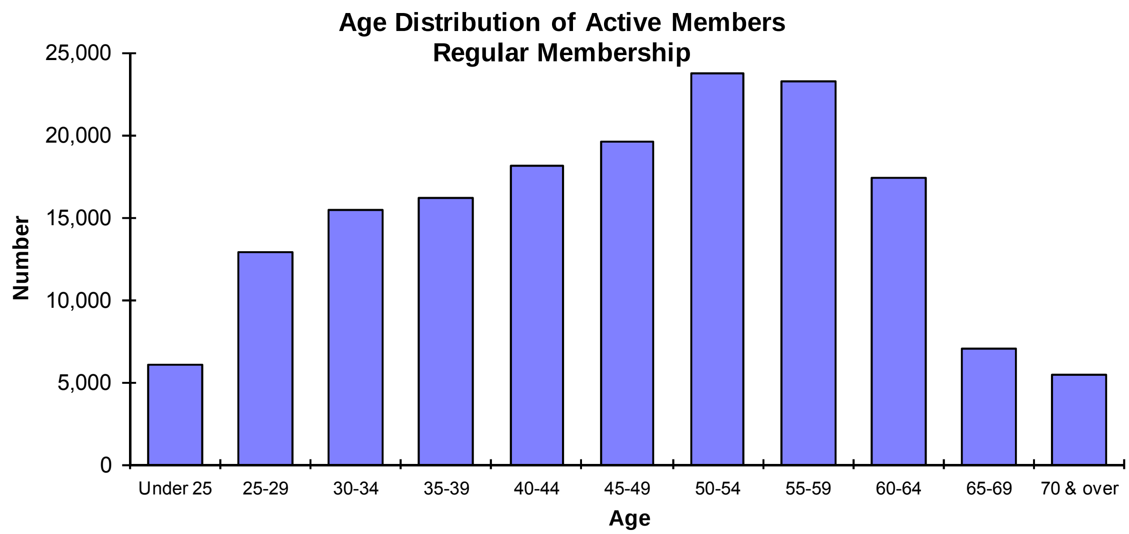
*Including retired/reemployed members

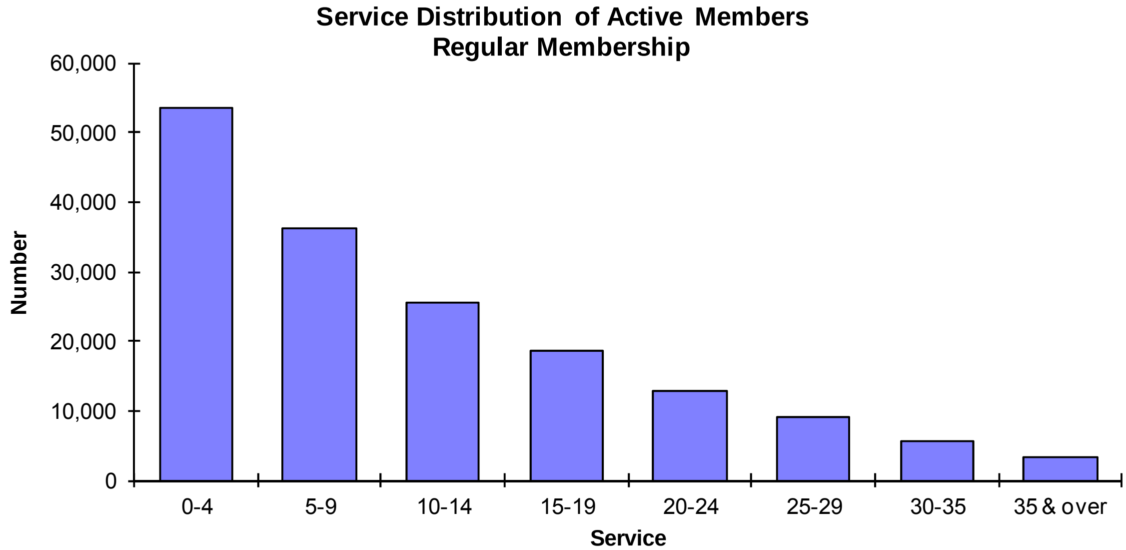
AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2013 FOR ACTIVE MEMBERS*

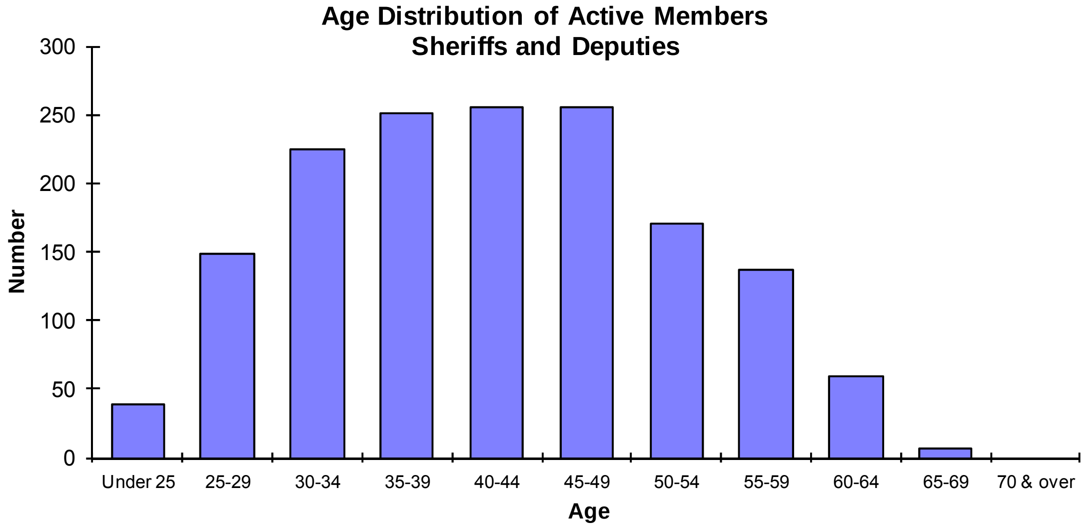
Males and Females - Protection Occupation

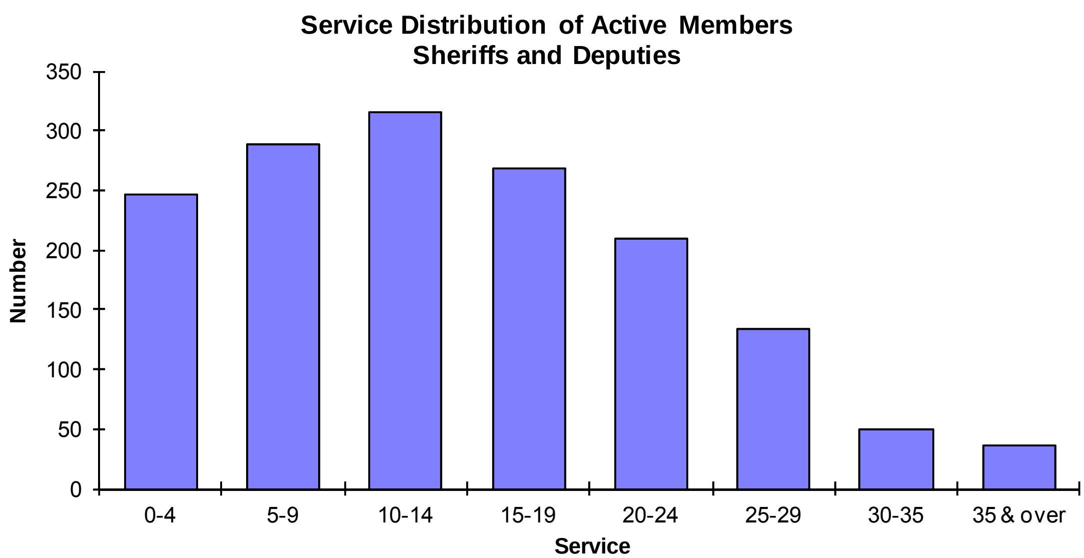
	Years of Service																			
	0 to 4		5 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 and over		Total	
Age	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary	No.	Avg. Salary
Under 25	317	20,912	13	42,888	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	330	21,778
25-29	538	30,155	263	44,531	2	30,601	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	803	34,865
30-34	378	29,088	458	44,555	124	51,121	2	28,458	0	NA	0	NA	0	NA	0	NA	0	NA	962	39,291
35-39	244	29,250	266	43,030	274	50,835	93	53,868	2	52,957	0	NA	0	NA	0	NA	0	NA	879	42,807
40-44	193	29,300	237	40,667	241	49,472	263	57,346	68	58,910	1	52,087	0	NA	0	NA	0	NA	1,003	46,217
45-49	135	27,060	162	40,089	190	48,509	192	55,216	159	60,316	53	60,127	0	NA	0	NA	0	NA	891	47,972
50-54	90	31,829	154	40,171	158	47,995	167	53,364	119	54,996	165	62,136	84	63,667	6	57,495	0	NA	943	50,939
55-59	79	29,359	97	40,493	143	48,839	118	49,876	86	50,518	63	56,474	77	65,115	25	64,758	1	66,706	689	48,938
60-64	35	23,742	72	38,119	66	48,298	71	55,274	32	49,865	24	55,164	24	60,912	19	58,818	4	79,161	347	47,560
65-69	14	6,777	15	29,045	18	47,215	17	38,984	9	40,875	5	47,369	3	76,638	3	55,821	1	56,967	85	36,496
70 & over	15	17,292	7	29,482	4	8,272	3	23,719	0	NA	0	NA	0	NA	0	NA	0	NA	29	19,655
Totals	2,038	27,803	1,744	42,291	1,220	49,267	926	54,218	475	55,905	311	59,839	188	64,115	53	61,301	6	73,386	6,961	43,332

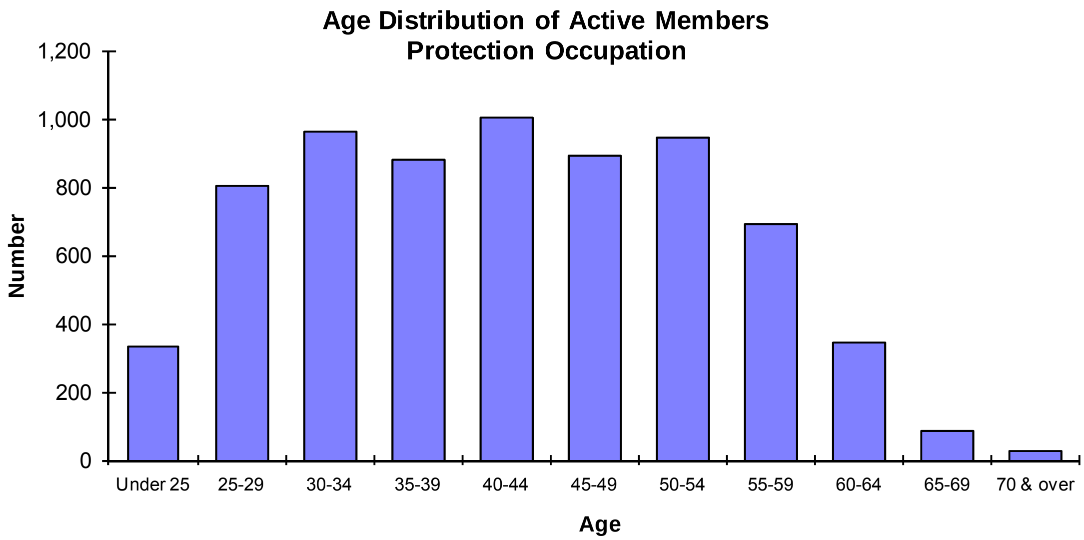
*Including retired/reemployed members

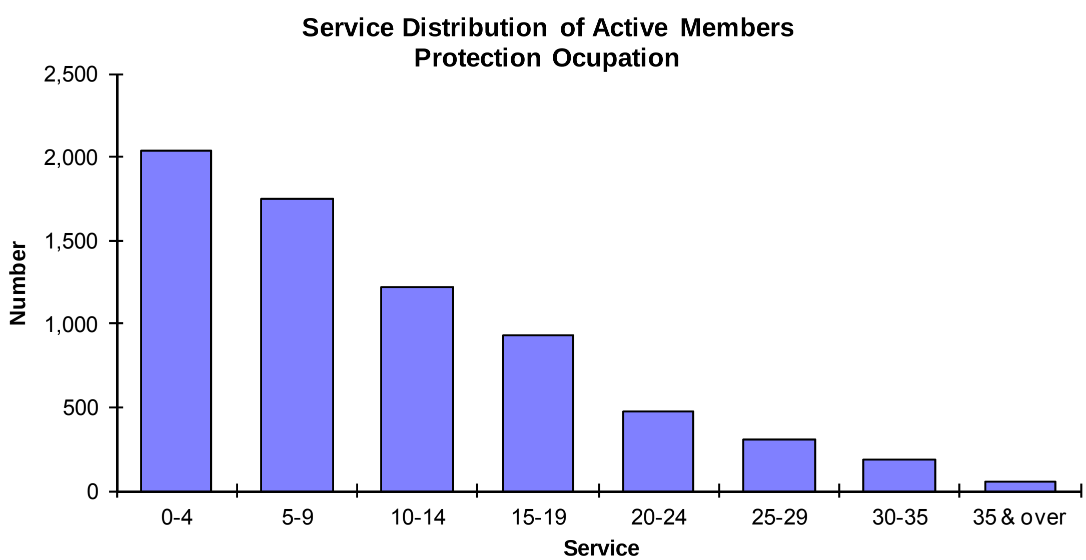

Age Distribution of Active Members
Regular Membership
25,000
20,000
15,000
10,000
5,000
0
Number
Under 25
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70 & over
Age


Service Distribution of Active Members
Regular Membership
60,000
50,000
40,000
30,000
20,000
10,000
0
Number
0-4
5-9
10-14
15-19
20-24
25-29
30-35
35 & over
Service


Age Distribution of Active Members
Sheriffs and Deputies
Number
300
250
200
150
100
50
0
Under 25
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70 & over
Age


Service Distribution of Active Members
Sheriffs and Deputies
Number
350
300
250
200
150
100
50
0
0-4
5-9
10-14
15-19
20-24
25-29
30-35
35 & over
Service


Age Distribution of Active Members
Protection Occupation
1,200
1,000
800
600
400
200
0
Number
Under 25
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70 & over
Age


Service Distribution of Active Members
Protection Ocupation
2,500
2,000
1,500
1,000
500
0
Number
0-4
5-9
10-14
15-19
20-24
25-29
30-35
35 & over
Service

AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2013 FOR INACTIVE VESTED MEMBERS*

Males and Females - Regular Membership

Years of Service

	0 to 3		4 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 and over		Total	
Age	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.
Under 25	0	NA	26	10,994	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	26	10,994
25-29	0	NA	460	21,509	2	27,643	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	462	21,536
30-34	0	NA	1,586	27,619	56	27,635	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	1,642	27,619
35-39	0	NA	1,777	26,915	288	38,186	19	41,222	1	20,789	0	NA	0	NA	0	NA	0	NA	2,085	28,599
40-44	2	4,162	1,963	25,076	509	33,183	124	38,413	10	39,498	1	18,006	0	NA	0	NA	0	NA	2,609	27,328
45-49	1	640	2,303	20,978	685	28,081	233	38,426	77	46,005	9	39,771	0	NA	0	NA	0	NA	3,308	24,305
50-54	3	19,138	2,932	19,321	1,136	25,070	518	32,282	265	39,511	90	40,689	28	49,857	3	38,523	0	NA	4,975	23,629
55-59	632	12,380	2,788	18,102	1,120	20,951	517	27,791	212	33,044	58	41,189	24	41,874	3	46,473	0	NA	5,354	19,922
60-64	1,872	10,135	1,873	15,765	693	20,302	304	22,516	127	30,623	35	33,364	5	30,508	1	28,170	0	NA	4,910	15,204
65-69	1,734	7,881	746	10,141	181	10,998	65	16,765	15	26,767	5	36,100	2	28,398	0	NA	1	29,677	2,749	9,087
70 & over	754	5,961	344	6,112	70	5,603	12	8,550	5	11,004	2	14,705	1	38,144	0	NA	0	NA	1,188	6,073
Totals	4,998	9,008	16,798	20,577	4,740	24,710	1,792	29,926	712	36,207	200	39,023	60	44,141	7	40,451	1	29,677	29,308	20,403

*Including inactive retired/reemployed members

AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2013 FOR INACTIVE VESTED MEMBERS*

Males and Females - Sheriffs and Deputies

Years of Service

	0 to 3		4 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 and over		Total	
Age	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.
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	51,770	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	4	51,770
30-34	0	NA	14	40,414	2	73,824	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	16	44,591
35-39	0	NA	12	42,719	5	44,192	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	17	43,152
40-44	0	NA	6	34,810	6	46,135	0	NA	1	63,303	0	NA	0	NA	0	NA	0	NA	13	42,229
45-49	0	NA	7	35,566	3	38,038	4	48,977	2	55,853	1	82,257	0	NA	0	NA	0	NA	17	44,291
50-54	0	NA	3	37,053	6	40,029	5	48,323	0	NA	0	NA	0	NA	0	NA	0	NA	14	42,353
55-59	0	NA	5	26,553	1	19,966	3	29,245	0	NA	0	NA	0	NA	0	NA	0	NA	9	26,718
60-64	2	2,490	1	7,095	0	NA	1	18,420	0	NA	0	NA	0	NA	0	NA	0	NA	4	7,624
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
Totals	2	2,490	52	38,353	23	44,333	13	41,821	3	58,336	1	82,257	0	NA	0	NA	0	NA	94	40,638

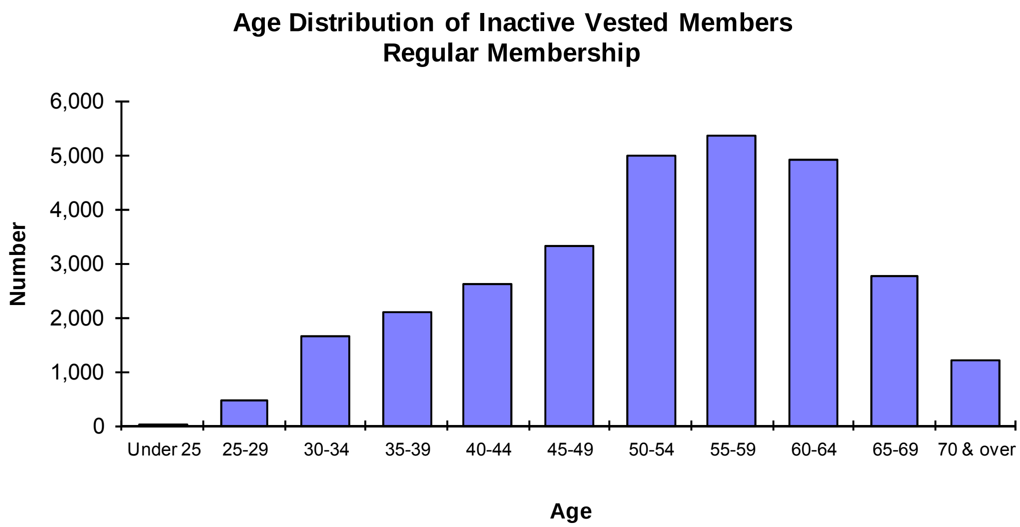
*Including inactive retired/reemployed members

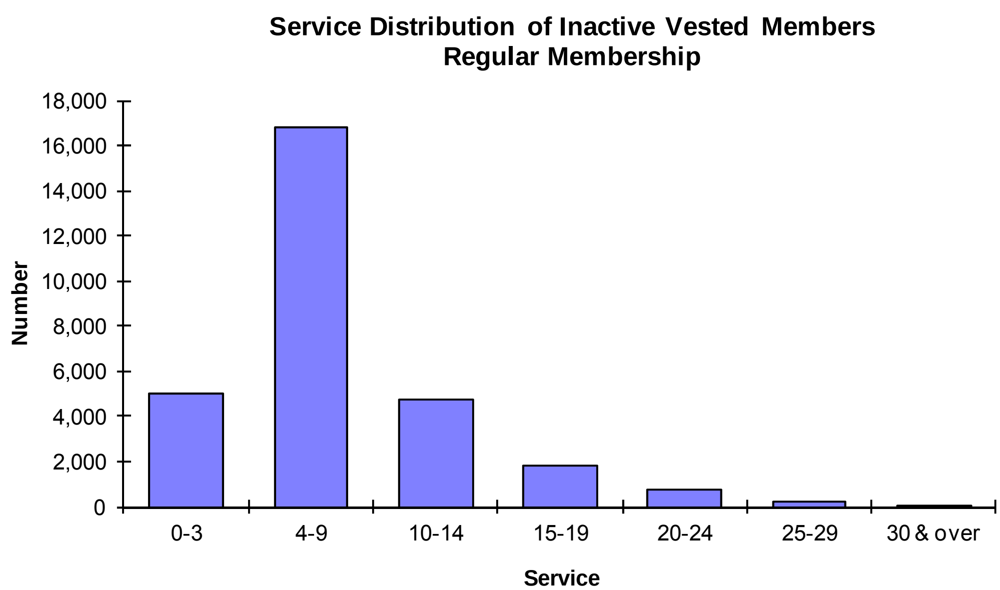
AGE AND SERVICE DISTRIBUTION AS OF JUNE 30, 2013 FOR INACTIVE VESTED MEMBERS*

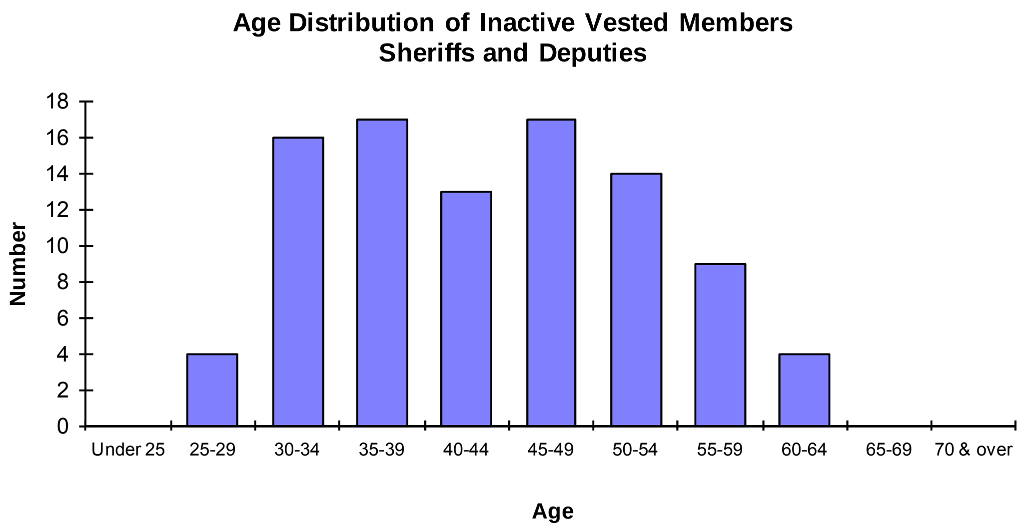
Males and Females - Protection Occupation

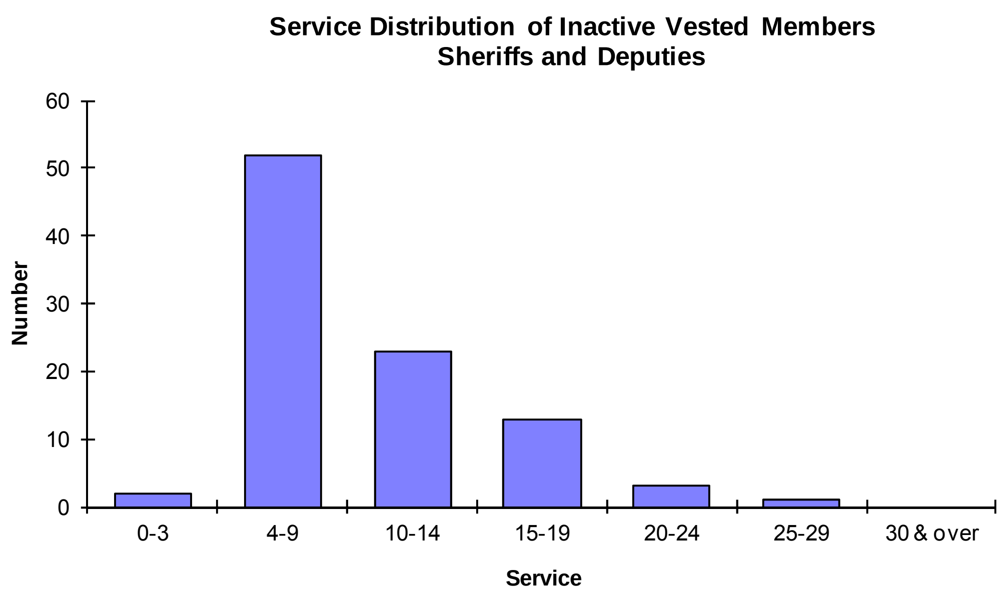
	Years of Service																			
	0 to 3		4 to 9		10 to 14		15 to 19		20 to 24		25 to 29		30 to 34		35 to 39		40 and over		Total	
Age	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.	No.	Avg. Sal.
Under 25	0	NA	1	21,576	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	1	21,576
25-29	0	NA	32	24,776	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	32	24,776
30-34	0	NA	59	25,566	5	35,735	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	64	26,361
35-39	0	NA	68	17,380	14	30,073	1	1,304	0	NA	0	NA	0	NA	0	NA	0	NA	83	19,327
40-44	0	NA	68	16,062	27	31,257	9	43,362	0	NA	0	NA	0	NA	0	NA	0	NA	104	22,369
45-49	0	NA	50	17,367	28	24,947	11	21,720	5	36,820	3	48,905	0	NA	0	NA	0	NA	97	22,027
50-54	1	3,468	56	14,873	27	28,082	19	30,763	6	41,165	1	51,694	3	52,423	0	NA	0	NA	113	23,319
55-59	18	12,165	33	12,867	13	13,633	8	26,444	3	17,953	3	36,910	3	51,663	0	NA	0	NA	81	16,691
60-64	28	10,259	16	6,045	6	19,707	4	3,817	1	40,723	1	50,421	0	NA	0	NA	0	NA	56	10,868
65-69	14	6,421	3	14,137	2	17,192	1	1,759	0	NA	0	NA	0	NA	0	NA	0	NA	20	8,423
70 & over	3	3,036	1	14,782	0	NA	1	325	0	NA	0	NA	0	NA	0	NA	0	NA	5	4,843
Totals	64	9,511	387	17,769	122	26,477	54	26,739	15	35,045	8	44,945	6	52,043	0	NA	0	NA	656	20,361

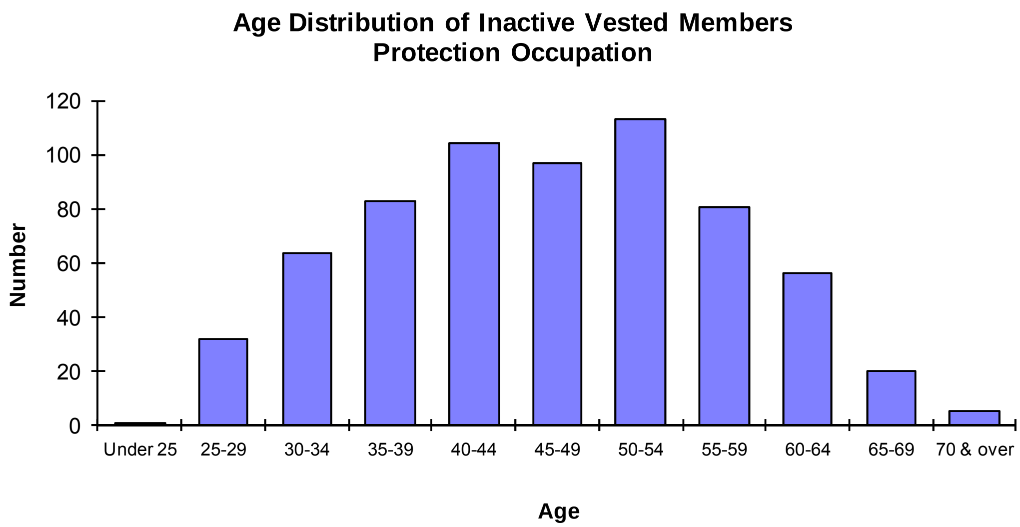
*Including inactive retired/reemployed members

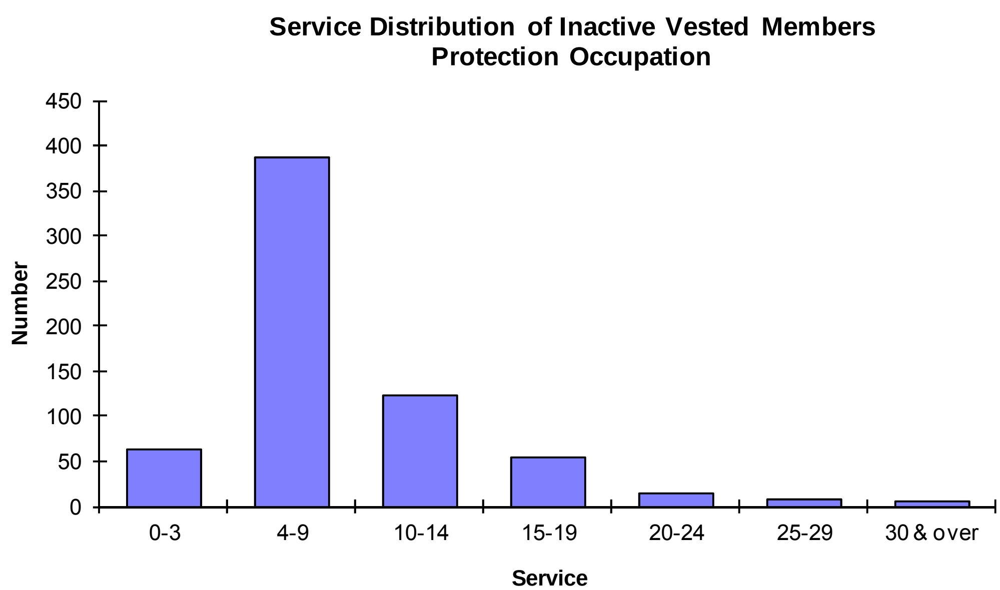

Age Distribution of Inactive Vested Members
Regular Membership
Number
6,000
5,000
4,000
3,000
2,000
1,000
0
Under 25
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70 & over
Age


Service Distribution of Inactive Vested Members
Regular Membership
Number
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
0-3
4-9
10-14
15-19
20-24
25-29
30 & over
Service


Age Distribution of Inactive Vested Members
Sheriffs and Deputies
Number
18
16
14
12
10
8
6
4
2
0
Under 25
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70 & over
Age


Service Distribution of Inactive Vested Members
Sheriffs and Deputies
Number
60
50
40
30
20
10
0
0-3
4-9
10-14
15-19
20-24
25-29
30 & over
Service


Age Distribution of Inactive Vested Members
Protection Occupation
Number
120
100
80
60
40
20
0
Under 25
25-29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
65-69
70 & over
Age


Service Distribution of Inactive Vested Members
Protection Occupation
Number
450
400
350
300
250
200
150
100
50
0
0-3
4-9
10-14
15-19
20-24
25-29
30 & over
Service

ANALYSIS OF RETIREES AND BENEFICIARIES

Males and Females - Regular Membership

	Number of Members and Beneficiaries										Average
						Contingent			Period		Annual
Age	Chpt 97	Option 1	Option 2	Option 3	Option 4	Beneficiary	Option 5	Option 6	Certain	Total	Benefit
Under 40	0	4	1	5	1	35	1	3	8	58	$7,924
40 to 44	0	13	9	1	10	20	1	5	5	64	6,337
45 to 49	0	35	26	4	9	51	5	19	3	152	7,658
50 to 54	0	101	36	32	20	88	13	39	6	335	9,936
55 to 59	0	1,144	1,076	490	429	188	403	1,444	13	5,187	21,385
60 to 64	0	3,462	3,621	2,179	1,143	374	1,426	4,298	21	16,524	22,227
65 to 69	0	4,979	4,916	3,376	1,684	520	1,964	4,895	37	22,371	18,293
70 to 74	0	4,731	4,002	2,897	2,013	669	1,957	2,312	30	18,611	14,177
75 to 79	0	4,357	3,319	1,995	2,399	823	1,915	482	21	15,311	11,116
80 to 84	0	3,411	2,604	1,235	1,744	847	1,302	79	6	11,228	8,314
85 to 89	0	2,280	2,058	758	901	639	770	3	2	7,411	6,124
90 to 94	0	869	1,287	340	308	284	479	2	0	3,569	5,036
95 to 99	2	65	557	85	42	56	177	0	0	984	4,458
100 & up	1	1	105	14	6	4	27	0	0	158	3,709
Counts	3	25,452	23,617	13,411	10,709	4,598	10,440	13,581	152	101,963	$14,599
% of Total	0.0%	25.0%	23.2%	13.2%	10.5%	4.5%	10.2%	13.3%	0.1%	100.0%	

ANALYSIS OF RETIREES AND BENEFICIARIES

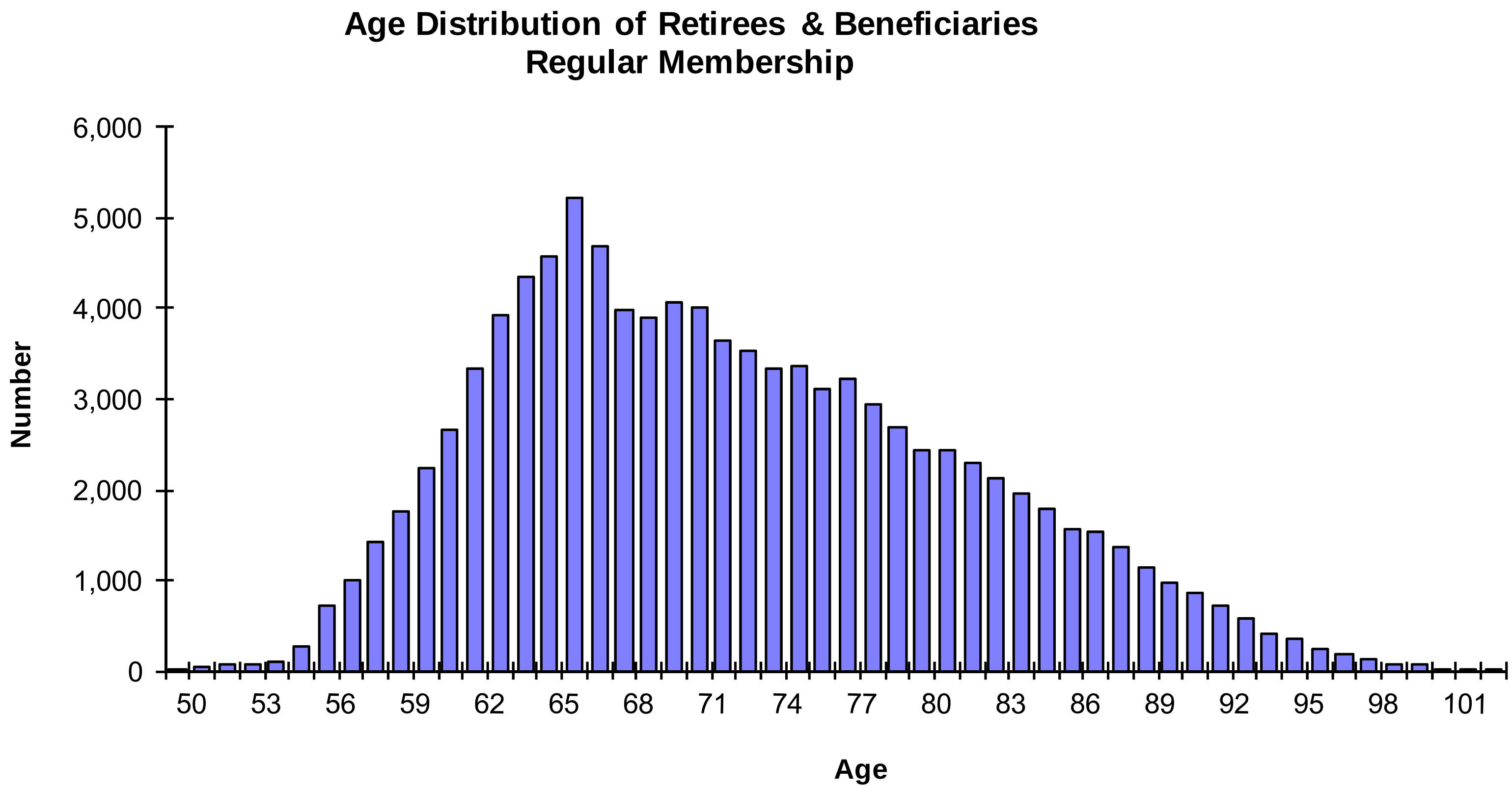
Males and Females - Sheriffs and Deputies

	Number of Members and Beneficiaries									Average
					Contingent			Period		Annual
Age	Option 1	Option 2	Option 3	Option 4	Beneficiary	Option 5	Option 6	Certain	Total	Benefit
Under 40	0	0	1	0	1	0	0	0	2	$15,460
40 to 44	1	0	0	0	0	0	0	0	1	29,889
45 to 49	6	2	0	1	1	0	2	0	12	28,253
50 to 54	4	3	7	12	2	1	22	0	51	37,117
55 to 59	22	23	11	34	1	3	52	0	146	38,803
60 to 64	38	17	9	34	4	9	73	0	184	32,353
65 to 69	37	15	14	31	6	8	37	0	148	27,703
70 to 74	22	12	4	25	8	5	16	0	92	23,859
75 to 79	16	2	3	24	5	3	7	0	60	16,037
80 to 84	6	7	3	9	6	1	0	0	32	10,751
85 to 89	3	1	0	5	8	0	0	0	17	8,312
90 to 94	1	2	0	0	0	0	0	0	3	7,802
95 to 99	0	0	0	0	0	0	0	0	0	NA
100 & up	0	0	0	0	0	0	0	0	0	NA
Counts	156	84	52	175	42	30	209	0	748	$28,980
% of Total	20.9%	11.2%	7.0%	23.4%	5.6%	4.0%	27.9%	0.0%	100.0%	

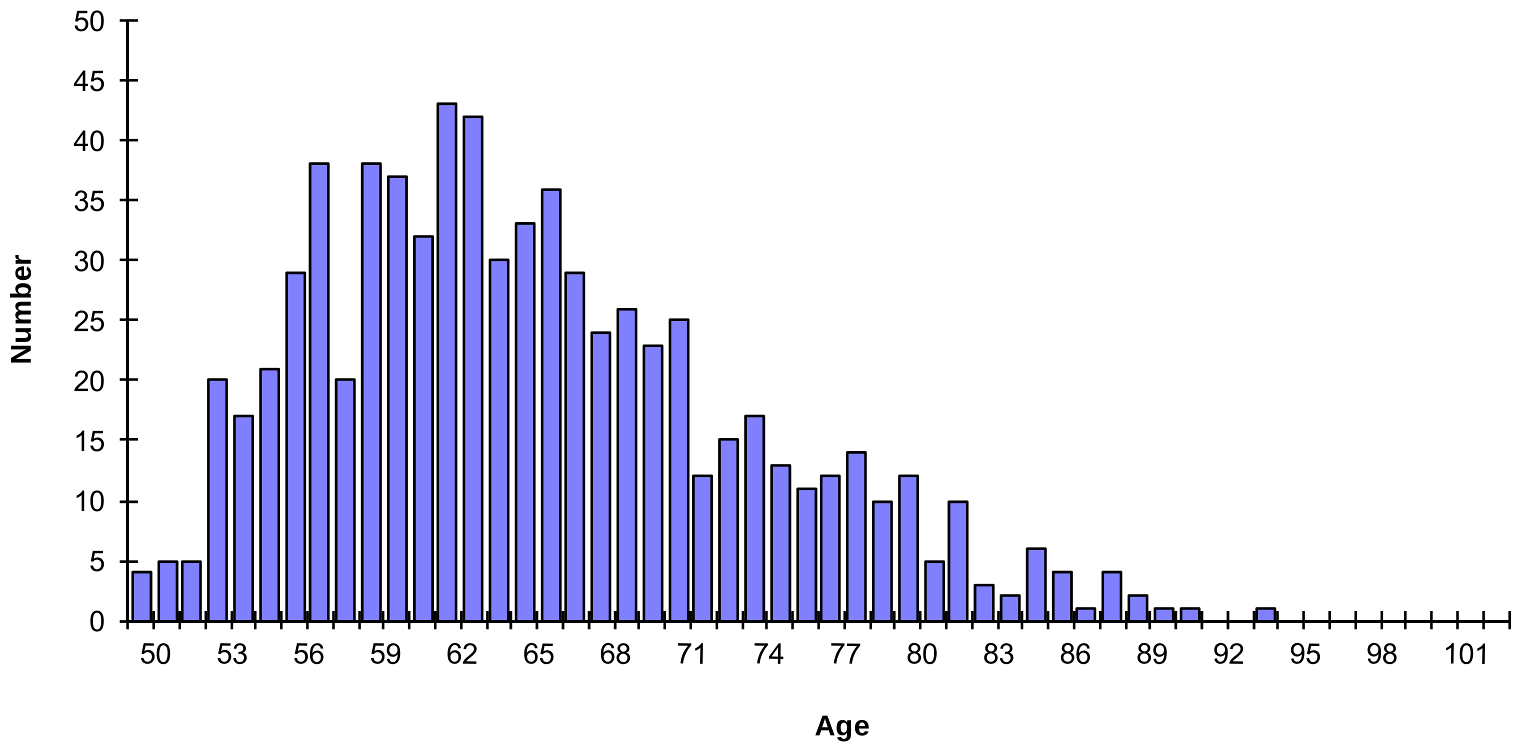
ANALYSIS OF RETIREES AND BENEFICIARIES

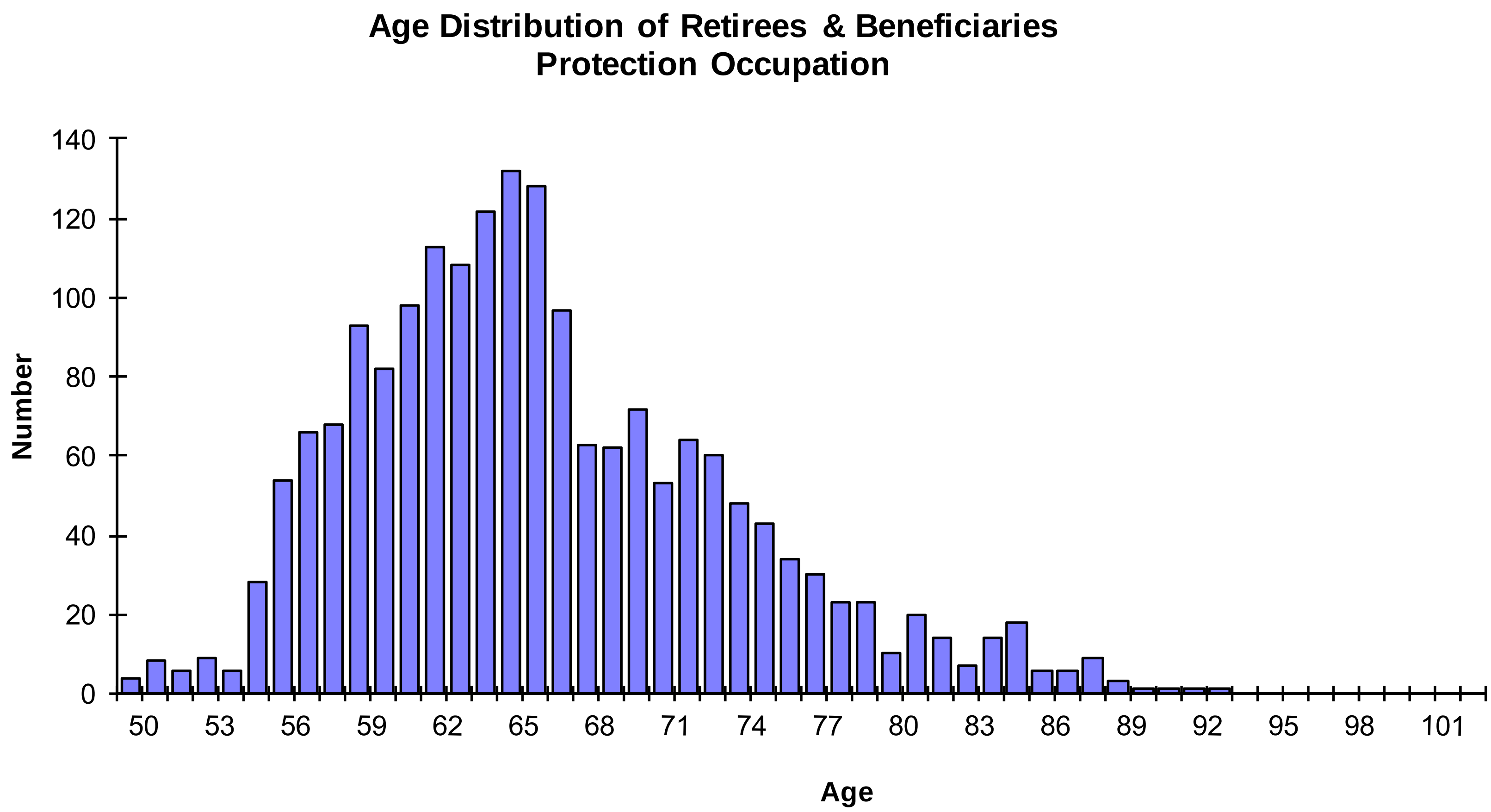
Males and Females - Protection Occupation

	Number of Members and Beneficiaries									Average
					Contingent			Period		Annual
Age	Option 1	Option 2	Option 3	Option 4	Beneficiary	Option 5	Option 6	Certain	Total	Benefit
Under 40	1	0	0	0	0	0	0	0	1	$21,765
40 to 44	1	0	0	2	1	0	2	2	8	20,237
45 to 49	4	0	3	1	1	0	3	0	12	19,449
50 to 54	8	4	4	6	2	0	9	0	33	19,458
55 to 59	58	32	21	57	11	15	115	0	309	30,867
60 to 64	106	96	38	85	18	17	163	0	523	27,403
65 to 69	100	76	43	82	12	27	141	1	482	21,921
70 to 74	64	42	30	64	22	13	62	0	297	17,029
75 to 79	40	13	9	50	15	13	13	0	153	13,886
80 to 84	18	2	1	25	13	6	0	0	65	11,549
85 to 89	14	3	1	12	7	5	0	0	42	8,208
90 to 94	0	0	0	1	2	1	0	0	4	6,074
95 to 99	0	0	0	0	0	0	0	0	0	NA
100 & up	0	0	0	0	0	0	0	0	0	NA
Counts	414	268	150	385	104	97	508	3	1,929	$22,704
% of Total	21.5%	13.9%	7.8%	20.0%	5.4%	5.0%	26.3%	0.2%	100.0%	


Age Distribution of Retirees & Beneficiaries
Regular Membership
Number
6,000
5,000
4,000
3,000
2,000
1,000
0
50
53
56
59
62
65
68
71
74
77
80
83
86
89
92
95
98
101
Age

Age Distribution of Retirees & Beneficiaries
Sheriffs and Deputies




Age Distribution of Retirees & Beneficiaries
Protection Occupation
Number
0
20
40
60
80
100
120
140
50
53
56
59
62
65
68
71
74
77
80
83
86
89
92
95
98
101
Age

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	104,933
Removed deaths prior to 7/1/13 and those no longer entitled to benefits	(293)
Records used in the valuation	104,640
Records on the not-in-pay data file	248,201
Records removed because the member has received all benefits	(264)[1]
Records used in the valuation	247,937

These records are allocated as follows:

Active members	165,095
Retired, reemployed members	8,310
Vested inactive members	30,058
Nonvested inactive members	44,474
Total	247,937

Nonvested inactive members include deceased vested inactive members with employee contributions still held by the System. Records that had no remaining benefit or had passed away prior to the valuation date were removed.

1 These 264 were removed because they are no longer active, nor are they entitled to benefits

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APPENDIX B

SUMMARY OF PLAN PROVISIONS

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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. Notable exceptions 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.
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:

Average Salary:	The average of the member's highest three years of covered wages. Effective July 1, 2012 the average of a member's highest five years of covered wages, but not less than the member's highest three years as of June 30, 2012, if vested at that time.

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 (seven years effective July 1, 2012). 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.

Retirement Benefits:

Normal Retirement	An 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 0.25% per month is applied for each month the benefit commences prior to normal retirement age (based on service at early retirement). Effective July 1, 2012, the reduction changes to 0.50% per month and applies to each month that the benefit commences before age 65. Transition rules apply if members have service both before and after July 1, 2012.
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: (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 (2) a deferred benefit determined in the same manner as for normal retirement. Payments can begin at normal or early retirement.

* Effective July 1, 2012 seven years of service for those not vested at that time.

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:* 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:
(December's Monthly benefit) X (12 months) X (Rate) X (Full calendar years retired) = FED

Source of Funds:

Regular Membership:

Contribution Rates			
Time Period	**Employees**	**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	4.50%	6.95%	11.45%
7/1/11 – 6/30/12	5.38%	8.07%	13.45%
7/1/12 and later	Actuarially Determined*		

*Change in contribution rate cannot exceed 1.0% per year.

SHERIFFS/DEPUTIES AND PROTECTION OCCUPATION:

Average Salary: The average of the member's highest three years of covered wages

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.

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.

Disability Benefit	Upon meeting requirements to be vested, (i) if the active or inactive member begins receiving federal Social Security or Railroad Retirement disability benefits, or (ii) upon being determined by IPERS to be disabled under the provisions of Iowa Code section 97B.50A. The disability benefits under Iowa Code section 97B.50A must be applied for through IPERS within one (1) year after termination of employment. Benefits under Iowa Code section 97B.50A 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 Benefit	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 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:

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: 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 members of the Sheriffs and Deputies group and the Protection Occupation group. This alternative applies to all IPERS retirement options listed above except Option 6. The Level Income payment alternative permits a 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: (December's Monthly benefit) x (12 months) x (Rate) x (Full calendar years retired) = FED

Source of Funds:

Sheriffs and Deputies:	Actuarially determined contribution rate. Employees contribute 50% and employers contribute 50%.
Protection Occupation:	Actuarially determined contribution rate. Employees contribute 40% and employers contribute 60%.

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APPENDIX C

ACTUARIAL ASSUMPTIONS AND METHODS

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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 members and 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 2010, based on experience from 2005-2009. The Investment Board has adopted and approved the use of the assumptions and methods presented in the 2005-09 Experience Study. In November, 2011, the Board adopted revised post-retirement mortality assumptions for the regular members after a coding error was discovered and the retained actuary recommended changing the current assumption. The following is a summary of the assumptions and methods used in the valuation:

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

To reflect anticipated future mortality improvements, generational mortality is used with projected mortality improvements based on Projection Scale AA.

Pre-Retirement (effective June 30, 2010)

State	
Male	RP2000 Employee Table, Generational, set back 3 years
Female	RP2000 Employee Table, Generational, set back 8 years
School	
Male	RP2000 Employee Table, Generational, set back 3 years
Female	RP2000 Employee Table, Generational, set back 8 years
Other	
Male	RP2000 Employee Table, Generational, no set back
Female	RP2000 Employee Table, Generational, set back 8 years
Sheriffs/Deputies and Protection Occupation	
Male	RP2000 Employee Table, Generational
Female	RP2000 Employee Table, Generational

5% of active deaths are assumed to be service related for non-regular members.

Post-Retirement (effective June 30, 2011 for Regular Members and June 30, 2010 for Sheriffs and Deputies and Protection Occupation Members)

State	RP2000 Healthy Annuitant Table, Generational
Male	1 Year set forward
Female	1 Year set back with 5% increase above age 75
School	RP2000 Healthy Annuitant Table, Generational
Male	No age adjustment but rates decreased by 5% below age 75
Female	3 Year set back with 10% decrease before age 75 and 10% increase above age 75
Other	RP2000 Healthy Annuitant Table, Generational
Male	1 Year set forward
Female	2 Year set back with 5% increase above age 75
Sheriffs/Deputies and Protection Occupation	RP2000 Healthy Annuitant Table, Generational
Male	No age adjustment
Female	No age adjustment

Beneficiaries: Same as members

Disabled Members (all groups): RP2000 Disabled Mortality, Generational
Set back 1 year for males and set forward 3 years for females

Retirement Rates (effective June 30, 2010)

Upon meeting the requirements for early retirement, the following rates apply to Regular Members:

	Assumed Retirement Rates – Early		
Age	State	School	Other
55	5.0%	8.0%	5.0%
56	5.0%	8.0%	5.0%
57	5.0%	8.0%	5.0%
58	5.0%	8.0%	5.0%
59	5.0%	9.0%	5.0%
60	5.0%	10.0%	5.0%
61	15.0%	15.0%	10.0%
62	15.0%	20.0%	20.0%
63	15.0%	20.0%	20.0%
64	15.0%	20.0%	20.0%

Upon reaching the requirements for normal retirement (unreduced benefits), the following rates apply:

Assumed Retirement Rates – Select

	Unreduced		
Age	State	School	Other
55	20.0%	30.0%	20.0%
56	15.0%	30.0%	20.0%
57	15.0%	30.0%	20.0%
58	15.0%	30.0%	20.0%
59	15.0%	30.0%	20.0%
60	15.0%	30.0%	20.0%
61	20.0%	30.0%	20.0%
62	40.0%	40.0%	40.0%
63	35.0%	30.0%	35.0%
64	30.0%	30.0%	35.0%
65	30.0%	30.0%	30.0%

Assumed Retirement Rates – Ultimate

	Unreduced		
Age	State	School	Other
55	15.0%	23.0%	15.0%
56	15.0%	23.0%	15.0%
57	15.0%	23.0%	15.0%
58	15.0%	23.0%	15.0%
59	15.0%	23.0%	15.0%
60	15.0%	23.0%	15.0%
61	20.0%	30.0%	20.0%
62	40.0%	35.0%	35.0%
63	30.0%	30.0%	25.0%
64	30.0%	30.0%	25.0%
65	30.0%	45.0%	40.0%
66	30.0%	35.0%	30.0%
67	20.0%	25.0%	20.0%
68	20.0%	25.0%	20.0%
69	35.0%	40.0%	40.0%
70	100.0%	100.0%	100.0%

	Assumed Retirement Rates	
Age	Sheriffs and Deputies	Protection Occupation
50	20.0%	
51	20.0%	
52	20.0%	
53	20.0%	
54	20.0%	
55	25.0%	20.0%
56	20.0%	10.0%
57	20.0%	10.0%
58	20.0%	10.0%
59	20.0%	10.0%
60	20.0%	10.0%
61	20.0%	10.0%
62	35.0%	35.0%
63	50.0%	30.0%
64	50.0%	30.0%
65	100.0%	100.0%

Terminated vested members are assumed to retire at age 62 (55 for Sheriffs/Deputies and Protection Occupation groups).
For Regular Membership, retired reemployed 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, 2010)

	Assumed Rates					
	Males			Females		
Age	State	School	Other	State	School	Other
27	0.020%	0.020%	0.020%	0.020%	0.030%	0.020%
32	0.020%	0.020%	0.020%	0.020%	0.030%	0.020%
37	0.040%	0.040%	0.040%	0.032%	0.040%	0.032%
42	0.065%	0.065%	0.065%	0.051%	0.050%	0.051%
47	0.120%	0.110%	0.140%	0.087%	0.090%	0.087%
52	0.220%	0.160%	0.326%	0.220%	0.165%	0.200%
57	0.320%	0.260%	0.630%	0.390%	0.240%	0.350%
62	0.420%	0.360%	0.900%	0.620%	0.320%	0.500%

Age	Assumed Rates Sheriffs/Deputies Protection Occupation Rate
27	0.150%
32	0.150%
37	0.150%
42	0.180%
47	0.230%
52	0.280%
57	0.380%
62	0.510%

Rates of Termination of Employment (effective June 30, 2010)

Regular Membership

Years of Service	Male State	Male School	Male Other	Female State	Female School	Female Other
1	15.4%	15.0%	21.0%	15.4%	15.0%	21.0%
5	5.5%	6.9%	8.4%	5.5%	6.9%	9.2%
10	2.2%	2.9%	4.3%	2.2%	2.9%	5.8%
15	1.7%	1.8%	2.6%	1.7%	1.8%	4.1%
20	1.1%	1.3%	2.4%	1.1%	1.3%	3.2%
25	1.1%	1.3%	2.0%	1.1%	1.2%	2.4%
30	1.1%	1.2%	1.2%	1.1%	1.2%	1.5%

Sheriffs/Deputies and Protection Occupation

Age	Rate of Termination
22	5.8%
27	5.8%
32	3.5%
37	3.0%
42	2.6%
47	2.0%
52	2.0%

Probability of Electing a Deferred Vested Benefit (effective June 30, 2010)

	Regular Membership					
	Male			Female		
Years of Service	State	School	Other	State	School	Other
5	66.0%	76.0%	61.0%	61.0%	80.0%	70.0%
10	73.0%	81.0%	66.0%	66.0%	80.0%	73.0%
15	78.0%	86.0%	71.0%	76.0%	85.0%	80.0%
20	83.0%	91.0%	76.0%	86.0%	90.0%	85.0%
25	88.0%	95.0%	80.0%	96.0%	95.0%	90.0%
30	90.0%	95.0%	80.0%	100.0%	100.0%	90.0%

	Sheriffs/Deputies and Protection Occupation
Years of Service	Rate
5	53%
10	65%
15	85%
20	95%
25	100%
30	100%

Rates of Salary Increase* (effective June 30, 2010)

	Annual Increase			
Years of Service	State	School	Other	Sheriffs/Deputies and Protection Occupation
1	15.0%	17.0%	15.0%	17.0%
5	7.6%	6.5%	6.1%	6.5%
10	6.3%	5.3%	5.3%	5.3%
15	5.2%	4.5%	4.8%	4.8%
20	4.8%	4.2%	4.5%	4.5%
25	4.6%	4.0%	4.4%	4.5%
30+	4.3%	4.0%	4.4%	4.0%

* Includes 4.0% wage growth

ACTUARIAL COST METHOD (adopted 1996)

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.

ACTUARIAL AMORTIZATION METHOD (adopted 2013)

The portion of the actuarial present value of benefits allocated to the valuation year is called the normal cost. The portion of the actuarial present value of benefits not provided for by the actuarial present value of future normal costs is called the actuarial liability. Deducting the actuarial value of assets from the actuarial liability determines the unfunded actuarial liability (UAL). The one-year lag between the valuation date and the date the contribution rate is effective is reflected in calculating the corresponding amortization payment. The UAL is amortized according to the Actuarial Amortization Method adopted by the Investment Board and summarized below:

1. Amortization payments will be calculated as a level percentage of payroll.
2. For the actuarial valuation prepared as of June 30, 2013, the amortization period of the UAL shall be 30-year open for all membership groups.
3. For the actuarial valuation prepared as of June 30, 2014:
   a. The UAL for each membership group shall be amortized over a 30-year closed period.
   b. This will be designated as the initial UAL base for subsequent valuations and it will be amortized over the remaining years of the 30-year closed period set on June 30, 2014.
4. For each valuation subsequent to June 30, 2014, annual net experience gains/losses for each membership group will be amortized over a new, closed 20-year period.
5. Subsequent plan amendments or changes in actuarial assumptions or methods that create a change in the UAL will be amortized over a demographically appropriate period selected by the Investment Board at the time that the change is incurred.
6. The dollar amount of the UAL payment for purposes of computing the UAL component of the actuarial and required contribution rate will be the sum of the amortization payments for each amortization schedule divided by the total projected payroll. Unless the plan has been 110 percent funded for the current and prior two years, a negative amortization payment shall be ignored.

7. If the valuation shows that the group has surplus, the prior amortization bases will be eliminated and one base equal to the amount of surplus shall be established. The amortization period of a surplus shall be a 30-year open period for all groups.

ACTUARIAL VALUE OF ASSETS SMOOTHING METHOD (adopted 2007)

The market value of assets, representing a fair 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 applied to the prior actuarial value 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 be 80. If a retirement date is also not available, the member is assumed to have retired at 65.

If a beneficiary birth date is needed but not supplied, husbands 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 Sheriffs/Deputies and Protection Occupation members are assumed to be male.

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

Membership Transfers

IPERS provides a code in the valuation data to indicate that a member is in a membership group (regular, Sheriffs and Deputies and Protection Occupation) different from that on the prior valuation date. The actuarial liability for these members is calculated under the assumptions and provisions of the prior membership group. A preliminary funded ratio (before asset transfer) is determined for the three membership groups. Assets are then transferred from the prior to the current membership group based on the funded ratio of the prior group times the actuarial liability of the member in the prior group. Then, the members are revalued in the current membership group for purposes of valuation calculations.

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 current year ending June 30, increased by the salary scale.

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

Accrued Service	Service credited under the system that was rendered before the date of the actuarial valuation.
Actuarial Assumptions	Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.
Actuarial Cost Method	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."
Actuarial Equivalent	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.
Actuarial Liability	The difference between the actuarial present value of system benefits and the actuarial value of future normal costs. Also referred to as "accrued liability" or "actuarial accrued liability."
Actuarial Present Value	The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment.
Amortization	Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with lump sum payment.
Experience Gain (Loss)	The difference between actual experience and actuarial assumptions anticipated experience during the period between two actuarial valuation dates.
Normal Cost	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 actuarial value of 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.

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APPENDIX D

CONTRIBUTION RATE FUNDING POLICY

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Background:

IPERS is charged with setting a "Required Contribution Rate" for each membership category within IPERS that will discharge its liabilities. Iowa Code §97B.11(3)(d) provides the basic framework for implementing this charge by stating:

> The Required Contribution Rate that is set by the system for a membership category shall be the contribution rate the system actuarially determines, based upon the most recent actuarial valuation of the system and using the actuarial methods, assumptions, and funding policy approved by the investment board, is the rate required by the system to discharge its liabilities as a percentage of the covered wages of members in that membership category. However, the Required Contribution Rate set by the system for members in regular service for a fiscal year shall not vary by more than one percentage point from the Required Contribution Rate for the prior fiscal year.

Goal:

To establish policy and procedures in setting contribution rates that combined with investment income will fund the benefits specified in Chapter 97B of the Iowa Code.

To move towards fully funding the benefits (100% or greater funded ratio) in as expeditious manner as is reasonable within the guidelines acknowledged herein.

Procedure:

The Investment Board shall retain a consulting actuary to conduct an annual actuarial valuation of assets and liabilities. The consulting actuary shall use the entry age normal cost method and all other actuarial assumptions and methods approved by the Investment Board.

In the annual valuation process, the consulting actuary shall calculate an Actuarial Contribution Rate and a Required Contribution Rate pursuant to this policy. Each shall be calculated as a level percent of pay.

There is a one year lag between the completion of an annual actuarial valuation report and the fiscal year to which the contribution rates calculated therein are applied. Therefore, the Actuarial Contribution Rate and the Required Contribution Rate declared in the annual valuation process are applicable to the fiscal year immediately following the completion of the valuation report (for example the rates declared in the report presented to the Investment Board in December, 2013 are applicable to the rates for the fiscal year beginning July 1, 2014).

Actuarial Contribution Rate (ACR):

1. ACR is the combined employer and employee contribution rate that is the minimum rate necessary to fund the benefits using the actuarial assumptions and methods approved by the Investment Board.

2. A separate ACR shall be determined for each membership group within IPERS according to this policy.

3. The ACR shall consist of:
    a. Normal cost and an amortization payment (not less than zero) of any unfunded actuarial liability.

b. Normal cost may only be offset by a negative amortization payment after a membership group has attained a funded ratio of 110 percent or greater for 3 consecutive years.

Required Contribution Rate:

1. The Required Contribution Rate is the combined employer and employee rate payable pursuant to this policy and Iowa Code §97B.11(3)(d).

2. The Required Contribution Rate shall be determined by comparing the ACR determined in the annual valuation process to the Required Contribution Rate of the previous year.
    a. IF the ACR is less than the previous Required Contribution Rate by fewer than 50 basis points, then the Required Contribution Rate shall remain unchanged from the previous year.
    b. If the ACR is less than the previous Required Contribution Rate by 50 basis points or more, then the Required Contribution Rate shall be lowered by 50 basis points provided the funded ratio of the membership group is 95% or higher.
    c. If the ACR is greater than the Required Contribution Rate of the previous year, then the Required Contribution Rate shall be:
        i. Increased to be equal to ACR for Sheriffs and Deputies.
        ii. Increased to be equal to ACR for Protection Occupation.
        iii. Increased to be equal to ACR for Regular membership, or one percentage point greater than the prior year's Required Contribution Rate, whichever is smaller.

Policy Guidelines:

In adopting actuarial assumptions and methods to be used in setting contributions, the Investment Board shall strive to provide a balance among the following:

1. Stability in contributions (such as use of smoothing and amortization schedules that do not produce dramatic swings in the required contributions from year to year).

2. Disciplined funding approach (such as requiring full payment of normal cost and an amortization payment towards the unfunded actuarial liability and deferring decreases in contribution rates until strong funded ratios are attained).

3. Interperiod equity (such as shortening the amortization schedule when reasonable and amortization of retroactive benefit enhancements over a reasonable time period such as the average working lifetime for active members and the average life expectancy of retired members).

4. Support an affordable, sustainable plan (in consultation with the BAC review affordability of required contribution rates and/or the benefit provisions).

5. At a minimum, this policy will be reviewed in conjunction with the quadrennial experience study.