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**ILLINOIS MUNICIPAL RETIREMENT FUND**  
**Annual Actuarial Valuation**

**December 31, 2003**



**Gabriel, Roeder, Smith & Company**

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**GABRIEL, ROEDER, SMITH & COMPANY**

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April 15, 2004

Board of Trustees  
Illinois Municipal Retirement Fund  
Oak Brook, Illinois 60521

Ladies and Gentlemen:

The results of the **December 31, 2003 annual actuarial valuations of members** covered by the Illinois Municipal Retirement Fund are presented in this report. The purpose of the valuations, as provided by Article 7 of the Illinois Pension Code, is to measure IMRF's funding progress and to establish contribution rates for the 2005 calendar year.

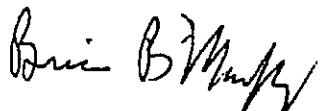
The valuations are based upon current plan provisions related to Regular Members, Sheriff's Law Enforcement Personnel (SLEP), and Elected County Officials (ECO) employment. All promised benefits are included in the actuarially calculated contribution rates. These provisions are summarized in Section B.


IMRF staff furnished the individual member statistical data required for the valuations, together with pertinent data on financial operations. Their cooperation in furnishing these materials is acknowledged with appreciation.

The actuarial assumptions used in the valuations are summarized in Section D of this report. The Board of Trustees establishes the assumptions after consulting with the actuary. They are internally consistent and are based on the results of the Triennial Experience Study covering 1999-2001 experience.

The valuations were completed by qualified actuaries in accordance with accepted actuarial procedures prescribed by the Actuarial Standards Board. The qualified actuaries are members of the American Academy of Actuaries and are experienced in performing actuarial valuations of public employee retirement systems. To the best of our knowledge this report is complete and accurate and the actuarial methods and assumptions produced results that are reasonable. It is our opinion that the Illinois Municipal Retirement Fund is in sound condition in accordance with actuarial principles of level percent of payroll financing.

Respectfully submitted,  
GABRIEL, ROEDER, SMITH & COMPANY

  
Brian B. Murphy, F.S.A.

  
Norman L. Jones, F.S.A.

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## INTRODUCTION

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IMRF is established under statutes adopted by the Illinois General Assembly. It is a multiple employer defined benefit pension plan that, as of December 31, 2003, serves 3,155 active plans and 361,010 active, inactive and retired persons. Since IMRF reports information to us by plan, there are cases in which a person with employment in more than one plan is counted multiple times for census counts. This produces an overstatement in the census when compared with true counts of people. Liabilities are, however, correctly calculated and apportioned among employers. This issue may affect inactive members to a greater extent than it affects others. IMRF is funded by both member and employer contributions. Members contribute at fixed rates determined by statute. Regular members contribute 4.5% of pay; SLEP members contribute 6.5%; ECO members contribute 7.5%. Participating employers make all additional contributions needed to provide benefits. Each employer contributes to a separate account within IMRF which, when combined with member contributions and investment income, will be sufficient to provide future benefits for its own employees. Employer contributions are computed each year in the actuarial valuation and consist of:

- **Normal Cost Contributions** for normal and early retirement benefits, separation benefits, permanent disability benefits, and annuity type death benefits. These contributions are the same for each employer.
- **Contributions for lump sum death-in-service benefits**, which are separately determined for each employer.
- **Contributions for temporary disability benefits**, which are the same for each employer.
- **Contributions for 13th checks**, which are 0.62% of covered payroll for each employer.
- **Contributions for ERI unfunded liabilities** which are separately determined for each employer.
- **Contributions for other unfunded liabilities**, which are separately determined for each employer. For most employers with taxing authority, unfunded liabilities are being funded over 27 remaining years. For most other employers the remaining period is 5 years. A separate schedule applies to each year's new employers. The amortization policy was modified this year, for contributions beginning in 2005, based on each entity's funded ratio and is described on page D-9.

Employer contributions computed in this valuation compared with those computed in the prior valuation are shown below.

	<b>Average Employer Contribution Rates Expressed as %'s of Active Member Pays</b>		
	<b>Regular</b>	<b>SLEP</b>	<b>ECO</b>
This Valuation	9.25%	17.15%	42.66%
Prior Valuation	7.82%	16.29%	44.90%

This year's valuation results were affected by:

- The continuing phase-in of investment losses that occurred from 2000 to 2002. The investment loss that is shown on pages A-10 and C-1 is a result of the asset recognition method that phases in gains and losses over a five-year period.
- Increases in the covered population.
- ERI liabilities.
- Revisions to the amortization policy for underfunded and overfunded entities.

Although investment results were very favorable during 2003, the valuation shows that for the first time since 1998, IMRF (in total) has an unfunded liability (please see page A-11). The Actuarial Value of Assets exceeds the Market Value this year by \$1.2 billion (about 7% of Market Value). Detail is given on page C-1. This means that over the next several years, investment return of \$1.2 billion above the assumed rate will be needed to prevent losses from being recognized in the valuation. Losses lead to higher contribution rates.

Section A of this report describes this year's valuation results in depth.

# **SECTION A**

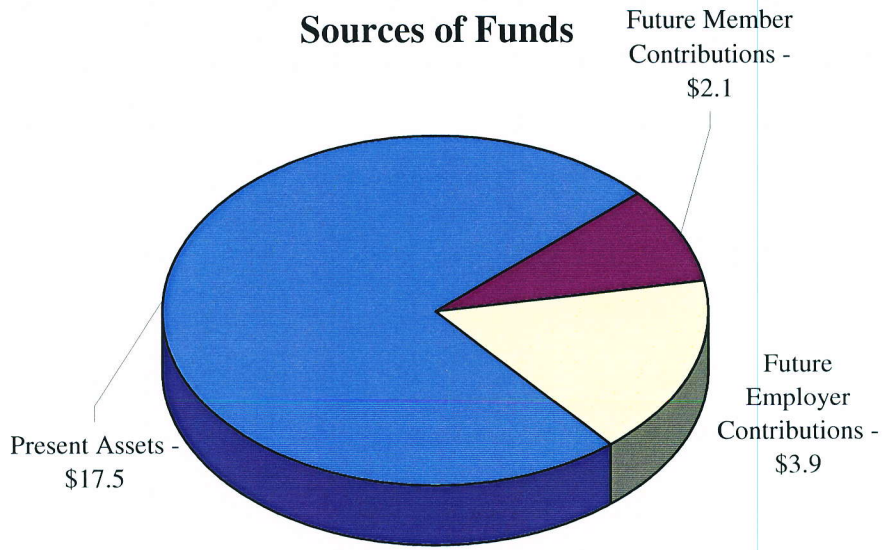
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## **Valuation Results**

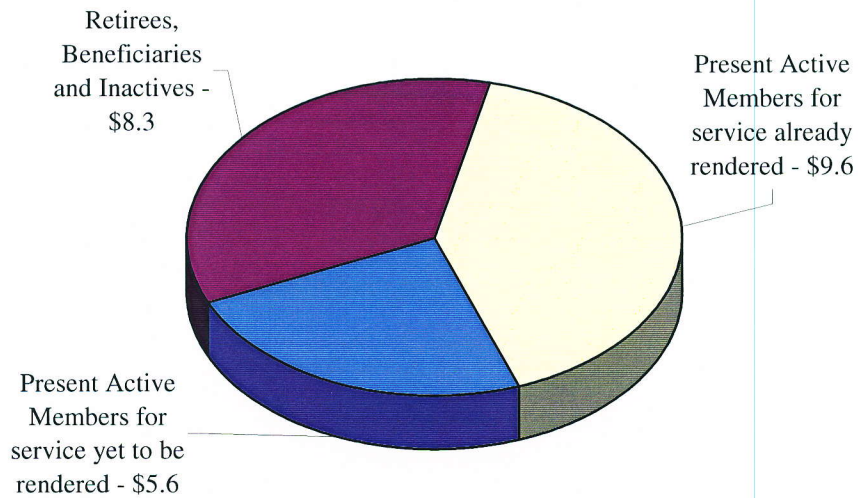
**FINANCING \$23.5 BILLION WORTH OF BENEFIT PROMISES  
TO PRESENT MEMBERS, RETIREES AND BENEFICIARIES  
DECEMBER 31, 2003  
(AMOUNTS IN \$BILLIONS)**

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**Sources of Funds**



**IMRF Obligations**



**ACTUARIAL BALANCE SHEET**  
**DECEMBER 31, 2003**

**Funding Sources**

	<b>Regular</b>	<b>SLEP</b>	<b>ECO</b>	<b>Total</b>
<b>Present Valuation Assets</b>				
Member Contributions	\$ 3,025,520,280	\$ 177,392,371	\$ 16,855,533	\$ 3,219,768,184
Employer Assets	6,160,499,949	309,507,279	11,324,877	6,481,332,105
Retired Life Assets	6,195,279,128	412,516,492	66,694,566	6,674,490,186
Market Value Adjustment	1,070,703,246	62,435,205	6,000,969	1,139,139,420
Death and Disability Reserves				15,160,923
<b>Total Present Assets</b>	<b>16,452,002,603</b>	<b>961,851,347</b>	<b>100,875,945</b>	<b>17,529,890,818</b>
<b>Future Assets</b>				
Member Contributions	1,915,076,964	126,885,086	10,138,611	2,052,100,661
Employer Contributions				
Normal Costs	3,238,607,840	243,619,375	24,427,288	3,506,654,503
Unfunded Liability	199,639,080	127,412,494	109,161,059	436,212,633
<b>Total Employer</b>	<b>3,438,246,920</b>	<b>371,031,869</b>	<b>133,588,347</b>	<b>3,942,867,136</b>
<b>Total Future Assets</b>	<b>5,353,323,884</b>	<b>497,916,955</b>	<b>143,726,958</b>	<b>5,994,967,797</b>
<b>Total Funding Sources</b>	<b>\$21,805,326,487</b>	<b>\$ 1,459,768,302</b>	<b>\$ 244,602,903</b>	<b>\$23,524,858,615</b>

**Funding Uses**

<b>Funds Needed for</b>	<b>Regular</b>	<b>SLEP</b>	<b>ECO</b>	<b>Total</b>
Active Members	\$14,045,658,199	\$ 990,818,584	\$ 162,748,259	\$15,199,225,042
Inactive Members	1,564,389,160	56,433,226	15,160,078	1,635,982,464
Retirees and Beneficiaries	6,195,279,128	412,516,492	66,694,566	6,674,490,186
Death and Disability Benefits				15,160,923
<b>Total Actuarial Present Value</b>	<b>\$21,805,326,487</b>	<b>\$ 1,459,768,302</b>	<b>\$ 244,602,903</b>	<b>\$23,524,858,615</b>



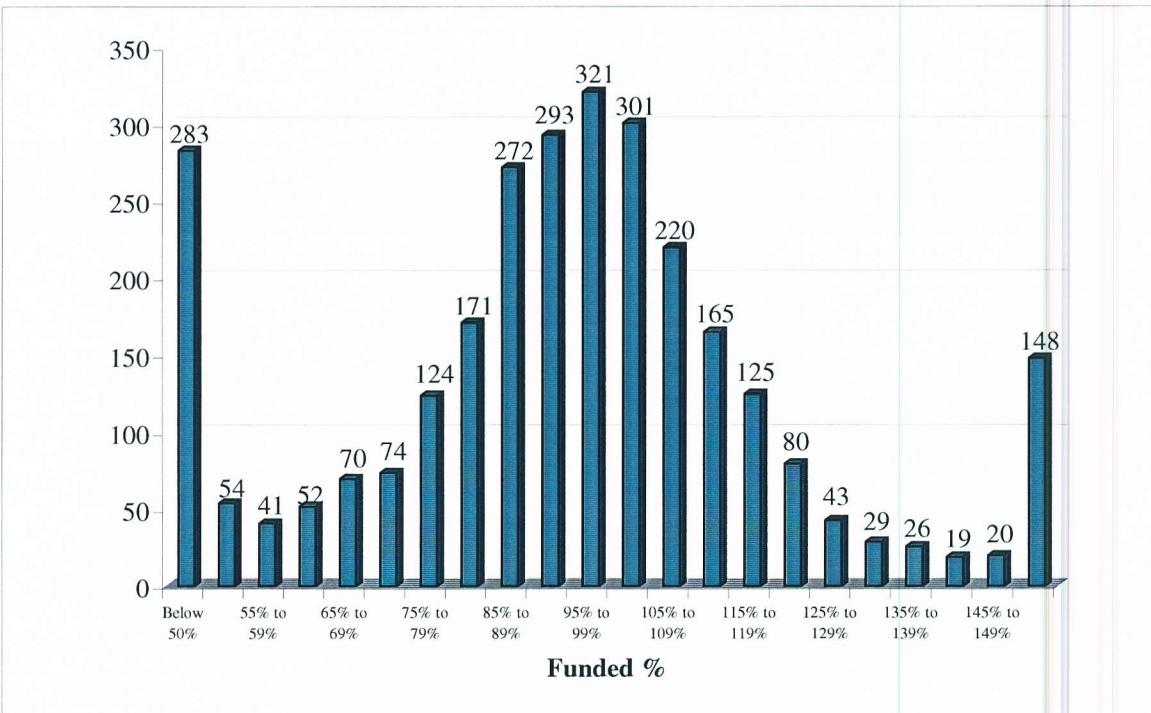
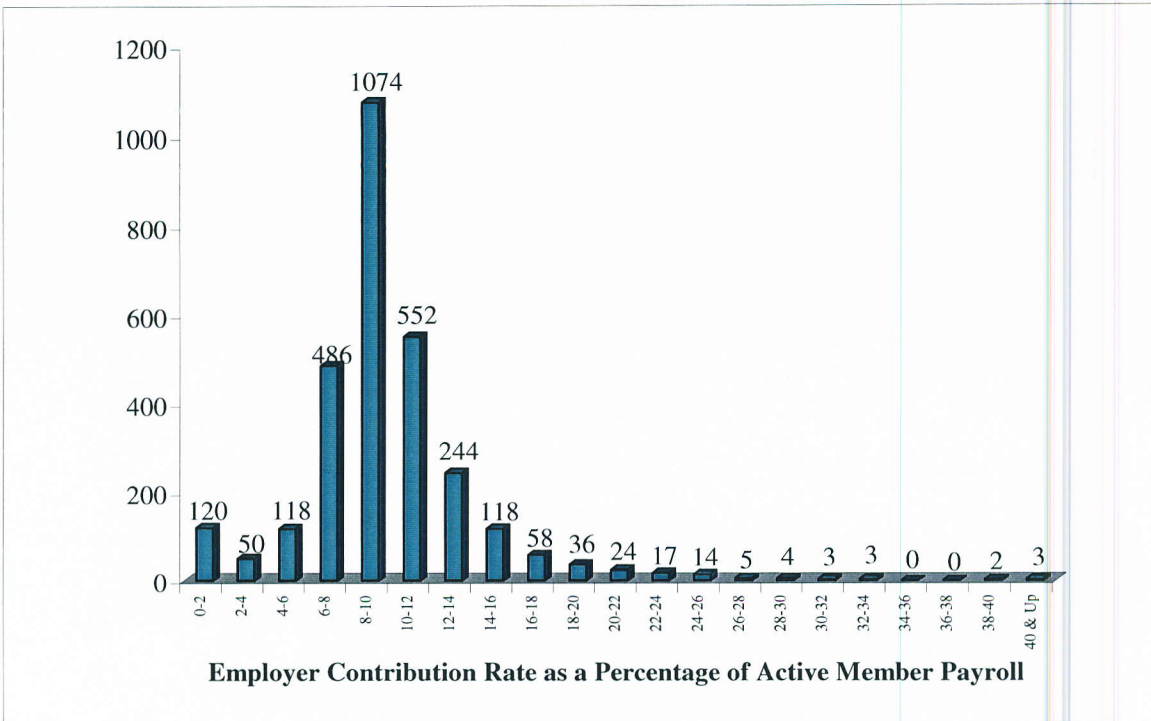
**DEVELOPMENT OF AVERAGE CONTRIBUTION RATES  
 APPLICABLE TO CALENDAR YEAR 2005  
 (RESULTS AS OF DECEMBER 31, 2003)**

	% of Active Member Pays		
	Regular	SLEP	ECO
Average Employer Contributions for			
Normal Cost	7.61 %	12.48 %	18.07 %
Lump Sum Death-in-Service Benefits	0.17 %	0.17 %	0.21 %
Temporary Disability	0.21 %	0.21 %	0.21 %
13th Checks	0.62 %	0.62 %	0.62 %
Unfunded (Overfunded) Liabilities (27/5 years)	0.31 %	3.48 %	23.52 %
Early Retirement Incentive Liabilities	0.33 %	0.19 %	0.03 %
<b>Total Average Employer Rate</b>	<b>9.25 %</b>	<b>17.15 %</b>	<b>42.66 %</b>
Prior Year Averages	7.82 %	16.29 %	44.90 %

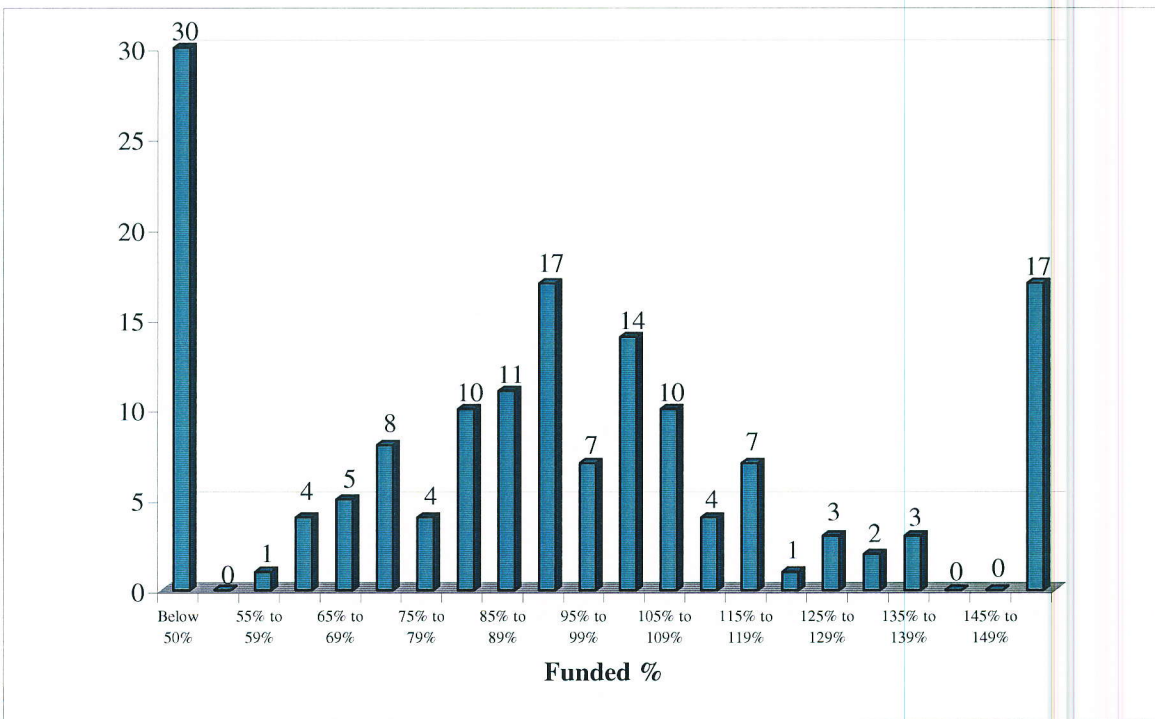
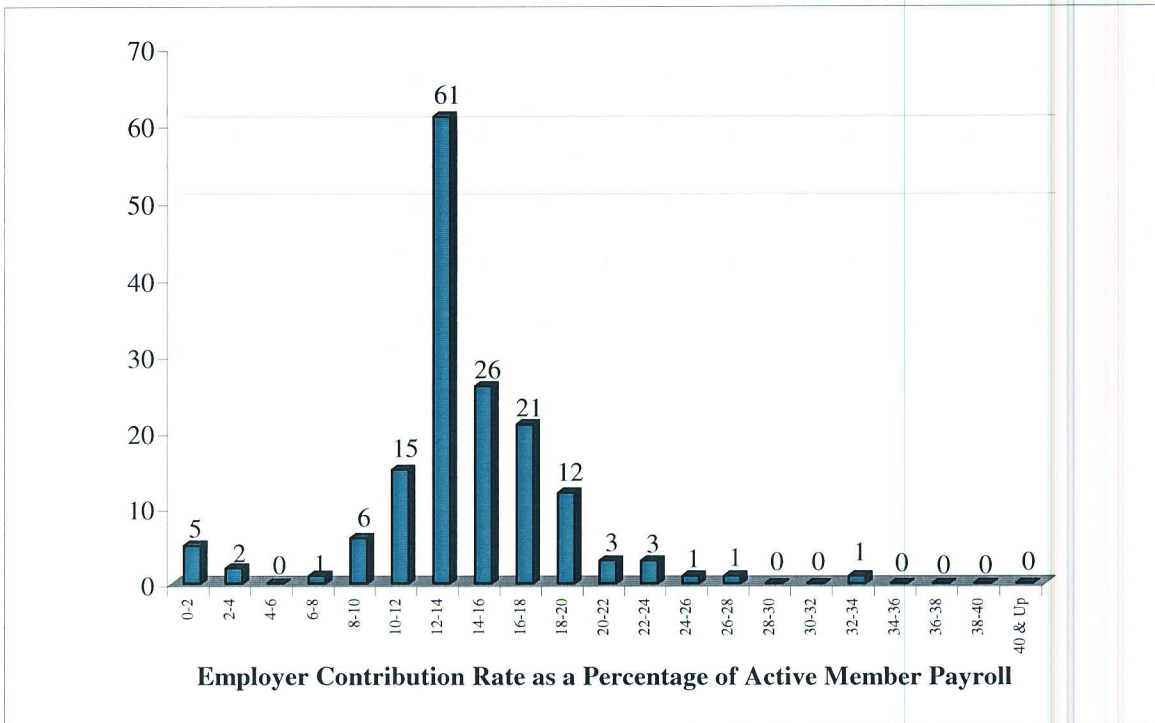
Each participating employer pays the same normal cost rate and the same rate for temporary disability benefits and 13th checks. Rates for lump sum death-in-service benefits, unfunded (overfunded) liabilities, and early retirement incentive liabilities are separately determined for each employer, and can vary widely. Because of this, the average contribution rates tell only part of the story. Pages A-4 through A-7 show the distribution of computed employer contribution rates, funding percents, and rate changes from the prior year among the 2,931 Regular plans, 158 SLEP plans and 66 ECO plans. IMRF staff reviews all of the computed rates and in some cases may make adjustments to those rates that are not reflected in this report. While most contribution rates are near the average, some employer rates are below 2% and some are over 40% of payroll.

Employer contributions made during calendar year 2003 amounted to \$321 million, which was approximately 100% of the amount that had been computed in the 2001 valuation. In particular, for each of the last three years actual contributions have been at least 90% of the actuarially computed rates.

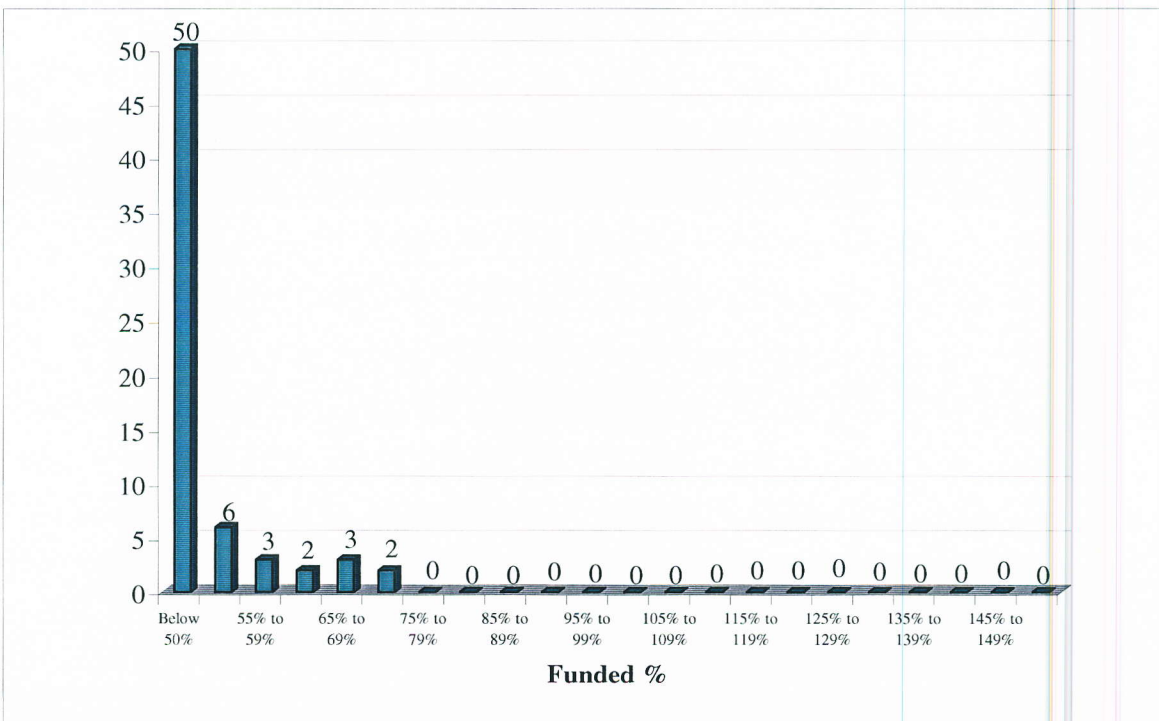
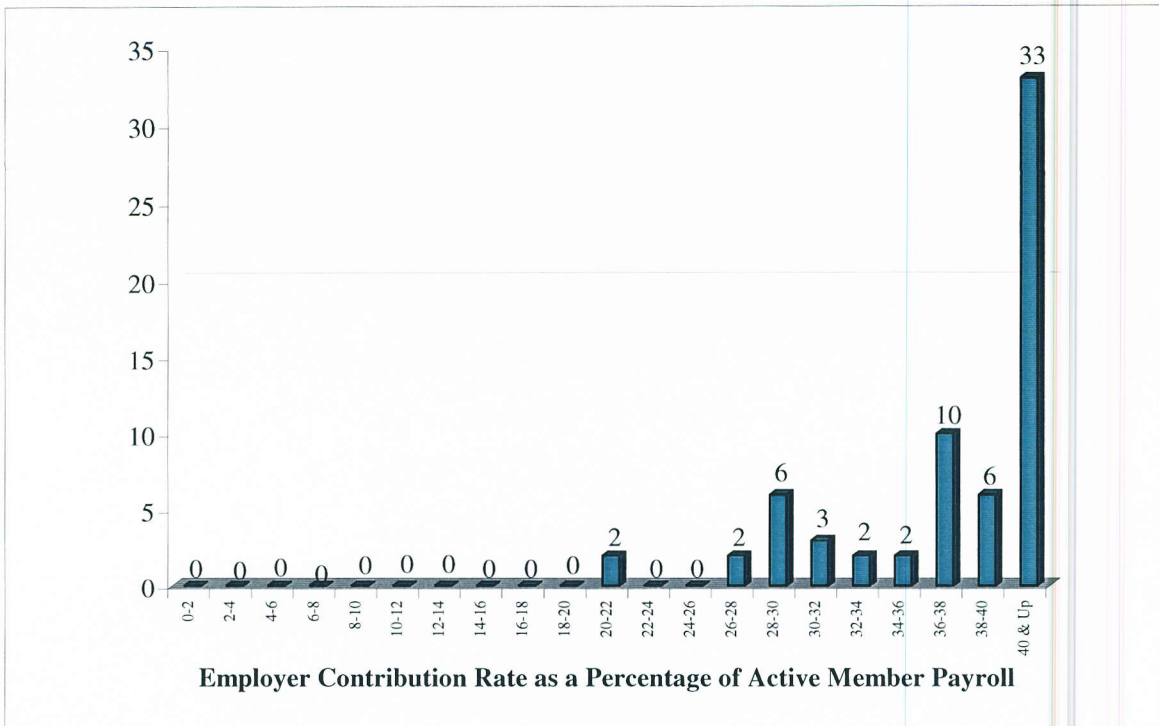
# EMPLOYER CONTRIBUTION RATES AND FUNDED PERCENTS 2,931 REGULAR EMPLOYERS AT DECEMBER 31, 2003



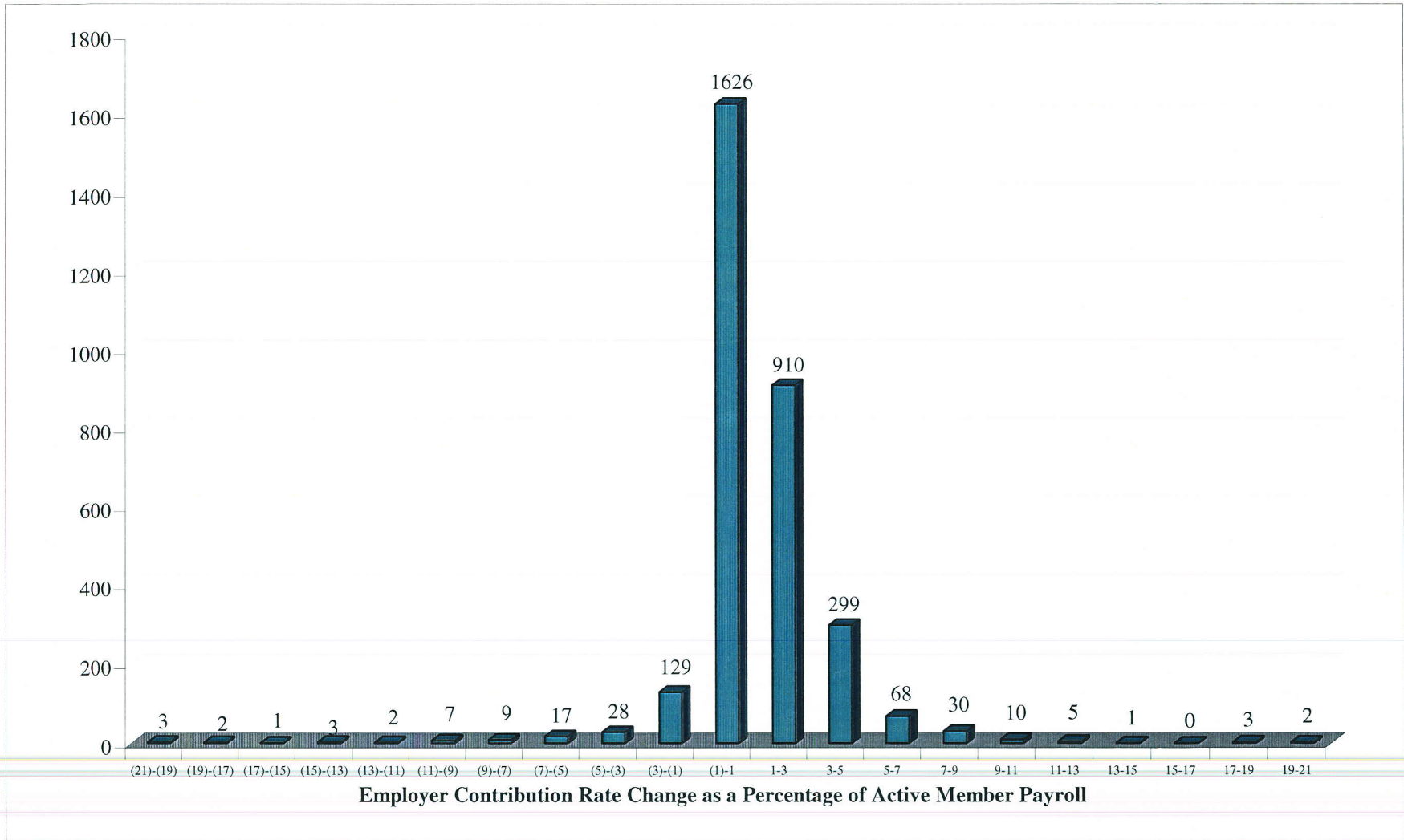
# EMPLOYER CONTRIBUTION RATES AND FUNDED PERCENTS 158 SLEP EMPLOYERS AT DECEMBER 31, 2003



## EMPLOYER CONTRIBUTION RATES AND FUNDED PERCENTS 66 ECO EMPLOYERS AT DECEMBER 31, 2003



## EMPLOYER CONTRIBUTION RATE CHANGES - 2003 ACTUARIAL VALUATIONS 3,155 EMPLOYERS



## HISTORICAL SUMMARY OF EMPLOYER RATES

Rate Applies to Calendar Year	Rate Computed as of December 31	Employer Contribution Rate Expressed as % of Active Payroll					
		Regular Members		SLEP Members		ECO Members	
		Normal Cost	Average Total Rate	Normal Cost	Average Total Rate	Normal Cost	Average Total Rate
1983	1981*	2.88%	6.58%	3.56%	6.20%		
1984	1982	2.97%	6.55%	3.90%	6.22%		
1985	1983	3.57%	7.35%	4.92%	7.03%		
1986	1984*	2.59%	7.52%	3.93%	6.46%		
1987	1985	2.61%	7.34%	4.28%	6.66%		
1988	1986	2.51%	7.29%	4.40%	7.11%		
1989	1987*#	6.94%	12.17%	7.93%	13.01%		
1990	1988	6.94%	11.79%	7.90%	12.53%		
1991	1989	6.94%	11.60%	7.88%	12.02%		
1992	1990*	8.24%	11.89%	10.31%	14.01%		
1993	1991*#	7.04%	10.58%	8.49%	12.01%		
1994	1992	7.33%	10.77%	8.87%	11.82%		
1995	1993*	7.22%	10.19%	9.50%	12.00%		
1996	1994	7.22%	9.98%	9.51%	11.97%		
1997	1995	7.27%	9.61%	9.32%	11.43%		
1998	1996*	7.21%	9.64%	10.22%	13.94%		
1999	1997!	7.23%	9.03%	10.62%	14.65%	21.48%	36.14%
2000	1998	7.17%	8.16%	10.42%	14.28%	23.39%	41.38%
2001	1999*	7.41%	6.64%	12.02%	14.86%	23.85%	42.58%
2002	2000	7.62%	5.87%	11.94%	14.13%	18.05%	38.46%
2003	2001	7.66%	6.22%	11.96%	14.04%	17.95%	40.37%
2004	2002*	7.60%	7.82%	12.47%	16.29%	18.18%	44.90%
<b>2005</b>	<b>2003</b>	<b>7.61%</b>	<b>9.25%</b>	<b>12.48%</b>	<b>17.15%</b>	<b>18.07%</b>	<b>42.66%</b>

\* Assumption change.

# Benefit change

As shown above, the average employer contribution rates increased this year for Regular and SLEP employers. The rate increases are primarily due to the gradual recognition of investment losses under the asset valuation method. Generally, small fluctuations from year to year should be expected, for the average rate and for any large employer's rate. Small and very small employers will experience larger variations.

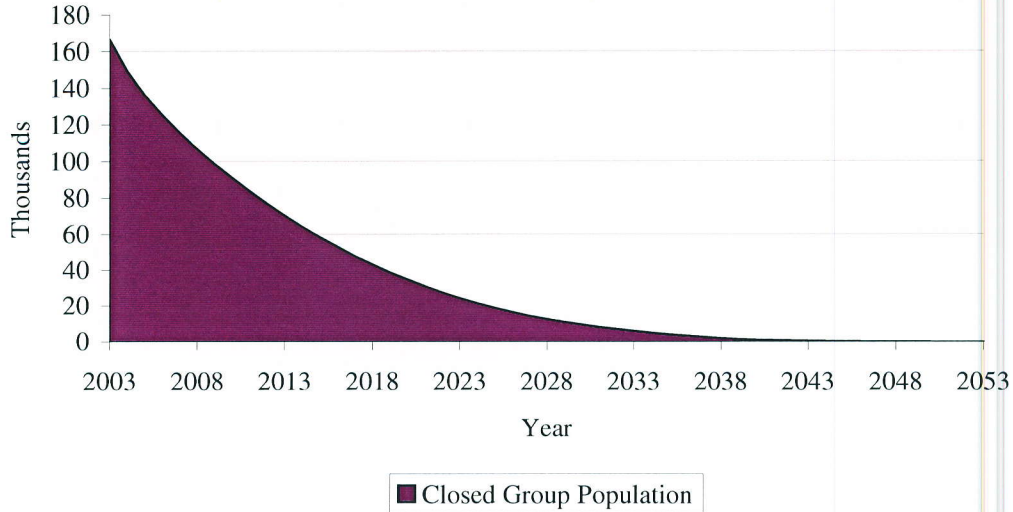
Six percent of employers experienced a rate decrease of more than 1% of payroll. Fifty-two percent of employers experienced either a change (up or down) of less than 1% of payroll. Forty-two percent of employers experienced a rate increase of greater than 1%. Of those, the majority were in the 1% to 3% increase range (please see page A-7).

Most of the larger changes were for small employers (often employers covering only 1 or 2 employees), since the removal or addition of 1 employee can significantly impact the contribution rate. The actuary and IMRF staff review all of the large rate changes individually in order to determine the reasonableness of the change. In some cases, rates may be changed.

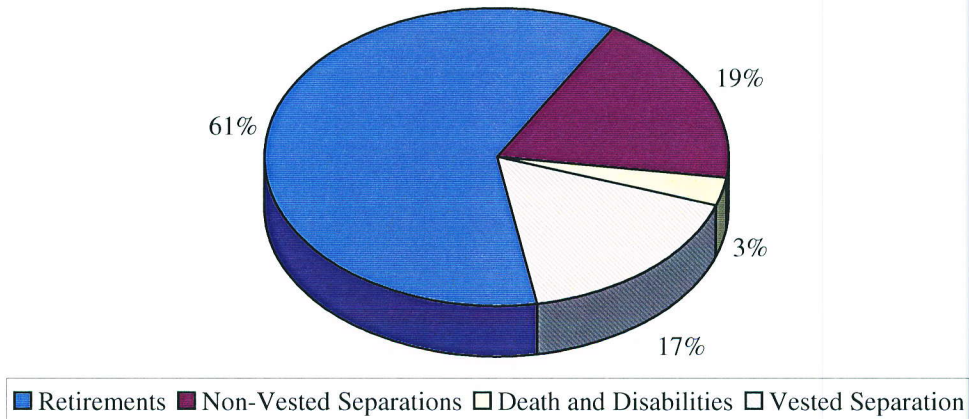
## EXPECTED DEVELOPMENT OF PRESENT POPULATION DECEMBER 31, 2003

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### Closed Group Population Projection



### Expected Terminations from Active Employment For Current Active Members



The charts show the expected future development of the present population in simplified terms. The retirement system presently covers 166,439 active members. Eventually, 19% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for a monthly benefit. About 78% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by retiring from vested deferred status. Three percent of the present population is expected to become eligible for death-in-service or disability benefits. **Within 9 years, over half of the covered membership is expected to consist of new hires.**

## UNFUNDED ACTUARIAL ACCRUED LIABILITIES

In a retirement system such as IMRF, where unfunded liabilities are being amortized as a level percent of active member payroll, unfunded liabilities are expected to rise in dollar amount for an extended period before finally beginning to decrease. This has to do with inflation and the related fact that the dollar is a yardstick whose length changes every year. However, this year, the phase in of investment losses has caused unfunded liabilities to increase both in dollar amount, and in percent of payroll. The schedule below illustrates the development of the unfunded liability, based upon actuarial value of assets, during the year.

	Unfunded Liability Development During	
	2003	2002
Unfunded (Overfunded) Liability January 1	\$(240,288,202)	\$(986,504,690)
Assumed Net (Payments) Credits	41,586,144	127,063,125
Assumed Interest	(16,480,934)	(69,280,407)
Expected Unfunded Liability December 31	(215,182,992)	(928,721,972)
Change Due to Experience Study	0	30,592,102
Change Due to Investment Experience	404,569,684	611,753,696
Change Due to Other Sources	246,825,941	46,087,972
Actual Unfunded (Overfunded) Liability December 31	\$436,212,633	\$(240,288,202)

Changes due to other sources included the effect of differences between actual and assumed experience and the effect of new employers joining IMRF. These matters are discussed more completely in the report on the Gain and Loss Analysis.



**UNFUNDED ACTUARIAL ACCRUED LIABILITIES  
COMPARATIVE STATEMENT**

Valuation Date	(1) Actuarial Accrued Liabilities (AAL)	(2) Valuation Assets	(3) Unfunded AAL	(4) Valuation Payroll	(5) Funded Ratio (2)/(1)	(6) Unfunded/ Payroll (3)/(4)
1983	\$ 2,780,217,771	\$ 1,821,146,853	\$ 959,070,918	\$1,487,069,292	65.5%	64.5%
1984*	3,261,944,379	1,944,694,044	1,317,250,335	1,551,980,698	59.6%	84.9%
1985	3,609,515,653	2,248,747,268	1,360,768,385	1,660,500,587	62.3%	81.9%
1986	3,958,462,273	2,487,488,403	1,470,973,870	1,768,254,219	62.8%	83.2%
1987*#	4,516,366,654	2,757,918,614	1,758,448,040	1,869,513,284	61.1%	94.1%
1988	4,941,412,403	3,139,563,467	1,801,848,936	1,998,362,932	63.5%	90.2%
1989	5,429,420,300	3,589,732,873	1,839,687,427	2,141,472,213	66.1%	85.9%
1990*	6,234,602,259	4,468,795,967	1,765,806,292	2,303,544,906	71.7%	76.7%
1991*#	6,406,965,450	5,034,577,441	1,372,388,009	2,491,859,698	78.6%	55.1%
1992	6,954,483,358	5,615,583,858	1,338,899,500	2,634,441,716	80.7%	50.8%
1993*	7,509,766,239	6,396,329,900	1,113,436,339	2,709,280,078	85.2%	41.1%
1994	8,126,642,830	7,078,861,925	1,047,780,905	2,946,519,940	87.1%	35.6%
1995	8,823,697,487	8,034,030,783	789,666,704	3,095,916,750	91.1%	25.5%
1996*	9,778,592,519	9,076,261,663	702,330,856	3,084,086,668	92.8%	22.8%
1997	10,807,969,067	10,273,116,034	534,853,033	3,454,621,933	95.1%	15.5%
1998	11,860,879,198	11,636,495,534	224,383,665	3,696,047,942	98.1%	6.1%
1999*	13,005,023,293	13,520,192,111	(515,168,818)	3,952,129,535	104.0%	-
2000	14,153,055,774	15,169,369,271	(1,016,313,497)	4,184,702,169	107.2%	-
2001	15,318,517,575	16,305,022,254	(986,504,679)	4,503,092,615	106.4%	-
2002*	16,559,907,302	16,800,195,504	(240,288,202)	4,755,103,888	101.5%	-
2003	17,966,103,451	17,529,890,818	436,212,633	4,944,767,495	97.6%	8.8%

\* Assumption change.

# Benefit change

While no one or two numeric indices can fully describe the financial condition of a retirement system, trends in both the Funded Ratio (column 5) and the Unfunded/Payroll Ratio (column 6) provide useful information. Unfunded accrued liabilities represent plan debt, while active member payroll represents the plan's capacity to service the debt. In a retirement system that is following the discipline of level percent of payroll financing, the Funded Ratio should gradually move toward 100% and the Unfunded/Payroll ratio should gradually move toward 0%.

## SHORT CONDITION TEST

If the contributions to IMRF are level in concept and soundly executed, the System will *pay all promised benefits when due – the ultimate test of financial soundness*. Testing for level contribution rates is the *long-term test*.

A *short condition test* is one means of checking a system's progress under its funding program. In a short condition test, the plan's present assets (cash and investments) are compared with:

- 1) Member contributions on deposit;
- 2) The liabilities for future benefits to present retired lives;
- 3) The liabilities for service already rendered by active and inactive members.

In a system that has been following the discipline of level percent of payroll financing, the liabilities for member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active and inactive members (liability 3) will be partially covered by the remainder of present assets. The larger the funded portion of liability 3, the stronger the condition of the system.

### Short Condition Test

Calendar Year	Aggregate Actuarial Liabilities For			Actuarial Assets	Portion of Actuarial Liabilities covered by Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
	Non-Retired Contributions	Annuitants	Non-Retired Members (Employer Financed Portion)				
1990*	\$ 986,213,859	\$ 2,111,742,303	\$3,134,267,510	\$ 4,468,795,967	100%	100%	43.7%
1991*#	1,095,888,522	2,217,253,547	3,093,823,381	5,034,577,441	100%	100%	55.6%
1992	1,218,238,446	2,421,564,751	3,314,680,161	5,615,583,858	100%	100%	59.6%
1993*	1,350,831,396	2,660,823,087	3,498,111,756	6,396,329,900	100%	100%	68.2%
1994	1,496,014,554	2,907,982,455	3,722,645,821	7,078,861,925	100%	100%	71.9%
1995	1,642,362,193	3,171,162,151	4,010,173,143	8,034,030,783	100%	100%	80.3%
1996*	1,782,293,677	3,588,320,471	4,407,978,361	9,076,261,663	100%	100%	84.1%
1997	1,933,512,014	3,995,946,514	4,878,510,539	10,273,116,034	100%	100%	89.0%
1998	2,086,679,470	4,485,651,306	5,288,548,422	11,636,495,534	100%	100%	95.8%
1999*	2,259,446,274	4,915,459,683	5,830,117,336	13,520,192,111	100%	100%	108.8%
2000	2,473,646,891	5,284,275,174	6,395,133,709	15,169,369,271	100%	100%	115.9%
2001	2,708,833,984	5,613,708,283	6,995,975,308	16,305,022,254	100%	100%	114.1%
2002*	2,950,041,671	6,050,882,416	7,558,983,215	16,800,195,504	100%	100%	103.2%
<b>2003</b>	<b>3,186,234,066</b>	<b>6,674,490,186</b>	<b>8,105,379,199</b>	<b>17,529,890,818</b>	<b>100%</b>	<b>100%</b>	<b>94.6%</b>

\* Assumption change.

# Benefit change.

## **SECTION B**

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### **Summary of Benefit Provisions and Valuation Data**

# SUMMARY OF BENEFITS AND CONDITIONS EVALUATED

## DECEMBER 31, 2003

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### Participating Employers.

All counties and school districts, plus cities and villages and incorporated towns with a population of 5,000 or more (except certain governmental entities specifically excluded by the Pension Code). Other local government units may elect to participate.

### Membership.

All appointed employees of a participating employer who are employed in a position normally requiring 600 hours (1,000 hours for certain employees hired after 1981) or more of work in a year. Elected officials and hospital employees who satisfy requirements may also participate.

### Final Rate of Earnings (FRE).

**Retirement and Survivor Annuities: Regular and SLEP Members:** The average of earnings during the 48 consecutive month period within the last 10 years of IMRF service in which earnings were the highest. Earnings considered for each of the last 3 months cannot exceed the highest earnings in any of the first 45 months by more than 25%. Minimum FRE is \$125 per month. **ECO Members:** Original ECO Plan: Salary rate at date of termination or retirement. Revised Plan: Average of last four years for each office held.

**Death Benefits:** The greater of the above amount or the average of earnings over the last 12 months of service.

**Disability Benefits:** The average of earnings over the last 12 months of service. (for ECO members, annualized salary on last day of ECO participation)

### Normal Retirement Pension Eligibility.

**Regular Members:** Age 60 with 8 or more years of service or 35 or more years of service and age 55 or greater.

**SLEP Members:** Age 50 with 20 or more years of SLEP service.

**ECO Regular Members:** Age 55 with 8 or more years of service.

**ECO SLEP Members:** Age 50 with 20 or more years of SLEP service or age 55 with 8 or more years of any service.

### Normal Retirement Pension Amount.

**Regular Members:** 1-2/3% of FRE times each of the first 15 years of service, plus 2% of FRE times service over 15 years.

**SLEP Optional Formula:** 2-1/2% of FRE times each of the first 20 years of SLEP service, plus 2% of FRE times service over 20, but less than 30 years, plus 1% of FRE times service over 30 years.

**Maximum Formula Pension:** 75% of FRE.

**ECO Members:** 3% of FRE times each of the first 8 years of service, plus 4% of FRE times each of the next 4 years of service, plus 5% of FRE times service over 12 years. For original ECO participants, one day of ECO service is required to qualify for this formula. For participants in the Revised Plan, 8 years of service credit per office is required to qualify for the ECO formula for that office.

**Maximum ECO Formula Pension:** 80% of FRE.

**Money Purchase Minimum Pension:** The amount that may be purchased by 2.4 times the member's accumulated contributions, including interest at 7.5%.

### Early Retirement (not applicable to SLEP optional benefits or to ECO service).

**Eligibility:** Attainment of age 55 with 8 or more years of service.

**Amount:** Normal pension amount reduced by 1/4% times the lesser of (i) the number of months to the member's attainment of age 60, or (ii) the number of months actual service is less than 35 years.

**Money Purchase Minimum Pension:** Same as normal retirement (see above).

**SUMMARY OF BENEFITS AND CONDITIONS EVALUATED**  
**DECEMBER 31, 2003**  
**(CONTINUED)**

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**Vesting.**

A member with 8 or more years of service who leaves employment before being eligible for an immediate pension who does not withdraw accumulated contributions will be entitled to a deferred pension at pension eligibility. The amount of the pension will be based on service and FRE at time of employment termination, but will include the effect, if any, of the money purchase minimum pension. (These provisions apply to both ECO and non-ECO members.)

**Surviving Spouse Pension.**

***Regular and SLEP***

***Eligibility:*** Married for one year prior to death of an active member or date of termination of service for a retiree or inactive member over age 55 with 8 or more years of service.

***Amount:*** 50% of the pension otherwise payable to the deceased member. If spouse is more than 5 years younger than the deceased member, the pension is actuarially reduced. In addition to this monthly amount, a lump sum benefit of \$3,000 is payable.

***ECO***

***Eligibility:*** Married at date of termination and for one year immediately preceding death.

***Amount:*** 66 2/3% of the pension otherwise payable to the deceased member, beginning at age 50 (immediately if there are minor children).

***Minimum:*** 10% of salary (30% with one minor child, 40% with two minor children, and 50% with three minor children).

If death occurs after termination of service, the total payment to the spouse and children is limited to 75% of the member's pension.

**Lump Sum Death-In-Service Benefit.**

***Less than 1 year of service:*** Member contributions plus interest.

***More than 1 year of service*** (or death in the line of duty): The sum of one times FRE and member contributions with interest.

These benefits are payable only if no surviving spouse pension is payable.

**Lump Sum Death-After Retirement Benefit.**

\$3,000. If there is no surviving spouse, any remainder of the deceased member's contributions and interest not paid out as a pension is also payable.

**Children's Benefits.**

***Regular and SLEP***

***Eligibility:*** Death of a member eligible to retire who has no surviving spouse, or death of a surviving spouse beneficiary.

***Amount:*** Equal to spouse pension, divided equally among surviving children and payable to age 18.

***ECO***

***Eligibility:*** Death of a member with minor children and no eligible spouse.

***Amount:*** 20% of salary to each child, to a maximum of 50% of salary, payable to age 18.

If death occurs after termination of service, the total payment to the surviving spouse and children is limited to 75% of the member's pension.

**SUMMARY OF BENEFITS AND CONDITIONS EVALUATED**  
**DECEMBER 31, 2003**  
**(CONCLUDED)**

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**Temporary Disability.**

*Eligibility:* Temporary disability for at least 30 days after one year of service and prior to age 70. Pre-existing conditions are excluded if service is under 5 years.

*Amount:* 50% of FRE less amounts payable from Social Security or Worker's Compensation.

*Duration:* Period equal to 1/2 credited service, not to exceed 30 months.

**Total and Permanent Disability.**

*Regular and SLEP*

*Eligibility:* Payable after temporary disability period to members who are totally and permanently disabled and unable to engage in any gainful occupation.

*Amount:* 50% of FRE less amounts payable by Social Security.

*ECO*

*Eligibility:* Payable to members who are totally and permanently disabled from performing the duties of their office while in service as an elected county officer.

*Amount:* The greater of 50% of FRE or the alternate formula pension amount earned to date.

*Duration:* To the later of (i) age 60, or (ii) age at disability plus 5 years.

IMRF service is credited during the disability period, except that under the revised ECO plan, the service that will be credited will be Regular or SLEP as appropriate, but not ECO.

**Post-Retirement Increases.**

Pensions are increased by 3% of their original amount on January 1 each year. The first increase is prorated by the number of months of retirement. Disability pensions are not increased until the January 1st following 30 months of disability. These provisions apply to both ECO and non-ECO members.

**13th Check.**

A lump sum payment is made to retirees and surviving spouses on July 1st. The amount depends on funds available from a designated employer contribution of 0.62% of payroll. No specific 13<sup>th</sup> check amount is promised to any individual.

**Member Contributions.**

*Regular Members:* 4 1/2% of earnings (3-3/4% base plus 3/4% for survivor benefits).

*SLEP Members:* 6 1/2% of earnings (5-3/4% base plus 3/4% for survivor benefits).

*Additional:* Up to 10% of earnings.

*ECO Members:* (a) Past service: Regular members pay an additional 3% of the salary for the applicable period plus interest from the date of service to the payment date. SLEP members pay an additional 1% of salary for the applicable period plus interest from the date of service to the payment date. (The total rate is 7 1/2% for each past year purchased plus interest.)

(b) Future service: 7 1/2% of earnings during the period of elective participant. (Note: Continued classification as an ECO member is not a condition for continued elective participation in the ECO program for participants in the original ECO Plan.)

*Refunds:* If membership terminates without eligibility for any other benefit, a refund of base and survivor contributions without interest plus accumulated additional contributions with interest is payable. Upon retirement of a member who does not have an eligible spouse, survivor benefit contributions are refunded.

**SUMMARY OF COVERED POPULATION DATA**  
**DECEMBER 31, 2003**

Data on persons covered by IMRF was reported to the Actuary as follows:

Member Status	No.	Valuation Payroll / Benefits	Average		
			Pay / Benefits	Age	Service
Active Members					
Regular	161,941	\$4,727,789,530	\$29,195	45.8	8.7
SLEP	3,883	192,144,270	49,483	40.2	11.1
ECO	615	24,833,695	40,380	53.5	10.9
Total Active	166,439	\$4,944,767,495	\$29,709	45.7	8.8
Inactive Members					
Regular	147,129			45.6	4.4
Slep	937			43.7	9.3
ECO	130			52.9	10.7
(Inactive and Active)	(30,103)				
Total Inactive	118,093			45.6	4.4
Retirees & Beneficiaries	76,478	\$632,169,624	\$8,266	72.8	
<b>Total Population</b>	<b>361,010</b>				
Prior Year Total	353,897				

Additional population statistics are presented on the following pages.

**ACTIVE MEMBERS BY EMPLOYER TYPE**  
**DECEMBER 31, 2003**  
**REGULAR, SLEP, ECO COMBINED**

Type of Employer	Rate Groups	Members			Payroll
		Number	% of Total	Cumulative Percent	
School Districts	885	74,719	44.8%	44.8%	\$ 1,648,521,588
Counties (Regular, SLEP,ECO)	268	31,611	19.0%	63.8%	1,085,962,732
Cities	281	20,345	12.2%	76.0%	807,311,945
Villages	410	15,089	9.1%	85.1%	643,569,905
Park Districts	188	6,741	4.1%	89.2%	219,676,179
Special Ed Districts	38	4,331	2.6%	91.8%	92,773,803
Townships	476	3,548	2.1%	93.9%	102,543,937
Library Districts	199	2,619	1.6%	95.5%	67,587,484
Forest Preserve Districts	13	964	0.6%	96.1%	35,749,596
Sanitary Districts	39	921	0.6%	96.7%	44,202,951
Consolidated Education Service Region	29	730	0.4%	97.1%	16,395,234
County Hospital Districts	3	538	0.3%	97.4%	17,178,479
Towns	4	511	0.3%	97.7%	20,925,866
Mass Transit District (Taxing Authority)	3	485	0.3%	98.0%	17,871,205
Intergovernmental Coop	41	478	0.3%	98.3%	22,241,371
Misc. Taxing Authority	7	267	0.2%	98.5%	14,434,601
Airport Authorities	11	264	0.2%	98.7%	11,147,915
Public Library System	10	250	0.2%	98.9%	8,631,729
Multi Co/Cons Health Dept.	4	233	0.1%	99.0%	6,317,417
Health Districts	4	215	0.1%	99.1%	6,950,568
Mass Transit Instrumentality	3	158	0.1%	99.2%	5,061,743
Vocational System	40	153	0.1%	99.3%	4,085,336
Fire Protection Districts	37	150	0.1%	99.4%	6,499,884
Public Hopusing Authority	7	117	0.1%	99.5%	3,685,560
County Conservation Districts	4	117	0.1%	99.6%	3,729,915
Miscellaneous Instrumentality	12	114	0.1%	99.7%	5,169,932
Conservancy Districts	4	113	0.1%	99.8%	3,291,974
Joint Spec Rec Assns	9	99	0.1%	99.9%	3,614,163
Joint Education Projects	8	85	0.1%	100.0%	1,785,061
Public Housing Commission	7	73	0.0%	100.0%	2,512,037
County Road District	37	68	0.0%	100.0%	1,483,413
Special Ed Coop/Districts	20	64	0.0%	100.0%	3,260,681
Tuberculosis Sanitarium Districts	1	57	0.0%	100.0%	2,407,863
Regional Planning Commission	1	42	0.0%	100.0%	2,373,733
Water District	7	41	0.0%	100.0%	1,447,595
Mosquito Abatement District	7	35	0.0%	100.0%	1,548,026
Water Supply/Sewr Comission	5	30	0.0%	100.0%	1,299,977
Educ Serv Centers	3	18	0.0%	100.0%	464,233
ROE Office	1	16	0.0%	100.0%	454,037
Township Cemetary	15	15	0.0%	100.0%	280,448
Multi Twp Assessment Districts	13	12	0.0%	100.0%	192,172
Drainage District	1	3	0.0%	100.0%	125,207
Employers with no Active Members	233	0	0.0%	100.0%	-
<b>Totals</b>	<b>3,388</b>	<b>166,439</b>	<b>100.0%</b>	<b>100.0%</b>	<b>\$ 4,944,767,495</b>



**ACTIVE REGULAR MEMBERS  
BY ATTAINED AGE AND YEARS OF SERVICE  
DECEMBER 31, 2003**

Attained Ages	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
15-19	440							440	\$ 4,667,538
20-24	5,892	98						5,990	116,967,497
25-29	8,724	1,555	27					10,306	272,635,784
30-34	7,643	3,519	1,036	57				12,255	365,377,531
35-39	8,792	3,914	2,380	1,089	52			16,227	480,131,634
40-44	11,366	6,100	3,177	2,536	1,337	123		24,639	714,640,226
45-49	10,634	7,429	4,304	2,897	2,281	1,442	86	29,073	873,519,807
50	1,717	1,356	963	637	385	371	83	5,512	169,752,612
51	1,527	1,315	961	622	383	318	135	5,261	164,865,568
52	1,572	1,176	1,038	710	382	351	162	5,391	169,769,869
53	1,352	1,118	953	701	412	342	201	5,079	160,140,469
54	1,263	981	940	654	440	297	177	4,752	152,223,648
55	1,175	850	886	754	395	293	186	4,539	143,520,795
56	1,056	898	768	683	403	245	155	4,208	133,478,716
57	1,141	864	834	790	429	249	175	4,482	138,812,204
58	788	527	546	557	325	190	109	3,042	93,102,314
59	755	568	490	467	337	183	108	2,908	88,106,963
60	738	533	511	517	305	176	93	2,873	85,859,082
61	704	552	505	506	347	196	108	2,918	86,528,234
62	547	469	368	397	255	189	82	2,307	68,229,941
63	434	371	287	285	201	133	59	1,770	50,986,682
64	333	315	246	195	165	109	70	1,433	40,341,426
65	270	271	197	171	136	95	71	1,211	33,812,472
66	231	204	162	135	90	77	48	947	24,892,548
67	205	180	106	103	90	39	41	764	18,547,785
68	200	128	126	72	47	39	24	636	15,435,175
69	142	117	94	62	44	26	24	509	11,281,133
70	145	95	81	43	36	26	18	444	10,135,122
Over 70	484	439	387	270	169	132	144	2,025	40,026,755
<b>Totals</b>	<b>70,270</b>	<b>35,942</b>	<b>22,373</b>	<b>15,910</b>	<b>9,446</b>	<b>5,641</b>	<b>2,359</b>	<b>161,941</b>	<b>\$4,727,789,530</b>

**ACTIVE SLEP MEMBERS  
BY ATTAINED AGE AND YEARS OF SERVICE  
DECEMBER 31, 2003**

Attained Ages	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
15-19									
20-24	108							108	\$ 3,579,946
25-29	342	90						432	16,680,790
30-34	270	346	79	1				696	30,831,519
35-39	168	204	255	101	3			731	35,989,964
40-44	91	118	156	201	50			616	32,453,041
45-49	46	54	92	146	146	85	1	570	32,121,162
50	9	7	13	24	22	38	1	114	6,662,437
51	14	8	13	27	16	24	1	103	6,087,501
52	6	9	10	16	14	22	6	83	4,814,884
53	7	5	14	21	15	14	11	87	4,905,974
54	5	5	8	12	14	6	1	51	2,656,097
55	6	6	8	12	6	8	6	52	2,834,024
56	5	4	5	13	8	6	4	45	2,562,900
57	8	6	9	3	8	9	7	50	2,680,013
58	1	4	2	5	1	4	3	20	1,268,364
59	4	4	4	3	1	2	4	22	1,207,806
60	3	7	3	3	3	1	1	21	1,084,747
61	3	4		4	3	4	3	21	935,797
62	3		2	3	4	1		13	614,012
63		1	2	6	1	2	1	13	702,502
64	1	2	2	1		1	1	8	389,223
65			2	2				4	197,489
66		1	2	1	2	1	1	8	344,819
67			3	1				4	174,121
68		2		1	1			4	153,813
69									
70							1	1	38,137
71	1	1		2	1	1		6	173,188
<b>Totals</b>	<b>1,101</b>	<b>888</b>	<b>684</b>	<b>609</b>	<b>319</b>	<b>229</b>	<b>53</b>	<b>3,883</b>	<b>\$192,144,270</b>

**ACTIVE ECO REGULAR MEMBERS  
BY ATTAINED AGE AND YEARS OF SERVICE  
DECEMBER 31, 2003**

Attained Ages	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
20-24									
25-29	3	1						4	\$ 102,709
30-34	9	5						14	565,765
35-39	15	7	4					26	1,300,424
40-44	22	11	11	5	5			54	2,446,466
45-49	29	27	19	15	11	7	2	110	5,155,952
50	9	2	3	5	2	3	1	25	1,144,623
51	5	4	7	3	3		1	23	1,099,471
52	3	3	4	3	2			15	781,780
53	7	1	3	6				17	653,973
54	8	5	5	4	1		1	24	1,098,835
55	7	9	4	1	2	2	1	26	744,655
56	7	5	4	5	2	1	2	26	994,493
57	4	5	1	5	5		1	21	1,071,964
58	6	2	1	1	2		2	14	521,033
59	4	2	5	4	1	1		17	609,417
60	5	1	2	5				13	538,825
61	4	2		2		1		9	229,539
62	3	1	2	2		2	3	13	518,636
63	4	6	1	2				13	322,952
64	5	3	1	3			1	13	377,872
65	2	3	2	2	2		1	12	278,553
66	3	3	2	2				10	244,537
67	6	2		2			1	11	275,472
68	3		1				1	5	181,367
69	1	5	3	3		1	1	14	220,749
70	1	1	1					3	39,594
71	12	11	3	4	5	1	1	37	535,874
<b>Totals</b>	<b>187</b>	<b>127</b>	<b>89</b>	<b>84</b>	<b>43</b>	<b>19</b>	<b>20</b>	<b>569</b>	<b>\$22,055,530</b>

**ACTIVE ECO SLEP MEMBERS  
BY ATTAINED AGE AND YEARS OF SERVICE  
DECEMBER 31, 2003**

Attained Ages	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
30-34									
35-39		2						2	\$ 109,055
40-44	3		1	1				5	255,542
45-49	3	1	1	1	2	1		9	474,160
50				2		1		3	176,722
51			1			1		2	120,052
52									
53	1			2		1	2	6	431,950
54	1							1	109,132
55			3	1				4	223,296
56		1					1	2	120,067
57		3			1			4	199,635
58							1	1	92,912
59					1			1	69,748
60						1		1	53,894
61		1						1	58,981
62	1	1						2	119,896
63						1		1	82,726
64									
65									
66									
67									
68									
69									
70									
71					1			1	80,397
<b>Totals</b>	<b>9</b>	<b>9</b>	<b>6</b>	<b>7</b>	<b>5</b>	<b>6</b>	<b>4</b>	<b>46</b>	<b>\$2,778,165</b>

**ALL ACTIVE MEMBERS BY YEARS OF SERVICE AND GENDER  
DECEMBER 31, 2003**

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Service Years	Active Member Count			Active Member Pays	
	Males	Females	Total	Total	Average
0	5,782	10,960	16,742	\$ 308,659,170	\$ 18,436
1	5,236	9,887	15,123	328,336,851	21,711
2	5,041	10,162	15,203	353,185,439	23,231
3	4,270	8,743	13,013	327,454,940	25,164
4	3,853	7,633	11,486	299,116,243	26,042
5	3,207	6,414	9,621	260,575,833	27,084
6	2,874	5,370	8,244	229,897,447	27,887
7	2,419	4,642	7,061	208,731,775	29,561
8	2,208	4,093	6,301	186,897,036	29,661
9	1,938	3,801	5,739	177,279,420	30,890
10	1,779	3,174	4,953	158,536,030	32,008
11	1,489	2,664	4,153	138,409,233	33,328
12	1,651	2,831	4,482	152,527,466	34,031
13	1,815	3,052	4,867	172,638,569	35,471
14	1,869	2,828	4,697	168,623,052	35,900
15 & Up	16,673	18,081	34,754	1,473,898,991	42,409
<b>Totals</b>	<b>62,104</b>	<b>104,335</b>	<b>166,439</b>	<b>\$4,944,767,495</b>	<b>\$29,709</b>

**INACTIVE REGULAR MEMBERS  
BY ATTAINED AGE AND YEARS OF SERVICE  
DECEMBER 31, 2003**

Attained Ages	Years of Service to Valuation Date							Totals No.
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	
15-19	247							247
20-24	4,324	5						4,329
25-29	10,813	93	1					10,907
30-34	13,466	410	57				4	13,937
35-39	11,549	742	280	30	1	3	15	12,620
40-44	12,395	1,115	545	193	60	3	32	14,343
45-49	17,485	1,629	826	351	193	36	96	20,616
50	2,669	376	188	91	56	13	17	3,410
51	2,396	372	240	115	54	15	19	3,211
52	2,859	404	213	96	45	24	27	3,668
53	2,530	402	246	113	53	27	21	3,392
54	2,304	395	240	110	60	28	25	3,162
55	2,164	330	194	102	43	11	21	2,865
56	1,868	266	131	40	21	7	6	2,339
57	1,883	247	131	31	17	9	12	2,330
58	1,259	174	73	22	12	6	9	1,555
59	1,208	164	76	29	10	3	8	1,498
60	959	121	51	23	6	5	9	1,174
61	1,054	123	32	16	15	6	10	1,256
62	852	68	38	16	7	7	4	992
63	683	59	13	17	11	9	3	795
64	767	52	18	18	7	5	4	871
65	455	42	11	9	1	5	4	527
66	439	28	6	6	1		2	482
67	373	27	7	5			1	413
68	466	20	5	2	2	1		496
69	398	23	1	3	1			426
70	325	19	5	1	2		1	353
Over 70	4,970	164	35	9	4	3	6	5,191
<b>Totals</b>	<b>103,160</b>	<b>7,870</b>	<b>3,663</b>	<b>1,448</b>	<b>682</b>	<b>226</b>	<b>356</b>	<b>117,405</b>

**INACTIVE SLEP MEMBERS  
BY ATTAINED AGE AND YEARS OF SERVICE  
DECEMBER 31, 2003**

Attained Ages	Years of Service to Valuation Date							Totals No.
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	
15-19								
20-24	13							13
25-29	51	1					1	53
30-34	53	19	4				1	77
35-39	48	17	14					79
40-44	42	14	19	3	5		1	84
45-49	42	15	12	12	19	4	1	105
50	12	3	3	2	2	4		26
51	8	3	4	3	2			20
52	5	4	5	2			2	18
53	15	2	3	1	1			22
54	10	3	2	1		1		17
55	5	1	3	4		1	2	16
56	3	2	2	1				8
57	3				1			4
58	1		3					4
59	10		1	1	1			13
60	5	1						6
61	1	1						2
62	2							2
63	2		1					3
64	2							2
65	4							4
66	2						1	3
67								
68	2							2
69								
70								
Over 70	8							8
<b>Totals</b>	<b>349</b>	<b>86</b>	<b>76</b>	<b>30</b>	<b>31</b>	<b>10</b>	<b>9</b>	<b>591</b>

**INACTIVE ECO MEMBERS  
BY ATTAINED AGE AND YEARS OF SERVICE  
DECEMBER 31, 2003**

Attained Ages	Years of Service to Valuation Date							Totals No.
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	
15-19								
20-24								
25-29								
30-34	1							1
35-39	2	1						3
40-44	4	4	2		1			11
45-49	10	8	4	1			1	24
50		4	4				1	9
51			1	3	2			6
52	2	1	4	1				8
53	1		1		1			3
54	1		1	1				3
55	3	1	1	2	1			8
56	1		1					2
57				1				1
58	1							1
59	2			2				4
60								
61		1	1					2
62					2			2
63	1				1			2
64	1	1						2
65								
66	1							1
67	1							1
68								
69								
70	1							1
Over 70	2							2
<b>Totals</b>	<b>35</b>	<b>21</b>	<b>20</b>	<b>11</b>	<b>8</b>	<b>2</b>		<b>97</b>



**RETIREES AND BENEFICIARIES  
DECEMBER 31, 2003**

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**Annual Amounts by Form of Payment**

<b>Type of Retirement</b>	<b>Regular</b>		<b>Optional Plan</b>		<b>Total</b>	
	<b>No.</b>	<b>Amount</b>	<b>No.</b>	<b>Amount</b>	<b>No.</b>	<b>Amount</b>
Normal or Early						
Joint and 50% Survivor	33,793	\$ 307,911,408	14,510	\$ 138,537,948	48,303	\$ 446,449,356
Straight Life	11,809	101,378,856	3,599	37,080,420	15,408	138,459,276
<b>Total</b>	<b>45,602</b>	<b>409,290,264</b>	<b>18,109</b>	<b>175,618,368</b>	<b>63,711</b>	<b>584,908,632</b>
Disability	623	3,444,648	-	-	623	3,444,648
Surviving Beneficiaries	10,762	39,662,400	639	3,730,008	11,401	43,392,408
Voluntary Contributions	743	423,936	-	-	743	423,936
<b>Grand Total</b>	<b>57,730</b>	<b>\$ 452,821,248</b>	<b>18,748</b>	<b>\$ 179,348,376</b>	<b>76,478</b>	<b>\$ 632,169,624</b>

Voluntary Contributions includes annuitization of certain surviving spouse and SLEP refund amounts. Thirteenth Check amounts are not included in the above figures.

**RETIREES AND BENEFICIARIES  
BY ATTAINED AGE  
DECEMBER 31, 2003**

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Attained Ages	Number			Annual Benefits
	Males	Females	Total	
Under 20	5	7	12	\$ 23,376
20 - 24	4	6	10	28,968
25 - 29	3	3	6	22,572
30 - 34	11	6	17	49,644
35 - 39	9	22	31	94,296
40 - 44	18	40	58	276,624
45 - 49	55	110	165	768,420
50 - 54	480	240	720	18,159,372
55 - 59	1,957	3,215	5,172	75,470,232
60 - 64	3,106	6,853	9,959	110,745,324
65 - 69	4,433	9,122	13,555	127,930,200
70 - 74	4,467	9,061	13,528	112,491,360
75 - 79	4,401	8,822	13,223	91,263,624
80 - 84	3,309	7,392	10,701	59,496,108
85 - 89	1,700	4,596	6,296	26,303,808
90 - 94	626	1,823	2,449	7,712,472
95 & Up	95	481	576	1,333,224
<b>Totals</b>	<b>24,679</b>	<b>51,799</b>	<b>76,478</b>	<b>\$632,169,624</b>

**RETIREES AND BENEFICIARIES BY YEAR OF RETIREMENT  
DECEMBER 31, 2003**

Year of Retirement	Number			Annual Benefits
	Males	Females	Total	
2003	1,960	3,153	5,113	\$ 64,262,088
2002	1,799	3,239	5,038	54,292,704
2001	1,619	2,963	4,582	44,127,276
2000	1,372	2,814	4,186	40,187,508
1999	1,639	2,917	4,556	47,727,252
1998	1,623	2,853	4,476	50,700,324
1997	1,452	2,853	4,305	43,973,472
1996	1,250	2,673	3,923	37,787,244
1995	1,139	2,461	3,600	29,112,816
1994	1,029	2,246	3,275	26,137,764
1993	984	2,119	3,103	23,583,852
1992	926	1,911	2,837	21,647,880
1991	804	1,801	2,605	18,455,028
1990	830	1,738	2,568	18,234,624
1985 - 1989	3,370	7,628	10,998	68,474,148
1980 - 1984	1,874	4,548	6,422	30,601,920
1975 - 1979	816	2,519	3,335	10,149,048
1970 - 1974	167	1,025	1,192	2,352,792
1965 - 1969	23	259	282	293,220
Before 1965	3	79	82	68,664
<b>Total</b>	<b>24,679</b>	<b>51,799</b>	<b>76,478</b>	<b>\$632,169,624</b>

**DATA REPORTED FOR ACTUARIAL VALUATIONS  
COMPARATIVE SUMMARY**

Date December 31	Total Count	Active Members					Number		Ratio: Act/Ret.
		Number	Average			Inactive	Retired		
			Age	Serv.	Annual Pay			Pay Increase	
1983	198,249	107,178	43.0	6.8	\$13,825	-	54,471	36,600	2.90
1984	183,483	105,658	43.1	7.2	14,689	6.2 %	38,762	39,063	2.70
1985	187,886	107,708	43.1	7.2	15,417	5.0 %	39,315	40,863	2.60
1986	193,006	110,285	43.1	7.3	16,033	4.0 %	39,921	42,800	2.60
1987	203,499	112,611	43.0	7.1	16,602	3.5 %	46,199	44,689	2.50
1988	208,237	115,050	43.1	7.2	17,370	4.6 %	47,305	45,882	2.50
1989	221,145	118,670	43.1	7.2	18,046	3.9 %	53,470	49,005	2.40
1990	228,964	121,234	43.3	7.3	19,000	5.3 %	57,016	50,714	2.40
1991	237,731	125,559	43.4	7.4	19,846	4.5 %	59,775	52,397	2.40
1992	242,730	126,557	43.7	7.7	20,816	4.9 %	61,964	54,209	2.30
1993	245,409	122,361	44.2	8.2	22,142	6.4 %	66,735	56,313	2.20
1994	265,456	133,803	43.8	7.8	22,021	(0.5)%	73,972	57,681	2.30
1995	262,232	136,617	43.8	8.2	22,661	2.9 %	65,914	59,701	2.29
1996	249,291	139,525	44.0	8.3	22,104	3.5 %*	48,274	61,492	2.27
1997	290,804	143,999	44.1	8.2	23,991	8.5 %	81,919	64,886	2.22
1998	303,869	148,610	44.3	8.2	24,871	3.7 %	88,173	67,086	2.22
1999	317,616	153,910	44.4	8.6	25,678	3.2 %	94,576	69,130	2.23
2000	330,313	157,836	44.6	8.2	26,514	3.4 %	102,082	70,395+	2.24
2001	343,842	163,886	44.9	8.3	27,477	3.9 %	108,338	71,618	2.29
2002	353,897	166,365	45.3	8.5	28,582	4.0 %	113,524	74,008	2.25
2003	361,010	166,439	45.7	8.8	29,709	3.9 %	118,093	76,478	2.18

\* Changed method of recording earnings for 1996 valuation.

+ Restated subsequent to release of 2000 valuation.

# **SECTION C**

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## **Financial Data**

## DEVELOPMENT OF FUNDING VALUE OF RETIREMENT SYSTEM ASSETS

Year Ended December 31	2002	2003	2004	2005	2006	2007
A. Funding Value Beginning of Year	\$ 16,305,022,253	\$ 16,800,195,506				
B. Market Value End of Year	13,496,215,283	16,349,040,059				
C. Market Value Beginning of Year	14,964,964,170	13,496,215,283				
D. Non-Investment/Administrative Net Cash Flow	(111,758,768)	(121,204,498)				
E. Investment Return						
E1. Market Total:B-C-D	(1,356,990,119)	2,974,029,274				
E2. Assumed Rate of Return	7.50%	7.50%				
E3. Assumed Amount of Return	1,218,685,715	1,255,469,494				
E4. Return Subject to Phase In: E1-E3	(2,575,675,834)	1,718,559,780				
F. Phased-In Recognition of Investment Return						
F1. Current year: 0.20xE4	(515,135,167)	343,711,956	Unknown	Unknown	Unknown	Unknown
F2. First Prior Year	(428,515,358)	(515,135,167)	\$343,711,956	Unknown	Unknown	Unknown
F3. Second Prior Year	(153,262,372)	(428,515,358)	(515,135,167)	\$343,711,956	Unknown	Unknown
F4. Third Prior Year	348,631,257	(153,262,372)	(428,515,358)	(515,135,167)	\$343,711,956	Unknown
F5. Fourth Prior Year	136,527,946	348,631,257	(153,262,372)	(428,515,358)	(515,135,167)	\$343,711,956
F6. Total Recognized Investment Gain	(611,753,694)	(404,569,684)	(753,200,941)	(599,938,569)	(171,423,211)	343,711,956

G. Funding Value End of Year: A+D+E3+F6	\$16,800,195,506	\$17,529,890,818				
H. Difference Between Market and Funding Value	(3,303,980,223)	(1,180,850,759)	(427,649,824)	172,288,745	343,711,956	-
I. Recognized Rate of Return	3.7 %	5.1 %				
J. Market Rate of Return	(9.1)%	22.1 %				
K. Ratio of Funding Value to Market Value	124.5 %	107.2 %				

The Funding Value of Assets recognizes assumed investment return (line E3) fully each year. Differences between actual and assumed investment return (line E4) are phased in over a closed 5-year period.

## DEVELOPMENT OF MARKET VALUE ADJUSTMENT

In a single employer plan, the Market Value Adjustment would normally be the difference between the funding value of assets and the market value of assets. In IMRF, because of the need to allocate the Market Value Adjustment in an equitable manner among participating employers, certain extra steps are taken as shown below.

	Year Ended December 31	
	2003	2002
1. Funding Value of End of Year	\$17,529,890,818	\$16,800,195,504
2. Amounts not used in rate calculations		
a. Suspended Annuity Reserve	7,253,636	6,613,337
b. Disability Benefit Reserve	6,865,654	7,352,118
c. Death Benefit Reserve	8,295,269	9,772,910
d. Supplemental Benefit Reserve	1,683,080	2,001,340
e. Cases removed from rate calculations*	28,284,806	27,588,911
f. Estimated pending reserve transfers	-	-
g. Total	52,382,445	53,328,616
3. Remaining amount to allocate: (1)-(2g)	17,477,508,373	16,746,866,888
4. Total reported negative reserves	(1,069,560)	(1,272,458)
5. Amount available to positive reserves: (3)-(4)	17,478,577,933	16,748,139,346
6. Total Market Value of reported positive reserves	16,339,438,513	13,438,556,723
<b>7. Market Value Adjustment: (5)-(6)</b>	<b>\$ 1,139,139,420</b>	<b>\$ 3,309,582,623</b>

\* *Employers that are not included on the asset tape submitted to the actuary. These employers have no active members and no employer assets, but may have retired lives and/or inactive members.*

The Market Value Adjustment is allocated among all employers that have a positive reserve balance (member plus employer plus retired life reserves), in proportion to each employer's reserve balance.

## REPORTED MARKET VALUES

	Market Value		Percentage of Total	
	2003	2002	2003	2002
<b>Investment portfolio</b>				
Fixed income	\$ 5,453,356,939	\$ 5,029,331,720	33.4%	37.3%
Short term	85,777,137	277,205,044	0.5%	2.1%
Foreign exchange contracts	(3,433,200)	(833,061)	0.0%	0.0%
Stocks	7,031,734,911	5,098,950,985	43.2%	37.9%
Bond funds	-	-	0.0%	0.0%
Stock funds and Index Funds	2,489,130,082	1,934,490,237	15.3%	14.4%
Options	-	-	0.0%	0.0%
Real estate	585,260,315	585,869,573	3.6%	4.4%
Alternative investments	519,892,257	469,747,938	3.2%	3.5%
Master trust reserve fund	676,699,070	480,703,210	4.2%	3.6%
Cash	-	-	0.0%	0.0%
Due from brokers	-	-	0.0%	0.0%
Due (to) brokers	(607,341,218)	(486,179,809)	(3.7)%	(3.6)%
Accrued investment income	52,717,538	58,571,023	0.3%	0.4%
<hr/>				
<b>Total Invested Assets</b>	<b>16,283,793,831</b>	<b>13,447,856,860</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Receivables</b>	<b>76,972,548</b>	<b>68,562,290</b>		
<b>Cash</b>	<b>7,999,332</b>	<b>2,733,741</b>		
<b>Fixed Assets</b>	<b>812,530</b>	<b>1,000,417</b>		
<hr/>				
<b>Total Market Value</b>	<b>16,369,578,240</b>	<b>13,520,153,308</b>		
<b>Liabilities</b>				
Benefits & vouchers payable	20,538,181	23,938,025		
<b>Total Liabilities</b>	<b>20,538,181</b>	<b>23,938,025</b>		
<b>Nets Assets Available for Benefits</b>	<b>\$16,349,040,059</b>	<b>\$13,496,215,283</b>		

Figures on this page may not always agree with final figures reported by IMRF, but are shown for completeness.



## **SECTION D**

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### **Actuarial Methods and Assumptions**

**SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS  
USED FOR IMRF ACTUARIAL VALUATIONS  
ASSUMPTIONS ADOPTED BY RETIREMENT BOARD  
AFTER CONSULTING WITH ACTUARY**

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***Economic Assumptions***

*The investment return rate* used in making the valuations was 7.5% per year, compounded annually (net after expenses). The assumed real rate of return is the portion of total investment return, which is more than the assumed wage inflation rate. Considering other financial assumptions, the 7.5% investment return rate translates to an assumed real rate of return of 3.50%.

*Pay increase assumptions* for individual active members are shown for sample ages on page D-7. Part of the assumption for each age is for merit and/or seniority increase, and the other 4.00% recognizes wage inflation. There is no specific price inflation assumption made for this valuation.

The *active member payroll* is assumed to increase 4.00% annually, which is the portion of the individual pay increase assumptions attributable to wage inflation.

The *number of active members* is assumed to continue at the present number.

***Non-Economic Assumptions***

Non-economic (decrement) assumptions include rates of mortality before and after retirement, rates of disability, rates of retirement, rates of other separation from employment and probabilities of an active member being married. With the exception of mortality tables, the non-economic assumptions are based upon experience during the 1999-2001 period (please see report dated September 18, 2002), and were first used in the December 31, 2002 valuation. Decrement assumptions are shown for sample ages beginning on page D-3.

***Actuarial Valuation Method***

*An aggregate entry age actuarial cost method of valuation* was used in determining most liabilities and normal cost. This means that a normal cost was determined for each benefit group (Regular, SLEP, ECO) as a percent-of-payroll. The normal cost was assumed to apply to each employer.

Differences in the past between assumed experience and actual experience ("actuarial gains and losses") become part of actuarial accrued liabilities.

**SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS  
USED FOR IMRF ACTUARIAL VALUATIONS  
ASSUMPTIONS ADOPTED BY RETIREMENT BOARD AFTER CONSULTING  
WITH ACTUARY  
(CONTINUED)**

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Unfunded actuarial accrued liabilities are amortized to produce payments (principal & interest) which are level percent of payroll contributions.

Liabilities for lump sum death benefits and temporary disability benefits were determined using a term cost approach. Under this approach, the funding objective is to receive contributions each year that approximately equal the benefits being paid.

*Employer contributions* were assumed to be *paid in equal installments* throughout the year.

*Present assets (cash & investments) at funding value* are shown on page C-1.

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The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.)

**ACTUARIAL ASSUMPTIONS  
DECEMBER 31, 2003  
PROBABILITIES OF AGE & SERVICE RETIREMENT**

Age at Retirement	Regular Members				SLEP Members
	Reduced Early		Normal		
	Males	Females	Males	Females	
50					25%
51					20%
52					15%
53					10%
54					25%
55	6%	7%	35%	35%	25%
56	6%	7%	35%	35%	20%
57	6%	7%	35%	35%	25%
58	6%	7%	35%	35%	35%
59	6%	7%	35%	35%	15%
60			10%	10%	10%
61			15%	15%	10%
62			25%	20%	25%
63			20%	20%	20%
64			20%	20%	20%
65			40%	30%	25%
66			30%	20%	25%
67			25%	18%	25%
68			23%	18%	25%
69			22%	18%	25%
70-79			20%	18%	100%
80 & Over			100%	100%	100%

For ECO members, retirement probabilities were ten percentage points higher than otherwise indicated on this schedule.

**ACTUARIAL ASSUMPTIONS**  
**DECEMBER 31, 2003**  
**PROBABILITIES OF SEPARATION FROM ACTIVE MEMBER STATUS**

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Service	% Separating Next Year		
	Regular & ECO		SLEP
	Males	Females	
0	23.0%	26.0%	14.0%
1	16.0%	18.0%	10.0%
2	12.5%	14.0%	7.5%
3	10.5%	11.0%	7.0%
4	8.3%	9.5%	6.0%
5	7.0%	8.0%	N.A.
6	6.0%	7.0%	N.A.
7	5.5%	6.5%	N.A.
Age	8 or More Years of Service		5 or More Years of Service
30	5.5%	6.5%	3.0%
35	4.4%	5.8%	2.4%
40	3.4%	4.8%	1.7%
45	2.8%	4.3%	1.5%
50	2.5%	3.7%	1.5%

**ACTUARIAL ASSUMPTIONS**  
**DECEMBER 31, 2003**  
**ACTIVE MEMBER PROBABILITIES OF DEATH AND DISABILITY**

Sample Ages	% Dying				% Disabled			
	Regular & ECO		SLEP		Regular & ECO		SLEP	
	Male	Female	Male	Female	Male	Female	Male	Female
20	0.02%	0.01%	0.03%	0.02%	0.02%	0.01%	0.03%	0.03%
25	0.02%	0.02%	0.03%	0.02%	0.02%	0.01%	0.05%	0.05%
30	0.03%	0.02%	0.05%	0.03%	0.02%	0.02%	0.08%	0.08%
35	0.04%	0.03%	0.06%	0.03%	0.06%	0.03%	0.11%	0.11%
40	0.06%	0.04%	0.09%	0.04%	0.09%	0.05%	0.17%	0.17%
45	0.11%	0.06%	0.16%	0.07%	0.14%	0.07%	0.24%	0.24%
50	0.20%	0.09%	0.29%	0.11%	0.21%	0.12%	0.36%	0.36%
55	0.31%	0.14%	0.46%	0.17%	0.33%	0.18%	0.50%	0.50%
60	0.46%	0.22%	0.69%	0.27%	0.42%	0.32%	0.46%	0.46%
65	0.78%	0.37%	1.17%	0.44%	0.45%	0.38%	0.31%	0.31%
70	1.38%	0.58%	2.06%	0.70%	0.38%	0.32%	0.18%	0.18%
75	2.23%	1.01%	3.34%	1.21%	0.27%	0.23%	0.05%	0.05%
80	3.70%	1.82%	5.56%	2.18%	0.23%	0.19%	0.00%	0.00%

**ACTUARIAL ASSUMPTIONS**  
**DECEMBER 31, 2003**  
**RETIREE, BENEFICIARY, AND DISABLED LIFE MORTALITY**

Sample Ages	% Dying Next Year			
	Non-Disabled Lives		Disabled Lives	
	Males	Females	Males	Females
40	0.1176%	0.0705%	0.3714%	0.1738%
45	0.2074%	0.1066%	0.5824%	0.2746%
50	0.3714%	0.1738%	0.8700%	0.4244%
55	0.5824%	0.2746%	1.4812%	0.6969%
60	0.8700%	0.4244%	2.6153%	1.1112%
65	1.4812%	0.6969%	4.2367%	1.9121%
70	2.6153%	1.1112%	7.0366%	3.4575%
75	4.2367%	1.9121%	10.9094%	6.2242%
80	7.0366%	3.4575%	15.7992%	10.7925%

Sample Ages	Life Expectancy Years			
	Non-Disabled Retired Lives		Disabled Lives	
	Males	Females	Males	Females
40	39.0	45.5	29.7	35.9
45	34.3	40.7	25.3	31.3
50	29.7	35.9	21.1	26.8
55	25.3	31.3	17.1	22.4
60	21.1	26.8	13.6	18.3
65	17.1	22.4	10.5	14.4
70	13.6	18.3	7.9	10.9
75	10.5	14.4	6.0	8.0
80	7.9	10.9	4.5	5.8

For non-disabled lives, the mortality rates are the 1983 Group Annuity Mortality Table for Males and the 1983 Individual Annuity Mortality Table for Females both multiplied by 95%. For disabled lives, the mortality rates are the 1983 Group Annuity Mortality Table for Males and the 1983 Individual Annuity Mortality Table for Females both multiplied by 95% and set forward ten years.

**ACTUARIAL ASSUMPTIONS  
DECEMBER 31, 2003  
PAY INCREASES FOR ACTIVE MEMBERS**

% Increase in Pay Next Year					
6 or More Years Service				Less Than 6 Years of Service	
Age	Merit & Longevity	Economic	Total	Service	% Increase
25	2.5%	4.0%	6.5%	0	7.0%
30	1.9%	4.0%	5.9%	1	5.0%
35	1.3%	4.0%	5.3%	2	3.5%
40	1.0%	4.0%	5.0%	3	3.0%
45	0.9%	4.0%	4.9%	4	2.0%
50	0.7%	4.0%	4.7%	5	1.5%
55	0.6%	4.0%	4.6%		
60	0.4%	4.0%	4.4%		

For a person with 6 or more years of service, the assumed pay increase during the coming year is found in the 6 or more years of service total column. For a person with less than 6 years of service, the % increase from the less than 6 years column that corresponds to the person's service is added to the increase from the 6 or more years of service total column that corresponds to the person's age to get the total assumed increase. For example, a 40-year-old with 8 years of service is assumed to get a 5.0% pay increase during the coming year. But a 40-year-old with 4 years of service is assumed to get a 7.0% increase (5.0% + 2.0%).



## Miscellaneous and Technical Assumptions

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Expenses	Assumed investment return is net of administrative and investment expenses.
Marriage Assumption	80% of male and 70% of female participants are assumed to be married for purposes of death-in-service and death after retirement benefits. Male spouse are assumed to be three years older than female spouses.
Pay Increase Timing	Beginning of (Calendar) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing	Decrements of all types are assumed to occur mid-year.
Eligibility Testing	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Benefit Service	Exact fractional service on the decrement date is used to determine the amount of benefit payable.
Decrement Relativity	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Surviving Spouse Refunds	For those individuals who are not assumed to be married at retirement, the surviving spouse contributions are assumed to be refunded.
SLEP Refunds	SLEP participants who are assumed to retire with insufficient service to qualify for SLEP benefits are assumed to receive a refund of their SLEP contributions.
ECO Conversions	It is assumed that active participants in the ECO program will convert all eligible service up to the point the maximum ECO benefit would be achieved.
Other	Disability decrements operate during retirement eligibility.

**FINANCING UNFUNDED ACCRUED LIABILITIES  
AND FULL FUNDING CREDITS  
DECEMBER 31, 2003 VALUATIONS**

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The following procedures were applied to financing liabilities in the valuation.

**Financing Periods if employer is less than 90% funded on an actuarial basis..**

1. Instrumentalities: Remaining period from original 10 years; rolling 5 years if period is already used up.
2. Early Retirement Incentive Plan liabilities: a period up to 10 years selected by the Employer upon adoption of ERI.
3. For existing taxing bodies (Regular, SLEP, and ECO rate Groups): 27 years, reducing one year annually until the remaining period is 10 years, after which time the remaining period will be a rolling 10 years.
4. Employers joining IMRF in 2003: 32 Years; for those joining in 2004: 31 Years; reducing one year each valuation until it reaches 10 years, after which time the remaining period will be a rolling 10 years.

**Financing Period if employer is between 90% and 100% funded on an actuarial basis:**

5. If Market Value of the entity's plan assts is less than the actuarial value of the entity's plan assets: Do not provide for a reduction in employer contribution rates. Follow the amortization rules for employers which are less than 90% funded on an actuarial basis (see above).
6. If Market Value of the entity's plan assts is greater than the actuarial value of the entity's plan assets: Amortize the unfunded liability using the market value in lieu of the actuarial value.
7. Early Retirement Incentive Plan liabilities: a period up to 10 years selected by the Employer upon adoption of ERI.

**Financing Period if employer is over 100% funded on an actuarial basis.**

8. Irrespective of the size of the employer or the funding level, grant the employer an option to amortize overfunding over a 5 year period.
9. For employers with 50 or more employees, grant the employer an option to adopt a minimum contribution rate until the overfunding is eliminated.
10. Irrespective of the size of the employer, surplus in a plan can be used to satisfy early retirement incentive costs so long as the reserve balance does not drop below 100%.

The mass production valuation applies rules 1 through 7. IMRF staff applies rules 8 through 10 and reviews each case individually to see if changes are needed to comply with Board policy.

# SELECTION OF ASSUMPTIONS USED IN ACTUARIAL VALUATIONS

## Economic Assumptions

Investment return

Pay increases to individual employees:  
the portion for economic changes

Active member group size and  
total payroll growth

## Demographic Assumptions

Actual ages at service retirement

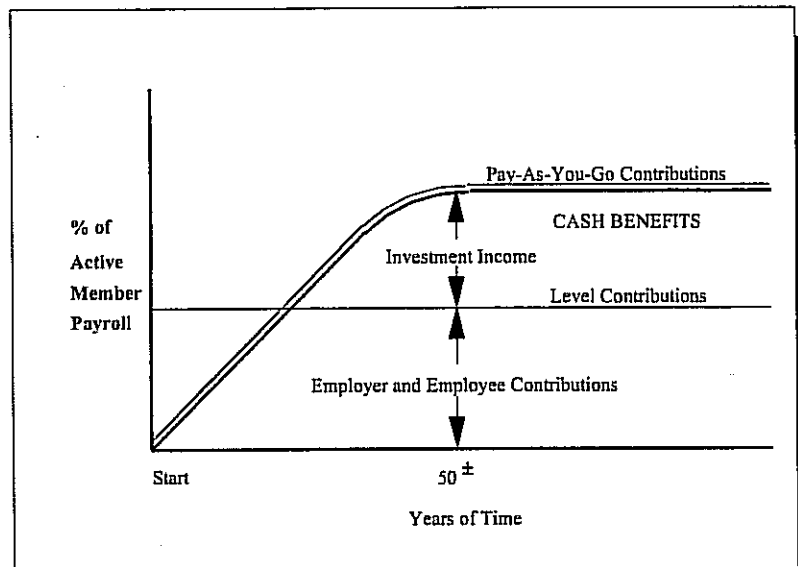
Pay increases to individual members:  
the portion for merit & seniority

Disability while actively employed

Separations before retirement

Mortality after retirement

Mortality before retirement



## RELATIONSHIP BETWEEN THE BOARD AND THE ACTUARY

The actuary should have the primary responsibility for choosing the *demographic* assumptions used in the actuarial valuation, making use of specialized training and experience.

The actuary and other professionals can provide guidance concerning the choice of suitable economic assumptions, but the basis of the economic assumptions is expected market returns for various asset classes and the assumed rate of inflation (a quantity which defies accurate prediction). Given an assumed rate of future inflation, it is very important that this rate be applied in a consistent manner in deriving the assumed rate of investment return, the economic portion of the assumption on pay increases to individual employees, and the assumed rate of growth of active member payroll. Consistent application of assumptions is an area in which the actuary has specialized training.

A sound procedure is that the actuary suggests reasonable alternatives for economic assumptions, followed by discussion involving the actuary, the Board of Trustees, and other professionals, and the Board then makes a final choice from the various reasonable alternatives.

## **SECTION E**

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### **Financial Principles**

## FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES OF IMRF

*Promises Made, and To Be Paid For.* As each year is completed, IMRF in effect hands an "IOU" to each member then acquiring a year of service credit. The "IOU" says: "The Illinois Municipal Retirement Fund owes you one year's worth of retirement benefits, payments in cash commencing when you retire."

The related *key financial questions* are:

*Which generation of taxpayers contributes the money to cover the IOU?*

*The present taxpayers*, who receive the benefit of the member's present year of service? *Or the future taxpayers*, who happen to be in Illinois at the time the IOU becomes a cash demand, years and often decades later?

*The law governing IMRF financing intends that this year's taxpayers contribute the money to cover the IOUs being handed out this year.* With this financial objective, *the employer contribution rate is expected to remain approximately level from generation to generation of taxpayers.*

There are systems which have a design for deferring contributions to future taxpayers. Lured by a lower contribution rate now, they put aside the consequence that the contribution rate must then relentlessly grow to a level much higher than would be required if a level contribution pattern were followed.

An inevitable by-product of the level-cost design is the accumulation of reserve assets, for decades, and the income produced when the assets are invested. *Investment income* ultimately becomes *the 3rd and largest contributor* for benefits to members, and is interlocked with the contribution amounts required from members and employers.

Translated to actuarial terminology, this level-cost objective means that the contribution rates must total at least the following:

Normal Cost (the cost of members' service being rendered this year)

... plus ...

Interest at the assumed real rate of return on Unfunded Actuarial Accrued Liabilities (unfunded actuarial accrued liabilities are the difference between: accrued liabilities for service already rendered; and the accrued assets of IMRF).

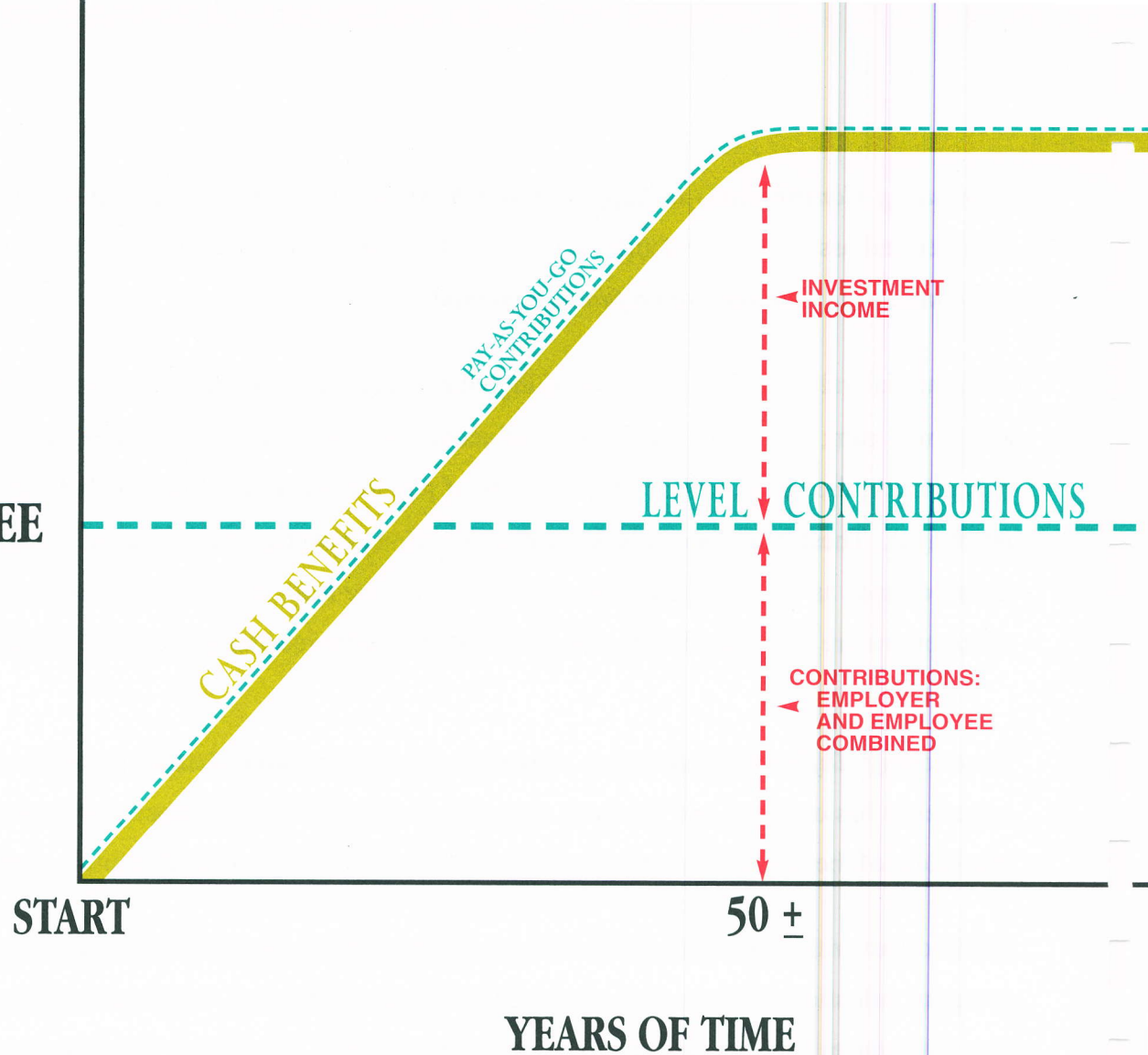
***Computing Contributions to Support Fund Benefits.*** From a given schedule of benefits and from member and asset data, the actuary calculates the contribution rates to support the benefits by means of *an actuarial valuation and a funding method.*

An actuarial valuation has a number of ingredients such as: the rate of investment return which plan assets will earn; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of pay increases; and the assumed age or ages at actual retirement. These rates cannot be known today. Consequently, in an actuarial valuation, assumptions must be made as to what the above rates will be for the next year and for decades in the future. The assumptions are established by the Board of Trustees after receiving the advice of the actuary.

***Reconciling Differences Between Assumed Experience and Actual Experience.*** Once actual experience has occurred and has been observed, it will not coincide exactly with assumed experience, regardless of the skill of the actuary and the many calculations made. The future cannot be predicted.

IMRF copes with these continually changing differences by having annual actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is *continuing adjustments in financial position.*

**% OF  
ACTIVE  
EMPLOYEE  
PAYS**



**CASH BENEFITS LINE.** This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

**LEVEL CONTRIBUTION LINE.** Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

Economic Risk Areas

- Rates of investment return
- Rates of pay increase
- Changes in active member group size

Non-Economic Risk Areas

- Ages at actual retirement
- Rates of mortality
- Rates of withdrawal of active members (turnover)
- Rates of disability

## THE ACTUARIAL VALUATION PROCESS

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*The financing diagram* on the opposite page shows the relationship between *the two fundamentally different philosophies of paying* for retirement benefits: the method where contributions match cash benefit payments (or barely exceed cash benefit payments, as in the Federal Social Security program) which is thus an *increasing contribution method*; and, the *level contribution method* which attempts to equalize contributions between the generations.

*The actuarial valuation* is the mathematical process by which the level contribution rate is determined. The activity constituting the valuation may be summarized as follows:

A. *Census Data*, including:

Retired lives now receiving benefits

Former members with vested benefits not yet payable

Active members

B. + *Asset data* (cash & investments)

C. + *Benefit provisions* that establish eligibility and amounts of payments to members

D. + *Assumptions concerning future experience* in various risk areas

E. + *The funding method* for employer contributions (the long-term, planned pattern for employer contributions)

F. + *Mathematically combining the assumptions, the funding method, and the data*

G. = Determination of:

Plan Financial position and/or

New Employer Contribution Rates



## GLOSSARY

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**ACTUARIAL ACCRUED LIABILITY.** The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost (employer and employee). Sometimes referred to as “accrued liability” or “past service liability.”

**ACCRUED SERVICE.** The service credited under the plan which was rendered before the date of the actuarial valuation.

**ACCUMULATED BENEFIT OBLIGATION.** The actuarial present value of vested and non-vested benefits based on service to date and past and current salary levels.

**ACTUARIAL ASSUMPTIONS.** Estimates of future plan 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 future plan benefits” between the actuarial present value of future normal cost and the 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 the rate(s) of interest and mortality tables used by the plan.

**ACTUARIAL PRESENT VALUE.** The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

**ACTUARIAL PRESENT VALUE OF CREDITED PROJECTED BENEFITS** or Pension Benefit Obligation. The present value of future benefits based on service to date and the effect of projected salary increases.

**ACTUARY.** A person who is trained in the applications of probability and compound interest to problems in business and finance that involve payment of money in the future, contingent upon the occurrence of future events. Most actuaries in the United States are Members of the American Academy of Actuaries. The Society of Actuaries is an international research, education and membership organization for actuaries in the life and health insurance, employee benefits, and pension fields. It administers a series of examinations leading initially to Associateship and the designation A.S.A. and ultimately to Fellowship with the designation F.S.A.

**AMORTIZATION.** Paying off an interest-bearing liability by means of periodic payments, as opposed to paying it off with a lump sum payment.

**EXPERIENCE GAIN (LOSS).** A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

**NORMAL COST.** The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

**PLAN TERMINATION LIABILITY.** The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a “going concern” basis and is not normally determined in a routine actuarial valuation.

**RESERVE ACCOUNT.** An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

**UNFUNDED ACTUARIAL ACCRUED LIABILITY.** The difference between the actuarial accrued liability and valuation assets. Sometimes referred to as “unfunded accrued liability.”

**VALUATION ASSETS.** The value of current plan assets recognized for valuation purposes.