Illinois Municipal Retirement Fund

Annual Actuarial Valuation Report

December 31, 2023

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800.521.0498 | P: 248.799.9000 | www.grsconsulting.com

March 8, 2024

Board of Trustees
Illinois Municipal Retirement Fund
Oak Brook, Illinois

Re: Illinois Municipal Retirement Fund Actuarial Valuation as of December 31, 2023
Actuarial Disclosures

Ladies and Gentlemen:

The results of the **December 31, 2023 Annual Actuarial Valuations** of members covered by the Illinois Municipal Retirement Fund (IMRF) are presented in this report.

The purpose of the valuations, as provided by Article 7 of the Illinois Pension Code, is to measure the IMRF's funding progress and to establish contribution rates for the 2025 calendar year. This report should not be relied upon for any other purpose. This report may be distributed to parties other than the Fund only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

Future actuarial measurements may differ significantly from the current measurements 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. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

This valuation assumes the continuing ability of the participating employers to make the contributions necessary to fund this plan. A determination regarding whether or not the participating employers are actually able to do so is outside our scope of expertise. Consequently, we did not perform such an analysis.

The valuation was based upon information, furnished by the IMRF staff, concerning Retirement Fund benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the IMRF Staff.

The valuations are based upon current plan provisions related to Regular Members, Sheriff's Law Enforcement Personnel (SLEP), and Elected County Officials (ECO) employment.

In addition, this report was prepared using certain assumptions approved by the Board as described in the section of this report entitled Actuarial Methods and Assumptions. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. The combined effect of the assumptions is expected to have no significant bias (i.e., not significantly optimistic or pessimistic). All actuarial assumptions and methods used in the valuation follow the guidance in the applicable Actuarial Standards of Practice.

This report includes certain risk measures but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. This report also includes a discussion of the required Low-Default-Risk Obligation Measure (LDROM) on page A-16. Additional assessment of risks was outside the scope of this assignment. A discussion of various risk measures is included on pages A-13 through A-15 of this report.

This report was prepared using our proprietary valuation model and related software which, in our professional judgment, has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of the IMRF as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Mark Buis, Francois Pieterse, and Bonita J. Wurst are Members of the American Academy of Actuaries (MAAA). These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Gabriel, Roeder, Smith & Company will be pleased to review this valuation and report with the Board of Trustees and to answer any questions pertaining to the valuation.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

Mark Buis

Mark Buis, FSA, EA, FCA, MAAA

Pieterse

Francois Pieterse, ASA, FCA, MAAA

Bonita J. Wurst

Bonita J. Wurst, ASA, EA, FCA, MAAA

MB/FP/BW:sc

Introduction

IMRF is established under statutes adopted by the Illinois General Assembly. It is an agent multiple employer defined benefit pension plan that, as of December 31, 2023, encompasses 3,401 active plans and serves 519,512 active and inactive members and retired persons. Since IMRF reports information to us by plan, there are cases in which a person with coverage 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. This issue may affect inactive members to a greater extent than it affects others. Liabilities are, however, correctly calculated and apportioned among employers. 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 7.5%; 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 for each plan 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 as a percentage of payroll for most employers (larger employers have the option of being individually rated).
- **Contributions for lump sum death-in-service benefits**, which are separately determined for each employer.
- **Contributions for temporary disability benefits**, which are 0.04% of payroll for each employer.
- **Contributions for 13th Payments**, which are 0.62% of covered payroll for each employer.
- **Contributions for Early Retirement Incentive (ERI) unfunded liabilities,** which are separately determined for each employer.
- **Contributions for other unfunded liabilities**, which are separately determined for each employer. For employers with taxing authority, unfunded liabilities are being funded over a 18-year closed period. For non-taxing employers the unfunded liabilities are being funded over a 10-year rolling period. Unfunded liabilities associated with benefit changes for SLEP members (Public Act 94-712) are amortized over 13 years for most employers. The amortization policy is described on page D-15.

The Annual Recommended Contribution rates determined in this report for the are reasonable under Actuarial Standard of Practice (ASOP) No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions, based on:

- The use of reasonable actuarial assumptions and cost methods,
- The use of reasonable amortization and asset valuation methods; and
- Application of the IMRF funding policy which will accumulate sufficient assets to make benefit payments when due, assuming all assumptions will be realized and Annual Recommended Contributions are made when due.

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

	Average Employer Contribution Rates Expressed as %'s of Active Member Pays			
	Regular	**SLEP**	**ECO**	**Average/Total**
This Valuation	6.99%	18.47%	37.87%	7.50%
Prior Valuation	6.65%	17.99%	39.73%	7.15%

This year's valuation results were affected by:

- Changes in Actuarial Assumptions due to the Triennial Experience Study done in the fourth quarter of 2023.
- Unfavorable investment performance.
- Liability losses, mostly due to higher pay increases than expected.
- Continued recognition of Tier 2 benefits for new hires.
- ERI liabilities.
- Three employers are individually rated (DuPage County; Union School District 46 and Peoria County). Although these employers will receive separate valuation reports, member counts, assets, and liabilities for these employers are also included in the totals in this valuation report.

A full reconciliation of changes in contribution rates can be found in the Gain/Loss Analysis report. Based upon this year's valuation results, IMRF is 96.6% funded and the average/total employer rate is 7.50% of payroll.

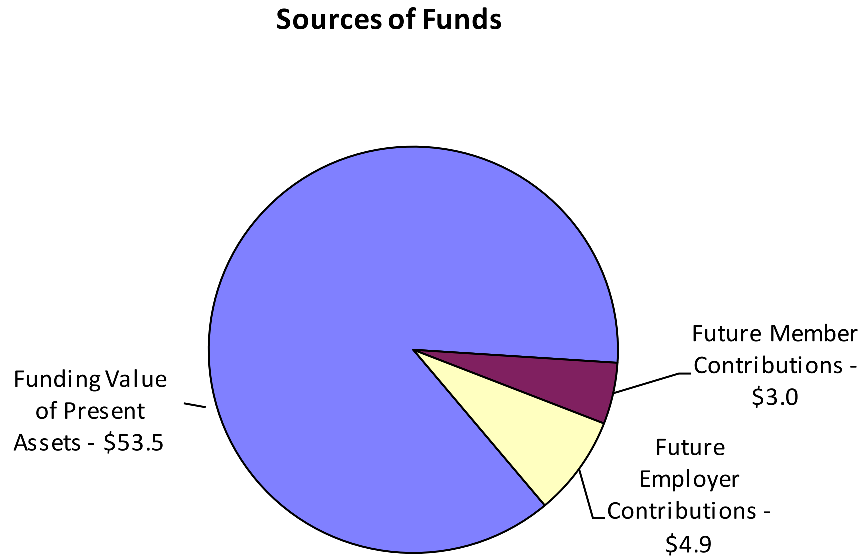
Section A of this report describes this year's valuation results in depth.

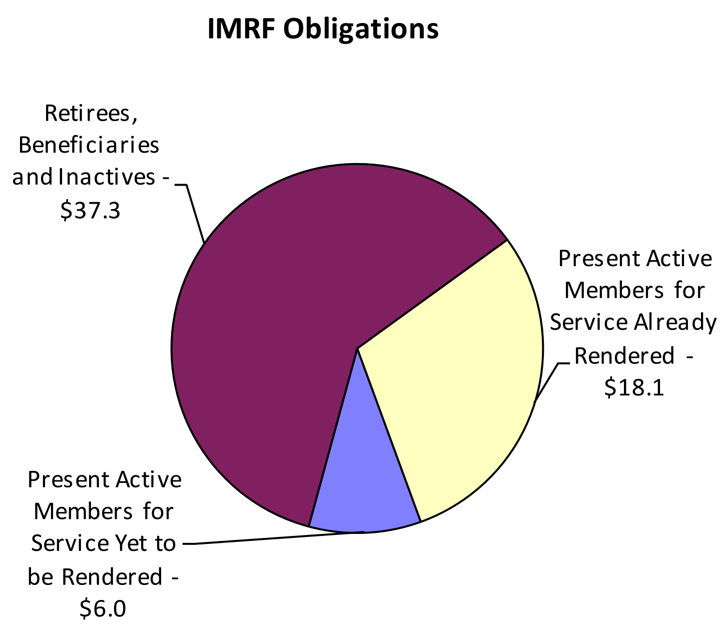
Looking Ahead: Due to the asset smoothing method, only a portion of the current year's asset gain was recognized. If the Market Value of Assets were used (instead of smoothed value), the funded status would have been about 95.2% (instead of 96.6%). Absent offsetting gains, this will put upward pressure on contribution rates. To the extent that actual returns fall below/(above) the assumed return of 7.25%, contribution requirements will increase/(decrease).

SECTION A

VALUATION RESULTS

Financing $61.4 Billion Worth of Benefit Promises to Present Members, Retirees and Beneficiaries December 31, 2023 (Amounts in $Billions)





Actuarial Balance Sheet
December 31, 2023

Funding Sources	Regular	SLEP	ECO	Total
Present Valuation Assets				
Member Contributions	$ 7,203,014,179	$ 446,166,025	$ 16,421,050	$ 7,665,601,254
VA Member Contributions	520,537,858	37,103,081	485,454	558,126,393
Employer Assets	10,789,613,164	509,754,064	170,697	11,299,537,925
Retired Life Assets	29,496,570,483	2,535,895,477	318,761,348	32,351,227,308
Market Value Adjustment	1,514,990,053	111,486,312	10,700,401	1,637,176,766
Death and Disability Reserves				24,076,921
Total Present Assets	$49,524,725,737	$3,640,404,959	$346,538,950	$53,535,746,567
Future Assets				
Member Contributions	$ 2,786,479,167	$ 206,438,199	$ 1,519,190	$ 2,994,436,556
Employer Contributions				
Normal Costs	2,786,677,480	223,354,327	2,643,391	3,012,675,198
Unfunded Liability	1,466,069,960	385,193,168	18,079,030	1,869,342,158
Total Employer	$ 4,252,747,440	$ 608,547,495	$ 20,722,421	$ 4,882,017,356
Total Future Assets	$ 7,039,226,607	$ 814,985,694	$ 22,241,611	$ 7,876,453,912
Total Funding Sources	**$56,563,952,344**	**$4,455,390,653**	**$ 368,780,561**	**$61,412,200,479**

Funding Uses

Funds Needed for	Regular	SLEP	ECO	Total
Active Members	$21,773,347,519	$1,745,953,621	$ 32,904,030	$23,552,205,170
Inactive Members	4,773,496,484	136,438,474	16,629,729	4,926,564,687
VA Members	520,537,858	37,103,081	485,454	558,126,393
Retirees and Beneficiaries	29,496,570,483	2,535,895,477	318,761,348	32,351,227,308
Death and Disability Benefits				24,076,921
Total Actuarial Present Value	**$56,563,952,344**	**$4,455,390,653**	**$368,780,561**	**$61,412,200,479**

Development of Average Contribution Rates
Applicable to Calendar Year 2025
(Results as of December 31, 2023)

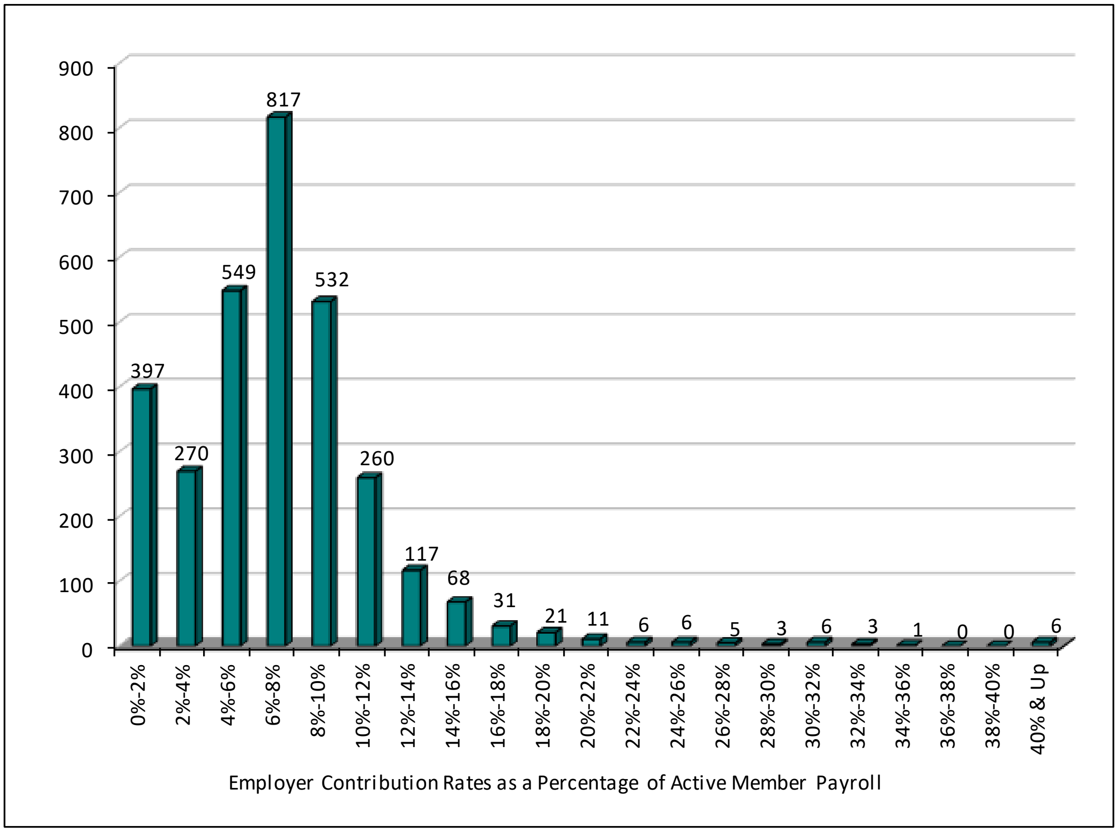
	% of Active Member Pays		
	Regular	**SLEP**	**ECO**
Tier 1 Employer Normal Cost	6.11 %	10.97 %	13.05 %
Tier 2 Employer Normal Cost	3.37 %	6.61 %	13.05 %
Average Employer Contributions for			
Normal Cost*			
Retirement	4.61 %	8.69 %	12.74 %
$3,000 Lump Sum Death Benefit	0.02 %	0.01 %	0.03 %
Total & Permanent Disability Benefit	0.01 %	0.04 %	0.28 %
Total Normal Cost	4.64 %	8.74 %	13.05 %
Lump Sum Death-in-Service Benefits	0.12 %	0.13 %	0.16 %
Temporary Disability	0.04 %	0.04 %	0.04 %
13th Payments	0.62 %	0.62 %	0.62 %
Unfunded (Overfunded) Liabilities (18/10 years)	1.49 %	7.02 %	24.00 %
Early Retirement Incentive Liabilities	0.08 %	0.05 %	0.00 %
SLEP Supplemental Liabilities	0.00 %	1.87 %	0.00 %
Total Average Employer Rate	**6.99 %**	**18.47 %**	**37.87 %**
Prior Year Averages	6.65 %	17.99 %	39.73 %

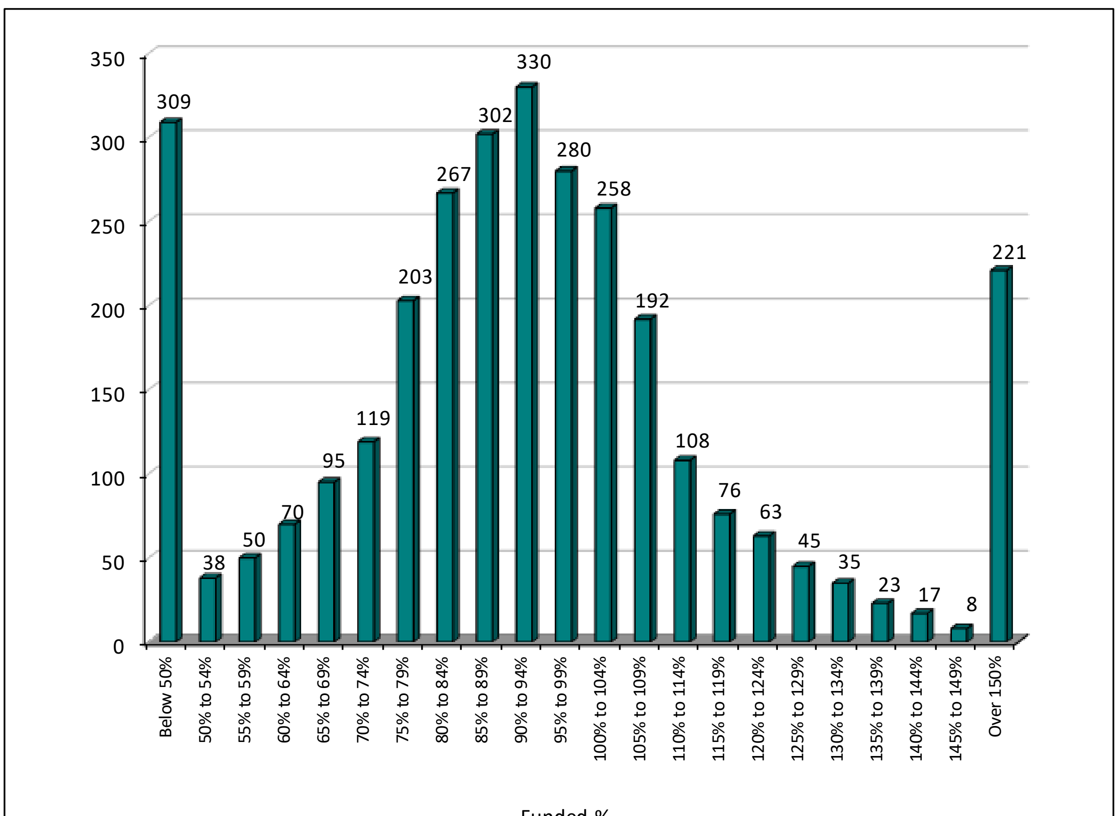
* *Average of Tier 1 and Tier 2 Normal Cost weighted on expected payroll.*

Each employer pays its normal cost in accordance with its mix of Tier 1 and Tier 2 employees and the percentages above (some larger employers have the option of paying an individual normal cost rate) and the same rate for temporary disability benefits and 13th Payments. 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 based on the annual required contribution from the prior year among the 3,109 Regular plans, 225 SLEP plans and 67 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.

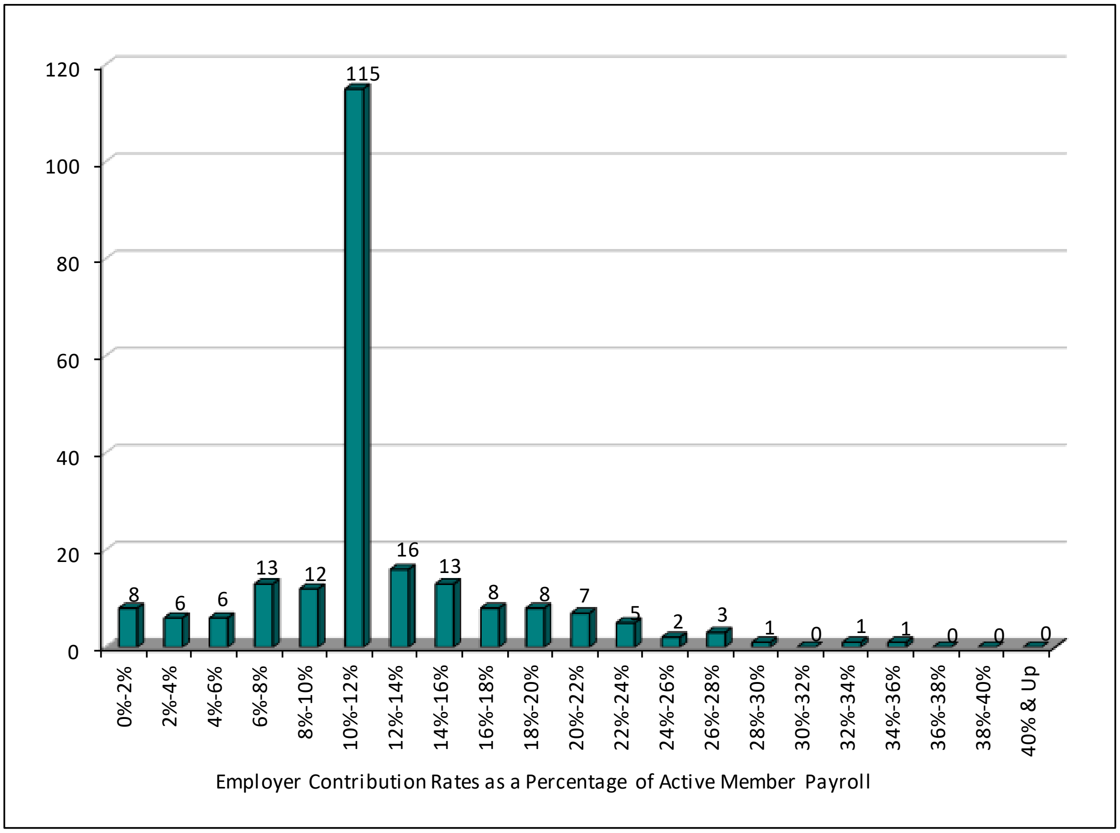
Employer contributions made during calendar year 2023 amounted to $652 million. This compares with $807 million in the previous year.

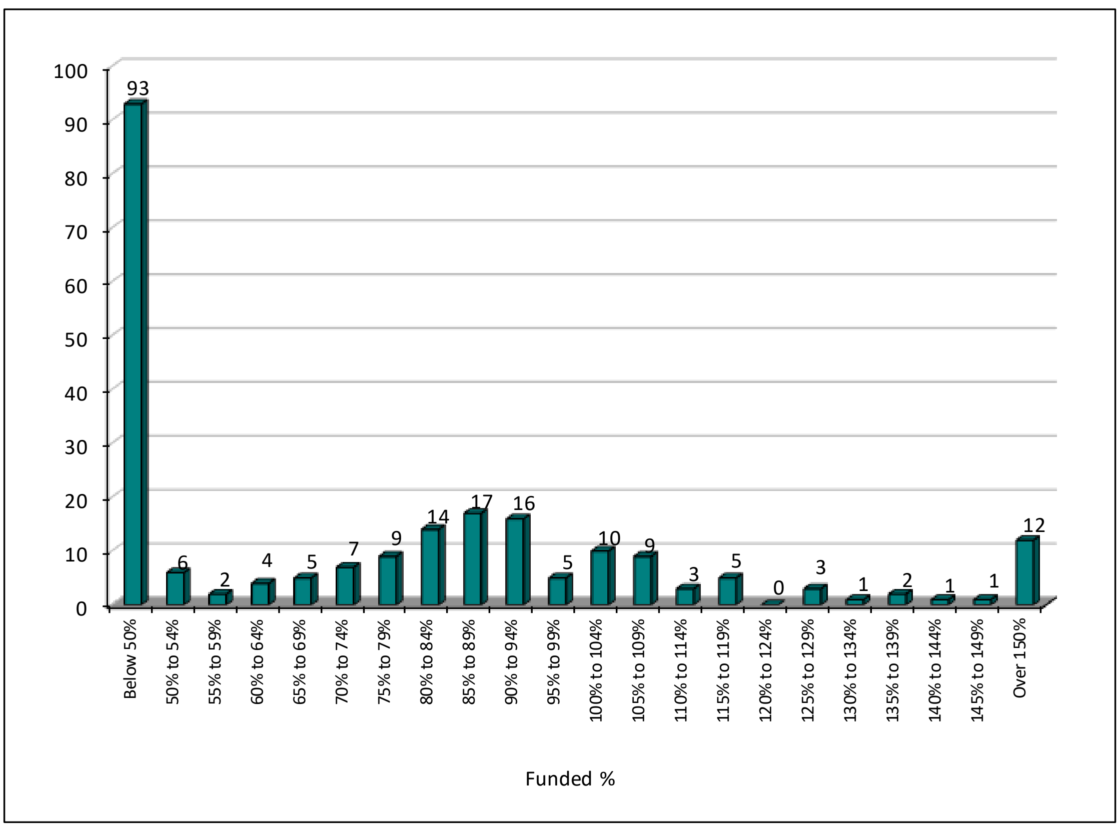
Employer Contribution Rates and Funded Percents
3,109 Regular Employers at December 31, 2023



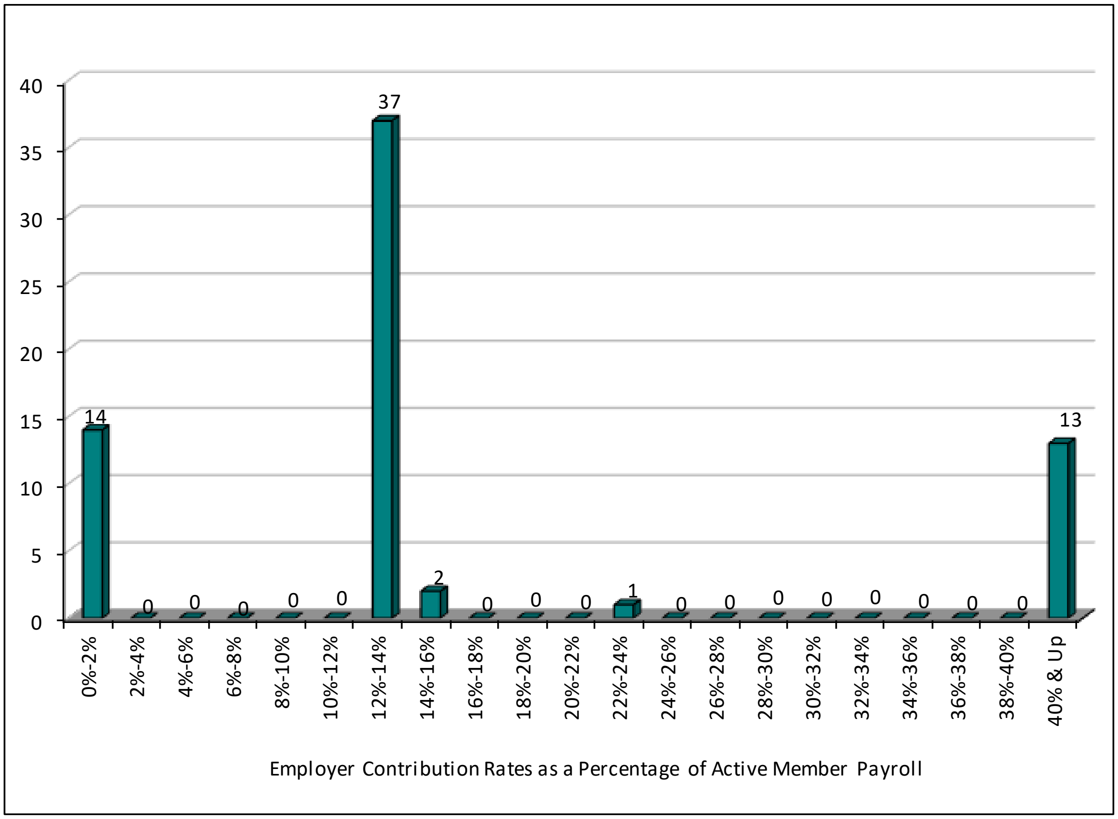


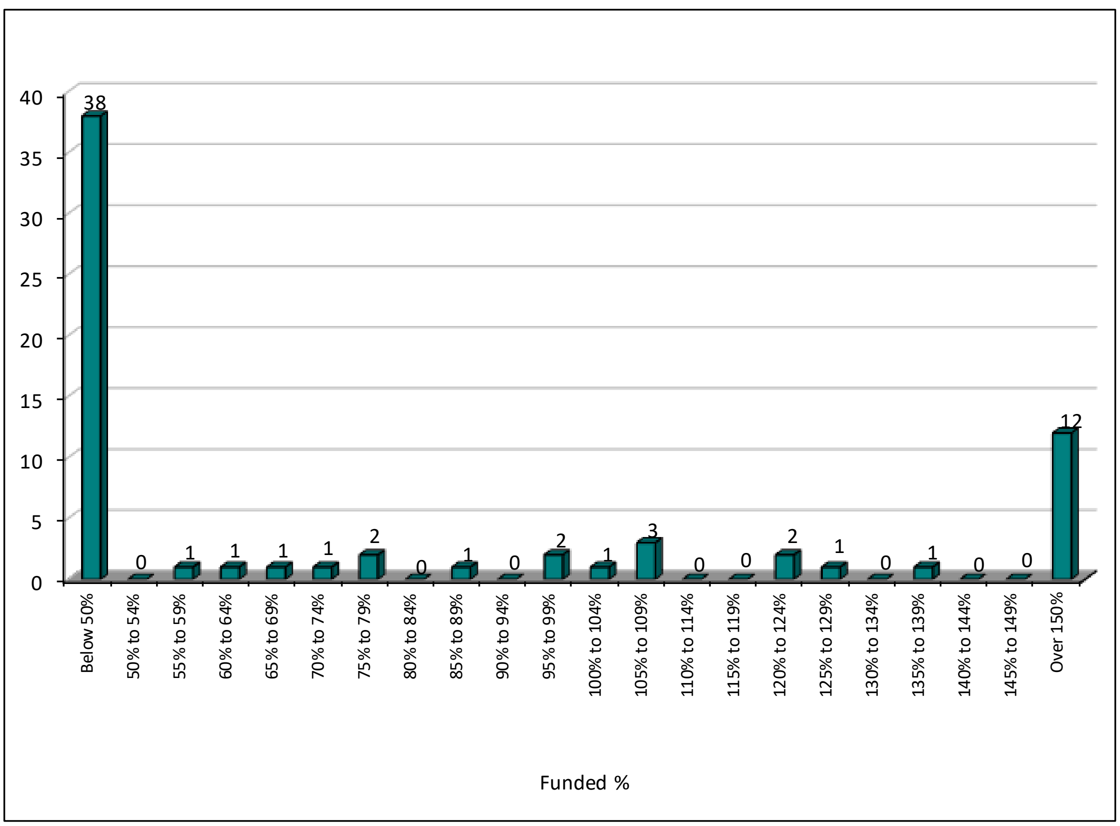
Employer Contribution Rates and Funded Percents
225 SLEP Employers at December 31, 2023



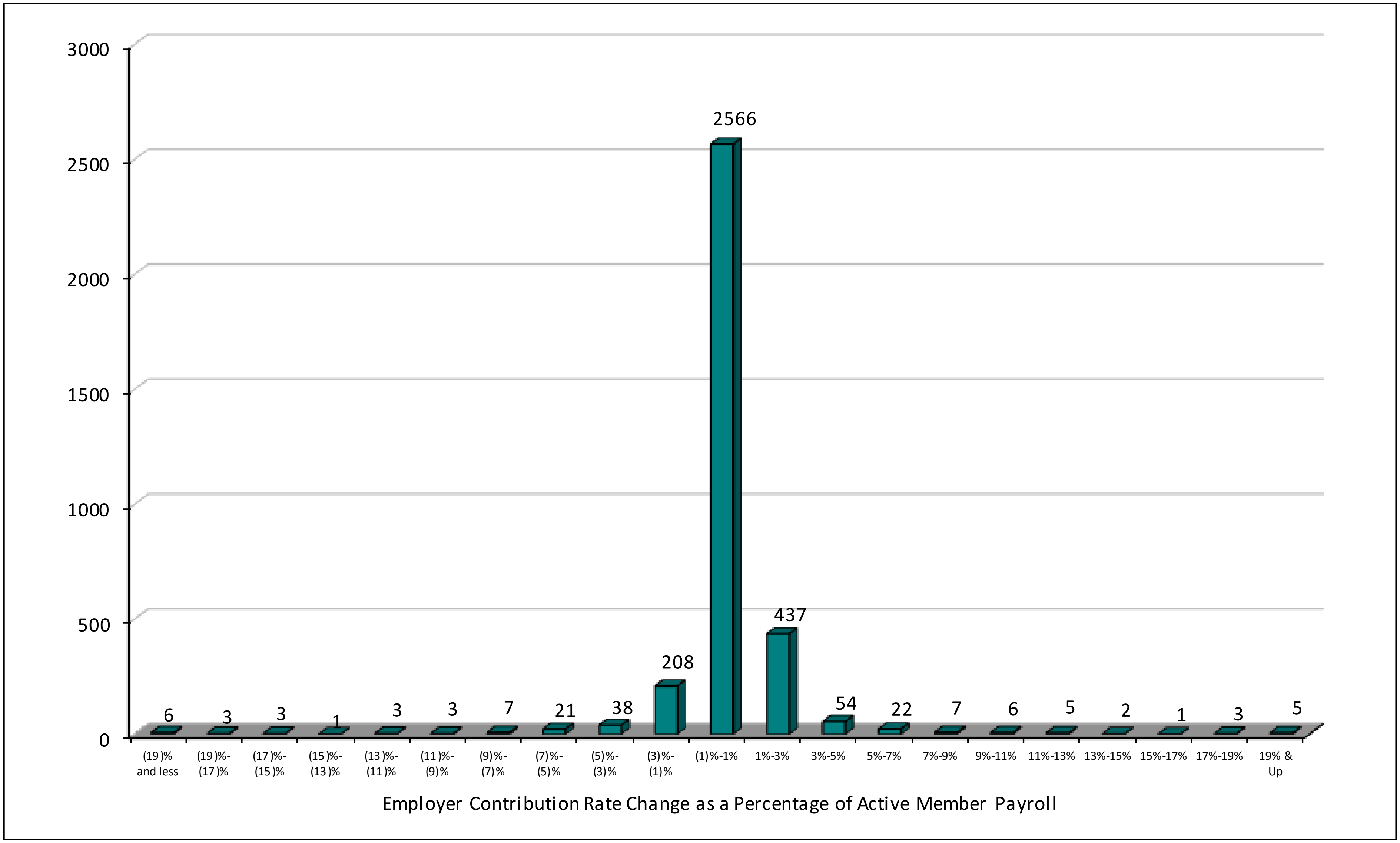


Employer Contribution Rates and Funded Percents
67 ECO Employers at December 31, 2023





Employer Contribution Rate Changes - 2023 Actuarial Valuations
3,401 Employers



Historical Summary of Employer Rates

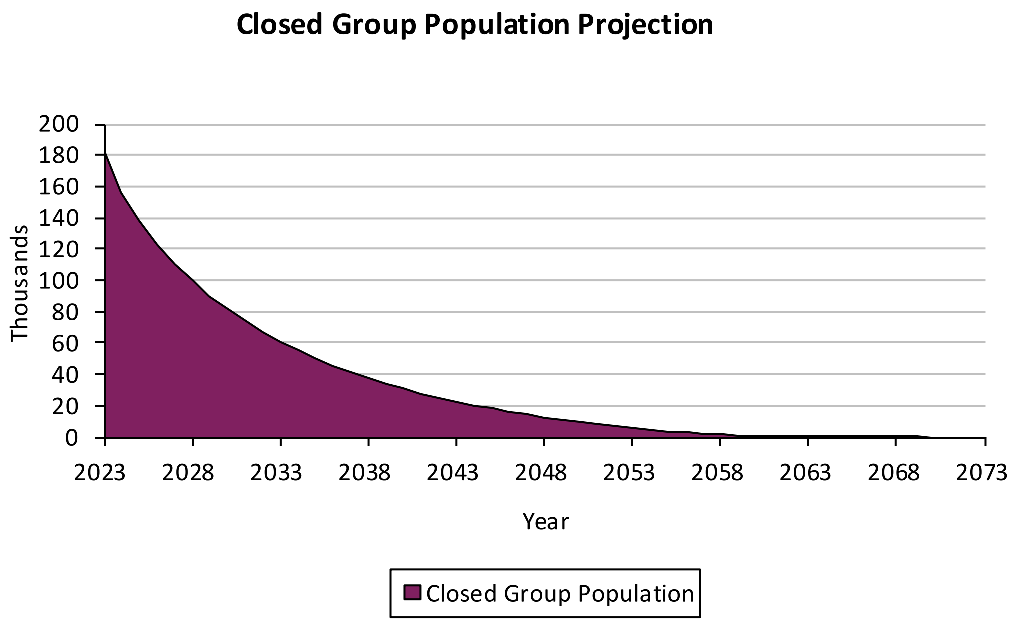
Rate Applies to Calendar Year	Rate Computed as of December 31	Employer Contribution Rate Expressed as % of Active Member Payroll					
		Regular Members		SLEP Members		ECO Members	
		Normal Cost	Average Total Rate	Normal Cost	Average Total Rate	Normal Cost	Average Total Rate
2001	1999 [1]	7.41%	6.64%	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 [1]	7.60%	7.82%	12.47%	16.29%	18.18%	44.90%
2005	2003	7.61%	9.25%	12.48%	17.15%	18.07%	42.66%
2006	2004	7.64%	10.04%	12.56%	18.25%	18.01%	44.90%
2007	2005 [1, 2]	7.43%	9.72%	11.66%	18.42%	17.52%	41.30%
2008	2006	7.42%	9.47%	11.63%	19.33%	16.96%	41.80%
2009	2007	7.42%	9.27%	11.63%	18.65%	17.08%	42.77%
2010	2008 [1]	7.58%	11.89%	11.97%	21.63%	17.24%	43.57%
2011	2009	7.58%	12.14%	11.97%	21.76%	17.20%	42.72%
2012	2010	7.58%	12.42%	12.01%	22.48%	17.22%	47.15%
2013	2011 [1, 2]	7.77%	12.85%	12.74%	23.40%	17.63%	46.85%
2014	2012	7.64%	12.58%	12.61%	23.20%	17.59%	74.52%
2015	2013	7.51%	11.69%	12.42%	22.33%	17.73%	70.37%
2016	2014 [1]	6.84%	11.73%	11.95%	22.71%	16.49%	86.07%
2017	2015	6.71%	11.34%	11.77%	22.39%	16.83%	73.50%
2018	2016	6.61%	11.24%	11.63%	21.49%	16.85%	82.72%
2019	2017 [1]	5.61%	9.06%	10.98%	20.50%	13.21%	66.43%
2020	2018 [1]	5.98%	10.91%	11.94%	24.48%	13.79%	72.66%
2021	2019	5.86%	10.62%	11.72%	23.70%	14.21%	71.68%
2022	2020 [1]	5.22%	8.59%	10.05%	19.81%	13.26%	61.37%
2023	2021	5.09%	6.55%	9.87%	16.38%	13.14%	38.13%
2024	2022	4.96%	6.65%	9.61%	17.99%	12.81%	39.73%
2025	**2023 [1]**	**4.64%**	**6.99%**	**8.74%**	**18.47%**	**13.05%**	**37.87%**

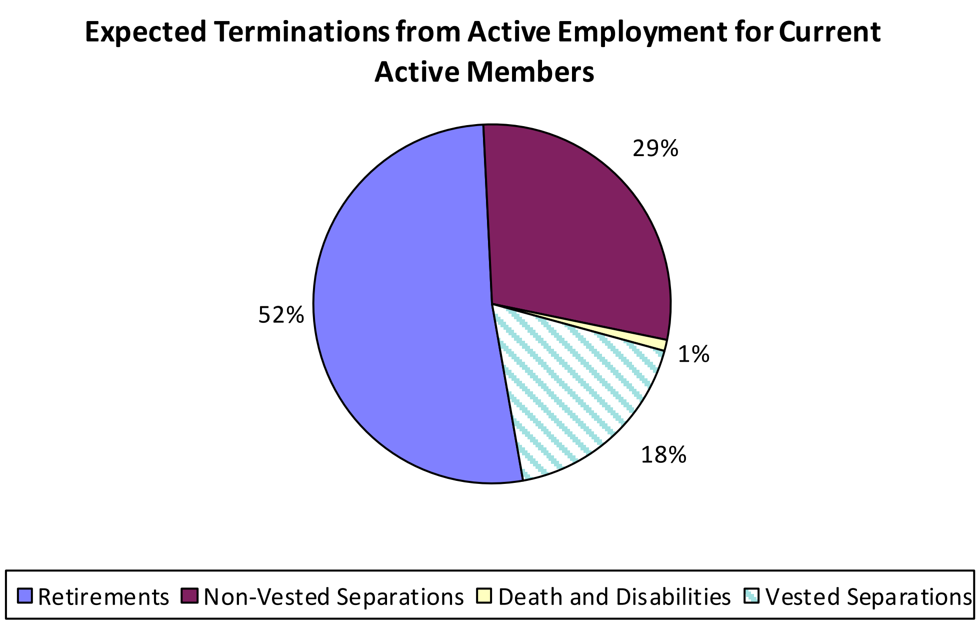
[1] *Assumption change.*
[2] *Benefit change.*

As shown above, the average employer contribution rates increased this year for regular and SLEP and decreased for ECO employers. The increase was primarily due to pay increases being higher than what was expected in 2023 and the phase-ins of prior investment losses. For ECO employers the decrease was primarily due to less retirements than expected and higher payrolls. 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.

Most of the larger changes were for small employers (often employers covering just a few employees), since the removal or addition of one 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 adjusted following that review. Also, under certain circumstances employers have been allowed to phase in rate changes. Such adjustments are not reflected in this report.

Expected Development of Present Population
December 31, 2023





The charts above show the expected future development of the present population in simplified terms. The Retirement System presently covers 181,357 active members. Eventually, 29% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for a monthly benefit. About 70% 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. One percent of the present population is expected to become eligible for death-in-service or disability benefits. **Within six years, over half of the covered membership is expected to consist of new hires.**

Unfunded Actuarial Accrued Liabilities

In a retirement fund 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. The schedule below illustrates the development of the unfunded liability, based upon actuarial value of assets, during the year.

	Unfunded Liability Development During	
	2023	**2022**
Unfunded (Overfunded) Liability January 1	$ 970,238,758	$736,003,199
Assumed Net (Payments) Credits	(81,553,829)	(49,091,971)
Assumed Interest	67,420,446	51,601,401
Expected Unfunded Liability December 31	956,105,375	738,512,629
Increase/(Decrease) Due to Change in Assumptions	(29,009,402)	0
Increase/(Decrease) Due to Benefit Changes	0	0
Increase/(Decrease) Due to Data Changes	0	0
Loss/(Gain) Due to Investment Experience	439,031,784	23,294,564
Loss/(Gain) Due to Other Sources	503,214,401	208,431,565
Actual Unfunded Liability December 31	$ 1,869,342,158	$970,238,758

Unfunded Actuarial Accrued Liabilities
Comparative Statement
(Amounts in $Millions)

Valuation Date	(1) Actuarial Accrued Liabilities (AAL)	(2) Funding Value of Assets	(3) Unfunded AAL	(4) Valuation Payroll	(5) Funded Ratio (2)/(1)	(6) Liability/ Payroll (1)/(4)	(7) Assets/ Payroll (2)/(4)	(8) Unfunded/ Payroll (3)/(4)
1998	$ 11,860.9	$ 11,636.5	$ 224.4	$3,696.0	98.1%	320.9%	314.8%	6.1%
1999*	13,005.0	13,520.2	(515.2)	3,952.1	104.0%	329.1%	342.1%	-
2000	14,153.1	15,169.4	(1,016.3)	4,184.7	107.2%	338.2%	362.5%	-
2001	15,318.5	16,305.0	(986.5)	4,503.1	106.4%	340.2%	362.1%	-
2002*	16,559.9	16,800.2	(240.3)	4,755.1	101.5%	348.3%	353.3%	-
2003	17,966.1	17,529.9	436.2	4,944.8	97.6%	363.3%	354.5%	8.8%
2004	19,424.7	18,316.0	1,108.7	5,161.1	94.3%	376.4%	354.9%	21.5%
2005 *#	20,815.1	19,698.4	1,116.7	5,374.6	94.6%	387.3%	366.5%	20.8%
2006	22,488.2	21,427.1	1,061.0	5,630.7	95.3%	399.4%	380.5%	18.8%
2007	24,221.5	23,274.4	947.2	5,931.4	96.1%	408.4%	392.4%	16.0%
2008 *	25,611.2	21,601.1	4,010.1	6,259.3	84.3%	409.2%	345.1%	64.1%
2009	27,345.1	22,754.8	4,590.3	6,461.7	83.2%	423.2%	352.1%	71.0%
2010	29,129.2	24,251.1	4,878.1	6,391.2	83.3%	455.8%	379.4%	76.3%
2011 *#	30,962.8	25,711.3	5,251.5	6,431.3	83.0%	481.4%	399.8%	81.7%
2012	32,603.2	27,491.8	5,111.4	6,496.1	84.3%	501.9%	423.2%	78.7%
2013	34,356.6	30,083.0	4,273.6	6,602.5	87.6%	520.4%	455.6%	64.7%
2014 *	37,465.1	32,700.2	4,764.9	6,732.5	87.3%	556.5%	485.7%	70.8%
2015	39,486.6	34,913.1	4,573.5	6,919.3	88.4%	570.7%	504.6%	66.1%
2016	41,358.7	36,773.4	4,585.3	7,006.7	88.9%	590.3%	524.8%	65.4%
2017 *	42,179.5	39,187.8	2,991.7	7,127.5	92.9%	591.8%	549.8%	42.0%
2018 *	45,354.1	40,830.0	4,524.1	7,321.5	90.0%	619.5%	557.7%	61.8%
2019	47,357.9	42,936.2	4,421.7	7,547.5	90.7%	627.5%	568.9%	58.6%
2020 *	48,922.9	46,017.4	2,905.5	7,568.2	94.1%	646.4%	608.0%	38.4%
2021	50,927.6	50,191.5	736.1	7,811.1	98.6%	652.0%	642.6%	9.4%
2022	53,112.9	52,142.7	970.2	8,303.3	98.2%	639.7%	628.0%	11.7%
2023 *	**55,405.1**	**53,535.7**	**1,869.4**	**8,954.4**	**96.6%**	**618.7%**	**597.9%**	**20.9%**

* *Assumption change.*
\# *Benefit change.*

While no one or two numeric indices can fully describe the financial condition of a retirement fund, trends in both the Funded Ratio (Column 5) and the Unfunded/Payroll Ratio (Column 8) 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 fund 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%.

Unfunded Actuarial Accrued Liabilities

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 7.25% on the actuarial value of assets), it is expected that:

1. The employer normal cost as a percentage of pay will decrease to the level of the Tier 2 normal cost as time passes as the majority of the active population will consist of Tier 2 members;
2. The unfunded actuarial accrued liability will increase in dollar amount for several years before it begins to decrease; and
3. The funded status of the plan will increase gradually towards a 100% funded ratio without ever actually reaching it.

When selecting a contribution allocation procedure, the following three items should be considered, including the balance amongst the three items: (1) benefit security, (2) intergenerational equity, and (3) contribution stability and predictability. Generally, given the nature of public employee retirement systems (e.g., level contribution financing objective and perceived ongoing nature of the plan or plan sponsor), intergenerational equity and contribution stability and predictability have received more consideration than benefit security when contribution allocation procedures are selected. However, given the importance of benefit security to any retirement system, we suggest that contributions to the Fund in excess of those presented in this report be considered.

Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

1. The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations; in other words, for transferring the obligations to an unrelated third party (e.g., insurance company) in a market value type transaction. In addition, the measurement is inappropriate for assessing benefit security for the membership.
2. The measurement is dependent upon the actuarial cost method which, in combination with the plan's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).

The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets, unless the market value of assets is used in the measurement.

Risk Measures

Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Examples of risks that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. **Investment Risk** – actual investment returns may differ from the expected returns;
2. **Asset/Liability Mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. **Contribution Risk** – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. **Salary and Payroll Risk** – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
5. **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
6. **Other Demographic Risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated. If the investment return assumption is on the optimistic end of the spectrum, investment experience may be less favorable than assumed, leading to increases in contribution rates.

The contribution rates developed in connection with this valuation are designed to comply with the Board's funding policy and actuarial standards of practice, but do not set a maximum amount that may be contributed. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

Risk Measures (Continued)

$ Millions									
Valuation Date	(1) Accrued Liabilities (AAL)	(2) Market Value of Assets	(3) Unfunded AAL (1)-(2)	(4) Valuation Payroll	(5) Change in Valuation Payroll	(6) Funded Ratio (2)/(1)	(7) Annuitant Liabilities (AnnLiab)	(8) AnnLiab/ AAL (7)/(1)	(9) Liability/ Payroll (1)/(4)
2007	$24,221.5	$24,211.5	$ 10.0	$5,931.4	5.3%	100.0%	$ 9,400.8	38.8%	408.4%
2008 *	25,611.2	18,000.9	7,610.3	6,259.3	5.5%	70.3%	10,025.6	39.1%	409.2%
2009	27,345.1	22,282.2	5,062.9	6,461.7	3.2%	81.5%	10,903.3	39.9%	423.2%
2010	29,129.2	25,132.4	3,996.8	6,391.2	-1.1%	86.3%	12,122.0	41.6%	455.8%
2011 *#	30,962.8	24,833.7	6,129.1	6,431.3	0.6%	80.2%	13,388.0	43.2%	481.4%
2012	32,603.2	27,995.3	4,607.9	6,496.1	1.0%	85.9%	14,482.6	44.4%	501.9%
2013	34,356.6	33,203.0	1,153.6	6,602.5	1.6%	96.6%	15,753.1	45.9%	520.4%
2014 *	37,465.1	34,833.1	2,632.0	6,732.5	2.0%	93.0%	17,885.0	47.7%	556.5%
2015	39,486.6	34,461.1	5,025.5	6,919.3	2.8%	87.3%	19,471.6	49.3%	570.7%
2016	41,358.7	36,446.8	4,911.9	7,006.7	1.3%	88.1%	21,085.5	51.0%	590.3%
2017*	42,179.5	41,312.7	866.8	7,127.5	1.7%	97.9%	22,007.9	52.2%	591.8%
2018	45,354.1	38,755.6	6,598.5	7,321.5	2.7%	85.5%	24,106.3	53.2%	619.5%
2019	47,357.9	44,923.5	2,434.4	7,547.5	3.1%	94.9%	25,719.5	54.3%	627.5%
2020 *	48,922.9	50,229.7	(1,306.8)	7,568.2	0.3%	102.7%	27,251.8	55.7%	646.4%
2021	50,927.6	57,215.4	(6,287.8)	7,811.1	3.2%	112.3%	29,173.1	57.3%	652.0%
2022	53,112.9	48,200.9	4,912.0	8,303.3	6.3%	90.8%	30,872.7	58.1%	639.7%
2023 *	**55,405.1**	**52,765.1**	**2,640.0**	**8,954.4**	**7.8%**	**95.2%**	**32,351.2**	**58.4%**	**618.7%**

Beginning in 2018, these Risk Measures were based on 7.25% future investment return.

Notes:

** IMRF had experience studies in these years leading to a change or "true up" in actuarial assumptions. A pattern of periodic studies is a sign of a well run system and suggests the extent to which the liability measures the actuary provides are likely to be realistic.*

 # IMRF had benefit changes in these years. Benefit increases cause liabilities to rise; benefit decreases cause liabilities to fall. In either case, benefit changes affect the year-by-year comparability of the measures on this page.

(5). When payroll grows at or faster than the assumed rate, funding of unfunded accrued liabilities is likely to proceed at least at the scheduled rate. Payroll growing slower than the assumed rate can lead to underfunding of the plan because expected contributions for unfunded liability may not be received.

(6). The Funded ratio is the most widely known measure of a plan's financial strength, but the trend in the funded ratio is much more important than the absolute ratio. There can be more than one funded ratio measurement. The funded ratio shown on this page is computed on a Market Value basis. The funded ratio should trend to 100%. As it approaches 100%, it is important to re-evaluate the level of investment risk in the portfolio and potentially to re-evaluate the assumed rate of return.

(7) and (8). The ratio of Annuitant liabilities to total accrued liabilities gives an indication of the maturity of the system. As the ratio increases, cash flow needs increase, and the investment policy may need to change. A ratio on the order of 50% indicates a maturing system. A ratio significantly higher than 200% may indicate a closed system or another special situation.

(9). The ratio of liabilities to payroll gives an indication of both maturity and volatility. Many systems have ratios between 500% and 700%. Ratios significantly above that range may indicate difficulty in supporting the benefit level as a level % of payroll.

Risk Measures (Concluded)

$ Millions								
Valuation Date	(10) Assets/ Payroll (2)/(4)	(11) Portfolio StdDev	(12) Std Dev % of Pay (10)x(11)	(13) Unfunded/ Payroll (3)/(4)	(14) Net External Cash Flow (NECF)	(15) NECF/ Assets (14)/(2)	(16) Portfolio Rate of Return	(17) 10-Year Trailing Average
2007	408.2%			0.2%	(63.2)	-0.3%	8.1%	
2008 *	287.6%			121.6%	(84.2)	-0.5%	-25.3%	
2009	344.8%			78.4%	(118.7)	-0.5%	24.5%	
2010	393.2%			62.5%	(115.5)	-0.5%	13.3%	5.0%
2011 *#	386.1%			95.3%	(187.3)	-0.8%	-0.4%	5.7%
2012	431.0%			70.9%	(210.9)	-0.8%	13.6%	8.1%
2013	502.9%			17.5%	(271.9)	-0.8%	19.7%	7.8%
2014 *	517.4%	13.1%	67.8%	39.1%	(391.9)	-1.1%	6.1%	7.2%
2015	498.0%	13.9%	69.2%	72.6%	(532.8)	-1.5%	0.5%	6.4%
2016	520.2%	12.0%	62.3%	70.1%	(624.9)	-1.7%	7.6%	5.9%
2017*	579.6%	13.4%	77.8%	12.2%	(789.5)	-1.9%	15.7%	6.6%
2018	529.3%	13.1%	69.4%	90.1%	(878.2)	-2.3%	-4.1%	9.3%
2019	595.2%	13.0%	77.4%	32.3%	(1,178.4)	-2.6%	19.2%	8.8%
2020 *	663.7%	12.5%	83.0%	-	(1,166.6)	-2.3%	14.6%	8.9%
2021	732.5%	12.5%	91.6%	-	(1,289.9)	-2.3%	16.7%	10.6%
2022	580.5%	12.8%	74.3%	59.2%	(1,606.2)	-3.3%	-13.1%	7.8%
2023 *	**589.3%**	**10.1%**	**59.6%**	**29.5%**	**(1,880.1)**	**-3.6%**	**13.6%**	**7.2%**

Beginning in 2018, these Risk Measures were based on 7.25% future investment return.

Notes:

** IMRF had experience studies in these years leading to a change or "true up" in actuarial assumptions. A pattern of periodic studies is a sign of a well run system and suggests the extent to which the liability measures the actuary provides are likely to be realistic.*

 # IMRF had benefit changes in these years. Benefit increases cause liabilities to rise; benefit decreases cause liabilities to fall. In either case, benefit changes affect the year-by-year comparability of the measures on this page.

(10). The ratio of assets to payroll gives an indication of both maturity and volatility. Many systems have ratios between 500% and 700%. Ratios significantly above that range may indicate difficulty in supporting the benefit level as a level % of payroll.

(11) and (12). The portfolio standard deviation measures the volatility of investment return. When multiplied by the ratio of assets to payroll it gives the effect of a one standard deviation asset move as a percent of payroll. This figure helps users understand the difficulty of dealing with investment volatility and the challenges volatility brings to sustainability.

(13). The ratio of unfunded liability to payroll gives an indication of the plan sponsor's ability to actually pay off the unfunded liability. A ratio above approximately 300% or 400% may indicate difficulty in discharging the unfunded liability within a reasonable time frame.

(14) and (15). The ratio of Net External Cash Flow to assets is an important measure of sustainability. Negative ratios are common and expected for a maturing system. In the longer term, this ratio should be on the order of approximately -4%. A ratio that is significantly more negative than that for an extended period could be a leading indicator of potential exhaustion of assets.

(16) and (17). Investment return is probably the largest single risk that most systems face. The year by year return and the 10-year geometric average give an indicator of the historical performance of the portfolio versus the system's assumed return. The averages through 2017 are affected by the events of 2008.

Low-Default-Risk Obligation Measure

Actuarial Standards of Practice No. 4 (ASOP No. 4) was revised and reissued in December 2021 by the Actuarial Standards Board (ASB). It includes a new calculation called a Low-Default-Risk Obligation Measure (LDROM) to be prepared and issued annually for defined benefit pension plans. The transmittal memorandum for ASOP No. 4 includes the following explanation:

> *"The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the "right" liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date."*

The LDROM estimates the amount of money the plan would need to invest in low risk securities to provide the benefits with greater certainty. The current model expects lower costs but with higher risk, which creates less certainty and a possibility of higher costs. The LDROM model creates higher expected costs but more predictability when compared to the current model. Thus, the difference between the two measures (Valuation and LDROM) is one illustration of the possible costs the sponsor could incur if there was a reduction in the investment risk in comparison to the current diversified portfolio, . However, the downside risk would be limited in the scenarios where the current portfolio would fail to achieve returns in excess of the low-default-risk discount, in this case 4.79%.

The following information has been prepared in compliance with this new requirement. Unless otherwise noted, the measurement date, actuarial cost methods, and assumptions used are the same as for the funding valuation covered in this actuarial valuation report.

Valuation Accrued Liabilities	LDROM
(in $ Millions)	
$ 55,405.1	$ 72,589.0

ASOP No. 4 requires commentary to help the intended user understand the significance of the LDROM with respect to the funded status of the plan, plan contributions, and the security of participant benefits. Specifically, if plan assets were changed to be invested exclusively in low-default-risk securities, the funded status would be lower and the contributions would have to immediately be higher. While investing in a portfolio with low-default-risk securities may be more likely to reduce the standard deviation of investment volatility, the higher necessary contributions would produce a larger ratio of assets to payroll, and thus it is not self-evident that the volatility of the employer contributions would be any lower. In addition, the portfolio would be expected to generate less investment earnings over time, thus it also would be more likely to result in higher employer contributions and/or lower benefits.

Disclosures: Discount rate used to calculate LDROM: 4.79%. This single equivalent discount rate was derived using the expected benefit payments of the IMRF, generated in the annual valuation and using the Intermediate FTSE Pension Discount Curve as of December 31, 2023. This measure is not appropriate for assessing the need for or amount of future contributions as the current portfolio is expected to generate significantly more investment earnings than the low-default-risk portfolio. This measure is also not appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation as this measure includes projections of salary increases and the ability for current members to continue to accrue eligibility and vesting service.

Short Condition Test

If the contributions to IMRF are level in concept and soundly executed, the Fund 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; and
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 (Regular, SLEP, ECO Combined)

	Aggregate Actuarial Liabilities For				Portion of Actuarial Liabilities Covered by Assets		
Calendar Year	(1) Non-Retired Contributions	(2) Annuitants	(3) Non-Retired Members (Employer Financed Portion)	Funding Value of Assets	(1)	(2)	(3)
2006	$3,960,880,175	$ 8,652,328,762	$ 9,874,976,094	$ 21,427,139,356	100%	100%	89.3%
2007	4,248,399,825	9,400,832,984	10,572,310,907	23,274,361,198	100%	100%	91.0%
2008*	4,573,736,116	10,025,599,295	11,011,863,938	21,601,053,512	100%	100%	63.6%
2009	4,893,022,745	10,903,323,478	11,548,766,993	22,754,803,784	100%	100%	60.3%
2010	5,153,902,881	12,121,959,266	11,853,366,092	24,251,136,889	100%	100%	58.8%
2011 *#	5,417,822,062	13,388,018,799	12,156,974,567	25,711,287,584	100%	100%	56.8%
2012	5,705,336,025	14,482,560,758	12,415,347,316	27,491,809,785	100%	100%	58.8%
2013	5,957,217,332	15,753,071,341	12,646,286,800	30,083,042,548	100%	100%	66.2%
2014 *	6,262,110,058	17,885,026,667	13,318,010,887	32,700,208,537	100%	100%	64.2%
2015	6,488,892,894	19,506,345,352	13,491,335,644	34,913,127,469	100%	100%	66.1%
2016	6,714,120,028	21,085,519,077	13,559,071,297	36,773,397,527	100%	100%	66.2%
2017 *	6,924,946,616	22,007,921,865	13,246,614,175	39,187,802,312	100%	100%	77.4%
2018 *	7,141,414,323	24,106,296,051	14,106,400,279	40,829,952,193	100%	100%	67.9%
2019	7,372,126,920	25,719,545,459	14,266,228,889	42,936,185,938	100%	100%	69.0%
2020 *	7,590,754,155	27,251,813,875	14,080,380,709	46,017,438,373	100%	100%	79.4%
2021	7,725,384,410	29,173,126,705	14,029,039,885	50,191,547,801	100%	100%	94.8%
2022	7,936,001,055	30,872,651,189	14,304,256,542	52,142,670,028	100%	100%	93.2%
2023 *	**8,242,824,045**	**32,351,227,308**	**14,811,037,372**	**53,535,746,567**	**100%**	**100%**	**87.4%**

** Assumption change.*
 # Benefit change.

Short Condition Test

Regular Members

Calendar Year	Aggregate Actuarial Liabilities For (1) Non-Retired Contributions	(2) Annuitants	(3) Non-Retired Members (Employer Financed Portion)	Funding Value of Assets	Portion of Actuarial Liabilities Covered by Assets (1)	(2)	(3)
2014 *	$5,864,657,124	$16,328,679,943	$12,393,664,527	$30,402,948,477	100%	100%	66.2%
2015	6,078,358,544	17,811,924,086	12,534,397,434	32,424,981,363	100%	100%	68.1%
2016	6,291,877,038	19,261,898,572	12,633,562,550	34,123,098,220	100%	100%	67.8%
2017 *	6,490,226,071	20,092,314,923	12,298,162,175	36,331,479,430	100%	100%	79.3%
2018 *	6,695,020,590	22,000,474,720	13,086,811,427	37,838,485,682	100%	100%	69.9%
2019	6,910,342,167	23,484,426,624	13,241,084,921	39,768,414,640	100%	100%	70.8%
2020 *	7,110,240,098	24,899,184,870	13,049,712,181	42,589,356,157	100%	100%	81.1%
2021	7,243,130,575	26,642,794,300	13,022,435,974	46,425,629,908	100%	100%	96.3%
2022	7,441,815,753	28,188,190,079	13,288,391,826	48,276,089,132	100%	100%	95.2%
2023 *	**7,741,486,972**	**29,496,570,483**	**13,774,690,627**	**49,546,678,122**	**100%**	**100%**	**89.4%**

** Assumption change.*

SLEP Members

Calendar Year	Aggregate Actuarial Liabilities For (1) Non-Retired Contributions	(2) Annuitants	(3) Non-Retired Members (Employer Financed Portion)	Funding Value of Assets	Portion of Actuarial Liabilities Covered by Assets (1)	(2)	(3)
2014 *	$370,537,841	$ 1,294,788,995	$ 850,193,605	$2,035,365,794	100%	100%	43.5%
2015	383,662,153	1,420,665,538	888,665,484	2,203,555,749	100%	100%	44.9%
2016	397,369,461	1,541,181,527	864,975,181	2,366,215,732	100%	100%	49.4%
2017 *	410,693,526	1,634,411,371	890,594,187	2,563,303,924	100%	100%	58.2%
2018 *	424,847,491	1,803,835,984	968,157,159	2,689,937,170	100%	100%	47.6%
2019	441,427,545	1,928,035,088	980,287,898	2,857,806,863	100%	100%	49.8%
2020 *	460,316,418	2,043,671,198	987,330,559	3,100,544,206	100%	100%	60.4%
2021	463,460,299	2,217,014,703	968,914,963	3,415,357,025	100%	100%	75.8%
2022	474,985,166	2,371,717,350	980,379,498	3,520,818,132	100%	100%	68.8%
2023 *	**484,391,310**	**2,535,895,477**	**1,007,198,643**	**3,642,292,262**	**100%**	**100%**	**61.8%**

** Assumption change.*

Short Condition Test

ECO Members

Calendar Year	Aggregate Actuarial Liabilities For (1) Non-Retired Contributions	(2) Annuitants	(3) Non-Retired Members (Employer Financed Portion)	Funding Value of Assets	Portion of Actuarial Liabilities Covered by Assets (1)	(2)	(3)
2014 *	$26,915,093	$ 261,557,729	$74,152,755	$261,894,266	100%	90%	0.0%
2015	26,872,197	273,755,728	68,272,726	284,590,357	100%	94%	0.0%
2016	24,873,529	282,438,978	60,533,566	284,083,575	100%	92%	0.0%
2017 *	24,027,019	281,195,571	57,857,813	293,018,958	100%	96%	0.0%
2018 *	21,546,242	301,985,347	51,431,693	301,529,341	100%	93%	0.0%
2019	20,357,208	307,083,747	44,856,070	309,964,435	100%	94%	0.0%
2020 *	20,197,639	308,957,807	43,337,969	327,538,010	100%	99%	0.0%
2021	18,793,536	313,317,702	37,688,948	350,560,868	100%	100%	49.0%
2022	19,200,136	312,743,760	35,485,218	345,762,764	100%	100%	38.9%
2023 *	**16,945,763**	**318,761,348**	**29,148,102**	**346,776,183**	**100%**	**100%**	**38.0%**

** Assumption change.*

SECTION B

SUMMARY OF BENEFIT PROVISIONS AND VALUATION DATA

Summary of Benefits and Conditions Evaluated December 31, 2023

This is a brief plan description of IMRF benefits. Additional conditions and restrictions may apply. A complete description is found in Article 7 of the Illinois Pension Code. Only the description found in Article 7 can be relied upon.

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) are required to participate. 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 are required to participate. Elected officials and hospital employees who satisfy requirements may also participate.

Service Credit

Service credit is the total time under IMRF, stated in years and fractions. Service is credited monthly while the member is working, receiving IMRF disability benefits or on IMRF's Benefit Protection Leave. For revised ECO members, the ECO benefit formula is limited to service in an elected office.

Members may qualify for a maximum of one year of additional service credit for unused, unpaid sick leave accumulated with the last employer. Members who retire from a school district may utilize unused sick leave from all school district employers. This additional service credit applies only for members leaving employment for retirement. The service credit is earned at the rate of one month for every 20 days of unused, unpaid sick leave or fraction thereof. It applies to the determination of the amount of an annuity, but not to the minimum service period required for eligibility.

IMRF is a participating plan under the Reciprocal Act, as are all other Illinois public pension systems, except local police and fire pension plans. Under the Reciprocal Act, service credit of at least one year may be considered together at the date of retirement or death for the purpose of determining eligibility for and amount of benefits. However, for teacher aides who meet certain criteria, service credit of less than one year may be considered in determining benefits under the Reciprocal Act.

Final Rate of Earnings (FRE)

Retirement and Survivor Annuities

Tier 1 Members: The final rate of earnings for Regular and SLEP members is the highest total earnings during any 48 consecutive months within the last 10 years of IMRF service divided by 48 or the total lifetime earnings divided by the total lifetime number of months of service. The final rate of earnings for ECO members is the annual salary of the ECO member on the day he or she retires. For revised ECO members who join the plan after January 25, 2000, the final rate of earnings is the highest total earnings during any 48 consecutive months within the last 10 years of IMRF service divided by 48 for each office held.

Tier 2 Members: The final rate of earnings for Regular and SLEP members is the highest total earnings during any 96 consecutive months within the last 10 years of IMRF service divided by 96 for each office held. Pensionable earnings were initially capped at $106,800, increase annually beginning in 2012 by three percent or one-half of the increase of the Consumer Price Index, whichever is less. For SLEP members, overtime compensation is excluded from pensionable earnings.

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).

Summary of Benefits and Conditions Evaluated December 31, 2023

Normal Retirement Pension Eligibility

Tier 1 Members:
Normal retirement for an unreduced pension is:

- Age 60 with eight or more years of service or 35 or more years of service at age 55,
- Age 50 with 20 or more years of SLEP service for members with SLEP service,
- Age 55 with eight or more years of service for members with ECO service, or
- Age 55 with eight or more years of service in the same elected county office for members with Revised ECO service.

Tier 2 Members:
Normal retirement for an unreduced pension is:

- Age 67 with ten or more years of service or 35 or more years of service at age 62,
- Age 55 with ten or more years of SLEP service for members with SLEP service, or
- Age 67 with eight or more years of service in the same elected county office for members with Revised ECO service.

Normal Retirement Pension Amount

A Regular IMRF pension is:

- 1-2/3 percent of the final rate of earnings for each of the first 15 years of service credit, plus
- 2 percent for each year of service credit in excess of 15 years.

The maximum pension at retirement cannot exceed 75 percent of the final rate of earnings.

A SLEP pension is:

- 2-1/2 percent of the final rate of earnings for each year of service.

The maximum pension at retirement cannot exceed 80 percent (75 percent for Tier 2) of the final rate of earnings.

An ECO pension is:

- 3 percent of the final rate of earnings for each of the first eight years of service, plus
- 4 percent for each year of service between eight and 12 years of service, plus
- 5 percent for years of service credit over 12.

The maximum pension at retirement cannot exceed 80 percent of the final rate of earnings.

A money purchase minimum pension is provided if it exceeds the normal formula amount. The money purchase minimum is the amount that may be purchased by 2.4 times the member's applicable accumulated contributions, including interest at the actuarial assumed rate.

A reversionary pension option is provided to members at retirement. This option permits the member to revert a portion of their pension to one other person upon their death. This election is irrevocable. This payment option is often selected by members whose spouses are not eligible for a surviving spouse pension or who have children or other family members with special needs.

Factors for determining reversionary pension options are based on 120% of the current mortality rates (50% unisex) and interest at the actuarial assumed rate.

An IMRF pension is paid for life.

Early Retirement (not applicable to SLEP Tier 1 optional benefits or to ECO service)

Tier 1 Members: Regular members may retire as early as age 55 with a reduced pension. The reduction is the lesser of:

- One-fourth percent for each month the member is under age 60, or
- One-fourth percent for each month of service less than 35 years.

Tier 2 Members: Regular members may retire as early as age 62 with a reduced pension. The reduction is the lesser of:

- One-half percent for each month the member is under age 67, or
- One-half percent for each month of service less than 35 years.

SLEP members may retire as early as age 50 with a reduced pension. The reduction is one-half percent for each month the member is under age 55.

Early Retirement Incentive Program (ERI)

Eligibility and Amount: IMRF employers may offer an early retirement incentive (ERI) program to their employees who are over 50 (57 for Tier 2 regular and ECO members) years of age and who have at least 20 years of service credit. Eligible members may purchase up to five years of service credit and age. Employers must pay off the additional ERI liability within 10 years. Subsequent ERI programs may be offered once every five years by an employer after the liability for the previous ERI program is paid.
Member Cost: For each year of service credit purchased, members pay the current member contribution rate multiplied by the highest 12 consecutive months of salary (within ERI period).

Vesting

Tier 1 Members: Members are vested for pension benefits when they have at least eight years of qualifying service credit. SLEP members are vested for a SLEP pension when they have at least 20 years of SLEP service credit. SLEP members with more than eight years of service but less than 20 years of SLEP service will receive a Regular pension. Revised ECO members (those who joined the ECO plan after January 25, 2000) are vested with eight or more years of ECO service credit in the same elected county position. Revised ECO members with eight years of service but less than eight years in the same elected county office will receive a Regular pension. Members can start drawing a benefit when either Normal or Early Retirement Pension Eligibility conditions are met.

Tier 2 Members: Members are vested for pension benefits when they have at least 10 years of qualifying service credit. SLEP members are vested for a SLEP pension when they have at least 10 years of SLEP service credit. Revised ECO members (those who join the ECO plan after January 25, 2000) are vested with ten or more years of ECO service credit in the same elected county position. Revised ECO members with at least 10 years of total service but less than 10 years of service in the same elected county office will receive a Regular pension. Members can start drawing a benefit when either Normal or Early Retirement Pension Eligibility conditions are met.

Surviving Spouse Pension

For Regular and SLEP members: A surviving spouse's monthly pension is one-half (66-2/3 percent for Tier 2) of the member's pension.

For ECO members: A surviving spouse's monthly pension is 66-2/3 percent of the member's pension. This pension is payable once the surviving spouse becomes 50 years old. If the spouse is caring for the member's minor, unmarried children, the spouse will receive (age 50 requirement does not apply):

- A monthly pension equal to 30 percent of the ECO member's salary at time of death, plus
- 10 percent of the ECO member's salary at time of death for each minor, unmarried child. The maximum total monthly benefit payable to spouse and children cannot exceed 50 percent of the ECO member's salary at time of death, or
- A monthly pension equal to 66-2/3 percent of the pension the member had earned.

Surviving spouse pensions under all plans are increased each January 1. The increase is based on the original amount of the pension. The increase for the first year is prorated for the number of months the surviving spouse or the member received a pension. For Tier 1, the annual increase is three percent. For Tier 2, the annual increase is three percent or one-half the increase in the Consumer Price Index, whichever is less.

Summary of Benefits and Conditions Evaluated
December 31, 2023

Lump Sum Death-In-Service Benefit

Less than 1 year of service: Member contribution.
More than 1 year of service (or death in the line of duty): The sum of one times FRE (limited to pensionable earnings cap for Tier 2 members) 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's beneficiary.
Amount: Equal to spouse's 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.

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

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) Social Security age, 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.

Summary of Benefits and Conditions Evaluated December 31, 2023

Post-Retirement Increases

Tier 1 Members: Members in all plans receive an annual 3% increase based upon the original amount of the annuity. The increase for the first year is pro-rated for the number of months the member was retired.

Tier 2 Members: Members in all plans receive an annual increase based upon the original amount of the annuity of 3% or one-half of the increase in the Consumer Price Index whichever is less. For regular and ECO members the annual increases do not begin until the retiree reaches the age of 67 or after 12 months of retirement, whichever is later. For SLEP members the increases begin at age 60 or after 12 months of retirement, whichever is later.

13th Payment

A lump sum payment is made to eligible 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 13th payment 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: 7 1/2% of earnings (6-3/4% base plus 3/4% for survivor benefits).
ECO Members: 7 1/2% of earnings (6-3/4% base plus 3/4% for survivor benefits).

Converting past service credit: ECO members can convert past regular service by contributing 3% of earnings plus interest for each month of Regular service credit converted. ECO members can convert past SLEP service by contributing 0% to 3% (depending on the original SLEP contribution) of earnings plus interest for each month of SLEP service credit converted. SLEP members can convert past regular service by contributing 3% of earnings plus interest for each month of Regular service credit converted.

Voluntary Additional: Up to 10% of earnings.

Refunds: Non-vested members who stop working for an IMRF employer can receive a lump sum refund of their IMRF member contributions without interest. Vested members can receive a lump sum refund of their IMRF member contributions if they stop working for an IMRF employer prior to age 55 (62 for Tier 2 regular members, 50 for Tier 2 SLEP members). Vested members age 55 or older (62 for Tier 2 regular members, 50 for Tier 2 SLEP members) may receive separation refunds if the member rolls over the refund into another defined benefit retirement plan for the purpose of purchasing service credit.

Members who retire without an eligible spouse (married to or in a civil union with the member at least one year before the member terminates IMRF participation) may receive a refund of their surviving spouse contributions with interest or an annuity.

If, upon death of all persons eligible for benefits upon the member's record, all of the member contributions with interest (at the actuarial assumed rate) were not paid as a refund or pension to either the member or his or her spouse or other beneficiary, any residual balance will be paid out.

Caps on Reportable Wages

Under Tier 2, a member's wages are capped. No contributions are payable on wages above the cap. The wage cap is also applied when IMRF calculates benefits. The cap increases each year by the lesser of 3% or one-half of the increase in the Consumer Price Index (urban) for the preceding September. If the CPI is zero or negative, the wage cap is not increased. A wage cap of $125,774 was used in the December 31, 2023 valuation.

Summary of Covered Population Data
December 31, 2023

Data on persons covered by IMRF were reported to the actuary as follows:

Member Status	No.	Valuation Payroll/Benefits	Average Pay/ Benefits	Average Age	Average Years of Service
Active Members					
Regular Tier 1	67,486	$3,995,860,249	$59,210	54.8	17.5
Regular Tier 2	109,668	4,596,642,328	41,914	42.2	4.2
SLEP Tier 1	1,632	177,347,668	108,669	47.8	19.9
SLEP Tier 2	2,512	179,848,051	71,596	35.6	5.3
ECO / ECO SLEP Tier 1	59	4,729,651	80,164	59.3	19.7
Total Active	181,357	$8,954,427,947	$49,375	46.9	9.3
Inactive Members					
Regular Tier 1	124,739			51.9	6.4
Regular Tier 2	101,853			38.5	2.5
SLEP Tier 1	768			49.4	12.3
SLEP Tier 2	962			35.9	3.9
ECO / ECO SLEP Tier 1	75			58.6	12.7
ECO / ECO SLEP Tier 2	2			67.3	5.6
(Inactive and Active)	(43,723)				
Total Inactive	184,676			45.9	4.7
Retirees & Beneficiaries	228,636				
(Retired in multiple employers)	(75,157)				
Total Retired	153,479	$2,973,613,344	$19,375	72.1	
Total Population	**519,512**				
Prior Year Total	499,620				

There are a number of situations where members may be counted more than once. In particular, there are some members who are inactive with at least one employer and active with another employer. In order to avoid counting such individuals more than once, the inactive count is reduced by the number of such people as shown above. Other situations involving people who are inactive or retired with more than one employer can also lead to people being counted more than once in the totals above.

Additional population statistics are presented on the following pages.

Active Members by Employer Type
December 31, 2023
Regular, SLEP, ECO Combined

Type of Employer	Rate Groups	Members Number	Members % of Total	Members Cumulative Percent	Payroll
School Districts	850	91,715	50.7%	50.7%	$3,366,040,260
Counties (Regular, SLEP,ECO)	269	28,763	15.9%	66.6%	1,784,137,289
Cities	317	18,490	10.2%	76.8%	1,259,407,657
Villages	498	14,454	8.0%	84.8%	1,061,054,063
Park Districts	204	7,336	4.0%	88.8%	391,968,007
Special Ed Districts	52	4,740	2.6%	91.4%	173,992,956
Townships	500	3,265	1.8%	93.2%	165,849,860
Library Districts	240	3,470	1.9%	95.1%	156,167,612
Sanitary Districts	38	924	0.5%	95.6%	76,632,591
Intergovernmental Coop	56	812	0.4%	96.0%	68,841,347
Forest Preserve Districts	13	897	0.5%	96.5%	58,153,000
Mass Transit District (Taxing Authority)	4	692	0.4%	96.9%	47,086,799
County Hospital Districts	3	722	0.4%	97.3%	46,503,544
Towns	5	691	0.4%	97.7%	41,535,859
Consolidated Education Service Region	23	638	0.4%	98.1%	26,830,639
Mass Transit Instrumentality	7	538	0.3%	98.4%	26,100,042
Misc. Taxing Authority	8	293	0.2%	98.6%	25,917,978
Airport Authorities	12	296	0.2%	98.8%	20,027,140
Joint Spec Rec Assns	18	317	0.2%	99.0%	17,301,777
Fire Protection Districts	68	213	0.1%	99.1%	15,876,128
Miscellaneous Instrumentality	21	173	0.1%	99.2%	14,790,736
Educ Serv Centers	4	248	0.1%	99.3%	13,904,356
Regional Planning Commission	3	156	0.1%	99.4%	12,797,877
Health Districts	4	207	0.1%	99.5%	12,303,846
Multi Co/Cons Health Dept.	3	268	0.1%	99.6%	12,256,571
Public Library System	2	154	0.1%	99.7%	8,695,670
County Conservation Districts	5	120	0.1%	99.8%	7,697,075
Vocational System	41	163	0.1%	99.9%	7,448,342
Public Housing Authority	12	139	0.1%	100.0%	6,766,481
Special Ed Coop/Districts	12	50	0.0%	100.0%	5,057,844
Water District	15	74	0.0%	100.0%	4,918,377
Conservancy Districts	4	64	0.0%	100.0%	4,176,135
Mosquito Abatement District	7	30	0.0%	100.0%	2,543,956
Water Supply/Sewr Comission	6	38	0.0%	100.0%	2,328,868
ROE Office	2	48	0.0%	100.0%	2,236,534
Public Housing Commission	5	38	0.0%	100.0%	2,197,130
Joint Education Projects	5	43	0.0%	100.0%	1,872,368
County Road District	33	46	0.0%	100.0%	1,734,748
Multi Twp Assessment Districts	17	14	0.0%	100.0%	475,624
Drainage District	2	6	0.0%	100.0%	404,307
Township Cemetary	12	12	0.0%	100.0%	396,554
Tuberculosis Sanitarium Districts	1	0	0.0%	100.0%	-
Employers with no Active Members or no Asset Information*	1,059	0	0.0%	100.0%	-
Totals	**4,460**	**181,357**	**100.0%**	**100.0%**	**$8,954,427,947**

* *This number represents employers with no active members and no asset information. This number also represents employers listed earlier with employees participating in the Voluntary Additional contribution program.*

Active Regular Members
by Attained Age and Years of Service
December 31, 2023

Attained Ages	Years of Service to Valuation Date 0-7	8-9	10-14	15-19	20-24	25-29	30 & Up	Totals No.	Totals Valuation Payroll
15 - 19	532							532	$ 13,006,977
20 - 24	7,718							7,718	246,769,773
25 - 29	13,159	216	25					13,400	547,824,465
30 - 34	13,191	1,454	919	46		1		15,611	712,523,573
35 - 39	12,185	1,599	2,615	1,132	38			17,569	861,373,101
40 - 44	12,107	1,555	2,532	2,840	1,072	55	4	20,165	1,032,148,133
45 - 49	10,355	1,596	2,587	2,478	2,384	797	41	20,238	1,068,435,245
50	1,913	357	530	482	424	297	54	4,057	213,518,533
51	1,865	372	538	540	419	325	90	4,149	220,580,002
52	2,005	362	621	576	486	382	136	4,568	241,972,343
53	2,001	368	692	710	529	429	250	4,979	269,607,513
54	1,886	402	734	685	554	390	277	4,928	267,267,826
55	1,864	334	685	661	526	392	306	4,768	253,404,198
56	1,812	364	615	710	521	345	336	4,703	248,717,677
57	1,667	339	663	728	586	358	310	4,651	249,598,823
58	1,667	327	640	739	601	323	322	4,619	235,795,593
59	1,701	318	633	814	681	380	368	4,895	252,063,642
60	1,585	306	674	833	645	370	339	4,752	244,107,029
61	1,516	375	592	767	657	409	354	4,670	234,321,327
62	1,451	288	612	705	662	332	351	4,401	216,385,813
63	1,252	267	536	605	573	341	302	3,876	190,138,997
64	1,113	253	445	527	466	355	294	3,453	169,825,954
65	989	240	397	479	409	246	228	2,988	139,130,753
66	810	174	301	326	336	198	141	2,286	104,950,318
67	670	177	245	231	245	139	120	1,827	79,025,286
68	541	128	196	150	131	96	87	1,329	56,202,684
69	493	111	175	140	92	72	69	1,152	44,454,181
70	426	77	131	100	95	71	42	942	37,372,627
Over 70	1,698	344	595	470	327	191	303	3,928	141,980,191
Totals	**100,172**	**12,703**	**19,928**	**18,474**	**13,459**	**7,294**	**5,124**	**177,154**	**$8,592,502,577**

Active SLEP Members
by Attained Age and Years of Service
December 31, 2023

Attained Ages	Years of Service to Valuation Date: 0-7	8-9	10-14	15-19	20-24	25-29	30 & Up	Totals: No.	Totals: Valuation Payroll
15 - 19	4							4	$ 252,204
20 - 24	159							159	8,518,171
25 - 29	529	4						533	34,006,559
30 - 34	510	96	49					655	47,132,200
35 - 39	282	77	158	89	1			607	50,578,878
40 - 44	156	41	137	306	97	2	1	740	68,530,276
45 - 49	90	14	68	139	216	81	2	610	62,640,312
50	14	3	9	21	39	37		123	13,320,155
51	11	3	6	31	22	21	1	95	9,867,786
52	14	4	6	16	23	25	2	90	8,967,787
53	17	3	14	21	21	17	3	96	9,694,228
54	15		4	22	15	13	2	71	7,615,118
55	16	2	5	16	12	10	5	66	6,596,208
56	15	3	6	11	7	9	3	54	5,637,596
57	10	2	5	9	6	6	5	43	4,419,654
58	9	2	3	7	5	4	2	32	2,980,487
59	5	2	3	8	5	4	5	32	3,409,300
60	6	3	1	6	3	3	1	23	2,017,282
61	4	2	1	5	2	4	2	20	1,749,607
62	6	1	1	4	2	2	1	17	1,658,982
63	3		5	3	3		1	15	1,570,830
64	4		1	8	1	1	1	16	1,553,915
65			1	4	3	1	1	10	1,032,617
66	4		2	3	1			10	1,003,255
67	2		1	1		1		5	608,123
68	1		2	1	3			7	822,935
70	1		4				1	6	617,196
Over 70	3	1	1					5	394,058
Totals	**1,890**	**263**	**493**	**731**	**487**	**241**	**39**	**4,144**	**$357,195,719**

Active ECO Regular Members
by Attained Age and Years of Service
December 31, 2023

Attained Ages	Years of Service to Valuation Date							Totals	
	0-7	8-9	10-14	15-19	20-24	25-29	30 & Up	No.	Valuation Payroll
35-39	1							1	$ 94,273
45-49				3	2			5	418,334
50					1			1	26,042
51				1				1	192,761
52		1		1		1		3	166,071
53			1	1				2	211,326
54			1	1	2			4	354,193
56					1			1	52,712
57				1	1	1	1	4	142,755
58				2	1			3	339,949
59				2	2			4	257,774
60		1		1				2	211,416
61			1	2	3			6	531,605
62			1				1	2	138,056
63	1		1					2	107,898
64		2			1			3	321,450
65	1		1					2	145,406
66					1	2		3	120,153
67			1			2		3	267,149
69			1					1	49,076
70					1	1		2	69,792
Over 70				1			2	3	346,361
Totals	**3**	**4**	**8**	**16**	**16**	**7**	**4**	**58**	**$4,564,552**

Active ECO SLEP Members
by Attained Age and Years of Service
December 31, 2023

Attained Ages	0-7	8-9	10-14	15-19	20-24	25-29	30 & Up	Totals No.	Totals Valuation Payroll
Over 70							1	1	$ 165,099
Totals							**1**	**1**	**$ 165,099**

All Active Members by Years of Service and Gender
December 31, 2023

Years of	Active Member Count			Active Member Pays	
Service	Males	Females	Total	Total	Average
0	8,368	16,379	24,747	$ 799,433,710	$32,304
1	7,108	13,178	20,286	759,854,243	37,457
2	5,324	9,754	15,078	602,741,678	39,975
3	2,906	5,141	8,047	346,393,515	43,046
4	3,612	6,524	10,136	434,779,137	42,895
5	3,212	5,838	9,050	408,352,236	45,122
6	2,779	4,965	7,744	363,495,517	46,939
7	2,584	4,395	6,979	340,195,595	48,746
8	2,594	4,165	6,759	341,018,647	50,454
9	2,355	3,856	6,211	323,913,857	52,152
Sub-Total	40,842	74,195	115,037	4,720,178,135	41,032
10	2,105	3,256	5,361	290,854,640	54,254
11	1,777	2,814	4,591	255,012,900	55,546
12	1,539	2,346	3,885	218,646,476	56,280
13	1,284	2,014	3,298	189,461,707	57,447
14	1,291	2,003	3,294	187,237,642	56,842
15 & Up	18,587	27,304	45,891	3,093,036,447	67,400
Totals	**67,425**	**113,932**	**181,357**	**$8,954,427,947**	**$49,375**

Inactive Regular Members
by Attained Age and Years of Service
December 31, 2023

Attained Ages	Years of Service to Valuation Date 0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	Totals No.
15-19	172							172
20-24	5,125	3						5,128
25-29	14,371	229					1	14,601
30-34	19,826	1,085	88					20,999
35-39	21,524	1,898	450	55	1			23,928
40-44	21,557	2,474	984	288	42			25,345
45-49	18,752	2,405	1,113	493	181	19	15	22,978
50	3,532	506	264	129	49	12	8	4,500
51	3,578	511	272	114	62	15	3	4,555
52	3,907	590	317	112	75	18	9	5,028
53	3,824	669	305	170	69	35	11	5,083
54	3,940	643	360	176	67	31	12	5,229
55	3,578	572	373	124	62	27	11	4,747
56	3,145	517	196	72	26	13	7	3,976
57	3,011	470	198	68	20	9	6	3,782
58	2,792	467	195	65	25	9	5	3,558
59	2,736	423	168	47	28	9	9	3,420
60	2,765	417	150	52	21	6	9	3,420
61	2,322	338	128	51	24	5	10	2,878
62	2,088	336	115	35	19	9	14	2,616
63	2,029	265	98	23	20	7	12	2,454
64	1,772	245	82	29	11	6	10	2,155
65	1,591	206	38	24	12	6	10	1,887
66	1,403	191	48	10	12	6	9	1,679
67	1,355	172	35	12	3	3	4	1,584
68	1,061	124	26	7		2	5	1,225
69	1,062	127	25	5	3	1	7	1,230
70	868	90	11	3	3	2	3	980
Over 70	3,747	334	72	34	18	7	24	4,236
Totals	**157,433**	**16,307**	**6,111**	**2,198**	**853**	**257**	**214**	**183,373**

Inactive SLEP Members
by Attained Age and Years of Service
December 31, 2023

Attained	Years of Service to Valuation Date							Totals
Ages	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.
15-19								
20-24	24							24
25-29	152	5						157
30-34	164	27	4					195
35-39	121	48	30	2				201
40-44	97	45	40	12	3			197
45-49	63	37	27	13	29	3	1	173
50	16	7	5	3	9			40
51	17	5	3	3				28
52	13	7	2	2	1	1		26
53	23	6	2	6				37
54	13	6	11	4				34
55	11	2	5	1		1		20
56	9	4	1	1				15
57	8	1	3	2				14
58	6	1	1					8
59	5	1	1	1		1	1	10
60	6	3	2					11
61	5	2	1					8
62	1		1				1	3
63	4					2		6
64	2	2	1				1	6
65	8							8
66	5							5
67	2							2
68	3							3
69	2							2
70	3							3
Over 70	9	1						10
Totals	**792**	**210**	**140**	**50**	**42**	**8**	**4**	**1,246**

Inactive ECO Members
by Attained Age and Years of Service
December 31, 2023

Attained	Years of Service to Valuation Date							Totals
Ages	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.
15-19								
20-24								
25-29								
30-34								
35-39		1						1
40-44		1	1					2
45-49		2	4	1				7
50	1	2	1					4
51	1	1						2
52			1					1
53		4						4
54	1	4	1	1				7
55		1						1
56	1	2						3
57								
58								
59		1						1
60		1						1
61	1	2						3
62			1					1
63	1	3						4
64		2						2
65		1						1
66	1			1				2
67		1					1	2
68		2	1					3
69	1							1
70								
Over 70	1	2	1					4
Totals	**9**	**33**	**11**	**3**			**1**	**57**

Retirees and Beneficiaries
December 31, 2023

	Annual Amounts by Form of Payment					
	Regular		Level Payment Option		Total	
Type of Retirement	**No.***	**Amount**	**No.***	**Amount**	**No.***	**Amount**
Normal or Early						
Joint and 50% Survivor	122,482	$1,706,710,896	21,003	$355,598,196	143,485	$2,062,309,092
Joint and 66% Survivor	1,291	23,460,972	157	5,167,536	1,448	28,628,508
Straight Life	41,755	569,342,700	7,143	125,641,200	48,898	694,983,900
Total	165,528	2,299,514,568	28,303	486,406,932	193,831	2,785,921,500
Disability	182	2,355,900	-	0	182	2,355,900
Surviving Beneficiaries	19,830	156,462,516	1,077	10,439,400	20,907	166,901,916
Annuitization of Surviving Spouse and SLEP benefits	10,230	8,997,012	-	0	10,230	8,997,012
Voluntary Contributions	3,486	9,437,016	-	0	3,486	9,437,016
Grand Total	**199,256**	**$2,476,767,012**	**29,380**	**$496,846,332**	**228,636**	**$2,973,613,344**

* *Number of records. There are 153,479 unique retirees.*

Of the 10,230 records listed as receiving “Annuitization of Surviving Spouse and SLEP benefits,” 10,201 records are also in receipt of a separate retirement benefit.

Of the 3,486 records listed as receiving “Voluntary Contributions,” 3,483 records are also in receipt of a separate retirement benefit.

13th Check Payment amounts are not included in the above figures.

In the above chart, “Regular” refers to all forms of payment other than the level payment option. It does not connote “Regular” as opposed to SLEP and ECO.

Retirees and Beneficiaries
by Attained Age
December 31, 2023

Attained Ages	Number* Males	Number* Females	Number* Total	Annual Benefits
Under 20	0	0	0	$ 0
20 - 24	2	2	4	8,244
25 - 29	6	18	24	73,464
30 - 34	19	28	47	204,204
35 - 39	18	39	57	183,900
40 - 44	38	43	81	531,972
45 - 49	27	58	85	638,892
50 - 54	602	239	841	29,320,920
55 - 59	4,071	6,531	10,602	178,564,944
60 - 64	10,202	20,143	30,345	445,752,612
65 - 69	15,736	34,540	50,276	701,628,456
70 - 74	15,630	34,059	49,689	673,046,196
75 - 79	11,115	26,420	37,535	464,515,212
80 - 84	7,214	17,854	25,068	265,998,264
85 - 89	4,103	10,724	14,827	140,174,940
90 - 94	1,770	4,969	6,739	56,435,592
95 & Up	492	1,924	2,416	16,535,532
Totals	**71,045**	**157,591**	**228,636**	**$2,973,613,344**

** Number of records. There are 153,479 unique retirees.*

Retirees and Beneficiaries
by Year of Retirement
December 31, 2023

Year of Retirement	Number* Males	Number* Females	Number* Total	Annual Benefits
2023	4,207	7,485	11,692	$ 169,455,240
2022	4,651	9,057	13,708	190,047,840
2021	4,935	9,600	14,535	205,945,812
2020	4,297	9,123	13,420	182,715,132
2019	4,039	8,304	12,343	171,165,672
2018	4,096	8,660	12,756	173,727,048
2017	3,993	8,721	12,714	169,142,436
2016	3,629	8,540	12,169	157,149,756
2015	3,781	8,352	12,133	159,451,836
2010 - 2014	14,896	32,770	47,666	645,686,160
2005 - 2009	9,227	19,797	29,024	375,504,324
2000 - 2004	5,661	13,660	19,321	219,173,904
1995 - 1999	2,839	9,246	12,085	118,946,880
1990 - 1994	623	3,128	3,751	28,819,704
1985 - 1989	130	915	1,045	5,937,576
1980 - 1984	36	198	234	698,964
1975 - 1979	5	29	34	42,240
Before 1974	0	6	6	2,820
Total	**71,045**	**157,591**	**228,636**	**$ 2,973,613,344**

* *Number of records. There are 153,479 unique retirees.*

Data Reported for Actuarial Valuations
Comparative Summary

Date December 31	Total Count	Active Members Number	Active Members Average Age	Active Members Average Serv.	Active Members Average Annual Pay	Active Members Pay Increase	Number Inactive	Number Retired#	Ratio: Act/Ret.
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
2004	367,590	167,030	46.0	9.0	30,899	4.0 %	121,543	79,017	2.11
2005	377,251	169,867	46.3	9.1	31,640	2.4 %	125,761	81,623	2.08
2006	387,665	173,068	46.5	9.4	32,535	2.8 %	130,239	84,358	2.05
2007	398,659	176,495	46.7	9.5	33,607	3.3 %	134,687	87,477	2.02
2008	420,632	180,615	46.8	9.6	34,655	3.1 %	149,885	90,132	2.00
2009	412,435	180,643	47.1	9.8	35,771	3.2 %	138,530	93,262	1.94
2010	405,195	176,179	47.5	10.3	36,277	1.4 %	131,462	97,554	1.81
2011	409,415	175,233	47.7	10.4	36,701	1.2 %	132,282	101,900	1.72
2012	415,079	174,381	47.8	10.6	37,252	1.5 %	134,293	106,405	1.64
2013	417,227	173,481	47.9	10.7	38,059	2.2 %	136,749	106,997	1.62
2014	423,509	173,579	47.9	10.6	38,786	1.9 %	137,941	111,989	1.55
2015	432,096	173,832	47.9	10.6	39,805	2.6 %	141,236	117,028	1.49
2016	429,134	174,835	47.8	10.5	40,076	0.7 %	132,213	122,086	1.43
2017	439,021	175,566	47.8	10.4	40,597	1.3 %	136,385	127,070	1.38
2018	450,303	176,523	47.8	10.3	41,476	2.2 %	141,817	131,963	1.34
2019	461,368	177,795	47.7	10.1	42,451	2.4 %	146,866	136,707	1.30
2020	464,712	170,637	47.8	10.4	44,353	4.5 %	153,267	140,808	1.21
2021	480,950	172,371	47.5	10.0	45,315	2.2 %	163,043	145,536	1.18
2022	499,620	175,446	47.2	9.7	47,327	4.4 %	174,305	149,869	1.17
2023	519,512	181,357	46.9	9.3	49,375	4.3 %	184,676	153,479	1.18

\+ *Restated subsequent to release of 2000 valuation.*

\# *Number of unique retirees. There are 228,636 retiree records in 2023.*

SECTION C

FINANCIAL DATA

Development of Funding Value of Retirement Fund Assets

Year Ended December 31	2022	2023	2024	2025	2026	2027
A. Funding Value Beginning of Year	$50,191,547,801	$52,142,670,028				
B. Market Value End of Year	48,200,907,225	52,765,060,134				
C. Market Value Beginning of Year	57,215,398,205	48,200,907,225				
D. Non-Investment/Administrative Net Cash Flow	(1,606,244,077)	(1,880,082,272)				
E. Investment Return						
E1. Market Total: B-C-D	(7,408,246,903)	6,444,235,181				
E2. Assumed Rate of Return	7.25%	7.25%				
E3. Assumed Amount of Return	**3,580,660,868**	**3,712,190,595**	-------------------------------Scheduled---------------------------------			
E4. Return Subject to Phase-In: E1-E3	(10,988,907,771)	2,732,044,586				
F. Phased-In Recognition of Investment Return						
F1. Current Year: 0.20 x E4	(2,197,781,554)	546,408,917	Unknown	Unknown	Unknown	Unknown
F2. First Prior Year	997,213,235	(985,440,701)	$546,408,917	Unknown	Unknown	Unknown
F3. Second Prior Year	680,449,955	-	(985,440,701)	$546,408,917	Unknown	Unknown
F4. Third Prior Year	496,823,800	-	-	(985,440,701)	$546,408,917	Unknown
F5. Fourth Prior Year	-	-	-	-	(985,440,700)	$546,408,918
F6. Funding Corridor Adjustment						
F7. Total Scheduled Phase-in of gain/(loss)	**(23,294,564)**	**(439,031,784)**	(439,031,784)	(439,031,784)	(439,031,783)	546,408,918
G. Acceptable Phase-in of Investment Return						
G1. Projected Funding Value without Phase-in: A+D+E3	**52,165,964,592**	**53,974,778,351**				
G2. Limit on Phase-in: B-G1	(3,965,057,367)	(1,209,718,217)				
G3. Acceptable Phase-in Amount	(23,294,564)	(439,031,784)				
H. Funding Value End of Year: A+D+E3+G3	**$52,142,670,028**	**$53,535,746,567**				
I. Difference Between Market and Funding Value	(3,941,762,803)	(770,686,433)	(331,654,649)	107,377,135	546,408,918	-
J. Recognized Rate of Return (Funding Value)	7.2%	6.4%				
K. Market Rate of Return	-13.1%	13.6%				
L. Ratio of Funding Value to Market Value	108.2%	101.5%				

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 subject to a 20% corridor. The acceptable phase-in amount (Item G3) is the minimum of Items F7 and G2, if G2 is positive. If G2 is negative, the acceptable phase-in amount is the greater of Items F7 and G2.

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	
	2023	2022
1. Funding Value of End of Year	$ 53,535,746,567	$ 52,142,670,028
2. Amounts not used in rate calculations		
a. Suspended Annuity Reserve	59,844,887	56,630,536
b. Disability Benefit Reserve	11,255,354	8,402,179
c. Death Benefit Reserve	12,821,567	6,768,327
d. Supplemental Benefit Reserve	4,337,714	3,275,139
e. Cases removed from rate calculations*	672,629,083	566,444,549
f. Estimated pending reserve transfers	-	-
g. Total	760,888,605	641,520,730
3. Remaining amount to allocate: (1)-(2g)	52,774,857,962	51,501,149,298
4. Total reported negative reserves	(266,837)	(188,203)
5. Amount available to positive reserves: (3)-(4)	52,775,124,799	51,501,337,501
6. Total Market Value of reported positive reserves	51,137,948,033	47,821,673,487
7. Market Value Adjustment: (5)-(6)	**$ 1,637,176,766**	**$ 3,679,664,014**

* *Employers that are not included on the asset file submitted to the actuary. In general, these employers have no active members and no employer assets, but may have retired lives and/or inactive members. This amount also includes Voluntary Additional contribution balances.*

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.

Even in years when the Funding Value of Assets equals the Market Value of Assets, a market value adjustment can be made due to the following reasons:

- Differences between the earnings and experience reserve and the investment loss reserve from the financial statements.
- Differences between employee contribution amounts in the financial statements versus data tapes.
- Differences between employer contribution amounts in the financial statements versus data tapes.

Reported Market Values

	Market Value		Percentage of Total	
	2023	2022	2023	2022
Investment Portfolio				
Fixed income	$12,240,691,166	$11,867,357,384	23.3%	24.8%
Short term	613,820,110	531,093,261	1.2%	1.1%
Foreign exchange contracts	(13,338,135)	37,280,887	0.0%	0.1%
Stocks	23,495,422,525	20,253,762,982	44.8%	42.2%
Bond funds	-	-	0.0%	0.0%
Stock funds and index funds	5,164,870,831	5,212,378,078	9.8%	10.9%
Options	-	-	0.0%	0.0%
Real estate	4,502,590,658	4,401,120,997	8.6%	9.2%
Alternative investments	6,069,497,775	5,481,265,208	11.6%	11.4%
Master trust reserve fund	23,065,618	31,675,420	0.0%	0.1%
Cash	-	-	0.0%	0.0%
Due from brokers	211,398,424	-	0.4%	0.0%
Due (to) brokers	-	(46,471,594)	0.0%	(0.1)%
Accrued investment income	138,917,649	129,379,799	0.3%	0.3%
Total Invested Assets	**$52,446,936,621**	**$47,898,842,422**	100.0%	100.0%
Receivables	**310,134,210**	**94,669,033**		
Cash	**(7,370,980)**	**204,821,747**		
Fixed Assets	**75,050,738**	**64,471,347**		
Total Market Value	**$52,824,750,589**	**$48,262,804,549**		
Deferred Outflows of Resources	10,733,455	3,109,563		
Deferred Inflows of Resources	1,020,081	13,743,328		
Liabilities				
Benefits & vouchers payable	68,454,104	51,263,559		
Lease Payable	949,725	-		
Total Liabilities	**69,403,829**	**51,263,559**		
Nets Assets Available for Benefits	**$52,765,060,134**	**$48,200,907,225**		

Amounts on this page are preliminary year-end numbers and may not agree with final audited numbers reported by IMRF, but are shown for completeness.

Change in Plan Assets

	Activity During Year	
	2023	**2022**
Additions:		
Contributions:		
Employer Contributions	$ 652,384,365	$ 807,064,772
Employee Contributions	540,661,005	501,784,146
Total Contributions	1,193,045,370	1,308,848,918
Investment Income:		
Net Appreciation (Depreciation)		
in Fair Value of Investments	5,276,056,017	(8,208,093,898)
Interest	727,961,296	362,681,906
Dividends	467,110,384	466,812,618
Securities Lending Income	9,848,169	6,179,417
Other	158,789	(128,879)
Net Investment Income	6,481,134,655	(7,372,548,836)
Other Revenues	176,340	97,958
Total Additions	7,674,356,365	(6,063,601,960)
Deductions:		
Benefits and Refunds:		
Retirement, Disability,		
and Beneficiary	2,921,100,233	2,770,304,236
Separation Benefits	95,399,444	90,722,993
Transfers to other Systems	2,208,550	4,028,472
Supplemental Benefits	54,419,416	50,037,295
Total Benefits and Refunds	3,073,127,643	2,915,092,996
Administrative Expenses	37,027,631	35,766,202
Other Expenses	48,182	29,822
Total Deductions	3,110,203,456	2,950,889,020
Net Increase (Decrease)	4,564,152,909	(9,014,490,980)
Net Assets Held in Trust:		
Beginning of Year	$48,200,907,225	$57,215,398,205
End of Year	**$52,765,060,134**	**$48,200,907,225**

SECTION D

ACTUARIAL METHODS AND ASSUMPTIONS

Summary of Actuarial Methods and Assumptions Used for IMRF Actuarial Valuations Assumptions Adopted by Retirement Board After Consulting with Actuary

Rationale: The rationale for all assumptions is provided in the study of experience during the 2020-2022 period, and dated January 4, 2024.

Economic Assumptions

The investment return rate assumed in the valuations was 7.25% per year, compounded annually (net after administrative expenses).

Price Inflation is assumed to be 2.25%.

Payroll Growth: Each employer's payroll was assumed to grow in total at a rate of 2.5% year.

The assumed **real rate of return** was 5.00% -- the difference between the assumed rate of investment return, and the assumed price inflation rate.

The **Active Member Population** is assumed to remain constant.

Pay increase assumptions for individual active members are shown for sample ages on pages D-8 and D-9. Part of the assumption for each age is for merit and/or seniority increase, and the other 2.75% recognizes price inflation, productivity increases, and other macroeconomic forces.

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. The non-economic assumptions are based upon experience during the 2020-2022 period (please see report dated January 4, 2024), and were first used in the December 31, 2023 valuation. Decrement assumptions are shown for sample ages beginning on page D-3.

Summary of Actuarial Methods and Assumptions Used for IMRF Actuarial Valuations Assumptions Adopted by Retirement Board After Consulting with Actuary

Actuarial Valuation Method

An aggregate entry age actuarial cost method of valuation was used in determining most liabilities and normal cost. This means that an individual entry-age employer normal cost was determined for each benefit group (Regular Tier 1, Regular Tier 2, SLEP Tier 1, SLEP Tier 2, ECO Tier 1, ECO Tier 2) as a percent of payroll. The normal cost for each employer was calculated based on the aggregate Tier 1 and Tier 2 normal cost, weighted on the expected payroll of Tier 1 and Tier 2 members for the given employer. Larger employers have the option of an individual normal cost rate. For each Tier the aggregate normal cost rate is multiplied by the present value of future salary of that Tier and then aggregated to determine the present value of future normal cost for each employer. The actuarial accrued liability is then calculated by subtracting the present value of future normal cost and present value of future employee contributions from the present value of future benefits.

Differences in the past between assumed experience and actual experience (“actuarial gains and losses”) become part of actuarial accrued liabilities. 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. The actual cost of benefits as a percentage of payroll for the year ending on the valuation date is assumed to continue. 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 and investments) at funding value are shown on page C-1.

Asset Valuation Method

The Funding Value of Assets (developed on page C-1) recognizes assumed investment return on the previous year’s funding value and the net cash flow fully each year. Differences between actual return on the market value of assets and the expected return on the funding value of assets are phased-in over a closed 5-year period subject to a 20% corridor. The method also limits the adjustment of the expected actuarial return to the maximum amount of unrecognized gains or losses not yet reflected in the actuarial value of assets. As of any valuation date in which the actuarial value minus the market value of assets switches from a positive value to a negative value, or vice-versa, from the prior valuation date, the smoothing mechanism restarts. Restarting the smoothing mechanism involves establishing a new “First Prior Year” phase in amount as of the *next* valuation date equal to the market value of assets minus the funding value of assets as of the current valuation date, divided by 4.

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

Actuarial Assumptions
December 31, 2023
Probabilities of Age and Service Retirement

Tier 1

Age at Retirement	Regular Reduced Early		Regular Normal		SLEP Normal		ECO-Regular Normal		ECO-SLEP Normal
	Males	Females	Males	Females	Service less than 32 years	Service 32 years or more	Males	Females	Males & Females
50					31.25%	31.50%			27%
51					31.25%	31.50%			27%
52					26.00%	31.50%			23%
53					24.50%	31.50%			14%
54					27.00%	31.50%			26%
55	7.50%	6.40%	33.50%	29.75%	26.00%	31.50%	25%	35%	24%
56	7.50%	6.40%	28.50%	22.00%	25.25%	31.50%	25%	35%	20%
57	7.50%	6.40%	20.25%	16.75%	29.50%	31.50%	15%	20%	23%
58	7.50%	6.40%	23.25%	17.00%	27.75%	31.50%	15%	20%	30%
59	7.50%	6.40%	21.50%	17.25%	33.50%	31.50%	15%	20%	24%
60			13.50%	12.00%	21.25%	31.50%	15%	20%	20%
61			13.25%	11.00%	23.25%	31.50%	15%	20%	17%
62			21.75%	17.50%	27.00%	31.50%	15%	20%	23%
63			20.50%	17.75%	21.75%	31.50%	15%	20%	20%
64			17.75%	16.00%	25.00%	31.50%	15%	20%	20%
65			26.50%	27.75%	25.50%	31.50%	15%	20%	30%
66			33.00%	33.00%	21.00%	31.50%	15%	20%	24%
67			28.50%	30.50%	30.00%	31.50%	15%	20%	24%
68			24.00%	24.25%	43.00%	31.50%	15%	20%	24%
69			23.25%	25.00%	15.00%	31.50%	15%	20%	24%
70			26.75%	26.00%	100.00%	100.00%	15%	20%	100%
71			25.00%	23.75%	100.00%	100.00%	15%	20%	100%
72			18.00%	23.00%	100.00%	100.00%	15%	20%	100%
73			21.50%	22.50%	100.00%	100.00%	15%	20%	100%
74			20.00%	22.75%	100.00%	100.00%	15%	20%	100%
75			23.50%	24.00%	100.00%	100.00%	17%	20%	100%
76			23.50%	24.00%	100.00%	100.00%	17%	20%	100%
77			23.50%	24.00%	100.00%	100.00%	17%	20%	100%
78			23.50%	24.00%	100.00%	100.00%	17%	20%	100%
79			23.50%	24.00%	100.00%	100.00%	17%	20%	100%
80 & Over			100.00%	100.00%	100.00%	100.00%	100%	100%	100%

For terminated vested members, members were assumed to retire as follows:

- Regular Tier 1 members were assumed to retire at age 60 or attained age if later;
- Regular Tier 2 members were assumed to retire at age 67 or attained age if later;
- SLEP Tier 1 members with less than 20 years of service were assumed to retire at age 60;
- SLEP Tier 1 members with 20 or more years of service were assumed to retire at age 50;
- SLEP Tier 2 members with less than 10 years of service were assumed to retire at age 67;
- SLEP Tier 2 members with 10 or more years of service were assumed to retire at age 55;
- ECO Tier 1 members were assumed to retire at age 55 or attained age if later; and
- ECO Tier 2 members were assumed to retire at age 62 or attained age if later.

Actuarial Assumptions
December 31, 2023
Probabilities of Age and Service Retirement

Tier 2

	Regular								SLEP					
	Male				Female				Male			Female		
	Normal			Early	Normal			Early	Normal		Early	Normal		Early
Age	Service Less than 30 Years	Service Between 30 and 35 Years	Service 35 Years or More		Service Less than 30 Years	Service Between 30 and 35 Years	Service 35 Years or More		Service Less than 30 Years	Service 30 Years or More		Service Less than 30 Years	Service 30 Years or More	
50											7.75%			7.75%
51											7.75%			7.75%
52											7.75%			7.75%
53											7.75%			7.75%
54											7.75%			7.75%
55									45%	80%		45%	80%	
56									17%	55%		17%	55%	
57									17%	55%		17%	55%	
58									25%	55%		25%	55%	
59									17%	55%		17%	55%	
60									23%	55%		23%	55%	
61									21%	55%		21%	55%	
62			75%	15%			75%	13%	26%	55%		26%	55%	
63			75%	15%			75%	13%	14%	55%		14%	55%	
64			75%	15%			75%	13%	14%	55%		14%	55%	
65			75%	15%			75%	13%	17%	55%		17%	55%	
66			75%	15%			75%	13%	20%	55%		20%	55%	
67	30%	50%	75%		30%	50%	75%		17%	55%		17%	55%	
68	30%	50%	75%		27%	50%	75%		17%	55%		17%	55%	
69	27%	50%	75%		23%	50%	75%		17%	55%		17%	55%	
70	24%	50%	75%		20%	50%	75%		100%	100%		100%	100%	
71	22%	50%	75%		18%	50%	75%		100%	100%		100%	100%	
72	20%	50%	75%		20%	50%	75%		100%	100%		100%	100%	
73	18%	50%	75%		15%	50%	75%		100%	100%		100%	100%	
74	22%	50%	75%		18%	50%	75%		100%	100%		100%	100%	
75	16%	50%	75%		17%	50%	75%		100%	100%		100%	100%	
76	22%	50%	75%		18%	50%	75%		100%	100%		100%	100%	
77	22%	50%	75%		18%	50%	75%		100%	100%		100%	100%	
78	22%	50%	75%		18%	50%	75%		100%	100%		100%	100%	
79	22%	50%	75%		18%	50%	75%		100%	100%		100%	100%	
80+	100%	100%	100%		100%	100%	100%		100%	100%		100%	100%	

Actuarial Assumptions
December 31, 2023
Probabilities of Separation from Active Member Status

Tier 1

Service	% Separating Next Year					
	Regular		ECO			
	Males	Females	Males	Females	SLEP	ECO-SLEP
0	24.9%	27.8%	40.0%	40.0%	19.0%	17.0%
1	19.7%	22.5%	20.0%	20.0%	12.5%	10.0%
2	15.7%	18.1%	15.0%	15.0%	8.6%	6.5%
3	13.5%	15.1%	14.0%	14.0%	8.6%	6.2%
4	11.4%	12.5%	13.0%	13.0%	7.0%	5.5%
5	9.4%	11.4%	12.0%	12.0%	6.5%	4.6%
6	8.3%	10.2%	11.0%	11.0%	6.0%	3.6%
7	8.3%	10.1%	10.0%	10.0%	N/A	N/A
Age	**8 or More Years of Service**		**8 or More Years of Service**		**7 or More Years of Service**	**7 or More Years of Service**
30	4.5%	8.3%	9.5%	6.8%	3.6%	2.4%
35	3.9%	6.0%	9.5%	6.8%	2.8%	1.8%
40	3.1%	4.8%	9.5%	6.8%	2.2%	1.3%
45	2.7%	3.9%	9.5%	6.8%	2.0%	1.2%
50	2.2%	3.4%	9.5%	6.8%	2.0%	1.2%

Tier 2

Service	% Separating Next Year		
	Regular		
	Males	Females	SLEP
0	25.4%	28.1%	19.0%
1	20.5%	22.6%	12.5%
2	15.8%	18.2%	8.6%
3	13.6%	15.1%	8.6%
4	11.3%	12.6%	7.0%
5	9.2%	11.0%	6.5%
6	8.1%	9.6%	6.0%
7	7.8%	9.0%	N/A
8	6.5%	8.0%	N/A
9	6.1%	7.6%	N/A
Age	**10 or More Years of Service**		**7 or More Years of Service**
30	5.3%	7.6%	4.8%
35	4.5%	6.9%	3.1%
40	3.9%	6.2%	2.4%
45	3.4%	5.5%	2.3%
50	3.2%	4.9%	2.3%

Actuarial Assumptions
December 31, 2023
Retiree, Beneficiary, Terminated Vested
and Disabled Life Mortality

The mortality tables: The mortality tables used in this valuation of the System are described below:

- **Healthy Post-Retirement:** The Pub-2010, Amount-Weighted, below-median income, General, Retiree, Male (adjusted 108%) and Female (adjusted 106.4%) tables, and future mortality improvements projected using scale MP-2021.

- **Disability Retirement:** The Pub-2010, Amount-Weighted, below-median income, General, Disabled Retiree, Male (adjusted 100%) and Female tables, and future mortality improvements projected using scale MP-2021.

Tier 1 and Tier 2

Sample Attained Ages	% Dying Next Year			
	Non-Disabled Lives		Disabled Lives	
	Males	Females	Males	Females
40	0.1412%	0.0597%	0.8780%	0.7514%
45	0.2055%	0.0931%	1.0953%	0.9581%
50	0.7338%	0.4064%	1.5124%	1.3489%
55	0.9261%	0.4920%	2.0118%	1.7139%
60	1.1967%	0.5866%	2.5611%	2.0230%
65	1.4202%	0.7035%	3.0602%	2.1462%
70	2.0792%	1.1036%	3.6002%	2.4967%
75	3.3181%	1.9306%	4.5864%	3.4953%
80	5.6778%	3.5345%	6.5396%	5.4551%

Sample Attained Ages	Future Life Expectancy (years)*			
	Non-Disabled Retired Lives		Disabled Lives	
	Males	Females	Males	Females
40	41.7	47.0	34.2	37.4
45	36.5	41.7	30.1	33.2
50	31.6	36.7	26.3	29.2
55	27.3	32.0	22.8	25.6
60	23.1	27.4	19.6	22.3
65	19.1	22.8	16.7	19.0
70	15.2	18.4	13.9	15.7
75	11.6	14.2	11.1	12.4
80	8.5	10.6	8.5	9.4

* *Life expectancy in future years is determined by the fully generational MP-2021 projection scale. The sample values shown are for individuals with the indicated attained ages in 2023.*

Actuarial Assumptions
December 31, 2023
Active Member Probabilities of Death and Disability

The mortality tables: The mortality tables used in this valuation of the System are described below:

- **Healthy Pre-Retirement:** The Pub-2010, Amount-Weighted, below-median income, General, Employee, Male and Female tables, and future mortality improvements projected using scale MP-2021.

Tier 1 and Tier 2

Sample Attained Ages	% Dying in 2023			
	Regular & ECO		SLEP & ECO-SLEP	
	Male	Female	Male	Female
20	0.04%	0.01%	0.04%	0.01%
25	0.05%	0.01%	0.05%	0.01%
30	0.07%	0.03%	0.07%	0.03%
35	0.10%	0.04%	0.10%	0.04%
40	0.13%	0.06%	0.13%	0.06%
45	0.16%	0.07%	0.16%	0.07%
50	0.21%	0.10%	0.21%	0.10%
55	0.30%	0.15%	0.30%	0.15%
60	0.48%	0.25%	0.48%	0.25%
65	0.69%	0.36%	0.69%	0.36%
70	0.95%	0.55%	0.95%	0.55%
75	1.41%	0.90%	1.41%	0.90%
80	2.25%	1.55%	2.25%	1.55%

Sample Ages	% Disabled							
	Regular		ECO		SLEP		ECO-SLEP	
	Male	Female	Male	Female	Male	Female	Male	Female
20	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%
25	0.00%	0.00%	0.01%	0.01%	0.00%	0.01%	0.01%	0.01%
30	0.00%	0.00%	0.01%	0.01%	0.01%	0.02%	0.01%	0.01%
35	0.01%	0.00%	0.03%	0.02%	0.01%	0.02%	0.03%	0.02%
40	0.01%	0.00%	0.04%	0.03%	0.02%	0.04%	0.04%	0.03%
45	0.02%	0.01%	0.06%	0.04%	0.02%	0.05%	0.06%	0.04%
50	0.02%	0.01%	0.09%	0.06%	0.03%	0.08%	0.09%	0.06%
55	0.04%	0.02%	0.15%	0.10%	0.05%	0.11%	0.15%	0.10%
60	0.05%	0.03%	0.19%	0.17%	0.04%	0.10%	0.19%	0.17%
65	0.05%	0.03%	0.20%	0.20%	0.03%	0.06%	0.20%	0.20%
70	0.04%	0.03%	0.17%	0.17%	0.02%	0.04%	0.17%	0.17%
75	0.03%	0.02%	0.12%	0.12%	0.00%	0.01%	0.12%	0.12%
80	0.03%	0.02%	0.10%	0.10%	0.00%	0.00%	0.10%	0.10%

Actuarial Assumptions
December 31, 2023
Pay Increases for Regular and ECO Active Members

Tier 1

% Increase in Pay Next Year							
5 or More Years of Service				Increase for Those With Less Than 5 Years of Service			
Age	Merit & Longevity	Economic	Total	Years of Service	Merit & Longevity	Economic	Total
25	2.50%	2.75%	5.25%	0	8.00%	2.75%	10.75%
30	2.02%	2.75%	4.77%	1	6.15%	2.75%	8.90%
35	1.40%	2.75%	4.15%	2	3.50%	2.75%	6.25%
40	1.05%	2.75%	3.80%	3	2.75%	2.75%	5.50%
45	0.77%	2.75%	3.52%	4	2.20%	2.75%	4.95%
50	0.53%	2.75%	3.28%				
55	0.33%	2.75%	3.08%				
60	0.19%	2.75%	2.94%				

Tier 2

% Increase in Pay Next Year							
5 or More Years of Service				Increase for Those With Less Than 5 Years of Service			
Age	Merit & Longevity	Economic	Total	Years of Service	Merit & Longevity	Economic	Total
25	2.50%	2.75%	5.25%	0	9.25%	2.75%	12.00%
30	2.02%	2.75%	4.77%	1	7.50%	2.75%	10.25%
35	1.40%	2.75%	4.15%	2	4.80%	2.75%	7.55%
40	1.14%	2.75%	3.89%	3	4.00%	2.75%	6.75%
45	0.92%	2.75%	3.67%	4	3.50%	2.75%	6.25%
50	0.68%	2.75%	3.43%				
55	0.48%	2.75%	3.23%				
60	0.25%	2.75%	3.00%				

For a person with five or more years of service, the assumed pay increase during the coming year is found in the five or more years of service total column. For a person with less than five years of service, the assumed pay increase during the coming year is found in the less than five years of service total column.

Actuarial Assumptions
December 31, 2023
Pay Increases for SLEP and ECO-SLEP Active Members

Tier 1 and Tier 2

% Increase in Pay Next Year			
Years of Service	Economic	Merit & Longevity	% Total Increase
1	2.75%	11.00%	13.75%
2	2.75%	8.50%	11.25%
3	2.75%	4.00%	6.75%
4	2.75%	3.50%	6.25%
5	2.75%	3.00%	5.75%
6	2.75%	2.50%	5.25%
7	2.75%	2.00%	4.75%
8	2.75%	1.50%	4.25%
9	2.75%	1.25%	4.00%
10	2.75%	1.00%	3.75%
11	2.75%	0.75%	3.50%
12	2.75%	0.75%	3.50%
13	2.75%	0.50%	3.25%
14	2.75%	0.50%	3.25%
15	2.75%	0.50%	3.25%
16	2.75%	0.50%	3.25%
17	2.75%	0.50%	3.25%
18	2.75%	0.50%	3.25%
19	2.75%	0.50%	3.25%
20	2.75%	0.50%	3.25%
21	2.75%	0.50%	3.25%
22	2.75%	0.50%	3.25%
23	2.75%	0.50%	3.25%
24	2.75%	0.50%	3.25%
25	2.75%	0.50%	3.25%
26	2.75%	0.50%	3.25%
27	2.75%	0.50%	3.25%
28	2.75%	0.50%	3.25%
29	2.75%	0.50%	3.25%
30	2.75%	0.50%	3.25%

Miscellaneous and Technical Assumptions

Expenses:	Assumed investment return is net of administrative and investment expenses.
Marriage Assumption:	67% of male and 64% of female participants are assumed to be married for purposes of death-in-service and death after retirement benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.
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.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.
Normal Form of Benefit:	The assumed normal form of benefit is a 50% joint and survivor benefit for Regular and SLEP Tier 1 members and 66 2/3% for Regular and SLEP Tier 2 members and ECO members. Factors for determining optional forms of payment are based on 120% of the current mortality rates (50% unisex) and interest at the valuation rate.
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.
SLEP Conversions:	It was assumed that all active participants in the SLEP program will convert all eligible service (up to 10 years). Additionally, it was assumed that these members would contribute the difference in both member and employer rates for each year converted.
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.

Miscellaneous and Technical Assumptions

Final Rate of Earnings (FRE):	The FRE is determined by projecting the current salary to retirement and averaging the salary over the appropriate number of years. The current FRE is used if this produces a higher value. For Tier 2 members, FRE is capped at $125,774 and increases by the lesser of 3% and one-half of CPI.
Refunds for Terminated Vested Members:	Members are assumed to elect annuities.
Other:	Disability decrements operate during retirement eligibility.
Post-Retirement Increases:	For Tier 2, pensions increase by the lesser of 3% or one-half of the increase in the Consumer Price Index (urban) for the preceding September. If the CPI is zero, pension benefits are not increased. In the December 31, 2023 valuation annual pension increases were assumed to grow at an annual rate of 1.13%. Tier 1 increases are not related to CPI.
Wage Cap Growth:	Under Tier 2, a member's wages are capped. The wage cap increases each year by the lesser of 3% or one-half of the increase in the Consumer Price Index (urban) for the preceding September. If the CPI is zero, the wage cap is not increased. A wage cap of $125,774 was used for Tier 2 members in the December 31, 2023 valuation. In the December 31, 2023 valuation, the wage cap was assumed to grow at an annual rate of 1.13%.
Financing of Unfunded Actuarial Accrued Liabilities (Money in the Pipes):	The Unfunded Accrued Liability (UAL) as of December 31, 2023 is projected to the beginning of the calendar year for which employer contributions are being calculated. This allows the 2023 valuation to account for expected future contributions that are based on past valuations.
Sick Leave Load:	Normal cost and active liabilities for all decrements were increased by 1.40% to account for the inclusion of unused sick leave.

Actuarial Funding Policy

A. Introduction

The purpose of this Actuarial Funding Policy is to record the funding objective and policy set by the Board of Trustees (Board) of the Illinois Municipal Retirement Fund (IMRF). The Board establishes this funding policy to help ensure the systematic accumulation of assets needed to pay future benefits for members of IMRF.

This funding policy shall be reviewed by the Board of Trustees every three years in conjunction with the triennial experience study conducted by IMRF's actuaries.

The actuary shall prepare annual actuarial valuations and calculate future employer contribution rates based upon calendar-year data. As required by statute, it shall conduct a triennial experience study to review actuarial assumptions and to recommend appropriate changes.

Summary of Key Actuarial Assumptions:

- Entry-Age Normal Actuarial Cost Method
- Utilize a 5-year Smoothing Period, subject to a 20% Market v. Actual Corridor
- Amortize over/under funding over a closed period. 30-year closed period until the remaining period reaches 15 years. After that point (in 2029) a single, rolling 15-year period shall be used for all unfunded liabilities that develop after that point and the schedule for the pre-existing liabilities shall continue until those liabilities are fully extinguished.
- Funding Target of 100%
- Economic Assumptions:

Price Inflation:	2.25%
Wage Inflation:	2.75%
Investment Return:	7.25%

- Mortality Assumption: Pub-2010 projected to current year using MP-2021 with administrative factors to be implemented by the actuary when appropriate.

B. Funding Objectives

1. Maintain adequate assets so that current plan assets plus future contributions and investment earnings will be sufficient to fund all benefits expected to be paid to members and beneficiaries when due.

2. Make consistent progress towards 100% funding and maintain 100% funding once it is obtained. In particular, continue progress of systematic reduction of the Unfunded Actuarial Accrued Liabilities (UAAL) through use of the Actuarial Determined Employer Contribution Rate (ADEC).

3. Maintain stability of employer contribution rates, consistent with other funding objectives, and avoid sharp increases or decreases due to specific events.

4. Maintain public policy goals of accountability and transparency, meaning that each policy element is to be clear in intent and effect, and each should allow an assessment of whether, how and when the funding requirements of the plan will be met.

5. Monitor material risks to assist in any risk management strategies the Board deems appropriate.

6. Promote intergenerational equity. Each generation of members and employers should incur the cost of benefits for the employees who provide services to them, rather than deferring those costs to future members and employers.

7. Provide a reasonable margin for adverse experience to help offset risks.

8. Review investment return assumption in conjunction with the periodic asset liability study and in consideration of the Board's risk profile.

C. Elements

1. Actuarial Cost Method (i.e., Contribution Budgeting)

An aggregate entry age actuarial cost method of valuation will be used in determining most liabilities and normal cost. An individual entry-age employer normal cost will be determined for each benefit group (Regular Tier 1, Regular Tier 2, SLEP Tier 1, SLEP Tier 2, ECO Tier 1, ECO Tier 2) as a percent of payroll. The normal cost for each employer will be calculated based on the aggregate Tier 1 and Tier 2 normal cost, weighted on the expected payroll of Tier 1 and Tier 2 members for the given employer. The aggregate normal cost rate is then multiplied by the present value of future salary to determine the present value of future normal cost for each employer. The actuarial accrued liability is then calculated by subtracting the present value of future normal cost and present value of future employee contributions from the present value of future benefits.

Differences in the past between assumed experience and actual experience ("actuarial gains and losses") will become part of actuarial accrued liabilities. Unfunded actuarial accrued liabilities are to be amortized to produce payments (principal & interest) which are level percent of payroll contributions.

Liabilities for lump sum death benefits and temporary disability benefits will be 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.

2. Asset Smoothing Method

The Funding Value of Assets will recognize assumed investment return fully each year. Differences between actual and assumed investment income are to be phased-in over a closed 5-year period subject to a 20% corridor (intended to prevent excess divergence between actuarial and market values). The method also limits the adjustment to the expected actuarial return to the maximum amount of unrecognized gains or losses not yet reflected in the actuarial value of assets. In any year in which the actuarial value minus the market value of assets switches from a positive value to a negative value, or vice-versa, any prior gain/loss bases are to be eliminated and the smoothing mechanism restarts.

C. Elements (Continued)

3. Amortization Method

a. General

Financing Liabilities and Overfunding

The following procedures will be applied to financing liabilities.

i. Instrumentalities: 10-year rolling period.
ii. Early Retirement Incentive (ERI) Plan liabilities: a period up to 10 years selected by the Employer upon adoption of ERI.
iii. For taxing bodies (Regular, SLEP and ECO rate Groups): 30-year closed period until the remaining period reaches 15 years. After that point, a single rolling 15-year period shall be used for all unfunded liabilities that develop after that point and the schedule for the pre-existing liabilities shall continue until those liabilities are fully extinguished. In the event that a single rolling 15-year period results in negative amortization, the Board shall select a lesser period such that negative amortization does not occur.

The following procedures will be applied to financing overfunding.

i. Instrumentalities: 10-year rolling period.
ii. For taxing bodies (Regular, SLEP and ECO rate Groups): 30-year closed period until the remaining period reaches 15 years. After that point, a single rolling 15-year period shall be used for all assets exceeding liabilities.
iii. Assets exceeding liabilities can be used to satisfy Early Retirement Incentive (ERI) costs so long as the reserve balance (on an actuarial basis) does not drop below 100%. Those assets shall be applied to the extent they are available only at the employer’s request. If those assets are insufficient to satisfy the ERI costs, then the remaining balance will be amortized for a period up to 10 years as selected by the employer.

b. SLEP Supplemental Liabilities (Public Act 94-712)

Amortize supplemental liabilities over a closed 30-year period, with an employer option of selecting a period of either 35 or 40 years.

4. Assumed Investment Return

The assumed rate of return is 7.25%, net of all administrative and investment expenses.

C. Elements (Continued)

5. Funding Target

The targeted aggregate funded ration shall be 100%.

6. Computation of Employer Contribution Rates

The Board shall determine the employer contribution rate annually in consultation with the actuary, based upon the actuarial valuation for the most recent completed calendar year. The rate shall be calculated and communicated to the employer as soon as practical in the following year (known as Preliminary Rate Notice) and finalized by year-end (known as Final Rate Notice). Each rate shall remain in effect for one calendar year.

Annual employer contributions will be calculated utilizing the Actuarially Determined Employer Contribution rate (ADEC). It will be expressed as a percentage of payroll to be calculated so as to include a factor for normal cost for current service for each eligible plan and tier (based upon the benefit provisions in the Illinois Pension Code) and a factor to collect or refund any under or over funded amount.

In situations where the annual contributions based upon the ADEC times employer payroll are deemed insufficient to extinguish an unfunded liability over the course of an amortization period, a minimum contribution will be calculated which will pay down the unfunded liability by the year 2043.

Economic Assumptions:
- Price Inflation: 2.25%
- Payroll growth: 2.75%
- Investment Return: 7.25%

Non-Economic Assumptions will be based upon the latest applicable triennial experience study and include:
- Rates of separation from active member status
- Rates of disability among actives
- Patterns of merit and longevity increases among actives
- Rates of retirement

Mortality Assumption:
- The Pub-2010 mortality tables with adjustments for IMRF experience and the MP-2021 projection scale with administrative factors to be implemented by the actuary when appropriate.

C. Elements (Continued)

7. Risk Management

a. Assumption Changes

i. The actuarial assumptions used shall be those last adopted by the Board based on the most recent experience study and upon the advice and recommendation of the actuary. In accordance with 40 ILCS 5/7-213, the actuary shall conduct an experience study at least every three years. The results of the study shall be the basis for the actuarial assumption changes recommended to the Board.

ii. The actuarial assumptions can be updated during the three-year period if significant plan design changes or other significant events occur, as advised by the actuary.

b. Amortization Method

The amortization method, Level Percent Closed, will ensure full payment of the UAAL over a finite, systematically decreasing period not to exceed 30 years. Not shorter than a rolling 15-year period.

c. Risk Measures

The following risk measures will be annually determined to provide quantifiable measurements of risk and their movement over time.

i. Classic measures currently determined
   A. Funded Ratio (assets/liability)
   B. UAAL Amortization Period (years required to pay down the UAAL based on current funding rates)

ii. Dollar Standard Deviation of Investment Return/Total Payroll
   - Measures the risk associated with negative asset returns relative impact on the funded status of the plan. A decrease in this measure indicates a decrease in investment risk.

iii. Total UAL/Total Payroll
   - Measures the risk associated with contribution decreases relative impact on the ability to fund the UAAL. A decrease in this measure indicates a decrease in contribution risk.

iv. Total Assets/Total Payroll
   - Measures the risk associated with the ability to respond to asset experience through adjustments in contributions. A decrease in this measure indicates a decrease in asset risk.

v. Total AAL/Total Payroll
   - Measures the risk associated with the ability to respond to liability experience through adjustments in contributions. A decrease in this measure indicates a decrease in experience risk. This also provides a long-term measure of the asset risk in situations where the System has a funded ration below 100%.

C. Elements (Concluded)

d. Peer Review (Actuarial Audit)
Conduct a peer review of the Actuary’s work every five years.

e. Asset Liability Study
Conduct an asset liability study at least once every five years or as needed due to economic/financial conditions.

D. Glossary

1. **Actuarial Accrued Liability (AAL):** The difference between (i) the actual present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."
2. **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.
3. **Actuarial Cost Method:** A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefit" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."
4. **Actuarial 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. For example, if during a given year the assets earn more than the investment return assumption, the amount of earnings above the assumption will cause an unexpected reduction in UAAL, or "actuarial gain" at the next valuation. These include contribution gains and losses that result from actual contributions made being greater or less than the level determined under policy.
5. **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 (MAAA). 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 designation ASA and ultimately to Fellowship with the designation FSA.
6. **Amortization:** Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.
7. **Asset Liability Study:** A comprehensive strategic asset allocation review designed to assess the continuing appropriateness of the Investment Objectives and Asset Allocation Policy. It includes a study of future benefit payments, liabilities, required funding, the appropriateness of the actuarial interest rate assumption and the prospective funded status of liabilities. It may also include a study of portfolio design for optimal diversification and comparisons with peer practices.
8. **Corridor:** A range described as a percentage beyond which the market value and actuarial value of assets should not exceed without significant changes to the employer contribution rate.

D. Glossary (Concluded)

9. **Entry Age Normal Actuarial Cost Method:** A funding method that calculates the Normal Cost as a level percentage of pay over the working lifetime of the plan's members.
10. **Experience Study:** An actuarial investigation of demographic and economic experiences of the system during the period studied. The investigation was made for the purpose of updating the actuarial assumptions used in valuing the actuarial liabilities.
11. **Funding Value of Assets:** The value of current plan assets recognized for valuation purposes. Generally based on a phased-in recognition of all or a portion of market related investment return. Sometimes referred to as Actuarial Value of Assets.
12. **Market Value of Assets:** The fair value of plan assets as reported in the plan's audited financial statements.
13. **Normal Cost (NC):** 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 liability is not part of the normal cost.
14. **Rolling Period:** An amortization method in which the amortization period is reset each following year for the same period of time.
15. **Unfunded Actuarial Accrued Liability (UAAL):** The positive difference, if any, between the actuarial accrued liability and valuation assets. Sometimes referred to as "unfunded accrued liability."

E. Appendix

Attached are reference materials which shall be updated from time to time, but which are not part of this Policy. Changes/revisions to the reference materials need not be adopted by the Board of Trustees. Substantive changes to this Policy require Board of Trustee approval.

Financing Unfunded Accrued Liabilities and Full Funding Credits December 31, 2023 Valuations

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

Financing Periods if employer is less than 120% funded on a market basis.

1. Instrumentalities: 10-year rolling period.

2. Early Retirement Incentive Plan liabilities: a period up to 10 years selected by the Employer upon adoption of ERI.

3. For taxing bodies (Regular, SLEP, and ECO rate Groups): 18-year closed period until remaining period reaches 15 years. After that point, a single rolling 15-year period shall be used for all unfunded liabilities that develop after that point and the schedule for the pre-existing liabilities shall continue until those liabilities are fully extinguished. In the event that a single rolling 15-year period results in negative amortization, the Board shall select a lesser period such that negative amortization does not occur.

Financing Period if employer is over 120% funded on a market basis.

4. Irrespective of the size of the employer or the funding level, grant the employer an option to amortize overfunding over 120% over a 5-year period.

5. For employers with 50 or more employees, grant the employer an option to adopt a minimum contribution rate until the overfunding is reduced to 120%.

6. 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 120%.

SLEP supplemental liabilities attributable to Public Act 94-712 were financed over 13 years for most employers (five employers were financed over 14 years; one employer was financed over 15 years; two employers were financed over 16 years; one employer was financed over 19 years; three employers were financed over 22 years; four employers were financed over 23 years and one employer was financed over 24 years).

The mass production valuation applies rules 1 through 3. For rules 4 through 6, the period provided on the IMRF rate tape is used for valuation purposes and IMRF staff reviews each case individually to see if changes are needed to comply with Board policy.

Selection of Assumptions Used in Actuarial Valuations

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

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).

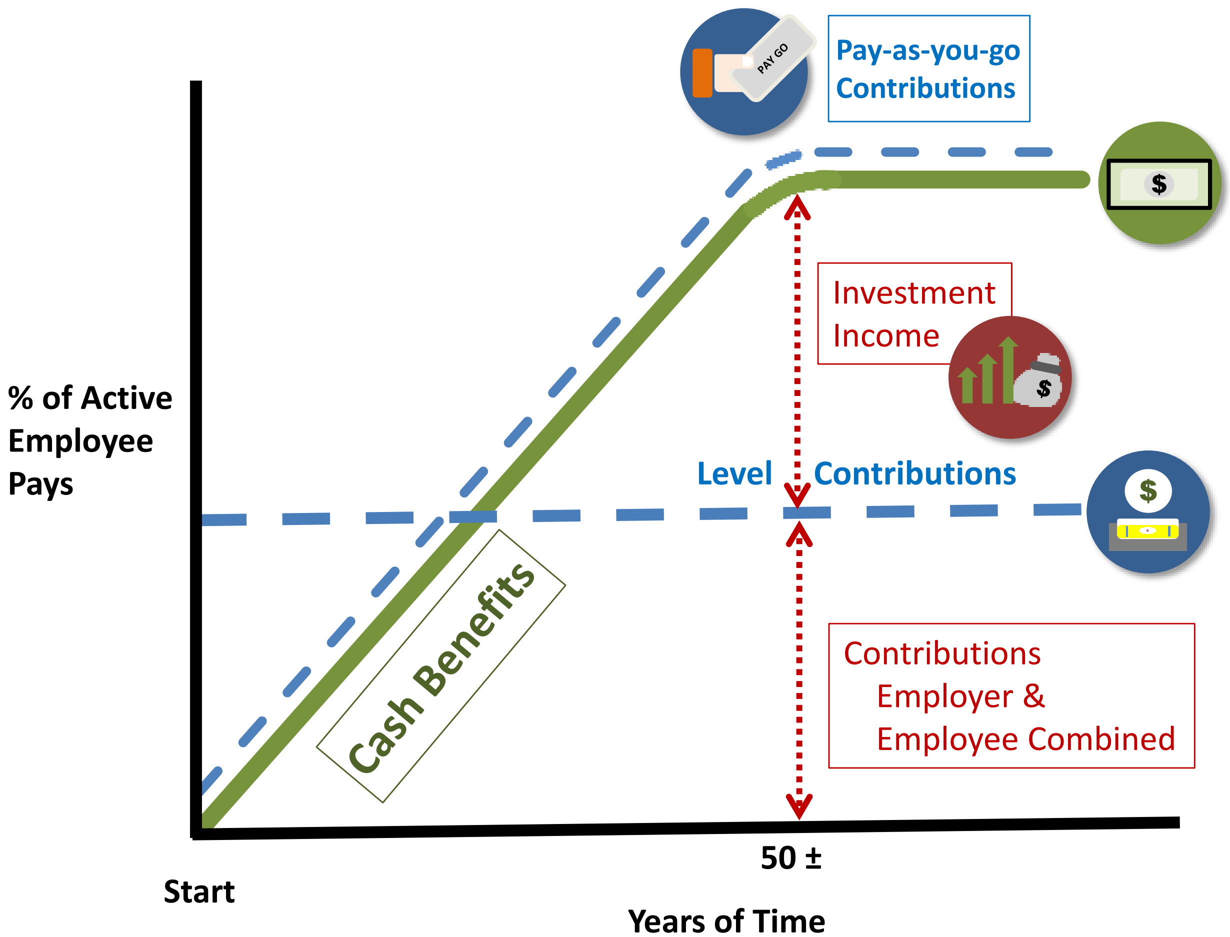
However, that statement is theoretical only. Contributions made at only that level would provide very little in the way of benefit security.

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.*** Once every three years, an Experience Study is conducted to fully review differences between actual and assumed experience and recommend changes to our assumed experience, where appropriate.



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 due to economic changes
  - Changes in active member group size
- **Non-Economic Risk Areas**
  - Ages at actual retirement
  - Rates of mortality before and after retirement
  - Rates of withdrawal of active members (turnover)
  - Rates of disability
  - Rates of pay increase due to merit & seniority

Actuarial Valuation Process

The financing diagram on the previous 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

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 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.

ERI - Early Retirement Incentive Plan.

Funded Percent - A measure of the ratio of the funding value of assets to the actuarial accrued liability.

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.

800.521.0498 | P: 248.799.9000 | www.grsconsulting.com

March 8, 2024

Mr. Mark F. Nannini
Chief Financial Officer
Illinois Municipal Retirement Fund
2211 South York Road, Suite 500
Oak Brook, Illinois 60523

Re: December 31, 2023 Actuarial Valuation

Dear Mr. Nannini:

Enclosed are 12 copies of the December 31, 2023 Annual Actuarial Valuation Report.

We look forward to reviewing the results of this year's valuations at the Board meeting.

Sincerely,

GABRIEL, ROEDER, SMITH & COMPANY

Francois Pieterse, ASA, FCA, MAAA

FP:sc
Enclosures

cc: Sharon Brown, IMRF

One Towne Square | Suite 800 | Southfield, Michigan 48076-3723