

Illinois Municipal Retirement Fund

Gain/Loss Analysis of Financial Experience Among
Active Members During the Period

January 1, 2022 to December 31, 2022



Table of Contents

Report of IMRF Gain/Loss Analysis

During Calendar Year 2022

Pages	Material
	Cover Letter
1-2	Comments
3-4	Changes in Unfunded Actuarial Accrued Liabilities
5	Experience Gain (Loss)
6	Experience Gain (Loss) - Comparative Statement
7	Gain (Loss) from Investment Return
8-11	Active Members at Beginning of Experience Period
12-15	Active Members at End of Experience Period
	Retirement Experience
16-19	Active Members Who Became Age & Service Retirees
	Disability Experience
20-23	Members Who Became Disability Retirees
	Withdrawal Experience
24-31	Members Who Left Active Status
	Mortality Experience
32	Active Members Deaths
33	Retired Members Deaths
	Salary Experience
34	Salary Increases by Age
35	Salary Increases by Years of Service



March 10, 2023

Board of Trustees
Illinois Municipal Retirement Fund
Oak Brook, Illinois

Ladies and Gentlemen:

Submitted in this report are the results of the annual gain and loss analysis of financial experience among the active members of the Illinois Municipal Retirement Fund (IMRF) covering the period from **January 1, 2022 to December 31, 2022.**

This is one of several documents comprising the full actuarial report. For additional information please see the Annual Actuarial Valuation report dated March 10, 2023.

The valuation was based upon information, furnished by 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 IMRF Staff. GRS is not responsible for unauthorized use of this report.

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

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 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 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.

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. We are relying on the GRS actuaries and Internal Software, Training, and Processes Team who developed and maintain the model.

Mark Buis, Francois Pieterse, and Laura Frankowiak 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,

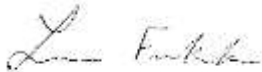
GABRIEL, ROEDER, SMITH & COMPANY



Mark Buis, FSA, EA, FCA, MAAA



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MB/FP/LF:dj



Comments

Purpose of Gain/Loss Analysis. Regular actuarial valuations give valuable information about the composite change in unfunded actuarial accrued liabilities -- whether or not the liabilities are increasing or decreasing and by how much.

Valuations do not show the portion of the change attributable to each risk area within the retirement system financial mechanism: 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 ages at actual retirement. In an actuarial valuation, assumptions must be made as to what these rates will be, for the next year and for decades in the future.

The objective of a gain and loss analysis is to determine the portion of the change in actuarial condition (unfunded actuarial accrued liabilities) attributable to each risk area.

The fact that actual experience differs from assumed experience is to be expected -- ***the future cannot be predicted with precision.*** The economic risk areas (particularly investment return and pay increases) are volatile. Inflation directly affects economic risk areas, and inflation seems to defy reliable prediction.

Changes in the assumed experience for a risk area should be made when the differences between assumed and actual experience have been observed to be sizable and persistent. A gain and loss analysis covering a relatively short period may or may not be indicative of ***long-term trends, which are the basis of financial assumptions.***

Data Used. The 2022 gain/loss analysis is based on the active member population as reported for use in preparing the December 31, 2021 and December 31, 2022 regular annual actuarial valuations. Please note however, that counts shown in this report may not match the December 31, 2022 or the December 31, 2021 valuations since data records for members who have more than one record have been combined. The 2021 reported active member data was matched with the 2022 reported active/inactive member data and the 2022 reported data for retirees and beneficiaries. This matching shows the movement of persons from active member status to various inactive status categories (e.g., retirement, death, disability, etc.). A reconciliation of the population is shown on the following page.

Comments

	Active Population Reconciliation						
	Actual					Total	Expected
	Regular	SLEP	ECO				
			Regular	SLEP			
Beginning of Year Census	167,579	4,046	72	2	171,699		
+ New People	28,898	475	2	0	29,375		
- Normal Retirement	4,553	163	5	1	4,722	4,814	
- Early Retirement	1,030	2	0	0	1,032	1,004	
- Vested Deferred Retirements	2,299	58	8	0	2,365	1,219	
- Deaths	132	2	0	0	134	351	
- Disabilities	289	9	0	0	298	37	
- Other Terminations	17,489	219	0	0	17,708	14,334	
End of Year Census	170,685	4,068	61	1	174,815		

The expected number of disabilities is based on the assumed rates of disability for permanent disability. The actual number of disabilities shown above is comprised of both temporary and permanent disability cases with temporary cases making up the majority.

The retirement system had **a net experience gain/(loss) of (\$232) million** during the 2022 observation year, which is 0.45% of the beginning accrued liabilities. During the 2022 observation year, IMRF experienced a return on the Market Value of Assets of (13.1)% (7.2% on Funding Value of Assets). The loss of \$23.3 million related to investment return and described on the following page is based on the Actuarial Value of Assets (AVA), which is a five-year smoothed market value. In this method, a portion of the current years' market value loss is combined with portions of the gains or losses from the prior four years to arrive at the AVA. See page 7 for a full description of this method.

Changes in Unfunded Actuarial Accrued Liabilities During Calendar Year 2022

The schedule below estimates the total gain or loss on Retirement Fund activities for the year as the difference between Expected and Actual Unfunded Liability.

	Unfunded Liability Development During	
	2022	2021
Unfunded Liability January 1	\$ 736,003,199	\$ 2,905,510,366
(Assumed Payments)	(49,091,971)	(217,755,192)
Assumed Interest	51,601,401	202,847,945
Expected Unfunded Liability December 31	738,512,629	2,890,603,119
Change Due to Change in Assumptions	0	0
Change Due to Benefit Changes	0	0
Change Due to Investment Experience	23,294,564	(2,174,486,990)
Change Due to Demographic and Other Sources	208,431,565	19,887,070
Actual Unfunded Liability December 31	970,238,758	736,003,199
Gain (Loss) for the Year	\$ (231,726,129)	\$ 2,154,599,920

The following schedule reconciles the employer contribution rate from last year to this year.

	Regular	SLEP	ECO	Total
Prior Year	6.55 %	16.38 %	38.13 %	7.00 %
Tier 2 Structure	(0.12)%	(0.21)%	0.00 %	(0.12)%
Investment Return	0.03 %	0.04 %	0.19 %	0.04 %
Pay Increases	0.28 %	1.12 %	0.26 %	0.31 %
Demographic	(0.02)%	(0.12)%	0.07 %	(0.03)%
Population Growth	(0.03)%	(0.13)%	1.40 %	(0.03)%
Death and Disability Rate Change	(0.02)%	(0.02)%	(0.02)%	(0.02)%
Other	(0.02)%	0.93 %	(0.30)%	0.00 %
Current Year	6.65 %	17.99 %	39.73 %	7.15 %

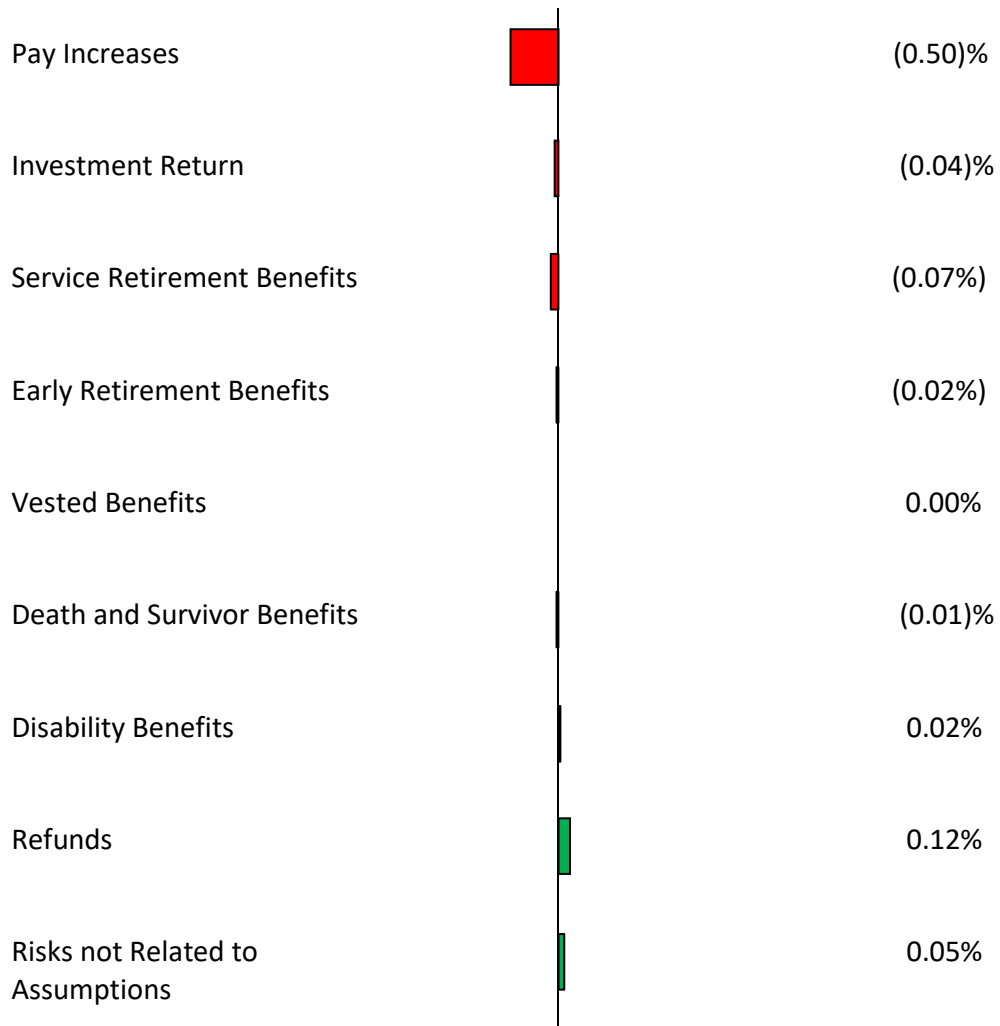
The next page shows the breakdown of the total gain or loss by source. Risk areas related to assumptions include economic risks and demographic risks. Economic risks relate to pay increases and investment return. Demographic risks relate to rates of retirement, death, disability, and other terminations. Actual number counts for each decrement are shown on pages 16 to 35. It is important to note that liability weighting was used to develop assumptions for certain decrements (such as retirement and age-based withdrawal) and therefore looking at number counts alone is not always the best indicator of plan experience.

Changes in Active Member Accrued Liabilities Gains & Losses by Risk Area During Calendar Year 2022

Type of Risk Area	Gain (Loss) in Period			Percent of Liabilities
	Regular	SLEP	Totals	
	Millions of \$			
Risks Related to Assumptions				
Economic Risk Areas				
<i>Pay Increases</i>	\$(227.3)	\$(29.4)	\$ (256.7)	(0.50)%
<i>Investment Return</i>			(23.3)	(0.04)%
Demographic Risk Areas				
<i>Service Retirements</i>	(30.1)	(4.0)	(34.1)	(0.07)%
<i>Early Retirements</i>	(12.2)	0.0	(12.2)	(0.02)%
<i>Vested Deferred Retirements</i>	1.7	0.8	2.5	0.00%
<i>Death and Survivor Benefits</i>	(3.2)	(0.5)	(3.7)	(0.01)%
<i>Disability Benefits</i>	7.8	1.1	8.9	0.02%
<i>Terminated with Refund</i>	55.2	6.4	61.6	0.12%
Risks not Related to Assumptions			25.3	0.05%
Total Gain (or Loss) During Period			(231.7)	(0.45)%
Beginning of Year Accrued Liabilities			\$50,927.6	100.0%

Gain/Loss Experience During Calendar Year 2022

Gain/Loss Experience Expressed as a % of Beginning of Year Liabilities



Experience Gains & Losses by Risk Area Comparative Statement (\$ in Millions)

Experience Period	Pay Increases	Investment Return	Service Retirement	Early Retirement	Vested Deferred Retirement	Death and Survivor Benefits	Disability Benefits	Terminated with Refund	Experience Study / Change in Discount Rate ³	Other	Total Gain (Loss)	
											\$	Percent of Liabilities
2003	\$ 36.8	\$ (404.6)	\$ (18.4)	\$(5.4)	\$(28.0)	\$ 2.3	\$ 5.9	\$ 10.0		\$ (250.0)	\$ (651.4)	(3.9)%
2004	(0.3)	(478.5)	(14.7)	(5.3)	(27.5)	3.4	7.3	15.8		(183.0)	(682.6)	(3.8)%
2005 ¹	130.0	23.8	(10.4)	(5.0)	(28.3)	1.9	12.0	19.3		(111.2)	32.1	0.2 %
2006	23.5	262.2	(8.6)	(3.4)	(32.7)	2.1	9.4	11.1		(211.7)	51.9	0.3 %
2007	(15.4)	305.8	(8.4)	(2.6)	(35.3)	4.1	10.2	23.2		(170.5)	111.1	0.6 %
2008 ¹	8.2	(3,331.5)	2.4	(2.1)	(40.8)	1.8	11.4	9.1		(40.5)	(3,382.0)	(12.6)%
2009	70.2	(343.2)	11.6	(0.5)	(38.3)	3.5	12.9	(11.8)		(53.5)	(349.1)	(1.4)%
2010	359.6	(90.5)	(0.2)	0.0	(32.3)	3.3	7.3	(0.3)		(442.1) ²	(195.2)	(0.7)%
2011 ¹	238.9	(164.3)	(22.9)	(5.7)	(25.9)	7.3	8.2	19.9	\$ (181.1)	(163.3)	(288.9)	(1.0)%
2012	230.2	71.0	2.0	(3.0)	(24.7)	6.5	20.8	23.8		(89.0)	237.6	0.8 %
2013	141.5	811.5	(11.6)	(2.8)	(22.7)	3.2	15.7	45.1		(74.0)	905.9	2.8 %
2014 ¹	64.2	767.6	(19.3)	(4.9)	(19.7)	(2.2)	17.2	37.9	(1,309.7)	34.9	(434.0)	(1.3)%
2015	22.9	313.2	(28.5)	(4.7)	(16.8)	(3.4)	15.8	33.0		(100.6)	230.9	0.6 %
2016	312.7	(109.9)	(20.2)	(2.6)	(14.1)	(3.3)	12.0	35.7		(185.5)	24.8	0.1 %
2017 ¹	104.3	475.5	(21.8)	(2.6)	(17.8)	(8.2)	9.7	22.4	1,094.6	(32.6)	1,623.5	3.9 %
2018 ⁴	(40.1)	(385.8)	(19.5)	(5.3)	(14.5)	(7.7)	11.5	31.2	(1,191.0)	92.9	(1,528.3)	(3.6)%
2019	(45.1)	367.2	(20.2)	(7.4)	(18.2)	(10.3)	17.0	32.4		(222.9)	92.5	0.2 %
2020 ¹	(27.0)	1,177.3	(25.6)	(6.6)	(23.7)	(2.3)	10.6	15.6	357.0	22.5	1,497.8	3.2 %
2021	(76.2)	2,174.5	(54.0)	(17.2)	(8.4)	1.2	8.9	49.6		76.2	2,154.6	4.4 %
2022	(256.7)	(23.3)	(34.1)	(12.2)	2.5	(3.7)	8.9	61.6		25.3	(231.7)	(0.5)%

¹ Changes in assumptions due to the Experience Study.

² Includes one-time data changes of approximately \$250 million.

³ Includes Experience Study Changes.

⁴ Change in Investment Rate of Return.



Development of Funding Value of Retirement System Assets Gain (Loss) from Investment Return During the Calendar Year 2022

Year Ended December 31	2021	2022	2023	2024	2025	2026
A. Funding Value Beginning of Year	\$46,017,438,373	\$50,191,547,801				
B. Market Value End of Year	57,215,398,205	48,200,907,225				
C. Market Value Beginning of Year	50,229,709,593	57,215,398,205				
D. Non-Investment/Administrative Net Cash Flow	(1,289,883,565)	(1,606,244,077)				
E. Investment Return						
E1. Market Total: B-C-D	8,275,572,177	(7,408,246,903)				
E2. Assumed Rate of Return	7.25%	7.25%				
E3. Assumed Amount of Return	3,289,506,003	3,580,660,868	-----Scheduled-----			
E4. Return Subject to Phase-in: E1-E3	4,986,066,174	(10,988,907,771)				
F. Phased-In Recognition of Investment Return						
F1. Current Year: 0.20xE4	997,213,235	(2,197,781,554)	Unknown	Unknown	Unknown	Unknown
F2. First Prior Year	680,449,955	997,213,235	\$(985,440,701)	Unknown	Unknown	Unknown
F3. Second Prior Year	496,823,800	680,449,955	-	\$(985,440,701)	Unknown	Unknown
F4. Third Prior Year	-	496,823,800	-	-	\$(985,440,701)	Unknown
F5. Fourth Prior Year	-	-	-	-	-	\$(985,440,700)
F6. Funding Corridor Adjustment						
F7. Total Scheduled Phase-in of Gain/(Loss)	2,174,486,990	(23,294,564)	(985,440,701)	(985,440,701)	(985,440,701)	(985,440,700)
G. Acceptable Phase-In of Investment Return						
G1. Projected Funding Value without Phase-In: A+D+E3	48,017,060,811	52,165,964,592				
G2. Limit on Phase-In: B-G1	9,198,337,394	(3,965,057,367)				
G3. Acceptable Phase-In Amount	2,174,486,990	(23,294,564)				
H. Funding Value End of Year: A+D+E3+G3	50,191,547,801	52,142,670,028				
I. Difference Between Market and Funding Value	7,023,850,404	(3,941,762,803)	(2,956,322,102)	(1,970,881,401)	(985,440,700)	-
J. Recognized Rate of Return (Funding Value)	12.0 %	7.2 %				
K. Market Rate of Return	16.7 %	(13.1)%				
L. Ratio of Funding Value to Market Value	87.7 %	108.2 %				

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



Regular Employees in Valuation by Age and Years of Service as of December 31, 2021

Age	Years of Service to Valuation Date								Total Number
	Men				Women				
	0-7	8-19	20-34	35 Plus	0-7	8-19	20-34	35 Plus	
24 & Under	2,650				3,577				6,227
25- 29	4,791	133			6,955	55			11,934
30- 34	4,551	1,219	1		7,291	1,015			14,077
35- 39	3,409	2,759	41		7,088	2,667	28		15,992
40- 44	2,847	2,963	670	2	7,777	3,612	578		18,449
45- 49	2,367	2,341	1,633	6	7,195	4,074	1,467	3	19,086
50	489	447	459	2	1,439	1,053	419	2	4,310
51	545	484	547	7	1,434	1,224	516	1	4,758
52	488	484	525	3	1,435	1,289	526	3	4,753
53	502	451	547	5	1,346	1,185	579	6	4,621
54	501	439	540	22	1,328	1,277	651	18	4,776
55	509	482	572	36	1,187	1,341	665	18	4,810
56	505	472	467	40	1,180	1,359	695	30	4,748
57	600	485	486	65	1,114	1,457	793	28	5,028
58	530	529	508	67	1,060	1,454	778	54	4,980
59	594	506	518	73	999	1,353	940	64	5,047
60	529	533	441	125	996	1,329	937	62	4,952
61	537	485	410	95	865	1,282	903	71	4,648
62	521	467	358	96	760	1,118	922	72	4,314
63	441	410	278	58	716	1,003	750	69	3,725
64	458	384	232	79	514	841	786	50	3,344
65	367	372	229	59	493	751	659	46	2,976
66	296	276	134	32	356	487	398	28	2,007
67	285	249	69	22	293	338	284	24	1,564
68	227	201	72	13	250	256	197	11	1,227
69	209	206	70	13	177	217	169	17	1,078
70 & Over	907	787	224	56	788	762	528	96	4,148
Totals	30,655	18,564	10,031	976	58,613	32,799	15,168	773	167,579

Figures on this page may not always match corresponding figures from the regular valuation due to differences in tabulation methods.



ECO Regular Employees in Valuation by Age and Years of Service as of December 31, 2021

Age	Years of Service to Valuation Date								Total Number
	Men				Women				
	0-7	8-19	20-34	35 Plus	0-7	8-19	20-34	35 Plus	
24 & Under									
25- 29									
30- 34									
35- 39									
40- 44		3							3
45- 49		1	2			1			4
50	1		1			1			3
51						2			2
52		2				2			4
53			1						1
54			1						1
55		1	3				1		5
56		1	2			1			4
57						3	1		4
58	1	1							2
59		3	1			1	1	1	7
60		2				1		1	4
61	1	1				1			3
62	2	1	1						4
63					1	2			3
64			1	1			1	1	4
65			1			1	2		4
66							1		1
67		2							2
68		1	2						3
69									
70 & Over		2					1	1	4
Totals	5	21	16	1	1	16	8	4	72

Figures on this page may not always match corresponding figures from the regular valuation due to differences in tabulation methods.



SLEP Employees in Valuation by Age and Years of Service as of December 31, 2021

Age	Years of Service to Valuation Date								Total Number
	Men				Women				
	0-7	8-19	20-34	35 Plus	0-7	8-19	20-34	35 Plus	
24 & Under	107				22				129
25- 29	421	1			53				475
30- 34	399	102			57	19			577
35- 39	227	355			28	53			663
40- 44	104	416	79		12	67	14		692
45- 49	53	201	289		11	44	50		648
50	11	33	80		1	4	12		141
51	12	49	50	1	1	4	7		124
52	8	35	42		3	4	5		97
53	13	32	38		3	3	3		92
54	13	22	26		1	4	3		69
55	8	16	26	1	1	4	1		57
56	5	12	16	1	2	2	2		40
57	6	13	7	2		4	4		36
58	9	12	7		1	2	2		33
59	5	8	11	1		3	3		31
60	5	9	6			1	2		23
61	3	6	7			3	1		20
62	2	12	4	2		1			21
63	1	8	6			2	1	1	19
64	2	8	1			1			12
65	2	2	1	1			2		8
66	1	7		1			1		10
67		1	2						3
68	2	8					1		11
69	2	3	1						6
70 & Over	3	4	1	1					9
Totals	1,424	1,375	700	11	196	225	114	1	4,046

Figures on this page may not always match corresponding figures from the regular valuation due to differences in tabulation methods.



ECO SLEP Employees in Valuation by Age and Years of Service as of December 31, 2021

Age	Years of Service to Valuation Date								Total Number
	Men				Women				
	0-7	8-19	20-34	35 Plus	0-7	8-19	20-34	35 Plus	
55		1							1
70 & Over				1					1
Totals		1		1					2

Figures on this page may not always match corresponding figures from the regular valuation due to differences in tabulation methods.

Regular Employees in Valuation by Age and Years of Service as of December 31, 2022

Age	Years of Service to Valuation Date								Total Number
	Men				Women				
	0-7	8-19	20-34	35 Plus	0-7	8-19	20-34	35 Plus	
24 & Under	2,995				4,144				7,139
25- 29	4,944	145			7,221	86			12,396
30- 34	4,612	1,270	1		7,733	1,043			14,659
35- 39	3,598	2,704	25		7,644	2,630	22		16,623
40- 44	3,091	3,056	671	1	8,184	3,677	529		19,209
45- 49	2,504	2,345	1,636	5	7,410	4,091	1,499	2	19,492
50	489	468	386	4	1,319	931	372	1	3,970
51	550	424	474	4	1,394	1,052	466	2	4,366
52	597	483	571	7	1,432	1,229	563	3	4,885
53	526	461	544	7	1,366	1,305	571	10	4,790
54	538	451	553	15	1,296	1,199	614	10	4,676
55	531	437	523	34	1,266	1,267	683	25	4,766
56	528	462	509	42	1,141	1,270	678	21	4,651
57	554	437	439	40	1,129	1,282	701	36	4,618
58	603	464	470	76	1,084	1,361	837	38	4,933
59	560	487	465	70	1,025	1,385	800	56	4,848
60	581	514	476	85	967	1,303	931	58	4,915
61	553	516	387	107	963	1,183	916	61	4,686
62	514	461	374	90	816	1,110	877	62	4,304
63	481	427	303	74	714	911	812	67	3,789
64	428	383	225	64	674	875	682	67	3,398
65	409	343	195	61	476	673	668	37	2,862
66	316	319	161	41	417	553	470	38	2,315
67	283	227	100	23	329	345	267	18	1,592
68	238	229	52	17	282	254	189	18	1,279
69	215	173	62	14	232	197	153	12	1,058
70 & Over	999	827	243	54	888	788	562	105	4,466
Totals	32,237	18,513	9,845	935	61,546	32,000	14,862	747	170,685

Figures on this page may not always match corresponding figures from the regular valuation due to differences in tabulation methods.



ECO Regular Employees in Valuation by Age and Years of Service as of December 31, 2022

Age	Years of Service to Valuation Date								Total Number
	Men				Women				
	0-7	8-19	20-34	35 Plus	0-7	8-19	20-34	35 Plus	
24 & Under									
25- 29									
30- 34									
35- 39	1								1
40- 44		1							1
45- 49		2	2			1			5
50		1							1
51		1	1			1			3
52						2			2
53		2					2		4
54									
55			1						1
56		1	3				1		5
57		1	2			1			4
58						3	1		4
59	1	1							2
60		2	2			1	1	1	7
61		1						1	2
62	1	1							2
63		2	1						3
64					1	1			2
65			1	1			1	1	4
66			1				1		2
67									
68									
69		1	2						3
70 & Over		1					1	1	3
Totals	3	18	16	1	1	10	8	4	61

Figures on this page may not always match corresponding figures from the regular valuation due to differences in tabulation methods.



SLEP Employees in Valuation by Age and Years of Service as of December 31, 2022

Age	Years of Service to Valuation Date								Total Number
	Men				Women				
	0-7	8-19	20-34	35 Plus	0-7	8-19	20-34	35 Plus	
24 & Under	119				22				141
25- 29	434				65	1			500
30- 34	441	99			64	23			627
35- 39	226	322			30	52			630
40- 44	127	411	75		17	59	13		702
45- 49	62	197	259		10	38	50		616
50	5	38	62		4	10	10		129
51	16	27	50		1	2	11		107
52	16	43	39	1		5	7		111
53	11	27	40		2	3	4		87
54	12	28	26		2	4	2		74
55	12	22	20		1	2	4		61
56	7	14	19	1	2	4	1		48
57	9	11	13		1	2	1		37
58	5	10	10	2		3	3		33
59	8	8	6		1	2	1		26
60	4	9	6	1		3	2		25
61	4	9	8			1	1		23
62	2	6	4			3			15
63	2	9	3	1		1			16
64	1	7	3			2		1	14
65	4	7	1			1			13
66	2	2		1			2		7
67	1	5	1	1			1		9
68			1						1
69	2	5					1		8
70 & Over	2	5		1					8
Totals	1,534	1,321	646	9	222	221	114	1	4,068

Figures on this page may not always match corresponding figures from the regular valuation due to differences in tabulation methods.



ECO SLEP Employees in Valuation by Age and Years of Service as of December 31, 2022

Age	Years of Service to Valuation Date								Total Number
	Men				Women				
	0-7	8-19	20-34	35 Plus	0-7	8-19	20-34	35 Plus	
70 & Over				1					1
Totals				1					1

Figures on this page may not always match corresponding figures from the regular valuation due to differences in tabulation methods.

RETIREMENT EXPERIENCE

Active Regular Group Members Who Became Age & Service Retirees During Calendar Year 2022 (Retirement with Benefit Beginning Immediately)

Male		
Age	Retirements	Exposure
Under 55	29	29
55	18	55
56	23	65
57	19	82
58	29	110
59	16	89
60	101	978
61	99	950
62	157	920
63	121	709
64	99	652
65	164	637
66	135	479
67	94	347
68	78	304
69	63	249
70	73	254
71	47	174
72	31	149
73	23	107
74	18	87
75 & Up	100	416
Total (55 & Up)	1,508	7,813
Average Rate:	0.1930	

Female		
Age	Retirements	Exposure
Under 55	5	5
55	10	34
56	10	35
57	11	47
58	13	62
59	12	68
60	198	2,122
61	214	2,135
62	342	2,083
63	314	1,837
64	235	1,613
65	422	1,488
66	372	1,142
67	281	757
68	152	564
69	101	424
70	65	340
71	66	281
72	40	182
73	32	171
74	29	134
75 & Up	92	446
Total (55 & Up)	3,011	15,965
Average Rate:	0.1886	

Active Regular Group Members Who Became Early Service Retirees During Calendar Year 2022

Male		
Age	Retirements	Exposure
55	89	892
56	62	902
57	46	813
58	54	880
59	112	953
Total	363	4,440
Average Rate:	0.0818	

Female		
Age	Retirements	Exposure
55	99	1,755
56	114	1,796
57	125	1,935
58	141	2,069
59	188	2,095
Total	667	9,650
Average Rate:	0.0691	

Active SLEP Group Members Who Became Age & Service Retirees During Calendar Year 2022 (Retirement with Benefit Beginning Immediately)

Male		
Age	Retirements	Exposure
Under 50	-	-
50	32	84
51	26	71
52	9	51
53	13	42
54	14	44
55	6	21
56	7	26
57	3	20
58	2	9
59	8	13
60	2	17
61	2	13
62	4	15
63	4	17
64	1	9
65	1	6
66	1	6
67	1	5
68	4	6
69	3	5
70	1	2
71	1	2
72	1	1
73	-	1
74	-	-
75 & Up	1	2
Total (50 & Up)	147	488
Average Rate:	0.3012	

Female		
Age	Retirements	Exposure
Under 50	-	-
50	3	11
51	1	12
52	-	4
53	3	5
54	-	3
55	-	4
56	1	2
57	3	3
58	1	5
59	-	1
60	1	6
61	1	5
62	1	1
63	1	2
64	-	4
65	-	-
66	-	3
67	-	-
68	-	-
69	-	1
70	-	-
71	-	-
72	-	-
73	-	-
74	-	-
75 & Up	-	-
Total (50 & Up)	16	72
Average Rate:	0.2222	

**Active ECO Group Members Who Became Age & Service Retirees
During Calendar Year 2022
(Retirement with Benefit Beginning Immediately)**

Male		
Age	Retirements	Exposure
Under 55	-	-
55	-	2
56	-	5
57	-	1
58	-	-
59	-	2
60	-	4
61	1	2
62	-	-
63	-	4
64	-	1
65	-	2
66	-	-
67	-	-
68	-	4
69	-	1
70	-	-
71	-	-
72	-	1
73	-	1
74	-	-
75 & Up	-	-
Total (55 & Up)	1	30
Average Rate:	0.0333	

Female		
Age	Retirements	Exposure
Under 55	-	-
55	-	-
56	-	1
57	-	4
58	-	1
59	-	2
60	-	1
61	1	2
62	-	1
63	-	-
64	2	3
65	-	3
66	1	2
67	-	-
68	-	-
69	-	-
70	-	-
71	-	1
72	-	-
73	-	-
74	-	-
75 & Up	-	1
Total (55 & Up)	4	22
Average Rate:	0.1818	

Active ECO SLEP Group Members Who Became Age & Service Retirees During Calendar Year 2022 (Retirement with Benefit Beginning Immediately)

Male		
Age	Retirements	Exposure
Under 50	-	-
50	-	-
51	-	-
52	-	-
53	-	-
54	-	-
55	-	-
56	1	1
57	-	-
58	-	-
59	-	-
60	-	-
61	-	-
62	-	-
63	-	-
64	-	-
65	-	-
66	-	-
67	-	-
68	-	-
69	-	-
70	-	-
71	-	1
72	-	-
73	-	-
74	-	-
75 & Up	-	-
Total (50 & Up)	1	2
Average Rate:	0.5000	

Female		
Age	Retirements	Exposure
Under 50	-	-
50	-	-
51	-	-
52	-	-
53	-	-
54	-	-
55	-	-
56	-	-
57	-	-
58	-	-
59	-	-
60	-	-
61	-	-
62	-	-
63	-	-
64	-	-
65	-	-
66	-	-
67	-	-
68	-	-
69	-	-
70	-	-
71	-	-
72	-	-
73	-	-
74	-	-
75 & Up	-	-
Total (50 & Up)	-	-
Average Rate:	-	

DISABILITY EXPERIENCE

Regular Group Members Who Became Disability Retirees During Calendar Year 2022

Male		
Age	Disabilities*	Exposure
Under 20	-	107
20-24	-	2,149
25-29	1	4,772
30-34	2	5,707
35-39	9	6,162
40-44	11	6,478
45-49	15	6,338
50-54	20	7,378
55-59	16	7,960
60-64	39	7,211
65-69	8	3,719
70-74	1	1,493
75 and Over	-	752
Totals	122	60,226
Average Rate:	0.0020	

Female		
Age	Disabilities*	Exposure
Under 20	-	101
20-24	-	2,913
25-29	3	6,790
30-34	3	8,198
35-39	12	9,536
40-44	9	11,813
45-49	14	12,698
50-54	34	15,353
55-59	35	16,594
60-64	45	14,617
65-69	8	6,300
70-74	2	1,736
75 and Over	2	704
Totals	167	107,353
Average Rate:	0.0016	

* The numbers shown above may be overstated due to inclusion of temporary disability cases. Actual numbers may vary once the permanent cases have been determined.

SLEP Group Members Who Became Disability Retirees During Calendar Year 2022

Male		
Age	Disabilities*	Exposure
Under 20	-	1
20-24	-	88
25-29	2	385
30-34	-	509
35-39	-	560
40-44	1	610
45-49	4	534
50-54	1	507
55-59	1	179
60-64	-	88
65-69	-	37
70-74	-	2
75 and Over	-	2
Totals	9	3,502
Average Rate:	0.0026	

Female		
Age	Disabilities*	Exposure
Under 20	-	-
20-24	-	18
25-29	-	55
30-34	-	75
35-39	-	80
40-44	-	84
45-49	-	107
50-54	-	64
55-59	-	31
60-64	-	18
65-69	-	4
70-74	-	-
75 and Over	-	-
Totals	-	536
Average Rate:	-	

* The numbers shown above may be overstated due to inclusion of temporary disability cases. Actual numbers may vary once the permanent cases have been determined.

ECO Group Members Who Became Disability Retirees During Calendar Year 2022

Male		
Age	Disabilities	Exposure
Under 20	-	-
20-24	-	-
25-29	-	-
30-34	-	-
35-39	-	-
40-44	-	3
45-49	-	2
50-54	-	6
55-59	-	11
60-64	-	12
65-69	-	7
70-74	-	2
75 and Over	-	-
Totals	-	43
Average Rate:	-	

Female		
Age	Disabilities	Exposure
Under 20	-	-
20-24	-	-
25-29	-	-
30-34	-	-
35-39	-	-
40-44	-	-
45-49	-	1
50-54	-	5
55-59	-	8
60-64	-	8
65-69	-	5
70-74	-	1
75 and Over	-	1
Totals	-	29
Average Rate:	-	

ECO SLEP Members Who Became Disability Retirees During Calendar Year 2022

Male		
Age	Disabilities	Exposure
Under 20	-	-
20-24	-	-
25-29	-	-
30-34	-	-
35-39	-	-
40-44	-	-
45-49	-	-
50-54	-	-
55-59	-	1
60-64	-	-
65-69	-	-
70-74	-	-
75 and Over	-	-
Totals	-	1
Average Rate:	-	

Female		
Age	Disabilities	Exposure
Under 20	-	-
20-24	-	-
25-29	-	-
30-34	-	-
35-39	-	-
40-44	-	-
45-49	-	-
50-54	-	-
55-59	-	-
60-64	-	-
65-69	-	-
70-74	-	-
75 and Over	-	-
Totals	-	-
Average Rate:	-	

WITHDRAWAL EXPERIENCE

**Regular Group Members Who Left Active Status
During Calendar Year 2022
with Eight or More Years of Service**

Male		
Age	Withdrawals	Exposure
25-29	11	143
30-34	107	1,289
35-39	214	2,809
40-44	172	3,716
45-49	187	4,048
50-54	181	4,960
55 & Over	301	301
Total	1,173	17,266
Average Rate:	0.0679	

Female		
Age	Withdrawals	Exposure
25-29	13	74
30-34	109	1,059
35-39	249	2,710
40-44	334	4,220
45-49	420	5,669
50-54	570	8,696
55 & Over	624	624
Total	2,319	23,052
Average Rate:	0.1006	

**SLEP Group Members Who Left Active Status
During Calendar Year 2022
with Seven or More Years of Service**

Male		
Age	Withdrawals	Exposure
25-29	2	10
30-34	10	150
35-39	16	379
40-44	17	505
45-49	23	487
50-54	8	145
55 & Over	6	59
Total	82	1,735
Average Rate:	0.0473	

Female		
Age	Withdrawals	Exposure
25-29	-	2
30-34	3	27
35-39	1	57
40-44	2	74
45-49	3	97
50-54	1	17
55 & Over	-	14
Total	10	288
Average Rate:	0.0347	

**ECO Group Members Who Left Active Status
During Calendar Year 2022
with Eight or More Years of Service**

Male		
Age	Withdrawals	Exposure
25-29	-	-
30-34	-	-
35-39	-	-
40-44	-	3
45-49	-	2
50-54	1	5
55 & Over	4	4
Total	5	14
Average Rate:	0.3571	

Female		
Age	Withdrawals	Exposure
25-29	-	-
30-34	-	-
35-39	-	-
40-44	-	-
45-49	-	1
50-54	-	5
55 & Over	3	3
Total	3	9
Average Rate:	0.3333	

**ECO SLEP Group Members Who Left Active Status
During Calendar Year 2022
with Seven or More Years of Service**

Male		
Age	Withdrawals	Exposure
25-29	-	-
30-34	-	-
35-39	-	-
40-44	-	-
45-49	-	-
50-54	-	-
55 & Over	-	-
Total	-	-
Average Rate:	-	-

Female		
Age	Withdrawals	Exposure
25-29	-	-
30-34	-	-
35-39	-	-
40-44	-	-
45-49	-	-
50-54	-	-
55 & Over	-	-
Total	-	-
Average Rate:	-	-

**Regular Group Members Who Left Active Status
with No Monthly Benefit
During Calendar Year 2022
(Non-Vested Separations)**

Male		
Service Index	Withdrawals	Exposure
1	1,100	4,083
2	1,231	5,225
3	761	4,091
4	639	4,091
5	496	3,530
6	359	2,983
7	285	2,902
8	225	2,533
9	173	2,196
10	127	1,668
11	132	1,446
12	86	1,053
13	72	814
14	64	1,016
15	61	1,062
16	72	985
17	61	943
18	51	767
19	36	652
20	28	628
21	27	671
22	32	690
23	26	696
24	25	574
25	23	466
26	11	376
27	13	328
28	12	274
29	4	210
30 and Over	37	722
Totals (Less Than or Equal to 8 Years of Service) Average Rate	5,096 0.1731	29,438

Female		
Service Index	Withdrawals	Exposure
1	2,561	8,861
2	2,599	9,705
3	1,685	8,201
4	1,444	8,037
5	996	6,706
6	782	5,629
7	656	5,059
8	477	4,380
9	366	3,607
10	268	2,892
11	242	2,216
12	188	1,622
13	182	1,277
14	169	1,444
15	154	1,655
16	143	1,488
17	103	1,198
18	78	997
19	71	848
20	45	708
21	61	804
22	52	796
23	42	697
24	33	555
25	20	418
26	26	329
27	13	262
28	12	217
29	13	173
30 and Over	38	514
Totals (Less Than or Equal to 8 Years of Service) Average Rate	11,200 0.1980	56,578

**SLEP Group Members Who Left Active Status
with No Monthly Benefit
During Calendar Year 2022
(Non-Vested Separations)**

Male		
Service Index	Withdrawals	Exposure
1	36	168
2	42	224
3	23	204
4	28	228
5	11	155
6	16	147
7	6	127
8	11	114
9	10	129
10	4	88
11	5	78
12	5	72
13	3	68
14	2	116
15	4	152
16	3	111
17	5	128
18	1	131
19	3	116
20	3	87
21	3	71
22	4	62
23	2	48
24	1	60
25	7	46
26	-	39
27	1	13
28	3	8
29	-	7
30 and Over	2	2
Totals (Less Than or Equal to 7 Years of Service)	162	1,253
Average Rate	0.1293	

Female		
Service Index	Withdrawals	Exposure
1	6	14
2	6	40
3	4	28
4	2	30
5	3	21
6	1	20
7	1	19
8	-	14
9	-	17
10	-	11
11	1	17
12	2	13
13	1	18
14	-	17
15	-	25
16	1	19
17	-	16
18	-	20
19	-	21
20	1	13
21	1	15
22	-	14
23	-	11
24	1	11
25	1	7
26	1	3
27	-	2
28	-	4
29	-	-
30 and Over	-	-
Totals (Less Than or Equal to 7 Years of Service)	23	172
Average Rate	0.1337	

**ECO Group Members Who Left Active Status
with No Monthly Benefit
During Calendar Year 2022
(Non-Vested Separations)**

Male		
Service Index	Withdrawals	Exposure
1	-	-
2	-	1
3	-	-
4	-	-
5	-	-
6	-	-
7	-	1
8	-	1
9	-	-
10	-	-
11	-	-
12	2	2
13	-	-
14	-	1
15	-	1
16	1	2
17	-	-
18	-	1
19	-	-
20	-	-
21	-	-
22	-	-
23	-	2
24	-	-
25	-	-
26	-	-
27	-	-
28	-	1
29	-	-
30 and Over	2	2
Totals (Less Than or Equal to 8 Years of Service)	-	3
Average Rate	0.0000	

Female		
Service Index	Withdrawals	Exposure
1	-	-
2	-	1
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	2	2
13	-	-
14	-	1
15	-	2
16	-	-
17	-	-
18	-	-
19	-	-
20	-	2
21	-	-
22	-	-
23	-	-
24	1	1
25	-	-
26	-	-
27	-	-
28	-	-
29	-	-
30 and Over	-	-
Totals (Less Than or Equal to 8 Years of Service)	-	1
Average Rate	0.0000	

**ECO SLEP Group Members Who Left Active Status
with No Monthly Benefit
During Calendar Year 2022
(Non-Vested Separations)**

Male		
Service Index	Withdrawals	Exposure
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	-	-
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-
21	-	-
22	-	-
23	-	-
24	-	-
25	-	-
26	-	-
27	-	-
28	-	-
29	-	-
30 and Over	-	-
Totals (Less Than or Equal to 7 Years of Service) Average Rate	-	-
	0.0000	

Female		
Service Index	Withdrawals	Exposure
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	-	-
13	-	-
14	-	-
15	-	-
16	-	-
17	-	-
18	-	-
19	-	-
20	-	-
21	-	-
22	-	-
23	-	-
24	-	-
25	-	-
26	-	-
27	-	-
28	-	-
29	-	-
30 and Over	-	-
Totals (Less Than or Equal to 7 Years of Service) Average Rate	-	-
	0.0000	

MORTALITY EXPERIENCE

Active Members Deaths During Calendar Year 2022

Male		
Age	Deaths	Exposure
Under 20	-	108
20-24	-	2,237
25-29	1	5,157
30-34	2	6,216
35-39	2	6,722
40-44	2	7,091
45-49	7	6,874
50-54	9	7,891
55-59	14	8,151
60-64	19	7,311
65-69	11	3,763
70-74	6	1,497
75 and Over	5	754
Totals	78	63,772
Average Rate:	0.0012	

Female		
Age	Deaths	Exposure
Under 20	-	101
20-24	-	2,931
25-29	-	6,845
30-34	2	8,273
35-39	1	9,616
40-44	5	11,897
45-49	2	12,806
50-54	3	15,422
55-59	9	16,633
60-64	18	14,643
65-69	10	6,309
70-74	4	1,737
75 and Over	2	705
Totals	56	107,918
Average Rate:	0.0005	

Retired Members Deaths During Calendar Year 2022

Male		
Age	Deaths	Exposure
Under 55	-	525
55-59	30	2,978
60-64	94	7,097
65-69	184	10,690
70-74	275	9,863
75-79	294	6,460
80-84	288	3,830
85-89	271	2,056
90-94	176	815
95-99	60	192
100-104	5	18
105 & Over	-	-
Totals	1,677	44,524
Actual Average Rate	0.0377	
Expected Average Rate	0.0344	

Female		
Age	Deaths	Exposure
Under 55	3	257
55-59	35	4,774
60-64	83	13,751
65-69	162	21,740
70-74	259	20,336
75-79	364	14,395
80-84	411	8,809
85-89	423	5,142
90-94	428	2,623
95-99	234	851
100-104	45	110
105 & Over	7	12
Totals	2,454	92,800
Actual Average Rate	0.0264	
Expected Average Rate	0.0257	

SALARY EXPERIENCE

Salary Increases by Age During Calendar Year 2022*

Age Group Beginning of Year	Pay Increase During the Next Year		
	Regular	SLEP	ECO
25-29	13.92 %	11.99 %	0.00 %
30-34	9.78 %	11.85 %	0.00 %
35-39	8.37 %	11.23 %	0.00 %
40-44	7.49 %	8.11 %	0.00 %
45-49	6.90 %	7.37 %	0.78 %
50-54	6.64 %	7.62 %	2.14 %
55-59	6.14 %	7.19 %	1.48 %
60-64	5.99 %	5.79 %	4.49 %
65-69	5.70 %	4.00 %	2.94 %
70-74	5.85 %	6.61 %	2.82 %
75 & Over	6.23 %	5.43 %	2.46 %
Averages:			
Expected	3.07 %	4.26 %	3.03 %
Actual	6.51 %	8.26 %	2.98 %

* Members active both at the beginning and end of year and have 5 or more years of service at the beginning of the year for Regular and ECO groups and 0 or more years of service for SLEP and ECO SLEP groups (increases for SLEP groups are correlated primarily with service).

Salary Increases by Years of Service During Calendar Year 2022

Service Index	Pay Increase During the Next Year		
	Regular	SLEP	ECO
1	15.89 %	16.06 %	0.00 %
2	12.67 %	15.14 %	5.84 %
3	10.47 %	10.60 %	0.00 %
4	10.25 %	11.57 %	0.00 %
5	9.80 %	10.83 %	0.00 %
6	8.98 %	10.23 %	0.00 %
7	8.33 %	10.92 %	1.43 %
8	7.57 %	7.24 %	4.64 %
9	7.83 %	7.21 %	0.00 %
10	7.56 %	7.03 %	2.00 %
11	7.07 %	8.51 %	2.49 %
12	7.38 %	7.05 %	1.22 %
13	6.71 %	7.71 %	0.00 %
14	6.86 %	8.68 %	0.82 %
15	6.63 %	5.89 %	1.91 %
16	6.45 %	7.36 %	1.51 %
17	5.94 %	5.64 %	0.00 %
18	5.94 %	5.83 %	0.46 %
19	6.05 %	6.35 %	1.76 %
20	5.60 %	7.33 %	1.07 %
21	5.77 %	8.27 %	3.52 %
22	5.70 %	4.88 %	24.82 %
23	5.51 %	7.51 %	5.01 %
24	5.49 %	6.36 %	0.00 %
25	5.21 %	7.25 %	3.37 %
26	4.90 %	6.00 %	2.21 %
27	4.90 %	6.85 %	6.53 %
28	4.76 %	9.28 %	3.43 %
29	5.22 %	10.08 %	0.00 %
30	5.08 %	3.72 %	0.00 %
31	4.72 %	6.13 %	0.00 %
32	4.88 %	8.29 %	0.00 %
33	4.91 %	10.95 %	0.00 %
34	4.53 %	11.73 %	1.30 %
35	4.85 %	(6.22)%	0.00 %
36	5.09 %	5.02 %	0.00 %
37	3.86 %	4.41 %	0.00 %
38	3.91 %	6.75 %	1.39 %
39	3.92 %	39.64 %	10.26 %
40	4.45 %	0.00 %	0.00 %
Averages:			
Expected	3.95 %	4.26 %	3.12 %
Actual	7.83 %	8.26 %	3.03 %



March 10, 2023

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

Dear Mr. Nannini:

Enclosed are 12 copies of the Gain/Loss Analysis of Financial Experience Among Active Members during the period of January 1, 2022 to December 31, 2022 for the Illinois Municipal Retirement Fund (IMRF).

Your comments and/or questions will be welcome.

Sincerely,

GABRIEL, ROEDER, SMITH & COMPANY

A handwritten signature in black ink, appearing to read "F. Pieterse". The signature is written in a cursive, flowing style.

Francois Pieterse, ASA, FCA, MAAA

FP:dj
Enclosures

cc: Sharon Brown, IMRF