MUNICIPAL FIRE AND POLICE RETIREMENT SYSTEM OF IOWA

Actuarial Valuation Report

July 1, 2023

HUB

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October 10, 2023

PERSONAL AND CONFIDENTIAL

Board of Trustees
Municipal Fire and Police Retirement System of Iowa
7155 Lake Drive, Suite 201
West Des Moines, IA 50266

RE: July 1, 2023 Actuarial Report

Dear Board Members:

We are pleased to submit this actuarial report of the Municipal Fire and Police Retirement System of Iowa. The report presents the annual actuarial valuation, which was determined in accordance with Iowa Code Chapter 411. The costs developed and presented in this report are based on asset values as of June 30, 2023, member census data as of July 1, 2023 and current System provisions, all of which were supplied by the Municipal Fire & Police Retirement System of Iowa.

The purposes of the actuarial report are:

1. To determine the normal contribution rate that is payable by the Cities under Chapter 411 of the Code of Iowa;
2. To determine the funded status of the System; and
3. To provide information relating to the disclosure requirements of the Governmental Accounting Standards Board (GASB) Statement No. 67 – Financial Reporting for Defined Benefit Pension Plans (an amendment of GASB Statement No. 25).

All costs and liabilities were determined in accordance with generally accepted actuarial principles and procedures and are based on the actuarial assumptions and methods prescribed by the Board of Trustees in accordance with Iowa Code Section 411.5.10-11. To the best of our knowledge, the information supplied in this report is complete and accurate and in my opinion, the assumptions are reasonably related to the experience of the System and to reasonable expectations under the System. The amounts presented in the accompanying report have been determined appropriately according to the actuarial assumptions and methods stated herein, and fully and fairly disclose the actuarial position of the System. However, future measures may differ significantly from the current measurement. Due to the limited scope of our assignment, this report does not include an analysis of the potential range of such future measures. The undersigned meets the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinion contained in this report.

Sincerely,

Glen C. Gahan, FSA
Executive Vice President
Member of American Academy of Actuaries
Enrolled Actuary No. 23-4875

Michael S. Ehmke, ASA
Senior Vice President
Member of American Academy of Actuaries
Enrolled Actuary No. 23-5811

GCG/MSE/ks

Enclosure

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Report Highlights

This section compares results of the current and prior two actuarial valuations. Additional supporting detail is available in other sections of the report. The Table of Contents on the prior page identifies the location of the supporting detail.

	As of July 1,		
	2021	**2022**	**2023**
Cities Recommended Contribution	$ 80,528,971	$ 80,373,115	$ 84,922,524
Normal Contribution Rate	23.90%	22.98%	22.66%
Plan Assets			
Market Value	3,293,610,268	3,090,046,862	3,175,750,413
Actuarial Value	2,918,169,854	3,083,242,438	3,215,148,052
Prior Year Investment Return			
Market Value	30.78%	(3.51%)	6.03%
Actuarial Value	10.97%	8.86%	7.56%
Actuarial Accrued Liability	3,518,184,403	3,651,617,338	3,801,949,463
Funded Ratio*	82.95%	84.43%	84.57%
Annual Participating Payroll	336,941,302	349,752,458	374,768,422
Annual Normal Cost	58,814,108	61,347,565	65,495,151
Percent of Payroll	17.46%	17.54%	17.48%
Annual Pension Benefits			
Service Retirement	105,137,988	110,489,748	112,910,652
Disabled Retirement	55,264,320	58,285,284	60,857,436
Vested Retirement	9,127,704	9,865,500	10,623,012
Beneficiaries	23,239,020	23,986,512	25,155,240
Total	192,769,032	202,627,044	209,546,340
Number of Members			
Active	4,107	4,155	4,168
Disabled	1,159	1,181	1,206
Retirees and Beneficiaries	3,126	3,172	3,227
Vested Terminated	415	453	465
Total	8,807	8,961	9,066

*Based on the ratio of the Actuarial Value of Assets to Actuarial Accrued Liability.

Comments on the Valuation

Cities Recommended Contribution

The recommended contribution to the System was determined using the Entry Age Normal actuarial cost method as adopted by the Board of Trustees for valuation years beginning July 1, 2011. The Aggregate actuarial cost method had been used for years prior to July 1, 2011 to determine the contribution for the System.

We recommend a contribution of $84,922,524 be made for the 2023 plan year. This is equal to a contribution rate of 22.66% of payroll. This rate assumes that the State of Iowa will contribute approximately $0 for the 2023 plan year.

The System's normal contribution rate decreased from 22.98% for 2022 to 22.66% for 2023. The System's contribution rate before any adjustment to the minimum contribution rate changed as follows:

July 1, 2022 normal contribution rate:	22.98%
• Increase in contribution rate due to lower State contribution	0.00%
• System experience more favorable than assumed	(0.26%)
• Investment experience more favorable than assumed	(0.04%)
• Changes in System provisions	0.00%
• Change in actuarial cost method	0.00%
• Changes in actuarial assumptions	(0.02%)
Preliminary normal contribution rate:	22.66%
• Increase necessary to meet minimum contribution rate	0.00%
July 1, 2023 normal contribution rate	22.66%

Changes in System Provisions

All System provisions remained unchanged from the prior year valuation.

Changes in Actuarial Assumptions

In accordance with Iowa State Code Section 411.5.10-11, the Board of Trustees prescribes the actuarial assumptions used in this report. Per the Code Section, we as the System's actuary conduct a formal investigation, or experience study, of the primary assumptions every five years. The most recent investigation was completed for the 10-year period ending June 30, 2022.

Comments on the Valuation

Based on the results of the recent 10-year experience study and adoption by the Board of Trustees, the following actuarial assumptions were changed:

- Change withdrawal rates to be 10% higher for ages below age 40 for actives
- Increase ordinary disability rates to be 50% higher for actives ages 35 to 54
- Increase accidental disability rates to be 50% higher for actives age 35 to 49
- Increase DROP participation rates to 60% for ages 55 to 56 for actives
- Increase DROP voluntary premature withdrawal rates to 30% for ages 55 to 56 for actives

Change in Actuarial Methods

All actuarial cost methods remain unchanged from the prior year valuation.

Comments on the Valuation

Government Accounting Standards Board Disclosure

Measurements used to evaluate the funded status of the System are based on procedures set forth by Government Accounting Standards Board (GASB). In an effort to enhance the understandability and usefulness of the pension information that is included in the financial reports of pension plans for state and local governments, GASB has issued Statement No. 67 – Financial Reporting for Pension Plans (an amendment of GASB Statement No. 25), and Statement No. 68 – Accounting and Financial Reporting for Pensions (an amendment of GASB Statement No. 27). Statement No. 67 is effective for fiscal years beginning after June 15, 2013, while Statement No. 68 is effective for fiscal years beginning after June 15, 2014. Statement No. 67 applies to financial reporting by pension plans, while Statement No. 68 applies to accounting and financial reporting by state and local governments for pensions. This report includes information relative to reporting requirements of GASB Statement No. 67, while information relative to reporting requirements of GASB Statement No. 68 is prepared in a separate report.

In addition to two required statements regarding System assets, the statement requires four schedules and accompanying notes disclosing information relative to provisions of the System, assumptions used to measure the total pension liability, the funded status of the System and historical contribution patterns:

- The Schedule of Changes in Net Pension Liability provides changes in the total pension liability, the plan's fiduciary net position and the net pension liability.

- The Schedule of Net Pension Liability provides the net pension liability as a percentage of covered payroll.

- The Schedule of Employer Contributions provides historical information about the Actuarially Determined Contribution (ADC) and the percentage of the ADC that was actually contributed. For the System, the ADC is equal to the normal contribution rate multiplied by the covered payroll for the year. This is the total ADC before any adjustment for minimum contribution rates or state contributions.

- The Schedule of Investment Returns presents the annual money-weighted rate of return on pension plan investments. This information is prepared in a separate report.

Comments on the Valuation

Covered Members
Ages of Active Members – The average age of the active members has decreased. The average age of members included in the valuation was 40.1 for the current year and 40.2 in the prior year.

Service of Active Members – The average service of the active members has decreased. The average service of members included in the valuation was 12.8 for the current year and 12.9 in the prior year.

Participating Compensation and Members – Total participating compensation increased from $349,752,458 to $374,768,422, a 7.2% increase. The number of active members increased from 4,155 in 2022 to 4,168 in 2023.

Average Annual Compensation – The average compensation of active members is more than the average compensation for the prior year. The average compensation was $84,176 in 2022 and $89,916 in 2023.

Ages of New Service Retirement Members – The average age of active members who elected service retirement has increased. The average age of new service retirements was 58.7 for the current year and 58.2 in the prior year.

Actuarial Valuation Results

This section of the report provides information concerning the valuation of System assets and liabilities and determination of recommended contributions. The following is a brief description of the following pages and of how the information is organized.

Assets – System assets are amounts that have accumulated and will be used to meet future benefit obligations. In the Assets exhibit, trust fund transactions reported by the System are traced from the prior valuation date to the current valuation date and a statement of market value of assets is presented. In addition, the actuarial value of assets is developed based on the adopted method.

Actuarial Accrued Liability – The actuarial accrued liability is equal to the sum of the individual accrued liabilities for all System members. Each member's accrued liability equals the actuarial present value of all future benefits less the actuarial present value of all future normal costs.

Unfunded Actuarial Accrued Liability – The unfunded actuarial accrued liability on the valuation date is equal to the excess of the System's actuarial accrued liability over the System's actuarial value of assets.

Annual Normal Cost – The annual normal cost is the portion of total System costs assigned to the current plan year by the actuarial cost method.

Annual Contributions – The recommended annual contribution is defined by the rate of contribution and covered payroll. The System's contribution rate by statute may not be less than 17% of covered payroll. As of July 1, 2013, the determination changed to the Entry Age Normal Method with a 25-year level dollar amortization of unfunded actuarial accrued liability on a closed layered basis. The recommended contribution rate consists of the normal cost plus amortization of the unfunded actuarial accrued liability, less member contributions, less state contributions, divided by the covered payroll.

Unfunded Accrued Liability Payments – One of the components included to determine the recommended annual contribution is the unfunded accrued liability payment. The unfunded accrued liability payment is an annual amount that will amortize the initial unfunded accrued liability and any subsequent annual changes in the unfunded accrued liability due to System amendments, changes in actuarial assumptions and actuarial gains/losses.

Actuarial Gain/(Loss) – Actuarial gains and losses indicate the extent to which actual experience is deviating from that expected on the basis of the actuarial assumptions. Actuarial gains result from experience more favorable than assumed and reduce the unfunded actuarial accrued liability. Actuarial losses result from experience less favorable than assumed and increase the unfunded actuarial accrued liability.

Actuarial Present Value of Accrued Benefits – Another objective of preparing the actuarial valuation is to evaluate the funding status of the System. A comparison of the market value of assets with the actuarial present value of accrued benefits is displayed for the current and prior year.

Risk and Other Disclosures – Actuarial standards of practice require certain risk and other disclosures to address the assessment of the risk to the System that actual future measurements may differ significantly from expected future measurements.

Actuarial Valuation Results

Assets – Market Value

Year Ending June 30, 2023

Market Value of Assets at June 30, 2022		$3,090,046,862
Receipts		
Member Contributions	$ 34,165,042	
Cities Contributions	86,664,231	
State Contributions	0	
Investment Income	199,121,236	
Investment Management Expenses	(16,254,428)	
Other Income	482,966	
Total Receipts		$ 304,179,047
Disbursements		
Benefit Payments to Members	$(214,140,489)	
Termination Withdrawals	(2,045,865)	
Administrative Expenses	(1,969,805)	
Disability Expenses	(298,254)	
Other Expenses	(21,083)	
Total Disbursements		$ (218,475,496)
Market Value of Assets at June 30, 2023		$3,175,750,413

Actuarial Valuation Results

Assets – Market Value

Year Ending June 30, 2023

Assets		
Cash	$ 10,821,958	
U.S. Government Obligations	105,966,338	
U.S. Corporate Fixed Income	111,623,184	
U.S. Equity Securities	406,892,555	
Foreign Equity Securities	391,514,258	
Commingled Fixed Income	41,103,374	
Short-Term Investments	24,037,735	
Infrastructure	115,125,818	
Real Estate	309,137,877	
Private Equity	806,170,666	
Private Credit	60,021,378	
Multi-Strategy Commingled Fund	56,372,519	
Absolute Return	73,849,851	
Fund of Funds Commingled Fund	676,996,107	
Receivables	9,677,336	
Fixed/Other Assets	252,770	
Pension Related Deferred Outflows	131,039	
Total Assets		$3,199,694,763
Liabilities		
Benefits/Refunds Payable	$(18,910,844)	
Investment Management Expenses Payable	(4,003,145)	
Administrative Expenses Payable	(476,732)	
Net Pension Liability to IPERS	(478,702)	
Payable to Brokers, Net	(8,790)	
Pension Related Deferred Inflows	(66,137)	
Total Liabilities		$ (23,944,350)
Market Value of Assets at June 30, 2023		$3,175,750,413

Actuarial Valuation Results

Assets – Actuarial Value

Year Ending June 30, 2023

1.	Actuarial Value of Assets at July 1, 2022	$3,083,242,438
2.	Contributions for 2022 Plan Year (Members, Cities and State)	120,829,273
3.	Benefit distributions and refunds for 2022 plan year	(216,186,354)
4.	Noninvestment Expenses	
	a. Administrative Expenses	(1,969,805)
	b. Disability Expenses	(298,254)
	c. Other Expenses	(21,083)
	d. Total	(2,289,142)
5.	Expected return on Market Value of Assets for year at 7.5%	228,157,979

6. Asset gains/(losses) for prior five plan years

		(i) Asset gain or (loss)	Years Recognized	Years Remaining	(ii) Recognition Percentage	(i) x (ii) Recognized Amount
a.	2022	$ (44,808,205)	1	4	20.000%	(8,961,641)
b.	2021	(357,676,297)	2	3	20.000	(71,535,259)
c.	2020	594,021,191	3	2	20.000	118,804,238
d.	2019	(132,764,343)	4	1	20.000	(26,552,869)
e.	2018	(51,803,055)	5	0	20.000	(10,360,611)
f.	Total					1,393,858

7.	Asset gains/(losses) to be recognized = (6f)	1,393,858
8.	Actuarial Value of Assets at July 1, 2023 = (1) + (2) + (3) + (4d) + (5) + (7)	3,215,148,052
9.	Market Value of Assets at July 1, 2023	3,175,750,413
10.	Ratio of Actuarial Value to Market Value at July 1, 2023 = (8) / (9)	101.24%

Actuarial Valuation Results

Unfunded Actuarial Accrued Liability

The unfunded actuarial accrued liability is the amount the actuarial accrued liability exceeds the actuarial value of plan assets determined as of the actuarial valuation date. The unfunded actuarial accrued liability is reduced during a year when System funding exceeds the annual normal cost and interest accrued on the prior year unfunded accrued liability. The unfunded actuarial accrued liability is also reduced (increased) when the investment return on System assets exceeds (is less than) the assumed investment return. The actuarial accrued liability is increased if there are amendments that revise benefits payable from the System. The actuarial accrued liability may be increased or decreased as the result of System experience or if there are changes in the actuarial assumptions used to determine annual contributions.

	As of July 1, 2022	As of July 1, 2023
1. Actuarial Accrued Liability before changes		
a. Active members		
Service retirements/DROP	$1,176,241,273	$1,240,080,367
Ordinary disability	23,419,759	24,655,998
Accidental disability	120,154,197	126,107,048
Ordinary death	3,243,816	3,436,563
Accidental death	6,233,366	6,562,115
Withdrawal	39,571,838	42,273,548
Total Active	1,368,864,249	1,443,115,639
b. Inactive members		
Members receiving benefits	2,219,736,188	2,287,941,120
Deferred vested terminations	62,021,916	66,083,800
Refund of member contributions due	994,985	884,866
Total Inactive	2,282,753,089	2,354,909,786
c. Total Actuarial Accrued Liability	3,651,617,338	3,798,025,425
2. Actuarial Value of Plan Assets	3,083,242,438	3,215,148,052
3. Unfunded Actuarial Accrued Liability before changes =[Excess of (1) over (2)]	568,374,900	582,877,373
4. Change in Unfunded Actuarial Accrued Liability		
a. Change in System Provisions	0	0
b. Change in Actuarial Assumptions	0	3,924,038
5. Unfunded Actuarial Accrued Liability after changes	568,374,900	586,801,411

Actuarial Valuation Results

Annual Normal Cost

The annual normal cost is the portion of the total System costs assigned to the current year by the Actuarial Cost Method.

	As of July 1, 2022	As of July 1, 2023
1. Annual Normal Cost		
Benefit Normal Cost	$61,347,565	$65,495,151
Other	0	0
Total	61,347,565	65,495,151
2. Annual Participating Payroll	349,752,458	374,768,422
3. Annual Normal Cost as a Percentage of Participating Payroll = (1) / (2)	17.54%	17.48%

Actuarial Valuation Results

Annual Contributions

Preliminary Total Contribution	As of July 1, 2022	2023
1. Annual Normal Cost	$61,347,565	$65,495,151
2. Estimated Member Contributions	32,876,731	35,228,232
3. Unfunded Actuarial Accrued Liability Amortization Payment	51,904,632	54,638,078
4. Total (Cities plus State) Contribution = (1) – (2) + (3)	80,375,466	84,904,997
Cities' Contribution		
5. Preliminary Total Contribution = (4)	80,375,466	84,904,997
6. Estimated State Contribution	0	0
7. Preliminary Cities' Contribution = (5) – (6)	80,375,466	84,904,997
8. Covered Payroll	349,752,458	374,768,422
9. Cities' Contribution as a percent of payroll = (7) / (8)	22.98%	22.66%
10. Minimum required contribution rate for Cities	17.00%	17.00%
11. Cities' Contribution = [Greater of (9) or (10)] x (8)	80,373,115	84,922,524

Actuarial Valuation Results

Unfunded Accrued Liability Payments

One of the components included to determine the recommended contribution is the Unfunded Accrued Liability Payment (UAL). The UAL Payment is an annual amount that will amortize over 25 years on a closed, layered level dollar basis:

- The initial UAL established as of July 1, 2013.
- An increase in UAL if benefits are improved through amendments.
- An increase or decrease in the UAL associated with a change in actuarial assumptions.
- An increase or decrease in the UAL resulting from actuarial gains or losses due to experience.

Amortization Base	**Date Established**	**Source of Base**
$ 657,280,700	July 1, 2013	Initial Unfunded
(101,748,328)	July 1, 2014	Actuarial Gain
32,616,664	July 1, 2014	Assumption Change
(64,447,420)	July 1, 2015	Actuarial Gain
17,508,411	July 1, 2015	Assumption Change
21,275,521	July 1, 2016	Actuarial Loss
(10,467,574)	July 1, 2016	Assumption Change
(7,154,241)	July 1, 2017	Actuarial Gain
39,751,096	July 1, 2017	Assumption Change
(15,920,159)	July 1, 2018	Actuarial Gain
21,266,192	July 1, 2018	Assumption Change
63,348,299	July 1, 2019	Actuarial Loss
63,889,229	July 1, 2020	Actuarial Loss
(77,624,458)	July 1, 2021	Actuarial Gain
(17,602,441)	July 1, 2022	Actuarial Gain
28,830,747	July 1, 2023	Actuarial Loss
3,924,038	July 1, 2023	Assumption Change

Actuarial Valuation Results

Unfunded Accrued Liability Payments

Initial Charge Amortization Base	Initial Term-Years	Remaining Term on Valuation Date	Amortization Payment
$ 657,280,700	25	15	$54,851,250
32,616,664	25	16	2,721,919
17,508,411	25	17	1,461,109
21,275,521	25	18	1,775,480
39,751,096	25	19	3,317,300
21,266,192	25	20	1,774,702
63,348,299	25	21	5,286,529
63,889,229	25	22	5,331,670
28,830,747	25	25	2,405,977
3,924,038	25	25	327,468
		Total	79,253,404

Initial Credit Amortization Base	Initial Term-Years	Remaining Term on Valuation Date	Amortization Payment
$ 101,748,328	25	16	$ 8,491,080
64,447,420	25	17	5,378,253
10,467,574	25	18	873,538
7,154,241	25	19	597,034
15,920,159	25	20	1,328,566
77,624,458	25	23	6,477,900
17,602,441	25	24	1,468,955
		Total	24,615,326

Net Amortization Payment	$54,638,078

Actuarial Valuation Results

Actuarial Gain/(Loss)

Expected Unfunded Actuarial Accrued Liability	
1. Expected Actuarial Accrued Liability	
a. Actuarial Accrued Liability on July 1, 2022	$3,651,617,338
b. Normal Cost	61,347,565
c. Benefit Distributions	(216,186,354)
d. Interest on above at 7.50% to June 30, 2023	270,511,939
e. Total	3,767,290,488
2. Expected Assets	
a. Actuarial Value of Assets on July 1, 2022	3,083,242,438
b. Contributions	120,829,273
c. Benefit Distributions and Noninvestment Expenses	(218,475,496)
d. Interest on above at 7.50% to June 30, 2023	227,647,647
e. Total	3,213,243,862
3. Expected Unfunded Actuarial Accrued Liability on June 30, 2023	554,046,626
Actual Unfunded Actuarial Accrued Liability	
4. Actuarial Accrued Liability Before Changes	3,798,025,425
5. Actuarial Value of Assets	3,215,148,052
6. Actual Unfunded Actuarial Accrued Liability on July 1, 2023 (4) – (5)	582,877,373
Actuarial Gain or (Loss)	
7. Expected Unfunded Actuarial Accrued Liability	554,046,626
8. Actual Unfunded Actuarial Accrued Liability	582,877,373
9. Actuarial Gain or (Loss) for 2023 Fiscal Year (7) – (8)	(28,830,747)
10. Investment Gain or (Loss) (5) – (2e)	1,904,190
11. Other Gain or (Loss) (1e) – (4)	(30,734,937)

Actuarial Valuation Results

Actuarial Present Value of Accrued Benefits

	As of July 1, 2022	As of July 1, 2023
1. Present value of vested accrued benefits		
a. Present value of vested accrued benefits for active members	$1,057,376,381	$1,106,101,064
b. Present value of benefits for terminated members	63,016,901	66,968,666
c. Present value of benefits for retirees, beneficiaries and disableds	2,219,736,188	2,287,941,120
Total	$3,340,129,470	$3,461,010,850
2. Present value of accrued nonvested benefits	38,821,836	40,610,775
3. Present value of all accrued benefits = (1) + (2)	$3,378,951,306	$3,501,621,625
4. Market value of assets	$3,090,046,862	$3,175,750,413
5. Ratio of market value of assets to the present value of all accrued benefits = (4) ÷ (3)	91.45%	90.69%
6. Ratio of market value of assets to the present value of vested accrued benefits = (4) ÷ (1)	92.51%	91.76%

Actuarial Valuation Results

Change in Actuarial Present Value of Accrued Benefits

The change in actuarial present value of accrued benefits due to various factors including benefits accumulated, the passage of time, benefits paid, changes in assumptions and changes in System provisions is displayed below.

Actuarial present value of accrued benefits on July 1, 2022	$3,378,951,306
Change in present value of accrued benefits from July 1, 2022 to July 1, 2023 due to:	
• Additional benefits accumulated	$ 84,697,969
• Interest due to passage of time	245,460,919
• Benefits paid	(216,186,354)
• Change in assumptions	8,697,785
• Changes in System provisions	0
Actuarial present value of accrued benefits on July 1, 2023	$3,501,621,625

Actuarial Valuation Results

Risk and Other Disclosures

The Actuarial Standards Board provides guidance to actuaries when performing certain actuarial services in the form of standards of practice. The Actuarial Standards Board has issued a standard of practice on risk disclosure and another standard of practice on measuring pension obligations and determining pension plan contributions that apply to actuaries when performing a funding valuation of a defined benefit pension plan.

Risk Disclosures
The standard of practice on risk disclosure addresses assessment and disclosure of the risk that actual future measurements may differ significantly from expected future measurements of pension liabilities, funded status and actuarially determined contributions. Risk is defined as the potential of actual future measurements to deviate from expected future measurements. This deviation results when actual future experience is different from actuarially assumed experience. Sample sources of risk include: investment returns, asset/liability mismatch, interest rates, longevity and other demographic risks and contribution risk.

The results of the actuarial valuation are based on one set of reasonable assumptions. However, it is almost certain future experience will not exactly match the assumptions. As an example, investment performance may perform better or worse than assumed in any single year and over any longer time horizon. It is therefore important to consider the potential impacts of these potential differences when making decisions that may affect the future financial health of the System or of the System's members.

In addition, as plans mature they accumulate larger pools of assets and liabilities. This increases the potential risk to plan funding and the finances of those who are responsible for plan funding. For example, an investment loss on a larger pool of assets results in a larger dollar amount which will need to be recouped through either future investment gains or increased contributions. Since pension plans make long-term promises and rely on long-term funding, it is important to consider how mature the plan is today, and how mature it may become in the future.

Maturity Risk	**July 1, 2022**	**July 1, 2023**
Retired Participant Liability	2,219,736,188	2,287,941,120
Total Plan Liability	3,651,617,338	3,801,949,463
Ratio	60.8%	60.2%

Higher maturity risk related to investment returns is associated with plans whose retired liability is a significant and growing proportion of the plan's total liability, since it is more difficult to restore a plan financially after losses occur due to a shorter duration of liability where significant retired liability exists.

Actuarial Valuation Results

Risk and Other Disclosures

Cash Flow Risk	**July 1, 2022**	**July 1, 2023**
Contributions in prior year	120,052,943	120,829,273
Benefit Payments in prior year	(207,529,673)	(216,186,354)
Net Cash Flow	(87,476,730)	(95,357,081)

More risk related to investment volatility is associated with plans whose benefit payments are significant compared to the plan contributions. If, for example, a plan has negative cash flow and experiences investment returns below an assumed rate then there are fewer assets that can be reinvested to earn potentially higher returns that may follow.

Asset Volatility Risk	**July 1, 2022**	**July 1, 2023**
Market Value of Assets	3,090,046,862	3,175,750,413
Annual Payroll	349,752,458	374,768,422
Asset Volatility Ratio	8.8	8.5

More risk related to investment return and future costs are associated with plans whose asset volatility ratio is high and growing, which is a characteristic of more mature plans.

Liability Volatility Risk	**July 1, 2022**	**July 1, 2023**
Actuarial Accrued Liability	3,651,617,338	3,801,949,463
Annual Payroll	349,752,458	374,768,422
Liability Volatility Ratio	10.4	10.1

More risk related to experience losses and future costs are associated with plans whose liability volatility ratio is high and growing, which is a characteristic of more mature plans.

Funded Volatility Risk	**July 1, 2022**	**July 1, 2023**
Market Value of Assets	3,090,046,862	3,175,750,413
Actuarial Accrued Liability	3,651,617,338	3,801,949,463
Ratio	84.6%	83.5%

More risk is associated with plans that have lower funded ratios.

Interest Rate Risk

This risk refers to the potential that interest rates will be different than expected. The liabilities determined have been calculated by computing the present value of expected future benefit payments using the interest rate described in the assumptions section. If the interest rate in future valuations is different from that used in this valuation, future liabilities, funding contributions and funded status may differ significantly from those presented in this valuation. As a general rule, using a higher interest rate to compute the present value of future benefit payments will result in a lower liability, and vice versa. One aspect that can be used to estimate the impact of different interest rates is the plan's duration.

	July 1, 2022	**July 1, 2023**
Duration of Plan Liability	12.5 years	12.4 years

Actuarial Valuation Results

Risk and Other Disclosures

Retirement Risk
This risk refers to the potential for members to retire and receive subsidized benefits more valuable than expected. The System has valuable early retirement and disability benefits. If members retire or become disabled at earlier ages than anticipated by the actuarial assumptions, it is expected that additional funding will be required.

Investment Risk
This risk refers to the potential that investment returns will be different than expected. To the extent that actual investment returns differ from the assumed investment return, the System's future assets, funding contributions and funded status may differ significantly from those presented in this valuation. This risk is illustrated in the System's 25-year funding forecasts with alternative investment returns, presented outside of this report.

Demographic Risks
This risk refers to the potential that mortality or other demographic experience will be different than expected. The liabilities determined have been calculated by assuming that members will follow patterns of demographic experience (e.g., mortality, withdrawal, disability, retirement, DROP participation, etc.) as described in the report. If actual demographic experience or future demographic assumptions are different from what is assumed to occur in this valuation, future pension liabilities, funding contributions and funded status may differ significantly from those presented in this valuation.

Contribution Risk
This risk refers to contributions that will consistently fall short of the Actuarially Determined Contribution (ADC). If contributions are deferred to the future, investment income is lost in the intervening period and the System becomes more expensive.

The assumptions used to determine the risk measures are identical to the assumptions used for recommended funding purposes on the respective valuation dates. The liability measures are based on the Entry Age Normal Actuarial Accrued Liability

Actuarial Valuation Results

Risk and Other Disclosures

Other Disclosures

The standard of practice on measuring pension obligations and determining pension plan contributions provides guidance to actuaries related to determination of funded status, assigning the value of pension benefits to time periods, developing contribution allocation procedures and certain other disclosures. One additional disclosure includes the calculation of a low default risk obligation measure ("LDROM"). The calculation of the LDROM can be based on the same assumptions used in the funding valuation, except the discount rate or rates should be selected from low default risk fixed income securities whose cash flows are reasonably consistent with the pattern of benefits expected to be paid in the future. Thus, one interpretation of the LDROM is an estimate of the cost to fully immunize all benefits accrued as of the measurement date, by purchasing securities that mature at the same times when future benefits are due.

We have calculated the LDROM as of July 1, 2023 to be $5,153,543,497. The discount rate used is from the Moody's AA long-term corporate bond rate (5.04%) as of July 1, 2023 and the Entry Age Normal Actuarial Accrued Liability cost method was used. All other assumptions and methods are identical to those used in calculating the Total Contribution contained in the contributions section of this report.

The calculation of the LDROM is not intended to suggest it is the "right" liability measure for the System. The use of a discount rate based on low default risk fixed income securities produces a higher liability than that used for long-term investment purposes of the System's assets. If the LDROM was used for determining the Total Contribution it would generally produce higher contribution requirements and potentially more security of member's benefits due to higher asset levels.

The determination of the Total Contribution in the Annual Contributions section of this report meets the definition of a reasonable actuarially determined contribution as contained in the actuarial standard of practice applicable for funding valuations of defined benefit plans addressing the measurement of pension obligations and determining pension plan contributions. An actuarially determined contribution is reasonable by satisfying the following: i) all assumptions are reasonable, do not significantly conflict with our professional judgement and are expected to have no significant bias; ii) the actuarial cost method and asset valuation method are acceptable and defined in the Summary of Actuarial Methods section of this report; iii) the amortization method, if applicable, of the Unfunded Actuarial Accrued Liability ("UAAL") is expected to produce total amortization payments that are expected to fully amortize the UAAL within a reasonable time period; and iv) the contribution allocation procedure is consistent with the System accumulating assets adequate to make benefit payments when due.

Actuarial Valuation Results

Risk and Other Disclosures

Analysis of Actuarially Determined Contribution
Below is an analysis of the Total Contribution as it relates to the definition of a reasonable actuarially determined contribution for the 2023 plan year.

1.	Total Contribution	84,922,524
2.	Expected Member Contributions	35,228,232
3.	Annual Normal Cost	65,495,151
4.	Unfunded Actuarial Accrued Liability ("UAAL")	586,801,411
5.	Interest on UAAL = 7.5% x (4)	44,010,106
6.	Contributions in Excess of Annual Normal Cost Plus Interest on UAAL = (1) + (2) – (3) – (5)	10,645,499

Since (6) above is greater than zero, contributions currently exceed the Annual Normal Cost plus interest on the UAAL and is a reasonable actuarially determined contribution.

Based on the amortization method of the UAAL and the adopted funding method policy of the Board of Trustees the estimated number of years until the UAAL is funded is 25 years.

System Demographic Experience

During the plan year July 1, 2022 to June 30, 2023, actual demographic experience differed from that expected by the actuarial assumptions, as summarized below.

Decrement Type	Expected	Actual
Actives		
Service Retirement	45	30
Accidental Disability	27	56
Ordinary Disability	7	8
Accidental Death	2	1
Ordinary Death	1	1
Withdrawal	99	150
DROP Participation	33	43
DROP Premature Withdrawal	7	11
DROP Retirement	28	24
DROP Death	0	1
Inactives		
Beneficiary Death	51	47
Disabled Death	37	40
Retirement Death	64	64
Vested Termination Death	1	0

System Accounting Results

Overview of GASB Statement No. 67

This section of the report provides information concerning the reporting of System assets and liabilities under GASB Statement No. 67, "Financial Reporting for Pension Plans (an Amendment of GASB Statement No. 25)," which is effective for fiscal years beginning after June 15, 2013. GASB Statement No. 67 supersedes several previously issued statements.

GASB Statement No. 67 establishes financial reporting standards for state and local government defined benefit pension plans. The statement requires financial statements and accompanying notes to disclose information relative to the funded status of the System and historical contribution patterns.

- The schedule of net pension liability presents System assets, liabilities and funded percentages as of the end of the reporting period. Also included are the actuarial assumptions used in determining the total pension liability and sensitivity of the net pension liability to changes in the discount rate.

- The schedule of changes in net pension liability provides changes in the total pension liability, the System's fiduciary net position and the net pension liability.

- The schedule of contributions provides historical information about the actuarially determined contribution, the contributions actually contributed and the contributions as a percentage of covered payroll.

- Notes to the financial statements should also include description of benefits provided, System investment information and significant assumptions used to calculate total pension liability.

System Accounting Results

Net Pension Liability

The components of the net pension liability of the System at June 30, 2023 were as follows:

Total Pension Liability	$3,801,949,463
Plan Fiduciary Net Position	3,175,750,413
Net Pension Liability	626,199,050
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	83.53%

Sensitivity of the Net Pension Liability to Changes in the Discount Rate
The following presents the net pension liability, calculated using the current discount rate of 7.50%, as well as the net pension liability calculated using a discount rate that is 1-percentage point lower (6.50%) or 1-percentage point higher (8.50%) than the current rate:

	1% Decrease *6.50%*	Current Discount Rate *7.50%*	1% Increase *8.50%*
Total Pension Liability	$4,272,431,031	$3,801,949,463	$3,412,483,025
Plan Fiduciary Net Position	3,175,750,413	3,175,750,413	3,175,750,413
Net Pension Liability	1,096,680,618	626,199,050	236,732,612

System Accounting Results

Schedule of Changes in Net Pension Liability

	Fiscal Year Ending June 30		
	2023	**2022**	**2021**
Total Pension Liability			
Service Cost	61,347,565	58,814,108	56,807,678
Interest	270,511,939	260,633,217	251,348,980
Changes of Benefit Terms	0	0	0
Difference between Expected and Actual Experience	30,734,937	21,515,283	14,881,260
Changes of Assumptions	3,924,038	0	0
Benefit Payments, including refunds	(216,186,354)	(207,529,673)	(195,202,243)
Net Change in Total Pension Liability	150,332,125	133,432,935	127,835,675
Total Pension Liability – Beginning of Year	3,651,617,338	3,518,184,403	3,390,348,728
Total Pension Liability – End of Year	3,801,949,463	3,651,617,338	3,518,184,403
Plan Fiduciary Net Position			
Contributions – Employer and State	86,664,231	88,421,910	82,245,851
Contributions – Member	34,165,042	31,631,033	30,587,481
Net Investment Income	182,866,808	(113,965,317)	785,156,295
Benefit Payments, including refunds	(216,186,354)	(207,529,673)	(195,202,243)
Administrative Expenses	(1,969,805)	(1,902,581)	(1,894,969)
Other	163,629	(218,778)	(30,576)
Net Change in Plan Fiduciary Net Position	85,703,551	(203,563,406)	700,861,839
Plan Fiduciary Net Position – Beginning of Year	3,090,046,862	3,293,610,268	2,592,748,429
Plan Fiduciary Net Position – End of Year	3,175,750,413	3,090,046,862	3,293,610,268
Net Pension Liability – End of Year	626,199,050	561,570,476	224,574,135
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	83.53%	84.62%	93.62%
Covered-Employee Payroll*	362,613,585	337,741,039	324,953,814
Net Pension Liability as a Percentage of the Covered-Employee Payroll	172.69%	166.27%	69.11%

*Actual for noted period as provided by the System.

System Accounting Results

Schedule of Contributions

	Fiscal Year Ending June 30		
	2023	**2022**	**2021**
Actuarially Determined Contribution	$86,664,231	$88,421,910	$82,245,851
Contributions in Relation to the Actuarially Determined Contribution	86,664,231	88,421,910	82,245,851
Contribution Deficiency/ (Excess)	0	0	0
Covered-Employee Payroll*	362,613,585	337,741,039	324,953,814
Contributions as a Percentage of Covered-Employee Payroll	23.90%	26.18%	25.31%

*Actual for noted period as provided by the System.

Methods and Assumptions for Actuarially Determined Contribution
Actuarially determined contribution rates are calculated as of July 1, two years prior to the end of the fiscal year in which contributions are reported.

Valuation Date	July 1, 2023
Actuarial Cost Method	Entry Age Normal
Asset Valuation Method	5-Year Smoothed Market
Amortization Method	Level Dollar, Closed, Layered
Amortization Period	25 Years
Salary Increases	3.75% to 15.11%
Investment Rate of Return	7.50%
Mortality Table	RP 2014 Blue Collar Healthy Annuitant table with males set-forward zero years, females set-forward two years and disabled set-forward three years (male only rates), with generational projection of future mortality improvement with 50% of Scale BB beginning in 2017.

System Accounting Results

Actuarial Assumptions

The actuarial assumptions used in the valuation were adopted by the Board of Trustees in accordance with Iowa Code Section 411.5.10-11, which results in the assumptions being considered prescribed assumptions by another party under applicable actuarial standards of practice. The Board of Trustees adopts the actuarial assumptions based on the actuarial investigation completed every five years. The most recently completed investigation was for the 10-year period ending June 30, 2022.

The total pension liability was determined by the following actuarial assumptions:

Investment Rate of Return	7.50%
Discount Rate	7.50%
Inflation Rate	3.00%
Salary Increases	3.75% to 15.11%
Mortality Table	RP 2014 Blue Collar Healthy Annuitant table with males set-forward zero years, females set-forward two years and disabled set-forward three years (male only rates), with generational projection of future mortality improvement with 50% of Scale BB beginning in 2017.
Actuarial Cost Method	Entry Age Normal

Discount Rate
The discount rate used to measure the total pension liability as of June 30, 2023 was 7.50%. The projection of cash flows used to determine the discount rate assumed that member contributions will be made at 9.40% of covered payroll and the City contributions will be made at rates equal to the difference between actuarially determined rates and the member rate. Based on those assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on System investments was applied to all periods of projected benefit payments to determine the total pension liability.

Summary of Actuarial Assumptions

The actuarial assumptions used in the valuation were adopted by the Board of Trustees in accordance with Iowa Code Section 411.5.10-11, which results in the assumptions being considered prescribed assumptions by another party under applicable actuarial standards of practice. The Board of Trustees adopts the actuarial assumptions based on the actuarial investigation completed every five years. The most recently completed investigation was for the 10-year period ending June 30, 2022.

Interest Rate — 7.5%, net of investment and administrative expenses.

Salary Increase Rates — Rates varying based on age. Annual rates at sample ages are displayed below:

Age	Rate
20	15.11%
25	9.88
30	6.79
35	4.82
40	4.46
45	4.00
50 or Over	3.75

Mortality Rates

Pre-retirement Mortality

- Ordinary — Rates varying by age – Sample rates:

Age	Rate
20	0.01%
25	0.01
30	0.01
35	0.02
40	0.03
45	0.03
50	0.05
55	0.06
60	0.09
65	0.13

- Accidental — Rates varying by age – Sample rates:

Age	Rate
20	0.03%
25	0.02
30	0.02
35	0.02
40	0.02
45	0.03
50	0.07
55	0.14
60	0.23
65	0.41

Summary of Actuarial Assumptions
(continued)

Post-retirement Mortality

- Ordinary — RP 2014 Blue Collar Healthy Annuitant Mortality Table with males set-forward zero years and females set-forward two years with generational projection of future mortality improvement with 50% of Scale BB beginning in 2017.

- Disabled — RP 2014 Blue Collar Healthy Annuitant Mortality Table – Male, set-forward three years with generational projection of future mortality improvement with 50% of Scale BB beginning in 2017.

Disability Rates

- Ordinary — Rates varying by age – Sample rates:

Age	Rate
20	0.07%
25	0.07
30	0.07
35	0.14
40	0.19
45	0.24
50	0.33
55	0.31
60	0.64
65	1.31

- Accidental — Rates varying by age – Sample rates:

Age	Rate
20	0.10%
25	0.10
30	0.10
35	0.14
40	0.41
45	0.65
50	0.83
55	1.88
60	3.86
65	4.49

Summary of Actuarial Assumptions
(continued)

Turnover Rates

Rates varying by age – Sample rates:

Age	Rate
20	7.82%
25	6.39
30	4.96
35	2.98
40	1.62
45	1.00
50	1.00
55	0.00
60	0.00
65	0.00

Retirement Age

Rates varying by age for those not eligible for DROP – Sample rates:

Age	Rate
55	60%
56	15
57-60	10
61	15
62	20
63	30
64	35
65	100

DROP

- Participation

  Rates varying by age if eligible for DROP – Sample rates:

Age	Rate
55-56	60%
57-62	100
63 or over	0

- Period of Participation: 3 years.
- Investment Return on Accounts: 1.0%.
- Benefit Distribution: Lump Sum.
- Retirement Age: All members initially eligible for DROP at age 62 or younger enter DROP according to above rates. No change in retirement age for members who initially become eligible for DROP after age 62.
- Voluntary Premature Withdrawal: 5% per year except 30% for ages 55 and 56 while participating in DROP.

Summary of Actuarial Assumptions
(continued)

Administrative Expenses	None explicitly assumed.
Active Members Percentage Married	85%.
Spouses' Age	Wives are three years younger than husbands, including inactive members whose beneficiary age is unavailable.
Number of Children	2.5 per couple.
Participating Payroll	Actual annualized earnable compensation reported for prior plan year increased to the current plan year based on the System's assumed salary increase rate.
Inactive Members Percentage Married (50% J & S Annuity Form Only)	80%.
Timing of Decrements	Middle of fiscal year.

Summary of Actuarial Methods

The actuarial methods used in the valuation were adopted by the Board of Trustees in accordance with Iowa Code Section 411.5.10-11, which results in the methods being considered prescribed methods by another party under applicable actuarial standards of practice.

Actuarial Cost Method

The Entry Age Normal Actuarial Cost Method was used to determine recommended contributions. Using this method, the annual contribution consists of a normal cost and an unfunded accrued liability payment.

The normal cost is determined as the sum of the individual normal costs for each active System member. A normal cost accrual rate is determined for each member. The accrual rate is equal to the actuarial present value of future benefits determined as of the member's entry age, divided by the actuarial present value of the assumed salaries paid to the member from entry age to retirement age. The normal cost accrual rate is multiplied by current salary to provide the member's individual normal cost.

The actuarial accrued liability is the sum of the individual actuarial accrued liabilities for all System members. Each member's actuarial accrued liability equals the actuarial present value of future benefits, less the actuarial present value of the member's normal costs payable in the future. These present values are calculated at the member's attained age. The unfunded actuarial accrued liability equals the total actuarial accrued liability less the actuarial value of plan assets. The unfunded actuarial accrued liability payment is the amount payable toward the amortization of the unfunded actuarial accrued liability. The unfunded actuarial accrued liability is amortized over 25 years on a level dollar, closed layered basis.

At the end of each year, a determination of actuarial gains and losses is made. Actuarial gains and losses indicate the extent to which actual experience is deviating from that expected on the basis of the actuarial assumptions. Actuarial gains result from experience more favorable than assumed and reduce the unfunded actuarial accrued liability. Actuarial losses result from experience less favorable than assumed and increase the unfunded actuarial accrued liability.

Actuarial Asset Valuation Method

The preliminary actuarial value is equal to the prior year's actuarial value (starting with the market value as of July 1, 1992) adjusted for contributions, disbursements and expected return on investments. The preliminary value is then adjusted by 20% of any investment gains or losses during the five prior plan years.

Summary of System Provisions

The System was established, effective January 1, 1992, by Chapter 411 of the Code of Iowa by combining each city's fire retirement system and police retirement system into a single statewide retirement system for fire fighters and police officers. Plan amendments through July 1, 2023 are reflected in this summary.

Participation

Each person who becomes a permanent full-time police officer or fire fighter in a participating city.

Membership Service

From date of employment to date of separation from employment.

Earnable Compensation

The annual compensation which a member receives for services rendered as a police officer or fire fighter in the course of employment with a participating City, except for amounts received for overtime, meal or travel expenses, uniform allowances, fringe benefits, severance pay, mandatory deferred compensation, and accumulated sick leave or vacation pay.

Contributions

Members

The following percentages of Earnable Compensation:

Effective Date	Percentage
October 16, 1992	6.10%
July 1, 1993	7.10
July 1, 1994	8.10
January 1, 1995	8.35
July 1, 1995	9.35
July 1, 2009	9.40

Cities

The amount actuarially determined necessary to fund the benefits in accordance with accepted actuarial principles but not less than 17% of the Earnable Compensation of the active members.

State

The annual appropriation expected from the State of Iowa to fund benefits is $0.

Summary of System Provisions
(continued)

Average Final Compensation	The average Earnable Compensation of the member during the three years of service the member earned their highest salary as a police officer or fire fighter.
Service Retirement Benefit	
Eligibility	After age 55 and completion of 22 years of service.
Benefit	Monthly annuity equal to 66.0% of Average Final Compensation plus 2.0% of Average Final Compensation for each year of service in excess of 22 years (up to 8 additional years). The maximum benefit is 82.0% of Average Final Compensation.
DROP Benefit	
Eligibility	After age 55 and completion of 22 years of service.
Participation Date	First day of the month following the month in which a member applies for participation.
Participation Period	A three, four or five year participation period except during the 24 months immediately following April 1, 2007, members between ages 62 and 64 with at least 22 years of service may enroll for a one or two year participation period.
Chapter 411 Benefit	Monthly benefit determined based on the period of service and Average Final Compensation through the quarter of membership service immediately preceding the DROP participation date elected.
DROP Account	An account established for each member enrolled which will have a portion of the Chapter 411 Benefit credited to it for the duration of the selected participation period. The portion shall be equal to the sum of: (a) A “minimum percentage” of 52% multiplied by the Chapter 411 Benefit, plus (b) An “adjustment percentage” of 2% for each month up to 24 months between the date the member elects to participate in DROP and the date the member was initially eligible to participate, multiplied by the Chapter 411 Benefit.

Summary of System Provisions
(continued)

DROP Benefit (continued)

Member Contributions	Member's contributions will be contributed to the general System assets during the member's participation period.
City Contributions	Cities' contributions equal to the normal contribution rate determined annually but never less than 17% of Earnable Compensation will be contributed to the general System assets during the member's participation period.
Investment Return	Earnings and capital gains or losses on the investments shall be credited to the general System assets and not to the individual member DROP Accounts.
Benefit Escalation	The applicable escalator provisions apply from the member's actual date of retirement at the end of the DROP participation period. No escalation will occur during the DROP participation period.
Benefit Distributions	At the actual date of retirement, the member's DROP Account will be payable, upon application by the member, in the form of a lump sum distribution or rollover to an eligible plan. The regular Chapter 411 Benefit will commence on the member's actual date of retirement.
Premature Withdrawal and Accrual of Benefit	An amount equal to 75% of the member's DROP benefit shall accrue to the benefit of the member for each month of DROP participation. An amount equal to 25% of the member's accumulated DROP benefit shall accrue to the benefit of the member upon either: (1) completion of the selected participation period, or (2) termination of participation due to becoming eligible for a disability benefit, or (3) death prior to completion of the selected participation period.

Termination Benefit

Eligibility	At least 4 years of service upon termination of membership before age 55, but less than 22 years of service upon termination of membership after age 55.

Summary of System Provisions
(continued)

Termination Benefit (continued)

Benefit

Monthly annuity payable at age 55 or current age, if later, equal to 66.0% of Average Final Compensation plus 2.0% of Average Final Compensation for each year of service in excess of 22 years (up to 8 additional years), if any, times a ratio equal to service at termination divided by 22 (ratio not to exceed 1.0).

Effective July 1, 1990, members who terminate service, other than by death or disability, can elect to withdraw their accumulated contributions with interest in lieu of any benefits to which the member may be entitled to from the System.

Ordinary Disability Benefit

Eligibility

A member in good standing at any age and any length of service.

Benefit

Monthly annuity payable upon disability equal to either (a) or (b) below, but no less than (c):

(a) If service at disability is greater than or equal to 5, 50% of Average Final Compensation; or
(b) If service at disability is less than 5 years, 25% of Average Final Compensation;
(c) The benefit determined using the Service Retirement formula based on service and Average Final Compensation at the date of disability.

Accidental Disability Benefit

Eligibility

A member in good standing at any age and any length of service.

Benefit

A monthly annuity equal to 60% of Average Final Compensation but no less than the benefit determined using the Service Retirement formula based on service and Average Final Compensation at the date of disability.

Ordinary Death Benefit

Eligibility

For members in service: any age and any length of service.

For member not in service: 4 years of service.

Benefit

Upon death of the member, either (a) or (b) below:

(a) A lump sum equal to 50% of Earnable Compensation during the last year of employment; or
(b) A monthly annuity equal to 40% of average final compensation but not less than 20% of the average Earnable Compensation of an active member of the System, as reported by the actuary. For a member not in service, the monthly annuity is payable on the date the member would have reached age 55, except if there is a dependent child, it is paid immediately upon death of the member.

For each dependent child, an additional benefit equal to 6% of the average Earnable Compensation of an active member of the System, as reported by the actuary. This benefit is payable until the child reaches age 18 or 22 (if a full-time student) or payable for life if the child is disabled.

Accidental Death Benefit

Eligibility

Death from causes sustained in the line of duty.

Benefit

A monthly annuity equal to 50% of Average Final Compensation payable to surviving spouse, dependent child or dependent parents. In addition, a lump sum of $100,000 is payable to the surviving spouse, adult child, dependent child or dependent parents if death is due to a traumatic personal injury incurred in the line of duty.

For each dependent child, an additional benefit equal to 6% of the average Earnable Compensation of an active member of the System, as reported by the actuary.

Summary of System Provisions
(continued)

Death After Retirement

Eligibility	Death of member while receiving a service (basic benefit only), ordinary, accidental or vested (basic benefit only) retirement.
Benefit	To surviving spouse, 50% of the gross monthly benefit of the retired member but not less than 20% of the average Earnable Compensation of an active member of the System, as reported by the actuary. For each dependent child, an additional benefit equal to 6% of the average Earnable Compensation of an active member of the System, as reported by the actuary.

Annual Escalator Benefit

Eligibility	All retired members, except for vested retirements, and for beneficiaries, except for beneficiaries of vested retirements.
Benefit	The monthly pension benefit is increased each July 1 by the sum of (a) plus (b) below: (a) The previous monthly benefit multiplied by 1.5%, and (b) An additional dollar amount from the table below based on the number of years the member has been retired.

Amount	Years of Retirement
$15	Less than 5
20	5-9
25	10-14
30	15-19
35	20 or More

Normal Form of Benefit

Married	Joint and 50% Survivor Annuity.
Single	Life Only Annuity.

Summary of System Members

	July 1, 2021	2022	2023
Active Members			
Number	4,107	4,155	4,168
Average Attained Age	40.4	40.2	40.1
Average Past Service	13.2	12.9	12.8
Total Annual Compensation	$336,941,302	$349,752,458	$374,768,422
Average Annual Compensation	82,041	84,176	89,916
Non-Active Members in Pay Status			
Number	4,285	4,353	4,433
Average Age (excluding children)	70.1	70.2	70.3
Total Annual Benefits	$192,769,032	$202,627,044	$209,546,340
Average Annual Benefit	44,987	46,549	47,269
Non-Active Members with Deferred Benefits			
Number*	415	453	465
Average Age	43.7	43.3	43.4
Total Annual Benefits	$ 8,524,068	$ 9,595,116	$ 10,151,220
Average Annual Benefit	20,540	21,181	21,831

* Excludes 84, 114 and 111 terminated nonvested members who had not yet received a refund of contributions as of 2021, 2022 or 2023 respectively.

Summary of System Members

Reconciliation of Participant Counts

	Active	Terminated Vested	In Pay Status Beneficiaries	In Pay Status Disabled	In Pay Status Retirees	Total
Number as of July 1, 2022	4,155	453	945	1,181	2,227	8,961
Change due to:						
New hires and rehires	310	(5)	0	0	0	305
Terminations	(124)*	81	0	0	0	(43)
Retirement	(65)	(37)	0	0	102	0
Disability	(64)	0	0	64	0	0
Death without Beneficiary	0	0	(47)	(11)	(33)	(91)
Death with Beneficiary	(3)	0	69	(29)	(31)	6
Refund Paid Out	(41)	(27)	0	0	0	(68)
Benefit Aged Out	0	0	(4)	0	0	(4)
Other	0	0	0	1	(1)	0
Number as of July 1, 2023	4,168**	465	963	1,206	2,264	9,066

* Fifteen of the Terminations are from new hires during the period July 1, 2022 to June 30, 2023.

** One hundred twenty-nine (129) of the Actives have elected to participate in DROP as of July 1, 2023.

Summary of System Members

Active Members—As of July 1, 2023

	Years of Service									
Age	**0-4**	**5-9**	**10-14**	**15-19**	**20-24**	**25-29**	**30-34**	**35+**	**Total**	**Average Annual Salary**
Under 25	252	1	0	0	0	0	0	0	253	$ 68,168
25-29	453	131	0	0	0	0	0	0	584	$ 75,622
30-34	302	292	67	0	0	0	0	0	661	$ 81,212
35-39	136	189	228	85	0	0	0	0	638	$ 87,751
40-44	47	81	137	254	74	0	0	0	593	$ 94,140
45-49	19	25	63	136	243	51	0	0	537	$ 99,663
50-54	15	13	18	75	196	233	52	1	603	$103,274
55-59	5	2	5	29	48	67	67	18	241	$106,563
60+	1	0	1	3	9	15	16	13	58	$110,299
Total	1,230	734	519	582	570	366	135	32	4,168	
Average Annual Salary	$72,681	$87,278	$91,918	$97,176	$101,313	$108,823	$116,139	$118,426		$ 89,916

Summary of System Members

Inactive Members—As of July 1, 2023

Service Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
55-59	166	$ 11,887,056	$ 71,609
60-64	270	18,678,816	69,181
65-69	362	24,499,860	67,679
70-74	377	24,162,444	64,091
75-79	287	17,721,576	61,748
80-84	192	10,392,840	54,129
Over 84	124	5,568,060	44,904
Total	1,778	$112,910,652	$ 63,504

Vested Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
55-59	108	$ 2,918,220	$ 27,021
60-64	117	2,877,540	24,594
65-69	98	2,117,484	21,607
70-74	80	1,539,768	19,247
75-79	49	739,140	15,084
80-84	22	338,808	15,400
Over 84	12	92,052	7,671
Total	486	$10,623,012	$ 21,858

Summary of System Members

Inactive Members—As of July 1, 2023

Accidental Disability Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	14	$ 628,980	$ 44,927
40-44	24	1,151,556	47,982
45-49	50	2,475,696	49,514
50-54	94	5,003,808	53,232
55-59	110	6,304,332	57,312
60-64	139	7,927,248	57,031
65-69	142	7,652,700	53,892
70-74	155	8,087,772	52,179
75-79	139	7,019,676	50,501
80-84	76	3,397,836	44,708
Over 84	51	2,188,980	42,921
Total	994	$51,838,584	$ 52,151

Ordinary Disability Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	7	$ 258,804	$ 36,972
40-44	20	707,748	35,387
45-49	22	904,308	41,105
50-54	23	969,816	42,166
55-59	26	1,233,504	47,442
60-64	20	833,124	41,656
65-69	24	1,091,544	45,481
70-74	31	1,410,816	45,510
75-79	20	844,200	42,210
80-84	10	417,984	41,798
Over 84	9	347,004	38,556
Total	212	$9,018,852	$ 42,542

Summary of System Members

Inactive Members—As of July 1, 2023

Beneficiaries (Spouse)

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	5	$ 157,488	$ 31,498
40-44	6	190,440	31,740
45-49	11	357,924	32,539
50-54	19	627,840	33,044
55-59	28	819,180	29,256
60-64	43	1,247,928	29,022
65-69	94	2,834,568	30,155
70-74	132	3,738,432	28,321
75-79	161	4,292,580	26,662
80-84	177	4,749,816	26,835
Over 84	242	5,814,552	24,027
Total	918	$24,830,748	$ 27,049

Beneficiaries (Children)

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 3	0	$ 0	$ 0
3-5	0	0	0
6-8	2	11,232	5,616
9-11	4	24,144	6,036
12-14	5	29,508	5,902
15-17	5	36,060	7,212
18-20	11	76,608	6,964
Over 20	18	146,940	8,163
Total	45	$ 324,492	$ 7,211

Summary of System Members

Inactive Members—As of July 1, 2023

Terminated Vested

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	156	$ 2,327,724	$14,921
40-44	106	2,237,580	21,109
45-49	87	2,089,716	24,020
50-54	112	3,414,180	30,484
Over 54	4	82,020	20,505
Total	465	$10,151,220	$21,831