

**Municipal Fire and Police
Retirement System of Iowa**

Actuarial Valuation Report

July 1, 2020

September 16, 2020

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, 2020 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, 2020, member census data as of July 1, 2020 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
Principal
Member of American Academy
of Actuaries
Enrolled Actuary No. 20-4875



Michael S. Ehmke, ASA
Principal
Member of American Academy
of Actuaries
Enrolled Actuary No. 20-5811

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,		
	2018	2019	2020
Cities Recommended Contribution	\$ 73,820,798	\$ 79,963,755	\$ 85,836,388
Normal Contribution Rate	24.41%	25.31%	26.18%
Plan Assets			
Market Value	2,549,627,987	2,613,125,249	2,592,748,429
Actuarial Value	2,578,863,993	2,649,186,492	2,710,027,554
Prior Year Investment Return			
Market Value	7.63%	5.44%	2.34%
Actuarial Value	7.75%	5.65%	5.42%
Actuarial Accrued Liability	3,145,031,474	3,269,051,818	3,390,348,728
Funded Ratio*	82.00%	81.04%	79.93%
Annual Participating Payroll	302,420,313	315,937,395	327,870,085
Annual Normal Cost	53,017,674	55,133,707	56,807,678
Percent of Payroll	17.53%	17.45%	17.33%
Annual Pension Benefits			
Service Retirement	91,350,744	95,066,664	99,536,112
Disabled Retirement	48,742,116	50,710,716	52,745,112
Vested Retirement	7,194,492	7,771,656	8,418,288
Beneficiaries	<u>20,299,872</u>	<u>21,062,616</u>	<u>21,803,760</u>
Total	167,587,224	174,611,652	182,503,272
Number of Members			
Active	4,003	4,086	4,084
Disabled	1,130	1,134	1,141
Retirees and Beneficiaries	2,977	3,014	3,049
Vested Terminated	<u>367</u>	<u>374</u>	<u>375</u>
Total	8,477	8,608	8,649

*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 \$85,836,388 be made for the 2020 plan year. This is equal to a contribution rate of 26.18% of payroll. This rate assumes that the State of Iowa will contribute approximately \$0 for the 2020 plan year.

The System's normal contribution rate increased from 25.31% for 2019 to 26.18% for 2020. The System's contribution rate before any adjustment to the minimum contribution rate changed as follows:

July 1, 2019 normal contribution rate:	25.31%
• Increase in contribution rate due to lower State contribution	0.00%
• Plan experience more favorable than assumed	(0.51%)
• Investment experience less favorable than assumed	1.38%
• Changes in System provisions	0.00%
• Change in actuarial cost method	0.00%
• Changes in actuarial assumptions	<u>0.00%</u>
Preliminary normal contribution rate:	26.18%
• Increase necessary to meet minimum contribution rate	0.00%
July 1, 2020 normal contribution rate	26.18%

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, 2017.

There were no changes in actuarial assumptions from the prior year valuation.

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 remained consistent. The average age of members included in the valuation was 40.8 for the current year and 40.8 in the prior year.

Service of Active Members – The average service of the active members has remained consistent. The average service of members included in the valuation was 13.5 for the current year and 13.5 in the prior year.

Participating Compensation and Members – Total participating compensation increased from \$315,937,395 to \$327,870,085, a 3.8% increase. The number of active members decreased from 4,086 in 2019 to 4,084 in 2020.

Average Annual Compensation – The average compensation of active members is more than the average compensation for the prior year. The average compensation was \$77,322 in 2019 and \$80,282 in 2020.

Ages of New Service Retirement Members – The average age of active members who elected service retirement has slightly decreased. The average age of new service retirements was 57.8 for the current year and 58.0 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 Disclosures – Actuarial standards of practice require certain risk 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, 2020

Market Value of Assets at June 30, 2019		\$2,613,125,249
 Receipts		
Member Contributions	\$ 29,808,835	
Cities Contributions	77,551,461	
State Contributions	0	
Investment Income	71,744,955	
Investment Management Expenses	(11,494,709)	
Other Income	<u>916</u>	
Total Receipts		\$ 167,611,458
 Disbursements		
Benefit Payments to Members	\$(184,646,312)	
Termination Withdrawals	(1,295,801)	
Administrative Expenses	(1,887,579)	
Disability Expenses	(155,400)	
Other Expenses	<u>(3,186)</u>	
Total Disbursements		\$ (187,988,278)
Market Value of Assets at June 30, 2020		\$2,592,748,429

Actuarial Valuation Results
Assets – Market Value
Year Ending June 30, 2020

Assets

Cash	\$ 17,273,543	
U.S. Government Obligations	132,118,993	
U.S. Corporate Fixed Income	140,316,010	
U.S. Equity Securities	381,502,090	
Foreign Equity Securities	371,491,471	
Commingled Fixed Income	57,068,930	
Short-Term Investments	35,944,906	
Real Estate	286,294,556	
Private Equity	524,098,871	
Multi-Strategy Commingled Fund	44,605,551	
Fund of Funds Commingled	611,068,918	
Receivables	25,847,794	
Fixed/Other Assets	72,799	
Pension Related Deferred Outflows	171,882	
Total Assets		\$2,627,876,314

Liabilities

Benefits/Refunds Payable	\$(17,407,415)	
Investment Management Expenses Payable	(2,142,527)	
Administrative Expenses Payable	(441,367)	
Net Pension Liability to IPERS	(699,044)	
Payable to Brokers, Net	(14,307,489)	
Pension Related Deferred Inflows	(130,043)	
Total Liabilities		\$ (35,127,885)
Market Value of Assets at June 30, 2020		\$2,592,748,429

Actuarial Valuation Results

Assets – Actuarial Value

Year Ending June 30, 2020

1. Actuarial Value of Assets at July 1, 2019		\$2,649,186,492																																										
2. Contributions for 2019 Plan Year (Members, Cities and State)		107,360,296																																										
3. Benefit distributions and refunds for 2019 plan year		(185,942,113)																																										
4. Noninvestment Expenses																																												
a. Administrative Expenses		(1,887,579)																																										
b. Disability Expenses		(155,400)																																										
c. Other Expenses		<u>(3,186)</u>																																										
d. Total		(2,046,165)																																										
5. Expected return on Market Value of Assets for year at 7.5%		193,015,505																																										
6. Asset gains/(losses) for prior five plan years																																												
	<table style="width: 100%; border-collapse: collapse; margin-left: 40px;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 15%; text-align: center;">(i) <u>Asset gain or (loss)</u></th> <th style="width: 10%; text-align: center;"><u>Years Recognized</u></th> <th style="width: 10%; text-align: center;"><u>Years Remaining</u></th> <th style="width: 15%; text-align: center;">(ii) <u>Recognition Percentage</u></th> <th style="width: 10%; text-align: center;">(i) x (ii) <u>Recognized Amount</u></th> </tr> </thead> <tbody> <tr> <td>a. 2019</td> <td style="text-align: right;">\$(132,764,343)</td> <td style="text-align: center;">1</td> <td style="text-align: center;">4</td> <td style="text-align: center;">20.000%</td> <td style="text-align: right;">(26,552,869)</td> </tr> <tr> <td>b. 2018</td> <td style="text-align: right;">(51,803,053)</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">20.000</td> <td style="text-align: right;">(10,360,611)</td> </tr> <tr> <td>c. 2017</td> <td style="text-align: right;">3,020,970</td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">20.000</td> <td style="text-align: right;">604,194</td> </tr> <tr> <td>d. 2016</td> <td style="text-align: right;">94,033,500</td> <td style="text-align: center;">4</td> <td style="text-align: center;">1</td> <td style="text-align: center;">20.000</td> <td style="text-align: right;">18,806,700</td> </tr> <tr> <td>e. 2015</td> <td style="text-align: right;">(170,219,375)</td> <td style="text-align: center;">5</td> <td style="text-align: center;">0</td> <td style="text-align: center;">20.000</td> <td style="text-align: right;"><u>(34,043,875)</u></td> </tr> <tr> <td>f. Total</td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">(51,546,461)</td> </tr> </tbody> </table>		(i) <u>Asset gain or (loss)</u>	<u>Years Recognized</u>	<u>Years Remaining</u>	(ii) <u>Recognition Percentage</u>	(i) x (ii) <u>Recognized Amount</u>	a. 2019	\$(132,764,343)	1	4	20.000%	(26,552,869)	b. 2018	(51,803,053)	2	3	20.000	(10,360,611)	c. 2017	3,020,970	3	2	20.000	604,194	d. 2016	94,033,500	4	1	20.000	18,806,700	e. 2015	(170,219,375)	5	0	20.000	<u>(34,043,875)</u>	f. Total					(51,546,461)	
	(i) <u>Asset gain or (loss)</u>	<u>Years Recognized</u>	<u>Years Remaining</u>	(ii) <u>Recognition Percentage</u>	(i) x (ii) <u>Recognized Amount</u>																																							
a. 2019	\$(132,764,343)	1	4	20.000%	(26,552,869)																																							
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f. Total					(51,546,461)																																							
7. Asset gains/(losses) to be recognized = (6f)		(51,546,461)																																										
8. Actuarial Value of Assets at July 1, 2020 = (1) + (2) + (3) + (4d) + (5) + (7)		2,710,027,554																																										
9. Market Value of Assets at July 1, 2020		2,592,748,429																																										
10. Ratio of Actuarial Value to Market Value at July 1, 2020 = (8) / (9)		104.52%																																										

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,	
	<u>2019</u>	<u>2020</u>
1. Actuarial Accrued Liability before changes		
a. Active members		
Service retirements/DROP	\$1,112,858,671	\$1,145,608,199
Ordinary disability	22,258,099	22,763,552
Accidental disability	113,998,932	116,556,431
Ordinary death	3,084,442	3,153,524
Accidental death	5,986,459	6,088,108
Withdrawal	36,703,000	38,045,907
Total Active	1,294,889,603	1,332,215,721
b. Inactive members		
Members receiving benefits	1,929,129,169	2,008,736,264
Deferred vested terminations	44,591,271	48,909,558
Refund of member contributions due	441,775	487,185
Total Inactive	1,974,162,215	2,058,133,007
c. Total Actuarial Accrued Liability	3,269,051,818	3,390,348,728
2. Actuarial Value of Plan Assets	2,649,186,492	2,710,027,554
3. Unfunded Actuarial Accrued Liability before changes =[Excess of (1) over (2)]	619,865,326	680,321,174
4. Change in Unfunded Actuarial Accrued Liability		
a. Change in System Provisions	0	0
b. Change in Actuarial Assumptions	0	0
5. Unfunded Actuarial Accrued Liability after changes	619,865,326	680,321,174

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,	
	<u>2019</u>	<u>2020</u>
1. Annual Normal Cost		
Benefit Normal Cost	\$55,133,707	\$56,807,678
Other	0	0
Total	55,133,707	56,807,678
2. Annual Participating Payroll	315,937,395	327,870,085
3. Annual Normal Cost as a Percentage of Participating Payroll = (1) / (2)	17.45%	17.33%

Actuarial Valuation Results

Annual Contributions

Preliminary Total Contribution	As of July 1,	
	<u>2019</u>	<u>2020</u>
1. Annual Normal Cost	\$55,133,707	\$56,807,678
2. Estimated Member Contributions	29,698,115	30,819,788
3. Unfunded Actuarial Accrued Liability Amortization Payment	54,519,817	59,851,487
4. Total (Cities plus State) Contribution = (1) – (2) + (3)	79,955,409	85,839,377
Cities' Contribution		
5. Preliminary Total Contribution = (4)	79,955,409	85,839,377
6. Estimated State Contribution	0	0
7. Preliminary Cities' Contribution = (5) – (6)	79,955,409	85,839,377
8. Covered Payroll	315,937,395	327,870,085
9. Cities' Contribution as a percent of payroll = (7) / (8)	25.31%	26.18%
10. Minimum required contribution rate for Cities	17.00%	17.00%
11. Cities' Contribution = [Greater of (9) or (10)] x (8)	79,963,755	85,836,388

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 more or less favorable than expected.

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

Charge Bases

Initial Amortization Base	Initial Term-Years	Remaining Term on Valuation Date	Amortization Payment
\$ 657,280,700	25	18	\$54,851,250
32,616,664	25	19	2,721,919
17,508,411	25	20	1,461,108
21,275,521	25	21	1,775,480
39,751,096	25	22	3,317,300
21,266,192	25	23	1,774,702
63,348,299	25	24	5,286,529
63,889,229	25	25	<u>5,331,670</u>
		Total	76,519,958

Credit Bases

Initial Amortization Base	Initial Term-Years	Remaining Term on Valuation Date	Amortization Payment
\$ 101,748,328	25	19	\$ 8,491,080
64,447,420	25	20	5,378,253
10,467,521	25	21	873,538
7,154,241	25	22	597,034
15,920,159	25	23	<u>1,328,566</u>
		Total	16,668,471

Net Amortization Payment

\$59,851,487

Actuarial Valuation Results

Actuarial Gain/(Loss)

Expected Unfunded Actuarial Accrued Liability

1. Expected Actuarial Accrued Liability

Actuarial Accrued Liability on July 1, 2019	\$3,269,051,818
Normal Cost	55,133,707
Benefit Distributions	(185,942,113)
Interest on above at 7.50% to June 30, 2020	242,467,141
Total	3,380,710,553

2. Expected Assets

Actuarial Value of Assets on July 1, 2019	2,649,186,492
Contributions	107,360,296
Benefit Distributions and Noninvestment Expenses	(187,988,278)
Interest on above at 7.50% to June 30, 2020	195,720,098
Total	2,764,278,608

3. Expected Unfunded Actuarial Accrued Liability on June 30, 2020 616,431,945

Actual Unfunded Actuarial Accrued Liability

1. Actuarial Accrued Liability Before Changes	3,390,348,728
2. Actuarial Value of Assets	2,710,027,554
3. Actual Unfunded Actuarial Accrued Liability on July 1, 2020 (1) – (2)	680,321,174

Actuarial Gain or (Loss)

1. Expected Unfunded Actuarial Accrued Liability	616,431,945
2. Actual Unfunded Actuarial Accrued Liability	680,321,174
3. Actuarial Gain or (Loss) for 2020 Fiscal Year (1) – (2)	(63,889,229)

Actuarial Valuation Results

Actuarial Present Value of Accrued Benefits

	As of July 1,	
	<u>2019</u>	<u>2020</u>
1. Present value of vested accrued benefits		
a. Present value of vested accrued benefits for active members	\$ 999,633,561	\$ 1,030,296,090
b. Present value of benefits for terminated members	45,033,046	49,396,743
c. Present value of benefits for retirees, beneficiaries and disabled	1,929,129,169	2,008,736,264
Total	\$2,973,795,776	\$3,088,429,097
2. Present value of accrued nonvested benefits	36,701,794	37,827,576
3. Present value of all accrued benefits = (1) + (2)	\$3,010,497,570	\$3,126,256,673
4. Market value of assets	\$2,613,125,249	\$2,592,748,429
5. Ratio of market value of assets to the present value of all accrued benefits = (4) ÷ (3)	86.80%	82.93%
6. Ratio of market value of assets to the present value of vested accrued benefits = (4) ÷ (1)	87.87%	83.95%

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, 2019	\$3,010,497,570
Change in present value of accrued benefits from July 1, 2019 to July 1, 2020 due to:	
• Additional benefits accumulated	\$ 82,760,671
• Interest due to passage of time	218,940,545
• Benefits paid	(185,942,113)
• Change in assumptions	0
• Changes in System provisions	<u>0</u>
Actuarial present value of accrued benefits on July 1, 2020	\$3,126,256,673

Actuarial Valuation Results

Risk 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 (ASOP No. 51) on risk disclosure that applies to actuaries when performing a funding valuation of a defined benefit pension plan. This standard of practice 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	<u>July 1, 2019</u>	<u>July 1, 2020</u>
Retired Participant Liability	1,929,129,169	2,008,736,264
Total Plan Liability	3,269,051,818	3,390,348,728
Ratio	59.0%	59.2%

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.

Cash Flow Risk	<u>July 1, 2019</u>	<u>July 1, 2020</u>
Contributions in prior year	107,238,646	107,360,296
Benefit Payments in prior year	(178,457,619)	(185,942,113)
Net Cash Flow	(71,218,973)	(78,581,817)

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.

Actuarial Valuation Results

Risk Disclosures

Asset Volatility Risk	<u>July 1, 2019</u>	<u>July 1, 2020</u>
Market Value of Assets	2,613,125,249	2,592,748,429
Annual Payroll	315,937,395	327,870,085
Asset Volatility Ratio	8.3	7.9

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	<u>July 1, 2019</u>	<u>July 1, 2020</u>
Actuarial Accrued Liability	3,269,051,818	3,390,348,728
Annual Payroll	315,937,395	327,870,085
Liability Volatility Ratio	10.3	10.3

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	<u>July 1, 2019</u>	<u>July 1, 2020</u>
Market Value of Assets	2,613,125,249	2,592,748,429
Actuarial Accrued Liability	3,269,051,818	3,390,348,728
Ratio	79.9%	76.5%

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.

	<u>July 1, 2019</u>	<u>July 1, 2020</u>
Duration of Plan Liability	12.6 years	12.6 years

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 participants retire or become disabled at earlier ages than anticipated by the actuarial assumptions, it is expected that additional funding will be required.

Actuarial Valuation Results

Risk Disclosures

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.

System Demographic Experience

During the plan year July 1, 2019 to June 30, 2020, actual demographic experience differed from that expected by the actuarial assumptions, as summarized below.

Decrement Type	Expected	Actual
Actives		
Service Retirement	45	38
Accidental Disability	27	32
Ordinary Disability	7	11
Accidental Death	2	1
Ordinary Death	1	1
Withdrawal	93	97
DROP Participation	41	51
DROP Premature Withdrawal	7	19
DROP Retirement	24	20
DROP Death	0	0
Inactives		
Beneficiary Death	52	61
Disabled Death	34	36
Retirement Death	60	61
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, 2020 were as follows:

Total Pension Liability	\$3,390,348,728
Plan Fiduciary Net Position	<u>2,592,748,429</u>
Net Pension Liability	797,600,299

Plan Fiduciary Net Position as a percentage of the Total Pension Liability 76.47%

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	\$3,816,112,066	\$3,390,348,728	\$3,037,681,358
Plan Fiduciary Net Position	<u>2,592,748,429</u>	<u>2,592,748,429</u>	<u>2,592,748,429</u>
Net Pension Liability	1,223,363,637	797,600,299	444,932,929

System Accounting Results

Schedule of Changes in Net Pension Liability

	Fiscal Year Ending June 30		
	2020	2019	2018
Total Pension Liability			
Service Cost	55,133,707	53,017,674	56,128,110
Interest	242,467,141	233,282,508	224,678,250
Changes of Benefit Terms	0	0	0
Difference between Expected and Actual Experience	9,638,175	16,177,781	(9,748,387)
Changes of Assumptions	0	0	21,266,192
Benefit Payments, including refunds	(185,942,113)	(178,457,619)	(170,663,862)
Net Change in Total Pension Liability	121,296,910	124,020,344	121,660,303
Total Pension Liability – Beginning of Year	3,269,051,818	3,145,031,474	3,023,371,171
Total Pension Liability – End of Year	3,390,348,728	3,269,051,818	3,145,031,474
Plan Fiduciary Net Position			
Contributions – Employer and State	77,551,461	78,766,019	74,641,639
Contributions – Member	29,808,835	28,472,627	27,493,680
Net Investment Income	60,250,246	136,635,233	183,182,098
Benefit Payments, including refunds	(185,942,113)	(178,457,619)	(170,663,862)
Administrative Expenses	(1,887,579)	(1,797,284)	(1,781,886)
Other	(157,670)	(121,714)	(139,793)
Net Change in Plan Fiduciary Net Position	(20,376,820)	63,497,262	112,731,876
Plan Fiduciary Net Position – Beginning of Year	2,613,125,249	2,549,627,987	2,436,896,111
Plan Fiduciary Net Position – End of Year	2,592,748,429	2,613,125,249	2,549,627,987
Net Pension Liability – End of Year	797,600,299	655,926,569	595,403,487
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	76.47%	79.94%	81.07%
Covered-Employee Payroll*	317,709,825	302,713,506	290,660,576
Net Pension Liability as a Percentage of the Covered-Employee Payroll	251.05%	216.68%	204.84%

*Actual for noted period as provided by the System.

System Accounting Results

Schedule of Contributions

	Fiscal Year Ending June 30		
	2020	2019	2018
Actuarially Determined Contribution	\$77,551,461	\$78,766,019	\$74,641,639
Contributions in Relation to the Actuarially Determined Contribution	77,551,461	78,766,019	74,641,639
Contribution Deficiency/ (Excess)	0	0	0
Covered-Employee Payroll*	317,709,825	302,713,506	290,660,576
Contributions as a Percentage of Covered-Employee Payroll	24.41%	26.02%	25.68%

*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, 2020
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, 2017.

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, 2020 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, 2017.

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:

<u>Age</u>	<u>Rate</u>
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:

<u>Age</u>	<u>Rate</u>
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:

<u>Age</u>	<u>Rate</u>
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:

<u>Age</u>	<u>Rate</u>
20	0.07%
25	0.07
30	0.07
35	0.09
40	0.13
45	0.16
50	0.22
55	0.31
60	0.64
65	1.31

- Accidental

Rates varying by age – Sample rates:

<u>Age</u>	<u>Rate</u>
20	0.10%
25	0.10
30	0.10
35	0.10
40	0.27
45	0.43
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:

<u>Age</u>	<u>Rate</u>
20	7.11%
25	5.81
30	4.51
35	2.71
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:

<u>Age</u>	<u>Rate</u>
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:

<u>Age</u>	<u>Rate</u>
55-56	50%
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 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, 2020 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:

<u>Effective Date</u>	<u>Percentage</u>
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	<p>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).</p> <p>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.</p>
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Ordinary Disability Benefit

Eligibility	A member in good standing at any age and any length of service.
Benefit	<p>Monthly annuity payable upon disability equal to either (a) or (b) below, but no less than (c):</p> <ul style="list-style-type: none">(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.

Summary of System Provisions (continued)

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: <ul style="list-style-type: none"> (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.

<u>Amount</u>	<u>Years of Retirement</u>
\$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

	<u>July 1,</u>		
	<u>2018</u>	<u>2019</u>	<u>2020</u>
Active Members			
Number	4,003	4,086	4,084
Average Attained Age	41.0	40.8	40.8
Average Past Service	13.7	13.5	13.5
Total Annual Compensation	\$302,420,313	\$315,937,395	\$327,870,085
Average Annual Compensation	75,548	77,322	80,282
Non-Active Members in Pay Status			
Number	4,107	4,148	4,190
Average Age (excluding children)	69.9	70.0	70.1
Total Annual Benefits	\$167,587,224	\$174,611,652	\$182,503,272
Average Annual Benefit	40,805	42,095	43,557
Non-Active Members with Deferred Benefits			
Number*	367	374	375
Average Age	43.6	43.8	44.2
Total Annual Benefits	\$ 6,516,420	\$ 6,820,968	\$ 7,297,104
Average Annual Benefit	17,756	18,238	19,459

* Excludes 56, 60 and 65 terminated nonvested members who had not yet received a refund of contributions as of 2018, 2019 or 2020 respectively.

Summary of System Members

Reconciliation of Participant Counts

	Active	Terminated Vested	In Pay Status			Total
			Beneficiaries	Disabled	Retirees	
Number as of July 1, 2019	4,086	374	937	1,134	2,077	8,608
Change due to:						
New hires and rehires	238	(4)	0	0	0	234
Terminations	(84)*	52	0	0	0	(32)
Retirement	(77)	(28)	0	0	105	0
Disability	(43)	0	0	43	0	0
Death without Beneficiary	(1)	0	(61)	(19)	(24)	(105)
Death with Beneficiary	(1)	0	58	(17)	(37)	3
Refund Paid Out	(34)**	(19)	0	0	0	(53)
Benefit Aged Out	0	0	(6)	0	0	(6)
Other	0	0	0	0	0	0
Number as of July 1, 2020	4,084***	375	928	1,141	2,121	8,649

* Twenty-one of the Terminations are from new hires during the period July 1, 2019 to June 30, 2020.

** None of the Refunds Paid Out are from new hires during the period July 1, 2019 to June 30, 2020.

*** One hundred thirty-seven (137) of the Actives have elected to participate in DROP as of July 1, 2020.

Summary of System Members
Active Members—As of July 1, 2020

Age	Years of Service								Total	Average Annual Salary
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35+		
Under 25	228	0	0	0	0	0	0	0	228	\$60,964
25-29	425	75	0	0	0	0	0	0	500	\$66,424
30-34	241	287	94	0	0	0	0	0	622	\$72,325
35-39	97	178	272	79	0	0	0	0	626	\$78,165
40-44	32	67	182	228	82	0	0	0	591	\$83,028
45-49	14	26	74	167	268	58	0	0	607	\$87,531
50-54	9	9	29	90	182	194	54	1	568	\$91,348
55-59	2	5	9	19	47	77	76	23	258	\$96,249
60+	1	4	2	6	17	21	16	17	84	\$94,310
Total	1,049	651	662	589	596	350	146	41	4,084	
Average Annual Salary	\$64,634	\$76,424	\$80,795	\$85,075	\$90,400	\$97,103	\$100,484	\$109,018		\$80,282

Summary of System Members

Inactive Members—As of July 1, 2020

Service Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
55-59	144	\$ 9,394,956	\$ 65,243
60-64	270	18,121,416	67,116
65-69	402	25,406,136	63,199
70-74	370	22,007,496	59,480
75-79	229	12,146,760	53,043
80-84	155	7,267,656	46,888
Over 84	<u>130</u>	<u>5,191,692</u>	<u>39,936</u>
Total	1,700	\$99,536,112	\$ 58,551

Vested Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
55-59	95	\$ 2,293,524	\$ 24,142
60-64	108	2,300,148	21,298
65-69	90	1,925,232	21,391
70-74	73	1,215,168	16,646
75-79	28	431,976	15,428
80-84	11	129,696	11,791
Over 84	<u>16</u>	<u>122,544</u>	<u>7,659</u>
Total	421	\$ 8,418,288	\$ 19,996

Summary of System Members

Inactive Members—As of July 1, 2020

Accidental Disability Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	10	\$ 428,340	\$ 42,864
40-44	37	1,598,616	43,206
45-49	40	1,760,616	44,015
50-54	59	2,760,780	46,793
55-59	94	5,021,268	53,418
60-64	139	7,091,328	51,017
65-69	171	8,662,308	50,657
70-74	164	7,667,856	46,755
75-79	118	5,232,108	44,340
80-84	62	2,608,644	42,075
Over 84	<u>47</u>	<u>1,856,136</u>	<u>39,492</u>
Total	941	\$44,688,000	\$47,490

Ordinary Disability Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	12	\$ 341,484	\$ 28,457
40-44	7	247,836	35,405
45-49	19	707,532	37,239
50-54	27	1,070,904	39,663
55-59	16	705,948	44,122
60-64	27	1,199,268	44,417
65-69	30	1,395,312	46,510
70-74	33	1,316,196	39,885
75-79	15	602,952	40,197
80-84	9	303,552	33,728
Over 84	<u>5</u>	<u>166,128</u>	<u>33,226</u>
Total	200	\$8,057,112	\$ 40,286

Summary of System Members

Inactive Members—As of July 1, 2020

Beneficiaries (Spouse)

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	6	\$ 179,052	\$ 29,842
40-44	8	244,812	30,602
45-49	9	295,572	32,841
50-54	20	581,472	29,074
55-59	25	667,320	26,693
60-64	60	1,677,768	27,963
65-69	100	2,693,328	26,933
70-74	126	3,316,908	26,325
75-79	133	3,215,808	24,179
80-84	166	3,730,656	22,474
Over 84	<u>225</u>	<u>4,866,708</u>	<u>21,630</u>
Total	878	\$21,469,404	\$ 24,453

Beneficiaries (Children)

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 3	0	\$ 0	\$ 0
3-5	1	5,076	5,076
6-8	3	16,020	5,340
9-11	5	26,064	5,213
12-14	5	30,276	6,055
15-17	8	51,540	6,443
18-20	14	84,732	6,052
Over 20	<u>14</u>	<u>120,648</u>	<u>8,618</u>
Total	50	\$ 334,356	\$ 6,687

Summary of System Members

Inactive Members—As of July 1, 2020

Terminated Vested

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	108	\$1,448,508	\$13,412
40-44	79	1,482,252	18,763
45-49	76	1,474,308	19,399
50-54	109	2,860,788	26,246
Over 54	<u>3</u>	<u>31,248</u>	<u>10,416</u>
Total	375	\$7,297,104	\$19,459