



# MUNICIPAL FIRE AND POLICE RETIREMENT SYSTEM OF IOWA

Actuarial Valuation Report

July 1, 2019

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October 11, 2019

**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, 2019 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, 2019, member census data as of July 1, 2019 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. 17-4875



Michael S. Ehmke, ASA  
Principal  
Member of American Academy  
of Actuaries  
Enrolled Actuary No. 17-5811

GCG/MSE/je

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,		
	2017	2018	2019
<b>Cities Recommended Contribution</b>	\$ 77,081,123	\$ 73,820,798	\$ 79,963,755
<b>Normal Contribution Rate</b>	26.02%	24.41%	25.31%
<b>Plan Assets</b>			
Market Value	2,436,896,111	2,549,627,987	2,613,125,249
Actuarial Value	2,461,161,417	2,578,863,993	2,649,186,492
<b>Prior Year Investment Return</b>			
Market Value	11.75%	7.63%	5.44%
Actuarial Value	8.37%	7.75%	5.65%
<b>Actuarial Accrued Liability</b>	3,023,371,171	3,145,031,474	3,269,051,818
Funded Ratio*	81.40%	82.00%	81.04%
<b>Annual Participating Payroll</b>	296,237,982	302,420,313	315,937,395
<b>Annual Normal Cost</b>	56,128,110	53,017,674	55,133,707
Percent of Payroll	18.95%	17.53%	17.45%
<b>Annual Pension Benefits</b>			
Service Retirement	87,272,844	91,350,744	95,066,664
Disabled Retirement	47,563,392	48,742,116	50,710,716
Vested Retirement	6,677,184	7,194,492	7,771,656
Beneficiaries	<u>19,008,288</u>	<u>20,299,872</u>	<u>21,062,616</u>
Total	160,521,708	167,587,224	174,611,652
<b>Number of Members</b>			
Active	3,968	4,003	4,086
Disabled	1,136	1,130	1,134
Retirees and Beneficiaries	2,909	2,977	3,014
Vested Terminated	<u>356</u>	<u>367</u>	<u>374</u>
Total	8,369	8,477	8,608

\*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 \$79,963,755 be made for the 2019 plan year. This is equal to a contribution rate of 25.31% of payroll. This rate assumes that the State of Iowa will contribute approximately \$0 for the 2019 plan year.

The System's normal contribution rate increased from 24.41% for 2018 to 25.31% for 2019. The System's contribution rate before any adjustment to the minimum contribution rate changed as follows:

July 1, 2018 normal contribution rate:	24.41%
• Increase in contribution rate due to lower State contribution	0.00%
• Plan experience more favorable than assumed	(0.35%)
• Investment experience less favorable than assumed	1.25%
• 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:	25.31%
• Increase necessary to meet minimum contribution rate	0.00%
July 1, 2019 normal contribution rate	25.31%

### 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 slightly decreased. The average age of members included in the valuation was 40.8 for the current year and 41.0 in the prior year.

*Service of Active Members* – The average service of the active members has slightly decreased. The average service of members included in the valuation was 13.5 for the current year and 13.7 in the prior year.

*Participating Compensation and Members* – Total participating compensation increased from \$302,420,313 to \$315,937,395, a 4.5% increase. The number of active members increased from 4,003 in 2018 to 4,086 in 2019.

*Average Annual Compensation* – The average compensation of active members is more than the average compensation for the prior year. The average compensation was \$75,548 in 2018 and \$77,322 in 2019.

*Ages of New Service Retirement Members* – The average age of active members who elected service retirement has decreased. The average age of new service retirements was 58.0 for the current year and 59.0 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** – Recent revisions to certain actuarial standards of practice introduced new disclosure requirements related to risks that affect the System.



## Actuarial Valuation Results

### Assets – Market Value

Year Ending June 30, 2019

**Market Value of Assets at June 30, 2018** \$2,549,627,987

#### Receipts

Member Contributions	\$ 28,472,627
Cities Contributions	78,766,019
State Contributions	0
Investment Income	154,591,458
Investment Management Expenses	(17,956,225)
Other Income	<u>87,498</u>

**Total Receipts** \$ 243,961,377

#### Disbursements

Benefit Payments to Members	\$(177,077,100)
Termination Withdrawals	(1,380,519)
Administrative Expenses	(1,797,284)
Disability Expenses	(199,546)
Other Expenses	<u>(9,666)</u>

**Total Disbursements** \$ (180,464,115)

**Market Value of Assets at June 30, 2019** \$2,613,125,249

**Actuarial Valuation Results**  
**Assets – Market Value**  
**Year Ending June 30, 2019**

**Assets**

Cash	\$ 279,711	
U.S. Government Obligations	72,903,384	
U.S. Corporate Fixed Income	69,432,607	
U.S. Equity Securities	471,394,215	
Foreign Equity Securities	397,534,033	
Commingled Fixed Income	62,293,383	
Short-Term Investments	76,012,736	
Real Estate	281,287,673	
Private Equity	510,544,521	
Multi-Strategy Commingled Fund	48,308,077	
Fund of Funds Commingled	636,472,789	
Receivables	6,900,968	
Fixed/Other Assets	114,333	
Pension Related Deferred Outflows	197,996	
Total Assets		\$2,633,676,426

**Liabilities**

Benefits/Refunds Payable	\$(15,608,723)	
Investment Management Expenses Payable	(2,025,432)	
Administrative Expenses Payable	(418,877)	
Net Pension Liability to IPERS	(751,182)	
Payable to Brokers, Net	(1,673,965)	
Pension Related Deferred Inflows	(72,998)	
Total Liabilities		\$ (20,551,177)
Market Value of Assets at June 30, 2019		\$2,613,125,249

## Actuarial Valuation Results

### Assets – Actuarial Value

#### Year Ending June 30, 2019

1.	Actuarial Value of Assets at July 1, 2018	\$2,578,863,993																																																
2.	Contributions for 2018 Plan Year (Members, Cities and State)	107,238,646																																																
3.	Benefit distributions and refunds for 2018 plan year	(178,457,619)																																																
4.	Noninvestment Expenses																																																	
	a. Administrative Expenses	(1,797,284)																																																
	b. Disability Expenses	(199,546)																																																
	c. Other Expenses	<u>(9,666)</u>																																																
	d. Total	(2,006,496)																																																
5.	Expected return on Market Value of Assets for year at 7.5%	188,525,786																																																
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: 20%; 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: 10%; 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.</td> <td>2018</td> <td style="text-align: center;">\$(51,803,053)</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;">(10,360,611)</td> </tr> <tr> <td>b.</td> <td>2017</td> <td style="text-align: center;">3,020,970</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;">604,194</td> </tr> <tr> <td>c.</td> <td>2016</td> <td style="text-align: center;">94,033,500</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;">18,806,700</td> </tr> <tr> <td>d.</td> <td>2015</td> <td style="text-align: center;">(170,219,375)</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;">(34,043,875)</td> </tr> <tr> <td>e.</td> <td>2014</td> <td style="text-align: center;">(99,921,132)</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>(19,984,226)</u></td> </tr> <tr> <td>f.</td> <td>Total</td> <td></td> <td></td> <td></td> <td></td> <td style="text-align: right;">(44,977,818)</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.	2018	\$(51,803,053)	1	4	20.000%	(10,360,611)	b.	2017	3,020,970	2	3	20.000	604,194	c.	2016	94,033,500	3	2	20.000	18,806,700	d.	2015	(170,219,375)	4	1	20.000	(34,043,875)	e.	2014	(99,921,132)	5	0	20.000	<u>(19,984,226)</u>	f.	Total					(44,977,818)	
	(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.	2018	\$(51,803,053)	1	4	20.000%	(10,360,611)																																												
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f.	Total					(44,977,818)																																												
7.	Asset gains/(losses) to be recognized = (6f)	(44,977,818)																																																
8.	Actuarial Value of Assets at July 1, 2019 = (1) + (2) + (3) + (4d) + (5) + (7)	2,649,186,492																																																
9.	Market Value of Assets at July 1, 2019	2,613,125,249																																																
10.	Ratio of Actuarial Value to Market Value at July 1, 2019 = (8) / (9)	101.38%																																																

## 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.

	<b>As of July 1,</b>	
	<b><u>2018</u></b>	<b><u>2019</u></b>
1. Actuarial Accrued Liability before changes		
a. Active members		
Service retirements/DROP	\$1,067,066,625	\$1,112,858,671
Ordinary disability	22,226,869	22,258,099
Accidental disability	143,914,112	113,998,932
Ordinary death	5,639,698	3,084,442
Accidental death	3,780,805	5,986,459
Withdrawal	<u>21,266,361</u>	<u>36,703,000</u>
Total Active	1,263,894,470	1,294,889,603
b. Inactive members		
Members receiving benefits	1,817,397,840	1,929,129,169
Deferred vested terminations	42,020,495	44,591,271
Refund of member contributions due	<u>452,477</u>	<u>441,775</u>
Total Inactive	1,859,870,812	1,974,162,215
c. Total Actuarial Accrued Liability	3,123,765,282	3,269,051,818
2. Actuarial Value of Plan Assets	2,578,863,993	2,649,186,492
3. Unfunded Actuarial Accrued Liability before changes =[Excess of (1) over (2)]	544,901,289	619,865,326
4. Change in Unfunded Actuarial Accrued Liability		
a. Change in System Provisions	0	0
b. Change in Actuarial Assumptions	21,266,192	0
5. Unfunded Actuarial Accrued Liability after changes	566,167,481	619,865,326

## 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>2018</u>	<u>2019</u>
1. Annual Normal Cost		
Benefit Normal Cost	\$53,017,674	\$55,133,707
Other	0	0
Total	53,017,674	55,133,707
2. Annual Participating Payroll	302,420,313	315,937,395
3. Annual Normal Cost as a Percentage of Participating Payroll = (1) / (2)	17.53%	17.45%

## Actuarial Valuation Results

### Annual Contributions

<b>Preliminary Total Contribution</b>	<b>As of July 1,</b>	
	<b><u>2018</u></b>	<b><u>2019</u></b>
1. Annual Normal Cost	\$53,017,674	\$55,133,707
2. Estimated Member Contributions	28,427,509	29,698,115
3. Unfunded Actuarial Accrued Liability Amortization Payment	49,233,288	54,519,817
4. Total (Cities plus State) Contribution = (1) – (2) + (3)	73,823,453	79,955,409
 <b>Cities' Contribution</b>		
5. Preliminary Total Contribution = (4)	73,823,453	79,955,409
6. Estimated State Contribution	0	0
7. Preliminary Cities' Contribution = (5) – (6)	73,823,453	79,955,409
8. Covered Payroll	302,420,313	315,937,395
9. Cities' Contribution as a percent of payroll = (7) / (8)	24.41%	25.31%
10. Minimum required contribution rate for Cities	17.00%	17.00%
11. Cities' Contribution = [Greater of (9) or (10)] x (8)	73,820,798	79,963,755

## Actuarial Valuation Results

### Unfunded Accrued Liability Payments

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

- The initial unfunded accrued liability established as of July 1, 2013.
- An increase in unfunded accrued liability if benefits are improved through amendments.
- An increase or decrease in the unfunded accrued liability associated with a change in actuarial assumptions.
- An increase or decrease in the unfunded accrued liability 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

#### Charge Bases

Initial Amortization Base	Initial Term-Years	Remaining Term on Valuation Date	Amortization Payment
\$ 657,280,700	25	19	\$54,851,250
32,616,664	25	20	2,721,919
17,508,411	25	21	1,461,108
21,275,521	25	22	1,775,480
39,751,096	25	23	3,317,300
21,266,192	25	24	1,774,702
63,348,299	25	25	<u>5,286,529</u>
		Total	71,188,288

#### Credit Bases

Initial Amortization Base	Initial Term-Years	Remaining Term on Valuation Date	Amortization Payment
\$ 101,748,328	25	20	\$ 8,491,080
64,447,420	25	21	5,378,253
10,467,521	25	22	873,538
7,154,241	25	23	597,034
15,920,159	25	24	<u>1,328,566</u>
		Total	16,668,471

**Net Amortization Payment** \$54,519,817

## Actuarial Valuation Results

### Actuarial Gain/(Loss)

#### Expected Unfunded Actuarial Accrued Liability

##### 1. Expected Actuarial Accrued Liability

Actuarial Accrued Liability on July 1, 2018	\$3,145,031,474
Normal Cost	53,017,674
Benefit Distributions	(178,457,619)
Interest on above at 7.50% to June 30, 2019	233,282,508
Total	3,252,874,037

##### 2. Expected Assets

Actuarial Value of Assets on July 1, 2018	2,578,863,993
Contributions	107,238,646
Benefit Distributions and Noninvestment Expenses	(180,464,115)
Interest on above at 7.50% to June 30, 2019	191,718,486
Total	2,696,357,010

3. Expected Unfunded Actuarial Accrued Liability on June 30, 2019 556,517,027

#### Actual Unfunded Actuarial Accrued Liability

1. Actuarial Accrued Liability Before Changes	3,269,051,818
2. Actuarial Value of Assets	2,649,186,492
3. Actual Unfunded Actuarial Accrued Liability on July 1, 2019 (1) – (2)	619,865,326

#### Actuarial Gain or (Loss)

1. Expected Unfunded Actuarial Accrued Liability	556,517,027
2. Actual Unfunded Actuarial Accrued Liability	619,865,326
3. Actuarial Gain or (Loss) for 2019 Fiscal Year (1) – (2)	(63,348,299)



## Actuarial Valuation Results

### Actuarial Present Value of Accrued Benefits

	<b>As of July 1,</b>	
	<b><u>2018</u></b>	<b><u>2019</u></b>
1. Present value of vested accrued benefits		
a. Present value of vested accrued benefits for active members	\$ 954,040,512	\$ 999,633,561
b. Present value of benefits for terminated members	42,214,760	45,033,046
c. Present value of benefits for retirees, beneficiaries and disabled	1,862,532,799	1,929,129,169
Total	\$2,858,788,071	\$2,973,795,776
2. Present value of accrued nonvested benefits	35,027,834	36,701,794
3. Present value of all accrued benefits = (1) + (2)	\$2,893,815,905	\$3,010,497,570
4. Market value of assets	\$2,549,627,987	\$2,613,125,249
5. Ratio of market value of assets to the present value of all accrued benefits = (4) ÷ (3)	88.11%	86.80%
6. Ratio of market value of assets to the present value of vested accrued benefits = (4) ÷ (1)	89.19%	87.87%

## 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, 2018	\$2,893,815,905
Change in present value of accrued benefits from July 1, 2018 to July 1, 2019 due to:	
• Additional benefits accumulated	\$ 84,674,270
• Interest due to passage of time	210,465,014
• Benefits paid	(178,457,619)
• Change in assumptions	0
• Changes in System provisions	<u>0</u>
Actuarial present value of accrued benefits on July 1, 2019	\$3,010,497,570

# 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 new 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.

<b>Maturity Risk</b>	<b><u>July 1, 2018</u></b>	<b><u>July 1, 2019</u></b>
Retired Participant Liability	1,862,532,799	1,929,129,169
Total Plan Liability	3,145,031,474	3,269,051,818
Ratio	59.2%	59.0%

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.

<b>Cash Flow Risk</b>	<b><u>July 1, 2018</u></b>	<b><u>July 1, 2019</u></b>
Contributions in prior year	102,135,319	107,238,646
Benefit Payments in prior year	(170,663,862)	(178,457,619)
Net Cash Flow	(68,528,543)	(71,218,973)

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

<b>Asset Volatility Risk</b>	<b><u>July 1, 2018</u></b>	<b><u>July 1, 2019</u></b>
Market Value of Assets	2,549,627,987	2,613,125,249
Annual Payroll	302,420,313	315,937,395
Asset Volatility Ratio	8.4	8.3

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.

<b>Liability Volatility Risk</b>	<b><u>July 1, 2018</u></b>	<b><u>July 1, 2019</u></b>
Actuarial Accrued Liability	3,145,031,474	3,269,051,818
Annual Payroll	302,420,313	315,937,395
Liability Volatility Ratio	10.4	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.

<b>Funded Volatility Risk</b>	<b><u>July 1, 2018</u></b>	<b><u>July 1, 2019</u></b>
Market Value of Assets	2,549,627,987	2,613,125,249
Actuarial Accrued Liability	3,145,031,474	3,269,051,818
Ratio	81.1%	79.9%

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.

	<b><u>July 1, 2018</u></b>	<b><u>July 1, 2019</u></b>
Duration of Plan Liability	12.7 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, 2018 to June 30, 2019, actual demographic experience differed from that expected by the actuarial assumptions, as summarized below.

Decrement Type	Expected	Actual
<b>Actives</b>		
Service Retirement	36	29
Accidental Disability	27	35
Ordinary Disability	7	8
Accidental Death	2	2
Ordinary Death	1	1
Withdrawal	89	111
DROP Participation	46	40
DROP Premature Withdrawal	7	10
DROP Retirement	21	19
DROP Death	0	0
<b>Inactives</b>		
Beneficiary Death	52	54
Disabled Death	34	39
Retirement Death	58	46
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, 2019 were as follows:

Total Pension Liability	\$3,269,051,818
Plan Fiduciary Net Position	<u>2,613,125,249</u>
Net Pension Liability	655,926,569

Plan Fiduciary Net Position as a percentage of the Total Pension Liability 79.94%

#### **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	\$3,681,088,710	\$3,269,051,818	\$2,927,804,623
Plan Fiduciary Net Position	<u>2,613,125,249</u>	<u>2,613,125,249</u>	<u>2,613,125,249</u>
Net Pension Liability	1,067,963,461	655,926,569	314,679,674



## System Accounting Results

### Schedule of Changes in Net Pension Liability

	Fiscal Year Ending June 30		
	2019	2018	2017
<b>Total Pension Liability</b>			
Service Cost	53,017,674	56,128,110	53,423,772
Interest	233,282,508	224,678,250	213,069,288
Changes of Benefit Terms	0	0	0
Difference between Expected and Actual Experience	16,177,781	(9,748,387)	12,891,275
Changes of Assumptions	0	21,266,192	39,751,096
Benefit Payments, including refunds	(178,457,619)	(170,663,862)	(163,571,586)
Net Change in Total Pension Liability	124,020,344	121,660,303	155,563,845
<b>Total Pension Liability – Beginning of Year</b>	3,145,031,474	3,023,371,171	2,867,807,326
<b>Total Pension Liability – End of Year</b>	3,269,051,818	3,145,031,474	3,023,371,171
<b>Plan Fiduciary Net Position</b>			
Contributions – Employer and State	78,766,019	74,641,639	73,411,163
Contributions – Member	28,472,627	27,493,680	26,625,022
Net Investment Income	136,635,233	183,182,098	259,812,040
Benefit Payments, including refunds	(178,457,619)	(170,663,862)	(163,571,586)
Administrative Expenses	(1,797,284)	(1,781,886)	(1,767,657)
Other	(121,714)	(139,793)	(159,263)
Net Change in Plan Fiduciary Net Position	63,497,262	112,731,876	194,349,719
<b>Plan Fiduciary Net Position – Beginning of Year</b>	2,549,627,987	2,436,896,111	2,242,546,392
<b>Plan Fiduciary Net Position – End of Year</b>	2,613,125,249	2,549,627,987	2,436,896,111
<b>Net Pension Liability – End of Year</b>	655,926,569	595,403,487	586,475,060
<b>Plan Fiduciary Net Position as a Percentage of the Total Pension Liability</b>	79.94%	81.07%	80.60%
<b>Covered-Employee Payroll*</b>	302,713,506	290,660,576	283,222,057
<b>Net Pension Liability as a Percentage of the Covered-Employee Payroll</b>	216.68%	204.84%	207.07%

\*Actual for noted period as provided by the System.

## System Accounting Results

### Schedule of Contributions

	Fiscal Year Ending June 30		
	2019	2018	2017
<b>Actuarially Determined Contribution</b>	\$78,766,019	\$74,641,639	\$73,411,163
<b>Contributions in Relation to the Actuarially Determined Contribution</b>	78,766,019	74,641,639	73,411,163
<b>Contribution Deficiency/ (Excess)</b>	0	0	0
<b>Covered-Employee Payroll*</b>	302,713,506	290,660,576	283,222,057
<b>Contributions as a Percentage of Covered-Employee Payroll</b>	26.02%	25.68%	25.92%

\*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, 2019
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, 2019 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)

<b>Administrative Expenses</b>	None explicitly assumed.
<b>Active Members Percentage Married</b>	85%.
<b>Spouses' Age</b>	Wives are three years younger than husbands, including inactive members whose beneficiary age is unavailable.
<b>Number of Children</b>	2.5 per couple.
<b>Participating Payroll</b>	Actual annualized earnable compensation reported for prior plan year increased to the current plan year based on the System's assumed salary increase rate.
<b>Inactive Members Percentage Married (50% J &amp; S Annuity Form Only)</b>	80%.
<b>Timing of Decrements</b>	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, 2019 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)**

<b>Average Final Compensation</b>	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.
<b>Service Retirement Benefit</b>	
<b>Eligibility</b>	After age 55 and completion of 22 years of service.
<b>Benefit</b>	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.
<b>DROP Benefit</b>	
<b>Eligibility</b>	After age 55 and completion of 22 years of service.
<b>Participation Date</b>	First day of the month following the month in which a member applies for participation.
<b>Participation Period</b>	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.
<b>Chapter 411 Benefit</b>	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.
<b>DROP Account</b>	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)

<b>Benefit</b>	<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

<b>Eligibility</b>	<p>A member in good standing at any age and any length of service.</p>
<b>Benefit</b>	<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"><li>(a) If service at disability is greater than or equal to 5, 50% of Average Final Compensation; or</li><li>(b) If service at disability is less than 5 years, 25% of Average Final Compensation;</li><li>(c) The benefit determined using the Service Retirement formula based on service and Average Final Compensation at the date of disability.</li></ul>

### Accidental Disability Benefit

<b>Eligibility</b>	<p>A member in good standing at any age and any length of service.</p>
<b>Benefit</b>	<p>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.</p>

## 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

<b>Eligibility</b>	Death of member while receiving a service (basic benefit only), ordinary, accidental or vested (basic benefit only) retirement.
<b>Benefit</b>	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

<b>Eligibility</b>	All retired members, except for vested retirements, and for beneficiaries, except for beneficiaries of vested retirements.
<b>Benefit</b>	The monthly pension benefit is increased each July 1 by the sum of (a) plus (b) below: <ul style="list-style-type: none"> <li>(a) The previous monthly benefit multiplied by 1.5%, and</li> <li>(b) An additional dollar amount from the table below based on the number of years the member has been retired.</li> </ul>

<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

<b>Married</b>	Joint and 50% Survivor Annuity.
<b>Single</b>	Life Only Annuity.

## Summary of System Members

	<u>July 1,</u>		
	<u>2017</u>	<u>2018</u>	<u>2019</u>
<b>Active Members</b>			
Number	3,968	4,003	4,086
Average Attained Age	41.0	41.0	40.8
Average Past Service	13.7	13.7	13.5
Total Annual Compensation	\$296,237,982	\$302,420,313	\$315,937,395
Average Annual Compensation	74,657	75,548	77,322
<b>Non-Active Members in Pay Status</b>			
Number	4,045	4,107	4,148
Average Age (excluding children)	69.7	69.9	70.0
Total Annual Benefits	\$160,521,708	\$167,587,224	\$174,611,652
Average Annual Benefit	39,684	40,805	42,095
<b>Non-Active Members with Deferred Benefits</b>			
Number*	356	367	374
Average Age	43.9	43.6	43.8
Total Annual Benefits	\$ 6,175,008	\$ 6,516,420	\$ 6,820,968
Average Annual Benefit	17,346	17,756	18,238

\* Excludes 42, 56 and 60 terminated nonvested members who had not yet received a refund of contributions as of 2017, 2018 or 2019 respectively.

## Summary of System Members

### Reconciliation of Participant Counts

	Active	Terminated Vested	In Pay Status			Total
			Beneficiaries	Disabled	Retirees	
Number as of July 1, 2018	4,003	367	935	1,130	2,042	8,477
Change due to:						
New hires and rehires	308	(4)	0	0	0	304
Terminations	(90)*	54	0	0	0	(36)
Retirement	(58)	(23)	0	0	81	0
Disability	(43)	0	0	43	0	0
Death without Beneficiary	0	0	(54)	(13)	(24)	(91)
Death with Beneficiary	(3)	0	60	(26)	(22)	9
Refund Paid Out	(31)**	(20)	0	0	0	(51)
Benefit Aged Out	0	0	(4)	0	0	(4)
Other	0	0	0	0	0	0
Number as of July 1, 2019	4,086***	374	937	1,134	2,077	8,608

\* Seven of the Terminations are from new hires during the period July 1, 2018 to June 30, 2019.

\*\* Three of the Refunds Paid Out are from new hires during the period July 1, 2018 to June 30, 2019.

\*\*\* One hundred thirty-two (132) of the Actives have elected to participate in DROP as of July 1, 2019.



**Summary of System Members**  
**Active Members—As of July 1, 2019**

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	225	0	0	0	0	0	0	0	225	\$57,978
25-29	405	72	1	0	0	0	0	0	478	\$62,830
30-34	259	269	93	0	0	0	0	0	621	\$69,344
35-39	91	176	292	75	0	0	0	0	634	\$75,536
40-44	30	72	179	261	68	0	0	0	610	\$80,584
45-49	17	19	82	197	273	52	0	0	640	\$84,777
50-54	7	11	39	84	149	183	66	0	539	\$87,317
55-59	1	5	9	22	51	87	64	19	258	\$93,079
60+	3	3	1	7	14	15	19	19	81	\$91,542
Total	1,038	627	696	646	555	337	149	38	4,086	
Average Annual Salary	\$61,078	\$73,635	\$78,588	\$82,266	\$87,861	\$93,574	\$96,904	\$99,798		\$77,322

## Summary of System Members

### Inactive Members—As of July 1, 2019

#### Service Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
55-59	131	\$ 8,445,480	\$ 64,469
60-64	297	19,536,624	65,780
65-69	394	23,975,868	60,852
70-74	347	20,237,820	58,322
75-79	239	12,050,676	50,421
80-84	140	6,052,248	43,230
Over 84	<u>126</u>	<u>4,767,948</u>	<u>37,841</u>
Total	1,674	\$95,066,664	\$ 56,790

#### Vested Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
55-59	96	\$ 2,243,568	\$ 23,371
60-64	98	2,042,376	20,841
65-69	97	1,912,944	19,721
70-74	57	938,616	16,467
75-79	26	390,876	15,034
80-84	16	144,816	9,051
Over 84	<u>13</u>	<u>98,460</u>	<u>7,574</u>
Total	403	\$ 7,771,656	\$ 19,285

## Summary of System Members

### Inactive Members—As of July 1, 2019

#### Accidental Disability Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	12	\$ 506,880	\$ 42,240
40-44	31	1,303,560	42,050
45-49	44	1,885,872	42,861
50-54	58	2,606,904	44,947
55-59	93	4,613,088	49,603
60-64	137	7,018,404	51,229
65-69	187	9,037,824	48,331
70-74	155	6,974,352	44,996
75-79	115	4,880,736	42,441
80-84	63	2,601,792	41,298
Over 84	<u>43</u>	<u>1,611,600</u>	<u>37,479</u>
Total	938	\$43,041,012	\$45,886

#### Ordinary Disability Retirements

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	12	\$ 333,960	\$ 27,830
40-44	9	314,700	34,967
45-49	17	597,972	35,175
50-54	22	925,260	42,057
55-59	20	771,444	38,572
60-64	24	1,059,000	44,125
65-69	34	1,474,116	43,356
70-74	28	1,118,748	39,955
75-79	16	617,580	38,599
80-84	11	371,700	33,791
Over 84	<u>3</u>	<u>85,224</u>	<u>28,408</u>
Total	196	\$7,669,704	\$ 39,131

## Summary of System Members

### Inactive Members—As of July 1, 2019

#### Beneficiaries (Spouse)

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 40	8	\$ 223,344	\$ 27,918
40-44	8	257,376	32,172
45-49	9	260,088	28,899
50-54	18	479,520	26,640
55-59	28	723,372	25,835
60-64	57	1,521,660	26,696
65-69	104	2,743,608	26,381
70-74	118	2,933,640	24,861
75-79	142	3,353,712	23,618
80-84	155	3,349,572	21,610
Over 84	<u>235</u>	<u>4,868,112</u>	<u>20,715</u>
Total	882	\$20,714,004	\$ 23,485

#### Beneficiaries (Children)

Age	Number	Total Annual Benefit	Average Annual Benefit
Under 3	0	\$ 0	\$ 0
3-5	2	9,648	4,824
6-8	4	20,028	5,007
9-11	4	20,640	5,160
12-14	8	47,928	5,991
15-17	9	51,132	5,681
18-20	13	85,152	6,550
Over 20	<u>15</u>	<u>114,084</u>	<u>7,606</u>
Total	55	\$ 348,612	\$ 6,338

## Summary of System Members

### Inactive Members—As of July 1, 2019

#### Terminated Vested

<b>Age</b>	<b>Number</b>	<b>Total Annual Benefit</b>	<b>Average Annual Benefit</b>
Under 40	123	\$1,523,616	\$12,387
40-44	71	1,321,212	18,609
45-49	76	1,604,016	21,105
50-54	102	2,344,572	22,986
Over 54	<u>2</u>	<u>27,552</u>	<u>13,776</u>
Total	374	\$6,820,968	\$18,238