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**STATE OF IOWA
JUDICIAL RETIREMENT SYSTEM**

**Actuarial Valuation Report
as of July 1, 2021**





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November 8, 2021

Mr. Robert Gast
State Court Administrator
1111 E. Court Ave.
Des Moines, IA 50319

Dear Mr. Gast:

At your request, we have performed an actuarial valuation of the Iowa Judicial Retirement System as of July 1, 2021. The major findings of the valuation are included in this report. The purpose of this report is to provide a summary of the funded status of the System as of July 1, 2021 and to determine the member and State contribution rates for the fiscal year beginning July 1, 2022. There have been no changes to the plan provisions or actuarial assumptions since the prior valuation. However, the amortization method was updated to eliminate all amortization bases when actuarial assets exceed the actuarial liability (fully funded) and amortize the surplus over an open, 30-year period. Because the System is fully funded in the July 1, 2021 valuation, this change did not have an impact on the liabilities, but did result in a decrease in the total actuarial contribution rate.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the State Court Administrator's office. This information includes, but is not limited to, statutory provisions, member data and financial information. While not verifying the data at its source, the actuary has performed tests for consistency and reasonability. We found this information to be reasonably consistent and comparable with information provided in prior years. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different and our calculations may need to be revised.

We further certify that all costs, liabilities, rates of interest and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the System. Nevertheless, the emerging costs will vary from those presented in this report to the extent actual experience differs from that anticipated by the actuarial assumptions.

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In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results. Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

As this report is being prepared, the world is still recovering from the Covid-19 pandemic. We have considered available information, but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions which are long-term in nature. We will continue to monitor the situation and if we believe that any adjustments would be appropriate, we will advise you at that time.

Actuarial computations presented in this report are for purposes of calculating the member and State contribution rates for funding the System. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes. Actuarial computations for purposes of fulfilling financial accounting requirements for the System under Governmental Accounting Standards No. 67 and No. 68 are provided in separate reports.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Respectfully submitted,

A handwritten signature in blue ink that reads 'Patrice Beckham' in a cursive script.

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink that reads 'Bryan K. Hoge' in a cursive script.

Bryan K. Hoge, FSA, EA, FCA, MAAA
Consulting Actuary



SECTION I – EXECUTIVE SUMMARY

This report presents the results of the July 1, 2021 actuarial valuation for the State of Iowa Judicial Retirement System (System). The primary purposes of performing an actuarial valuation are to:

- measure and disclose asset and liability measures as of the valuation date;
- determine the actuarial contribution rate required to fund the System;
- assess and disclose the key risks associated with funding the System;
- determine the experience of the System since the last valuation date; and
- analyze and report on trends in System contributions, assets, and liabilities over the past several years.

The valuation results provide a “snapshot” view of the System’s financial condition on the valuation date, July 1, 2021. The unfunded actuarial accrued liability (UAAL) decreased by \$24.4 million from \$21.4 million on July 1, 2020 to a \$3.0 million surplus of actuarial assets over actuarial accrued liability as of July 1, 2021, indicating overall favorable experience for fiscal year 2021. Because the System’s funded ratio is now over 100%, the statutory contribution rates (9.35% for employees and 30.6% for the State) no longer apply. Going forward, the actuarial contribution rate will be split 40% to employees and 60% to the State. The contribution rates developed in this valuation will be effective for the fiscal year beginning July 1, 2022 and ending June 30, 2023.

Actual experience on both the System’s assets and liabilities impacts the System’s funding and the actuarial contribution rate. Experience that is more favorable than anticipated, based on the actuarial assumptions, will generally lower the UAAL and the actuarial contribution rate, while experience less favorable than expected will generally increase the UAAL and the actuarial contribution rate. The main factor contributing to the favorable experience was a rate of return of 35.7% on the market value of assets for fiscal year ending June 30, 2021. However, due to the use of an asset valuation method that recognizes actual experience that is different than expected over time, the return on the actuarial (smoothed) value of assets was 15.1%. Because this return is higher than the expected return of 6.75%, it resulted in an actuarial gain of \$18.6 million. There was also a net actuarial gain on liabilities of \$2.6 million, largely due to actual salary increases that were lower than expected and more deaths of younger retirees than expected, based on the actuarial assumptions. The lower than expected salary increases for active members also resulted in an actuarial gain on the liabilities for current Senior Judges as the benefit adjustment for that group is linked to salary increases for active members. The total actuarial experience for the plan year was an actuarial gain of \$21.3 million.

The actuarial contribution rate is determined as the sum of the normal cost rate plus a payment on the UAAL. The total actuarial contribution rate in this valuation was 24.95%, a decrease of 9.98% from the actuarial contribution rate of 34.93% in the prior valuation. Pursuant to state statutes, the System has been funded by fixed contribution rates for both the members (9.35% of pay) and the state of Iowa (30.60% of pay) until the System reached fully funded (actuarial assets equal actuarial accrued liability). As of July 1, 2021, the actuarial value of assets exceeds the actuarial accrued liability, so the employer and member contribution rates are now based on the actuarial contribution rate. The State contribution rate is set to 60% of the actuarial contribution rate



SECTION I – EXECUTIVE SUMMARY

(14.97% of pay in the 2021 valuation), and the member contribution rate is set to 40% of the actuarial contribution rate (9.98% of pay in the 2021 valuation).

Detailed discussions on the assets, liabilities and contribution rates can be found in the following pages of this Executive Summary.

The key measurements from the current actuarial valuation are compared to those of the prior valuation in the following table:

Funded Status	Actuarial Valuation Date	
	July 1, 2021	July 1, 2020
<u>Using Actuarial Value of Assets</u>		
Actuarial Accrued Liability	\$251,237,006	\$245,233,479
Actuarial Assets	254,241,801	223,840,969
Unfunded Actuarial Accrued Liability	(\$3,004,795)	\$21,392,510
Funded Ratio	101.2%	91.3%
<u>Using Market Value of Assets</u>		
Actuarial Accrued Liability	\$251,237,006	\$245,233,479
Market Assets	310,164,529	231,485,500
Unfunded Actuarial Accrued Liability	(\$58,927,523)	\$13,747,979
Funded Ratio	123.5%	94.4%

As discussed earlier, the total actuarial contribution rate in the 2021 valuation is lower than last year. The State's portion of the actuarial contribution rate decreased from 25.58% in the 2020 valuation to 14.97% in the 2021 valuation. The actuarial contribution rate is split between members and the State (40%/60%), so there is no contribution margin:

Required Contribution Rate	Actuarial Valuation Date	
	July 1, 2021	July 1, 2020
1. Normal Cost	25.69%	25.77%
2. Amortization Payment	(0.74%)	9.16%
3. Total Contribution Rate (1) + (2)	24.95%	34.93%
4. Member Contribution Rate	9.98%	9.35%
5. State Contribution Rate (3) - (4)	14.97%	25.58%
6. Statutory Contribution Rate	N/A	30.60%
7. Contribution Shortfall/(Margin) (5) - (6)	N/A	(5.02%)

Note: the contribution rates in the July 1, 2021 valuation will be effective July 1, 2022.

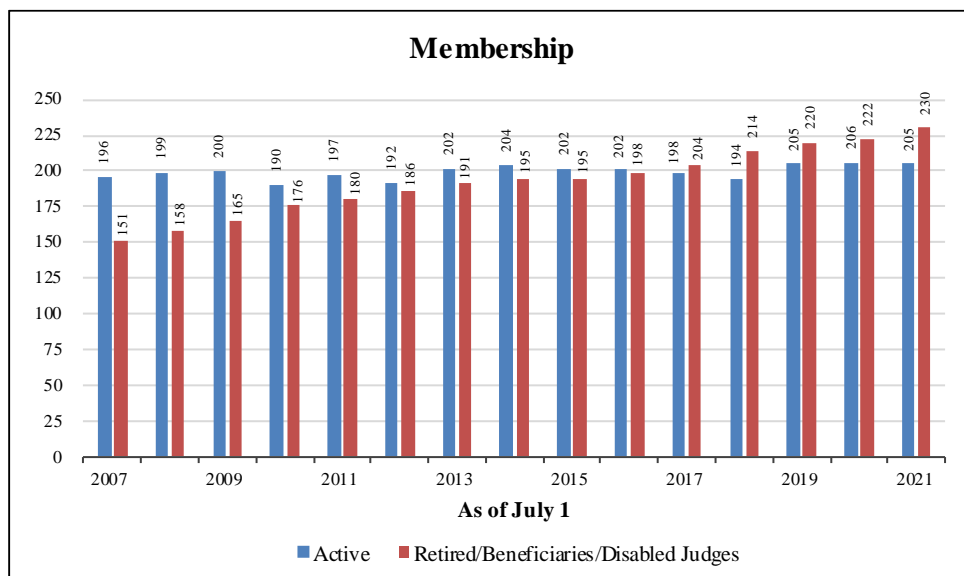


SECTION I – EXECUTIVE SUMMARY

There is currently \$55.9 million of unrecognized investment gains (difference between the market and actuarial value of assets). If all actuarial assumptions are met in the future, the deferred investment gains will flow through the asset smoothing method, and the funded ratio of the System is expected to increase over time.

MEMBERSHIP

The number of active members remained steady with 205 in the current valuation compared to 206 in the prior valuation. Given the nature of the active membership for a judicial retirement system, the number of active members is expected to be relatively stable over time. However, due to the trend of improving mortality rates, the number of retirees and beneficiaries receiving benefits under the plan has increased. As the following graph demonstrates, the number of participants receiving a benefit continues to be greater than the number of active participants contributing to the System. This is not uncommon in a mature retirement system, but we would note that it does create additional funding risk and contribution volatility, given the ratio of assets to covered payroll.



EXPERIENCE

July 1, 2020 to June 30, 2021

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is July 1, 2021. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, which are generally in excess of assets. The actuarial process leads to a method of determining the contributions needed by members and the employer in the future to balance the System assets and liabilities.



SECTION I – EXECUTIVE SUMMARY

Changes in both the System’s assets and liabilities impacted the change in the actuarial contribution rate between the July 1, 2020 and July 1, 2021 actuarial valuations. On the following pages each component is discussed.

ASSETS

As of July 1, 2021, the System had total funds on a market value basis of \$310.2 million. This was an increase of \$78.7 million from the July 1, 2020 value of \$231.5 million.

The market value of assets is not used directly in the calculation of the actuarial contribution rate. An asset valuation method is used to smooth the impact of market value fluctuations. See page 13 for the detailed development of the actuarial value of assets as of July 1, 2021.

The actuarial value of assets as of July 1, 2021, was \$254.2 million. The annualized net dollar-weighted rate of return for fiscal year 2021, measured on the actuarial value of assets, was 15.1%, and, measured on the market value of assets, was 35.7%. The components of the change in the market and actuarial value of assets for the System (in millions) are set forth below.

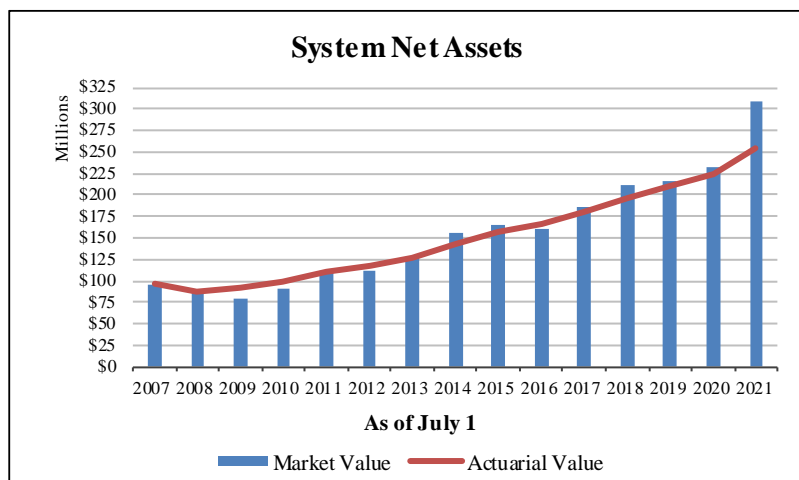
	\$(millions)	
	Market Value	Actuarial Value
Net Assets, July 1, 2020	\$231.5	\$223.8
• Employer and Member Contributions	12.0	12.0
• Benefit Payments and Admin Expenses	(15.3)	(15.3)
• Investment Income, Net of Expenses	<u>82.0</u>	<u>33.7</u>
Net Assets, July 1, 2021	\$310.2	\$254.2
Rate of Return, Net of Expenses*	35.7%	15.1%

*The net annual money-weighted rate of return on the market value of assets as reported by the Iowa Treasurer’s office.

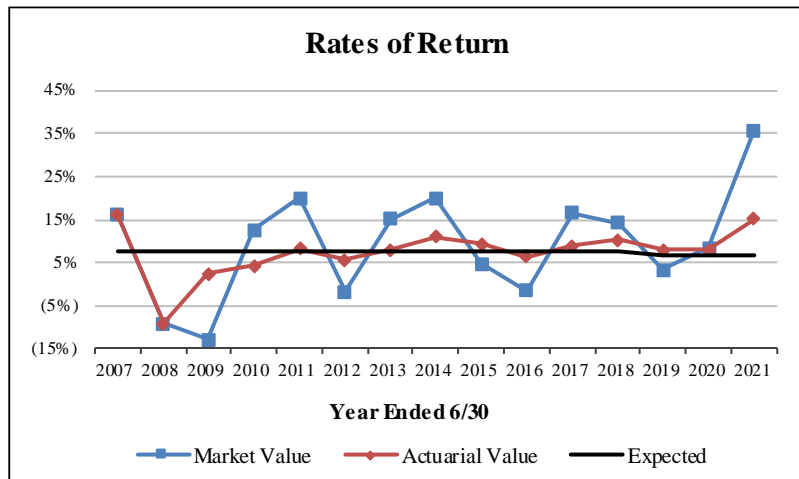
The rate of return on the actuarial value of assets was higher than the assumed rate of 6.75%, resulting in an actuarial gain on assets. As of July 1, 2021, there is \$55.9 million of deferred investment gain that has not yet been recognized, an increase from the \$7.6 million deferred investment gain in the 2020 valuation. Absent unfavorable investment experience in future years to offset the recognition of the deferred gain, it will flow through the asset smoothing method and future actuarial contribution rates are expected to decrease.



SECTION I – EXECUTIVE SUMMARY



Since the asset smoothing method was implemented in 2009, the actuarial value of assets has been both above and below the market value of assets, which is expected when using an asset smoothing method.



Rates of return on the market value of assets have been extremely volatile, while the return on the actuarial value of assets has been more stable. This illustrates the advantage of using an asset smoothing method. Prior to 2009, an asset smoothing method was not used.

LIABILITIES

The actuarial accrued liability is that portion of the present value of future benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and the actuarial value of assets as of the valuation date is referred to as the unfunded actuarial accrued liability (UAAL). The UAAL will be reduced if the employer's contributions exceed the employer's normal cost for the year, after allowing for interest on the previous balance of the unfunded actuarial accrued liability.

The UAAL as of July 1, 2021 is shown below:

Actuarial Accrued Liability	\$251,237,006
Actuarial Value of Assets	254,241,801
Unfunded Actuarial Accrued Liability	<u>(\$3,004,795)</u>



SECTION I – EXECUTIVE SUMMARY

Factors influencing the UAAL from year to year include actual experience versus that expected based on the actuarial assumptions (both asset and liability), and if applicable, changes in actuarial assumptions, procedures or methods and changes in benefit provisions. The actual experience measured in this valuation is that which occurred during the prior plan year (fiscal year ending June 30, 2021).

The UAAL decreased from \$21.4 million on July 1, 2020 and is now a surplus of \$3.0 million on July 1, 2021. The System experienced an aggregate actuarial gain (actual versus expected experience) of \$21.3 million for the year ending June 30, 2021. Actuarial experience (gain or loss) is measured by comparing the expected UAAL (developed using the actuarial assumptions in the prior valuation) and the actual UAAL. As discussed earlier, the return on the actuarial value of assets was 15.1% which resulted in an actuarial gain of \$18.6 million, decreasing the UAAL. The actuarial gain on the liabilities was \$2.6 million, which was largely due to salary increases that were lower than expected and more deaths of younger retirees than expected, based on the actuarial assumptions. The salary experience for actives also resulted in an actuarial gain on the liabilities for current Senior Judges as the actual benefit adjustment for that group was lower than expected. Actual contributions above the actuarial contribution rate also resulted in a small decrease in the UAAL.

Between July 1, 2020 and July 1, 2021, the change in the unfunded actuarial accrued liability for the System was as follows (in millions):

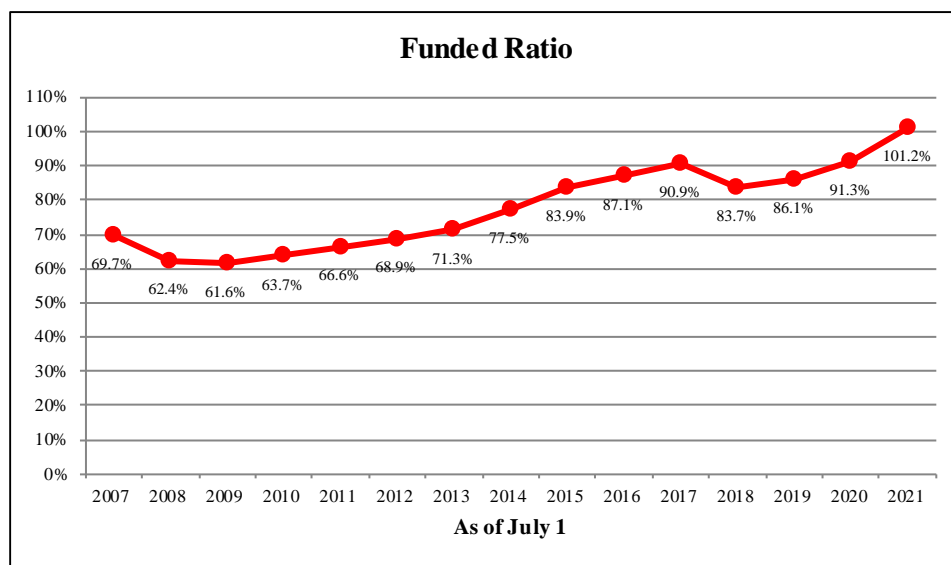
	<u>\$ millions</u>
Unfunded Actuarial Accrued Liability, July 1, 2020	21.4
• effect of contributions more than the actuarial rate	(1.6)
• expected decrease due to UAAL amortization	(1.4)
• investment experience	(18.6)
• liability experience ¹	(2.6)
• other actuarial experience	<u>(0.2)</u>
Unfunded Actuarial Accrued Liability, July 1, 2021	(3.0)

¹ Liability gain was 1.04% of expected actuarial accrued liability

An evaluation of the unfunded actuarial accrued liability on a pure dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both large numbers) is reflected. Another way to evaluate the progress made in the System's funding is to track the funded status, which is the ratio of the actuarial value of assets to the actuarial accrued liability. The funded status is shown in the following graph.



SECTION I – EXECUTIVE SUMMARY



The drop in the funded ratio in 2018 was the result of changes in the actuarial assumptions, including a reduction in the investment return assumption from 7.50% to 6.75% and adoption of a more recent mortality table.

It is important to note that the funded ratio would be different if it was calculated using the market value of assets. Furthermore, the funded ratio is not an indication of the ability of the System to settle its obligations and may not be sufficient as an indication of the need for future contributions.

CONTRIBUTION RATES

The funding objective of the System is to pay the normal cost rate and amortize the surplus of the actuarial value of assets over the actuarial accrued liability, using a level-dollar payment, over a 30-year open period now that the System is over 100% funded.

Under the Entry Age Normal cost method, the actuarial contribution rate consists of:

- a "normal cost", including administrative expenses, for the portion of projected liabilities allocated by the actuarial cost method to service of members during the year following the valuation date, and
- an "unfunded actuarial accrued liability contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

The components that impacted the actuarial contribution rate from the prior to the current valuation are shown in the following table.

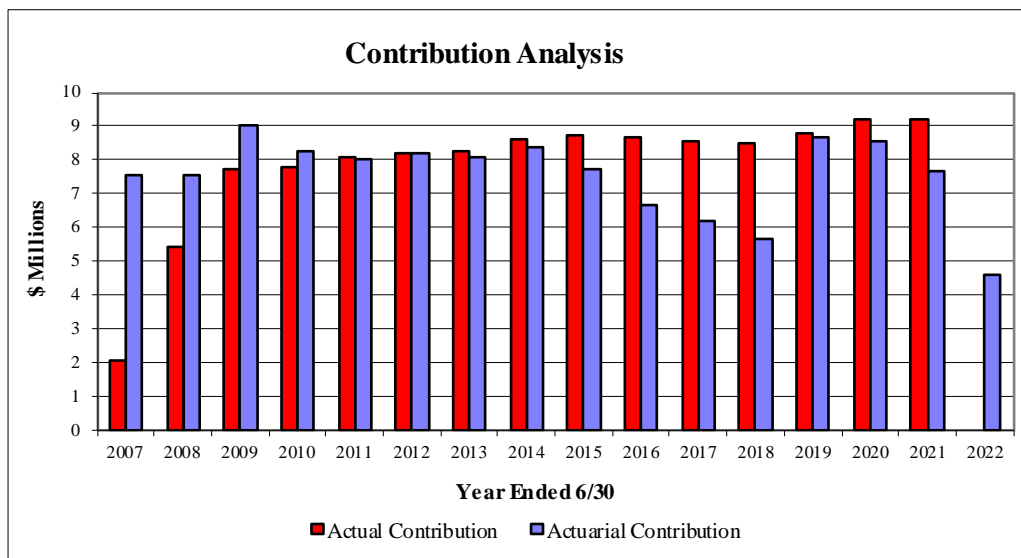


SECTION I – EXECUTIVE SUMMARY

	Valuation Date	
	<u>July 1, 2021</u>	<u>July 1, 2020</u>
Prior year total contribution rate	34.93%	37.81%
• change in normal cost	(0.08%)	0.11%
• change due to amortization method	(0.33%)	(0.44%)
• change due to asset (gains)/losses	(4.90%)	(0.69%)
• change due to liability/other actuarial experience	(0.63%)	(1.69%)
• change due to amortization of surplus	(3.63%)	0.00%
• change due to new benefit provisions	0.00%	0.00%
• change due to contribution margin	<u>(0.41%)</u>	<u>(0.17%)</u>
Current year total actuarial contribution rate	24.95%	34.93%
Member's contribution rate	<u>(9.98%)</u>	<u>(9.35%)</u>
State's actuarial contribution rate	14.97%	25.58%

Before the System was fully funded, contributions were set in statute at 9.35% for members and 30.60% for the State for a total statutory contribution rate of 39.95%. The System’s funded ratio now exceeds 100% (i.e., fully funded), so the employer and member contribution rates are based on the actuarial contribution rate (employer: 60%, member: 40%).

The following graph summarizes the historical actual and actuarial employer contributions.





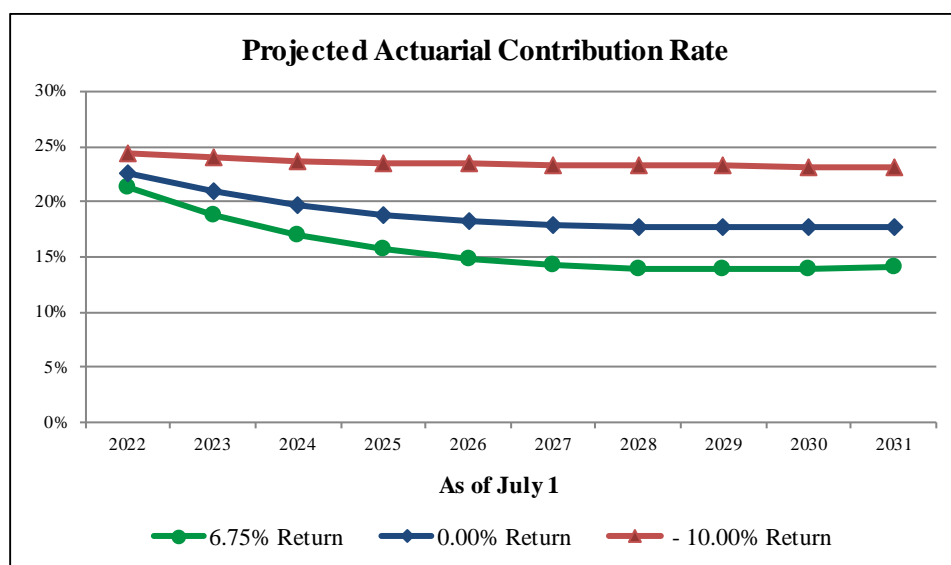
SECTION I – EXECUTIVE SUMMARY

COMMENTS

In recent years, the funded status of the System has improved due to actuarial gains on assets (investment returns higher than the assumed rate of return) and liability gains (lower than expected liabilities), largely due to lower than expected salary increases. The rate of return on the market value of assets has been nearly 12% on the market value of assets since the 2009 valuation. The combined impact of this experience has improved the System's funded status from 62% in the 2009 valuation to 101% in the current valuation. In addition to the favorable experience, the total contributions to the System have increased since 2008 which has also strengthened the System's long-term funding.

The statutory contribution rate is set equal to the actuarial contribution rate in the current valuation since the System is now fully funded. Contributing the full actuarial contribution rate is key to helping the System maintain its strong funded status. However, the actuarial contribution rate will vary from year to year as actual experience deviates from that assumed. As a result, both members and the State should be aware that volatility in the contribution rate is not unusual or unexpected. This is a very different situation from the past when both the member and state contributions were fixed rates.

If all actuarial assumptions are met in future years, the deferred investment experience will be recognized in the actuarial value of assets and will increase the funded ratio of the System. However, future investment experience is expected to vary from year to year, significantly at times given the asset allocation of the Fund. That volatility and how the actual returns unfold from year to year will heavily impact the funding of the System. The following graph compares the potential impact of various investment returns in the short term on the actuarial contribution rate. The three alternate investment return scenarios include: (1) baseline: all assumptions met, (2) return of 0% for 2021 and 6.75% thereafter, and (3) -10% return in 2021 and 6.75% return thereafter.





SECTION I – EXECUTIVE SUMMARY

A typical retirement plan faces many different risks. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions each year and that uncertainty, whether favorable or unfavorable, creates risk. Actuarial Standard of Practice Number 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions. Risk evaluation is an important part of managing a defined benefit plan. Please see Section III of this report for an in-depth discussion of the specific risks facing the State of Iowa Judicial Retirement System.

We note that as we prepare this report, the world is still recovering from the Covid-19 pandemic. We have considered available information, but do not believe that there is yet sufficient data to warrant the modification of any of our long-term assumptions. We will continue to monitor the situation and advise of any adjustments that we believe would be appropriate.

**SECTION I – EXECUTIVE SUMMARY****STATE OF IOWA
JUDICIAL RETIREMENT SYSTEM****SUMMARY OF PRINCIPAL VALUATION RESULTS**

	<u>July 1, 2021</u>	<u>July 1, 2020</u>	<u>% Change</u>
1. SUMMARY OF DATA			
Active Judges	205	206	(0.5%)
Senior Judges and Retired Senior Judges	54	61	(11.5%)
Retired and Disabled Judges	123	112	9.8%
Beneficiaries	53	49	8.2%
Inactive Vested Judges	3	3	0.0%
Total Members	<u>438</u>	<u>431</u>	1.6%
2. PARTICIPANT STATISTICS			
Total Compensation for Plan Year	\$ 30,873,786	\$ 30,108,301	2.5%
Average Compensation	150,604	146,157	3.0%
Average Active Age	55.26	55.38	(0.2%)
Average Active Service	9.57	9.65	(0.8%)
Average Annual Benefit in Receipt	\$ 66,127	\$ 65,972	0.2%
3. ASSET AND LIABILITY INFORMATION			
Actuarial Accrued Liability	\$ 251,237,006	\$ 245,233,479	2.4%
Actuarial Value of Assets	254,241,801	223,840,969	13.6%
Unfunded Actuarial Accrued Liability (UAAL)	(3,004,795)	21,392,510	(114.0%)
Funded Ratio (Actuarial Value)	101.2%	91.3%	10.8%
Market Value of Assets	\$ 310,164,529	\$ 231,485,500	34.0%
Funded Ratio (Market Value)	123.5%	94.4%	30.8%
4. CONTRIBUTION INFORMATION			
Normal Cost	25.69%	25.77%	(0.3%)
UAAL Payment	<u>(0.74%)</u>	<u>9.16%</u>	(108.1%)
Total Actuarial Contribution	24.95%	34.93%	(28.6%)
Less Member Contribution	<u>(9.98%)</u>	<u>(9.35%)</u>	6.7%
State Actuarial Contribution	14.97%	25.58%	(41.5%)
Less State Statutory Contribution	N/A	<u>(30.60%)</u>	N/A
Contribution Shortfall/(Margin)	N/A	(5.02%)	N/A



SECTION II – SUMMARY OF VALUATION RESULTS

TABLE 1
STATEMENT OF CHANGE IN FIDUCIARY NET POSITION

	<u>Year End</u> <u>June 30, 2021</u>	<u>Year End</u> <u>June 30, 2020</u>
Additions		
1. Contributions		
a. State	\$ 9,199,743	\$ 9,210,720
b. Members	2,811,044	2,814,399
c. Total Contributions (a + b)	<u>12,010,787</u>	<u>12,025,119</u>
2. Net Investment Income	\$ 81,920,750	\$ 17,776,168
3. Total Additions (1c + 2)	\$ 93,931,537	\$ 29,801,287
Deductions		
4. Deductions		
a. Benefit Payments	\$ 15,232,808	\$ 14,698,833
b. Administrative Expense	19,700	22,195
c. Total Deductions (a + b)	<u>15,252,508</u>	<u>14,721,028</u>
5. Net Increase (3 – 4c)	\$ 78,679,029	\$ 15,080,259
6. Net Assets Held in Trust for Pension Benefits		
a. Beginning of Year	\$ 231,485,500	\$ 216,405,241
b. End of Year	\$ 310,164,529	\$ 231,485,500



SECTION II – SUMMARY OF VALUATION RESULTS

TABLE 2 DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

As of July 1, 2021

To arrive at a suitable value for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens swings in the market value while still indirectly recognizing market values. This methodology smoothes the volatility of market experience by only recognizing 25% of the difference between the expected value of the actuarial value of assets (based on the actuarial assumptions) and the actual market value.

1. Actuarial Value of Assets as of July 1, 2020	\$ 223,840,969
2. Actual Contribution/Disbursements	
a. Contributions	\$ 12,010,787
b. Benefit Payments and Expenses	(15,252,508)
c. Net	\$ (3,241,721)
3. Expected Value of Assets as of July 1, 2021 [(1) x 1.0675] + [(2c) x (1.0675) ^{1/2}]	\$ 235,600,892
4. Market Value of Assets as of July 1, 2021	\$ 310,164,529
5. Difference Between Market and Expected Values (4) - (3)	\$ 74,563,637
6. Actuarial Value of Assets as of July 1, 2021 (3) + [(5) x 25%]	\$ 254,241,801
7. Actuarial Value of Assets divided by Market Value of Assets (6) / (4)	82.0%
8. Market Value of Assets less Actuarial Value of Assets (4) - (6)	\$ 55,922,728



SECTION II – SUMMARY OF VALUATION RESULTS

TABLE 3
PRESENT VALUE OF FUTURE BENEFITS
AS OF JULY 1, 2021

1. Active employees	
a. Retirement Benefit	\$156,001,927
b. Withdrawal Benefit	82,585
c. Pre-Retirement Death Benefit	1,631,466
d. Total	<u>\$157,715,978</u>
2. Inactive Vested Members	892,099
3. Senior Judges	55,381,771
3. Retired Members	90,559,112
4. Disabled Members	0
5. Beneficiaries	<u>18,185,921</u>
6. Total Present Value of Future Benefits	<u><u>\$322,734,881</u></u>
(1d) + (2) + (3) + (4) + (5)	



SECTION II – SUMMARY OF VALUATION RESULTS

TABLE 4
UNFUNDED ACTUARIAL ACCRUED LIABILITY
as of July 1, 2021

1. Present Value of Future Benefits	
a. Active Employees	\$157,715,978
b. Inactive Employees	<u>165,018,903</u>
c. Total	\$322,734,881
2. Present Value of Future Normal Costs	71,497,875
3. Total Actuarial Accrued Liability (1c) - (2)	251,237,006
4. Actuarial Value of Assets	254,241,801
5. Unfunded Actuarial Accrued Liability (3) - (4)	(\$3,004,795)



SECTION II – SUMMARY OF VALUATION RESULTS

TABLE 5
ACTUARIAL BALANCE SHEET
July 1, 2021

ASSETS

Actuarial value of assets	\$ 254,241,801
Present value of future normal costs	71,497,875
Payments on Unfunded Actuarial Accrued Liability	<u>\$ (3,004,795)</u>
Total Net Assets	\$ 322,734,881

LIABILITIES

Present Value of Projected Benefits:

Active Members	
Retirement Benefits	\$ 156,001,927
Withdrawal Benefits	82,585
Pre-Retirement Death Benefits	1,631,466
Members with Deferred Benefits	892,099
Members Receiving Benefits	<u>\$ 164,126,804</u>
Total Liabilities	\$ 322,734,881



SECTION II – SUMMARY OF VALUATION RESULTS

TABLE 6

**ACTUARIAL GAIN/(LOSS)
Plan Year Ending June 30, 2021**

The actuarial gain/(loss) is comprised of both the liability and the actuarial asset gain/(loss). Each of these represents the difference between the expected and actual values as of July 1, 2021.

1. Expected actuarial accrued liability	
a. Actuarial accrued liability at July 1, 2020	\$ 245,233,479
b. Normal cost for fiscal year ending June 30, 2021	7,328,390
c. Benefit payments for fiscal year ending June 30, 2021	(15,232,808)
d. Interest at 6.75% on (a), (b), and (c)	16,542,213
e. Expected actuarial accrued liability at July 1, 2021	\$ 253,871,274
2. Actuarial accrued liability at July 1, 2021	\$ 251,237,006
3. Actuarial accrued liability gain/(loss) (1e) - (2)	\$ 2,634,268
4. Expected actuarial value of assets	
a. Actuarial value of assets at July 1, 2020	\$ 223,840,969
b. Contributions for fiscal year ending June 30, 2021	12,010,787
c. Benefit payments and expenses for fiscal year ending June 30, 2021	(15,252,508)
d. Interest at 6.75% on (a), (b), and (c)	15,001,644
e. Expected actuarial value of assets at July 1, 2021	\$ 235,600,892
5. Actuarial value of assets at July 1, 2021	\$ 254,241,801
6. Actuarial value of assets gain/(loss) (5) - (4e)	\$ 18,640,909
7. Net actuarial gain/(loss) (3) + (6)	\$ 21,275,177



EXHIBIT 7

ACTUARIAL GAIN/(LOSS) BY SOURCE

The purpose of conducting an actuarial valuation of a retirement plan is to estimate the costs and liabilities for the benefits expected to be paid from the plan, to determine the annual level of contribution for the current plan year that should be made to support these benefits and, finally, to analyze the plan’s experience. The costs and liabilities of this retirement plan depend not only upon the benefit formula and plan provisions but also upon factors such as the investment return on the Fund, mortality rates among active and retired members, withdrawal and retirement rates among active members, rates at which salaries increase and the rate at which the cost of living increases.

The actuarial assumptions employed as to these and other contingencies in the current valuation are set forth in Appendix A of this report.

Since the overall results of the valuation will reflect the choice of assumptions made, periodic studies of the various components of the plan’s experience are conducted in which the experience for each component is analyzed in relation to the assumption used for that component (called an experience study). This summary is not intended to be an actual “experience study” but rather an analysis of sources of gain and loss in the past plan year.

Gain/(Loss) By Source

The System experienced a net actuarial gain on liabilities of \$2,634,000 during the plan year ended June 30, 2021, and an actuarial gain on assets of \$18,641,000. The net actuarial gain was \$21,275,000. The major components of this net actuarial experience gain are shown below:

Liability Sources	<u>Gain/(Loss)</u>
Salary Increases	\$ 581,000
Retirements	(105,000)
Terminations	28,000
Deaths	1,570,000
New Entrants/Rehires	(154,000)
Senior Judges' Benefit Adjustment	513,000
Miscellaneous	201,000
Total Liability Gain/(Loss)	\$ 2,634,000
 Asset Gain/(Loss)	 \$ 18,641,000
 Net Actuarial Gain/(Loss)	 \$ 21,275,000



SECTION II – SUMMARY OF VALUATION RESULTS

TABLE 8

**SUMMARY OF AMORTIZATION BASES
At July 1, 2021**

Amortization Bases	Original Amount	Years Remaining	Outstanding Balance	Amortization Payment*
2021 UAAL Base	(\$3,004,795)	30	<u>(\$3,004,795)</u> (\$3,004,795)	<u>(\$228,507)</u> (\$228,507)
*Amortization Payment reflects mid-year timing.				
Total UAAL Amortization Payment				(\$228,507)
Projected Payroll for Fiscal Year				\$30,873,786
UAAL Amortization Payment Rate				(0.74%)

Note: If the Plan reaches a funded ratio of 100% or more based on the actuarial value of assets, all prior amortization bases are eliminated, and the surplus assets are amortized as a level-dollar amount over 30 years.



TABLE 9

**DETERMINATION OF ACTUARIAL
REQUIRED CONTRIBUTION RATE**

1. Normal Cost	
a. Retirement Benefits	25.26%
b. Pre-Retirement Death Benefits	0.33%
c. Withdrawal Benefits	0.04%
d. Administrative Expenses	0.06%
e. Total	<hr/> 25.69%
2. UAAL Amortization Payment (See Table 8)	(0.74%)
3. Total Actuarial Contribution Rate (1e) + (2)	24.95%
4. Member Contribution Rate [40% of (3)]	9.98%
5. State Actuarial Contribution Rate (3) - (4)	14.97%



SECTION III – RISK CONSIDERATIONS

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September, 2017, Actuarial Standard of Practice Number 51, *Assessment and Disclosure of Risk in Measuring Pension Obligations*, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, was first applicable for the July 1, 2019 actuarial valuation for the State of Iowa Judicial Retirement System (System).

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. If plan assets are depleted, benefits may not be paid which could create legal and litigation risk or the plan could become “pay as you go”. The term “risk” is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

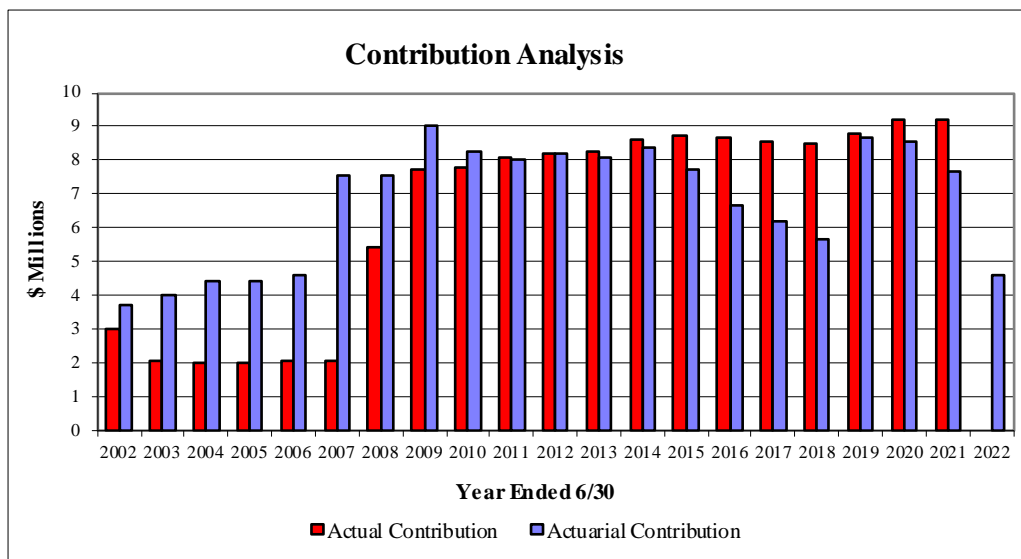
- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- contribution risk, i.e., the potential for contribution rates to be too high for the plan sponsor/employer to pay and
- external risks such as the regulatory and political environment.

Although the last two are risks to the System, ASOP 51 does not require the actuary to opine on these particular risks so no discussion is included here.

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. Prior to the July 1, 2021 valuation, fixed contribution rates to the Judicial Retirement System were made by both the members and the State. In accordance with the System’s funding policy, after reaching 100% funded in the July 1, 2021 actuarial valuation, members will now contribute 40% of the total actuarial contribution rate, while the State contributes the remaining 60%. Contributing the full actuarial contribution rate in the future is key to helping the System maintain its strong funded status. As the following graph illustrates, the statutory state contribution amount has met or exceeded the actuarial required contribution over the last eleven years.



SECTION III – RISK CONSIDERATIONS



The most significant risk factor for the State of Iowa Judicial Retirement System is investment return because of the volatility of returns and the size of plan assets compared to payroll (see Table 10). A perusal of historical returns over 10-20 years reveals that the actual return each year is rarely close to the average return for the same period. This is to be expected, given the underlying capital market assumptions and the System’s asset allocation.

A key demographic risk for all retirement systems, including the State of Iowa Judicial Retirement System, is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect small, continuous improvements in mortality experience over time and these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, as experienced with the COVID-19 pandemic. This type of event is also significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.

The following exhibits summarize some historical information that helps indicate how certain key risk metrics have changed over time. Many are due to the natural maturing of the retirement system over time.



TABLE 10

HISTORICAL ASSET VOLATILITY RATIOS

As a retirement system matures, the size of the market value of assets typically increases relative to the covered payroll of active members, on which the System is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the System. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Actuarial Valuation Date	Market Value of Assets	Estimated Plan Year Payroll	Asset Volatility Ratio	Increase in ACR with a Return 10% Lower than Assumed*
7/1/2007	\$96,618,857	\$24,425,621	3.96	3.22%
7/1/2008	88,197,551	26,662,800	3.31	2.69%
7/1/2009	79,331,934	26,810,700	2.96	2.40%
7/1/2010	91,321,799	25,479,600	3.58	2.91%
7/1/2011	111,571,876	26,402,700	4.23	3.43%
7/1/2012	111,224,878	25,760,100	4.32	3.51%
7/1/2013	128,928,834	28,278,385	4.56	3.70%
7/1/2014	155,974,313	28,534,201	5.47	4.44%
7/1/2015	163,990,416	28,270,390	5.80	4.71%
7/1/2016	161,152,637	28,254,401	5.70	4.63%
7/1/2017	186,971,193	28,403,543	6.58	5.34%
7/1/2018	211,467,232	27,764,403	7.62	6.19%
7/1/2019	216,405,241	29,957,857	7.22	5.86%
7/1/2020	231,485,500	30,108,301	7.69	6.24%
7/1/2021	310,164,529	30,873,786	10.05	8.16%

Note: Years prior to the 7/1/2010 were provided by the prior actuary.

*The impact of asset smoothing is not reflected in the impact on the Actuarial Contribution Rate (ACR). Current year assumptions and a 25 -year amortization period are used for all years shown.

The amount of assets at July 1, 2021 is 10.05 times the covered payroll so underperforming the investment return assumption by 10.00% (i.e., earn -3.25% for one year) is equivalent to an actuarial loss of \$31.0 million or 100.5% of payroll. While the actual impact in the first year is mitigated by the asset smoothing method and amortization of the UAAL, the magnitude of the ultimate contribution increase illustrates the contribution risk associated with volatile investment returns.



TABLE 11

HISTORICAL CASH FLOWS

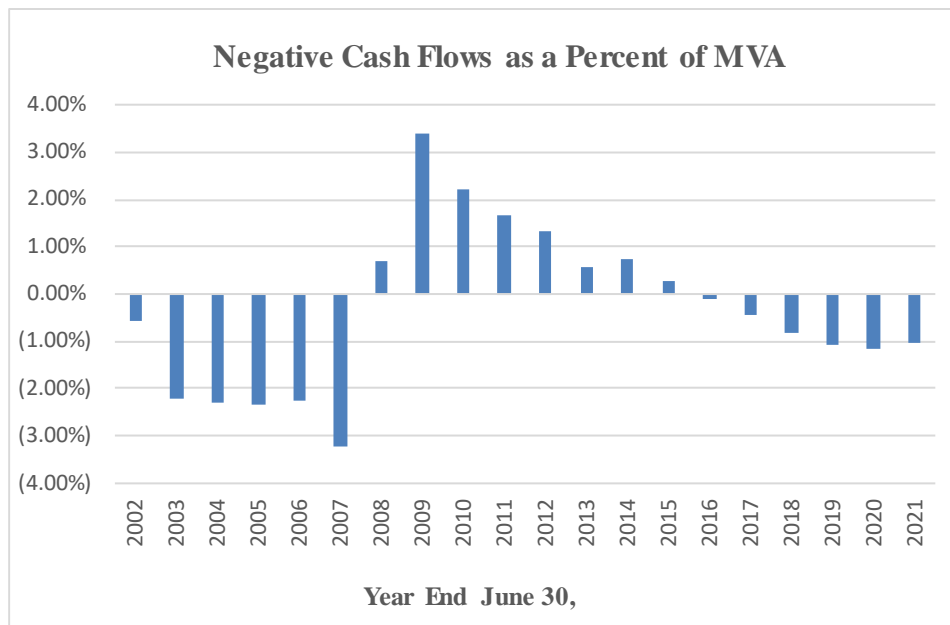
Plans with negative cash flows tend to experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments and the difference must be funded with investment income. Typically a negative cash flow of more than 5% of market value may cause significant concerns. Furthermore, if the System has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow.

Year End	Market Value of Assets (MVA)	Contributions	Benefit Payments and Expenses	Net Cash Flow	Net Cash Flow as a Percent of MVA
6/30/2002	\$67,707,616	\$4,032,862	\$4,405,923	(\$373,061)	(0.55%)
6/30/2003	70,017,875	3,054,742	4,608,714	(1,553,972)	(2.22%)
6/30/2004	78,023,055	3,083,336	4,884,825	(1,801,489)	(2.31%)
6/30/2005	81,605,499	3,081,863	5,000,157	(1,918,294)	(2.35%)
6/30/2006	86,109,848	3,143,508	5,088,523	(1,945,015)	(2.26%)
6/30/2007	96,618,857	2,648,842	5,769,593	(3,120,751)	(3.23%)
6/30/2008	88,197,551	6,875,062	6,271,941	603,121	0.68%
6/30/2009	79,331,934	9,798,356	7,106,038	2,692,318	3.39%
6/30/2010	91,321,799	10,028,413	8,012,509	2,015,904	2.21%
6/30/2011	111,571,876	10,577,454	8,693,772	1,883,682	1.69%
6/30/2012	111,224,878	10,726,016	9,227,546	1,498,470	1.35%
6/30/2013	128,928,834	10,747,940	10,024,506	723,434	0.56%
6/30/2014	155,974,313	11,555,867	10,394,091	1,161,776	0.74%
6/30/2015	163,990,416	11,389,693	10,906,494	483,199	0.29%
6/30/2016	161,152,637	11,314,666	11,479,902	(165,236)	(0.10%)
6/30/2017	186,971,193	11,154,766	11,968,331	(813,565)	(0.44%)
6/30/2018	211,467,232	11,101,178	12,832,255	(1,731,077)	(0.82%)
6/30/2019	216,405,241	11,451,258	13,749,946	(2,298,688)	(1.06%)
6/30/2020	231,485,500	12,025,119	14,721,028	(2,695,909)	(1.16%)
6/30/2021	310,164,529	12,010,787	15,252,508	(3,241,721)	(1.05%)

Note: Years prior to 6/30/2010 were provided by the prior actuary.



TABLE 11
HISTORICAL CASH FLOWS
(continued)



The change from negative to positive cash flows in the middle of this period coincides with increases in the member and State contribution rates. The member contribution rate increased to 7.7% of pay effective July 1, 2008, 8.7% effective July 1, 2009, and 9.35% effective July 1, 2010 until the System attained fully funded status in 2021. Thereafter, the member contribution rate is 40% of the total actuarial contribution rate for future years. The State’s required contribution rate was 23.7% of pay, but beginning July 1, 2008 was increased to 30.6% of pay until the System attained fully funded status in 2021. Thereafter, the State contribution rate is 60% of the total actuarial contribution rate. Given the significant combined contribution rate prior to July 1, 2021, there have been small negative cash flows from July 1, 2015 through June 30, 2021. However, now that the System has reached 100% funded, future contributions are expected to be significantly lower. Consequently, negative cash flows are expected to be a greater risk in the future.



TABLE 12

LIABILITY MATURITY MEASUREMENTS

Most public sector retirement systems have been in operation for many years. As a result, they have aging plan populations, and in some cases declining active populations, resulting in an increasing ratio of retirees to active members and a growing percentage of retiree liability. With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the system because it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread costs.

Year End	Retiree Liability (a)	Total Actuarial Accrued Liability (b)	Retiree Percentage (a) / (b)
6/30/2007	\$55,989,010	\$138,662,253	40.4%
6/30/2008	60,487,993	141,364,072	42.8%
6/30/2009	69,225,049	151,029,371	45.8%
6/30/2010	80,531,008	156,029,125	51.6%
6/30/2011	86,757,124	164,511,490	52.7%
6/30/2012	94,627,210	170,232,283	55.6%
6/30/2013	96,676,981	178,725,295	54.1%
6/30/2014	99,174,350	183,915,864	53.9%
6/30/2015	102,063,335	186,269,470	54.8%
6/30/2016	107,719,863	190,933,661	56.4%
6/30/2017	113,167,558	198,233,533	57.1%
6/30/2018	144,164,726	235,143,470	61.3%
6/30/2019	156,028,897	243,632,678	64.0%
6/30/2020	160,673,845	245,233,479	65.5%
6/30/2021	164,126,804	251,237,006	65.3%

Note: Years prior to the 6/30/2010 were provided by the prior actuary.

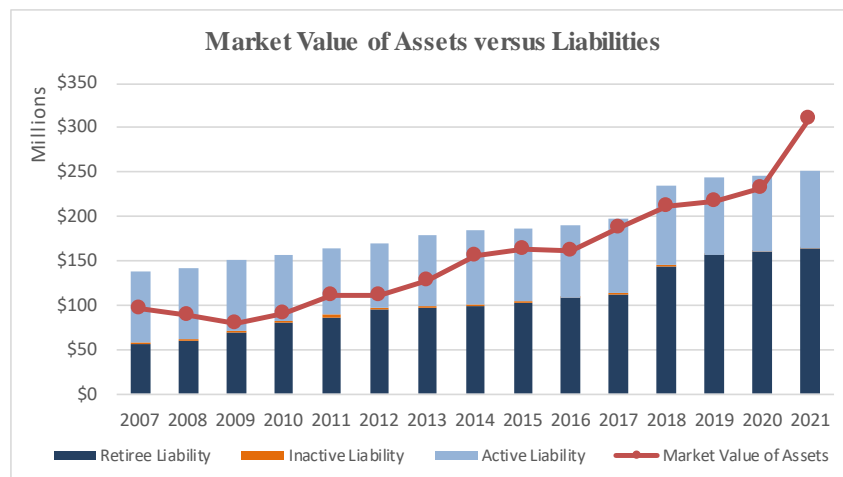


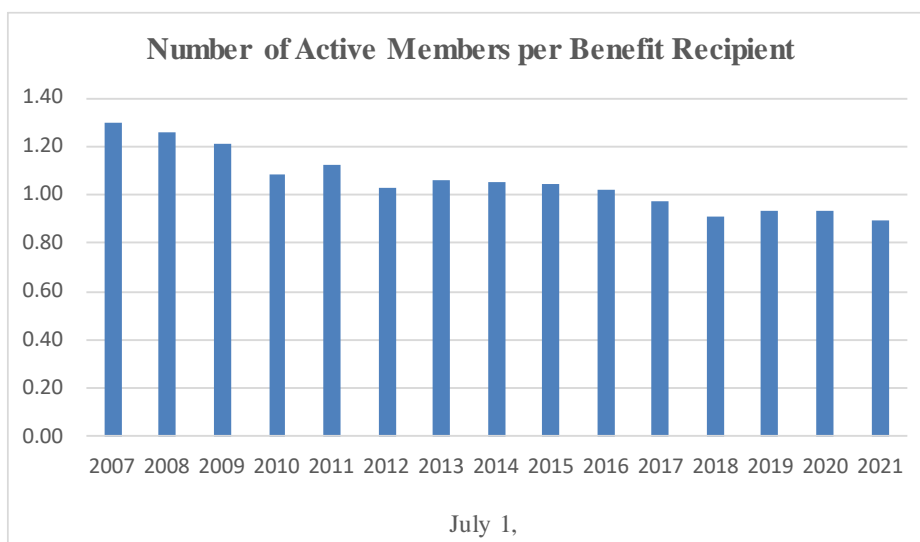


TABLE 13
HISTORICAL MEMBER STATISTICS

Valuation Date July, 1	Active Members	Payroll	Payroll Increase	Retired Members*	Active/Retired
2007	196	\$24,425,621		151	1.30
2008	199	26,662,800	9.16%	158	1.26
2009	200	26,810,700	0.55%	165	1.21
2010	190	25,479,600	(4.96%)	176	1.08
2011	197	26,402,700	3.62%	176	1.12
2012	192	25,760,100	(2.43%)	186	1.03
2013	202	28,278,385	9.78%	191	1.06
2014	204	28,534,201	0.90%	195	1.05
2015	202	28,270,390	(0.92%)	195	1.04
2016	202	28,254,401	(0.06%)	198	1.02
2017	198	28,403,543	0.53%	204	0.97
2018	194	27,764,403	(2.25%)	214	0.91
2019	205	29,957,857	7.90%	220	0.93
2020	206	30,108,301	0.50%	222	0.93
2021	205	30,873,786	2.54%	230	0.89

*Includes Senior Judges

Note: Years prior to 7/1/2010 were provided by prior actuary.





SECTION III – RISK CONSIDERATIONS

TABLE 14

COMPARISON OF VALUATION RESULTS UNDER ALTERNATE INVESTMENT RETURN ASSUMPTIONS (\$ In Thousands)

This exhibit compares the key July 1, 2021 valuation results under five (5) different investment return assumptions to illustrate the impact of different assumptions on the funding of the System. Note that only the investment return assumption is changed, as identified in the heading below. All other assumptions are unchanged for purposes of this analysis.

Table with 6 columns: Investment Return Assumption, 6.25%, 6.50%, 6.75%, 7.00%, 7.25%. Rows include Contributions (Total Normal Cost, Unfunded Actuarial Accrued Liability, Total Actuarial Contribution), Member Contributions (Member Contributions, State Statutory Contributions), Contribution Shortfall/(Margin), and Actuarial Accrued Liability, Actuarial Value of Assets, Unfunded Actuarial Accrued Liability, Funded Ratio.

Note: All other assumptions are unchanged for purposes of this sensitivity analysis. Numbers may not add due to rounding.



SECTION IV – OTHER INFORMATION

TABLE 15
SCHEDULE OF FUNDING PROGRESS
(In Thousands)

Actuarial Valuation Date	Actuarial Value of Assets¹ (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL/ Covered Payroll ((b-a)/c)
July 1, 2005	\$81,605	\$105,472	\$23,867	77%	\$20,684	115%
July 1, 2006	86,110	123,670	37,560	70%	24,094	156%
July 1, 2007	96,619	138,662	42,043	70%	24,426	172%
July 1, 2008	88,198	141,364	53,166	62%	26,663	199%
July 1, 2009	93,045	151,029	57,984	62%	26,811	216%
July 1, 2010	99,416	156,029	56,613	64%	25,480	222%
July 1, 2011	109,512	164,511	54,999	67%	26,403	208%
July 1, 2012	117,272	170,232	52,960	69%	25,760	206%
July 1, 2013	127,353	178,725	51,372	71%	28,278	182%
July 1, 2014	142,589	183,916	41,327	78%	28,534	145%
July 1, 2015	156,347	186,269	29,922	84%	28,270	106%
July 1, 2016	166,230	190,934	24,704	87%	28,254	87%
July 1, 2017	180,147	198,234	18,087	91%	28,404	64%
July 1, 2018	196,781	235,143	38,362	84%	27,764	138%
July 1, 2019	209,888	243,633	33,745	86%	29,958	113%
July 1, 2020	223,841	245,233	21,392	91%	30,108	71%
July 1, 2021	254,242	251,237	(3,005)	101%	30,874	-10%

¹ The actuarial value of assets was changed from pure market value to the expected value plus 25% of the difference between actual and expected value effective with the July 1, 2009 valuation.

Note: Results before July 1, 2010 were calculated by the prior actuary
Numbers may not add due to rounding.



TABLE 16
SCHEDULE OF EMPLOYER CONTRIBUTIONS

<u>Fiscal Year Ended</u>	<u>Actuarial Required Contribution</u>	<u>Actual Employer Contribution</u>	<u>Percentage of ARC Contributed</u>
June 30, 2005	\$4,418,900	\$2,039,664	46%
June 30, 2006	4,966,452	2,039,664	41%
June 30, 2007	7,597,352	2,039,664	27%
June 30, 2008	7,705,698	5,450,963	71%
June 30, 2009	8,539,188	7,720,271	90%
June 30, 2010	7,857,421	7,806,398	99%
June 30, 2011	8,307,680	8,101,876	98%
June 30, 2012	8,364,471	8,215,668	98%
June 30, 2013	8,444,509	8,232,461	97%
June 30, 2014	8,376,176	8,630,064	103%
June 30, 2015	7,709,058	8,724,008	113%
June 30, 2016	6,667,006	8,666,541	130%
June 30, 2017	6,201,427	8,544,064	138%
June 30, 2018	5,688,134	8,503,024	149%
June 30, 2019	8,673,714	8,771,171	101%
June 30, 2020	8,566,572	9,210,720	108%
June 30, 2021	7,690,504	9,199,743	120%



APPENDIX A
ACTUARIAL ASSUMPTIONS AND METHODS



APPENDIX A – ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions

<i>Interest</i>	6.75% per annum.										
<i>Mortality</i>	RP-2014 White Collar Mortality Tables with a two year age set back and generational improvements using MP-2017.										
<i>Turnover</i>	1.00% per year for all participants under age 45.										
<i>Rate of Disablement; Disabled Life Mortality</i>	No incidence of disability was assumed.										
<i>Salary Increases</i>	Salaries will increase 3.75% per year.										
<i>Incidence of Retirement</i>	The following table indicates the assumed rate of retirement at each age.										
	<table> <thead> <tr> <th><u>Age</u></th> <th><u>Rate</u></th> </tr> </thead> <tbody> <tr> <td>50 - 59</td> <td>3%</td> </tr> <tr> <td>60 - 64</td> <td>12%</td> </tr> <tr> <td>65 - 71</td> <td>20%</td> </tr> <tr> <td>72</td> <td>100%</td> </tr> </tbody> </table>	<u>Age</u>	<u>Rate</u>	50 - 59	3%	60 - 64	12%	65 - 71	20%	72	100%
<u>Age</u>	<u>Rate</u>										
50 - 59	3%										
60 - 64	12%										
65 - 71	20%										
72	100%										
	Inactive vested members are assumed to begin receiving benefits at age 65.										
<i>Spouse's Benefit</i>	85% of employees were assumed married, with the female spouse four years younger.										
<i>Form of Payment</i>	Retirees missing a form of payment were assumed eligible for a 50% Joint & Survivor benefit if a spouse date of birth was provided.										
<i>Internal Revenue Service Limits on Recognized Pay</i>	The limit is assumed to increase based on cost of living increases of 2.60% per year.										
<i>Retiring Judges Electing Senior Judge Status</i>	80%, with 60% relinquishing after 6 years if before 78. Senior Judges must relinquish after 6 years (does not apply to judges with more than 20 years of service at January 1, 2018).										
<i>Adjustment to Benefit for Senior Judges</i>	<table> <thead> <tr> <th><u>Became Senior Judge</u></th> <th><u>Adjustment</u></th> </tr> </thead> <tbody> <tr> <td>Before 1/1/93</td> <td>3.75% for life</td> </tr> <tr> <td>1/1/93 to 7/1/94</td> <td>3.75% to age 78</td> </tr> <tr> <td>7/1/94 and later</td> <td>3.00% to age 78</td> </tr> </tbody> </table>	<u>Became Senior Judge</u>	<u>Adjustment</u>	Before 1/1/93	3.75% for life	1/1/93 to 7/1/94	3.75% to age 78	7/1/94 and later	3.00% to age 78		
<u>Became Senior Judge</u>	<u>Adjustment</u>										
Before 1/1/93	3.75% for life										
1/1/93 to 7/1/94	3.75% to age 78										
7/1/94 and later	3.00% to age 78										
<i>Decrement Timing</i>	Middle of year										
<i>Administrative Expense Load</i>	0.06% of covered payroll										



APPENDIX A – ACTUARIAL ASSUMPTIONS AND METHODS

Asset Valuation Method

The market value of assets, representing a fair value of System assets, may not necessarily be the best measure of the System's ongoing ability to meet its obligations.

To arrive at a suitable value for the actuarial valuation, a technique for determining the actuarial value of assets is used which dampens volatility in the market value while still indirectly recognizing market value. The specific technique follows:

- Step 1:** Determine the expected value of plan assets at the current valuation date using the actuarial value of assets from the prior valuation, the actuarial assumption for investment return and the actual receipts and disbursements of the fund for the previous 12 months.
- Step 2:** Subtract the expected value determined in Step 1 from the total market value of the Fund at the current valuation date.
- Step 3:** Multiply the difference between market and expected values determined in Step 2 by 25%.
- Step 4:** Add the expected value of Step 1 and the product of Step 3 to determine the actuarial value of assets.

Actuarial Cost Method

Liabilities and contributions shown in this report are computed using the Individual Entry Age Normal method of funding.

Sometimes called the “funding method”, this is a particular technique used by actuaries for establishing the amount of the annual actuarial cost of pension benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily the annual contribution to the System is comprised of (1) the normal cost and (2) an amortization payment on the unfunded actuarial accrued liability.

Under the Entry Age Actuarial Cost Method, the **Normal Cost** is computed as the level percentage of pay which, if paid from the earliest time each member would have been eligible to join the System if it then existed (thus, entry age) until his retirement or termination, would accumulate with interest at the rate assumed in the valuation to a fund sufficient to pay all benefits under the System.

The **Actuarial Accrued Liability** under this method at any point in time is the theoretical amount of the fund that would have accumulated had annual contributions equal to the normal cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date). The **Unfunded Actuarial Accrued Liability** is the excess of the actuarial accrued liability over the actuarial value of System assets on the valuation date.

Under this method experience gains or losses, i.e. decreases or increases in accrued liabilities attributable to deviations in experience from the actuarial assumptions, adjust the unfunded actuarial accrued liability.



APPENDIX A – ACTUARIAL ASSUMPTIONS AND METHODS

Amortization Method

Level-Dollar Amortization Method

The amount to be amortized is divided into equal dollar amounts to be paid over a given number of years; part of each payment is interest and part is principal (similar to a mortgage payment). Because payroll can be expected to increase as a result of inflation, level-dollar payments generally represent a decreasing percentage of payroll.

Amortization Period

The unfunded actuarial accrued liability is amortized a “layered” approach. Under the current method, annual changes in the UAAL due to actuarial experience gain/losses, benefit changes or assumption changes are amortized over a closed 25-year period, each with their own individual payment schedules. If the UAAL is less than or equal to zero, then all prior bases shall be eliminated, and the surplus (assets in excess of actuarial accrued liability) shall be amortized over an open 30-year period as of the actuarial valuation date.



APPENDIX B
SUMMARY OF PLAN PROVISIONS



APPENDIX B – SUMMARY OF PLAN PROVISIONS

STATE OF IOWA JUDICIAL RETIREMENT SYSTEM

Summary of Plan Provisions

An actuarial valuation involves the projection of the amount and timing of future benefit payments. Summarized below are the principal provisions of the plan which were used to estimate future benefit payments.

<i>Credited Service</i>	All years of service as a judge are credited.
<i>Average Monthly Salary</i>	Average monthly basic salary for highest three years as a judge. Each year's pay is limited to the compensation limit in Section 401(a)(17) of the Internal Revenue Code.
<i>Accrued Benefit</i>	The benefit payable at Normal Retirement Date which the judge has earned based on average salary and credited service to date.
<i>Normal Form</i>	The normal form of payment is an annuity payable for the life of the judge with one-half such amount payable to an eligible surviving spouse with a guarantee that payments totaling at least the amount of the judge's contributions will be made.
<i>Eligible Spouse</i>	A spouse is eligible if married to the judge for at least the one year preceding death.
<i>Retirement Eligibility</i>	Age 65 with a minimum of four years of service or 20 years of service and age 50.
<i>Mandatory Retirement Date</i>	Age 72 for active judges. Age 78 for judges participating in the Senior Judge Program.
<i>Monthly Retirement Benefit</i>	Effective July 1, 2006, 3.25% of Average Monthly Salary times years of credited service subject to a maximum of 65% of final earnings. Prior to 2006 the formula was 3% of average monthly salary times years of service subject to a maximum of 50% until July 1, 1998, 52% from July 1, 1998 until June 30, 2000, 56% from July 1, 2000 to June 30, 2001, 60% effective July 1, 2001. Commencing July 1, 1992, a judge or a survivor of a judge who retired before June 1, 1977, shall receive a minimum monthly annuity payment of \$500.
<i>Disability Retirement</i>	Upon total and permanent disability with a minimum of four years of credited service, the Judge receives the accrued benefit.
<i>Vesting</i>	100% vesting for voluntary terminations after 4 years of credited service (6 years prior to July 1, 2006). 100% vesting for Judges' contributions at all times.



APPENDIX B – SUMMARY OF PLAN PROVISIONS

<i>Pre-Retirement Death Benefit</i>	Four years of service required. The death benefit payable to an eligible spouse is one-half the accrued benefit at the date of death. The death benefit shall commence on the later of the date of death or the date the spouse reaches age 60.
<i>Judge's Required Contribution Rate</i>	July 1, 2008, 7.7% of pay. Effective July 1, 2009, 8.7% of pay. Effective July 1, 2010 and for each subsequent fiscal year until the System attains fully funded status, 9.35% of pay. Due to reaching fully funded status with the July 1, 2021 valuation, the member contribution rate is 40% of the actuarially required contribution rate.
<i>State's Required Contribution Rate</i>	For the fiscal year beginning July 1, 2008, and for each subsequent fiscal year until the system attains fully funded status, 30.6% of pay. Due to reaching fully funded status with the July 1, 2021 valuation, the State contribution rate is 60% of the actuarially required contribution rate.
<i>Senior Judge Program</i>	<p>Upon retirement, a judge may elect to work as a Senior Judge for 13 weeks per year with an annual salary set by the legislature and a monthly annuity. In addition to an annual salary, Senior Judges receive an increase in retirement benefit when active judges receive salary increases.</p> <p>Effective January 1, 2018, a judge must be 62 years of age or older at the time the judge assumes senior status. Senior Judges may only serve for a total of six years and shall cease holding office upon reaching 78 years of age. These requirements do not apply to judges who had 20 years of service prior to January 1, 2018.</p>
<i>Annuity for Senior Judges and Retired Senior Judges</i>	<p>(a) Judges retiring and becoming Senior Judges before January 1, 1993:</p> <p>The annuity for all Senior Judges or retired Senior Judges will be equal to 3% of the current base salary of the office in which the judge last served before retirement as a judge or Senior Judge, multiplied by the judge's years of service prior to retirement as a judge, subject to a maximum of 50% of such current base salary.</p> <p>(b) Judges retiring and becoming Senior Judges on or after January 1, 1993 and before July 1, 1994:</p> <p>The annuity is the same as (a) above, except that the annuity will increase only until the year in which the judge attains age 78. At that point, it will remain the same until the judges' death.</p>



APPENDIX B – SUMMARY OF PLAN PROVISIONS

- (c) Judges retiring and becoming Senior Judges on or after July 1, 1994:

The annuity is the same as (b) above, except that the percentage increase of the annuity each year is only 75% of the amount that it would have been under (b).

- (d) Judges retiring and becoming Senior Judges on or after July 1, 1998:

The annuity is the same as (c) above, except that the maximum benefit is 52% of the current base salary.

- (e) Judges retiring and becoming Senior Judges on or after July 1, 2000:

The annuity is the same as (d) above, except that the maximum benefit is 56% of the current base salary.

- (f) Judges retiring and becoming Senior Judges on or after July 1, 2001:

The annuity is the same as (e) above, except that the maximum benefit is 60% of the current base salary.

- (g) Judges retiring and becoming Senior Judges on or after July 1, 2006: The percentage multiplier is 3.25% per year of service and the maximum benefit is 65% of the current base salary.



APPENDIX C
SYSTEM MEMBERSHIP INFORMATION



APPENDIX C – SYSTEM MEMBERSHIP INFORMATION

RECONCILIATION OF MEMBER STATUS

From July 1, 2020 to July 1, 2021

	<u>Active Members</u>	<u>Inactive Vesteds</u>	<u>Senior Judge*</u>	<u>Retired Members**</u>	<u>Disabled Members</u>	<u>Beneficiaries</u>	<u>Total</u>
Members as of July 1, 2020	206	3	61	118	0	43	431
New Entrants	9	0	0	1	0	4	14
Non-vested Terminations	0	0	0	0	0	0	0
Vested Terminations	(1)	1	0	0	0	0	0
Senior Judge Status	(5)	0	5	0	0	0	0
Relinquished Senior Judge Status	0	0	(10)	10	0	0	0
Retirement	(3)	(1)	0	4	0	0	0
Deceased	(1)	0	(2)	(3)	0	(1)	(7)
Benefit Ended	0	0	0	0	0	0	0
Data Adjustments	0	0	0	0	0	0	0
Members as of July 1, 2021	205	3	54	130	0	46	438

*Senior Judges include both those serving as Senior Judges as well as those still entitled to future benefit increases.

**Includes QDRO's



APPENDIX C – SYSTEM MEMBERSHIP INFORMATION

ACTIVE MEMBERS AS OF JULY 1, 2021

Age	Number of Employees			Compensation for Plan Year		
	Male	Female	Total	Male	Female	Total
under 30	0	0	0	\$ 0	\$ 0	\$ 0
30-34	0	0	0	0	0	0
35-39	10	3	13	1,497,919	447,654	1,945,573
40-44	13	11	24	1,922,618	1,635,659	3,558,277
45-49	9	5	14	1,371,658	688,700	2,060,358
50-54	27	23	50	4,109,234	3,472,189	7,581,423
55-59	24	9	33	3,512,364	1,374,528	4,886,892
60-64	28	12	40	4,292,887	1,773,400	6,066,287
65-69	22	5	27	3,340,187	774,786	4,114,973
70 & up	4	0	4	660,003	0	660,003
Totals	137	68	205	\$20,706,870	\$10,166,916	\$30,873,786

ACTIVE AGE / SERVICE DISTRIBUTION AS OF JULY 1, 2021

Age	Years of Service								Total Count
	0-4 Count	5-9 Count	10-14 Count	15-19 Count	20-24 Count	25-29 Count	30-34 Count	35+ Count	
under 30	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0
35-39	12	1	0	0	0	0	0	0	13
40-44	17	6	1	0	0	0	0	0	24
45-49	10	2	1	1	0	0	0	0	14
50-54	17	19	12	2	0	0	0	0	50
55-59	7	6	10	5	4	1	0	0	33
60-64	2	11	11	4	7	4	1	0	40
65-69	1	5	7	10	3	1	0	0	27
70 & up	0	0	1	1	1	0	0	1	4
Totals	66	50	43	23	15	6	1	1	205



APPENDIX C – SYSTEM MEMBERSHIP INFORMATION

**INACTIVE VESTED MEMBERS
as of July 1, 2021**

Age	Number of Members			Annual Benefit		
	Male	Female	Total	Male	Female	Total
under 30	0	0	0	\$ 0	\$ 0	\$ 0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	0	0	0	0	0	0
45-49	0	0	0	0	0	0
50-54	0	0	0	0	0	0
55-59	1	1	2	17,606	25,950	43,556
60-64	1	0	1	48,546	0	48,546
65-69	0	0	0	0	0	0
70 & up	0	0	0	0	0	0
Totals	2	1	3	\$66,152	\$25,950	\$92,102



APPENDIX C – SYSTEM MEMBERSHIP INFORMATION

RETIREES AND BENEFICIARIES
as of July 1, 2021

Age	Number of Members				Annual Benefit			
	Retired*	Senior	Beneficiaries	Total	Retired	Senior	Beneficiaries	Total
under 55	0	0	1	1	\$ 0	\$ 0	\$54,226	\$54,226
55 to 59	0	1	1	2	0	92,631	33,859	126,490
60 to 64	5	1	5	11	452,004	97,500	103,376	652,880
65 to 69	14	17	11	42	886,229	1,508,993	598,437	2,993,659
70 to 74	43	21	7	71	3,383,283	1,820,706	336,002	5,539,991
75 to 79	32	2	6	40	2,222,693	196,719	218,393	2,637,805
80 to 84	10	6	7	23	689,798	471,194	278,901	1,439,893
85 to 89	12	3	9	24	493,436	201,858	400,939	1,096,233
90 to 94	7	2	5	14	274,864	132,683	173,099	580,646
95 to 99	0	1	1	2	0	57,838	29,455	87,293
100 & over	0	0	0	0	0	0	0	0
Totals	123	54	53	230	\$8,402,307	\$4,580,122	\$2,226,687	\$15,209,116

* Includes disabled members, if any.



**IOWA JUDICIAL RETIREMENT SYSTEM
CERTIFICATION**

We have prepared an actuarial valuation of the Iowa Judicial Retirement System as of July 1, 2021, for the fiscal year ending June 30, 2022. The results of the valuation are set forth in this addendum, which reflects the benefit provisions in effect on July 1, 2021.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the System’s staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete, or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

The results in this Addendum have been prepared for the sole purpose of providing the information required under Chapter 97 D.5 of the Iowa code. Calculations are based on the following prescribed methods:

- Actuarial cost method: Entry Age Normal
- Amortization method: Level percent of payroll
- Amortization period: 30 years, open period

All other assumptions, methodologies, and System provisions used are consistent with those used in the regular July 1, 2021 valuation for the Iowa Judicial Retirement System.

The results shown in this Addendum are not consistent with those in the regular July 1, 2021 valuation. The July 1, 2021 valuation results were determined in accordance with generally accepted actuarial principles and practices that are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying opinion and supporting recommendations of the American Academy of Actuaries. The results shown in this Addendum are not necessarily based on the methodologies adopted by the System.

We are available to answer any questions on the material contained in this report, or to provide explanations or further details as may be appropriate.

The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report.



Patrice A. Beckham, F.S.A.

November 8, 2021

Date



Bryan K. Hoge, F.S.A.

November 8, 2021

Date



IOWA JUDICIAL RETIREMENT SYSTEM
SUMMARY OF VALUATION RESULTS UNDER PRESCRIBED METHODOLOGY

This addendum report has been prepared to present the results of a valuation of the State of Iowa Judicial Retirement System as of July 1, 2021, based on the prescribed methodology under current statutes and regulations issued there under.

The unfunded actuarial accrued liability has been amortized as a level percent of payroll over 30 years. The payroll growth assumption used was 3.75%.

A summary of principal valuation results from the current and the prior valuation follows:

Table with 3 columns: Actuarial Valuation as of, July 1, 2021, July 1, 2020. Rows include Summary of Costs (Normal cost, UAAL amortization, Total, Less Employee Contribution Rate, State Required Contribution), Funded Status (Actuarial accrued liability, Actuarial value of assets, Unfunded actuarial accrued liability, Funded Ratio), and Asset Values (Market value of assets (MVA), Actuarial value of assets (AVA), MVA/AVA).