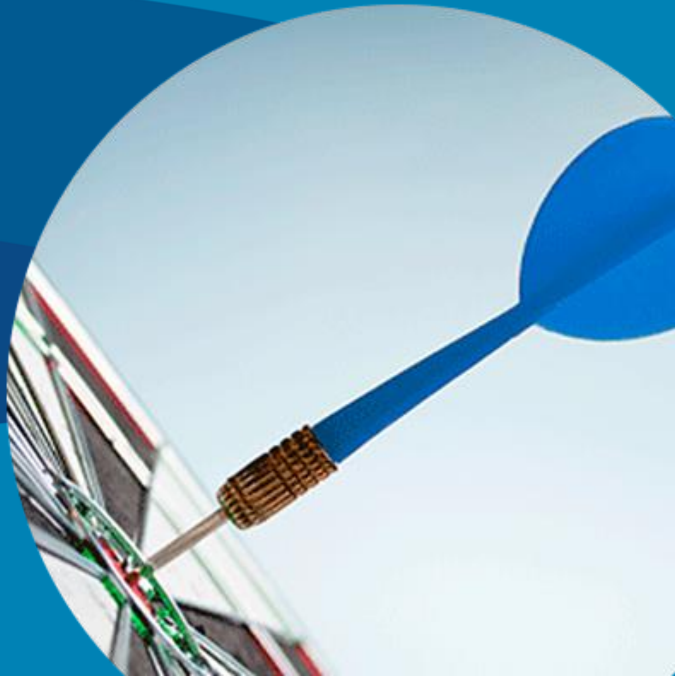
Judges' Retirement System of Illinois

Valuation Results as of June 30, 2019

October 25, 2019



Agenda

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  - Contribution shortfalls
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- Appendix B: Membership Data

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Valuation Results: Change in Actuarial Assumptions

- The JRS Board approved the following assumptions for use in the current valuation:
  - **Investment return**: The assumed rate of return was reduced from 6.75 percent to 6.50 percent.
  - **Price inflation**: The rate of price inflation was reduced from 2.50 percent to 2.25 percent.
  - **Wage inflation assumption**: The wage inflation assumption was reduced from 2.75 percent to 2.50 percent, which reflects an underlying general price inflation assumption of 2.25 percent.
  - **Salary increase assumption**: Salary increase rates were reduced.

Valuation Results: Change in Actuarial Assumptions

  - **Mortality rates**: Mortality tables were updated to the Pub-2010 Above-Median Income General Healthy Retiree and Employee Mortality Tables with adjustments for the System’s credibility factors and future mortality improvements using scale MP-2018.
  - **Normal and Early retirement rates**: Rates were updated to better reflect observed experience.
  - **Turnover rates**: Rates were updated to better reflect observed experience.
- The change in actuarial assumptions decreased the actuarial accrued liability as of June 30, 2019, by $37.7 million.

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Valuation Results: Funded Status ($ in millions)

	June 30, 2019	June 30, 2018
Actuarial Accrued Liability	**$2,793.0**	**$2,721.9**
Market Value of Assets (MVA)	**$1,073.1**	**$1,012.5**
Unfunded Actuarial Accrued Liability - MVA Basis	**$1,719.9**	**$1,709.4**
Funded Ratio - MVA Basis	**38.42%**	**37.20%**
Actuarial Value of Assets (AVA)	**$1,068.7**	**$1,012.8**
Unfunded Actuarial Accrued Liability - AVA Basis	**$1,724.3**	**$1,709.1**
Funded Ratio - AVA Basis	**38.26%**	**37.21%**

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Valuation Results: Change in Funded Ratio

Funded Ratio 6/30/2018	**37.21%**
Expected [1]	**1.65%**
Contribution Shortfall	**-0.34%**
Liability Experience	**-0.48%**
Assumption Changes	**0.52%**
Asset Experience (5.95% Return on AVA)	**-0.30%**
Funded Ratio 6/30/2019	**38.26%**

[1] *Assumes total contributions equal to normal cost plus interest.*

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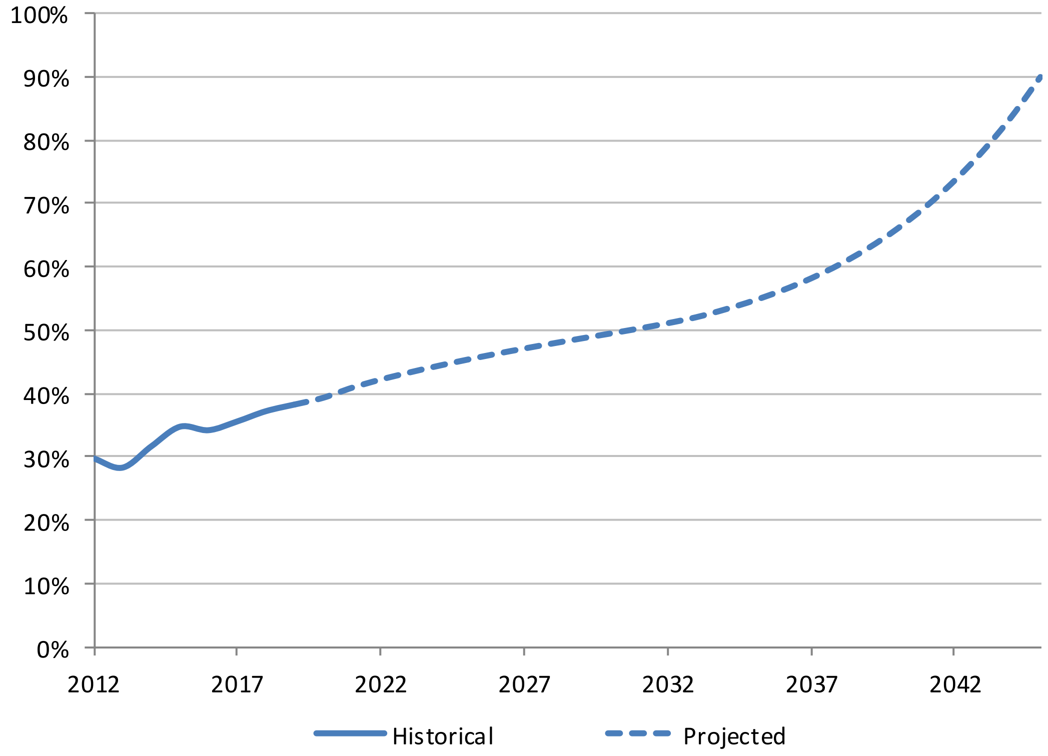
Valuation Results: Historical/Projected Funded Ratios



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Valuation Results: Cash Flow Comparison ($ in millions)

	FYE 2019	Projected FYE 2020	Projected FYE 2021	Projected FYE 2022	Projected FYE 2023
Employer Contribution	**$136.0**	**$144.2**	**$148.6**	**$151.5**	**$150.3**
Employee Contribution	**$14.3**	**$13.8**	**$14.1**	**$14.0**	**$13.9**
Benefits	**($148.6)**	**($170.2)**	**($177.7)**	**($185.4)**	**($193.5)**
Expenses	**($0.9)**	**($1.0)**	**($1.0)**	**($1.0)**	**($1.0)**
Net Cash Flow	**$0.8**	**($13.2)**	**($16.0)**	**($20.9)**	**($30.3)**

- After 2019, benefits are projected to exceed State and employee contributions.
- From 2020 to 2033, the percentage of investment income needed to pay ongoing benefits is projected to increase from approximately 19 percent to 88 percent.
  - This implies that a lower level of investment income is projected to be available for potential asset growth.

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Valuation Results:
Contribution Requirements ($ in millions)

FY 2021 State contribution	Amount	Rate
Basic Funding	$ 148.6	94.246%

Compares to FY 2020 contribution	Amount	Rate
Basic Funding	$ 144.2	91.851%

Valuation Results: Contribution Shortfalls ($ in millions)

FY 2021	Amount	Rate
Annual Determined Contribution	$ 173.2	109.838%
Basic funding	148.6	94.246%
Difference	$ 24.6	15.592%

FY 2020	Amount	Rate
Annual Determined Contribution	$ 173.7	110.675%
Basic funding	144.2	91.851%
Difference	$ 29.5	18.824%

- The Actuarially Determined Contribution (ADC), is equal to the Normal Cost plus a 25-year level percent of capped payroll closed-period amortization of the Unfunded Actuarial Accrued Liability. As of June 30, 2019, the remaining amortization period is 21 years.

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Experience Study

- Pursuant to Public Act 99-0232, JRS is required to conduct an actuarial experience review once every three years. Under this schedule, an experience review for the period from July 1, 2018 through June 30, 2021, will be performed after completion of the June 30, 2021, actuarial valuation with expected implementation of the recommended assumptions beginning with the June 30, 2022, actuarial valuation.

Summary

- The gain loss analysis for plan year ending 2019 showed that contribution shortfalls, unfavorable asset returns and other demographic losses were partially offset by changes to the actuarial assumptions. The result is an increase in funded ratio and an increase in the State's required contribution.
- Funded ratio is projected to increase slowly from 38.3% in 2019 to 52.1% in 2033, and then increases rapidly to 90% by 2045.

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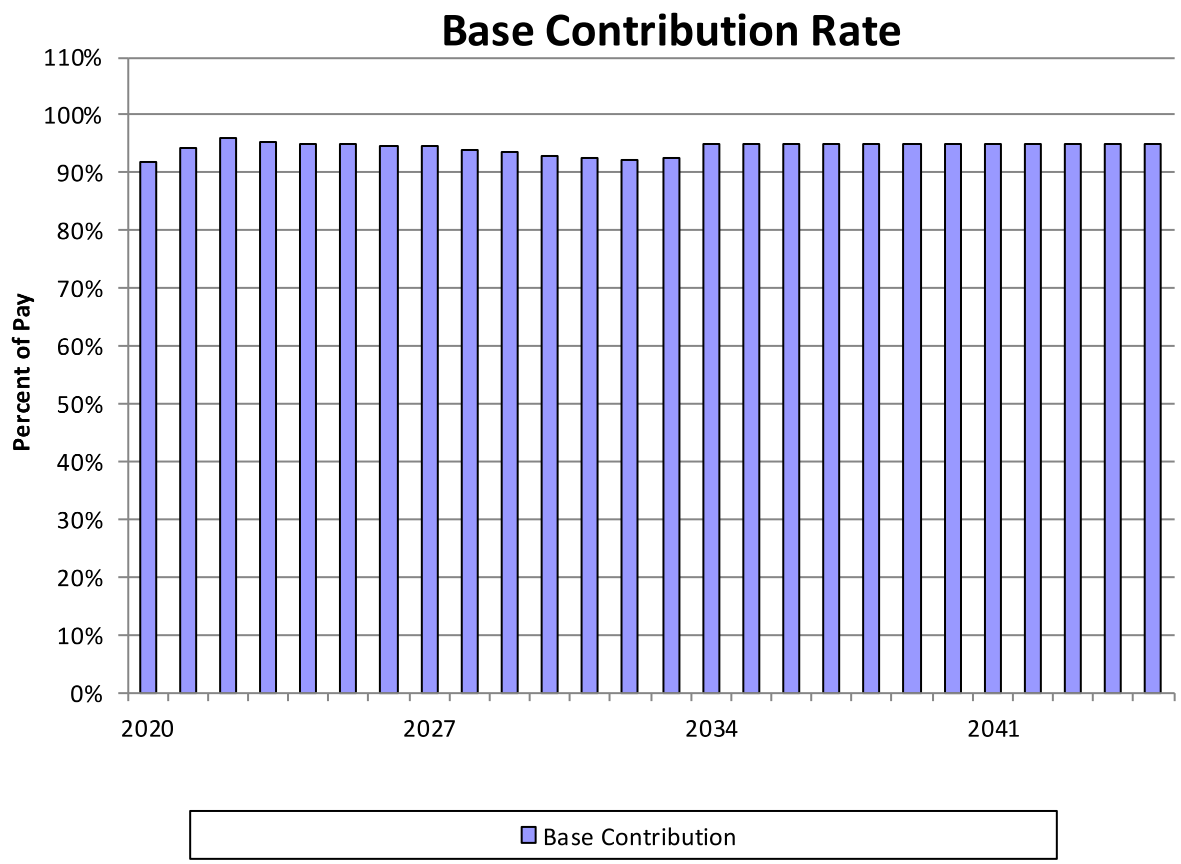
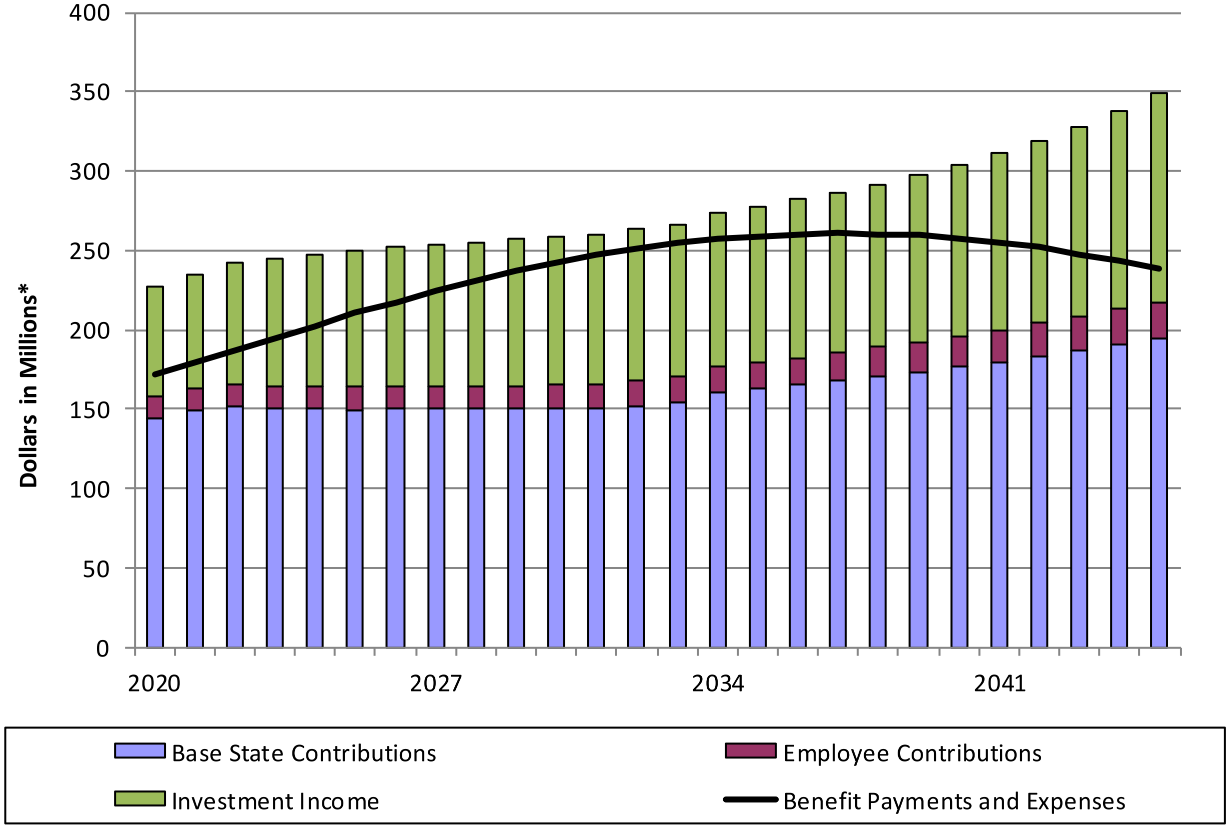
APPENDIX A: PROJECTION RESULTS

Projection Results: Phase-in of investment losses in the AVA and Contribution Rate Variances due to Smoothing of Changes in Assumptions: Contributions – Rate

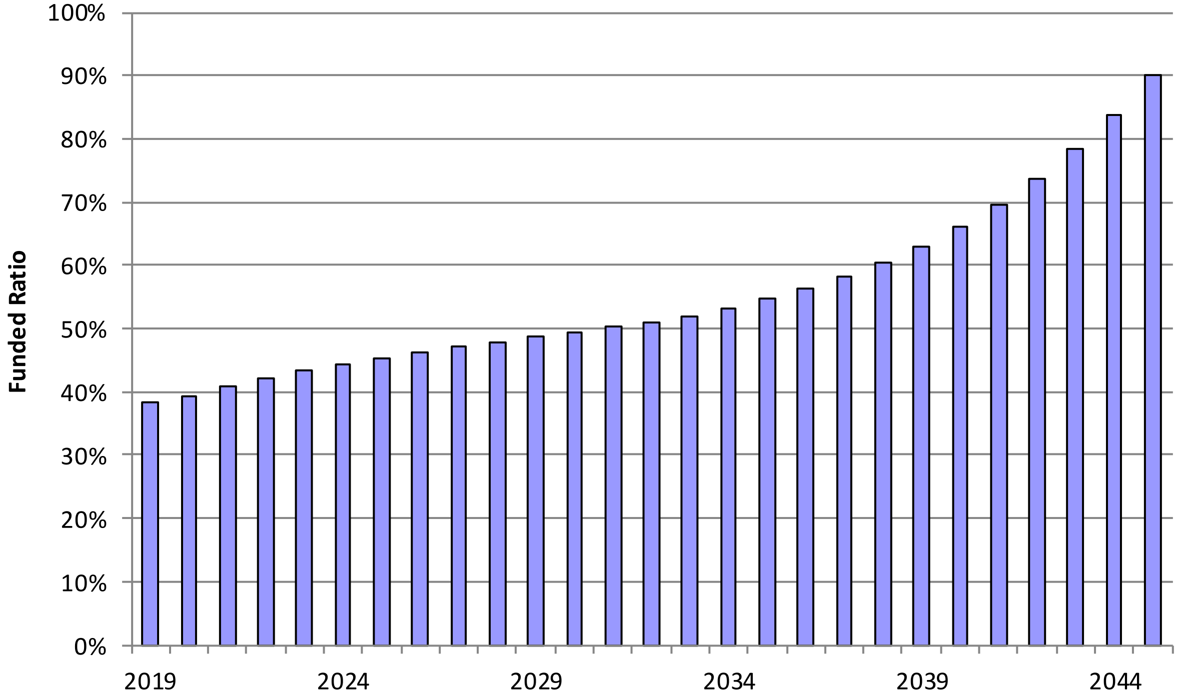


Projection Results: Phase-in of investment losses in the AVA and Contribution Rate Variances due to Smoothing of Changes in Assumptions: Cash Flow Comparison

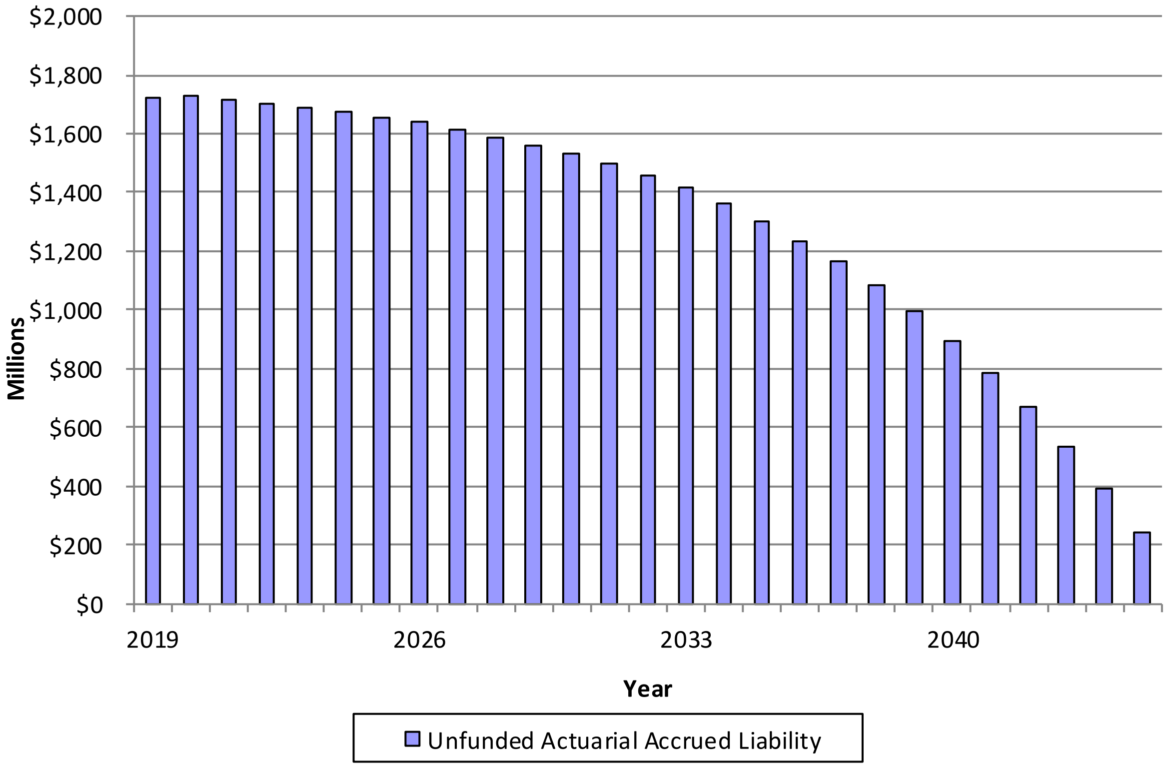


**Future dollar amounts are based on assumed inflationary increases.*

Projection Results: Phase-in of investment losses in the AVA and Contribution Rate Variances due to Smoothing of Changes in Assumptions: Funded Ratio



Projection Results: Phase-in of investment losses in the AVA and Contribution Rate Variances due to Smoothing of Changes in Assumptions: Unfunded Actuarial Accrued Liability



APPENDIX B: MEMBERSHIP DATA

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Active Members

	June 30, 2019	June 30, 2018
Number as of Valuation Date	**956**	**936**
Covered Uncapped Payroll for Fiscal Year	**$190.74 Million**	**$182.78 Million**
Average Annual Earnings	**$199,521**	**$195,274**

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Current Benefit Recipients

	June 30, 2019	June 30, 2018
Retirees	913	871
Disabled	0	0
Survivors	349	322
Total	1,262	1,193
Total Benefits	$160.51M	$149.928M
Average Benefits	$127,187	$125,673

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Questions

Disclosures

- Circular 230 Notice: Pursuant to regulations issued by the IRS, to the extent this presentation concerns tax matters, it is not intended or written to be used, and cannot be used, for the purpose of (i) avoiding tax-related penalties under the Internal Revenue Code or (ii) marketing or recommending to another party any tax-related matter addressed within. Each taxpayer should seek advice based on the individual's circumstances from an independent tax advisor.
- This presentation shall not be construed to provide tax advice, legal advice or investment advice.
- The actuaries submitting this presentation (Alex Rivera, FSA, EA, MAAA, Heidi G. Barry, ASA, FCA, MAAA and Jeffrey T. Tebeau, FSA, EA, MAAA) are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.
- The primary purpose of the actuarial valuation is to measure the financial position of JRS.

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Disclosures

- The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The major actuarial assumptions used in this analysis were provided by and are the responsibility of JRS. We are unable to judge the reasonableness of some of these assumptions without performing a substantial amount of additional work beyond the scope of the assignment.
- Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.
- This is one of multiple documents comprising the actuarial report for the JRS actuarial valuation. Additional information regarding actuarial assumptions and methods, and important additional disclosures are provided in the full actuarial valuation report as of June 30, 2019.
- If you need additional information to make an informed decision about the contents of this presentation, or if anything appears to be missing or incomplete, please contact us before relying on this presentation.