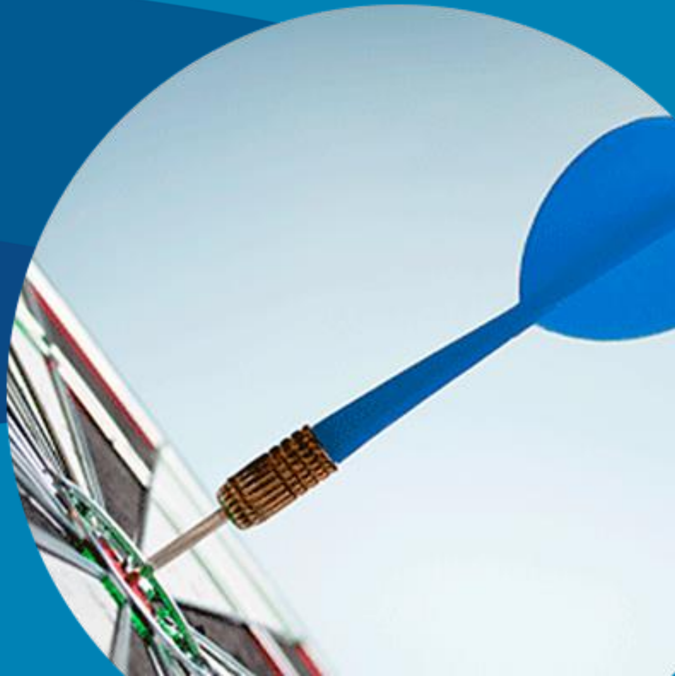
General Assembly Retirement System of Illinois

Valuation Results as of June 30, 2019

October 25, 2019



Agenda

- Valuation Results
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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 GARS 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.

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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 $8.8 million.

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Valuation Results: Funded Status ($ in millions)

	June 30, 2019	June 30, 2018
Actuarial Accrued Liability	**$374.6**	**$375.8**
Market Value of Assets (MVA)	**$59.7**	**$56.8**
Unfunded Actuarial Accrued Liability - MVA Basis	**$314.9**	**$319.0**
Funded Ratio - MVA Basis	**15.94%**	**15.12%**
Actuarial Value of Assets (AVA)	**$60.1**	**$57.6**
Unfunded Actuarial Accrued Liability - AVA Basis	**$314.5**	**$318.2**
Funded Ratio - AVA Basis	**16.03%**	**15.33%**

Results may not add due to rounding.

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Valuation Results: Change in Funded Ratio

Change in Funded Ratio

Funded Ratio 6/30/2018	**15.33%**
Expected [1]	**0.76%**
Contribution Shortfall	**-0.02%**
Liability Experience	**-0.17%**
Assumption Changes	**0.37%**
Asset Experience (5.21% Return on AVA)	**-0.24%**
Funded Ratio 6/30/2019	**16.03%**

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

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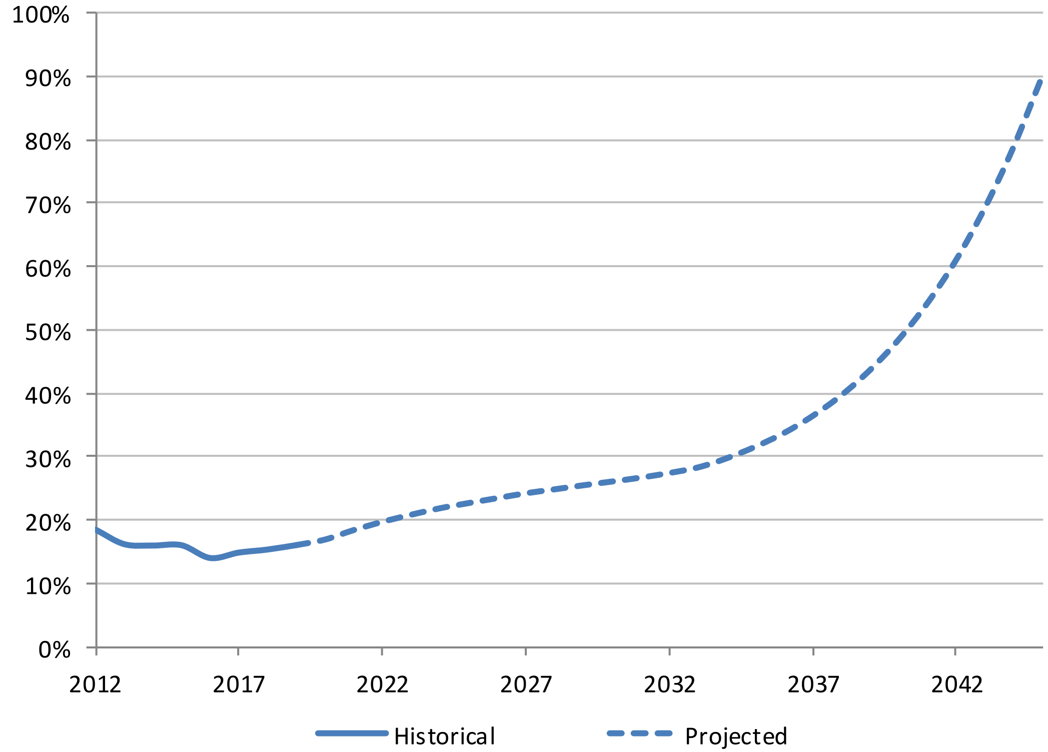
Valuation Results: Historical/Projected Funded Ratios



Valuation Results: Cash Flow Comparison ($ in millions)

	FYE 2019	Projected FYE 2020	Projected FYE 2021	Projected FYE 2022	Projected FYE 2023
Employer Contribution	$23.2	$25.8	$27.3	$27.2	$26.5
Employee Contribution	$1.3	$1.1	$1.1	$1.1	$1.1
Benefits	($24.7)	($26.6)	($27.1)	($27.9)	($28.3)
Expenses	($0.4)	($0.4)	($0.4)	($0.4)	($0.4)
Net Cash Flow	($0.6)	($0.1)	$0.9	$0.0	($1.1)

- In fiscal years 2020, and 2023 through 2038, benefits are projected to exceed State and employee contributions.
- From 2023 to 2031, the percentage of investment income needed to pay ongoing benefits is projected to increase from approximately 22 percent to 97 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	$ 27.3	277.973%

Compares to FY 2020 contribution	Amount	Rate
Basic Funding	$ 25.8	257.780%

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Valuation Results: Contribution Shortfalls ($ in millions)

FYE 2021	Amount	Rate
Actuarially Determined Contribution	$ 34.4	350.609%
Basic funding	27.3	277.973%
Shortfall	$ 7.1	72.636%

FYE 2020	Amount	Rate
Actuarially Determined Contribution	$ 34.4	344.430%
Basic funding	25.8	257.780%
Shortfall	$ 8.6	86.650%

- The Actuarially Determined Contribution (ADC), is equal to the Normal Cost plus a 20-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 16 years.

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Experience Study

- Pursuant to Public Act 99-0232, GARS 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

- Investment and demographic losses and a contribution shortfall decreased the funded ratio and increased the State’s contribution requirement, prior to reflecting the assumption changes.
- Funded ratio is projected to increase slowly from 16.0% in 2019 to 28.3% in 2033, and then increase rapidly to 90% by 2045.

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APPENDIX A: PROJECTION RESULTS

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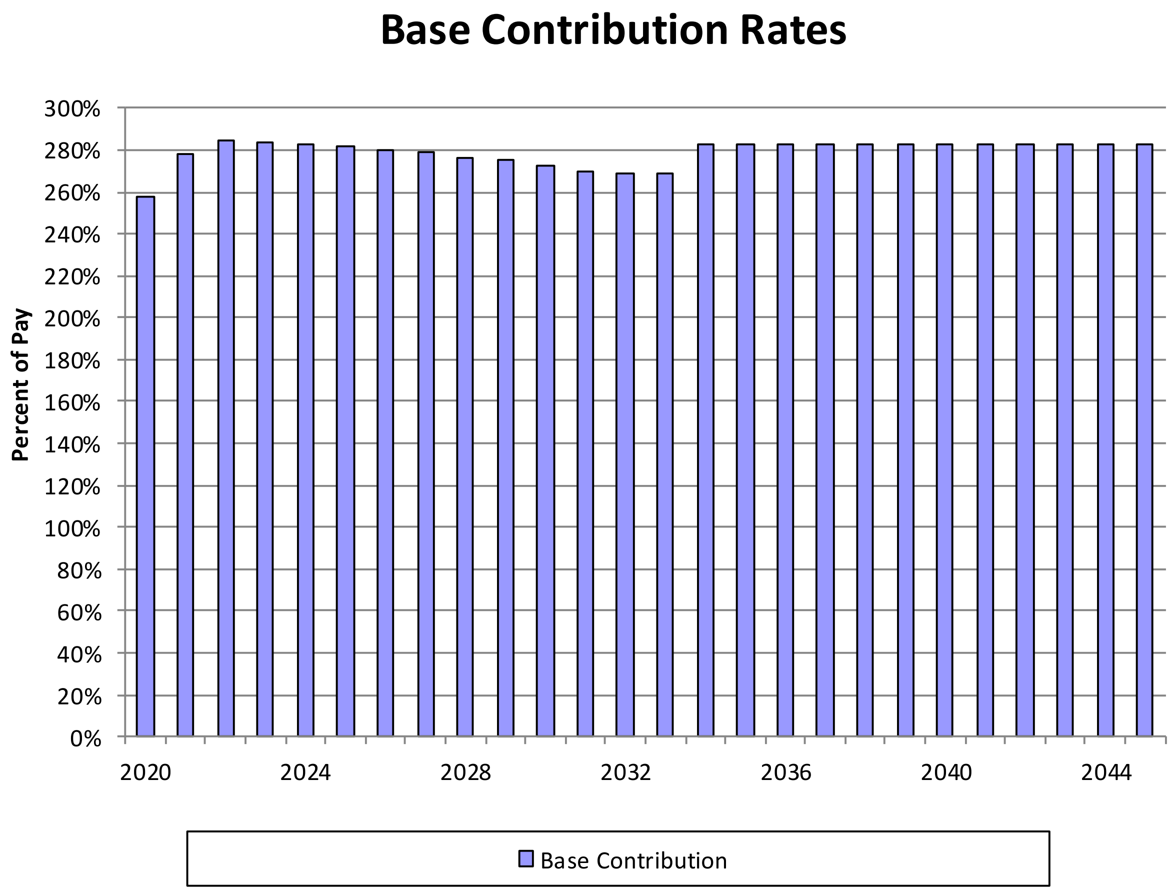
Projection Results: Phase-in of Investment Losses in the AVA and Contribution Rate Variances Due to Smoothing of Changes in Assumptions: Contributions – Rate



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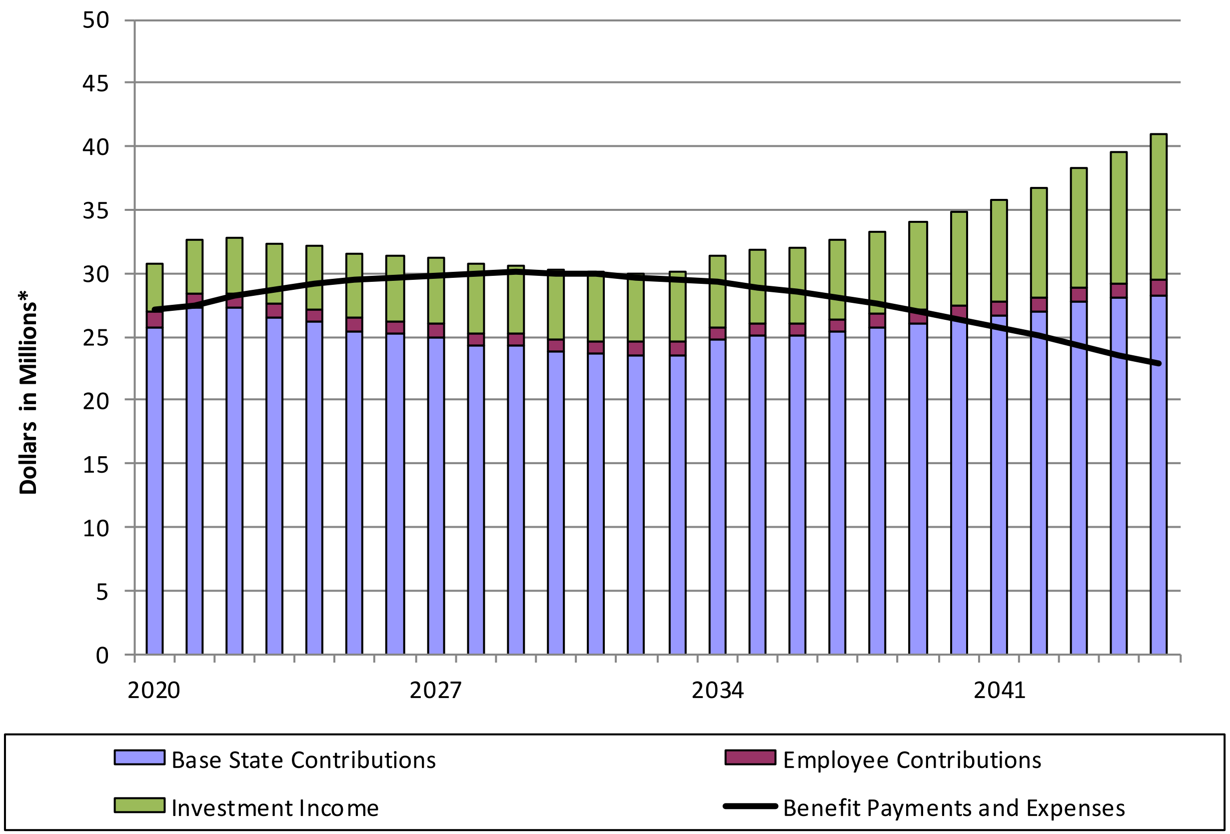
Projection Results: Phase-in of Investment Losses in the AVA and Contribution Rate Variances Due to Smoothing of Changes in Assumptions: Cash Flow Comparison



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

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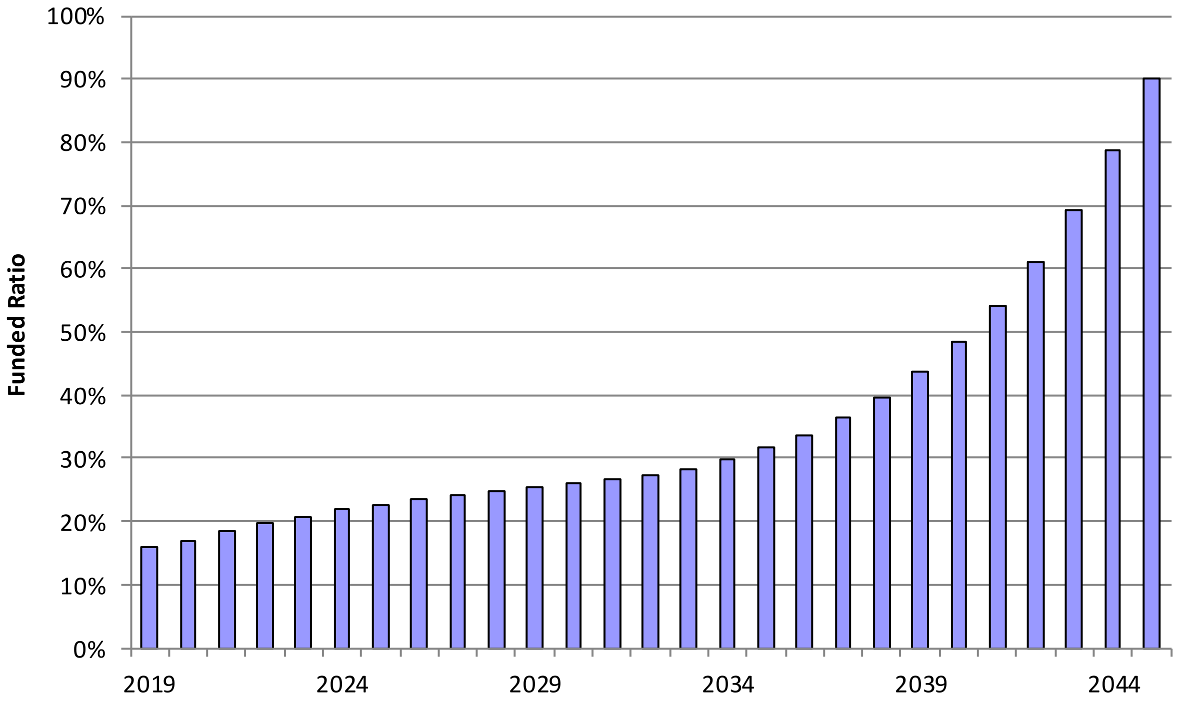
Projection Results: Phase-in of Investment Losses in the AVA and Contribution Rate Variances Due to Smoothing of Changes in Assumptions: Funded Ratio



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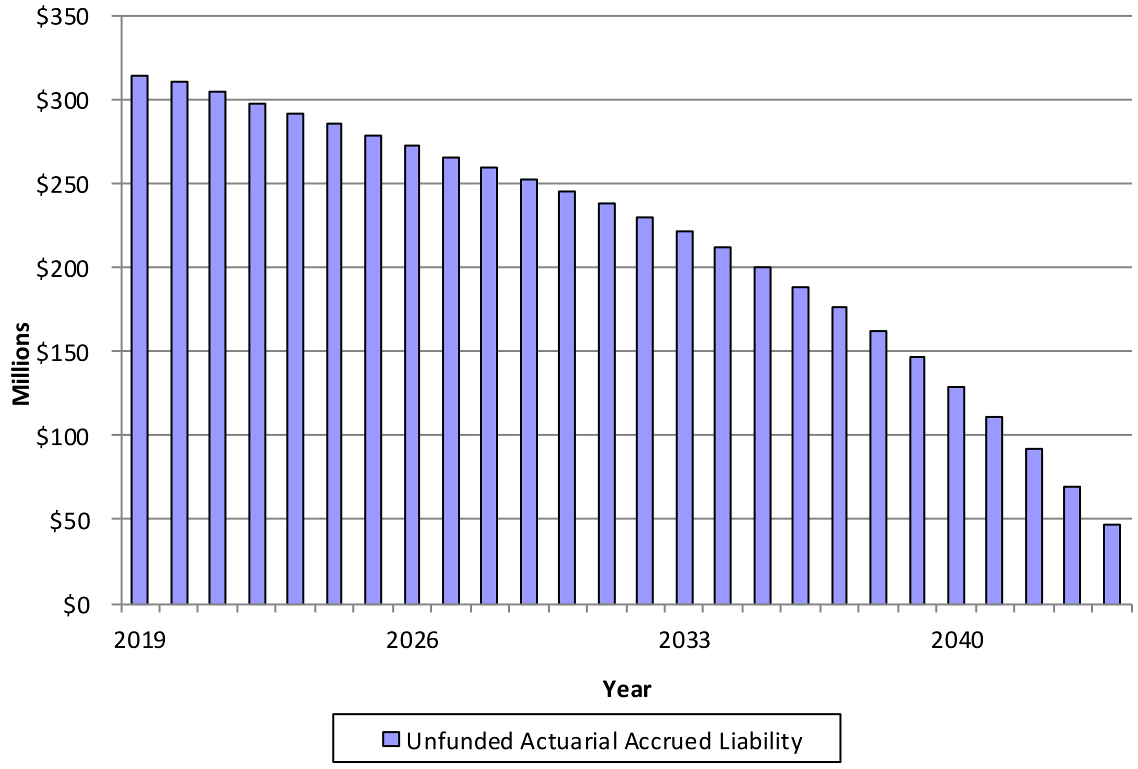
Projection Results: Phase-in of Investment Losses in the AVA and Contribution Rate Variances Due to Smoothing of Changes in Assumptions: Unfunded Actuarial Accrued Liability



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APPENDIX B: MEMBERSHIP DATA

Active Members

	June 30, 2019	June 30, 2018
Number as of Valuation Date	126	132
Covered Uncapped Payroll for Fiscal Year	$10.159 Million	$10.711 Million
Average Annual Earnings	$80,629	$81,144

Current Benefit Recipients

	June 30, 2019	June 30, 2018
Retirees	323	302
Survivors	106	115
QILDRO	12	0
Total	441	417
Total Benefits	$25.01M	$23.39M
Average Benefits	$56,712	$56,097

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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, FCA, 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 GARS.

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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 GARS. 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 GARS 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.