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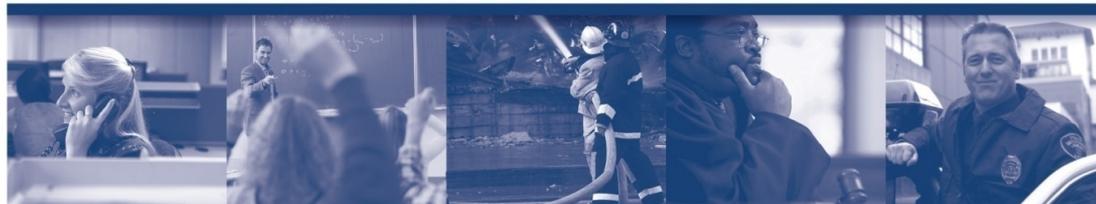
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Local Governmental Employees' Retirement System Principal Results of Actuarial Valuation as of December 31, 2018

October 31, 2019 Board of Trustees Meeting

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Purpose of the Annual Actuarial Valuation

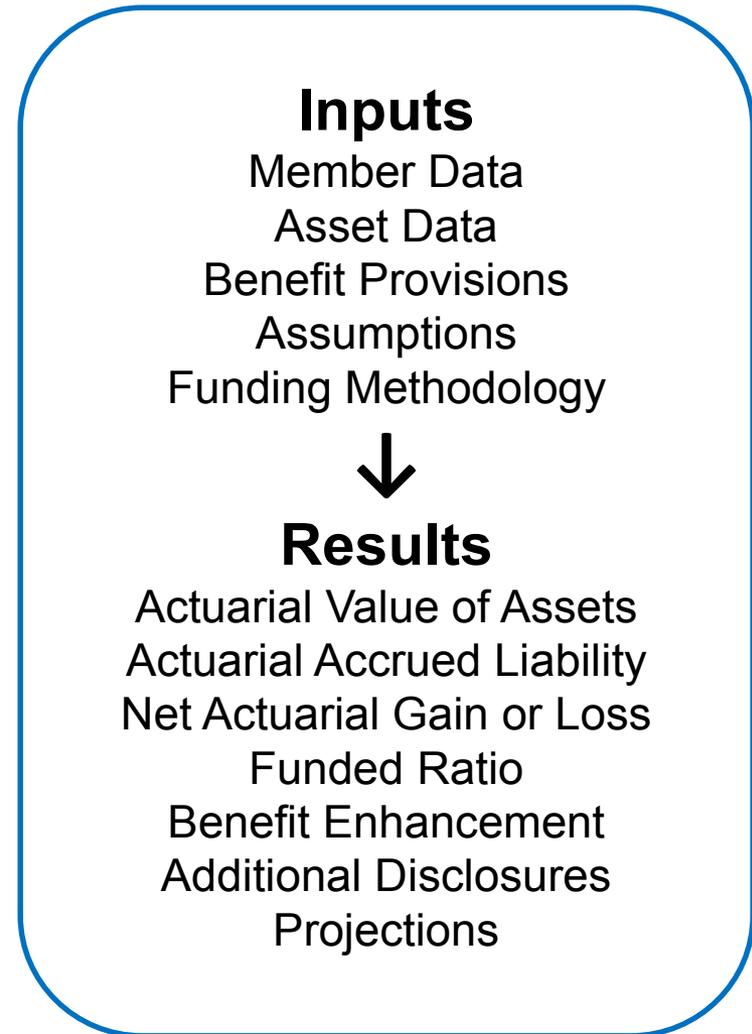


- As of the end of each calendar year:
 - An annual actuarial valuation is performed on LGERS
 - The actuary determines the amount of employer contributions to be made to LGERS during each member's career that, when combined with investment return and member contributions, are expected to be sufficient to pay for retirement benefits.
- In addition, the annual actuarial valuation is performed to:
 - Determine the progress on funding LGERS
 - Explore why the results of the current valuation differ from the results of the valuation of the previous year
 - Satisfy regulatory and accounting requirements



The Valuation Process

- The diagram to the right summarizes the inputs and results of the actuarial valuation process.
- A detailed summary of the valuation process and a glossary of actuarial terms are provided in Appendix A of the actuarial report.
- This diagram will appear throughout the presentation to designate where we are in the process.





Member Data

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The table below provides a summary of the membership data used in this valuation compared to the prior valuation.

	12/31/2018	12/31/2017
Active Members	129,986	128,779
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	73,835	68,243
Retired members and survivors of deceased members currently receiving benefits	<u>72,087</u>	<u>68,766</u>
Total	275,908	265,788

The number of active members increased by 0.9% from the previous valuation date. The increase in active members results in more benefits accruing, but also more contributions supporting the system. The number of retired members and survivors of deceased members currently receiving benefits increased by 4.8% from the previous valuation. The increase in retiree population is consistent with expectations.

A detailed summary of the membership data used in this valuation is provided in Section 3 and Appendix B.



Active Members

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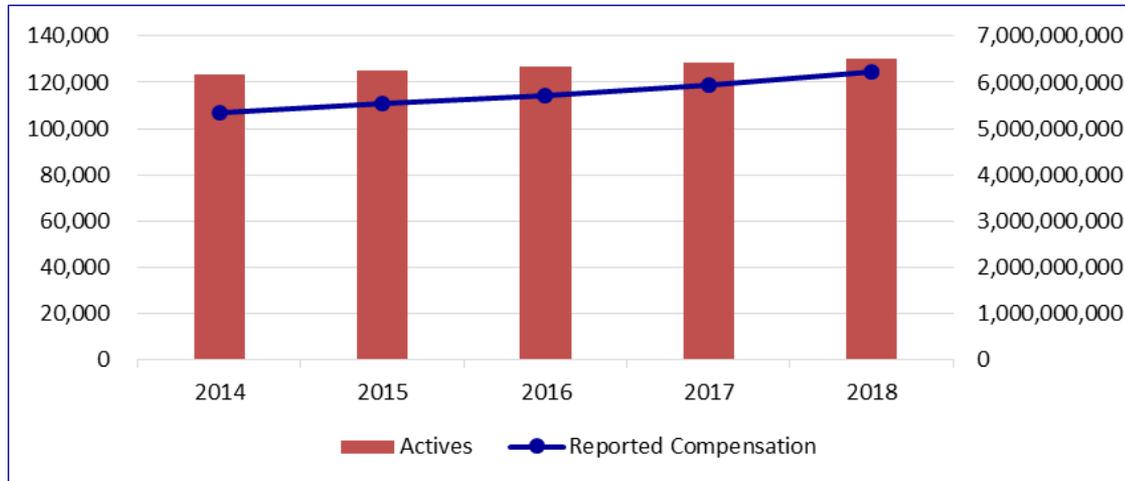
Employer Contributions

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The graph below provides a history of the number of active members and reported compensation over the past five years.



Reported compensation has increased by 4.7%. Total covered payroll* is expected to increase by approximately 3.5% annually in the future. Payroll that is increasing faster than we assume results in more benefits accruing than we anticipate, but also more contributions supporting the system.

*Total covered payroll is retirement-eligible compensation paid to all members. It does not imply a 3.5% pay increase to all members.

A detailed summary of the membership data used in this valuation is provided in Section 3 and Appendix B.



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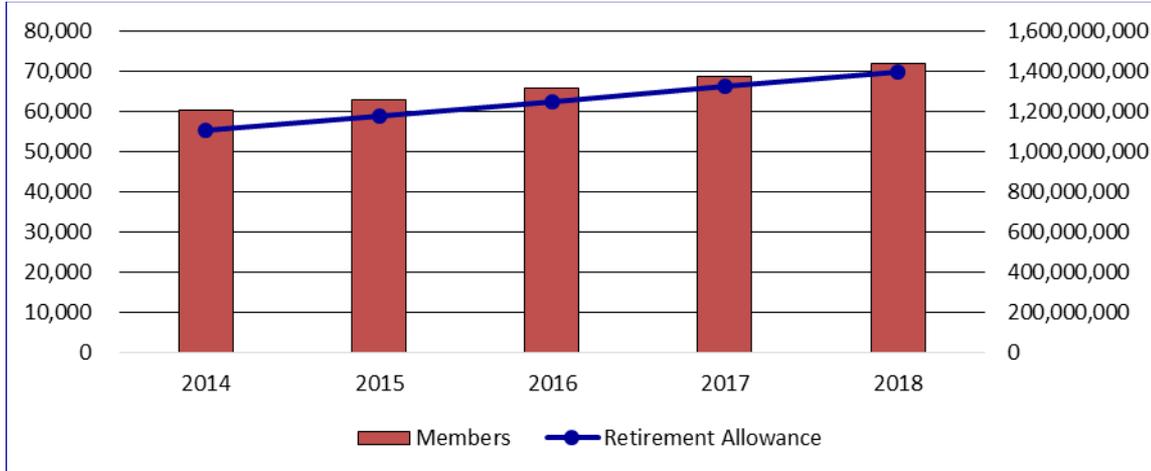
Employer Contributions

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Projections

The graph below provides a history of the number of retired members and survivors of deceased members and benefit amounts payable over the past five years.



The number of retired members and survivors of deceased members and the benefits paid to these members has been increasing steadily, as expected based on plan assumptions.

A detailed summary of the membership data used in this valuation is provided in Section 3 and Appendix B.

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Asset Data



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The table below provides details of the Market Value of Assets for the current and prior year's valuations.

Asset Data as of	12/31/2018	12/31/2017
Beginning of Year Market Value of Assets	25,918,361,041	23,308,817,567
Employer Contributions	521,319,795	478,092,270
Employee Contributions	406,122,445	388,023,721
Court Costs	2,803,215	2,987,285
Benefit Payments Other Than Refunds	(1,374,842,429)	(1,299,577,544)
Refunds	(61,462,168)	(63,727,627)
Administrative Expenses	(4,515,766)	(4,207,636)
Investment Income	<u>(362,655,522)</u>	<u>3,107,953,005</u>
Net Increase/(Decrease)	(873,230,430)	2,609,543,474
End of Year Value of Assets	25,045,130,611	25,918,361,041
Estimated Net Investment Return	-1.41%	13.47%

LGERS assets are held in trust and are invested for the exclusive benefit of plan members.

Currently, incoming contributions cover approximately 65% of the outgoing benefit payments and administrative expenses. Over the long term, benefit payments and administrative expenses not paid for by contributions are expected to be covered with investment income, illustrating the benefits of following actuarial pre-funding since inception.

A detailed summary of the market value of assets is provided in Section 4.

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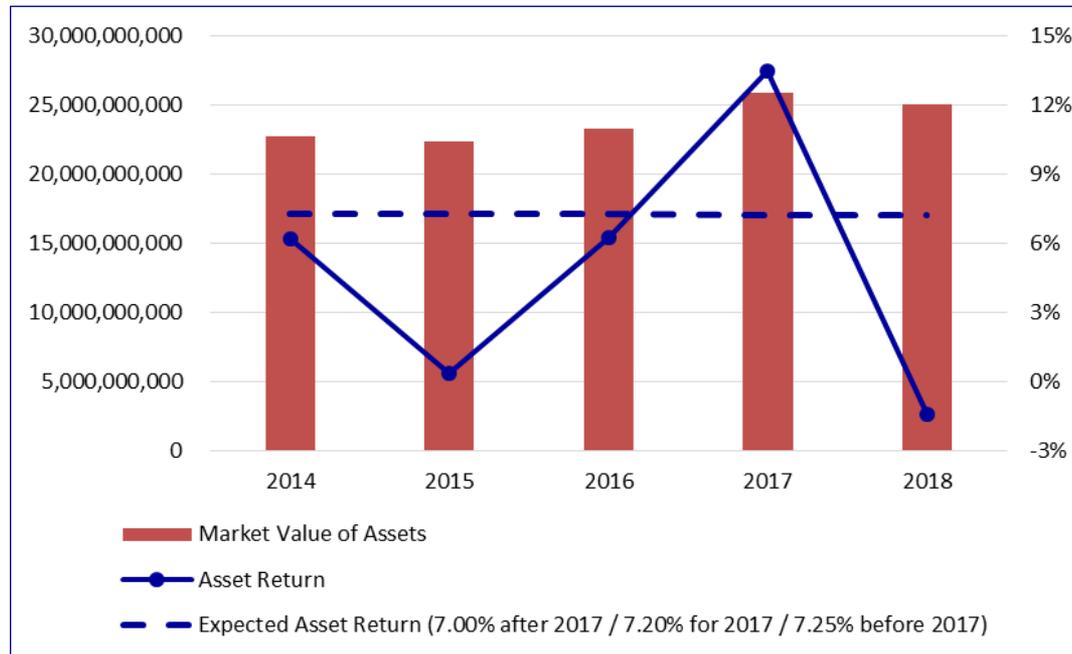
Employer Contributions

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Projections

The graph below provides a history of the market value of assets and asset returns over the past five years.



The investment return for the market value of assets for 2018 was -1.41%, far below the expected return of 7.00%. The return on the actuarial value of assets which is used to determine the contribution rates also fell short of the 7.00% expected return at 5.13%. This resulted in an increase in the UAAL of \$472 million. Market value returns have exceeded expectations only once in the last five years.

A detailed summary of the market value of assets is provided in Section 4.

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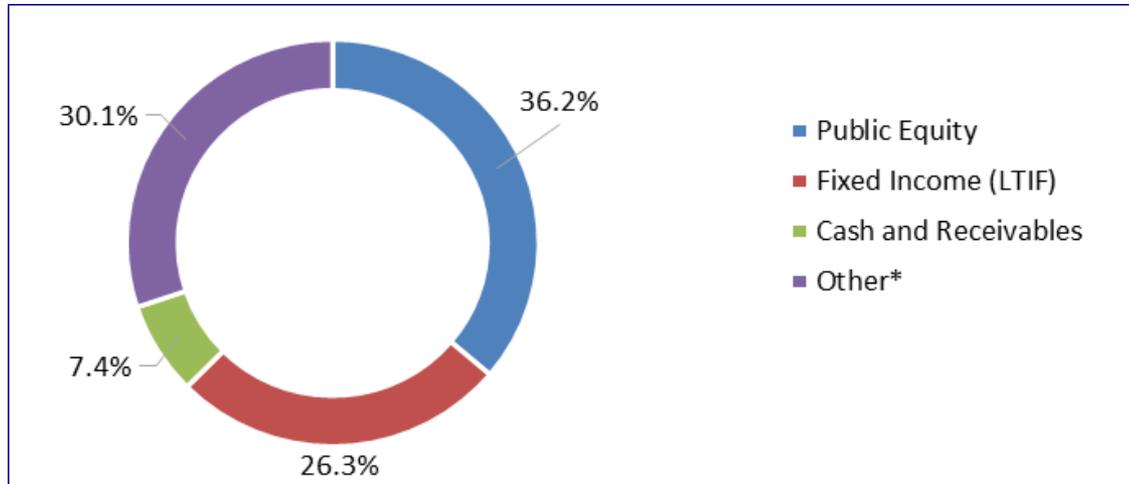
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The graph below provides the breakdown of the market value of assets at December 31, 2018 by asset category.



* Real Estate, Alternatives, Inflation and Credit

Based on historical market returns, the current asset allocation, the current investment policy, and the expectation of future asset returns, as reviewed in the last experience study, the 7.00% discount rate used in this valuation is reasonable and appropriate.

A detailed summary of the market value of assets is provided in Section 4.



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Benefit provisions are described in North Carolina General Statutes, Chapter 128.

- There have been no changes since the last valuation.

Many Public Sector Retirement Systems in the United States have undergone pension reform where the benefits of members (active or future members) have been reduced. Because of the well-funded status of LGERS due to the employers paying the actuarially determined employer contribution, benefit cuts have not been made in North Carolina as they have been in most other states. Instead, we have seen a modest expansion of benefits in recent years based on sound plan design.

A detailed summary of the benefit provisions is provided in Appendix C.



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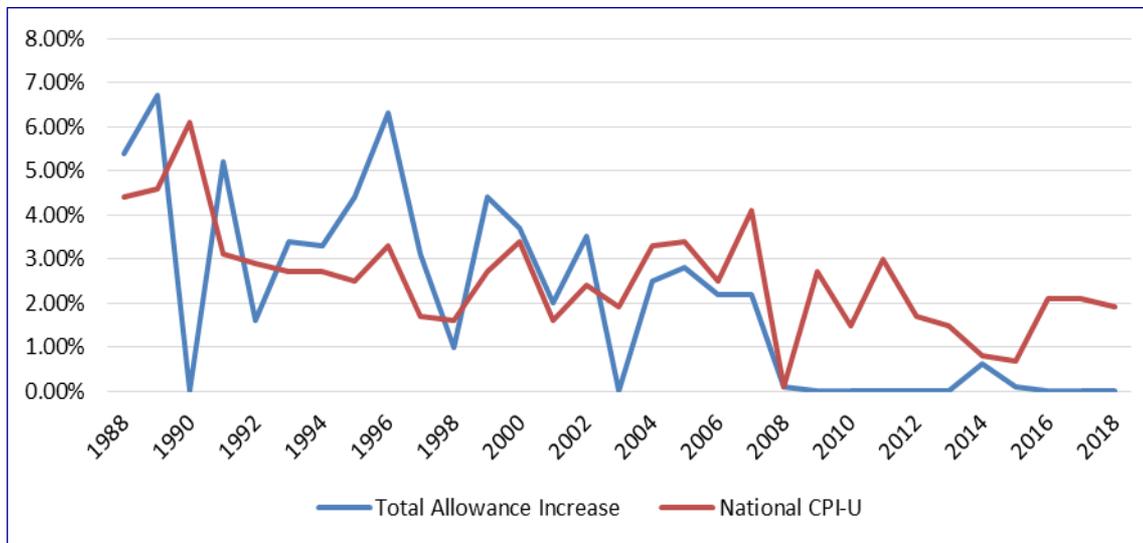
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The graph below provides a 30-year history of allowance increases for LGERS and the national CPI-U.



Generally the ad-hoc retirement allowance increase policy has helped retirees maintain purchasing power while helping to moderate contribution increases during times of down markets. This graph does not include one-time pension supplements that are sometimes granted.

A detailed summary of the benefit provisions is provided in Appendix C of the actuarial report.



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Actuarial assumptions bridge the gap between the information that we know with certainty as of the valuation date and what may happen in the future. The assumptions used include the following:

- Demographic
 - Retirement
 - Termination
 - Disability
 - Death
- Economic
 - Interest rate – 7.00% per year
 - Salary increase (individual, varies by service)
 - Inflation – 3.00%
 - Real wage growth – 0.50%

The assumptions used for the December 31, 2018 actuarial valuation are based on the experience study prepared as of December 31, 2014 and adopted by the Board of Trustees on January 21, 2016. The discount rate was updated to 7.00%, as adopted by the Board of Trustees on April 26, 2018. The impact on the contribution rate is being direct-rate smoothed over a three year period.

A detailed summary of the actuarial assumptions and methods is provided in Appendix D.



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The Funding Methodology is the payment plan for LGERS and is composed of the Actuarial Cost Method, the Asset Valuation Method and Amortization Method.

- Actuarial Cost Methods allocate costs to the actuarial accrued liability (i.e. the amount of money that should be in the fund) for past service and normal cost (i.e. the cost of benefits accruing during the year) for current service.
 - The Board of Trustees has adopted Entry Age Normal as its actuarial cost method
 - This method develops normal costs that stay level as a percent of payroll

The funding methodology is consistent with GFOA Best Practices.

<http://www.gfoa.org/core-elements-funding-policy>

A detailed summary of the actuarial assumptions and methods is provided in Appendix D.



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The Funding Methodology is the payment plan for LGERS and is composed of the Actuarial Cost Method, the Asset Valuation Method and Amortization Method.

- Asset Valuation Methods smooth or average the market value returns over time to alleviate contribution volatility that results from market returns.
 - Asset returns in excess of or less than the expected return on market value of assets reflected over a five-year period
 - Assets corridor: not greater than 120% of market value and not less than 80% of market value

The asset smoothing method is consistent with GFOA Best Practices.

<http://www.gfoa.org/core-elements-funding-policy>

A detailed summary of the actuarial assumptions and methods is provided in Appendix D.



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The Funding Methodology is the payment plan for LGERS and is composed of the Actuarial Cost Method, the Asset Valuation Method and Amortization Method.

- Amortization Methods determine the payment schedule for unfunded actuarial accrued liability (i.e. the difference between the actuarial accrued liability and actuarial value of assets)
 - Payment level: the payment is determined as a level dollar amount, similar to a mortgage payment
 - Payment period: a 12-year closed amortization period was adopted for fiscal year ending 2012. A new amortization base is created each year based on the prior years' experience.
- For fiscal years beginning subsequent to January 1, 2017, the sum of the "normal contribution" and the "accrued liability contribution" shall not be less than the employee contribution.

When compared to other Public Sector Retirement Systems in the United States, the funding policy for LGERS is quite aggressive in that the policy pays down the pension debt over a much shorter period of time (12 years) compared to the national average of around 24 years. Additionally, payments are developed to stay level instead of the increasing policy many systems use which results in lower payments early on. As such, it is a best practice among public retirement systems.

A detailed summary of the actuarial assumptions and methods is provided in Appendix D.



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In addition to the ADEC, an unfunded initial prior service liability contribution rate is required for those employers that have not liquidated this liability as of June 30, 2020.

- The unfunded initial prior service liability decreased from \$25.8M to \$21.9M during 2018.
- Using each employer's actual experience during 2018, we have determined that
 - One (1) employer was granted relief at 7/1/2019
 - Six (6) employers are expected to be granted relief at 7/1/2020 based on this valuation

For employers who joined the System prior to November 1, 2015, the outstanding balance of the unfunded initial prior service liability and the date of liquidation of the liability will be estimated as of June 30 each year. These estimates must be recalculated annually and adjusted according to each employer's actual experience.

A detailed summary of the actuarial assumptions and methods is provided in Appendix D and I.



Actuarial Value of Assets

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The table below provides the calculation of the Actuarial Value of Assets (AVA) at the valuation date.

Asset Data as of	12/31/2018
Beginning of Year Actuarial Value of Assets	\$ 25,520,733,159
Beginning of Year Market Value of Assets	25,918,361,041
Total Contributions and Court Costs	930,245,455
Benefit Payments, Refunds and Administrative Expenses	<u>(1,440,820,363)</u>
Net Cash Flow	(510,574,908)
Expected Investment Return	1,796,717,389
Expected End of Year Market Value of Assets	27,204,503,522
End of Year Market Value of Assets	25,045,130,611
Excess of Market Value over Expected Market Value of Assets	(2,159,372,911)
80% of 2018 Asset Gain/(Loss)	(1,727,498,329)
60% of 2017 Asset Gain/(Loss)	867,651,314
40% of 2016 Asset Gain/(Loss)	(91,002,206)
20% of 2015 Asset Gain/(Loss)	<u>(311,368,613)</u>
Total Deferred Asset Gain/(Loss)	(1,262,217,834)
Preliminary End of Year Actuarial Value of Assets	26,307,348,445
Final End of Year Actuarial Value of Assets (not less than 80% and not greater than 120% of Market Value)	26,307,348,445
Estimated Net Investment Return on Actuarial Value	5.13%

The actuarial value of assets smooths investment gains/losses, resulting in less volatility in the employer contribution. The asset valuation recognizes asset returns in excess of or less than the expected return on the market value of assets over a five-year period.

Lower than expected market returns in 2015, 2016 and 2018, which were partially offset by greater than expected market returns in 2017, resulted in an actuarial value of asset return for calendar year 2018 of 5.13% and a recognized actuarial asset loss of \$472 million during 2018.

A detailed summary of the Actuarial Value of Assets is provided in Section 4.



Actuarial Value of Assets

Inputs

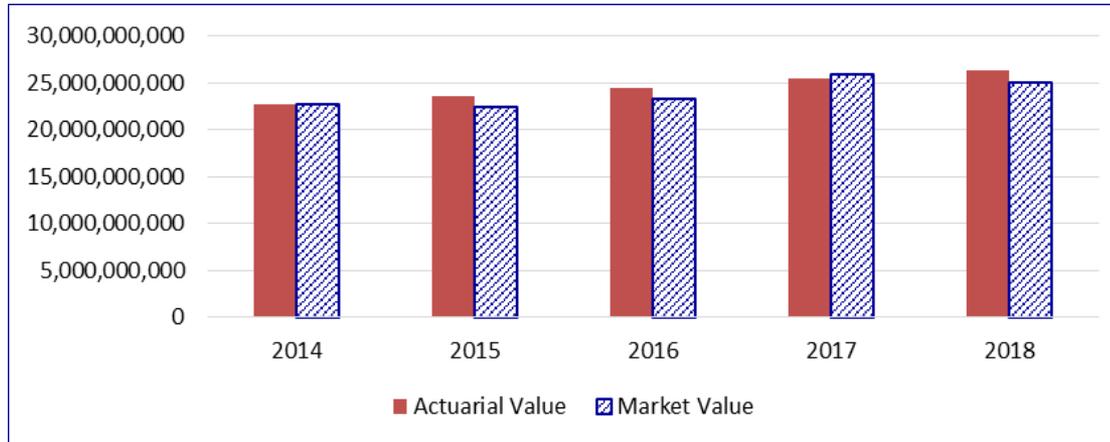
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The graph below provides a history of the market value and actuarial value of assets over the past five years.



The market value of assets is lower than the actuarial value of assets, which is used to determine employer contributions. This indicates that overall there are unrecognized asset losses to be recognized in future valuations. In fact, if the investments earn the expected 7.00% over the next four years, a loss will be recognized each of those years.

A detailed summary of the Actuarial Value of Assets is provided in Section 4.



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Calendar Year	Expected Asset Return	Actuarial Value of Asset Return	Market Value of Asset Return	20 Year Average Market Return
1996	7.50%	10.20%	9.36%	NA
1997	7.25%	10.19%	18.10%	NA
1998	7.25%	9.93%	16.64%	NA
1999	7.25%	15.61%	9.99%	NA
2000	7.25%	12.27%	2.65%	NA
2001	7.25%	8.98%	-1.69%	NA
2002	7.25%	6.13%	-4.44%	NA
2003	7.25%	8.52%	18.63%	NA
2004	7.25%	9.00%	10.77%	NA
2005	7.25%	8.58%	7.00%	NA
2006	7.25%	9.19%	11.41%	NA
2007	7.25%	9.03%	8.36%	NA
2008	7.25%	2.97%	-19.47%	NA
2009	7.25%	4.92%	14.94%	NA
2010	7.25%	6.10%	11.53%	NA
2011	7.25%	5.33%	2.14%	NA
2012	7.25%	6.51%	11.79%	NA
2013	7.25%	7.61%	12.21%	NA
2014	7.25%	7.32%	6.19%	NA
2015	7.25%	5.87%	0.34%	6.93%
2016	7.25%	5.34%	6.22%	6.78%
2017	7.20%	6.59%	13.47%	6.57%
2018	7.00%	5.13%	-1.41%	5.67%
20-Yr Average	7.23%	7.52%	5.67%	NA
Range	0.50%	12.64%	38.10%	NA

The average investment return recognized for purposes of determining the annual change in contribution each year is the actuarial value of assets return. Currently, the average actuarial return over the past 20 years of 7.52% compares with an average market return of 5.67%. The difference is primarily due to asset gains of the late 1990's being included in the actuarial value of assets and not in the market value as well as the 2018 market value loss only being partially recognized in the actuarial value of assets. The range of returns is markedly more volatile 12.64% versus 38.10%. This results in much lower employer contribution volatility using the actuarial value of assets versus market, while ensuring that the actuarial needs of TSERS are met.



Actuarial Value of Assets

Inputs

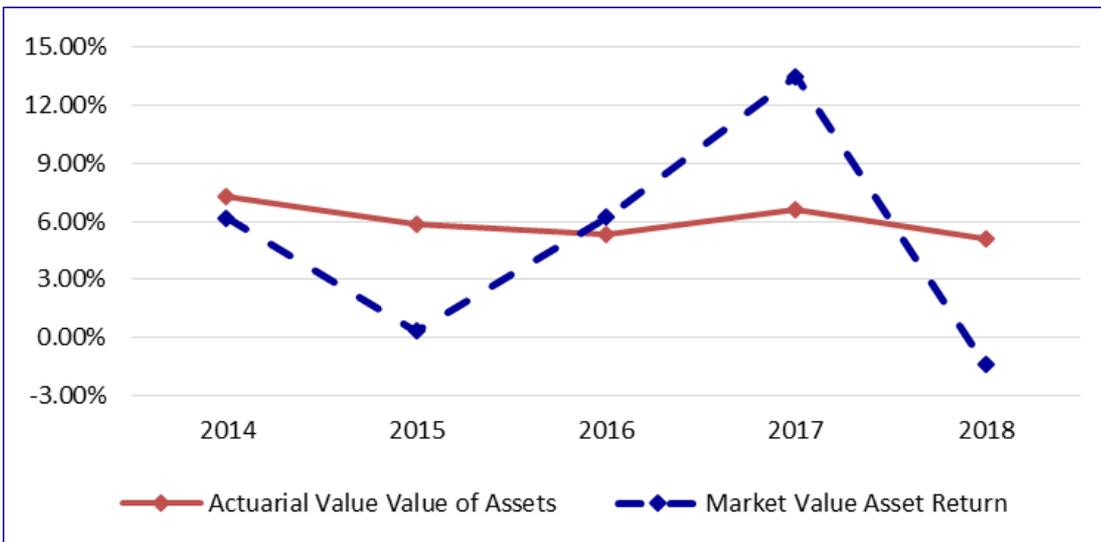
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The graph below provides a history of the market value and actuarial value of asset returns over the past five years.



The investment return for the market value of assets for calendar year 2018 was -1.41%. The actuarial value of assets smooths investment gains and losses. Lower than expected market returns in all years except 2017 resulted in an actuarial value of asset return for calendar year 2018 of 5.13% and a recognized loss of \$472 million during 2018.

A detailed summary of the Actuarial Value of Assets is provided in Section 4.



Actuarial Accrued Liability

Inputs

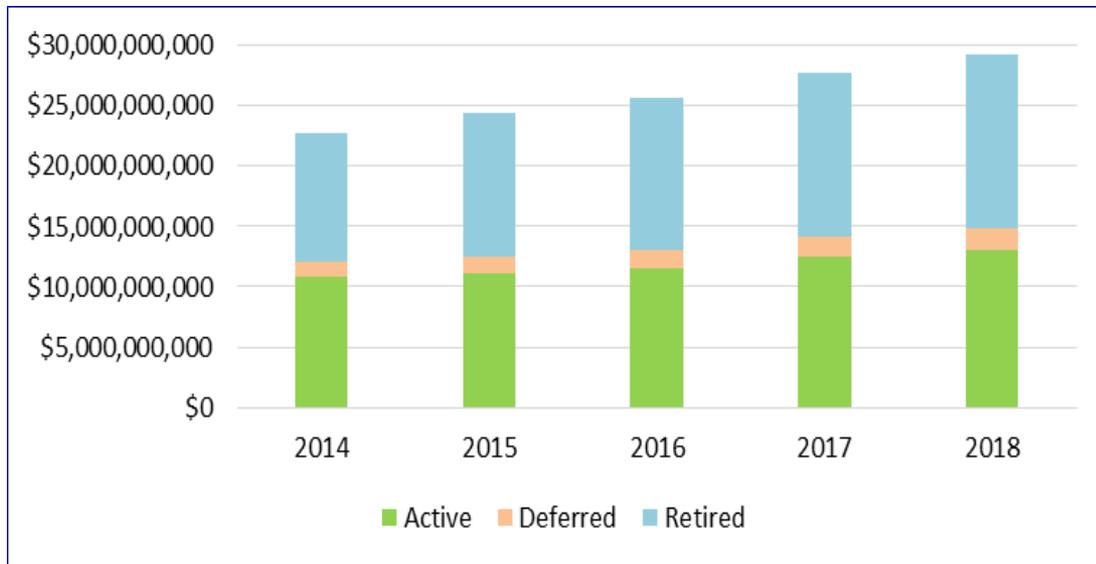
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The graph below provides a history of the actuarial accrued liability (AAL) over the past five years.



The AAL increased from \$27.746 billion to \$29.223 billion during 2018. LGERS is an open plan, which means that new members enter the plan each year. In an open plan, liabilities are expected to grow from one year to the next as more benefits accrue and the membership approaches retirement. The AAL was \$234 million higher than expected resulting from demographic losses. Most of the loss was due to salary increases higher than expected.

A detailed summary of the Actuarial Accrued Liability is provided in Section 5.



Valuation Results

AVA and AAL

Inputs

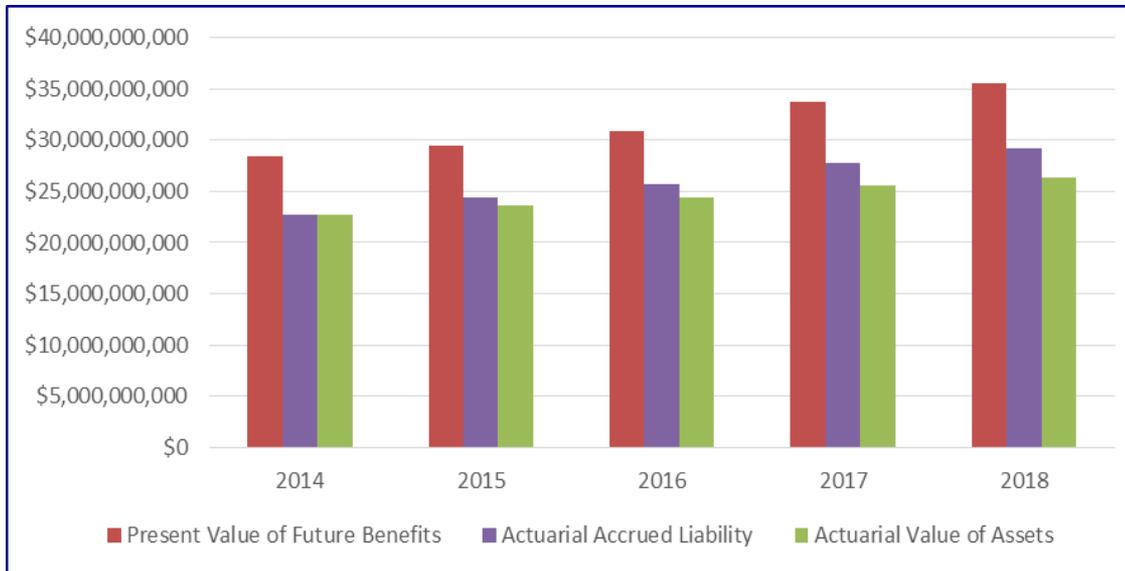
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The graph below provides a history of the present value of future benefits, the actuarial accrued liability and actuarial value of assets.



The present value of future benefits has increased over the past five years. The present value of future benefits increased from \$33.7 billion at December 31, 2017 to \$35.5 billion at December 31, 2018.

Detailed summaries of the AVA and AAL are provided in Sections 4 and 5 respectively.



Net Actuarial Gain or Loss

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The table below provides a reconciliation of the prior year's unfunded actuarial accrued liability to the current year's unfunded actuarial accrued liability.

(in millions)	
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2017	\$ 2,225
Normal Cost and Administrative Expenses during 2018	765
Reduction due to Actual Contributions during 2018	(930)
Interest on UAAL, Normal Cost, and Contributions	150
Asset (Gain)/Loss	472
Actuarial Accrued Liability (Gain)/Loss	234
Impact of Assumption Changes	-
Impact of Legislative Changes	-
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2018	\$ 2,916

During 2018, the UAAL increased by \$691 million. The loss recognized in the Actuarial Value of Assets during the year increased the UAAL by \$472 million. Demographic losses were \$234 million primarily due to salary increases larger than expected.

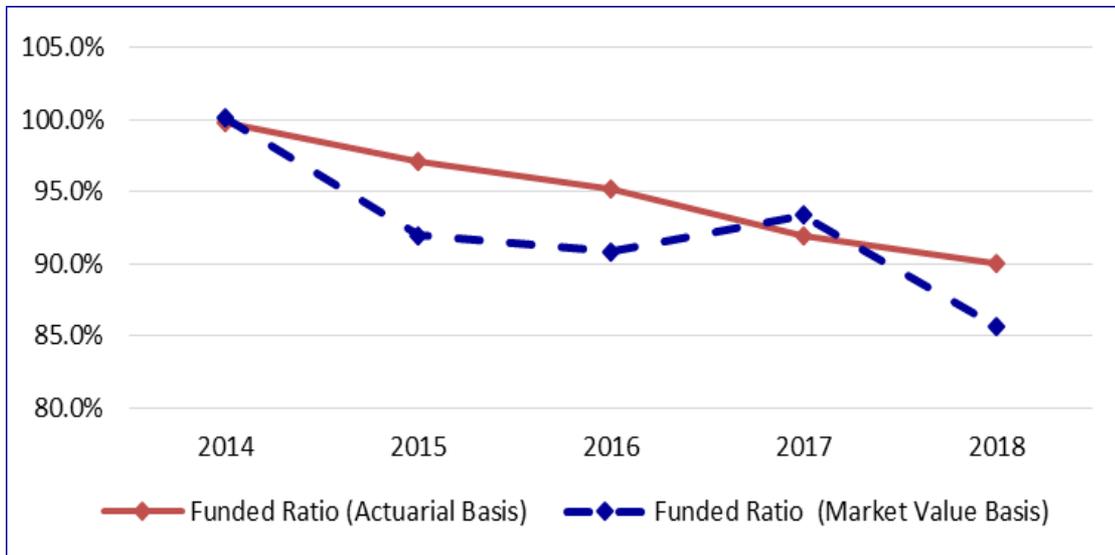
A detailed summary of the net actuarial gain or loss is provided in Section 5.



Valuation Results

Funded Ratio

The graph below provides a history of the funded ratio on a market and actuarial basis over the past five years.



The actuarial value of assets basis is used for computing contributions to alleviate contribution volatility. The funded ratio on an actuarial basis decreased from 92.0% at December 31, 2017 to 90.0% at December 31, 2018. The funded ratio for the December 31, 2014 valuation was based on accrued liabilities calculated under the frozen entry age cost method. Under that cost method, the AAL will track closely to assets.

A detailed summary of the funded ratio is provided in Section 5.

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Employer Contributions

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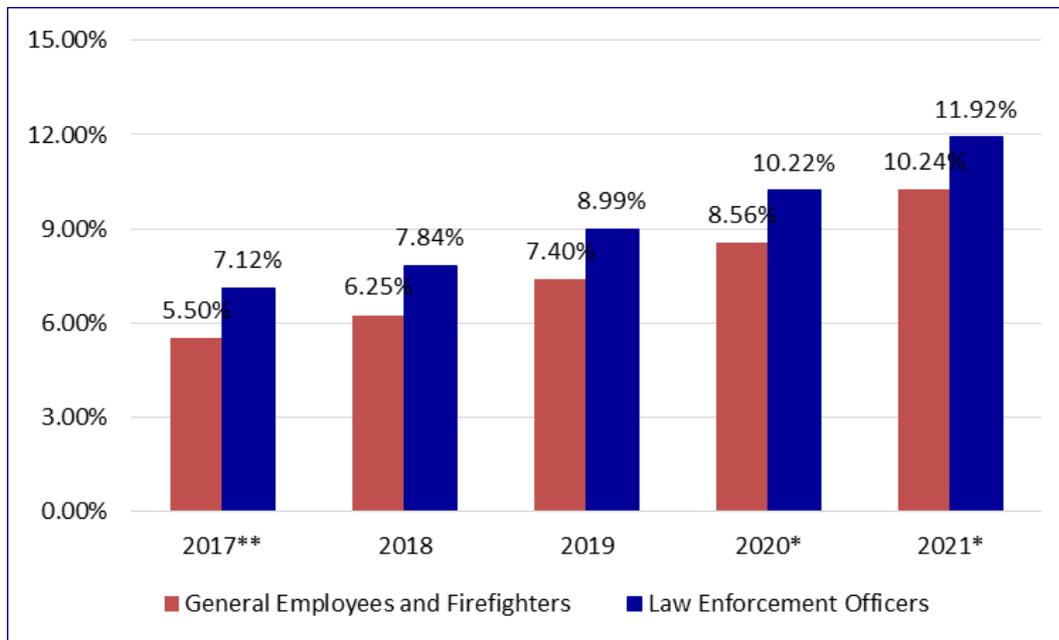
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The graph below provides a history of actuarially determined employer contribution rates over the past five years.



The actuarially determined employer contribution rates are split into the normal cost rate and the accrued liability rate. The normal cost rate is the employer's portion of the cost of benefits accruing after reducing for the 6% of pay contribution the members make. The accrued liability rate is the payment toward the unfunded liability needed to pay it off over a 12 year period. The 12-year period is a relatively short period for Public Sector Retirement Systems in the United States, with most Systems using a longer period to pay off the pension debt. The shorter period results in higher contributions and more benefit security.

- *Subject to the impact of future legislative changes effective during that fiscal year.
- ** Includes impact of the experience study

A detailed summary of the actuarially determined employer contribution is provided in Section 6.



Employer Contributions

Inputs

Membership Data
Asset Data
Benefit Provisions
Assumptions
Funding Methodology



Results

Actuarial Value of Assets
Actuarial Accrued Liability
Net Actuarial Gain or Loss
Funded Ratio

Employer Contributions

Benefit Enhancement
Additional Disclosures
Projections

- The revised Employer Contribution Rate Stabilization Policy (ECRSP) adopted by the Board of Trustees on January 31, 2019 requires that recommended contributions for general employees be set at 8.95% of payroll for fiscal year ending 2020 and will increase each fiscal year by 1.20% per year, with the following additional adjustments, if applicable:
 - If the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year is 50% higher than the scheduled employer contribution rate for that fiscal year, the scheduled employer contribution rate for the current and future fiscal years increases 0.50%;
 - If the underlying ADEC for a given fiscal year is 50% lower than the scheduled employer contribution rate for that fiscal year, the scheduled employer contribution rate for the current and future fiscal year decreases 0.50%;
 - If the General Assembly grants any additional COLA beyond the amount of COLA granted by the Board, increases the multiplier for active employees, or changes the benefit structure in a way that has a cost to the system, the schedule of contributions for the current and future fiscal years will be increased by the cost of the benefit enhancement. The cost of any COLA granted by the Board under the authority allowed by statute will not impact the scheduled contribution rates.
- Contribution rates for law enforcement officers will be 0.75% higher than contribution rates for general employees. The ECRSP would result in a recommended contribution rate of 10.15% of payroll for general employees and firefighters and 10.90% of payroll for law enforcement officers for fiscal year ending 2021.



Employer Contributions

Inputs

Membership Data
Asset Data
Benefit Provisions
Assumptions
Funding Methodology



Results

Actuarial Value of Assets
Actuarial Accrued Liability
Net Actuarial Gain or Loss
Funded Ratio

Employer Contributions

Benefit Enhancement
Additional Disclosures
Projections

The table below provides a history of the actuarially determined employer contribution and the corresponding actual rate for **General Employees and Firefighters**.

Valuation Date	Rate Effective	Preliminary ADEC	Change due to Legislation*	Final ADEC	Actual Contribution
12/31/2018	7/1/2020	10.24%	N/A	N/A	N/A
12/31/2017	7/1/2019	8.56%	0.00%	8.56%	8.95%
12/31/2016	7/1/2018	7.40%	0.00%	7.40%	7.75%
12/31/2015	7/1/2017	6.25%	0.00%	6.25%	7.50%
12/31/2014	7/1/2016	6.39%	-0.89%	5.50%	7.25%
12/31/2013	7/1/2015	6.52%	0.15%	6.67%	6.67%

*The change due to legislation for the contribution in effect at 7/1/2016 includes a 0.92% decrease in the ADEC due to the experience study and a 0.03% increase in the ADEC due to the cost-of-living adjustment at 7/1/2016.

The funding policy contribution rate for fiscal year ending 2021 is 10.15% of payroll. The preliminary ADEC for fiscal year ending 2021 is 10.24% of payroll.

In addition to calculating the ADEC, we calculate the cost of a permanent one-time 1% COLA is equivalent to 0.31% of payroll and each 0.01% increase in benefit rate is equal to 0.36% of payroll.

A detailed summary of the actuarially determined employer contribution rates is provided in Section 6.



Employer Contributions

Inputs

Membership Data
Asset Data
Benefit Provisions
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Funding Methodology



Results

Actuarial Value of Assets
Actuarial Accrued Liability
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The table below provides a history of the actuarially determined employer contribution and the corresponding actual rate for **Law Enforcement Officers**.

Valuation Date	Rate Effective	Preliminary ADEC	Change due to Legislation*	Final ADEC	Actual Contribution
12/31/2018	7/1/2020	11.92%	N/A	N/A	N/A
12/31/2017	7/1/2019	10.22%	0.00%	10.22%	9.70%
12/31/2016	7/1/2018	8.99%	0.00%	8.99%	8.50%
12/31/2015	7/1/2017	7.84%	0.00%	7.84%	8.25%
12/31/2014	7/1/2016	6.87%	0.25%	7.12%	8.00%
12/31/2013	7/1/2015	7.00%	0.15%	7.15%	7.15%

*The change due to legislation for the contribution in effect at 7/1/2016 includes a 0.22% increase in the ADEC due to the experience study and a 0.03% increase in the ADEC due to the cost-of-living adjustment at 7/1/2016

The funding policy contribution rate for fiscal year ending 2021 is 10.90% of payroll. The preliminary ADEC for fiscal year ending 2021 is 11.92% of payroll.

In addition to calculating the ADEC, we calculate the cost of a permanent one-time 1% COLA is equivalent to 0.31% of payroll and each 0.01% increase in benefit rate is equal to 0.36% of payroll.

A detailed summary of the actuarially determined employer contribution rates is provided in Section 6.



Employer Contributions: ECRSP

The table below provides a history and projection of the ADEC and ECRSP contributions for both General Employees and Firefighters as well as Law Enforcement Officers in LGERS.

The initial ECRSP rates were successful in attaining their objective before 2 reductions in the investment return assumption and four consecutive years of actuarial value of asset losses. The ECRSP was amended on January 31, 2019 to increase the rates to better align with the actuarially determined contribution rates.

Valuation Date	Rate Effective	General Employees and Firefighters		
		ADEC	ECRSP	Excess/ (Shortfall)
12/31/2019	7/1/2021	11.96%	11.35%	-0.61%
12/31/2018	7/1/2020	10.24%	10.15%	-0.09%
12/31/2017	7/1/2019	8.56%	8.95%	0.39%
12/31/2016	7/1/2018	7.40%	7.75%	0.35%
12/31/2015	7/1/2017	6.25%	7.50%	1.25%
12/31/2014	7/1/2016	5.50%	7.25%	1.75%
Valuation Date	Rate Effective	Law Enforcement Officers		
		ADEC	ECRSP	Excess/ (Shortfall)
12/31/2019	7/1/2021	13.64%	12.10%	-1.54%
12/31/2018	7/1/2020	11.92%	10.90%	-1.02%
12/31/2017	7/1/2019	10.22%	9.70%	-0.52%
12/31/2016	7/1/2018	8.99%	8.50%	-0.49%
12/31/2015	7/1/2017	7.84%	8.25%	0.41%
12/31/2014	7/1/2016	6.87%	8.00%	1.13%

Inputs

- Membership Data
- Asset Data
- Benefit Provisions
- Assumptions
- Funding Methodology



Results

- Actuarial Value of Assets
- Actuarial Accrued Liability
- Net Actuarial Gain or Loss
- Funded Ratio

Employer Contributions

- Benefit Enhancement
- Additional Disclosures
- Projections



Employer Contributions

Inputs

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Asset Data
Benefit Provisions
Assumptions
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Results

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The table below provides a reconciliation of the actuarially determined employer contribution.

	General Employees and Firefighters	Law Enforcement Officers
Fiscal year ending June 30, 2020 Preliminary ADEC based on December 31, 2017 valuation	8.56%	10.22%
Impact of Legislative Changes	0.00%	0.00%
Fiscal year ending June 30, 2020 ADEC for Reconciliation	8.56%	10.22%
Changes Due to Anticipated Reduction in UAAL*	-0.20%	-0.20%
Change Due to Demographic (Gain)/Loss	0.49%	0.46%
Change Due to Investment (Gain)/Loss	0.91%	0.91%
Change Due to Contributions Greater than ADEC**	-0.07%	-0.07%
Impact of Assumption Changes	0.00%	0.00%
Impact of Direct Rate Smoothing Current Year	<u>0.55%</u>	<u>0.60%</u>
Fiscal year ending June 30, 2021 Preliminary ADEC based on December 31, 2018 valuation	10.24%	11.92%

The change in rate due to investment loss is based on the actuarial value of assets return, which was less than the 7.00% assumed return.

The change in rate due to demographics was mostly due to salaries increasing more than expected.

The impact of direct rate smoothing is the deferred recognition of the 12/31/2017 discount rate change from 7.20% to 7.00%.

*Amortization of the UAAL is determined as a level dollar amount with payments expected to remain the same over the amortization period but was calculated as a percentage of valuation payroll in the previous valuation. Payroll is expected to increase annually while the expected amortization payment does not increase. This causes the expected amortization payment to be a lesser percentage of the expected payroll.

** General Employees and Firefighters contribution rate of 7.75% exceeded the ADEC of 7.40%.

Valuation Results

Potential COLAs



Inputs

Membership Data
Asset Data
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Results

Actuarial Value of Assets
Actuarial Accrued Liability
Net Actuarial Gain or Loss
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Projections

- Based on the actuarial investment loss recognized in this December 31, 2018, valuation, no Cost-of-Living Adjustment (COLA) that would take effect on July 1, 2020, may be granted by the Board
- Based on the methods and assumptions used for the projections discussed later in the presentation, we estimate that a potential COLA effective July 1, 2021, may be granted by the Board following the December 31, 2019, valuation in the following circumstances:
 - If calendar year 2019 market value returns exceed 18.9% (or about \$4.7B for LGERS), the plan is estimated to have an actuarial investment gain (rather than a loss) for 2019 and a COLA that would take effect on July 1, 2021, could be considered.
 - If calendar year 2019 market value returns exceed 22.2% (or about \$5.5B for LGERS), the plan is estimated to have an actuarial investment gain (rather than a loss) for 2019 and such gain may be enough to provide a 1% COLA that would take effect on July 1, 2021.
 - Estimated actuarial investment gain of \$164.1M
 - Estimated cost of 1% COLA payable to retirees effective July 1, 2021 of \$160.0M

Note: CMC cannot provide legal advice. This slide should not be interpreted as legal advice as to the Board's ability to provide a COLA to retirees or recommend a COLA to the legislature

A detailed summary of the actuarially determined employer contribution rates is provided in Section 6.



Additional Disclosures

Inputs

Membership Data
Asset Data
Benefit Provisions
Assumptions
Funding Methodology



Results

Actuarial Value of Assets
Actuarial Accrued Liability
Net Actuarial Gain or Loss
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Additional Disclosures
Projections

The table below illustrates the sensitivity of certain valuation results to changes in the discount rate on a market value of assets basis.

Discount Rate	3.02%	5.01%	7.00%	8.99%	10.98%
Market Value of Assets	\$ 25,045,130,611	\$ 25,045,130,611	\$ 25,045,130,611	\$ 25,045,130,611	\$ 25,045,130,611
Actuarial Accrued Liability	\$ 48,084,262,606	\$ 36,826,760,455	\$ 29,223,126,652	\$ 23,950,906,329	\$ 20,191,355,627
Unfunded Accrued Liability (UAL)	\$ 23,039,131,995	\$ 11,781,629,844	\$ 4,177,996,041	\$ (1,094,224,282)	\$ (4,853,774,984)
Funded Ratio	52.1%	68.0%	85.7%	104.6%	124.0%
20-Year Amortization of UAL	\$ 1,598,308,189	\$ 993,590,373	\$ 421,975,968	N/A	N/A
(as % of general local revenue)	9.4%	5.8%	2.5%	N/A	N/A

Section 6(c) of Session Law 2016-108 requires that the actuarial valuation report provide the valuation results using a 30-year Treasury rate as of December 31 of the year of the valuation as the discount rate. The 30-year Treasury rate is 3.02% as of December 31, 2018.

The difference between the UAAL measured at 7.00% and 3.02% is \$18.9 billion at December 31, 2018.

A detailed summary of the additional disclosures is provided in Appendix F.



Additional Disclosures

Inputs

- Membership Data
- Asset Data
- Benefit Provisions
- Assumptions
- Funding Methodology



Results

- Actuarial Value of Assets
- Actuarial Accrued Liability
- Net Actuarial Gain or Loss
- Funded Ratio
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- Additional Disclosures
- Projections

The table below provides an estimate of future market value of asset returns based on the study performed in 2016.

Horizon	95% Chance (19 out of every 20 scenarios)	75% Chance (3 out of every 4 scenarios)	50% Chance (1 out of every 2 scenarios)	25% Chance (1 out of every 4 scenarios)	5% Chance (1 out of every 20 scenarios)
10 Years (2025)	0.2%	4.0%	5.9%	8.0%	11.5%
20 Years (2035)	2.2%	4.8%	6.7%	8.5%	11.8%
30 Years (2045)	3.1%	5.3%	7.1%	8.7%	12.0%

These results are summarized in the “TSERS Asset-Liability and Investment Strategy Project” report dated April 19th, 2016 prepared by Conduent, the prior actuary.

The lower bound of 3.02% falls slightly below the 5th percentile of estimated future 30-year returns. In other words, there is less than a 5% chance of seeing a 30-year return of 3.02% or lower based on the study performed in 2016.

A detailed summary of the additional disclosures is provided in Appendix F.

Valuation Results

Projections



Inputs

Membership Data
Asset Data
Benefit Provisions
Assumptions
Funding Methodology



Results

Actuarial Value of Assets
Actuarial Accrued Liability
Net Actuarial Gain or Loss
Funded Ratio
Employer Contributions
Benefit Enhancement
Additional Disclosures

Projections

- Projections of actuarially determined employer contribution (ADEC) rates and funded status into the future can be helpful planning tools for stakeholders.
- Projections of the actuarial valuation are known as deterministic projections. Deterministic projections are based on one scenario in the future.
- Baseline deterministic projection is based on:
 - December 31, 2018 valuation results
 - December 31, 2018 valuation assumptions and methods to project future valuation results, including:
 - Valuation interest rate of 7.00% for all years
 - Investment return of 7.00% on market value of assets
 - The contribution rate under the Employer Contribution Rate Stabilization Policy and Direct Rate Smoothing is contributed until fiscal year ending 2022.
 - The ADEC is contributed for fiscal years ending 2023 and beyond.
 - For fiscal years beginning subsequent to January 1, 2017, the sum of the "normal contribution" and the "accrued liability contribution" shall not be less than the employee contribution.
 - 0% increase in total active member population
 - No cost-of-living adjustments granted
 - Future pay increases based on long-term salary increase assumptions
 - Two alternate deterministic projections based on the same assumptions as the baseline deterministic projection, except
 - First alternate deterministic projection assumes a 0% asset return for calendar year 2019.
 - Second alternate deterministic projection assumes a 14% asset return for calendar year 2019.

A detailed summary of the deterministic projections is provided in Section 9.

Valuation Results

Projected Contribution Rates – General Employees and Firefighters



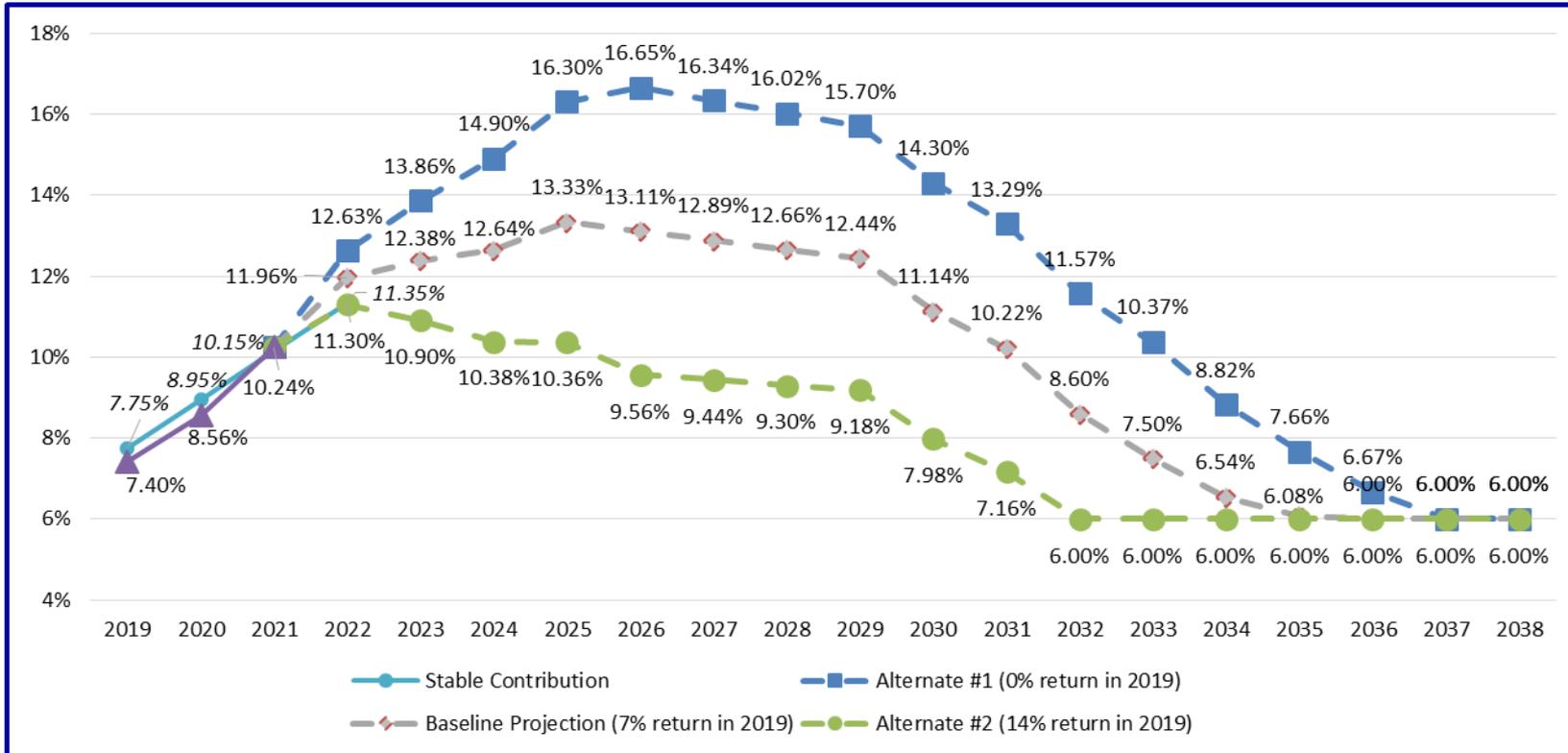
Inputs

- Membership Data
- Asset Data
- Benefit Provisions
- Assumptions
- Funding Methodology



Results

- Actuarial Value of Assets
- Actuarial Accrued Liability
- Net Actuarial Gain or Loss
- Funded Ratio
- Employer Contributions
- Benefit Enhancement
- Additional Disclosures
- Projections



The minimum employer contribution rate is 6%.

A detailed summary of the deterministic projections is provided in Section 9.

Valuation Results

Projected Contribution Rates – Law Enforcement Officers



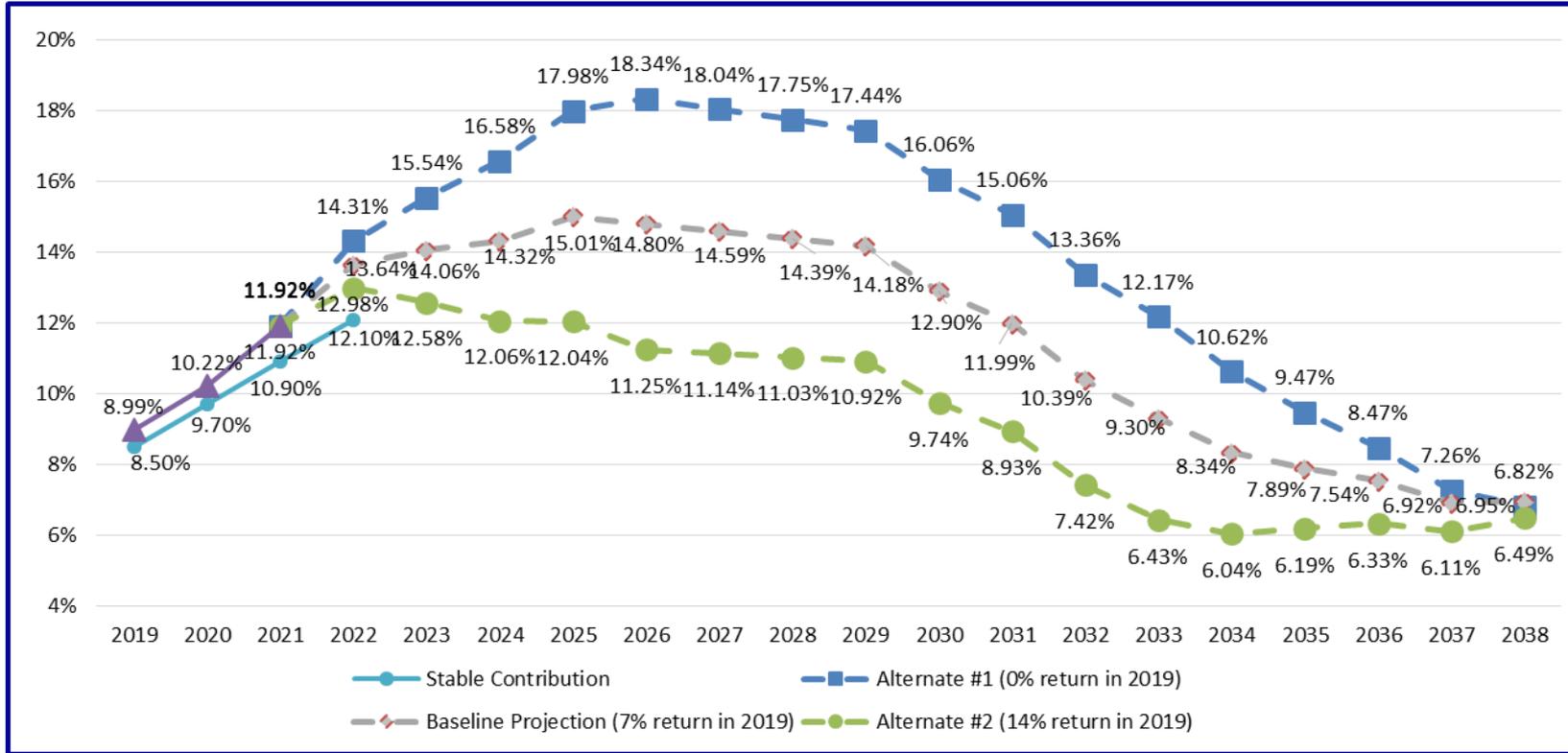
Inputs

- Membership Data
- Asset Data
- Benefit Provisions
- Assumptions
- Funding Methodology



Results

- Actuarial Value of Assets
- Actuarial Accrued Liability
- Net Actuarial Gain or Loss
- Funded Ratio
- Employer Contributions
- Benefit Enhancement
- Additional Disclosures
- Projections



The minimum employer contribution rate is 6%.

A detailed summary of the deterministic projections is provided in Section 9.



Projected Funded Ratio

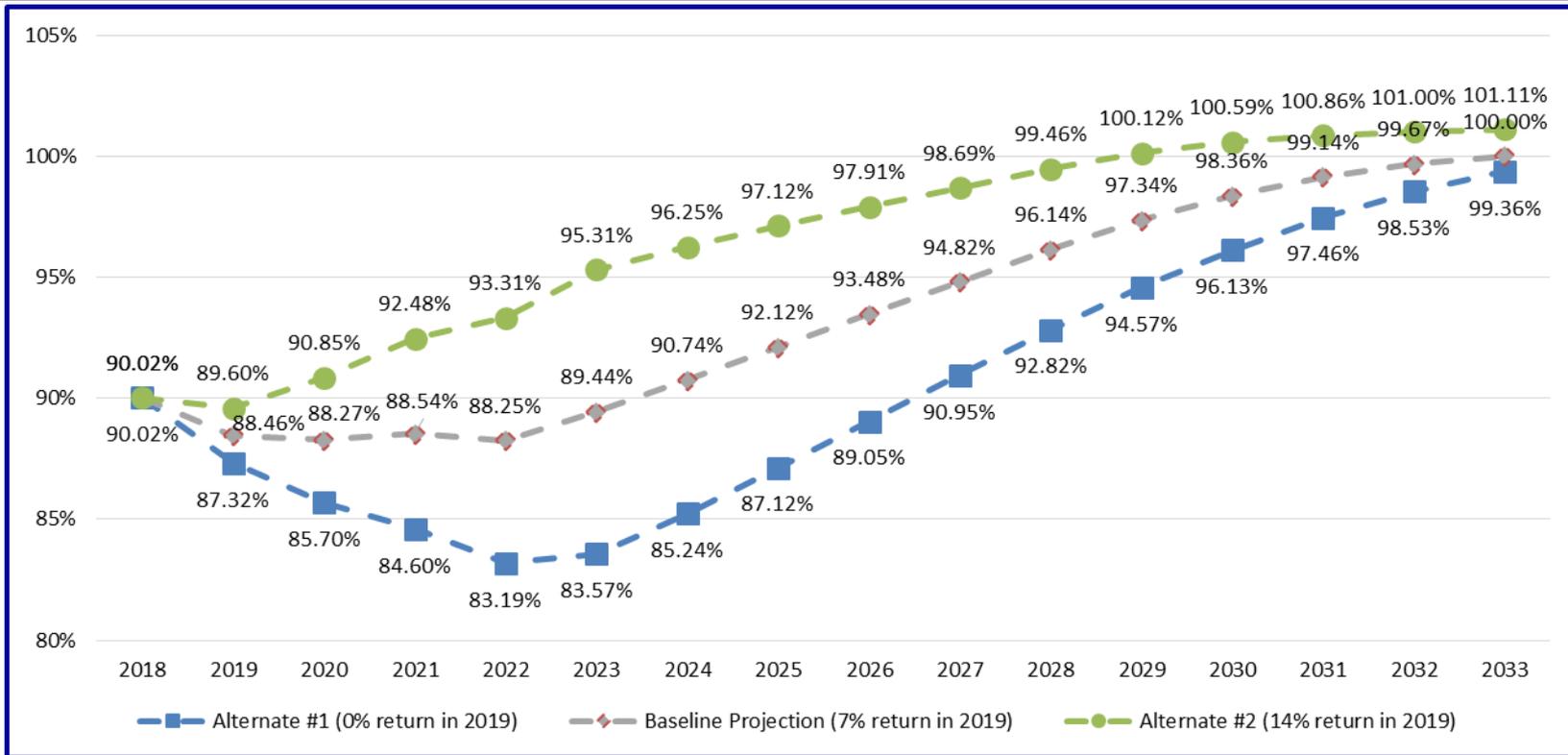
Inputs

- Membership Data
- Asset Data
- Benefit Provisions
- Assumptions
- Funding Methodology



Results

- Actuarial Value of Assets
- Actuarial Accrued Liability
- Net Actuarial Gain or Loss
- Funded Ratio
- Employer Contributions
- Benefit Enhancement
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- Projections



Note that if the 7.00% return under the Baseline Projection is achieved, the funded ratio reaches the long term target of 100% within 15 years. This is a direct result of using a 12 year period to pay off the unfunded actuarial accrued liability.

A detailed summary of the deterministic projections is provided in Section 9.



Key Takeaways

- Market value returns of -1.41% compared to 7.00% assumed
- Increase in covered payroll of 4.7% compared to 3.5% expected
- Last ADEC calculation using direct rate smoothing due to change in discount rate from 7.20% to 7.00% as of December 31, 2017.
- Recommended contributions under the Employer Contribution Rate Stabilization Policy (ECRSP) adopted by the Board of Trustees on January 21, 2016 were revised as of January 31, 2019 to better match actuarially determined contributions. ECRSP rates for FYE 6/30/2021:
 - 10.15% of payroll for general employees and firefighters
 - 10.90% of payroll for law enforcement officers

Key Takeaways (continued)



- Higher actuarially determined employer contribution rates for fiscal year ending June 30, 2021
 - 10.24% in the valuation compared to 9.58% in the baseline projection for general employees and firefighters
 - 11.92% in the valuation compared to 11.25% in the baseline projection for law enforcement officers



Key Takeaways (continued)

- LGERS is well funded compared to its peers. This is due to:
 - Stakeholders working together to keep LGERS well-funded since inception
 - A history of contributing the recommended contribution requirements
 - Assumptions that in aggregate are more conservative than peers
 - A funding policy that aggressively pays down unfunded liability over a 12-year period
 - An ad hoc cost-of-living adjustment, which typically only provides benefit increases when certain financial conditions are met, supports the health of the system
 - Modest changes in benefits when compared to peers
- As has been done over the past 75 + years, continued focus on these measures will be needed to maintain the sustainability of LGERS well into the future



Certification

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Because of limited scope, Cavanaugh Macdonald performed no analysis of the potential range of such future differences, except for some limited analysis in financial projections or required disclosure information. Results prior to December 31, 2017 were provided by the prior consulting actuary.

We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Larry Langer, ASA, EA, FCA, MAAA
Principal and Consulting Actuary

Jonathan T. Craven, ASA, EA, FCA, MAAA
Consulting Actuary



Cavanaugh Macdonald
CONSULTING, LLC
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North Carolina Local Governmental Employees' Retirement System

Report on the Actuarial Valuation Prepared
as of December 31, 2018

October 2019





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

October 16, 2019

Board of Trustees
North Carolina Local Governmental
Employees' Retirement System
3200 Atlantic Avenue
Raleigh, NC 27604

Members of the Board:

We submit herewith our report on the actuarial valuation of the North Carolina Local Governmental Employees' Retirement System (referred to as "LGERS" or the "Local Plan") prepared as of December 31, 2018. The report has been prepared in accordance with North Carolina General Statute 128-28(p). Information contained in our report for plan years prior to December 31, 2017 is based upon valuations performed by the prior actuary.

The primary purpose of the valuation report is to determine the required member and employer contribution rates, to describe the current financial condition of LGERS, and to analyze changes in such condition. In addition, the report provides information that the Office of the State Controller (OSC) requires for its Comprehensive Annual Financial Report (CAFR) and it summarizes census data. Use of this report for any other purposes or by anyone other than OSC and its auditors, or North Carolina Retirement System Division and Department of State Treasurer staff may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. Because of the risk of misinterpretation of actuarial results, you should ask Cavanaugh Macdonald Consulting (CMC) to review any statement you wish to make on the results contained in this report. CMC will not accept any liability for any such statement made without prior review.

The valuation is based upon membership data and financial information as furnished by the Retirement Systems Division and the Financial Operations Division and as summarized in this report. Although reviewed for reasonableness and consistency with the prior valuation, these elements have not been audited by CMC and we cannot certify as to the accuracy and completeness of the data supplied. Sometimes assumptions are made by CMC to interpret membership data that is imperfect. The valuation is also based on benefit and contribution provisions as presented in this report. If you have reason to believe that the plan provisions are incorrectly described, that important plan provisions relevant to this valuation are not described, or that conditions have changed since the calculations were made, you should contact the authors of this actuarial report prior to relying on this information.

The valuation is further based on the actuarial valuation assumptions, approved by the Board of Trustees, as presented in this report. We believe that these assumptions are appropriate and reasonable and also comply with the requirements of GASB Statement No. 67. We prepared this valuation in accordance with the requirements of this standard and in accordance with all applicable Actuarial Standards of Practice (ASOP).



The assumptions used for the December 31, 2018 actuarial valuation are based on the experience study prepared as of December 31, 2014 and adopted by the Board of Trustees on January 21, 2016, as further updated to use a discount rate of 7.00% in conjunction with direct rate smoothing of the employer contribution rate, as adopted by the Board of Trustees on April 26, 2018. The economic assumptions with respect to investment yield, salary increase and inflation have been based upon a review of the existing portfolio structure as well as recent and anticipated experience.

Where presented, references to “funded ratio” and “unfunded accrued liability” typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities. In various places in the report the results also show funded ratios and unfunded liabilities based upon varying sets of assumptions as well as market values of assets as that is required for certain disclosure information required per accounting rules or statutes. Where this has been done it has been clearly indicated.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: fund 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. Such changes in law may include additional costs resulting from future legislated benefit improvements or cost-of-living pension increases or supplements, which are not anticipated in the actuarial valuation. Because of limited scope, CMC performed no analysis of the potential range of such future differences, except for some limited analysis in financial projections or required disclosure information.

We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Respectfully submitted,

A handwritten signature in blue ink, appearing to be 'LL'.

Larry Langer, ASA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink, appearing to be 'Jonathan T. Craven'.

Jonathan T. Craven, ASA, EA, FCA, MAAA
Consulting Actuary



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Executive Summary

Overview

The North Carolina Retirement Systems Division (RSD) was established in 1941 to provide retirement benefits for public servants in the State of North Carolina. Today, under the management of the Department of State Treasurer, RSD administers seven public pension plans (defined benefit plans), three supplemental retirement plans (voluntary defined contributions plans), a health trust fund, a disability income plan, death benefit funds and a number of other benefit programs. As of December 31, 2018, the RSD defined benefit plans cover over one million current and prior public servants of the state of North Carolina. During the fiscal year ending June 30, 2019, RSD paid over \$6.4 billion in pensions to more than 310,000 retirees. And as of June 30, 2019, RSD's defined benefit plan assets were valued at over \$101 billion.

Under the supplemental retirement plans, the amount of contributions in any given year is defined by law. The amount of benefits derived is dependent on the investment returns the individual achieves. Conversely, under the pension plans, the amount of the benefit paid to a member upon retirement, termination, death or disability is defined by law. The amount of contributions needed to fund these benefits cannot be known with certainty. In North Carolina, like other states, these contributions are paid during a public servant's career so that upon retirement, termination, death, or disability, there are funds available to pay these benefits. These amounts are determined through an actuarial valuation. Actuarial valuations are performed for each of the pension plans administered by RSD and the results are contained in actuarial valuation reports like this.

The Local Governmental Employees' Retirement System (referred to as "LGERS" or the "Local Plan") was established in 1939 and began accepting participating employers in 1945. LGERS is maintained for the employees of cities, towns, counties, boards, commissions and other entities of local government in North Carolina. LGERS has over \$25 billion in assets and more than 275,000 members. This actuarial valuation report is our annual analysis of the financial health of LGERS. This report, prepared as of December 31, 2018, presents the results of the actuarial valuation of LGERS.

Purpose

An actuarial valuation is performed on LGERS annually as of the end of the calendar year. The actuary determines the amount of contributions to be made to LGERS during each member's career that, when combined with investment return, will be sufficient to pay for retirement benefits.

In addition, the annual actuarial valuation is performed to:

- Determine the actuarially recommended contribution rates for LGERS employers,
- Explore why the results of the current valuation differ from the results of the valuation of the previous year, and
- Satisfy regulatory and accounting requirements.

A detailed summary of the valuation process and a glossary of actuarial terms are provided in Appendix A.



Executive Summary

Risk

Measuring pension obligations and actuarially determined contributions requires the use of assumptions regarding future economic and demographic experience. Whenever assumptions are made about future events, there is risk that actual experience will differ from expected. Actuarial valuations include the risk that actual future measurements will deviate from expected future measurements due to actual experience that is different than the actuarial assumptions.

The primary areas of risk in this actuarial valuation are:

- Investment Risk – the potential that investment returns will be different than expected. Section 9 of this report demonstrates the sensitivity of future projected results to asset returns deviating from expected returns.
- Longevity and Other Demographic Risks – the potential that mortality or other demographic experience will be different than expected.
- Interest Rate Risk – To the extent market rates of interest affect the expected return on assets, there is a risk of change to the discount rate which determines the present value of liabilities and actuarial valuation results. Table F-1 of this report demonstrates the sensitivity of valuation results to differing discount rates.
- Contribution Risk – The potential that actual contributions are different than the actuarially determined contributions.

Annual actuarial valuations are performed for RSD which re-measure the assets and liabilities and compute a new actuarially determined contribution. RSD also has experience studies performed every five years to analyze the discrepancies between actuarial assumptions and actual experience and determine if the actuarial assumptions need to be changed. Annual actuarial valuations and periodic experience studies are practical ways to monitor and reassess risk.



Executive Summary (continued)

Key Takeaways

The actuarial valuation is performed each year to replace the estimates the actuary assumed for the prior valuation with the actual events that happened. This past year, as expected, some of the assumptions used in the prior valuation were not realized. Key results of the December 31, 2018 valuation as compared to the December 31, 2017 valuation were:

- Market value returns of -1.41% during calendar year 2018 compared to 7.00% assumed

When compared to the December 31, 2017 projections, the above resulted in:

- A lower funded ratio as of December 31, 2018 (90.0% in the valuation compared to 91.9% in the baseline projection)
- Higher actuarially determined employer contribution rates for fiscal year ending June 30, 2021
 - 10.24% in the valuation compared to 9.58% in the baseline projection for general employees and firefighters
 - 11.92% in the valuation compared to 11.25% in the baseline projection for law enforcement officers
- Actuarially determined employer contribution rates for both rate classes are somewhat higher than ECRSP rates.
 - General Employees/Firefighter ECRSP of 10.15% vs. ADEC of 10.24%
 - Law Enforcement Officer ECRSP of 10.90% vs. ADEC of 11.92%

LGERS is well funded compared to its peers. This is due to:

- Stakeholders working together to keep LGERS well-funded since inception
- A history of contributing the recommended contribution requirements
- Assumptions that in aggregate are more conservative than peers
- A funding policy that aggressively adjusts contribution rates to pay down unfunded liability
- An ad hoc cost-of-living adjustment, which typically only provides benefit increases when certain financial conditions are met, that supports the health of the system
- Modest changes in benefits when compared to peers

Continued focus on these measures will be needed to maintain the solid status of LGERS well into the future.



Section 1: Principal Results

This report, prepared as of December 31, 2018, presents the results of the annual valuation of the system. The principal results of the valuation and a comparison with the preceding year's results are summarized below.

Table 1: Summary of Principal Results

Valuation Results as of	12/31/2018	12/31/2017
Active Members		
Number	129,986	128,779
Reported Compensation	\$6,225,257,140	\$5,944,507,039
Valuation Compensation*	\$6,771,617,088	\$6,452,755,259
Retired Members and Survivors of Deceased Members Currently Receiving Benefits		
Number	72,087	68,766
Annual Allowances	\$1,400,113,021	\$1,324,257,015
Market Value		
Number of Participating Employers	896	894
Assets		
Actuarial Value (AVA)	\$26,307,348,445	\$25,520,733,159
Market Value	\$25,045,130,611	\$25,918,361,041
Actuarial Accrued Liability (AAL)	\$29,223,126,652	\$27,745,867,630
Unfunded Accrued Liability (AAL-AVA)	\$2,915,778,207	\$2,225,134,471
Funded Ratio (AVA/AAL)**	90.0%	92.0%
Unfunded Initial Prior Service Liability	\$21,880,677	\$25,764,186

* Reported compensation annualized for new hires and projected for valuation purposes.

**The Funded Ratio on a Market Value of Assets basis is 85.7% at December 31, 2018.



Section 1: Principal Results

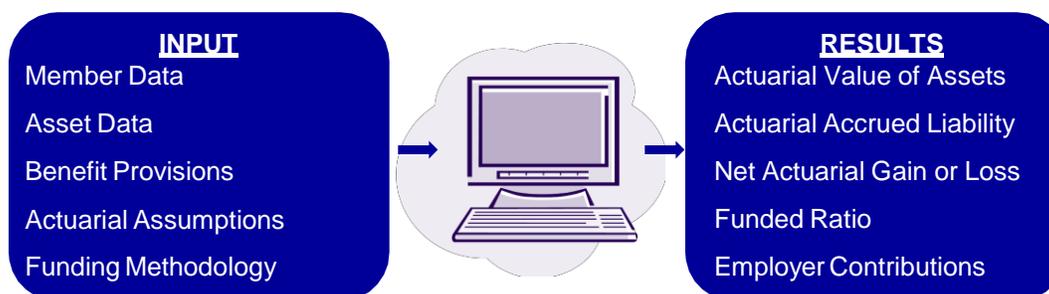
This report, prepared as of December 31, 2018, presents the results of the annual valuation of the system. The principal results of the valuation and a comparison with the preceding year's results are continued below.

Table 1: Summary of Principal Results (continued)

Valuation Results as of	12/31/2018	12/31/2017
Results for Fiscal Year Ending	6/30/2021	6/30/2020
Actuarially Determined Employer Contribution (ADEC), as a percentage of payroll		
General Employees and Firefighters		
Normal Cost	5.44%	5.39%
Accrued Liability	<u>5.35%</u>	<u>4.27%</u>
Total Preliminary ADEC	10.79%	9.66%
Total Based on Direct Rate Smoothing	10.24%	8.56%
Impact of Legislative Changes	<u>N/A</u>	<u>0.00%</u>
Final ADEC	10.24%	8.56%
Law Enforcement Officers		
Normal Cost	7.15%	7.14%
Accrued Liability	<u>5.35%</u>	<u>4.27%</u>
Total Preliminary ADEC	12.50%	11.41%
Total Based on Direct Rate Smoothing	11.92%	10.22%
Impact of Legislative Changes	<u>N/A</u>	<u>0.00%</u>
Final ADEC	11.92%	10.22%
Board Approved Contribution under the Employer Contribution Rate Stabilization Policy (ECRSP)		
General Employees and Firefighters	10.15%	8.95%
Law Enforcement Officers	10.90%	9.70%
Current Funding in Effect at	7/1/2019	7/1/2018
Employer Contribution Rate as a percentage of payroll		
General Employees and Firefighters	8.95%	7.75%
Law Enforcement Officers	9.70%	8.50%

Section 2: The Valuation Process

The following diagram summarizes the inputs and results of the actuarial valuation process.



A more detailed description of the valuation process is provided in Appendix A.

Valuation Input: Membership Data

As with any estimate, the actuary collects information that we know now. Under the actuarial valuation process, current information about LGERS members is collected annually by the Retirement Systems Division staff at the direction of the actuary. Membership data will assist the actuary in estimating benefits that could be paid in the future. Information about benefit provisions and assets held in the trust as of the valuation date is also collected.

The member information the actuary collects includes data elements such as current service, salary and benefit group identifier for members that have not separated service, and actual benefit amounts and form of payment for members that have separated service. Data elements such as gender and date of birth are used to determine when a benefit might be paid and for how long.



Section 2: The Valuation Process

Valuation Input: Membership Data (continued)

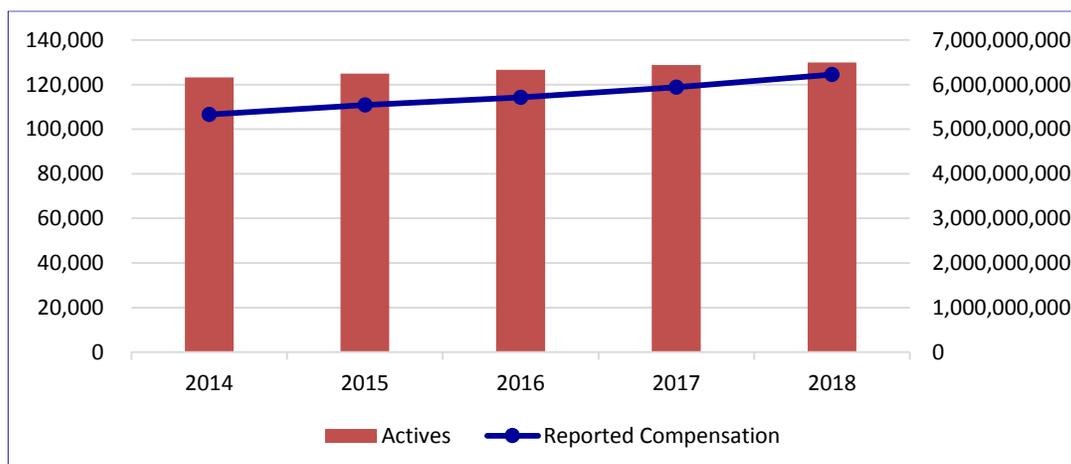
The table below provides a summary of the membership data used in this valuation compared to the prior valuation.

	12/31/2018	12/31/2017
Active Members	129,986	128,779
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	73,835	68,243
Retired members and survivors of deceased members currently receiving benefits	<u>72,087</u>	<u>68,766</u>
Total	275,908	265,788

Commentary: The number of active members increased by 0.9% from the previous valuation date. The increase in the active population results in more benefits accruing, but also more contributions supporting the system. The number of retired members and survivors of deceased members currently receiving benefits increased by 4.8% from the previous valuation date. The increase in retiree population is consistent with expectations.

Graph 1: Active Members

The graph below provides a history of the number of active members and reported compensation over the past five years.



Commentary: Reported compensation has increased by 4.7%. Covered payroll is expected to increase by 3.5% annually in the future. Payroll that is increasing faster than we assume results in more benefits accruing than we anticipate, but also more contributions supporting the system.

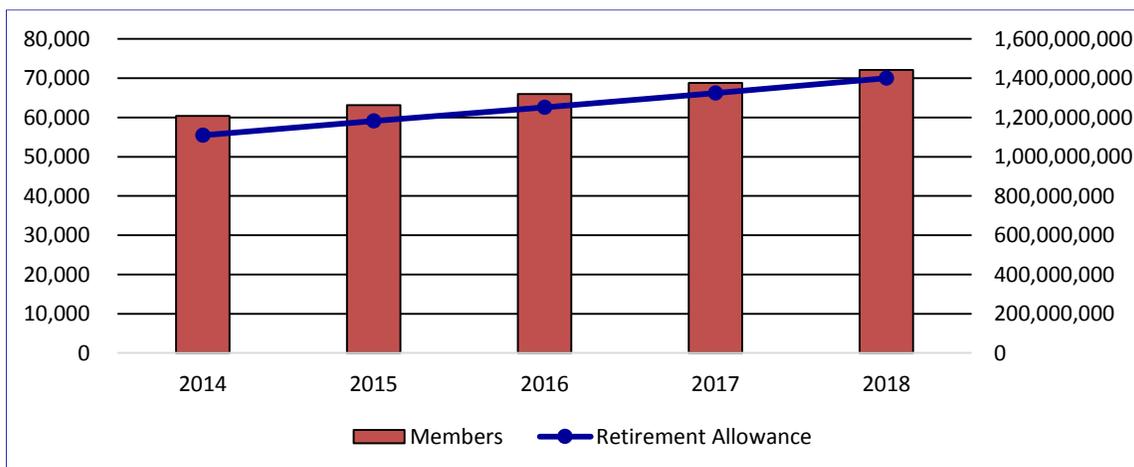


Section 2: The Valuation Process

Valuation Input: Membership Data (continued)

Graph 2: Retired Members and Survivors of Deceased Members

The graph below provides a history of the number of retired members and survivors of deceased members and benefit amounts payable over the past five years.



Commentary: The number of retired members and survivors of deceased members and the benefits paid to these members has been increasing steadily, as expected based on plan assumptions.

A detailed summary of the membership data used in this valuation is provided in Section 3 and Appendix B of this report.



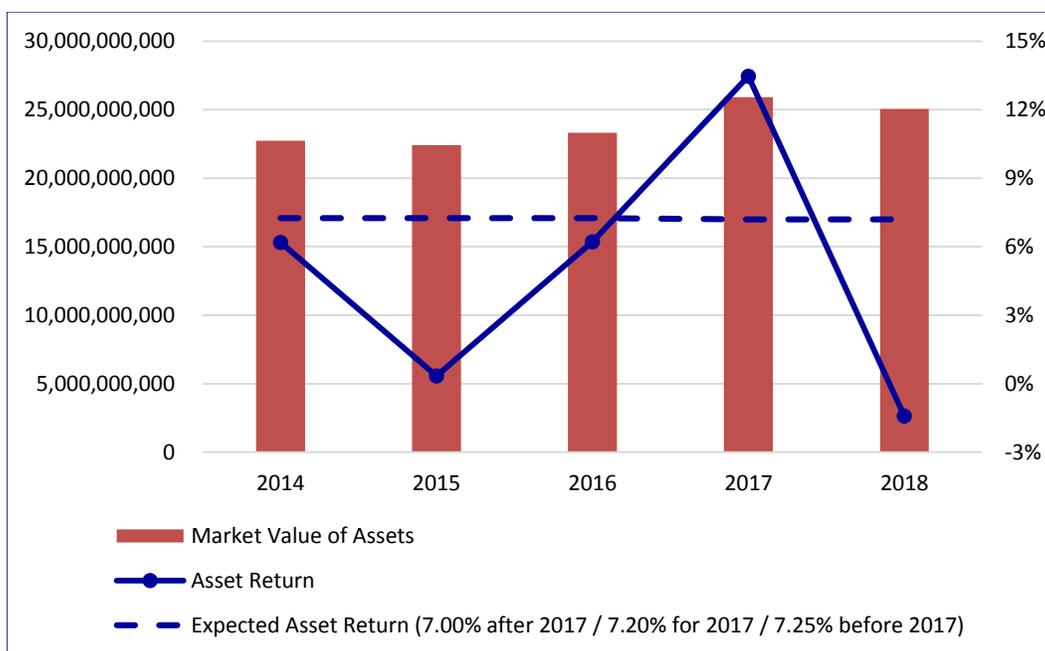
Section 2: The Valuation Process

Valuation Input: Asset Data

LGERS assets are held in trust and are invested for the exclusive benefit of plan members. The Market Value of Assets is \$25.0 billion as of December 31, 2018 and \$25.9 billion as of December 31, 2017. The investment return for the market value of assets for calendar year 2018 was -1.41%.

Graph 3: Market Value of Assets and Asset Returns

The graph below provides a history of the market value of assets and asset returns over the past five years.



Commentary: Market value returns were much less than the 7.0% assumed rate of return, resulting in higher required contributions and lower funded ratio than anticipated as of the December 31, 2017 baseline projections presented in the December 31, 2017 actuarial report.

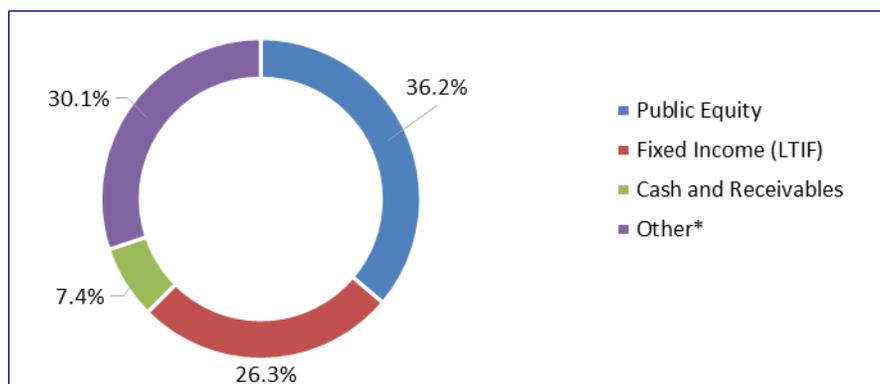


Section 2: The Valuation Process

Valuation Input: Asset Data (continued)

Graph 4: Allocation of Investments by Category

The graph below provides the breakdown of the market value of assets at December 31, 2018 by asset category.



* Real Estate, Alternatives, Inflation and Credit

Commentary: Based on historical market returns, the current asset allocation, the current investment policy, and the expectation of future asset returns, as reviewed in the last experience study, the 7.00% discount rate used in this valuation is reasonable and appropriate.

A detailed summary of the market value of assets is provided in Section 4 of this report.



Section 2: The Valuation Process

Valuation Input: Benefit Provisions

Benefit provisions are described in North Carolina General Statutes, Chapter 128.

Highlights of the benefit provisions are described below.

- An unreduced retirement allowance is payable to non-law enforcement members who retire from service:
 - after attaining age 65 and five years of creditable service;
 - after attaining age 60 and 25 years of creditable service; or
 - after attaining 30 years of creditable service
- An unreduced retirement allowance is payable to law enforcement members who retire from service:
 - after attaining age 55 and five years of creditable service; or
 - after attaining 30 years of creditable service
- The unreduced retirement allowance is equal to 1.85% of a member's average final compensation multiplied by the number of years of creditable service. Average final compensation is based on the four highest consecutive years of service.
- A reduced retirement allowance is payable to non-law enforcement members who retire from service:
 - after attaining age 60 and five years of creditable service; or
 - after attaining age 50 and 20 years of creditable service
- A reduced retirement allowance is payable to firefighters and rescue squad workers who retire from service after attaining age 55 and five years of creditable service.
- A reduced retirement allowance is payable to law enforcement members who retire from service after attaining age 50 and 15 years of creditable service or after attaining 25 years (15 as an officer) of creditable service.
- Benefits are also payable upon the death or disability of a member.
- LGERS does not provide for automatic cost of living increases as part of the benefit package. Instead, increases may be provided if certain financial conditions are met. More details on cost-of-living increases are provided in Graph 5.

Commentary: Many Public Sector Retirement Systems in the United States have undergone pension reform where the benefits of members (active or future members) have been reduced. Because of the well-funded status of LGERS, benefit cuts have not been made in North Carolina as they have been in most other states. Instead, we have seen a modest expansion of benefits in recent years based on sound plan design. However, if North Carolina's investment policy shifts substantively or if the system incurs other unfavorable investment, economic, or demographic experience, the system should review likely impacts of the shift and consider corresponding changes to actuarial assumptions, funding policy and/or benefit levels.



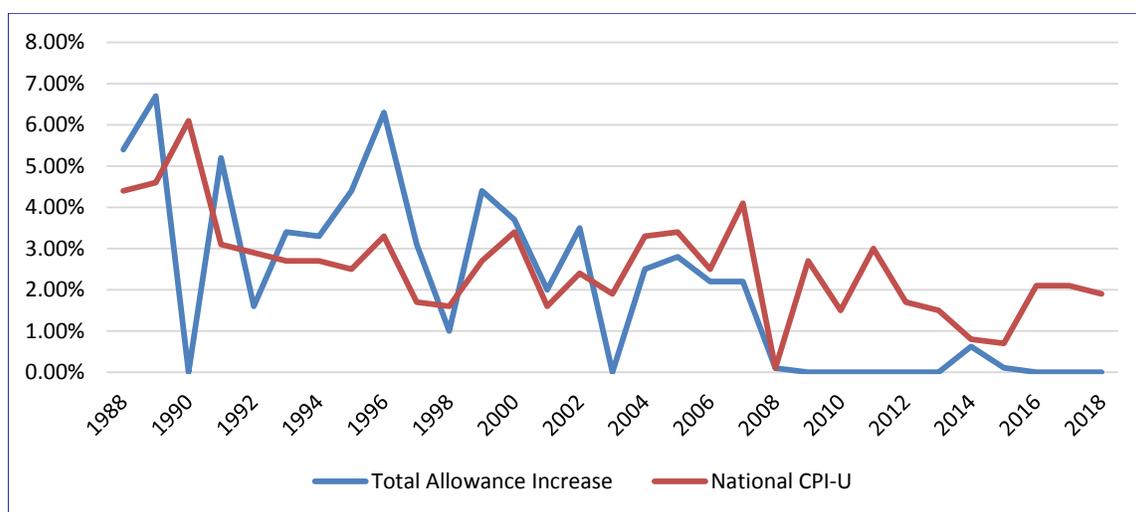
Section 2: The Valuation Process

Valuation Input: Benefit Provisions (continued)

As noted previously, cost-of-living increases are periodically considered by the Board of Trustees to the extent that certain financial conditions are met. Specifically, benefit allowance increases are generally considered when the trust experiences sufficient investment gains to cover the additional actuarial accrued liabilities created by providing the cost-of-living adjustment (generally, limited to the lesser of the CPI increase year-over-year or 4%). In addition to employers consistently contributing the actuary's recommended contribution, this benefit increase policy has helped keep costs manageable when compared to other public sector retirement systems in the United States. That being said, post-retirement increases help to reduce the risk that the benefit will be eroded by inflation.

Graph 5: Cost-of-Living Increase and CPI-U History

The graph below provides a 30-year history of the allowance increases for LGERS and the national CPI-U.



* Allowance increases are effective at July 1 the following year

Commentary: Generally this allowance increase policy has helped retirees maintain purchasing power while helping to moderate contribution increases during times of down markets. Graph shows only permanent increases to the retirement allowance and not one-time supplements that have been granted.

A detailed summary of the benefit provisions is provided in Appendix C of this report.

Valuation Input: Actuarial Assumptions

Actuarial assumptions bridge the gap between the information that we know with certainty as of the valuation date (age, gender, service, pay, and benefits of the members) and what may happen in the future. The actuarial assumptions of LGERS are reviewed at least every five years. Based on this review, the actuary will make recommendations on the demographic and economic assumptions.

Demographic assumptions describe future events that relate to people such as retirement rates, termination rates, disability rates, and mortality rates. Economic assumptions describe future events that relate to the assets of LGERS such as the interest rate, salary increases, the real return, and payroll growth.

The assumptions used for the December 31, 2018 actuarial valuation, with the exception of the discount rate, are based on the experience study prepared as of December 31, 2014 and adopted by the Board of Trustees on January 21, 2016. The discount rate was updated to be 7.00%, as adopted by the Board of Trustees on April 26, 2018.



Section 2: The Valuation Process

Valuation Input: Funding Methodology

The Funding Methodology is the payment plan for LGERS and is composed of the following three components:

- Actuarial Cost Methods allocate costs to the actuarial accrued liability (i.e. the amount of money that should be in the LGERS fund) for past service and normal cost (i.e. the cost of benefits accruing during the year) for current service.
 - The Board of Trustees has adopted Entry Age Normal as its actuarial cost method
 - Develops normal costs that stay level as a percent of payroll
- Asset Valuation Methods smooth or average the market value returns over time to alleviate contribution volatility that results from market returns. The Board of Trustees has adopted the following:
 - Asset returns in excess of or less than the expected return on market value of assets reflected over a five-year period
 - Assets corridor: not greater than 120% of market value and not less than 80% of market value
- Amortization Methods determine the payment schedule for unfunded actuarial accrued liability (i.e. the difference between the actuarial accrued liability and actuarial value of assets)
 - Payment level: the payment is determined as a level dollar amount, similar to a mortgage payment
 - Payment period: a 12-year closed amortization period was adopted for fiscal year ending 2018. A new amortization base is created each year based on the prior year experience

The valuation reflects the change in methodology for determining liquidation of unfunded initial prior service accrued liability, approved by the Board of Trustees in January 2012. The outstanding balance of the unfunded initial prior service accrued liability and the date of liquidation of accrued liability will be estimated as of June 30 each year. These estimates must be recalculated annually and adjusted according to each employer's actual experience.

- One (1) employer was granted relief at 7/1/2019
- Six (6) employers are expected to be granted relief at 7/1/2020 based on this valuation

A detailed summary of the actuarial assumptions and methods is provided in Appendix D of this report.



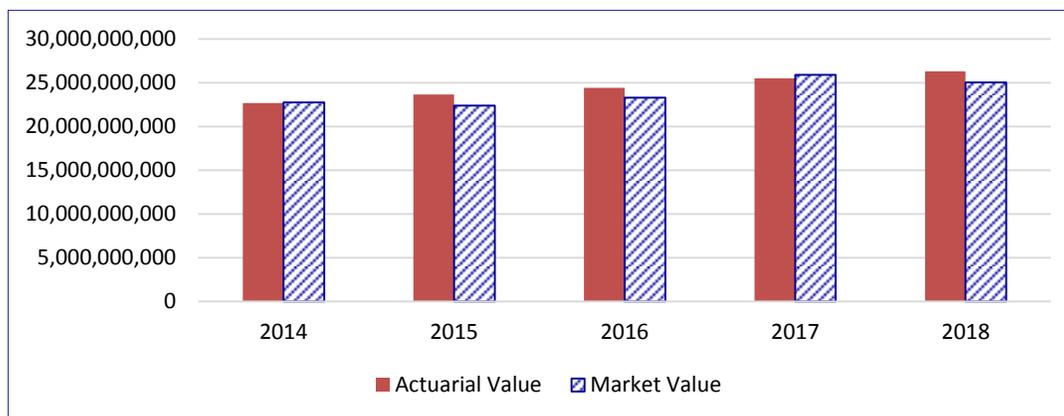
Section 2: The Valuation Process

Valuation Results: Actuarial Value of Assets

In order to reduce the volatility that investment gains and losses can have on required contributions and funded status of LGERS, the Board adopted an asset valuation method to determine the Actuarial Value of Assets used for funding purposes. The Actuarial Value of Assets is \$26.3 billion as of December 31, 2018 and \$25.5 billion as of December 31, 2017.

Graph 6: Actuarial Value and Market Value of Assets

The graph below provides a history of the market value and actuarial value of assets over the past five years.



Commentary: The market value of assets is lower than the actuarial value of assets, which is used to determine employer contributions. This indicates that overall there are unrecognized asset losses to be recognized in future valuations.

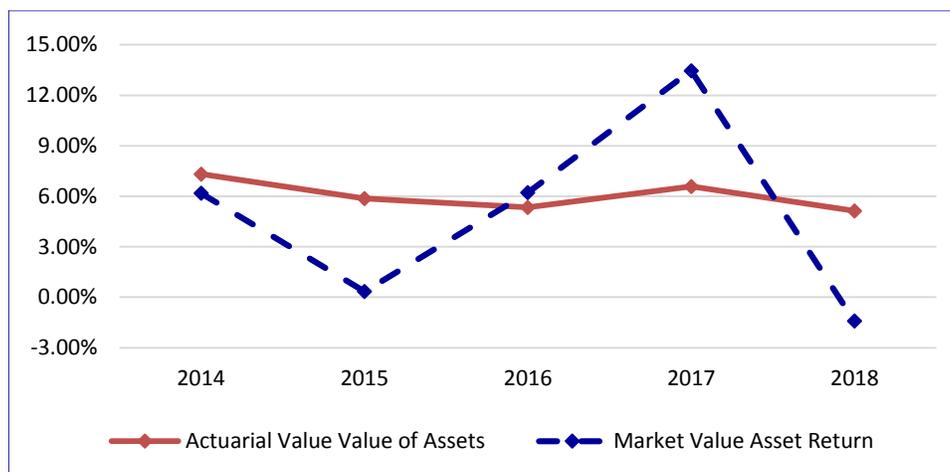


Section 2: The Valuation Process

Valuation Results: Actuarial Value of Assets (continued)

Graph 7: Asset Returns

The graph below provides a history of the market value and actuarial value of asset returns over the past five years.



Commentary: The investment return for the market value of assets for calendar year 2018 was -1.41%. The actuarial value of assets smooths investment gains and losses. Lower than expected market returns, in all years except 2017, resulted in an actuarial value of asset return for calendar year 2018 of 5.13% and a recognized actuarial asset loss of \$472 million during 2018.

A detailed summary of the Actuarial Value of Assets is provided in Section 4 of this report.



Section 2: The Valuation Process

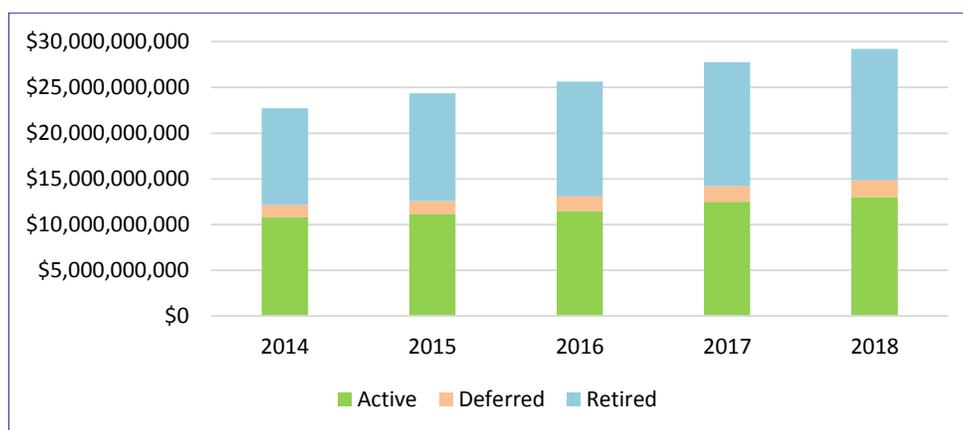
Valuation Results: Actuarial Accrued Liability

Using the provided membership data, benefit provisions, and actuarial assumptions, the future benefit payments of LGERS are estimated. These projected future benefit payments are discounted into today's dollars using the assumed rate of investment return assumption to determine the Present Value of Future Benefits (PVFB) of LGERS. The PVFB is an estimate of the current value of the benefits promised to all members as of a valuation date.

Once the PVFB is developed, an actuarial cost method is used to allocate the PVFB. Under the actuarial cost method, the PVFB is allocated to past, current and future service, respectively known as the actuarial accrued liability (AAL), normal cost (NC) and present value of future normal costs (PVFNC). The AAL is also referred to as the amount of money LGERS should ideally have in the trust. The NC is also referred to as the cost of benefits accruing during the year.

Graph 8: Actuarial Accrued Liability

The graph below provides a history of the actuarial accrued liability over the past five years.



Commentary: The AAL increased from \$27.746 billion to \$29.223 billion during 2018. LGERS is an open plan, which means that new members enter the plan each year. In an open plan, liabilities are expected to grow from one year to the next as more benefits accrue and the membership approaches retirement. The AAL was \$234 million higher than expected, resulting from demographic losses.

A detailed summary of the AAL is provided in Section 5 of this report.



Section 2: The Valuation Process

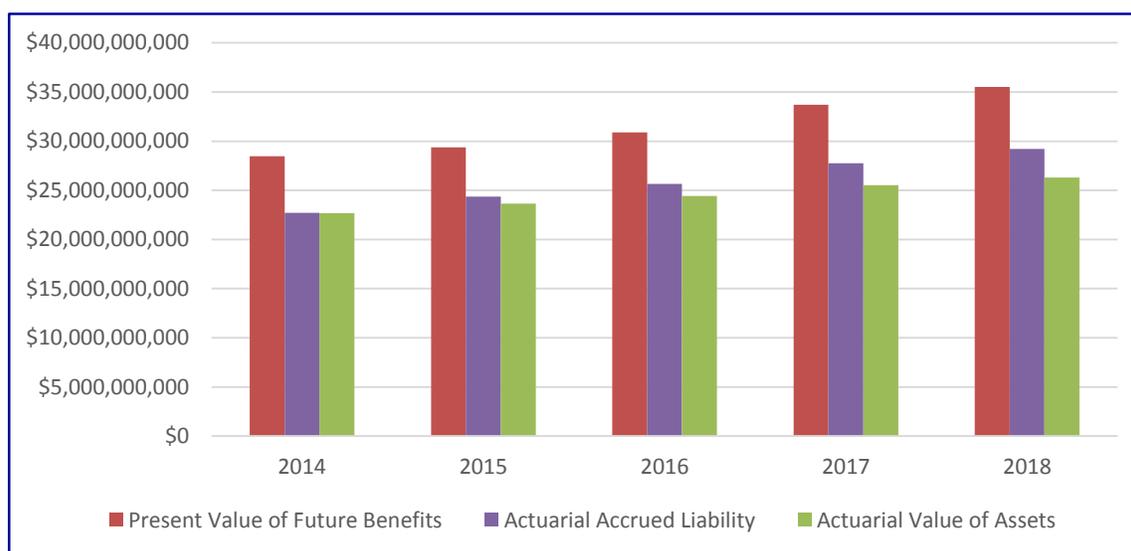
Valuation Results: Funded Ratio

The funded ratio is a measure of the progress that has been made in funding the plan as of the valuation date. It is the ratio of how much money LGERS actually has in the fund to the amount LGERS should have in the fund.

The actuarial cost method was changed to the entry age normal cost method from a frozen entry age cost method as of the December 31, 2015 valuation. Separate initial unfunded prior service cost accrued liabilities are maintained for employers who joined the system prior to November 1, 2015. Under the frozen entry age cost method, the funding target is the present value of future benefits, which includes the cost of service for past, current and future service. Under the entry age normal cost method, the funding target is the actuarial accrued liability, which includes the cost of service for only past service.

Graph 9: Present Value of Future Benefits, Actuarial Accrued Liability and Actuarial Value of Assets

The graph below provides a history of the present value of future benefits and actuarial accrued liability compared to the actuarial value of assets over the past five years.



Commentary: The present value of future benefits has increased over the past five years. The present value of future benefits increased from \$33.7 billion at December 31, 2017 to \$35.5 billion at December 31, 2018.

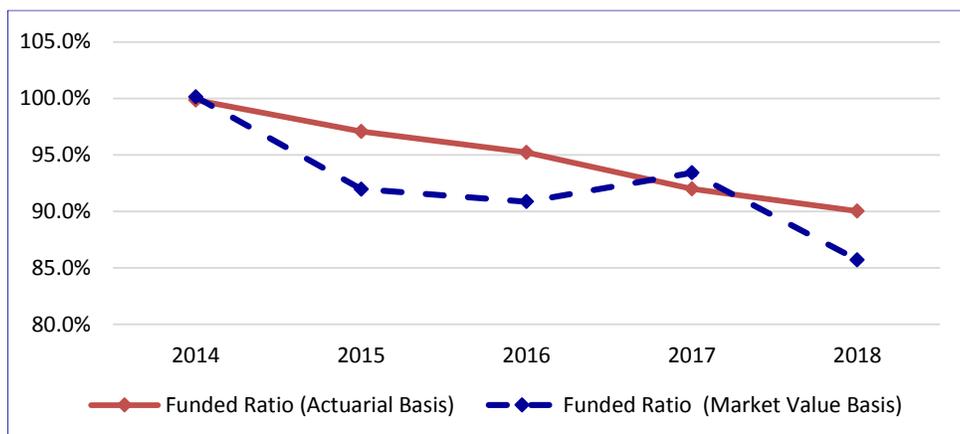


Section 2: The Valuation Process

Valuation Results: Funded Ratio (continued)

Graph 10: Funded Ratios

The graph below provides a history of the funded ratio on a market and actuarial basis over the past five years.



Commentary: The actuarial value of assets basis is used for computing contributions to alleviate contribution volatility. The funded ratio on an actuarial basis decreased from 92.0% at December 31, 2017 to 90.0% at December 31, 2018. The funded ratio for the December 31, 2014 valuation is based on accrued liabilities calculated under the frozen entry age cost method. Under this cost method, the AAL will track closely to assets.



Section 2: The Valuation Process

Valuation Results: Employer Contributions

The North Carolina General Statutes provide that the contributions of employers shall consist of a normal contribution and an accrued liability contribution. An additional initial accrued liability contribution rate is to be set for each employer on the basis of the prior service credits allowable to the employees thereof, and is determined on the basis of separate initial valuations for each employer.

The December 31, 2017 valuation resulted in a preliminary actuarially determined employer contribution rate of 8.56% of payroll for general employees and firefighters and 10.22% of payroll for law enforcement officers at July 1, 2019. The Board of Trustees increased the employer contributions required under the Employer Contribution Rate Stabilization Policy (ECRSP) on January 31, 2019. Based on the revised ESRSP, the Board of Trustees set contributions at 8.95% of payroll for general employees and firefighters and 9.70% of payroll for law enforcement officers at July 1, 2019. As a result of the December 31, 2018 valuation, the preliminary actuarial determined employer contribution rate is 10.24% of payroll for general employees and firefighters and 11.92% of payroll for law enforcement officers. Based on the ECRSP, the preliminary ECRSP contribution rate should be set at 10.15% of payroll for general employees and firefighters and 10.90% of payroll for law enforcement officers at July 1, 2020.

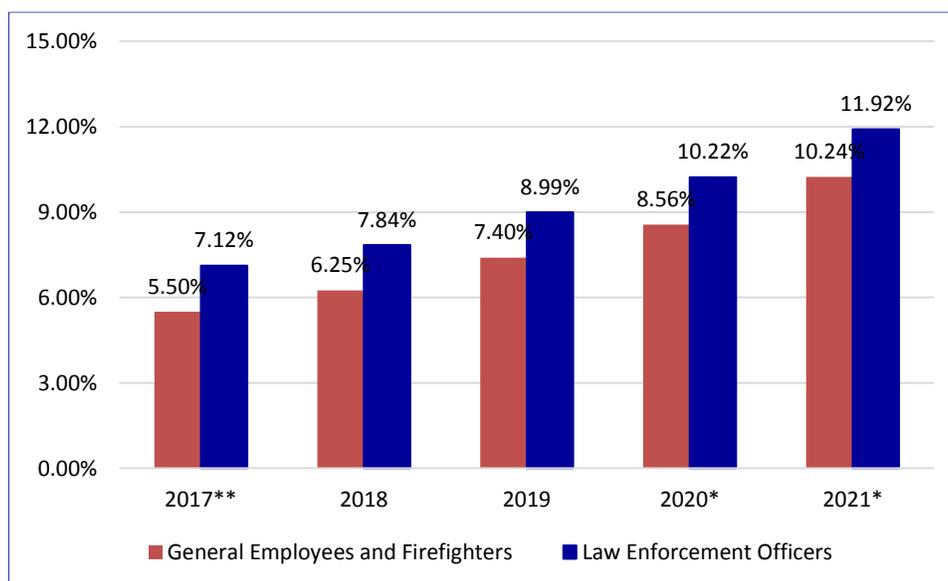


Section 2: The Valuation Process

Valuation Results: Employer Contributions (continued)

Graph 11: Employer Actuarially Determined Contribution Rates

The graph below provides a history of actuarially determined employer contribution rates over the past five years.



* Subject to the impact of future legislative changes effective before or during that fiscal year

** Includes impact of the experience study

Commentary: The normal cost rate is the employer's portion of the cost of benefits accruing after reducing for the 6% of pay contribution the members make. The accrued liability rate is the payment toward the unfunded liability needed to pay it off over a 12-year period. The 12-year period is a relatively short period for Public Sector Retirement Systems in the United States, with most Systems using a longer period to pay off unfunded pension liabilities. The shorter period results in higher contributions and more benefit security.

These contribution rates do not include an employer's additional initial contribution for unfunded prior service cost accrued liability.

A detailed summary of the actuarially determined employer contribution rates is provided in Section 6 of this report.



Section 2: The Valuation Process

Valuation Results: Projections

Projections of contribution requirements and funded status into the future can be helpful planning tools for stakeholders. This section provides such projections. The projections of the actuarial valuation are known as deterministic projections. Deterministic projections are based on one scenario in the future. The baseline deterministic projection is based on December 31, 2018 valuation results as assumptions.

Key Projection Assumptions:

- Valuation interest rate of 7.00% for all years, with direct rate smoothing of the employer contribution rates over a three-year period beginning July 1, 2019.
- 7.00% investment return on market value of assets
- Actuarial assumptions and methods as described in Appendix D. All future demographic experience is assumed to be exactly realized.
- The contribution rate under the Employer Contribution Rate Stabilization Policy (ECRSP) is contributed until fiscal year ending 2022.
- The actuarially determined contribution rate is contributed for fiscal years ending 2023 and beyond.
- 0% increase in the total active member population
- No cost-of-living adjustments granted
- Future pay increases based on long-term valuation assumptions

The ECRSP adopted by the Board of Trustees on January 31, 2019 requires that recommended contributions for general employees be set at 8.95% of payroll for fiscal year ending 2020 and will increase each fiscal year by 1.20% per year, with the following additional adjustments, if applicable:

- (1) If the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year is 50% higher than the scheduled employer contribution rate for that fiscal year, the scheduled employer contribution rate for the current and future fiscal years increases 0.50%;
- (2) If the underlying ADEC for a given fiscal year is 50% lower than the scheduled employer contribution rate for that fiscal year, the scheduled employer contribution rate for the current and future fiscal year decreases 0.50%;
- (3) If the General Assembly grants any additional COLA beyond the amount of COLA granted by the Board, increases the multiplier for active employees, or changes the benefit structure in a way that has a cost to the system, the schedule of contributions for the current and future fiscal years will be increased by the cost of the benefit enhancement. The cost of any COLA granted by the Board under the authority allowed by statute will not impact the scheduled contribution rates.

Contribution rates for law enforcement officers will be 0.75% higher than contribution rates for general employees. Details on the projected contribution rates for law enforcement officers are shown in Section 9.



Section 2: The Valuation Process

Valuation Results: Projections (continued)

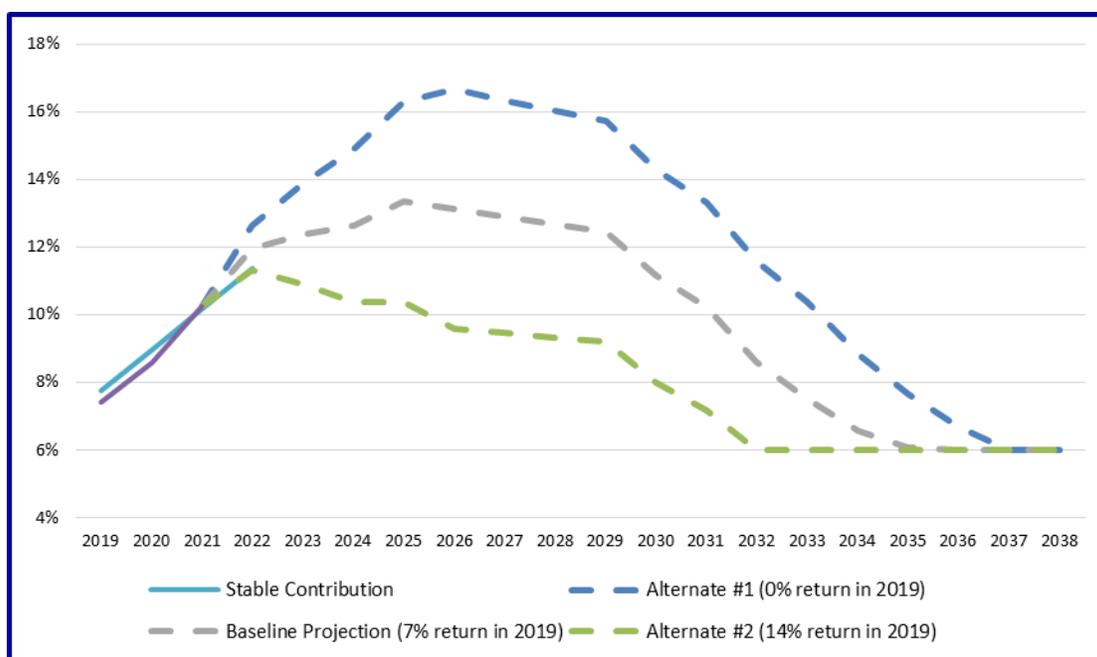
In addition, we have provided two alternate deterministic projections. The first alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 0.0% asset return for calendar year 2019. The second alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 14.0% asset return for calendar year 2019.

Finally, stochastic projections, where hundreds of projections based on varying rates of return are performed and results are ordered, are periodically performed by the Investment Management Division and shared with the Board of Trustees and RSD staff.

Valuation Results: Projections (continued)

Graph 12: Projected Actuarially Determined Employer Contribution Rates

The graph below provides the actuarially determined employer contributions rates for general employees and firefighters projected for 15 years, as well as the board-approved stable contribution under the Employer Contribution Rate Stabilization Policy.



Commentary: The minimum employer contribution rate is equal to the employee contribution rate of 6.00%. The contribution rates shown in the graph above do not include an employer's additional initial contribution for unfunded prior service cost accrued liability.

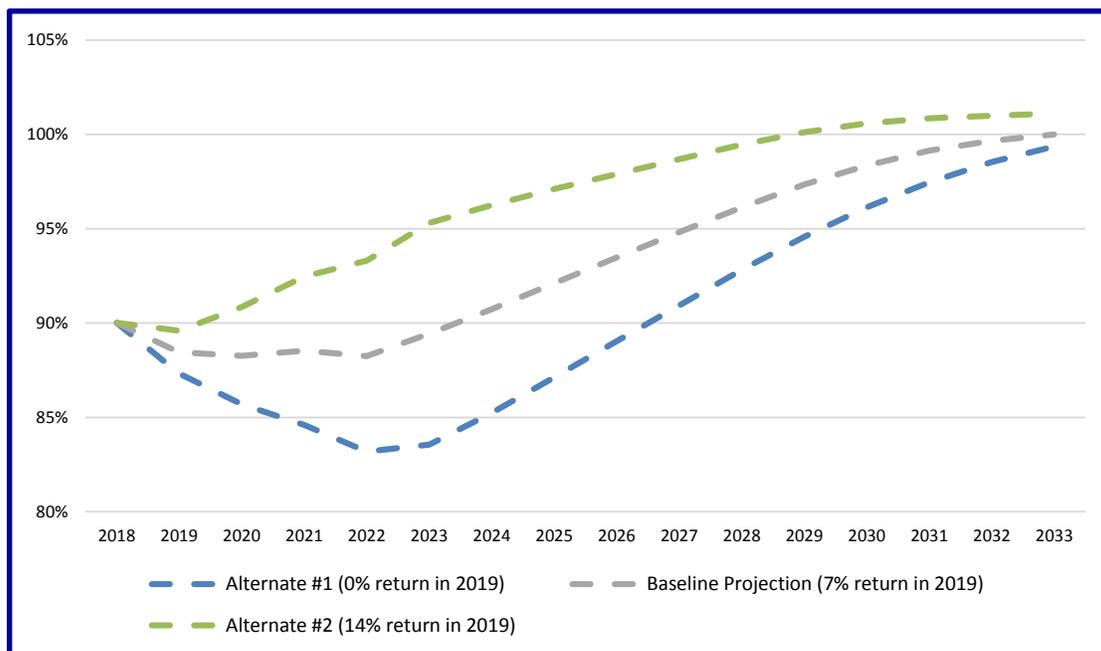


Section 2: The Valuation Process

Valuation Results: Projections (continued)

Graph 13: Projected Funded Ratio

The graph below provides the funded ratio projected for 15 years.



Commentary: Note that if the 7.00% return under the Baseline Projection is achieved, the funded ratio reaches the long term target of 100% within 15 years. This is a direct result of using a 12-year period to pay off the unfunded actuarial accrued liability.

A detailed summary of the deterministic projections is provided in Section 9 of this report.

Valuation Results: Accounting Information

The Governmental Accounting Standards Board (GASB) issues statements which establish financial reporting standards for defined benefit pension plans and accounting for pension expenditures and expenses for governmental employers.

The valuation has been prepared in accordance with the parameters of Statement No. 67 of the GASB and all applicable Actuarial Standards of Practice. The Net Pension Liability (Asset) under GASB 67 for the fiscal year ending June 30, 2019, is \$2,730,922,000 (compared to \$2,372,342,000 for fiscal year ending June 30, 2018). The required financial reporting information for LGERS under GASB No. 67 can be found in Section 8 of this report.



Section 3: Membership Data

The Retirement Systems Division provided membership data as of the valuation date for each member of LGERS. The membership data assists the actuary in estimating benefits that could be paid in the future. The tables below provide a summary of the membership data used in this valuation. Detailed tabulations of data are provided in Appendix B.

Table 2: Active Member Data

	Member Count	Average Age	Average Service	Reported Compensation
General Employees	96,076	45.67	9.72	4,447,229,736
Firefighters	12,732	37.93	10.01	644,438,071
Law Enforcement Officers	<u>21,178</u>	<u>39.16</u>	<u>11.31</u>	<u>1,133,589,333</u>
Total	129,986	43.85	10.01	6,225,257,140

The table above includes members not in receipt of benefits who had reported compensation in 2018.

Table 3: Terminated Vested Member Data

	Member Count	Average Age	Average Service	Accumulated Contributions
General Employees	61,976	45.27	3.66	727,580,620
Firefighters	3,931	37.82	4.25	52,740,023
Law Enforcement Officers	<u>7,928</u>	<u>40.69</u>	<u>5.26</u>	<u>137,588,020</u>
Total	73,835	44.39	3.86	917,908,663

The table above includes members not in receipt of benefits who did not have reported compensation in 2018.



Section 3: Membership Data

Table 4: Data for Members Currently Receiving Benefits

Member Count	Member Count	Average Age	Annual Retirement Allowances
<u>Retired Members (Healthy at Retirement)</u>			
General Employees	45,207	70.36	836,287,057
Firefighters	2,477	65.67	77,831,641
Law Enforcement Officers	<u>8,523</u>	<u>64.97</u>	<u>232,235,042</u>
Total	56,207	69.34	1,146,353,740
<u>Retired Members (Disabled at Retirement)*</u>			
General Employees	6,446	63.60	107,003,307
Firefighters	1,147	62.28	31,270,216
Law Enforcement Officers	<u>1,516</u>	<u>57.34</u>	<u>31,748,304</u>
Total	9,109	62.40	170,021,827
<u>Survivors of Deceased Members</u>			
General Employees	5,002	71.92	56,573,772
Firefighters	475	74.92	7,592,416
Law Enforcement Officers	<u>1,294</u>	<u>70.41</u>	<u>19,571,266</u>
Total	6,771	71.84	83,737,454
Grand Total	72,087	68.69	1,400,113,021

* Includes retired members reported as disabled in a prior valuation and not subsequently reported as returned to work.



Section 4: Asset Data

Assets are held in trust and are invested for the exclusive benefit of LGERS members. The tables below provide the details of the Market Value of Assets for the current and prior years' valuations.

Table 5: Market Value of Assets

Asset Data as of	12/31/2018	12/31/2017
Beginning of Year Market Value of Assets	25,918,361,041	23,308,817,567
Employer Contributions	521,319,795	478,092,270
Employee Contributions	406,122,445	388,023,721
Court Costs	2,803,215	2,987,285
Benefit Payments Other Than Refunds	(1,374,842,429)	(1,299,577,544)
Refunds	(61,462,168)	(63,727,627)
Administrative Expenses	(4,515,766)	(4,207,636)
Investment Income	<u>(362,655,522)</u>	<u>3,107,953,005</u>
Net Increase/(Decrease)	(873,230,430)	2,609,543,474
End of Year Value of Assets	25,045,130,611	25,918,361,041
Estimated Net Investment Return	-1.41%	13.47%

Table 6: Allocation of Investments by Category of the Market Value of Assets

Asset Data as of	12/31/2018	12/31/2017
Allocation by Dollar Amount		
Public Equity	9,071,091,374	10,267,888,887
Fixed Income (LTIF)	6,596,598,080	6,790,748,174
Cash and Receivables	1,847,663,468	864,889,581
Other*	<u>7,529,777,689</u>	<u>7,995,081,746</u>
Total Market Value of Assets	25,045,130,611	25,918,608,388
Allocation by Percentage of Asset Value		
Public Equity	36.2%	39.6%
Fixed Income (LTIF)	26.3%	26.2%
Cash and Receivables	7.4%	3.3%
Other*	<u>30.1%</u>	<u>30.9%</u>
Total Market Value of Assets	100.0%	100.0%

* Real Estate, Alternatives, Inflation and Credit



Section 4: Asset Data

In order to reduce the volatility that investment gains and losses can have on the required contributions and funded status of LGERS, the Board adopted an asset valuation method to determine the Actuarial Value of Assets used for funding purposes. The table below provides the calculation of the Actuarial Value of Assets at the valuation date.

Table 7: Actuarial Value of Assets

Asset Data as of	12/31/2018
Beginning of Year Actuarial Value of Assets	\$ 25,520,733,159
Beginning of Year Market Value of Assets	25,918,361,041
Total Contributions and Court Costs	930,245,455
Benefit Payments, Refunds and Administrative Expenses	<u>(1,440,820,363)</u>
Net Cash Flow	(510,574,908)
Expected Investment Return	1,796,717,389
Expected End of Year Market Value of Assets	27,204,503,522
End of Year Market Value of Assets	25,045,130,611
Excess of Market Value over Expected Market Value of Assets	(2,159,372,911)
80% of 2018 Asset Gain/(Loss)	(1,727,498,329)
60% of 2017 Asset Gain/(Loss)	867,651,314
40% of 2016 Asset Gain/(Loss)	(91,002,206)
20% of 2015 Asset Gain/(Loss)	<u>(311,368,613)</u>
Total Deferred Asset Gain/(Loss)	(1,262,217,834)
Preliminary End of Year Actuarial Value of Assets	26,307,348,445
Final End of Year Actuarial Value of Assets (not less than 80% and not greater than 120% of Market Value)	26,307,348,445
Estimated Net Investment Return on Actuarial Value	5.13%

Commentary: The actuarial value of assets smooths investment gains/losses, resulting in less volatility in the employer contribution. The asset valuation method recognizes asset returns in excess of or less than the expected return on the market value of assets over a five-year period. Actuarial value of assets was reset to market value of assets at December 31, 2014.

Lower than expected market returns, in all years except 2017, resulted in an actuarial value of asset return for calendar year 2018 of 5.13% and a recognized actuarial asset loss of \$472 million during 2018.



Section 4: Asset Data

The valuation assumes that the funds will earn a 7.00% asset return. The table below provides a history of the Actuarial Value and Market Value of Asset returns.

Table 8: Historical Asset Returns

Calendar Year	Expected Asset Return	Actuarial Value of Asset Return	Market Value of Asset Return	20 Year Average Market Return
1996	7.50%	10.20%	9.36%	NA
1997	7.25%	10.19%	18.10%	NA
1998	7.25%	9.93%	16.64%	NA
1999	7.25%	15.61%	9.99%	NA
2000	7.25%	12.27%	2.65%	NA
2001	7.25%	8.98%	-1.69%	NA
2002	7.25%	6.13%	-4.44%	NA
2003	7.25%	8.52%	18.63%	NA
2004	7.25%	9.00%	10.77%	NA
2005	7.25%	8.58%	7.00%	NA
2006	7.25%	9.19%	11.41%	NA
2007	7.25%	9.03%	8.36%	NA
2008	7.25%	2.97%	-19.47%	NA
2009	7.25%	4.92%	14.94%	NA
2010	7.25%	6.10%	11.53%	NA
2011	7.25%	5.33%	2.14%	NA
2012	7.25%	6.51%	11.79%	NA
2013	7.25%	7.61%	12.21%	NA
2014	7.25%	7.32%	6.19%	NA
2015	7.25%	5.87%	0.34%	6.93%
2016	7.25%	5.34%	6.22%	6.78%
2017	7.20%	6.59%	13.47%	6.57%
2018	7.00%	5.13%	-1.41%	5.67%
20-Yr Average	7.23%	7.52%	5.67%	NA
Range	0.50%	12.64%	38.10%	NA

Commentary: The average investment return recognized for purposes of determining the annual change in contribution each year is the actuarial value of assets return. Currently, the average actuarial return over the past 20 years of 7.52% compares with an average market return of 5.67%. The difference is primarily due to asset gains of the late 1990's being included in the actuarial value and not in the market value as well as the 2018 market value loss only being partially recognized in the actuarial value of assets. The range of returns on market value of assets is markedly more volatile, 12.64% versus 38.10%. This results in much lower employer contribution volatility using the actuarial value of assets versus market, while ensuring that the actuarial needs of LGERS are met.



Section 5: Liability Results

Using the provided membership data, benefit provisions, and actuarial assumptions, the Retirement System's future benefit payments are estimated. These projected future benefit payments are discounted into today's dollars using the assumed rate of investment return assumption to determine the Present Value of Future Benefits. The Present Value of Future Benefits is allocated to past, current and future service, respectively known as the actuarial accrued liability, normal cost and present value of future normal costs. The table below provides these liability numbers for the current and prior years' valuations.

Table 9: Liability Summary

Valuation Results as of	12/31/2018	12/31/2017
(a) Present Value of Future Benefits		
(1) Active Members	\$ 19,299,483,366	\$ 18,462,356,232
(2) Terminated Members	1,835,817,327	1,689,255,707
(3) Members Currently Receiving Benefits	<u>14,379,321,186</u>	<u>13,558,140,471</u>
(4) Total	\$ 35,514,621,879	\$ 33,709,752,410
(b) Present Value of Future Normal Costs		
(1) Employee Future Normal Costs	\$ 3,185,416,493	\$ 3,025,954,052
(2) Employer Future Normal Costs	<u>3,106,078,734</u>	<u>2,937,930,728</u>
(3) Total	\$ 6,291,495,227	\$ 5,963,884,780
(c) Actuarial Accrued Liability: (a4) - (b3)	\$ 29,223,126,652	\$ 27,745,867,630
(d) Actuarial Value of Assets	\$ 26,307,348,445	\$ 25,520,733,159
(e) Unfunded Accrued Liability: (c) -(d)	\$ 2,915,778,207	\$ 2,225,134,471
(f) Unfunded Initial Service Liability*	\$ 21,880,677	\$ 25,764,186
(g) Unfunded Accrued Liability to be Amortized over 12 Years (e) - (f)	\$ 2,893,897,530	\$ 2,199,370,285

*The unfunded initial prior service liability balance as of December 31, 2018 and the applicable employer contribution rate as of July 1, 2020 is provided in Appendix I, for participating employers with remaining initial prior service liability as of December 31, 2018. Appendix I also provides a non-binding estimated date of liquidation of the liability based on this valuation.

Commentary: The actuarial cost method was changed to the entry age normal cost method from a frozen entry age cost method as of the December 31, 2015 valuation. Separate initial unfunded prior service accrued liabilities are still maintained for employers who joined the system prior to November 1, 2015.



Section 5: Liability Results

The “Estimated Date of Liquidation of Initial Prior Service Liability”, shown in Appendix I, must be recalculated annually and adjusted according to each unit’s actual experience. The estimated date for liquidation of the liability as of the valuation date does not constitute a guarantee that a local unit will complete the liquidation as of the estimated date, for the reason that actual experience may not match the projections used to create the estimate.

The table below provides a summary of the participating employers in the current and prior years’ valuations.

Table 10: Participating Employers

Valuation Date	12/31/2018	12/31/2017
Total Participating Employers	896	894
Employers with an Unfunded Accrued Liability		
Balance at Prior Valuation Date	80	86
Employers Completing Scheduled Payments		
Since Prior Valuation Date	1	2
Employers Granted Early Relief		
Since Prior Valuation Date	11	4
Total Participating Employers with an Unfunded Accrued Liability Balance at Valuation Date	68	80
Employers Granted Relief for Fiscal Year		
Beginning 6 Months after Valuation Date	1	11
Employers with Expected Relief for Fiscal Year		
Beginning 18 Months after Valuation Date	6	1



Section 5: Liability Results

The table below provides a reconciliation of the prior year's unfunded actuarial accrued liability to the current year's unfunded actuarial accrued liability.

Table 11: Reconciliation of Unfunded Actuarial Accrued Liability

(in millions)	
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2017	\$ 2,225
Normal Cost and Administrative Expense during 2018	765
Reduction due to Actual Contributions during 2018	(930)
Interest on UAAL, Normal Cost, and Contributions	150
Asset (Gain) / Loss	472
Actuarial Accrued Liability (Gain) / Loss	234
Impact of Assumption Changes	-
Impact of Legislative Changes	-
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2018	\$ 2,916

Commentary: During 2018, the UAAL increased faster than expected primarily due to the asset loss during the year of \$472 million.



Section 6: Actuarially Determined Employer Contribution

The actuarially determined employer contribution consists of a normal cost rate and an accrued liability rate. The normal cost rate is the employer's portion of the cost of benefits accruing during the year after reducing for the member contribution. The accrued liability rate is the payment toward the unfunded accrued liability in order to pay off the unfunded accrued liability over 12 years. For fiscal years beginning subsequent to January 1, 2017, the sum of the normal cost rate and the accrued liability rate shall not be less than the employee contribution.

The Employer Contribution Rate Stabilization Policy (ECRSP) adopted by the Board of Trustees on January 31, 2019 requires that recommended contributions for general employees be set at 8.95% of payroll for fiscal year ending 2020 and will increase each fiscal year by 1.20% per year, with the following additional adjustments, if applicable:

- (1) If the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year is 50% higher than the scheduled employer contribution rate for that fiscal year, the scheduled employer contribution rate for the current and future fiscal years increases 0.50%;
- (2) If the underlying ADEC for a given fiscal year is 50% lower than the scheduled employer contribution rate for that fiscal year, the scheduled employer contribution rate for the current and future fiscal year decreases 0.50%;
- (3) If the General Assembly grants any additional COLA beyond the amount of COLA granted by the Board, increases the multiplier for active employees, or changes the benefit structure in a way that has a cost to the system, the schedule of contributions for the current and future fiscal years will be increased by the cost of the benefit enhancement. The cost of any COLA granted by the Board under the authority allowed by statute will not impact the scheduled contribution rates.

Contribution rates for law enforcement officers will be 0.75% higher than contribution rates for general employees. For fiscal year ending 2021, the ECRSP rates are 10.15% for general employees and firefighters and 10.90% for law enforcement officers. For this year, under the ECRSP policy, the maximum ADEC before the Board would be required to increase the ECRSP rate for general employees and firefighters would be 13.45%. The ADECs do not exceed the ECRSP maximum that would trigger change in the ECRSP rates.



Section 6: Actuarially Determined Employer Contribution

The table below provides the calculation of the actuarially determined employer contribution for the current valuation. The contribution rates shown in the table below do not include an employer's additional initial contribution for unfunded prior service liability.

Table 12: Calculation of the Actuarially Determined Employer Contribution

Valuation Date	12/31/2018
ADEC for Fiscal Year Ending	6/30/2021
Normal Cost Rate Calculation	
(a) Normal Cost Rate	
General Employees and Firefighters	11.24%
Law Enforcement Officers	13.15%
(b) Employee Contribution Rate	6.00%
(c) Expenses	
General Employees and Firefighters	0.20%
Law Enforcement Officers	0.00%
(d) Total Employer Normal Cost Rate (a) - (b) + (c)	
General Employees and Firefighters	5.44%
Law Enforcement Officers	7.15%
Accrued Liability Rate Calculation	
(e) Total Annual Amortization Payments*	\$ 374,777,085
(f) Valuation Compensation**	\$ 6,998,774,399
(g) Accrued Liability Rate (e) / (f)	5.35%
Preliminary ADEC (d) + (g)	
General Employees and Firefighters	10.79%
Law Enforcement Officers	12.50%
ADEC with Direct Rate Smoothing	
General Employees and Firefighters	10.24%
Law Enforcement Officers	11.92%

*See Table 15 for more detail

** Beginning with the December 31, 2017 valuation, compensation is projected to the fiscal year over which contributions will occur



Section 6: Actuarially Determined Employer Contribution

A detailed table of contribution rates payable by participating employers is provided in Appendix H. In addition to the actuarially determined employer contribution, as determined by the December 31, 2018 valuation (see Table 12 for more details), the unfunded initial prior service liability contribution rate is reflected for those employers that have not liquidated this liability as of June 30, 2020 (see Appendix I for more details).

The table below provides a reconciliation of the current and prior years' actuarially determined employer contributions.

Table 13: Reconciliation of the Change in the Actuarially Determined Employer Contribution Rates

	General Employees and Firefighters	Law Enforcement Officers
Fiscal year ending June 30, 2020 Preliminary ADEC based on December 31, 2017 valuation	8.56%	10.22%
Impact of Legislative Changes	0.00%	0.00%
Fiscal year ending June 30, 2020 ADEC for Reconciliation	8.56%	10.22%
Changes Due to Anticipated Reduction in UAAL*	-0.20%	-0.20%
Change Due to Demographic (Gain)/Loss	0.49%	0.46%
Change Due to Investment (Gain)/Loss	0.91%	0.91%
Change Due to Contributions Greater than ADEC**	-0.07%	-0.07%
Impact of Assumption Changes	0.00%	0.00%
Impact of Direct Rate Smoothing Current Year	<u>0.55%</u>	<u>0.60%</u>
Fiscal year ending June 30, 2021 Preliminary ADEC based on December 31, 2018 valuation	10.24%	11.92%

*Amortization of the UAAL is determined as a level dollar amount with payments expected to remain the same over the amortization period but was calculated as a percentage of valuation payroll in the previous valuation. Payroll is expected to increase annually while the expected amortization payment does not increase. This causes the expected amortization payment to be a lesser percentage of the expected payroll.

** General Employees and Firefighters contribution rate of 7.75% exceeded the ADEC of 7.40%.



Section 6: Actuarially Determined Employer Contribution

Amortization methods determine the payment schedule for the unfunded actuarial accrued liability. LGERS adopted a 12-year closed amortization period for fiscal year ending 2020. A new amortization base is created each year based on the prior years' experience. The tables below provide the calculation of the new amortization base and the amortization schedule for the current year's valuation.

Table 14: Calculation of the New Amortization Base

Calculation as of	12/31/2018
(a) Unfunded Actuarial Accrued Liability*	\$ 2,893,897,530
(b) Prior Years' Outstanding Bases	\$ 2,226,164,091
(c) New Amortization Base: (a) - (b)	\$ 667,733,439
(d) New Amortization Payment	\$ 89,952,672

* Does not include the unfunded initial prior service liability

Table 15: Amortization Schedule for Unfunded Accrued Liability

Date Established	Original Balance	12/31/2018	
		Outstanding Balance	Annual Payment
December 31, 2015	\$ 677,367,798	\$ 688,243,295	\$ 91,580,648
December 31, 2016	\$ 472,513,055	\$ 509,561,019	\$ 63,772,841
December 31, 2017	\$ 961,083,903	\$ 1,028,359,777	\$ 129,470,924
December 31, 2018	\$ 667,733,439	\$ 667,733,439	\$ 89,952,672
Total		\$ 2,893,897,530	\$ 374,777,085



Section 6: Actuarially Determined Employer Contribution

The tables below provide a history of the actuarially determined employer contribution rates.

Table 16: Actuarially Determined Employer Contribution Rates for General Employees and Firefighters

Valuation Date	Rate Effective	Preliminary ADEC	Change due to Legislation*	Final ADEC	Actual Contribution
12/31/2018	7/1/2020	10.24%	N/A	N/A	N/A
12/31/2017	7/1/2019	8.56%	0.00%	8.56%	8.95%
12/31/2016	7/1/2018	7.40%	0.00%	7.40%	7.75%
12/31/2015	7/1/2017	6.25%	0.00%	6.25%	7.50%
12/31/2014	7/1/2016	6.39%	-0.89%	5.50%	7.25%
12/31/2013	7/1/2015	6.52%	0.15%	6.67%	6.67%

*The change due to legislation for the contribution in effect at 7/1/2016 includes a 0.92% decrease in the ADEC due to the experience study and a 0.03% increase in the ADEC due to the cost-of-living adjustment at 7/1/2016.

Table 17: Actuarially Determined Employer Contribution Rates for Law Enforcement Officers

Valuation Date	Rate Effective	Preliminary ADEC	Change due to Legislation*	Final ADEC	Actual Contribution
12/31/2018	7/1/2020	11.92%	N/A	N/A	N/A
12/31/2017	7/1/2019	10.22%	0.00%	10.22%	9.70%
12/31/2016	7/1/2018	8.99%	0.00%	8.99%	8.50%
12/31/2015	7/1/2017	7.84%	0.00%	7.84%	8.25%
12/31/2014	7/1/2016	6.87%	0.25%	7.12%	8.00%
12/31/2013	7/1/2015	7.00%	0.15%	7.15%	7.15%

*The change due to legislation for the contribution in effect at 7/1/2016 includes a 0.22% increase in the ADEC due to the experience study and a 0.03% increase in the ADEC due to the cost-of-living adjustment at 7/1/2016.



Section 6: Actuarially Determined Employer Contribution

The following table shows estimates of the potential cost of two types of benefit improvements if they were enacted based on the results of the December 31, 2018 or December 31, 2017 valuations. The first benefit improvement is a permanent one-time cost-of-living increase and the second is an increase in the defined benefit formula multiplier.

Table 18: Cost of Benefits Enhancements

Calculation as of	12/31/2018	12/31/2017
Increase in UAAL for a 1% COLA	\$ 159,954,000	152,887,000
Increase in ADEC for a 1% COLA	0.31%	0.31%
Increase in UAAL for a 0.1% Increase in the Defined Benefit Formula	\$ 157,963,000	149,378,000
Increase in ADEC for a 0.1% Increase in the Defined Benefit Formula	0.36%	0.36%

The 1% COLA in the 12/31/2018 column would be effective July 1, 2020 and includes expected costs of COLAs paid for retirements after 12/31/2018 and before June 30, 2020. The COLA would be paid in full to retired members and survivors of deceased members on the retirement roll on July 1, 2019 and would be prorated for retired members and survivors of deceased members who commence benefits after July 1, 2019 but before June 30, 2020.

A corresponding increase in retirement allowances would be paid in the event of an increase in the defined benefit formula. An increase of 0.01% in the Defined Benefit Formula would result in an increase in AAL of \$158.0 million.

N.C.G.S. 128-27(k) COLA Disclosure for Board of Trustees:

- (1) The maximum COLA that could be granted under N.C.G.S. 128-27(k) by the Board payable in Fiscal Year 2020 is 0.00%
- (2) Amount of actuarial accrued liability that would be added if that COLA is granted: N/A
- (3) Amount that COLA would increase the underlying ADEC: N/A
- (4) ECRSP rate for General/Firefighters minus the increased ADEC for this COLA: N/A
- (5) ECRSP rate for Law Enforcement Officers minus the increased ADEC for this COLA: N/A



Section 7: Valuation Balance Sheet

The valuation balance sheet shows the projected assets and liabilities of LGERS. The items shown in the balance sheet are present values actuarially determined as of the relevant valuation date. The table below provides the valuation balance sheet for the current year and prior year.

Table 19: Valuation Balance Sheet on a Projected Basis

Balance Sheet as of	12/31/2018	12/31/2017
Assets		
Current Actuarial Value of Assets		
Annuity Savings Fund	\$ 5,357,001,369	\$ 5,161,971,164
Pension Accumulation Fund	<u>20,950,347,076</u>	<u>20,358,761,995</u>
Total	\$ 26,307,348,445	\$ 25,520,733,159
Future Member Contributions to the Annuity Savings Fund	\$ 3,185,416,493	\$ 3,025,954,052
Prospective Contributions to the Pension Accumulation Fund		
Normal Contributions	\$ 3,106,078,734	\$ 2,937,930,728
Unfunded Accrued Liability Contributions	<u>2,915,778,207</u>	<u>2,225,134,471</u>
Total	\$ 6,021,856,941	\$ 5,163,065,199
Total Assets	\$ 35,514,621,879	\$ 33,709,752,410
Liabilities		
Annuity Savings Fund		
Past Member Contributions	\$ 5,357,001,369	\$ 5,161,971,164
Future Member Contributions	<u>3,185,416,493</u>	<u>3,025,954,052</u>
Total Contributions	\$ 8,542,417,862	\$ 8,187,925,216
Pension Accumulation Fund		
Benefits Currently in Payment	\$ 14,379,321,186	\$ 13,558,140,471
Benefits to be Paid to		
Current Active and Inactive Members	\$ 12,592,882,831	11,963,686,723
Reserve for Increases in Retirement Allowances effective July 1, 2019 (July 1, 2018 for December 31, 2017)	<u>0</u>	<u>0</u>
Total Benefits Payable	\$ 26,972,204,017	\$ 25,521,827,194
Total Liabilities	\$ 35,514,621,879	\$ 33,709,752,410



Section 8: Accounting Results

This section contains the accounting information for Governmental Accounting Standards Board (GASB) Statement No. 67 for fiscal year ending June 30, 2019 based on a valuation date of December 31, 2018.

Please note that GASB Statement No. 67 (*Financial Reporting for Pension Plans*) is applicable for fiscal years ending 2014 and later.

The June 30, 2019 total pension liability presented in this section was determined by an actuarial valuation as of December 31, 2018, based on the assumptions, methods and plan provisions described in this report. The actuarial cost method used to develop the total pension liability is the Entry Age Normal Cost method, as required by GASB Statement No. 67.

GASB Statement No. 67 set forth certain items of information to be disclosed in the financial statements of the Plan. The tables below provide a distribution of the number of employees by type of membership.

Table 20: Number of Active and Retired Members as of December 31, 2018

Group	Number
Retired members and survivors of deceased members currently receiving benefits	72,087
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	73,835
Active Members	<u>129,986</u>
Total	275,908



Section 8: Accounting Results

GASB Statement No. 67 set forth certain items of information to be disclosed in the financial statements of the Plan. The tables below provide the schedule of changes in Net Pension Liability (Asset).

Table 21: Schedule of Changes in Net Pension Liability (Asset)

Schedule of Changes in Net Pension Liability as of June 30, 2019	
Total Pension Liability	
Service Cost	\$ 798,120,000
Interest	1,934,144,000
Changes of Benefit Terms	0
Difference between Expected and Actual Experience	252,859,000
Change of Assumptions	0
Benefit Payments, including Refund of Member Contributions	<u>(1,472,856,000)</u>
Net Change in Total Pension Liability	1,512,267,000
Total Pension Liability - Beginning of Year	\$ 28,354,602,000
Total Pension Liability - End of Year	\$ 29,866,869,000
Plan Fiduciary Net Position	
Employer Contributions	\$ 534,107,000
Member Contributions	420,437,000
Net Investment Income	1,675,331,000
Benefit Payments, including Refund of Member Contributions	(1,472,856,000)
Administrative Expenses	(4,634,000)
Other	<u>1,302,000</u>
Net Change in Plan Fiduciary Net Position	1,153,687,000
Plan Fiduciary Net Position - Beginning of Year	\$ 25,982,260,000
Plan Fiduciary Net Position - End of Year	\$ 27,135,947,000

Table 22: Net Pension Liability (Asset)

Net Pension Liability (Asset)		
	June 30, 2019	June 30, 2018
Total Pension Liability	\$ 29,866,869,000	\$ 28,354,602,000
Plan Fiduciary Net Position	<u>27,135,947,000</u>	<u>25,982,260,000</u>
Net Pension Liability (Asset)	\$ 2,730,922,000	\$ 2,372,342,000
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (Asset)	90.86%	91.63%



Section 8: Accounting Results

The table below is the sensitivity of the net pension liability to changes in the discount rate.

Table 23: Sensitivity of the Net Pension Liability (Asset) at June 30, 2019 to Changes in the Discount Rate

Sensitivity of the Net Pension Liability to Changes in the Discount Rate			
	1% Decrease	Current	1% Increase
Discount Rate	6.00%	7.00%	8.00%
Net Pension Liability (Asset)	\$ 6,246,118,000	\$ 2,730,922,000	\$ (190,918,000)

The discount rate used to measure the total pension liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that for fiscal year ending 2020 to fiscal year ending 2022, System contributions will follow the Employer Contribution Rate Stabilization Policy as adopted by the Board of Trustees on January 31, 2019, and “direct-rate smoothing” as adopted by the Board of Trustees on April 26, 2018. It is assumed that for fiscal years ending 2023 and beyond, System contributions will be based on the actuarially determined contribution rates. Based on those policies, the System’s fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Please see Appendix E for additional detail.

The table below provides the methods and assumptions used to calculate the actuarially determined contribution rate.

Table 24: Additional Information for GASB Statement No. 67

Valuation Date	12/31/2018
Actuarial Cost Method	Entry Age
Amortization Method	Level dollar closed
Amortization Period	12 year closed period
Asset Valuation Method	Asset return in excess of or less than the expected return on market value of assets reflected over a five-year period (not greater than 120% of market value and not less than 80% of market value)
Actuarial Assumptions	
Investment Rate of Return*	7.00%
Projected Salary Increases**	3.50% - 8.10%
*Includes Inflation of	3.00%
**Includes Inflation and Productivity of	3.50%
Cost-of-living Adjustments	N/A



Section 9: Projections

Projections of contribution requirements and funded status into the future can be helpful planning tools for stakeholders. This section provides such projections. The projections of the actuarial valuation are known as deterministic projections. Deterministic projections are based on one scenario in the future. The baseline deterministic projection is based on December 31, 2016 valuation results as assumptions.

Key Projection Assumptions

- Valuation interest rate of 7.00% for all years
- 7.00% investment return on market value of assets
- Actuarial assumptions and methods as described in Appendix D. All future demographic experience is assumed to be exactly realized.
- The contribution rate under the Employer Contribution Rate Stabilization Policy (ECRSP) is contributed until fiscal year ending 2022.
- The actuarially determined contribution rate is contributed for fiscal years ending 2023 and beyond.
- 0% increase in the total active member population
- No cost-of-living adjustments granted
- Future pay increases based on long-term valuation

The ECRSP adopted by the Board of Trustees on January 31, 2019 requires that recommended contributions for general employees be set at 8.95% of payroll for fiscal year ending 2020 and will increase each fiscal year by 1.20% per year, with the following additional adjustments, if applicable:

- (1) If the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year is 50% higher than the scheduled employer contribution rate for that fiscal year, the scheduled employer contribution rate for the current and future fiscal years increases 0.50%;
- (2) If the underlying ADEC for a given fiscal year is 50% lower than the scheduled employer contribution rate for that fiscal year, the scheduled employer contribution rate for the current and future fiscal year decreases 0.50%;
- (3) If the General Assembly grants any additional COLA beyond the amount of COLA granted by the Board, increases the multiplier for active employees, or changes the benefit structure in a way that has a cost to the system, the schedule of contributions for the current and future fiscal years will be increased by the cost of the benefit enhancement. The cost of any COLA granted by the Board under the authority allowed by statute will not impact the scheduled contribution rates.

Contribution rates for law enforcement officers will be 0.75% higher than contribution rates for general employees.

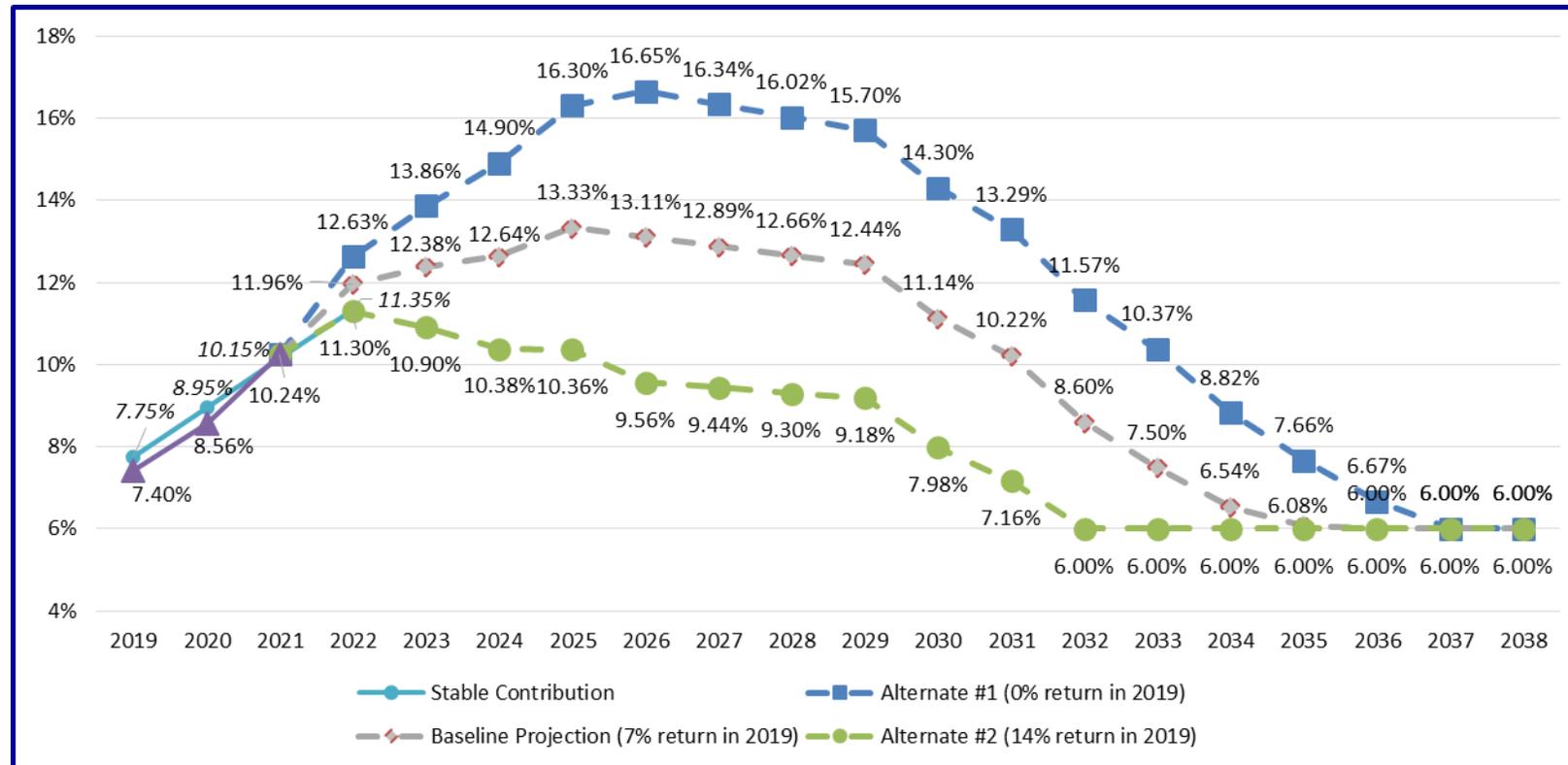
In addition, we have provided two alternate deterministic projections. The first alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 0.0% asset return for calendar year 2019. The second alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 14.0% asset return for calendar year 2019.



Section 9: Projections

The graph below provides the actuarially determined employer contribution rates projected for 15 years, as well as the board approved stable contribution under the Employer Contribution Rate Stabilization Policy.

Projected Actuarially Determined Employer Contribution Rates for General Employees and Firefighters

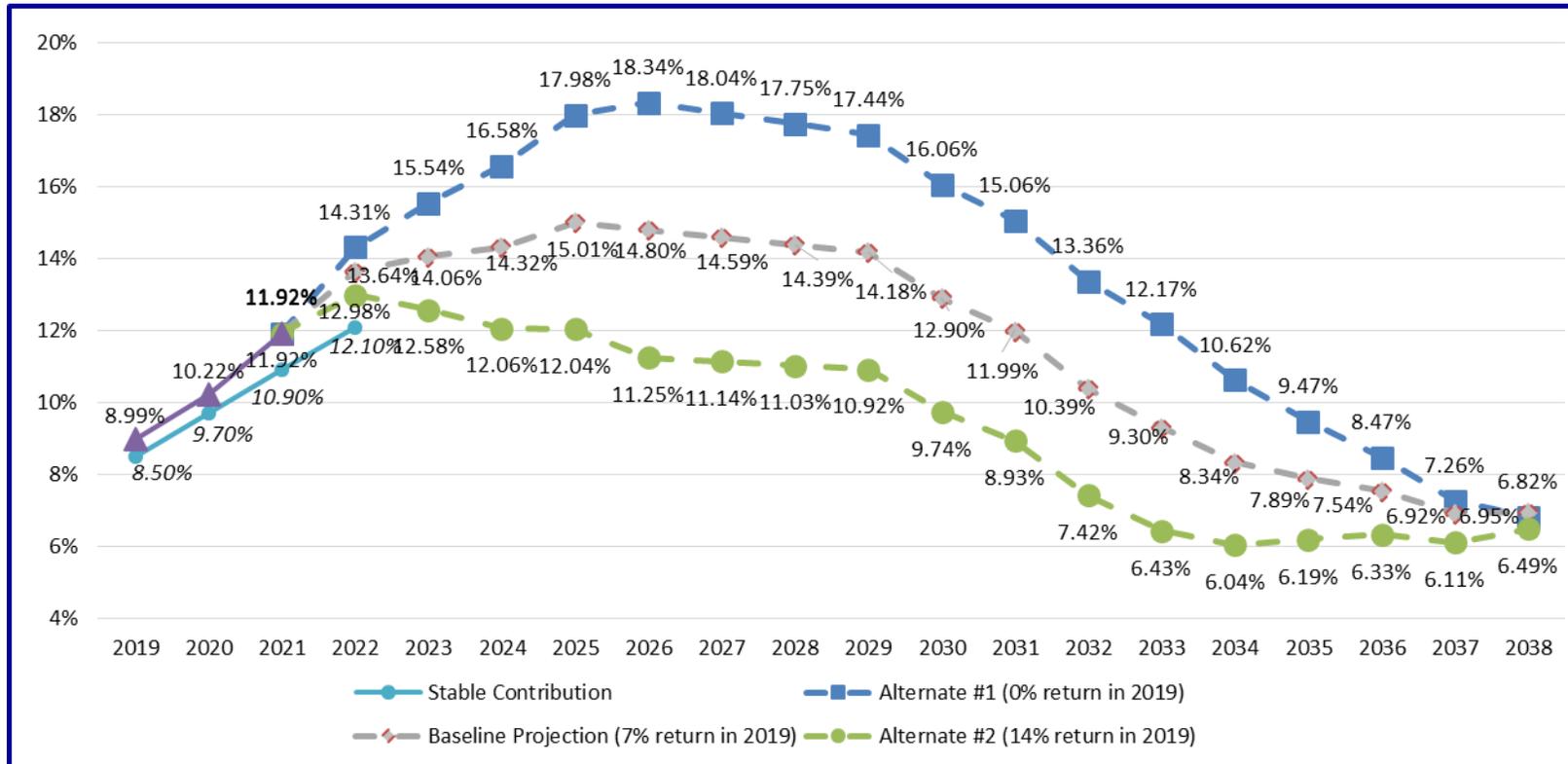




Section 9: Projections

The graph below provides the actuarially determined employer contribution rates projected for 15 years, as well as the board approved stable contribution under the Employer Contribution Rate Stabilization Policy.

Projected Actuarially Determined Employer Contribution Rates for Law Enforcement Officers

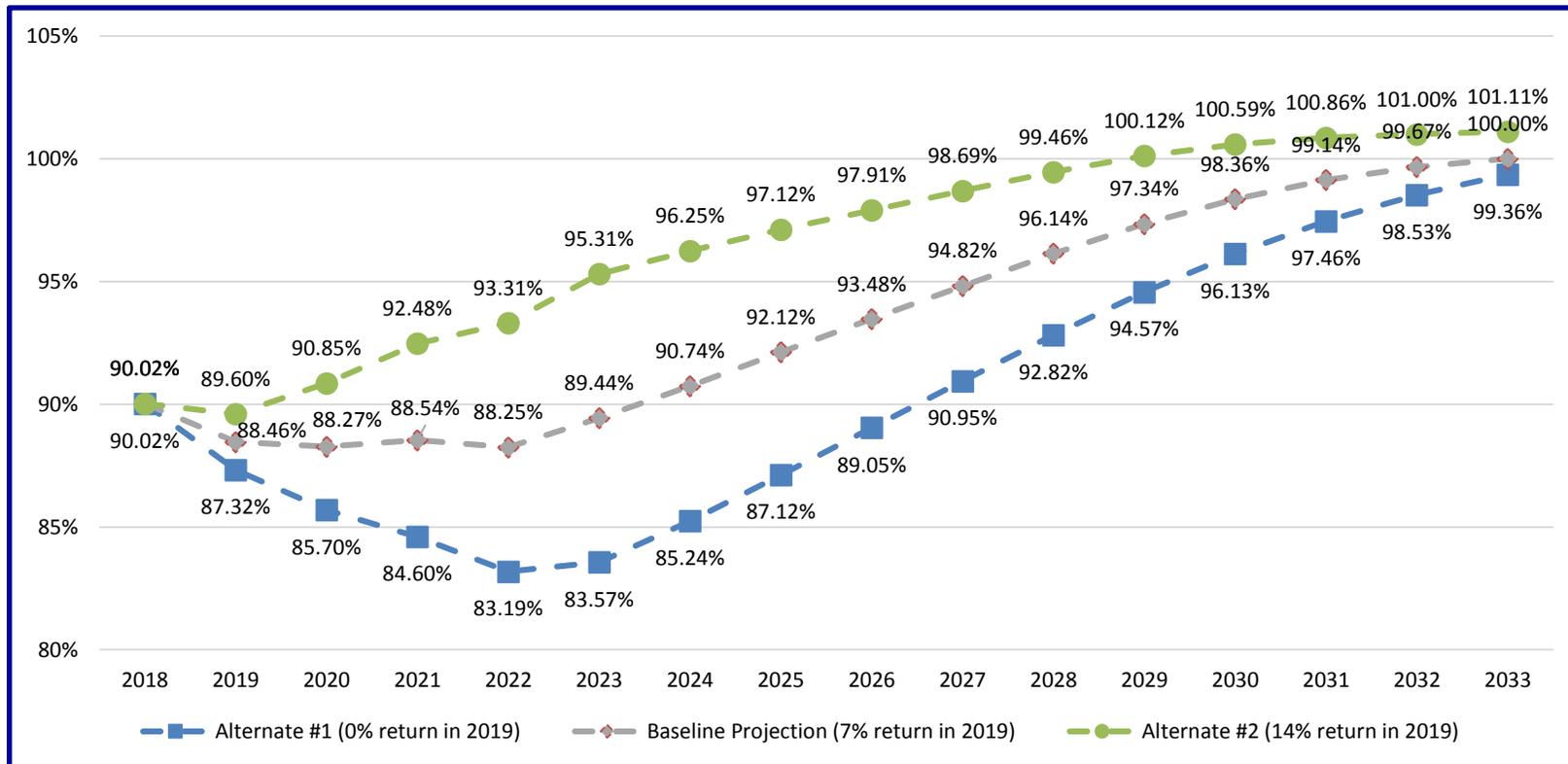




Section 9: Projections

The graph below provides the funded ratio projected for 15 years.

Projected Funded Ratio



Appendix A: Valuation Process and Glossary of Actuarial Terms

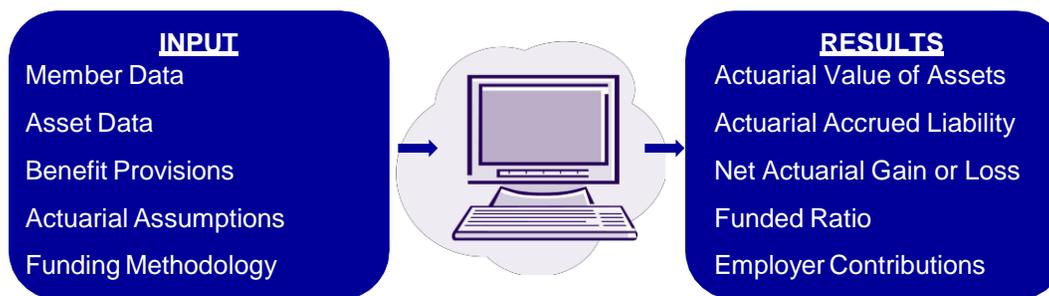
Purpose of an Actuarial Valuation

The majority of Public Sector Retirement Systems in the State of North Carolina are defined benefit (DB) retirement systems. Under a DB retirement system, the amount of benefits payable to a member upon retirement, termination, death or disability is defined in various contracts and legal instruments and is based, in part, on the member's years of credited service and final compensation. The amount of contribution needed to fund these benefits cannot be known with certainty. A primary responsibility of the Board of Trustees of a Retirement System is to establish and monitor a funding policy for the contributions made to the Retirement System.

While somewhat uncommon, in some jurisdictions, contributions are made by the plan sponsor as benefits come due. This is known as pay-as-you-go financing. More commonly, contributions for benefits are made in advance during the course of active employment of the members. This is known as actuarial pre-funding. For example, the State of North Carolina mandates for the Teachers' and State Employees' Retirement System ("TSERS") under G.S.135-8(d), that that "on account of each member there shall be paid into the pension accumulation fund by employers an amount equal to a certain percentage of the actual compensation of each member to be known as the 'normal contribution' and an additional amount equal to a percentage of the member's actual compensation to be known as the 'accrued liability contribution'. The rate per centum of such contributions shall be fixed on the basis of the liabilities of the Retirement System as shown by actuarial valuation, duly approved by the Board of Trustees, and shall be called the 'actuarially determined employer contribution rate'...The actuarially determined employer contribution rate shall be calculated annually by the actuary using assumptions and a cost method approved by the Actuarial Standards Board of the American Academy of Actuaries and selected by the Board of Trustees."

The Actuarial Valuation Process

The following diagram summarizes the inputs and results of the actuarial valuation process. A narrative of the process follows the diagram. The reader may find it worthwhile to refer to the diagram from time to time.



Under the actuarial valuation process, current information about Retirement System members is collected annually by staff at the direction of the actuary, namely member data, asset data and information on benefit provisions. Member data is collected for each member of the Retirement System. The member data will assist the actuary in estimating benefits that could be paid in the future. The member information the actuary collects to estimate the amount of benefit includes elements such as current service, salary and benefit group identifier for members that have not separated service; for those that have, the actual benefit amounts are collected. The actuary collects information such as gender and date of birth to determine when a benefit might be paid and for how long.



Appendix A: Valuation Process and Glossary of Actuarial Terms

The actuary collects summary information about assets as of the valuation date and information on cash flows for the year ending on the valuation date. Information about benefit provisions as of the valuation date is also collected. To bridge the gap between the information collected and potential benefits to be paid in the future, the actuary must make assumptions about future activities. These assumptions are recommended by the actuary to the Boards based on the results of an experience review. An experience review is a review of the Retirement System over a period of time, typically five years, where the actuary analyzes the demographic and economic assumptions of the Retirement System. Based on this review, the actuary will make recommendations on the demographic assumptions, such as when members will be projected to retire, terminate, become disabled and/or die in the future, as well as the economic assumptions, such as what rate of return is projected to be earned by the fund based on the Retirement System investment policy and what level of future salary increases is expected for members. To maintain the assumptions, the Board should adopt a prudent policy of having an experience review being performed every five years. The next experience review for the North Carolina Retirement Systems will be based on the five-year period ending on December 31, 2019 and will be presented during 2020. Using these assumptions, the actuary is able to use the member data, asset data and benefit provision information collected to project the benefits that will be paid from the Retirement System to current members. These projected future benefit payments are based not only on service and pay through the valuation date but includes future pay and service, which has not yet been earned by the members but is expected to be earned.

These projected future benefit payments are discounted into today's dollars using the assumed rate of investment return assumption to determine the Present Value of Future Benefits (PVFB) of the Retirement System. The PVFB is an estimate of the value of the benefits promised to all members as of a valuation date. If the Retirement System held assets equal to the PVFB and all the assumptions were realized, there would be sufficient funds to pay off all the benefits to be paid in the future for members in the Retirement System as of the valuation date.

The PVFB is a large sum of money, typically much larger than the amount of Retirement System assets held in the trust. The next step is for the actuary to apply the Funding Policy as adopted by the Board to determine the employer contributions to be made to the Retirement System so that the gap between the PVFB and assets is systematically paid off over time. The Funding Policy is adopted by the Board based on discussions with the actuary. When the Board develops a funding policy, a balance between contributions which are responsive to the needs of the Retirement System yet stable should be struck. There are many different funding policies for the Board to consider, and the actuary is responsible for discussing the various features of the funding policies under consideration. Funding Policies are generally reviewed during an experience review, but it is not uncommon to review a funding policy in between, particularly during period where large increases or decreases in contributions are expected. The Funding Policy is composed of three components: the actuarial cost method, the asset valuation method, and the amortization method.

Once the PVFB is developed, an actuarial cost method is used to allocate the PVFB. Under the actuarial cost method, the PVFB is allocated to past, current and future service, respectively known as the actuarial accrued liability (AAL), normal cost (NC) and present value of future normal costs (PVFNC). The actuary computes the liability components (PVFB, NC, AAL, and PVFNC) for each participant in the Retirement System at the valuation date. These liability components are then totaled for the Retirement System. There are many actuarial cost methods. Different actuarial methods will produce different contribution patterns, but do not change the ultimate cost of the benefits. The entry age normal cost method is the most prevalent method used for public sector plans in the United States, because the expected normal cost is calculated in such a way that it will tend to stay level as a percent of pay over a member's career.



Appendix A: Valuation Process and Glossary of Actuarial Terms

The actuarial accrued liability (AAL) is also referred to as the amount of money the Retirement System should ideally have in the trust. The unfunded actuarial accrued liability (UAAL) is the portion of actuarial accrued liability that is not covered by the assets of the Retirement System. The UAAL can be a negative number, which means that the Retirement System has more assets than actuarial accrued liability. We refer to this condition as overfunded liability in this summary. Having UAAL does not indicate that the Retirement System is in failing actuarial health. Most retirement systems have UAAL. Another related statistic of the Retirement System is the funded ratio. The funded ratio is the percent of the actuarial accrued liabilities covered by the actuarial value of assets. The assets used for these purposes are an actuarial value of assets (AVA), not market. The actuarial value of assets is based on the asset valuation method as recommended by the actuary and adopted by the Board. An actuarial value of assets is a smoothed, or averaged, value of assets, which is used to limit employer contribution volatility. Typically, assets are smoothed, or averaged, over a period of 3 to 5 years. By averaging returns, the UAAL is not as volatile, which we will see later results in contributions that are not as volatile as well. The North Carolina Retirement Systems use an actuarial value of assets with a smoothing period of 5 years.

While having UAAL is common, it is acceptable only if it is systematically being paid off. The method by which the UAAL is paid off is known as the amortization method. The concept is similar to that of a mortgage payment. The Board adopts the amortization method used to pay off the UAAL over a period of time. The amortization method is composed of the amortization period, the amount of payment increase, whether the period is open or closed and by the amount of amortization schedules. The amortization period is the amount of time over which the UAAL will be paid off. This is generally a period of thirty years or less, but actuaries are beginning to recommend shorter periods. The payments can be developed to stay constant from year to year like a mortgage, but often they are developed to increase each year at the same level payroll increases. Amortization type can be closed or open. Under a closed period, the UAAL is expected to be paid off over the amortization period. This is similar to a typical mortgage. Under an open period, the amortization period remains unchanged year after year. The concept is similar to re-mortgaging annually. In many instances, an amortization schedule is developed, whereby the UAAL is amortized over a closed period from the point the UAAL is incurred. Finally, some amortization methods are defined by a schedule of payments, where a new schedule of payments is added with each valuation. Regardless of the amortization type or period, the funding policy should generate a contribution that pays off the UAAL, which results in the funded ratio trending to 100% over time. Caution should be used when an open method is used, because typically an open amortization policy does not result in the UAAL being paid off. North Carolina pays off a much larger amount of UAAL compared to other states. While many states struggle to pay a 30-year level percent of pay UAAL contribution, which doesn't even reduce the amount of UAAL, North Carolina pays down the UAAL with level dollar payments over a 12-year period. This aggressive payment schedule of the UAAL results in North Carolina being home to many of the best funded Public Retirement Systems in the United States.

To satisfy the requirements of the State of North Carolina, the actuary calculates the total annual contribution to the Retirement System as the normal cost plus a contribution towards UAAL. Said another way, this contribution is sufficient to pay for the cost of benefits accruing during the year (normal cost) plus the mortgage payment (UAAL payment). The total contribution is reduced by the amount of member contributions, if any, to arrive at the employer contribution. Continuing to follow the aggressive North Carolina contribution policy will keep the North Carolina Retirement Systems among the best funded in the United States.



Appendix A: Valuation Process and Glossary of Actuarial Terms

An actuarial valuation report is produced annually, which contains the contribution for the fiscal year as well as the funded ratio of the Retirement System. The primary purpose of performing an actuarial valuation annually is to replace the estimated activities from the previous valuation, which were based on assumptions, with the actual experience of the Retirement System for the prior year. The experience gain (loss) is the difference between the expected and the actual UAAL of the Retirement System. An experience loss can be thought of as the amount of additional UAAL over and above the amount that was expected from the prior year due to deviation of actual experience from the assumption. Similarly, an experience gain can be thought of as having less UAAL than that which was expected from the prior year assumptions. As an example, if the Retirement System achieves an asset return of 15% when the assumption was a 7.00% return, an actuarial gain is said to have happened, which typically results in lower contributions and higher funded ratio, all else being equal. Alternatively, a return of 2% under the same circumstances would result in an actuarial loss, requiring an increase in contributions and a funded ratio that is lower than anticipated. Experience gains and losses are common within the valuation process. Typically gains and losses offset each other over time. To the extent that does not occur, the reasons for the gains and losses should be understood, and appropriate recommendations should be made by the actuary after an experience review to adjust the assumptions.

The actuarial valuation report will contain histories of key statistics from prior actuarial valuation reports. In particular, a history of the funded ratio of the Retirement System is an important exhibit. Trustees should understand the reason for the trend of the funded ratio of the Retirement System over time. The actuary will discuss the reasons for changes in the funded ratio of the Retirement System with each valuation report. To the extent that there are unexplained changes in funded ratio corrective action should be explored and the actuary will make recommendations as to whether there should be changes in the assumptions, funding policy, or some other portion of the actuarial valuation process.

In addition to historical information, projections of contributions and funded ratio based on current assumptions can sometimes be found in an actuarial valuation report. Projections of contributions can allow the employer to plan their budget accordingly. Surprises in Retirement System contributions to be paid by the employer serve no one. A one-year projection based on “bad” asset returns can provide ample time for the employer to plan, or allow for a discussion of changing the funding policy to occur. Contribution surprises are a primary contributor to employers considering pension reform. It is important to keep the employer apprised of future contribution requirements. A projection of funded ratio can serve the Trustees by illustrating the trend of the funded ratio over time. The funded ratio, under a prudent funding policy, should trend to 100% over a period of less than 30 years. (It is worthwhile to note that while 30 years has served as an industry standard for the longest period over which 100% funding should be achieved, that period is coming under scrutiny by the actuarial community and will likely be shortened.) If a projection of funded ratio does not trend to 100% over time, consideration should be given to fixing the funding policy to achieve this goal. For the North Carolina Retirement Systems, projections are generally performed for the January board meetings.

The actuarial report will contain schedules of information about the census, plan and asset information submitted by Retirement System staff upon which the actuarial valuation is based. It is important that the Board of Trustees review that information and determine if the information is consistent with their understanding of the Retirement System. If after questioning staff, the Board of Trustees is not comfortable that the information provided is correct, the actuary should be notified to determine if the actuarial valuation report should be corrected.

Finally, the valuation report and/or presentation should contain sufficient information in an understandable fashion to allow the Board to take action and adopt the contribution rate for the upcoming year. It should also allow stakeholders to understand key observations over the past year that resulted in contributions increasing (or decreasing) and where contributions are headed. The actuary is always open to making the results understandable. CMC works with the North Carolina Retirement Systems Division to make your reports and presentations understandable and actionable. If something doesn't make sense – speak up!!



Appendix A: Valuation Process and Glossary of Actuarial Terms

Glossary

Note that the first definitions given are the “official” definitions of the term. For some terms there is a second definition, in italics, which is the unofficial definition.

Actuarial Accrued Liability (AAL). The portion of the Present Value of Projected Benefits (PVFB) allocated to past service. Also difference between (i) the actuarial present value of future benefits, and (ii) the present value of future normal cost. Sometimes referred to as “accrued liability” or “past service liability.” The amount of money that should be in the fund. The funding target.

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, retirement, investment income and salary increases. Demographic (“people”) assumptions (rates of mortality, separation, and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic (“money”) assumptions (salary increases and investment income) consist of an underlying rate appropriate in an inflation-free environment plus a provision for a long-term average rate of inflation. Estimates of future events used to project what we know now - current member data, assets, and benefit provisions – into an estimate of future benefits.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the Present Value of Projected Benefits (PVFB) between the normal costs to be paid in the future and the actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

Actuarial Methods. The collective term for the Actuarial Cost Method, the Amortization Payment for UAAL Method, and the Asset Valuation Method used to develop the contribution requirements for the Retirement System. *The funding policy.*

Actuarial Equivalent. Benefits whose actuarial present values are equal.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial Value of Assets (AVA). A smoothed value of assets which is used to limit contribution volatility. Also known as the funding value of assets. *Smoothed value of assets.*

Amortization Payment for UAAL. Payment of the unfunded actuarial accrued liability by means of periodic contributions of interest and principal, as opposed to a lump sum payment. The components of the amortization payment for UAAL include:

- Amortization Period Length – Generally amortization periods up to 15 to 20 years (and certainly not longer than 30) are allowed. Similar to a mortgage, the shorter the amortization period, the higher the payment and the faster the UAAL is paid off.
- Amortization payment increases – Future payments can be level dollar, like a mortgage, or as a level percent of pay. Most Retirement Systems amortize UAAL as a level percent of pay which when combined with the employer normal cost that is developed as a level percent of pay can result in contributions that are easier to budget.
- Amortization type – An amortization schedule can be closed or open. A closed amortization schedule is similar to a mortgage – at the end of the amortization period the UAAL is designed to be paid off. An open amortization period is similar to refinancing the UAAL year after year.
- Amortization schedule – UAAL can be amortized over a single amortization period, or it can be amortized over a schedule.

The amortization payment for UAAL can be thought of as the UAAL mortgage payment.



Appendix A: Valuation Process and Glossary of Actuarial Terms

Asset Valuation Method. The components of how the actuarial value of assets is to be developed. LGERS uses a five-year smoothing of asset gains and losses, which is the most commonly used method

Experience Gain (Loss). A measure of the difference between actual experience and experience anticipated by a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used. *The experience Gain (Loss) represents how much the actuary missed the mark in a given year.*

Funded Ratio. The percent of the actuarial accrued liabilities covered by the actuarial value of assets. Also known as the funded status. *The ratio of how much money you actually have in the fund to the amount you should have in the fund.*

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as “current service cost.” An amortization payment toward the unfunded actuarial accrued liability is paid in addition to the normal cost to arrive at the total contribution in a given year. *The cost of benefits accruing during the year.*

Present Value of Future Normal Cost (PVFNC). The portion of the Present Value of Projected Benefits (PVFB) allocated to future service. *The value in today’s dollars of the amount of contribution to be made in the future for benefits accruing for members in the Retirement System as of the valuation date.*

Present Value of Future Benefits (PVFB). The projected future benefit payments of the plan are discounted into today’s dollars using an assumed rate of investment return assumption to determine the Present Value of Future Benefits (PVFB) of the Retirement System. The PVFB is the discounted value of the projected benefits promised to all members as of a valuation date, including future pay and service for members which has not yet been earned. *If the Retirement System held assets equal to the PVFB and all the assumptions were realized, there would be sufficient funds to pay off all the benefits to be paid in the future for members in the Retirement System as of the valuation date.*

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability (UAAL). The difference between the actuarial accrued liability (AAL) and actuarial value of assets (AVA). The UAAL is sometimes referred to as “unfunded accrued liability.” *Funding shortfall, or prefunded amount if negative.*

Valuation Date. The date that the actuarial valuation calculations are performed as of. *Also known as the “snapshot date”.*



Appendix B: Detailed Tabulation of Member Data

Table B-1: The Number and Average Reported Compensation of Active Members Distributed by Age and Service as of December 31, 2018

Age	Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	1,208	3,840	41	0	0	0	0	0	0	0	5,089
	7,398	32,533	40,786	0	0	0	0	0	0	0	26,633
25 to 29	1,263	9,446	2,727	46	0	0	0	0	0	0	13,482
	7,739	37,464	44,485	47,698	0	0	0	0	0	0	36,134
30 to 34	884	6,782	5,462	2,325	45	0	0	0	0	0	15,498
	8,088	39,472	47,717	51,343	51,235	0	0	0	0	0	42,403
35 to 39	638	4,825	3,912	4,689	1,690	56	0	0	0	0	15,810
	8,512	40,802	48,492	53,909	56,588	58,784	0	0	0	0	47,040
40 to 44	548	3,904	3,220	3,511	3,564	1,567	27	0	0	0	16,341
	8,659	41,273	48,925	54,517	60,317	63,732	62,999	0	0	0	50,876
45 to 49	473	3,694	3,193	3,274	3,173	3,868	1,509	31	0	0	19,215
	8,936	40,965	48,811	53,204	59,078	66,587	71,098	62,725	0	0	54,116
50 to 54	435	2,980	2,612	2,836	2,496	2,518	2,343	544	9	0	16,773
	8,504	40,725	46,848	51,745	56,708	63,499	71,759	72,941	70,795	0	53,899
55 to 59	329	2,548	2,291	2,473	2,270	1,800	1,497	837	154	6	14,205
	8,017	41,520	47,933	50,858	53,728	59,711	65,319	72,625	68,259	81,222	52,307
60 to 64	159	1,436	1,645	1,734	1,495	1,236	801	459	226	80	9,271
	7,922	39,261	47,656	50,455	52,542	57,757	62,351	68,997	78,204	71,763	51,611
65 to 69	49	503	603	618	451	322	219	144	68	81	3,058
	7,131	35,423	45,585	50,562	55,995	56,745	60,799	64,446	73,869	89,811	50,792
70 & Over	33	225	285	225	193	107	58	52	24	42	1,244
	8,653	25,552	30,357	38,399	47,783	50,673	51,260	64,310	65,155	89,264	39,872
Total	6,019	40,183	25,991	21,731	15,377	11,474	6,454	2,067	481	209	129,986
	8,057	38,895	47,456	52,452	57,026	63,027	68,351	70,975	73,618	82,547	47,892



Appendix B: Detailed Tabulation of Member Data

Table B-2: The Number and Reported Compensation of Active Member Distributed by Age as of December 31, 2018

Age	Men		Women	
	Number	Compensation	Number	Compensation
18	14	99,769	2	4,691
19	84	1,034,185	16	139,564
20	226	4,986,910	53	809,162
21	413	9,421,446	119	2,099,325
22	639	15,952,118	232	5,525,351
23	1,005	28,692,271	478	11,653,341
24	1,138	36,265,824	670	18,849,882
25	1,374	46,862,113	869	26,334,480
26	1,578	57,102,914	1,001	32,262,271
27	1,650	62,024,515	1,043	35,599,610
28	1,874	73,039,346	1,142	39,508,351
29	1,771	71,451,375	1,180	42,978,686
30	1,842	77,378,452	1,206	44,017,447
31	1,799	77,788,184	1,189	46,055,995
32	1,850	82,573,625	1,280	50,597,494
33	1,866	87,090,482	1,292	51,179,516
34	1,869	87,643,201	1,305	52,834,291
35	1,801	85,823,276	1,270	52,932,256
36	1,865	91,317,693	1,312	58,031,969
37	1,896	94,028,631	1,362	58,959,429
38	1,823	92,366,511	1,350	60,131,615
39	1,762	89,827,107	1,369	60,288,072
40	1,732	91,043,982	1,460	66,693,894
41	1,729	91,518,156	1,471	68,388,922
42	1,873	100,616,924	1,485	68,499,202
43	1,766	97,882,798	1,354	63,523,328
44	1,957	110,617,344	1,514	72,575,621
45	1,934	110,350,609	1,543	74,827,422
46	2,038	115,950,420	1,519	71,122,531
47	2,304	135,504,435	1,670	81,500,230
48	2,356	140,436,220	1,888	91,897,853
49	2,177	130,193,200	1,786	88,058,391
50	2,031	120,849,559	1,579	76,131,383
51	1,931	114,431,201	1,589	78,391,575
52	1,740	102,291,792	1,503	72,997,410
53	1,668	95,556,975	1,582	76,997,631
54	1,612	91,800,940	1,538	74,607,222
55	1,560	90,699,846	1,604	77,732,871
56	1,434	79,752,425	1,531	74,411,340
57	1,344	75,731,400	1,461	72,560,195



Appendix B: Detailed Tabulation of Member Data

Table B-2: The Number and Reported Compensation of Active Members Distributed by Age as of December 31, 2018 (continued)

Age	Men		Women	
	Number	Compensation	Number	Compensation
58	1,282	71,369,566	1,466	70,664,610
59	1,136	63,467,281	1,387	66,638,335
60	1,116	63,733,353	1,281	61,147,232
61	1,008	55,956,630	1,165	55,544,851
62	898	49,649,970	991	48,244,795
63	733	39,913,874	818	38,042,201
64	571	33,442,106	690	32,813,472
65	490	27,551,508	511	24,425,148
66	379	21,203,649	362	17,635,260
67	285	16,001,421	267	11,918,279
68	236	12,518,405	196	9,010,254
69	179	8,538,084	153	6,518,546
70	139	6,683,920	120	5,072,461
71	104	4,706,063	109	4,345,518
72	110	4,771,429	87	3,580,959
73	76	3,127,548	57	1,827,540
74	48	1,910,044	35	1,265,805
75	48	2,111,363	40	1,353,368
76	45	1,928,395	33	1,247,926
77	32	870,205	13	293,185
78	25	970,597	11	307,097
79	18	563,273	8	189,401
80	10	286,603	6	178,415
81	17	685,040	8	176,668
82	8	188,364	4	127,690
83	3	101,450	4	48,053
84	2	46,682	9	276,106
85	4	104,618	0	0
86	2	10,957	0	0
87	2	55,264	1	35,425
89	2	64,771	0	0
90	1	14,807	0	0
91	1	45,245	0	0
92	1	13,429	0	0
94	0	0	1	14,633
Total	72,336	3,660,604,088	57,650	2,564,653,052



Appendix B: Detailed Tabulation of Member Data

Table B-3: The Number and Reported Compensation of Active Members Distributed by Service as of December 31, 2018

Service	Men		Women	
	Number	Compensation	Number	Compensation
0	3,110	25,599,328	2,909	22,893,962
1	6,615	213,650,106	6,023	186,152,148
2	5,545	228,792,622	5,116	202,720,494
3	4,763	208,768,537	4,279	176,001,568
4	4,213	192,910,516	3,629	153,939,935
5	3,708	171,310,879	3,010	132,124,806
6	3,277	159,937,930	2,882	131,396,341
7	2,909	144,217,777	2,162	96,765,201
8	2,404	119,713,545	1,759	82,078,591
9	2,252	118,381,002	1,628	77,494,138
10	2,424	127,509,717	1,698	81,880,734
11	2,872	155,189,836	2,190	104,612,467
12	2,538	137,650,299	1,890	92,823,076
13	2,432	136,233,426	1,838	92,612,841
14	2,305	131,659,248	1,544	79,671,879
15	1,997	115,067,937	1,482	76,524,756
16	1,724	102,373,022	1,166	61,449,663
17	1,614	96,879,753	1,237	65,369,125
18	1,742	106,605,871	1,290	68,173,006
19	1,757	110,961,901	1,368	73,487,389
20	1,709	109,439,271	1,211	65,301,012
21	1,433	95,188,347	1,015	57,381,142
22	1,336	90,304,192	838	48,339,546
23	1,177	82,732,185	810	46,518,822
24	1,154	80,688,124	791	47,276,760
25	1,032	73,760,184	696	42,066,594
26	851	63,617,274	525	30,991,882
27	674	48,901,408	473	28,007,706
28	715	52,293,396	452	28,981,042
29	615	46,097,494	421	26,417,162
30	384	28,527,517	345	21,490,927
31	249	19,528,705	255	16,725,666
32	198	15,348,687	146	8,953,362
33	129	9,652,055	131	8,841,198
34	135	11,105,284	95	6,532,554
35	62	4,604,967	76	4,837,337



Appendix B: Detailed Tabulation of Member Data

Table B-3: The Number and Reported Compensation of Active Members Distributed by Service as of December 31, 2018 (continued)

Service	Men		Women	
	Number	Compensation	Number	Compensation
36	62	5,538,088	49	3,136,822
37	50	4,040,293	35	2,085,091
38	46	3,975,277	43	2,726,917
39	25	2,227,417	33	2,237,841
40	30	2,971,850	24	1,469,500
41	25	2,072,967	22	1,591,341
42	13	1,154,044	16	1,113,304
43	11	1,298,476	14	891,724
44	6	547,764	4	395,803
45	3	350,021	7	419,277
46	2	311,659	4	187,757
47	2	99,619	8	708,633
48	2	212,653	5	425,804
49	2	238,023	2	179,726
50	2	256,735	0	0
51	1	106,860	0	0
52	0	0	1	95,438
53	0	0	1	46,850
57	0	0	1	48,385
64	0	0	1	58,007
Total	72,336	3,660,604,088	57,650	2,564,653,052



Appendix B: Detailed Tabulation of Member Data

Table B-4: The Number and Accumulated Contributions of Terminated Vested Members Distributed by Age as of December 31, 2018

Age	Men		Women	
	Number	Contributions	Number	Contributions
18	2	290	1	9
19	11	3,964	3	563
20	50	39,030	14	8,662
21	74	85,999	21	12,977
22	155	208,685	51	54,892
23	288	449,983	98	116,378
24	380	740,408	198	351,092
25	507	1,119,415	297	598,121
26	525	1,465,374	391	1,028,021
27	695	2,139,393	516	1,567,027
28	748	2,871,034	599	2,093,994
29	922	4,418,597	660	2,546,400
30	887	4,309,429	773	3,478,363
31	920	4,988,909	845	3,921,771
32	1,013	6,314,070	877	4,620,477
33	1,010	6,932,816	911	5,522,464
34	1,105	8,457,510	1,055	7,168,353
35	1,022	8,552,187	1,033	7,894,755
36	1,091	10,024,330	1,090	8,782,628
37	1,030	10,285,076	1,068	9,358,544
38	999	9,692,189	1,150	9,774,566
39	994	11,127,547	1,208	11,142,163
40	928	11,324,196	1,198	12,578,014
41	931	11,854,727	1,154	11,960,833
42	978	12,945,568	1,111	12,731,608
43	927	12,498,841	1,162	13,765,280
44	931	14,127,377	1,226	15,249,721
45	966	15,186,290	1,195	15,636,708
46	981	16,522,279	1,166	16,480,120
47	1,016	16,701,997	1,163	16,993,493
48	1,127	19,346,231	1,312	19,410,702
49	1,017	18,324,227	1,216	18,611,439
50	912	17,055,027	1,138	18,707,081
51	827	14,852,973	1,048	16,769,199
52	852	13,994,598	973	15,736,599
53	791	13,679,056	976	16,564,620
54	826	15,778,402	969	17,480,630
55	736	14,618,854	974	17,394,880



Appendix B: Detailed Tabulation of Member Data

Table B-4: The Number and Accumulated Contributions of Terminated Vested Members Distributed by Age as of December 31, 2018 (continued)

Age	Men		Women	
	Number	Contributions	Number	Contributions
56	657	11,559,569	977	17,501,498
57	692	13,288,119	965	17,948,087
58	635	11,720,172	929	17,335,381
59	576	12,235,867	848	17,070,646
60	452	9,173,245	794	16,240,489
61	394	8,089,485	656	13,018,791
62	379	7,120,594	521	11,240,881
63	360	6,590,481	506	9,033,238
64	347	5,627,983	484	8,900,341
65	240	3,809,301	360	6,506,969
66	173	2,365,830	272	4,866,100
67	162	1,920,302	204	2,504,831
68	123	1,068,014	198	2,918,846
69	135	1,098,736	175	2,580,300
70	107	886,751	142	1,498,785
71	72	626,052	70	911,472
72	33	255,497	21	118,807
73	26	173,668	12	72,004
74	8	8,192	6	35,389
75	7	30,481	9	76,798
76	13	163,679	8	70,083
77	10	25,488	4	13,289
78	5	16,329	4	74,895
79	9	114,088	1	326
80	3	4,760	2	27,249
81	0	0	5	22,228
82	2	9,673	0	0
83	7	75,656	1	22,546
84	2	2,933	4	13,404
85	3	7,720	1	1,557
86	3	5,399	1	50,361
87	1	3,928	0	0
89	3	4,516	0	0
100+	2	539	0	0
Total	34,815	431,119,925	39,020	486,788,738



Appendix B: Detailed Tabulation of Member Data

Table B-5: The Number and Annual Retirement Allowances of Retired Members (Healthy at Retirement) and Survivors of Deceased Members Distributed by Age as of December 31, 2018

Age	Men		Women	
	Number	Allowances	Number	Allowances
18	3	33,351	1	20,786
19	3	25,997	0	0
20	2	35,793	0	0
21	3	19,041	1	65,114
22	1	10,664	1	5,417
24	1	7,872	1	26,660
25	1	11,727	0	0
26	1	1,750	5	42,584
27	2	19,662	4	66,518
28	2	14,522	4	27,118
29	4	54,230	3	21,813
30	0	0	6	47,387
31	7	55,686	4	9,367
32	5	52,746	3	46,620
33	4	30,049	1	5,085
34	8	104,999	5	25,362
35	4	89,954	4	54,295
36	6	80,033	10	82,755
37	9	101,003	8	83,403
38	10	103,890	9	111,821
39	6	56,704	8	95,167
40	6	67,581	14	224,119
41	7	54,093	11	136,028
42	6	55,817	10	79,762
43	9	67,545	11	105,477
44	5	58,285	20	182,686
45	14	179,596	17	158,310
46	6	67,243	12	149,082
47	8	107,251	18	286,741
48	33	662,139	27	279,420
49	64	1,927,999	41	641,495
50	121	3,907,195	49	811,248
51	231	7,020,821	94	1,935,448
52	329	11,225,969	137	3,218,595
53	379	12,436,129	177	4,204,787
54	501	16,103,750	231	5,661,046
55	617	20,213,165	271	6,660,832
56	668	21,002,605	339	8,280,850
57	738	22,715,779	439	12,159,819
58	773	23,569,293	508	13,432,625
59	764	23,700,273	553	14,561,829



Appendix B: Detailed Tabulation of Member Data

Table B-5: The Number and Annual Retirement Allowances of Retired Members (Healthy at Retirement) and Survivors of Deceased Members Distributed by Age as of December 31, 2018 (continued)

Age	Men		Women	
	Number	Allowances	Number	Allowances
60	793	23,284,486	614	15,605,479
61	866	24,936,333	851	20,234,141
62	1,007	28,237,298	945	20,441,242
63	1,100	27,766,202	1,083	20,814,550
64	1,218	30,237,402	1,244	22,899,901
65	1,277	31,185,553	1,316	23,956,554
66	1,401	32,607,796	1,524	26,032,287
67	1,480	32,884,365	1,630	25,859,705
68	1,501	32,318,674	1,576	25,221,917
69	1,370	29,680,464	1,549	25,199,485
70	1,405	29,751,505	1,520	23,410,552
71	1,409	28,346,734	1,537	23,388,849
72	1,443	27,970,402	1,606	24,200,895
73	925	18,003,991	1,153	16,788,035
74	938	17,861,924	1,102	16,512,523
75	768	13,954,400	998	13,649,133
76	829	15,415,178	1,025	13,968,959
77	634	11,091,655	872	11,414,156
78	577	10,224,954	746	9,623,818
79	538	9,376,346	737	9,584,757
80	450	7,672,728	703	8,998,139
81	438	7,444,111	611	7,690,028
82	441	7,335,235	621	7,322,183
83	371	6,270,609	545	6,911,032
84	327	5,222,442	491	5,928,403
85	278	4,196,032	437	5,035,800
86	240	3,776,373	408	4,654,578
87	214	3,233,802	384	4,263,034
88	167	2,464,375	338	4,142,873
89	126	2,041,545	286	2,905,676
90	109	1,488,492	252	3,124,665
91	87	1,442,144	204	2,179,262
92	70	994,385	195	1,959,988
93	51	726,476	124	1,502,437
94	43	637,006	94	884,745
95	27	372,038	79	833,333
96	19	237,752	52	544,123
97	19	205,055	48	397,465
98	6	91,660	27	208,700
99	3	22,929	29	237,918
100+	8	157,605	31	331,746
Total	30,334	697,220,657	32,644	532,870,537



Appendix B: Detailed Tabulation of Member Data

Table B-6: The Number and Annual Retirement Allowances of Retired Members (Healthy at Retirement) and Survivors of Deceased Members Distributed by Annuity Type as of December 31, 2018

Annuity Type	Men		Women	
	Number	Allowances	Number	Allowances
0:Maximum	9,730	\$ 201,311,625	16,627	\$264,777,545
1:Option 1: 10-year guaranteed	242	4,813,068	355	4,067,166
2:Option 2: 100% joint and survivor	6,682	152,995,375	1,707	25,039,973
3:Option 3: 50% joint and survivor	1,832	46,948,041	907	16,225,950
4:Option 4: Social security leveling	2,579	64,121,298	3,130	63,674,329
5:Option 5- 2:100% joint and surv.	38	773,951	11	67,742
6:Option 5-3: 50% joint and surv.	16	451,951	14	233,552
7:Option 6-2: 100% joint and surv. w / pop-up	6,068	155,806,750	2,381	46,161,863
8:Option 6-3: 50% joint and surv. w / pop-up	2,145	59,566,346	1,736	39,123,193
9:Special	6	186,391	1	7,631
3:Survivor	996	\$ 10,245,861	5,775	\$ 73,491,593
Total	30,334	\$ 697,220,657	32,644	\$532,870,537



Appendix B: Detailed Tabulation of Member Data

Table B-7: The Number and Annual Retirement Allowances of Retired Members (Disabled at Retirement) Distributed by Age of December 31, 2018

Age	Men		Women	
	Number	Allowances	Number	Allowances
27	1	23,184	0	0
29	2	31,585	0	0
30	2	42,979	0	0
31	2	43,555	0	0
32	1	21,518	5	104,244
33	5	120,708	3	64,563
34	5	114,865	0	0
35	10	211,001	5	95,781
36	15	294,238	6	137,620
37	13	233,557	3	59,104
38	20	420,046	11	272,151
39	22	461,487	7	153,826
40	28	566,219	8	174,093
41	23	492,505	16	295,203
42	27	574,235	22	415,994
43	45	970,595	19	381,848
44	40	898,318	20	400,592
45	45	1,018,572	23	487,613
46	53	1,136,073	34	676,713
47	89	1,943,000	43	965,193
48	107	2,437,133	40	819,196
49	111	2,395,301	63	1,210,672
50	122	2,835,027	57	1,113,411
51	104	2,221,991	75	1,695,248
52	136	2,905,859	74	1,537,051
53	144	3,032,631	89	1,644,265
54	136	2,936,347	87	1,734,038
55	169	3,527,775	109	2,143,188
56	182	3,684,695	91	1,686,341
57	187	3,508,057	135	2,513,273
58	167	3,051,246	122	2,209,141
59	172	3,199,776	136	2,560,330
60	163	3,084,201	170	2,802,097
61	160	2,805,908	135	2,287,899
62	205	3,765,104	144	2,343,645
63	198	3,654,628	166	2,713,332



Appendix B: Detailed Tabulation of Member Data

Table B-7: The Number and Annual Retirement Allowances of Retired Members (Disabled at Retirement) Distributed by Age of December 31, 2018 (continued)

Age	Men		Women	
	Number	Allowances	Number	Allowances
64	223	4,248,762	145	2,432,535
65	202	4,022,131	142	2,281,491
66	182	3,616,446	128	2,011,983
67	222	4,885,459	149	2,323,981
68	193	3,881,136	104	1,702,273
69	195	4,316,273	106	1,559,525
70	185	3,789,116	119	1,876,777
71	170	3,613,890	94	1,298,259
72	164	3,366,450	109	1,548,607
73	130	2,599,501	89	1,215,366
74	127	2,574,142	77	1,024,585
75	88	1,696,107	81	1,037,500
76	86	1,722,157	72	950,781
77	58	1,194,392	42	439,841
78	68	1,131,227	45	611,832
79	44	738,818	46	533,526
80	43	755,477	39	441,329
81	40	614,718	25	280,411
82	28	534,419	18	192,593
83	32	518,627	19	181,506
84	20	302,203	9	97,576
85	21	294,042	17	153,131
86	13	184,062	9	73,027
87	9	98,829	5	32,811
88	11	193,168	5	48,745
89	6	107,636	6	55,470
90	1	21,741	1	8,330
91	2	36,571	3	25,658
92	1	19,847	2	20,270
93	1	24,757	1	5,028
94	2	42,556	1	10,529
95	1	9,045	2	20,088
97	0	0	1	4,779
98	0	0	1	6,395
Total	5,479	109,817,624	3,630	60,204,203



Appendix B: Detailed Tabulation of Member Data

Table B-8: The Number and Annual Retirement Allowances of Retired Members (Disabled at Retirement) Distributed by Annuity Type of December 31, 2018

Annuity Type	Men		Women	
	Number	Allowances	Number	Allowances
0:Maximum	3,868	\$ 82,244,971	3,136	\$ 52,796,962
1:Option 1: 10-year guaranteed	127	2,649,359	59	838,943
2:Option 2: 100% joint and survivor	355	5,132,219	72	891,387
3:Option 3: 50% joint and survivor	352	5,848,184	79	1,171,051
4:Option 4: Social security leveling	8	227,601	8	157,780
5:Option 5- 2:100% joint and surv.	4	81,403	0	0
6:Option 5-3: 50% joint and surv.	7	88,024	1	7,003
7:Option 6-2: 100% joint and surv. w / pop-up	336	5,631,396	99	1,445,928
8:Option 6-3: 50% joint and surv. w / pop-up	414	7,747,813	176	2,895,149
9:Special	8	166,654	0	0
Total	5,479	\$109,817,624	3,630	\$ 60,204,203



Appendix C: Summary of Main Benefit & Contribution Provisions

The following summary presents the main benefit and contribution provisions of the system, as interpreted in preparing the actuarial valuation. Items in parentheses in the text are the provisions applicable only to law enforcement officers. As used in the summary, "average final compensation" means the average annual compensation of a member during the four consecutive calendar years of creditable service producing the highest such average. "Membership service" means service represented by regular contributions. "Prior service" means service prior to the date of participation of the employer for which credit is allowed. "Creditable service" means the sum of prior service plus membership service. "Creditable service" may also include certain special purchased service.

BENEFITS

Unreduced Retirement Allowance

Condition for Allowance	An unreduced retirement allowance is payable to any member who retires from service after attaining age 65 (55), or after age 60 and completion of 25 years of creditable service, or after completion of 30 years of creditable service.
Amount of Allowance	1.85% of average final compensation multiplied by the number of years of creditable service.

Reduced Retirement Allowance

Condition for Allowance	A reduced retirement allowance is payable to any member who retires from service after attaining age 60 (50) and completion of 5 (15) years of creditable service (or in the case of a firefighter or rescue squad worker, after attaining age 55 and five years of creditable service), but prior to becoming eligible for an unreduced retirement allowance.
Amount of Allowance	<p>The member's reduced retirement allowance is equal to 1.85% of average final compensation multiplied by the number of years of creditable service at the date of retirement reduced by 1/4 of 1% for each month by which the member's age at retirement is less than age 65 (55).</p> <p>If a firefighter has not attained age 60 nor completed 30 or more years of service at the time of retirement, his or her allowance is the actuarial equivalent of the allowance payable at age 60.</p>

OR

Condition for Allowance	A reduced retirement allowance is payable to any member who retires from service after age 50 and completion of 20 (15) years of creditable service, but prior to becoming eligible for a reduced or unreduced retirement allowance.
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Appendix C: Summary of Main Benefit & Contribution Provisions

Amount of Allowance	<p>The member's reduced retirement allowance is equal to 1.85% of average final compensation multiplied by the number of years of creditable service at date of retirement reduced by the lesser of:</p> <ul style="list-style-type: none">(i) $5/12$ ($1/3$) of 1% for each month by which age is less than 60 (55), plus, if the member is not a law enforcement officer, $1/4$ of 1% for each month by which age 60 is less than 65.(ii) 5% times the difference between 30 years and creditable service at retirement. <p style="text-align: center;">OR</p>
Condition for Allowance	<p>A reduced retirement allowance is payable to any law enforcement officer who retires from service at any age with 25 years of service (15 years as an officer), but prior to becoming eligible for a reduced or unreduced retirement allowance.</p>
Amount of Allowance	<p>The member's reduced retirement allowance is equal to 1.85% of average final compensation multiplied by the number of years of creditable service at date of retirement reduced by the lesser of:</p> <ul style="list-style-type: none">(i) $1/3$ of 1% for each month by which his or her age is less than 55,(ii) 5% times the difference between 30 years and creditable service at retirement plus 4% times the difference between age 50 and the member's age at retirement.
Disability Retirement Allowance	
Condition for Allowance	<p>A disability retirement allowance may be granted to a member who becomes totally and permanently incapacitated for duty before becoming eligible for an unreduced retirement allowance, and who had five or more years of creditable service. A law enforcement officer, firefighter or rescue squad worker who becomes totally and permanently disabled as the natural and proximate result of an accident occurring in the actual performance of duty may also be retired on a disability retirement allowance.</p>
Amount of Allowance	<p>On retirement for disability a member receives a service retirement allowance after attaining age 65 (55) or attaining age 60 and completion of 25 years of creditable service or completion of 30 years of creditable service; otherwise the allowance is equal to the retirement allowance calculated on the basis of average final compensation at time of disability retirement and service projected to the earliest age at which the member would have qualified for an unreduced retirement allowance except that any member who had five years of creditable service on or before July 1, 1982 shall have service projected to age 65.</p>



Appendix C: Summary of Main Benefit & Contribution Provisions

Deferred Retirement Allowance	Any member who separates from service after completing five or more years of membership service prior to becoming eligible for an unreduced or reduced retirement allowance and who leaves his or her total accumulated contributions in the system may receive a deferred retirement allowance, beginning at age 60 (55), computed in the same way as a reduced retirement allowance, or, if the member has 20 (15) or more years of service, at age 50 computed in the same way as a reduced service retirement allowance, on the basis of creditable service and compensation to the date of separation.
Return of Contributions	<p>Upon the withdrawal of a member without a retirement allowance and upon request, the member's accumulated contributions are returned to him or her, together with accumulated regular interest.</p> <p>Upon the death of a member before retirement, his or her accumulated contributions, together with the full accumulated regular interest thereon, are paid to the estate or to person(s) designated by the member provided no survivor's alternate benefit is payable.</p> <p>The current interest rate on member contributions is 4%.</p>
Survivor's Alternate Benefit	Upon the death of a member in service who has attained age 60 (55) and completed five years of creditable service, or completed 20 years of creditable service (or attained age 50 and completed 15 years of creditable service), the designated beneficiary may elect to receive a benefit equal to that which would have been payable under the provisions of Option 2 had the member retired on the first day of the month following his or her death and elected such option, in lieu of the member's accumulated contributions, provided the member had not instructed the Board of Trustees in writing that he or she did not wish the alternate benefit to apply.
Death After Retirement	<p>Upon the death of a beneficiary who did not retire under an effective election of Options 2, 3, 5, or 6, an amount equal to the excess, if any, of his or her accumulated contributions at retirement over the retirement allowance payments received is paid to a designated person or to the beneficiary's estate.</p> <p>Upon the death of the survivor of a beneficiary who retired under an effective election of Options 2, 3, 5, or 6, an amount equal to the excess, if any, of the beneficiary's accumulated contributions at retirement over the total retirement allowance payments received is paid to such other person designated by the beneficiary or to the beneficiary's estate.</p> <p>Upon the death of a beneficiary, a benefit may be provided by the Retiree's Contributory Death Benefit Plan.</p>
Other Death Benefits	Upon the death of a member in service, other benefits may be provided by the Death Benefit Plan or Separate Insurance Benefit Plan for Law Enforcement Officers.



Appendix C: Summary of Main Benefit & Contribution Provisions

Optional Arrangements at Retirement

In lieu of the full retirement allowance any member may, until the first payment of his or her allowance becomes normally due, elect to receive a reduced retirement allowance equal in value to the full allowance with the provision that:

Option 1 - A member retiring prior to July 1, 1993, may elect that at his or her death within 10 years from retirement date, an amount equal to his or her accumulated contributions at retirement, less 1/120 for each month the member has received a retirement allowance, is paid to the estate, or to person(s) designated by the member, or

Option 2 - At the death of the member his or her allowance shall be continued throughout the life of such other person as the member shall have designated at the time of retirement, or

Option 3 - At the death of the member one-half of his or her allowance shall be continued throughout the life of such other person as the member shall have designated at the time of retirement.

Option 4 - A member may elect to receive a retirement allowance in such amount that, together with his or her Social Security benefit, he or she will receive approximately the same income per annum before and after the earliest age at which he or she becomes eligible to receive the Social Security benefit.

Option 5 - A member retiring prior to July 1, 1993 may elect to receive a reduced retirement allowance under the provisions of Option 2 or Option 3 in conjunction with the provisions of Option 1.

Option 6 - The member may elect Option 2 or 3 with the added provision that should the designated beneficiary predecease the member, the allowance which would have been payable to the member had he not elected the option will be payable thereafter.

Post-Retirement Increases in Allowance

Future increases in allowances may be granted by the Board of Trustees or the State in accordance with G.S. 128- 27(k).



Appendix C: Summary of Main Benefit & Contribution Provisions

Service Reciprocity	For the purpose of determining eligibility for a deferred, reduced or unreduced service retirement allowance, the membership and creditable service of a member shall include such prior service earned as a member of the Teachers' and State Employees' Retirement System (TSERS), the Consolidated Judicial Retirement System (CJRS), or the Legislative Retirement System (LRS). In addition, if the member's accumulated contributions and reserves are transferred from the prior System to this System, the creditable service earned as a member of the prior System may be included for purposes of determining the amount of benefits payable under this System.
Military Service	Periods of active duty in the United States military may be counted as creditable service if the member was an employee upon entering the military and returned to employment within two years of discharge or for a period of 10 additional years.
Service Purchases	Additional creditable service may include service that the member purchased to restore a period of service for which the member (1) received a refund of contributions, (2) had a leave of absence for educational purposes, extended illness or parental or maternity reasons, (3) had full-time temporary or part-time local or State government employment, (4) was in a probationary or waiting period with a unit of the LGERS, (5) had a leave of absence under Workers' Compensation, (6) performed service with a unit of local government not covered by LGERS, (7) performed service with the federal government not covered by any other retirement system, (8) performed service with a public community service entity funded entirely with federal funds, (9) performed service as a member of the General Assembly, (10) performed service as a member of a charter school not participating in the system, (11) was employed by The University of North Carolina and participated in the Optional Retirement Program but not eligible to receive any benefits from that program, or (12) performed service which was omitted by reason of error.
Unused Sick Leave	Unused sick leave counts as creditable service at retirement. Sick leave which was converted from unused vacation leave is also creditable. One month of credit is allowed for each 20 days of unused sick leave, plus an additional month for any part of 20 days left over.



Appendix C: Summary of Main Benefit & Contribution Provisions

Transfer of Defined Contribution Balances (Special Retirement Allowances)

A member may make a one-time election to transfer any portion of their eligible accumulated contributions to this plan on or after retirement. Eligible accumulated contributions are those from the Supplemental Retirement Income Plan or Public Employee Deferred Compensation Plan, not including Roth after-tax contributions. A member who became a member of the Supplemental Retirement Income Plan prior to retirement and who remains a member of the Supplemental Retirement Income Plan may also make a one-time election to transfer eligible balances, not including any Roth after-tax contributions, from any of the following plans to the Supplemental Retirement Income Plan, subject to the applicable requirements of the Supplemental Retirement Income Plan, and then through the Supplemental Retirement Income Plan to this Retirement System:

- (1) A plan participating in the North Carolina Public School Teachers' and Professional Educators' Investment Plan.
- (2) A plan described in section 403(b) of the Internal Revenue Code.
- (3) A plan described in section 457(b) of the Internal Revenue Code that is maintained by a state, political subdivision of a state, or any agency or instrumentality of a state or political subdivision of a state.
- (4) An individual retirement account or annuity described in Section 408(a) or 408(b) of the Internal Revenue Code that is eligible to be rolled over and would otherwise be includible in gross income.
- (5) A tax-qualified plan described in section 401(a) or 403(a) of the Internal Revenue Code.

The member may elect to convert the accumulated contributions to a life annuity with or without annual increases equal to the annual increase in the U.S. Consumer Price Index. Any ad-hoc COLA increases granted will not apply to benefits under this section. A member may elect Options 2, 3, or 6 under the Plan and may also elect either a guaranteed number of months of payments or a guarantee of total payments at least equal to the amount of contributions transferred to the Plan. In addition, any transfer may be paid in whole or in part with employer contributions paid directly to the Retirement System at the time of transfer.



Appendix C: Summary of Main Benefit & Contribution Provisions

Contributions

By Members

Members contribute 6% of compensation.

By Employers

Participating employers make annual contributions consisting of a normal contribution and an accrued liability contribution. The normal contribution covers the liability on account of current service and is determined by the actuary after each valuation.

The accrued liability contribution rate is determined based on eliminating the unfunded actuarial accrued liability over a 12-year period. Some employers have additional prior service contributions.

The minimum total employer contribution rate is 6.00%.

Changes Since Prior Valuation

None.



Appendix D: Actuarial Assumptions and Methods

Assumptions are based on the experience investigation prepared as of December 31, 2014 and adopted by the Board of Trustees on January 21, 2016 for use beginning with the December 31, 2015 annual actuarial valuation. The interest rate of 7.00% was adopted by the Board of Trustees on April 26, 2018.

Interest Rate: 7.00% per annum, compounded annually.

Inflation: Both general and wage inflation are assumed to be 3.00% per annum.

Real Wage Growth: 0.50% per annum.

Payroll Growth: 3.50% per annum.

Separations From Active Service: Representative values of the assumed rates of separation from active service are as follows:

Annual Rates of Withdrawal

Service	General Employees		Firefighters & Rescue Squad Workers		Law Enforcement Officers	
	Male	Female	Male	Female	Male	Female
0	.1850	.2050	.1300	.1300	.1200	.1200
1	.1550	.1750	.1050	.1050	.0850	.0850
2	.1300	.1500	.0950	.0950	.0800	.0800
3	.1050	.1250	.0850	.0850	.0750	.0750
4	.0850	.1050	.0750	.0750	.0700	.0700

General Employees

Age	Annual Rates					
	Withdrawal and Vesting*		Base Mortality**		Disability	
	Male	Female	Male	Female	Male	Female
25	.0750	.1000	.0005	.0002	.0004	.0005
30	.0600	.0900	.0005	.0002	.0005	.0005
35	.0450	.0650	.0005	.0003	.0005	.0005
40	.0400	.0500	.0006	.0004	.0030	.0020
45	.0400	.0450	.0010	.0007	.0040	.0030
50	.0400	.0450	.0017	.0011	.0060	.0035
55	.0400	.0450	.0028	.0017	.0080	.0060
60	.0400	.0450	.0047	.0024	.0080	.0060
65			.0083	.0037		
69			.0125	.0057		

* These rates apply only after five years of membership in the system.

** Base mortality rates as of 2014.



Appendix D: Actuarial Assumptions and Methods

Firefighters & Rescue Squad Workers

Annual Rates

Age	<u>Withdrawal and Vesting*</u>		<u>Base Mortality**</u>		<u>Disability</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
25	.0350	.0350	.0005	.0002	.0010	.0006
30	.0400	.0400	.0005	.0002	.0010	.0009
35	.0300	.0300	.0005	.0003	.0015	.0024
40	.0250	.0250	.0006	.0004	.0040	.0038
45	.0250	.0250	.0010	.0007	.0055	.0048
50	.0250	.0250	.0017	.0011	.0100	.0076
55	.0250	.0250	.0028	.0017	.0150	.0176
60	.0250	.0250	.0047	.0024	.0150	.0276
65			.0083	.0037		
69			.0125	.0057		

* These rates apply only after five years of membership in the system.

** Base mortality rates as of 2014.

Law Enforcement Officers

Annual Rates

Age	<u>Withdrawal and Vesting*</u>		<u>Base Mortality**</u>		<u>Disability</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
25	.0500	.0500	.0005	.0002	.0060	.0025
30	.0500	.0500	.0005	.0002	.0010	.0030
35	.0400	.0400	.0005	.0003	.0020	.0040
40	.0300	.0300	.0006	.0004	.0030	.0050
45	.0350	.0350	.0010	.0007	.0400	.0060
50	.0350	.0350	.0017	.0011	.0400	.0070
55	.0350	.0350	.0028	.0017	.0400	.0070
60	.0350	.0350	.0047	.0024	.0400	.0070
65			.0083	.0037		
69			.0125	.0057		

* These rates apply only after five years of membership in the system.

** Base mortality rates as of 2014.



Appendix D: Actuarial Assumptions and Methods

Retirements: Representative values of the assumed rates of retirement from active service are as follows:

General Employees – Male

Age	Service						
	5	10	15	20	25	30	35
50				0.0300	0.0700	0.2750	0.1500
55				0.0500	0.1000	0.2500	0.1500
60	0.1000	0.1000	0.1000	0.1000	0.2750	0.3000	0.2500
65	0.3000	0.3000	0.3000	0.3000	0.3500	0.3500	0.3500
70	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
75	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

General Employees – Female

Age	Service						
	5	10	15	20	25	30	35
50				0.0450	0.0600	0.3000	0.2000
55				0.0600	0.0850	0.3000	0.2000
60	0.1100	0.1100	0.1100	0.1100	0.3000	0.3500	0.2500
65	0.3500	0.3500	0.3500	0.3500	0.3500	0.3500	0.3500
70	0.1500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500
75	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Firefighters & Rescue Squad Workers

Age	Service						
	5	10	15	20	25	30	35
50				0.0250	0.0850	0.3250	0.3250
55	0.0250	0.0250	0.0250	0.0250	0.1300	0.5000	0.2750
60	0.0575	0.0575	0.0575	0.0575	0.3250	0.3250	0.3250
65	0.3250	0.3250	0.3250	0.3250	0.3250	0.3250	0.3250
70	0.3250	0.3250	0.3250	0.3250	0.3250	0.3250	0.3250
75	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Law Enforcement Officers

Age	Service						
	5	10	15	20	25	30	35
50			0.0800	0.0800	0.0800	0.4000	0.4000
55	0.1000	0.3250	0.3250	0.3250	0.3250	0.7500	0.4000
60	0.1000	0.2000	0.2000	0.2000	0.2000	0.2250	0.2000
65	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000	0.3000
70	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000	0.2000
75	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000



Appendix D: Actuarial Assumptions and Methods

Salary Increases: Representative values of the assumed annual rates of salary increases are as follows:

<u>Service</u>	<u>Annual Rate of Salary Increase</u>		
	<u>General Employees</u>	<u>Firefighters & Rescue Squad Workers</u>	<u>Law Enforcement Officers</u>
0	7.75%	7.75%	7.35%
5	6.00	6.00	6.15
10	4.95	4.85	5.15
15	4.20	4.10	4.45
20	3.75	3.50	4.02
25	3.50	3.50	3.90
30	3.50	3.50	3.80
35	3.50	3.50	3.70
40	3.50	3.50	3.50
45	3.50	3.50	3.50
50	3.50	3.50	3.50

Post-Retirement Mortality: Representative values of the assumed post-retirement mortality rates as of 2014 prior to any mortality improvements are as follows:

Annual Rate of Death after Retirement

(Members Healthy at Retirement)

<u>Age</u>	<u>General Employees</u>		<u>Firefighters & Rescue Squad Workers</u>		<u>Law Enforcement Officers</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
55	.0066	.0029	.0057	.0036	.0060	.0038
60	.0089	.0041	.0078	.0052	.0081	.0054
65	.0127	.0064	.0110	.0080	.0115	.0084
70	.0193	.0102	.0168	.0129	.0174	.0134
75	.0309	.0165	.0268	.0209	.0279	.0218
80	.0604	.0404	.0447	.0348	.0465	.0362



Appendix D: Actuarial Assumptions and Methods

Annual Rate of Death after Retirement (Survivors of Deceased Members and Members Disabled at Retirement)

Age	Male Survivors of Deceased Members	Female Survivors of Deceased Members	Male Retirees Disabled at Retirement	Female Retirees Disabled at Retirement
55	.0071	.0045	.0241	.0143
60	.0096	.0064	.0274	.0168
65	.0135	.0099	.0326	.0207
70	.0206	.0158	.0416	.0279
75	.0330	.0258	.0559	.0406
80	.0550	.0429	.0789	.0604

Deaths After Retirement (General Employees): Mortality rates are based on the RP-2014 Total Data Set for Healthy Annuitants Mortality Table. Rates for male members are multiplied by 115% for ages 50-78 and by 135% for ages greater than 78. Rates for female members are multiplied by 79% for ages 50-78 and by 116% for ages greater than 78. The RP-2014 annuitant tables have no rates prior to age 50. The RP-2014 Total Data Set Employee Mortality Table (with no adjustments) is used for ages less than 50.

Deaths After Retirement (Firefighters and Rescue Squad Workers): Mortality rates are based on the RP-2014 Total Data Set for Healthy Annuitants Mortality Table. The RP-2014 annuitant tables have no rates prior to age 50. The RP-2014 Total Data Set Employee Mortality Table (with no adjustments) is used for ages less than 50.

Deaths After Retirement (Law Enforcement Officers): Mortality rates are based on the RP-2014 Total Data Set for Healthy Annuitants Mortality Table. Rates for all members are multiplied by 104% for ages greater than 50. The RP-2014 annuitant tables have no rates prior to age 50. The RP-2014 Total Data Set Employee Mortality Table (with no adjustments) is used for ages less than 50.

Deaths After Retirement (Survivors of Deceased Members): Mortality rates are based on the RP-2014 Total Data Set for Healthy Annuitants Mortality Table. Rates for all members are multiplied by 123% for all ages. The RP-2014 annuitant tables have no rates prior to age 50. The RP-2014 Total Data Set Employee Mortality Table (with no adjustments) is used for ages less than 50.

Deaths After Retirement (Disabled Members at Retirement): Mortality rates are based on the RP-2014 Total Data Set for Disabled Annuitants Mortality Table. Rates for male members are multiplied by 103% for all ages. Rates for female members are multiplied by 99% for all ages.

Deaths Prior to Retirement: Mortality rates are based on the RP-2014 Total Data Set Employee Mortality Table.

Line-of-Duty Deaths: 50% of deaths prior to retirement for firefighters, rescue squad workers and law enforcement officers are assumed to occur in the line-of-duty.



Appendix D: Actuarial Assumptions and Methods

Mortality Projection: All mortality rates are projected from 2014 using generational improvement with Scale MP-2015.

Timing of Assumptions: All withdrawals, deaths, disabilities, retirements and salary increases are assumed to occur July 1 of each year.

Leave Conversions:

	General		Law	Fire & Rescue
	Males	Females	Enforcement	Squad
Increase in AFC	1.50%	1.50%	1.50%	1.75%
Increase in Creditable Service (years)				
Credited	0.95	0.65	1.20	1.25
Eligibility	1.00	1.00	1.00	1.00

Liability for Inactive Members: The data provided for inactive members does not contain all the elements to calculate the member's deferred benefit. The liability for these members is estimated to be 200% of the member's accumulated contributions. The actuary is collecting data so that future members' deferred benefits can be estimated.

Administrative Expenses: 0.20% of payroll for general employees and firefighters is added to the normal cost.

Marriage Assumption: 100% married with male spouses four years older than female spouses.

Reported Compensation: Calendar year compensation as furnished by the system's office.

Valuation Compensation: Reported compensation adjusted to reflect the assumed rate of pay as of the valuation date.

Actuarial Cost Method: Entry age normal cost method. Entry age is established on an individual basis.

Normal Cost: Normal cost rate reflects the impact of new entrants during the year.

Amortization Period: 12-year closed, level-dollar amount. The first amortization base was created for the contribution payable for fiscal year ending 2018.

Asset Valuation Method: Actuarial value, as developed in Table 7. The actuarial value of assets is based upon a smoothed market value method. Under this method, asset returns in excess of or less than the expected return on market value of assets will be reflected in the actuarial value of assets over a five-year period. The calculation of the Actuarial Value of Assets is based on the following formula:

$$MV - 80\% \times G/(L)_1 - 60\% \times G/(L)_2 - 40\% \times G/(L)_3 - 20\% \times G/(L)_4$$

MV = the market value of assets as of the valuation date

$G/(L)_i$ = the asset gain or (loss) for the i-th year preceding the valuation date

Changes Since Prior Valuation: Calculation of investment return no longer net of administrative expenses and court costs.



Appendix E: GASB 67 Fiduciary Net Position Projection

Table E-1: Projection of Fiduciary Net Positions (in thousands)

Calendar Year	Beginning Fiduciary Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Position
2019	\$ 25,045,131	\$ 406,297	\$ 582,613	\$ 1,645,752	\$ 12,150	\$ 1,730,140	\$ 26,106,279
2020	26,106,279	385,515	640,070	1,722,677	11,529	1,803,057	27,200,716
2021	27,200,716	367,837	733,528	1,799,409	11,000	1,879,653	28,371,325
2022	28,371,325	352,031	804,373	1,877,861	10,528	1,960,807	29,600,147
2023	29,600,147	337,000	827,749	1,959,192	10,078	2,044,328	30,839,954
2024	30,839,954	322,513	859,069	2,050,752	9,645	2,128,558	32,089,698
2025	32,089,698	307,919	874,473	2,147,197	9,208	2,212,765	33,328,450
2026	33,328,450	293,265	854,990	2,243,122	8,770	2,295,017	34,519,830
2027	34,519,830	278,727	839,621	2,338,241	8,335	2,374,127	35,665,730
2028	35,665,730	264,292	824,375	2,432,653	7,904	2,450,085	36,763,925
2029	36,763,925	249,907	763,786	2,525,550	7,474	2,521,198	37,765,792
2030	37,765,792	235,819	671,635	2,616,175	7,052	2,584,569	38,634,588
2031	38,634,588	221,977	561,029	2,704,131	6,638	2,638,091	39,344,915
2032	39,344,915	208,524	437,745	2,787,415	6,236	2,680,257	39,877,790
2033	39,877,790	195,384	344,502	2,868,010	5,843	2,711,138	40,254,961
2034	40,254,961	182,275	273,533	2,946,547	5,451	2,731,958	40,490,730
2035	40,490,730	169,240	221,975	3,022,989	5,061	2,743,623	40,597,517
2036	40,597,517	156,461	162,712	3,095,590	4,679	2,746,134	40,562,555
2037	40,562,555	143,951	119,431	3,165,971	4,305	2,739,358	40,395,020
2038	40,395,020	131,509	107,785	3,232,055	3,933	2,724,541	40,122,867
2039	40,122,867	119,638	96,650	3,125,283	3,578	2,708,385	39,918,678
2040	39,918,678	108,188	85,881	3,180,497	3,235	2,691,439	39,620,454
2041	39,620,454	97,019	75,201	3,233,351	2,901	2,668,004	39,224,427
2042	39,224,427	85,822	64,677	3,283,798	2,567	2,637,811	38,726,372
2043	38,726,372	74,640	54,462	3,330,478	2,232	2,600,616	38,123,380
2044	38,123,380	63,666	44,739	3,371,279	1,904	2,556,302	37,414,905
2045	37,414,905	53,069	35,556	3,405,671	1,587	2,504,856	36,601,128
2046	36,601,128	42,949	26,887	3,432,903	1,284	2,446,318	35,683,094
2047	35,683,094	33,272	19,150	3,448,953	995	2,380,914	34,666,483
2048	34,666,483	24,425	13,809	3,445,138	730	2,309,404	33,568,254
2049	33,568,254	18,068	10,317	3,416,570	540	2,233,178	32,412,707
2050	32,412,707	13,740	7,768	3,369,976	411	2,153,661	31,217,489
2051	31,217,489	10,540	5,848	3,311,907	315	2,071,821	29,993,476
2052	29,993,476	8,071	4,374	3,243,849	241	1,988,349	28,750,180
2053	28,750,180	6,151	3,256	3,168,520	184	1,903,807	27,494,690
2054	27,494,690	4,660	2,409	3,086,024	139	1,818,683	26,234,279
2055	26,234,279	3,510	1,773	2,997,323	105	1,733,446	24,975,580
2056	24,975,580	2,626	1,290	2,903,770	79	1,648,510	23,724,157
2057	23,724,157	1,948	932	2,805,281	58	1,564,264	22,485,962
2058	22,485,962	1,435	669	2,703,350	43	1,481,071	21,265,743
2059	21,265,743	1,050	473	2,598,908	31	1,399,230	20,067,557
2060	20,067,557	762	328	2,492,515	23	1,319,003	18,895,113
2061	18,895,113	548	225	2,385,285	16	1,240,611	17,751,196
2062	17,751,196	391	149	2,278,062	12	1,164,218	16,637,880
2063	16,637,880	276	100	2,171,248	8	1,089,956	15,556,956
2064	15,556,956	193	64	2,065,205	6	1,017,936	14,509,937
2065	14,509,937	134	40	1,960,231	4	948,254	13,498,130
2066	13,498,130	91	22	1,856,584	3	880,991	12,522,647
2067	12,522,647	60	12	1,754,465	2	816,220	11,584,472
2068	11,584,472	39	5	1,654,093	1	754,000	10,684,423



Appendix E: GASB 67 Fiduciary Net Position Projection

Table E-1: Projection of Fiduciary Net Positions (in thousands) (continued)

Calendar Year	Beginning Fiduciary Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Position
2069	\$ 10,684,423	\$ 24	\$ 2	\$ 1,555,646	\$ 1	\$ 694,384	\$ 9,823,185
2070	9,823,185	14	-	1,459,283	-	637,412	9,001,329
2071	9,001,329	8	-	1,365,160	-	583,121	8,219,298
2072	8,219,298	4	-	1,273,421	-	531,535	7,477,416
2073	7,477,416	2	-	1,184,203	-	482,673	6,775,887
2074	6,775,887	1	-	1,097,642	-	436,544	6,114,791
2075	6,114,791	0	-	1,013,862	-	393,150	5,494,079
2076	5,494,079	0	-	932,984	-	352,483	4,913,579
2077	4,913,579	0	-	855,124	-	314,527	4,372,982
2078	4,372,982	0	-	780,387	-	279,257	3,871,852
2079	3,871,852	0	-	708,878	-	246,639	3,409,613
2080	3,409,613	0	-	640,700	-	216,628	2,985,541
2081	2,985,541	0	-	575,953	-	189,170	2,598,758
2082	2,598,758	0	-	514,736	-	164,202	2,248,225
2083	2,248,225	0	-	457,142	-	141,646	1,932,729
2084	1,932,729	0	-	403,255	-	121,416	1,650,890
2085	1,650,890	0	-	353,146	-	103,411	1,401,155
2086	1,401,155	0	-	306,860	-	87,522	1,181,817
2087	1,181,817	0	-	264,418	-	73,629	991,028
2088	991,028	0	-	225,804	-	61,602	826,827
2089	826,827	0	-	190,971	-	51,307	687,162
2090	687,162	0	-	159,835	-	42,602	569,929
2091	569,929	0	-	132,280	-	35,331	472,979
2092	472,979	0	-	108,155	-	29,387	394,211
2093	394,211	0	-	87,281	-	24,592	331,521
2094	331,521	0	-	69,454	-	20,817	282,884
2095	282,884	0	-	54,445	-	17,929	246,368
2096	246,368	0	-	42,001	-	15,801	220,167
2097	220,167	0	-	31,857	-	14,316	202,625
2098	202,625	0	-	23,736	-	13,367	192,256
2099	192,256	0	-	17,357	-	12,861	187,760
2100	187,760	0	-	12,449	-	12,715	188,026
2101	188,026	0	-	8,753	-	12,861	192,133
2102	192,133	0	-	6,032	-	13,242	199,343
2103	199,343	0	-	4,075	-	13,814	209,081
2104	209,081	0	-	2,702	-	14,543	220,922
2105	220,922	0	-	1,761	-	15,404	234,564
2106	234,564	0	-	1,133	-	16,381	249,812
2107	249,812	0	-	722	-	17,462	266,552
2108	266,552	0	-	459	-	18,643	284,736
2109	284,736	0	-	294	-	19,921	304,364
2110	304,364	0	-	190	-	21,299	325,472
2111	325,472	0	-	126	-	22,779	348,125
2112	348,125	0	-	85	-	24,366	372,406
2113	372,406	0	-	59	-	26,066	398,413
2114	398,413	0	-	42	-	27,887	426,258
2115	426,258	0	-	30	-	29,837	456,065
2116	456,065	0	-	22	-	31,924	487,968
2117	487,968	0	-	16	-	34,157	522,109
2118	522,109	0	-	11	-	36,547	558,646



Appendix E: GASB 67 Fiduciary Net Position Projection

Table E-2: Actuarial Present Value of Projected Benefit Payments (in thousands)

Calendar Year	Beginning Fiduciary Position	Benefit Payments	Funded Benefit Payments	Unfunded Benefit Payments	Present Value of Benefit Payments		
					Funded Payments at 7.00%	Unfunded Payments at 3.50%	Using Single Discount Rate of 7.00%
2019	\$ 25,045,131	\$ 1,645,752	\$ 1,645,752	\$ -	\$ 1,591,009	\$ -	\$ 1,591,009
2020	26,106,279	1,722,677	1,722,677	-	1,556,425	-	1,556,425
2021	27,200,716	1,799,409	1,799,409	-	1,519,394	-	1,519,394
2022	28,371,325	1,877,861	1,877,861	-	1,481,905	-	1,481,905
2023	29,600,147	1,959,192	1,959,192	-	1,444,940	-	1,444,940
2024	30,839,954	2,050,752	2,050,752	-	1,413,522	-	1,413,522
2025	32,089,698	2,147,197	2,147,197	-	1,383,176	-	1,383,176
2026	33,328,450	2,243,122	2,243,122	-	1,350,438	-	1,350,438
2027	34,519,830	2,338,241	2,338,241	-	1,315,610	-	1,315,610
2028	35,665,730	2,432,653	2,432,653	-	1,279,188	-	1,279,188
2029	36,763,925	2,525,550	2,525,550	-	1,241,156	-	1,241,156
2030	37,765,792	2,616,175	2,616,175	-	1,201,582	-	1,201,582
2031	38,634,588	2,704,131	2,704,131	-	1,160,728	-	1,160,728
2032	39,344,915	2,787,415	2,787,415	-	1,118,203	-	1,118,203
2033	39,877,790	2,868,010	2,868,010	-	1,075,266	-	1,075,266
2034	40,254,961	2,946,547	2,946,547	-	1,032,440	-	1,032,440
2035	40,490,730	3,022,989	3,022,989	-	989,930	-	989,930
2036	40,597,517	3,095,590	3,095,590	-	947,387	-	947,387
2037	40,562,555	3,165,971	3,165,971	-	905,539	-	905,539
2038	40,395,020	3,232,055	3,232,055	-	863,963	-	863,963
2039	40,122,867	3,125,283	3,125,283	-	780,768	-	780,768
2040	39,918,678	3,180,497	3,180,497	-	742,581	-	742,581
2041	39,620,454	3,233,351	3,233,351	-	705,534	-	705,534
2042	39,224,427	3,283,798	3,283,798	-	669,665	-	669,665
2043	38,726,372	3,330,478	3,330,478	-	634,752	-	634,752
2044	38,123,380	3,371,279	3,371,279	-	600,493	-	600,493
2045	37,414,905	3,405,671	3,405,671	-	566,934	-	566,934
2046	36,601,128	3,432,903	3,432,903	-	534,082	-	534,082
2047	35,683,094	3,448,953	3,448,953	-	501,475	-	501,475
2048	34,666,483	3,445,138	3,445,138	-	468,150	-	468,150
2049	33,568,254	3,416,570	3,416,570	-	433,895	-	433,895
2050	32,412,707	3,369,976	3,369,976	-	399,980	-	399,980
2051	31,217,489	3,311,907	3,311,907	-	367,371	-	367,371
2052	29,993,476	3,243,849	3,243,849	-	336,282	-	336,282
2053	28,750,180	3,168,520	3,168,520	-	306,984	-	306,984
2054	27,494,690	3,086,024	3,086,024	-	279,431	-	279,431
2055	26,234,279	2,997,323	2,997,323	-	253,645	-	253,645
2056	24,975,580	2,903,770	2,903,770	-	229,652	-	229,652
2057	23,724,157	2,805,281	2,805,281	-	207,348	-	207,348
2058	22,485,962	2,703,350	2,703,350	-	186,742	-	186,742
2059	21,265,743	2,598,908	2,598,908	-	167,783	-	167,783
2060	20,067,557	2,492,515	2,492,515	-	150,387	-	150,387
2061	18,895,113	2,385,285	2,385,285	-	134,502	-	134,502
2062	17,751,196	2,278,062	2,278,062	-	120,053	-	120,053
2063	16,637,880	2,171,248	2,171,248	-	106,938	-	106,938
2064	15,556,956	2,065,205	2,065,205	-	95,061	-	95,061
2065	14,509,937	1,960,231	1,960,231	-	84,326	-	84,326
2066	13,498,130	1,856,584	1,856,584	-	74,642	-	74,642
2067	12,522,647	1,754,465	1,754,465	-	65,922	-	65,922
2068	11,584,472	1,654,093	1,654,093	-	58,085	-	58,085



Appendix E: GASB 67 Fiduciary Net Position Projection

Table E-2: Actuarial Present Value of Projected Benefit Payments (in thousands) (continued)

Calendar Year	Beginning Fiduciary Position	Benefit Payments	Funded Benefit Payments	Unfunded Benefit Payments	Present Value of Benefit Payments		
					Funded Payments at 7.00%	Unfunded Payments at 3.50%	Using Single Discount Rate of 7.00%
2069	\$ 10,684,423	\$ 1,555,646	\$ 1,555,646	\$ -	\$ 51,054	\$ -	\$ 51,054
2070	9,823,185	1,459,283	1,459,283	-	44,758	-	44,758
2071	9,001,329	1,365,160	1,365,160	-	39,132	-	39,132
2072	8,219,298	1,273,421	1,273,421	-	34,115	-	34,115
2073	7,477,416	1,184,203	1,184,203	-	29,649	-	29,649
2074	6,775,887	1,097,642	1,097,642	-	25,684	-	25,684
2075	6,114,791	1,013,862	1,013,862	-	22,172	-	22,172
2076	5,494,079	932,984	932,984	-	19,068	-	19,068
2077	4,913,579	855,124	855,124	-	16,333	-	16,333
2078	4,372,982	780,387	780,387	-	13,931	-	13,931
2079	3,871,852	708,878	708,878	-	11,826	-	11,826
2080	3,409,613	640,700	640,700	-	9,990	-	9,990
2081	2,985,541	575,953	575,953	-	8,393	-	8,393
2082	2,598,758	514,736	514,736	-	7,010	-	7,010
2083	2,248,225	457,142	457,142	-	5,818	-	5,818
2084	1,932,729	403,255	403,255	-	4,797	-	4,797
2085	1,650,890	353,146	353,146	-	3,926	-	3,926
2086	1,401,155	306,860	306,860	-	3,188	-	3,188
2087	1,181,817	264,418	264,418	-	2,567	-	2,567
2088	991,028	225,804	225,804	-	2,049	-	2,049
2089	826,827	190,971	190,971	-	1,620	-	1,620
2090	687,162	159,835	159,835	-	1,267	-	1,267
2091	569,929	132,280	132,280	-	980	-	980
2092	472,979	108,155	108,155	-	749	-	749
2093	394,211	87,281	87,281	-	565	-	565
2094	331,521	69,454	69,454	-	420	-	420
2095	282,884	54,445	54,445	-	308	-	308
2096	246,368	42,001	42,001	-	222	-	222
2097	220,167	31,857	31,857	-	157	-	157
2098	202,625	23,736	23,736	-	109	-	109
2099	192,256	17,357	17,357	-	75	-	75
2100	187,760	12,449	12,449	-	50	-	50
2101	188,026	8,753	8,753	-	33	-	33
2102	192,133	6,032	6,032	-	21	-	21
2103	199,343	4,075	4,075	-	13	-	13
2104	209,081	2,702	2,702	-	8	-	8
2105	220,922	1,761	1,761	-	5	-	5
2106	234,564	1,133	1,133	-	3	-	3
2107	249,812	722	722	-	2	-	2
2108	266,552	459	459	-	1	-	1
2109	284,736	294	294	-	1	-	1
2110	304,364	190	190	-	-	-	-
2111	325,472	126	126	-	-	-	-
2112	348,125	85	85	-	-	-	-
2113	372,406	59	59	-	-	-	-
2114	398,413	42	42	-	-	-	-
2115	426,258	30	30	-	-	-	-
2116	456,065	22	22	-	-	-	-
2117	487,968	16	16	-	-	-	-
2118	522,109	11	11	-	-	-	-



Appendix F: Additional Disclosures

Table F-1 illustrates the sensitivity of certain valuation results to changes in the discount rate on a market value of assets basis. Table F-2 summarizes historical actuarial value and market value asset returns. Table F-3 provides an estimate of future market value of asset returns based on the current portfolio structure and summarized in the “TSERS Asset-Liability and Investment Strategy Project” report dated April 19th, 2016.

Section 6(c) of Session Law 2016-108 requires that the actuarial valuation report provide the valuation results using a 30-year treasury rate as of December 31 of the year of the valuation as the discount rate. This is 3.02% at December 31, 2018 and has been used as the lower bound of the sensitivity analysis presented. The range between the current discount rate (7.00%) and the 30-year treasury rate (3.02%) was used to establish an upper bound for sensitivity analysis (10.98%). The remaining rates illustrated represent mid-points between the selected rates. Table F-3 illustrates our best estimate of the plausibility of such rates. The lower bound of 3.02% falls below the 5th percentile of estimated future 30-year returns while the upper bound of 10.98% falls between the 75th and 95th percentiles of estimated future 30-year returns.

Table F-1: Sensitivity of Valuation Results as of December 31, 2018

Discount Rate	3.02%	5.01%	7.00%	8.99%	10.98%
Market Value of Asssets	\$ 25,045,130,611	\$ 25,045,130,611	\$ 25,045,130,611	\$ 25,045,130,611	\$ 25,045,130,611
Actuarial Accrued Liability	\$ 48,084,262,606	\$ 36,826,760,455	\$ 29,223,126,652	\$ 23,950,906,329	\$ 20,191,355,627
Unfunded Accrued Liability (UAL)	\$ 23,039,131,995	\$ 11,781,629,844	\$ 4,177,996,041	\$ (1,094,224,282)	\$ (4,853,774,984)
Funded Ratio	52.1%	68.0%	85.7%	104.6%	124.0%
20-Year Amortization of UAL (as % of general local revenue)	\$ 1,598,308,189 9.4%	\$ 993,590,373 5.8%	\$ 421,975,968 2.5%	N/A N/A	N/A N/A

Table F-2: Historical Asset Returns

Calendar Year	Actuarial Value of Asset Return	Market Value of Asset Return	Calendar Year	Actuarial Value of Asset Return	Market Value of Asset Return	Calendar Year	Actuarial Value of Asset Return	Market Value of Asset Return
1998	9.93%	16.64%	2005	8.58%	7.00%	2012	6.51%	11.79%
1999	15.61%	9.99%	2006	9.19%	11.41%	2013	7.61%	12.21%
2000	12.27%	2.65%	2007	9.03%	8.36%	2014	7.32%	6.19%
2001	8.98%	-1.69%	2008	2.97%	-19.47%	2015	5.87%	0.34%
2002	6.13%	-4.44%	2009	4.92%	14.94%	2016	5.34%	6.22%
2003	8.52%	18.63%	2010	6.10%	11.53%	2017	6.59%	13.47%
2004	9.00%	10.77%	2011	5.33%	2.14%	2018	5.13%	-1.41%

The average investment return recognized for the purposes of determining the annual change in contribution each year is the Actuarial Value of Asset Return. The Actuarial Value of Assets smooths investment gains and losses over a five-year period and is used to reduce volatility that investment gains and losses can have on required contributions and the funded status of the Plan.



Appendix F: Additional Disclosures

Table F-3: Estimate of Future Asset Returns

Horizon	95% Chance (19 out of every 20 scenarios)	75% Chance (3 out of every 4 scenarios)	50% Chance (1 out of every 2 scenarios)	25% Chance (1 out of every 4 scenarios)	5% Chance (1 out of every 20 scenarios)
10 Years (2025)	0.2%	4.0%	5.9%	8.0%	11.5%
20 Years (2035)	2.2%	4.8%	6.7%	8.5%	11.8%
30 Years (2045)	3.1%	5.3%	7.1%	8.7%	12.0%

Other than the discount rate, these results are based on the other economic and demographic assumptions presented in the report. For purposes of simplicity in this disclosure, no adjustments to the valuation assumption for inflation were reflected in the sensitivities above. The statute also requires that the actuarial valuation report show the results using a market value of assets basis. The “funded ratio” and “unfunded accrued liability” in Table F-1 are based upon the market value of assets. In order to alleviate volatility, future employer contributions are determined based on the actuarial value of assets, which smooths market value returns.

None of the liability amounts shown are intended to imply the amount that might represent the cost of any settlement of the plan’s obligations. The various caveats, constraints, and discussions presented earlier in the report apply to these results as well.



Appendix G: Data for Section 2 Graphs

The tables below provide the numbers associated with the graphs in Section 2 of this report.

Graph 1: Active Members

	Active Member Count	Reported Compensation
2014	123,184	\$ 5,331,287,565
2015	124,974	5,541,839,498
2016	126,647	5,716,583,136
2017	128,779	5,944,507,039
2018	129,986	6,225,257,140

Graph 2: Retired Members and Survivors of Deceased Members

	Retired and Survivors of Deceased Member Count	Retirement Allowance
2014	60,408	\$ 1,108,688,628
2015	63,110	1,181,580,927
2016	65,930	1,251,874,605
2017	68,766	1,324,257,015
2018	72,087	1,400,113,021

Graph 3: Market Value of Assets and Asset Returns

	Market Value of Assets	Asset Return
2014	22,744,942,754	6.19%
2015	22,403,836,820	0.34%
2016	23,308,817,567	6.22%
2017	25,918,361,041	13.47%
2018	25,045,130,611	-1.41%



Appendix G: Data for Section 2 Graphs

Graph 5: Cost-of-Living Increase and CPI-U History

	Total Allowance Increase	National CPI-U
1988	5.40%	4.40%
1989	6.70%	4.60%
1990	0.00%	6.10%
1991	5.20%	3.10%
1992	1.60%	2.90%
1993	3.40%	2.70%
1994	3.30%	2.70%
1995	4.40%	2.50%
1996	6.30%	3.30%
1997	3.10%	1.70%
1998	1.00%	1.60%
1999	4.40%	2.70%
2000	3.70%	3.40%
2001	2.00%	1.60%
2002	3.50%	2.40%
2003	0.00%	1.90%
2004	2.50%	3.30%
2005	2.80%	3.40%
2006	2.20%	2.50%
2007	2.20%	4.10%
2008	0.10%	0.10%
2009	0.00%	2.70%
2010	0.00%	1.50%
2011	0.00%	3.00%
2012	0.00%	1.70%
2013	0.00%	1.50%
2014	0.625%	0.80%
2015	0.105%	0.70%
2016	0.00%	2.10%
2017	0.00%	2.10%
2018	0.00%	1.90%

* Allowance increases are effective at July 1 the following year



Appendix G: Data for Section 2 Graphs

Graph 6: Actuarial Value and Market Value of Assets

	Actuarial Value of Assets	Market Value of Assets
2014	22,682,380,725	22,744,942,754
2015	23,649,311,273	22,403,836,820
2016	24,424,927,820	23,308,817,567
2017	25,520,733,159	25,918,361,041
2018	26,307,348,445	25,045,130,611

Graph 7: Asset Returns

	Actuarial Value Value of Assets	Market Value Asset Return
2014	7.32%	6.19%
2015	5.87%	0.34%
2016	5.34%	6.22%
2017	6.59%	13.47%
2018	5.13%	-1.41%

Graph 8: Actuarial Accrued Liability

	Liability for Active Members	Liability for Deferred Members	Liability for Retired Members	Total Liability
2014	\$ 10,793,750,356	\$ 1,345,626,216	\$ 10,578,753,552	\$ 22,718,130,124
2015	11,098,691,456	1,459,269,218	11,802,159,195	24,360,119,869
2016	11,498,250,153	1,580,234,469	12,575,121,366	25,653,605,988
2017	12,498,471,452	1,689,255,707	13,558,140,471	27,745,867,630
2018	13,007,988,139	1,835,817,327	14,379,321,186	29,223,126,652



Appendix G: Data for Section 2 Graphs

Graph 9: Present Value of Future Benefits, Actuarial Accrued Liability and Actuarial Value of Assets

	Present Value of Future Benefits	Actuarial Accrued Liability	Actuarial Value of Assets
2014	\$ 28,456,762,124	\$ 22,718,130,124	\$ 22,682,380,725
2015	29,380,961,747	24,360,119,869	23,649,311,273
2016	30,905,961,233	25,653,605,988	24,424,927,820
2017	33,709,752,410	27,745,867,630	25,520,733,159
2018	35,514,621,879	29,223,126,652	26,307,348,445

Graph 10: Funded Ratios

	Funded Ratio (Actuarial Basis)	Funded Ratio (Market Value Basis)
2014	99.8%	100.1%
2015	97.1%	92.0%
2016	95.2%	90.9%
2017	92.0%	93.4%
2018	90.0%	85.7%

Graph 11: Actuarially Determined Employer Contribution Rates

Fiscal Year	General Employees and Firefighters	Law Enforcement Officers
2017**	5.50%	7.12%
2018	6.25%	7.84%
2019	7.40%	8.99%
2020*	8.56%	10.22%
2021*	10.24%	11.92%

* Subject to the impact of future legislative changes effective during that fiscal year

** Includes impact of the experience study



Appendix G: Data for Section 2 Graphs

Graph 12: Projected Actuarially Determined Employer Contribution Rates

	Alternate #1 (0.0% 2019 Return)	Baseline Projection	Alternate #2 (14.0% 2019 Return)
2019	7.40%	7.40%	7.40%
2020	8.56%	8.56%	8.56%
2021	10.24%	10.24%	10.24%
2022	12.63%	11.96%	11.30%
2023	13.86%	12.38%	10.90%
2024	14.90%	12.64%	10.38%
2025	16.30%	13.33%	10.36%
2026	16.65%	13.11%	9.56%
2027	16.34%	12.89%	9.44%
2028	16.02%	12.66%	9.30%
2029	15.70%	12.44%	9.18%
2030	14.30%	11.14%	7.98%
2031	13.29%	10.22%	7.16%
2032	11.57%	8.60%	6.00%
2033	10.37%	7.50%	6.00%
2034	8.82%	6.54%	6.00%
2035	7.66%	6.08%	6.00%
2036	6.67%	6.00%	6.00%

Graph 13: Projected Funded Ratio

	Alternate #1 (0.0% 2019 Return)	Baseline Projection	Alternate #2 (14.0% 2019 Return)
2018	90.02%	90.02%	90.02%
2019	87.32%	88.46%	89.60%
2020	85.70%	88.27%	90.85%
2021	84.60%	88.54%	92.48%
2022	83.19%	88.25%	93.31%
2023	83.57%	89.44%	95.31%
2024	85.24%	90.74%	96.25%
2025	87.12%	92.12%	97.12%
2026	89.05%	93.48%	97.91%
2027	90.95%	94.82%	98.69%
2028	92.82%	96.14%	99.46%
2029	94.57%	97.34%	100.12%
2030	96.13%	98.36%	100.59%
2031	97.46%	99.14%	100.86%
2032	98.53%	99.67%	101.00%
2033	99.36%	100.00%	101.11%



Appendix H: Detailed Table of Rates of Contributions Payable by Employer

The table below provides the total contribution rates payable for the year beginning July 1, 2020 by all participating employers.

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2018 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
	70505	Eastern Band of Cherokee Indians		11.04%		0.14%		
	72265	Piedmont Triad Airport Authority		11.04%		0.14%		
	72593	Seagrove, Town		11.04%		0.14%		
	72657	Sparta, Town of		11.04%		0.14%		
90001	73190	Yancey County	10.23%	11.04%	0.08%	0.14%		
90002		Yancey Soil & Water Cons	10.15%					
90011	70330	Burnsville, Town of	10.23%	11.04%	0.08%	0.14%		
90092		Martin-Tyrrell-Washington Dist Health Dept	10.20%		0.05%			
90096		Albemarle Regional Health Services	10.22%		0.07%			
90098		Toe River Health District	10.21%		0.06%			
90099		Appalachian District Health Dept	10.18%		0.03%			
90101	70020	Alamance County	10.20%	11.04%	0.05%	0.14%		
90111	70320	Burlington, City of	10.22%	11.04%	0.07%	0.14%		
90114		Mebane, City of	20.65%	21.54%		0.14%	4,260,359	6/30/2025
90117		Alamance Municipal A.B.C. Board	10.36%		0.21%			
90121	71080	Graham, City of	10.15%	11.04%		0.14%		
90131	70880	Elon, Town of	10.19%	11.04%	0.04%	0.14%		
90141	71245	Town of Haw River	10.15%	11.04%		0.14%		
90151		Alamance, Village of	10.15%					
90161		Green Level, Town of	10.15%					
90201	70032	Alexander County	10.22%	11.04%	0.07%	0.14%		
90203		Alexander County Health Dept	10.19%		0.04%			
90205		Alexander County Public Library	10.24%		0.09%			
90206		Alexander County Dept of S S	10.20%		0.05%			
90211	72775	Taylorsville, Town of	10.15%	11.04%		0.14%		
90301	70035	Alleghany County	10.21%	11.04%	0.06%	0.14%		
90305		Northwestern Regional Library	10.26%		0.11%			
90307		Sparta A.B.C. Board	10.68%				2,422	12/31/2028
90401	70040	Anson County	10.24%	11.04%	0.09%	0.14%		
90411	72930	Wadesboro, Town of	10.24%	11.04%	0.09%	0.14%		
90413		Wadesboro Housing Authority	10.22%		0.07%			
90417		Wadesboro A.B.C. Board	10.29%		0.14%			
90421	71584	Lilesville, Town of	10.19%	11.04%	0.04%	0.14%		
90431	72345	Polkton, Town of	10.31%	11.04%	0.16%	0.14%		
90441		Peachland, Town of	10.15%					
90451		Ansonville, Town of	10.15%					
90461		Morven, Town of	10.15%				690	6/30/2019
90501	70065	Ashe County	10.21%	11.04%	0.06%	0.14%		
90507		West Jefferson A.B.C. Board	13.37%				27,542	6/30/2031



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
90511	71447	Jefferson, Town of	10.15%	11.04%		0.14%		
90521	73025	West Jefferson, Town of	10.15%	11.04%		0.14%		
90601	70090	Avery County	10.27%	11.04%	0.12%	0.14%		
90602		Avery County Fire Commission	16.40%				277,548	6/30/2034
90605		Avery-Mitchell-Yancey Reg Library	10.25%		0.10%			
90611	70110	Banner Elk, Town of	10.15%	11.04%		0.14%		
90617		High Country A.B. C. Board	10.21%		0.06%			
90621	72032	Newland, Town of	10.15%	11.04%		0.14%		
90631	70146	Beech Mountain, Town of	10.15%	11.04%		0.14%		
90641		Elk Park, Town of	10.15%					
90651	72724	Sugar Mountain, Town of	17.29%	18.18%		0.14%	252,584	6/30/2024
90701	70130	Beaufort County	10.19%	11.04%	0.04%	0.14%		
90704		Beaufort County A.B.C. Board	10.36%		0.21%			
90705		B.H.M. Regional Library	10.26%		0.11%			
90709		Mideast Commission	10.20%		0.05%			
90711	72990	Washington, City of	10.22%	11.04%	0.07%	0.14%		
90721	70085	Aurora, Town of	10.32%	11.04%	0.17%	0.14%		
90731	70147	Belhaven, Town of	10.15%	11.04%		0.14%		
90741		Washington Park, Town of	10.15%					
90751	70525	Chocowinity, Town of	10.15%	11.04%		0.14%		
90801	70180	Bertie County	10.15%	11.04%		0.14%		
90804		Bertie County A.B.C. Board	10.28%		0.13%			
90805		Albemarle Regional Library	10.30%		0.15%			
90808		Bertie-Martin Regional Jail Comm	10.24%		0.09%			
90811		Aulander, Town of	10.19%		0.04%			
90812	73122	Windsor, Town of	10.15%	11.04%		0.14%		
90813		Colerain, Town of	10.36%		0.21%			
90861	71556	Lewiston Woodville, Town of	11.19%	12.08%		0.14%	4,653	6/30/2024
90901	70210	Bladen County	10.21%	11.04%	0.06%	0.14%		
90911	70850	Elizabethtown, Town of	10.24%	11.04%	0.09%	0.14%		
90917		Elizabeth A.B.C. Board	10.15%					
90918		South Eastern Economic Development Comm	10.17%		0.02%			
90921	73050	White Lake, Town of	10.25%	11.04%	0.10%	0.14%		
90931	70537	Clarkton, Town pf	10.20%	11.04%	0.05%	0.14%		
90941	70215	Bladenboro, Town of	10.15%	11.04%		0.14%		
91001	70280	Brunswick County	10.20%	11.04%	0.05%	0.14%		
91002	71540	Leland, Town of	10.15%	11.04%		0.14%		
91003		Brunswick Co Health Dept	10.19%		0.04%			
91004		Brunswick County A.B.C. Board	10.15%					
91006		Brunswick Co Dept of Social Services	10.18%		0.03%			



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
91007		Calabash A.B.C. Board	10.15%					
91008		Cape Fear Council of Governments	10.15%					
91009		Brunswick County Tourism Authority	11.16%				7,790	6/30/2025
91010		Calabash, Town of	10.15%					
91011	72650	Southport, City of	10.23%	11.04%	0.08%	0.14%		
91012	72076	Northwest, City of	10.15%	11.04%		0.14%		
91013		Southeast Brunswick Sanitary District	16.05%		0.09%		220,688	6/30/2039
91014	71375	Holden Beach, Town of	10.15%	11.04%		0.14%		
91015		Cape Fear Regional Jetport	10.15%					
91017		Southport A.B.C. Board	10.58%		0.43%			
91020		Belville, Town of	10.79%				4,009	6/30/2023
91021	71630	Oak Island, Town of	10.23%	11.04%	0.08%	0.14%		
91024		Carolina Shores Town of	10.15%					
91026		Navassa, Town of	17.42%	18.31%		0.14%	271,887	6/30/2035
91027		Oak Island A.B.C. Bd	10.26%		0.11%			
91032		St James, Town of	10.15%					
91041	72723	Sunset Beach, Town of	10.19%	11.04%	0.04%	0.14%		
91042		Brunswick Regional Water and Sewer H2GO	10.15%					
91047		Sunset Beach A.B.C. Board	10.49%		0.34%		5,643	6/30/2019
91051	70405	Caswell Beach, Town of	10.15%	11.04%		0.14%		
91057		Shallotte A.B.C. Board	10.48%		0.33%			
91061	72135	Ocean Isle Beach, Town of	10.21%	11.04%	0.06%	0.14%		
91067		Ocean Isle Beach A.B.C.	10.27%		0.12%			
91071	70225	Boiling Spring Lakes, City of	10.22%	11.04%	0.07%	0.14%		
91077		Boiling Spring Lakes A.B.C. Board	10.15%					
91081	72597	Shallotte, Town of	10.15%	11.04%		0.14%		
91091	70107	Bald Head Island, Village of	10.20%	11.04%	0.05%	0.14%		
91101	70290	Buncombe County	10.19%	11.04%	0.04%	0.14%		
91102		Land-of-Sky Regional Council	10.20%		0.05%			
91104		Woodfin A.B.C. Commission	11.66%				8,257	6/30/2023
91107		Western NC Regional Air Quality	10.19%		0.04%			
91108		Metro Sewerage Dist of Buncombe County	10.21%		0.06%			
91109		Woodfin Sanitary Water and Sewer Dist	10.22%		0.07%			
91111	70190	Biltmore Forest, Town of	10.15%	11.04%		0.14%		
91120		West Buncombe Fire Dept	10.15%					
91121	70070	Asheville, City of	10.15%	11.04%		0.14%		
91127	70072	Asheville A.B.C. Board	10.25%	11.04%	0.10%	0.14%		
91128	70074	Asheville Regional Airport Authority	10.21%	11.04%	0.06%	0.14%		
91138		Skyland Vol Fire Dept	10.15%					
91141	73016	Weaverville, Town of	10.27%	11.04%	0.12%	0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
91147		Weaverville A.B.C. Board	11.08%				3,961	6/30/2021
91151	70200	Black Mountain, Town of	10.20%	11.04%	0.05%	0.14%		
91154		Black Mountain A.B.C. Board	10.21%		0.06%			
91161	71820	Montreat, Town of	10.21%	11.04%	0.06%	0.14%		
91171	73160	Woodfin, Town of	10.15%	11.04%		0.14%		
91201	70310	Burke County	10.22%	11.04%	0.07%	0.14%		
91202		Burke-Catawba Dist Confinment	10.15%					
91203		Burke Co Health Dept	10.20%		0.05%			
91206		Burke Co Dept of Social Services	10.20%		0.05%			
91208		Burke County Tourism Dev. Authority	10.15%					
91211	72883	Valdese, Town of	10.23%	11.04%	0.08%	0.14%		
91213		Valdese Housing Authority	10.15%					
91214		Rutherford College, Town of	10.15%					
91217		Morganton A.B.C. Board	10.52%		0.37%			
91221	70745	Drexel, Town of	10.19%	11.04%	0.04%	0.14%		
91231	71870	Morganton, City of	10.15%	11.04%		0.14%		
91233		Morganton Housing Authority	10.20%		0.05%			
91241	71065	Glen Alpine, Town of	10.22%	11.04%	0.07%	0.14%		
91251		Hildebran, Town of	10.15%					
91261		Connelly Springs, Town of	10.15%					
91301	70340	Cabarrus County	10.20%	11.04%	0.05%	0.14%		
91302		Water & Sewer Auth of Cabarrus County	10.19%		0.04%			
91306		Cabarrus Co Public Health Auth	10.18%		0.03%			
91308		Cabarrus County Tourism Authority	10.82%				51,325	6/30/2027
91311	70590	Concord, City of	10.20%	11.04%	0.05%	0.14%		
91317		Concord A.B.C. Board	10.27%		0.12%			
91321		Mount Pleasant, Town of	10.15%				32,490	6/30/2020
91327		Mt Pleasant A.B.C. Board	10.31%		0.16%			
91331	71468	Kannapolis, City of	10.19%	11.04%	0.04%	0.14%		
91341		Midland, Town of	10.15%					
91401	70350	Caldwell County	10.21%	11.04%	0.06%	0.14%		
91411	71090	Granite Falls, Town of	10.21%	11.04%	0.06%	0.14%		
91414		Rhodhiss, Town of	10.15%					
91417		Granite Falls A.B.C. Board	10.34%		0.19%			
91421		Sawmills, Town of	10.15%					
91423		Lenoir Housing Authority	10.20%		0.05%			
91431	71395	Hudson, Town of	10.15%	11.04%		0.14%		
91441		Harrisburg, Town of	10.15%					
91451	71552	Lenoir, City of	10.30%	11.04%	0.15%	0.14%		
91457		Lenoir A.B.C.Board	19.75%				41,948	6/30/2021



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
91461		Cajah's Mountain, Town of	10.15%					
91501	70357	Camden County	10.24%	11.04%	0.09%	0.14%		
91504		Camden County A.B.C. Board	10.41%		0.26%			
91601	70380	Carteret County	10.22%	11.04%	0.07%	0.14%		
91604	70385	Carteret County A.B.C. Board	10.31%	11.04%	0.16%	0.14%		
91608		Western Carteret Interlocal Cooperation Agency	10.15%					
91611	71860	Morehead City, Town of	10.20%	11.04%	0.05%	0.14%		
91621	72035	Newport, Town of	10.15%	11.04%		0.14%		
91631	70145	Beaufort, Town of	10.21%	11.04%	0.06%	0.14%		
91633		Beaufort Housing Authority	10.15%					
91641	72290	Pine Knoll Shores, Town of	10.20%	11.04%	0.05%	0.14%		
91651	70890	Emerald Isle, Town of	10.15%	11.04%		0.14%		
91661	71405	Indian Beach, Town of	10.15%	11.04%		0.14%		
91671	70365	Cape Carteret, Town of	10.20%	11.04%	0.05%	0.14%		
91681	70080	Atlantic Beach, Town of	16.52%	17.27%	0.14%	0.14%	1,094,093	6/30/2025
91691		Cedar Point, Town of	10.15%					
91701	70415	Caswell County	10.23%	11.04%	0.08%	0.14%		
91704		Caswell County A.B.C. Board	10.43%		0.28%			
91706		Caswell Co Dept of Social Services	10.21%		0.06%			
91719		Yanceyville, Town of	10.18%		0.03%			
91801	70430	Catawba County	10.20%	11.04%	0.05%	0.14%		
91804		Catawba County A.B.C. Board	10.38%		0.23%			
91811	71330	Hickory, City of	10.21%	11.04%	0.06%	0.14%		
91812		Hickory Conover Tourism Dev Auth	10.15%					
91813		Hickory Public Housing Authority	10.18%		0.03%			
91818		Western Piedmont Council of Gvmts	10.15%					
91819		Western Piedmont Regional Transit Authority	10.42%		0.27%			
91821	70535	Claremont, City of	10.20%	11.04%	0.05%	0.14%		
91831	71700	Maiden, Town of	10.20%	11.04%	0.05%	0.14%		
91841	71640	Longview, Town of	10.20%	11.04%	0.05%	0.14%		
91851	70610	Conover, Town of	10.24%	11.04%	0.09%	0.14%		
91861	70270	Brookford, Town of	10.15%	11.04%		0.14%		
91871	72040	Newton, City of	10.21%	11.04%	0.06%	0.14%		
91881	70441	Catawba, Town of	10.15%	11.04%		0.14%		
91901	70490	Chatham County	10.20%	11.04%	0.05%	0.14%		
91903		Chatham Co Housing Auth	10.15%					
91904		Chatham County A.B.C. Board	10.38%		0.23%			
91908		Goldston-Gulf Sanitary District	10.15%					
91911	72625	Siler City, Town of	10.21%	11.04%	0.06%	0.14%		
91917		Siler City A.B.C. Board	10.22%		0.07%			



Appendix H: Detailed Table of Rates of Contributions Payable by Employer

The table below provides the total contribution rates payable for the year beginning July 1, 2020 by all participating employers.

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2018 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
91921	72330	Pittsboro, Town of	10.21%	11.04%	0.06%	0.14%		
92001	70500	Cherokee County	10.25%	11.04%	0.10%	0.14%		
92005		Nantahala Regional Library	10.27%		0.12%			
92011	71975	Murphy, Town of	10.27%	11.04%	0.12%	0.14%		
92017		Murphy A.B.C. Board	10.20%		0.05%			
92021	70036	Andrews, Town of	10.15%	11.04%		0.14%		
92101	70530	Chowan County	10.23%	11.04%	0.08%	0.14%		
92104		Chowan County A.B.C. Board	10.32%		0.17%			
92109		Albemarle Regional Planning & Development Comm	10.19%		0.04%			
92111	70817	Edenton, Town of	10.21%	11.04%	0.06%	0.14%		
92113		New Edenton Housing Auth	10.30%		0.15%			
92201	70538	Clay County	10.23%	11.04%	0.08%	0.14%		
92214		Clay County A.B.C. Board	10.15%					
92301	70550	Cleveland County	10.20%	11.04%	0.05%	0.14%		
92302		Cleveland County Water	10.15%					
92311	72610	Shelby, City of	10.21%	11.04%	0.06%	0.14%		
92317		Shelby A.B.C. Board	10.31%		0.16%			
92321	71490	Kings Mountain, City of	10.15%	11.04%		0.14%		
92327		Kings Mountain A.B.C. Board	10.39%		0.24%			
92331	70230	Boiling Springs, Town of	10.28%	11.04%	0.13%	0.14%		
92341		Lawndale, Town of	10.15%					
92351	71178	Grover, Town of	12.20%	13.01%	0.08%	0.14%	3,875	9/30/2020
92401	70580	Columbus County	10.24%	11.04%	0.09%	0.14%		
92403		Whiteville Housing Authority	10.15%					
92411	73060	Whiteville, City of	10.22%	11.04%	0.07%	0.14%		
92417		Whiteville A.B.C. Board	10.17%		0.02%			
92421		Brunswick, Town of	10.15%					
92427		Lake Waccamaw A.B.C. Board	10.38%		0.23%			
92431	70908	Fair Bluff, Town of	10.15%	11.04%		0.14%		
92441	70450	Chadbourn, Town of	10.15%	11.04%		0.14%		
92444		West Columbus A.B.C. Board	10.15%					
92451	72760	Tabor City, Town of	10.15%	11.04%		0.14%		
92461	71519	Lake Waccamaw, Town of	10.15%	11.04%		0.14%		
92501	70650	Craven County	10.21%	11.04%	0.06%	0.14%		
92502		First Craven Sanitary Dist	10.15%					
92504		Craven Co A.B.C. Bd	10.30%		0.15%			
92505		Craveb-Pamlico-Carteret Regional Library	10.32%		0.17%			
92506		Coastal Carolina Regional Airport	10.40%		0.25%			
92507		Neuse River Council of Governments	10.17%		0.02%			
92508		Coastal Regional Solid Waste Mngt Auth	10.22%		0.07%			



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
92511	72020	New Bern, City of	10.21%	11.04%	0.06%	0.14%		
92513		Trillium Health Resources	10.19%		0.04%			
92521	72810	Trent Woods, Town of	10.23%	11.04%	0.08%	0.14%		
92531	71240	Havelock, City of	10.20%	11.04%	0.05%	0.14%		
92541	72435	River Bend, Town of	10.15%	11.04%		0.14%		
92551	72910	Vanceboro, Town of	10.15%	11.04%		0.14%		
92561		Bridgeton, Town of	10.15%	11.04%		0.14%		
92571		Cove City, Town of	10.15%					
92601	70680	Cumberland County	10.21%	11.04%	0.06%	0.14%		
92602		Westarea Volunteer Fire Dept	10.15%					
92604	70685	Cumberland Co A.B.C. Board	10.25%	11.04%	0.10%	0.14%		
92607		Mid-Carolina Council Of Governments	10.19%		0.04%			
92611	70940	Fayetteville, City of	10.21%	11.04%	0.06%	0.14%		
92613		Fayetteville Metropolitan Housing Auth	10.22%		0.07%			
92614		Fayetteville Public Works Commission	15.38%				7,054,690	6/30/2022
92621	72715	Stedman, Town of	10.15%	11.04%		0.14%		
92631	71390	Hope Mills, Town of	10.20%	11.04%	0.05%	0.14%		
92641		Wade, Town of	10.15%					
92651		Linden, Town of	10.15%					
92661	72676	Spring Lake, Town of	16.86%	17.66%	0.09%	0.14%	1,290,339	6/30/2024
92671		Falcon Town of	16.57%				16,591	6/30/2026
92681		Eastover, Town of	10.64%		0.49%			
92701	70700	Currituck County	10.21%	11.04%	0.06%	0.14%		
92704		Currituck Co A.B.C. Board	10.15%					
92801	70720	Dare County	10.21%	11.04%	0.06%	0.14%		
92802		Dare County Tourism Board	10.20%		0.05%			
92804	70721	Dare County A.B.C. Board	10.24%	11.04%	0.09%	0.14%		
92811	71980	Nags Head, Town of	10.21%	11.04%	0.06%	0.14%		
92821	71480	Kill Devil Hills, Town of	10.22%	11.04%	0.07%	0.14%		
92831	71705	Manteo, Town of	10.35%	11.04%	0.20%	0.14%		
92841	72645	Southern Shores, Town of	10.18%	11.04%	0.03%	0.14%		
92851	71507	Kitty Hawk, Town of	10.26%	11.04%	0.11%	0.14%		
92861	70755	Duck, Town of	10.15%	11.04%		0.14%		
92901	70723	Davidson County	10.22%	11.04%	0.07%	0.14%		
92911	72780	Thomasville, City of	10.23%	11.04%	0.08%	0.14%		
92913		Thomasville Housing Authority	26.58%				216,007	6/30/2024
92914		Thomasville A.B.C. Board	10.15%					
92917		Lexington A.B.C. Board	10.37%		0.22%			
92921	70730	Denton, Town of	10.15%	11.04%		0.14%		
92931	71570	Lexington, City of	10.21%	11.04%	0.06%	0.14%		



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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2018 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
92941		Midway, Town of	12.44%				11,508	3/31/2038
93001	70725	Davie County	10.20%	11.04%	0.05%	0.14%		
93009		Davie Soil and Water Conservation Dist	10.15%					
93011	71790	Mocksville, Town of	10.21%	11.04%	0.06%	0.14%		
93021		Bermuda Run, Town of	10.15%					
93028		Mocksville-Cooleemee A.B.C. Board	10.15%					
93031	70624	Cooleemee, Town of	16.35%	17.24%		0.14%	66,138	9/30/2027
93101	70770	Duplin County	10.23%	11.04%	0.08%	0.14%		
93103		Duplin County Toursim Development Authority	10.15%					
93108		Eastpointe Human Services	10.20%		0.05%			
93111	70160	Beulaville, Town of	10.21%	11.04%	0.06%	0.14%		
93121	71469	Kenansville, Town of	10.22%	11.04%	0.07%	0.14%		
93127		Kenansville A.B.C. Board	10.15%					
93131	72981	Warsaw, Town of	10.50%	11.04%	0.35%	0.14%		
93137		Warsaw A.B.C. Board	10.15%					
93141		Faison, Town of	10.24%		0.09%			
93151	72970	Wallace, Town of	10.15%	11.04%		0.14%		
93157		Wallace A.B.C. Bd	10.15%					
93161	72487	Rose Hill, Town of	10.25%	11.04%	0.10%	0.14%		
93171		Calypso, Town of	10.15%					
93181		Teachey, Town of	10.15%					
93191	71690	Magnolia, Town of	10.15%	11.04%		0.14%		
93201	70790	Durham County	10.20%	11.04%	0.05%	0.14%		
93204	70800	Durham County A.B.C. Board	10.25%	11.04%	0.10%	0.14%		
93209		Alliance Behavioral Healthcare	10.15%					
93211	70780	Durham, City of	10.15%	11.04%		0.14%		
93212		Durham Convention & Visitors Bureau	15.86%				535,405	6/30/2024
93219		Triangle J Council of Governments	10.19%		0.04%			
93301	70820	Edgecombe County	10.24%	11.04%	0.09%	0.14%		
93304		Edgecombe County A.B.C. Board	10.31%		0.16%			
93305		Edgecombe County Memorial Library	10.23%		0.08%			
93309		Upper Coastal Plain Council of Governements	10.22%		0.07%			
93311	72770	Tarboro, Town of	10.21%	11.04%	0.06%	0.14%		
93317		Tarboro Redevelopment Commission	10.21%		0.06%			
93321	72480	Rocky Mount, City of	10.20%	11.04%	0.05%	0.14%		
93323		Rocky Mount-Wilson Airport Authority	10.20%		0.05%			
93331	72296	Pinetops, Town of	10.23%	11.04%	0.08%	0.14%		
93333		Rocky Mt Housing Authority	10.15%					
93341		Macclesfield, Town of	10.20%		0.05%			
93351	72351	Princeville, Town of	10.15%	11.04%		0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
93401	70951	Forsyth County	10.15%	11.04%		0.14%		
93402		Airport Commission of Forsyth County	10.15%					
93406		Piedmont Triad Regional Council	10.28%		0.13%			
93411	73130	Winston-Salem, City of	10.15%	11.04%		0.14%		
93413		Winston-Salem Housing Authority	10.22%		0.07%			
93417	73140	Triad Municipal A.B.C. Board	10.29%	11.04%	0.14%	0.14%		
93421	71470	Kernersville, Town of	10.15%	11.04%		0.14%		
93431		Rural Hall, Town of	10.20%		0.05%			
93441		Clemmons, Village of	10.15%					
93442		Clemmons Fire Department	10.15%					
93451		Lewisville, Town of	10.15%					
93461		Walkertown, Town of	10.15%					
93471		Tobaccoville, Village of	10.15%					
93501	70960	Franklin County	10.23%	11.04%	0.08%	0.14%		
93511	70970	Franklinton, Town of	10.15%	11.04%		0.14%		
93517		Franklinton A.B.C Board	10.40%		0.25%			
93521	71650	Louisburg, Town of	10.22%	11.04%	0.07%	0.14%		
93527		Louisburg A.B.C. Board	10.29%		0.14%			
93531	70295	Bunn, Town of	10.15%	11.04%		0.14%		
93537		Bunn A.B.C. Board	10.15%					
93541	73200	Youngsville, Town of	10.15%	11.04%		0.14%		
93601	71030	Gaston County	10.19%	11.04%	0.04%	0.14%		
93602	72682	Stanley, Town of	10.21%	11.04%	0.06%	0.14%		
93604		Cramerton A.B.C. Board	10.15%					
93609		Partners Behavioral Health Management	10.19%		0.04%			
93610		Mcadenville, Town of	10.18%		0.03%			
93611	71040	Gastonia, City of	10.15%	11.04%		0.14%		
93617		Gastonia A.B.C. Board	10.58%		0.43%			
93618		Gaston County Economic Dev Commission	20.22%				55,185	12/31/2022
93621	70150	Belmont, City of	10.15%	11.04%		0.14%		
93623		Belmont Housing Authority	10.15%					
93631	70640	Cramerton, Town of	10.36%	11.04%	0.21%	0.14%		
93641	70520	Cherryville, City of	10.26%	11.04%	0.11%	0.14%		
93647		Cherryville A.B.C. Board	23.36%				26,146	6/30/2023
93651	70705	Dallas, Town of	10.15%	11.04%		0.14%		
93661	71655	Lowell, City of	10.15%	11.04%		0.14%		
93671		Bessemer City, City of	10.33%	11.04%	0.18%	0.14%		
93681	72390	Ranlo, Town of	10.15%	11.04%		0.14%		
93691	71930	Mount Holly, City of	10.21%	11.04%	0.06%	0.14%		
93701	71050	Gates County	10.21%	11.04%	0.06%	0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
93704		Gates County A.B.C. Board	10.38%		0.23%			
93801	71085	Graham County	10.15%	11.04%		0.14%		
93803		Graham Co Health Dept	10.20%		0.05%			
93806		Graham County Dept of S S	10.20%		0.05%			
93821		Robbinsville, Town of	10.30%		0.15%			
93901	71110	Granville County	10.22%	11.04%	0.07%	0.14%		
93904		Granville Co A.B.C. Bd	10.37%		0.22%			
93906		Granville County Hospital	10.19%		0.04%			
93908		Granville-Vance Public Health	10.19%		0.04%			
93910		South Granville Water and Sewer Authority	10.32%		0.17%			
93911	72200	Oxford, City of	10.23%	11.04%	0.08%	0.14%		
93913		Oxford Housing Authority	10.22%		0.07%			
93914		Stovall, Town of	10.89%		0.74%			
93921	70660	Creedmoor, City of	10.15%	11.04%		0.14%		
93931		Butner, Town of	10.27%	11.04%	0.12%	0.14%		
94001	71130	Greene County	10.24%	11.04%	0.09%	0.14%		
94002		Maury Sanitary Land District	10.15%				627	3/31/2020
94004		Greene County A.B.C. Board	10.29%		0.14%			
94005		Neuse Regional Library-Greene County	10.43%		0.28%			
94011		Hookerton, Town of	10.18%		0.03%			
94021		Snow Hill, Town of	10.15%	11.04%		0.14%		
94031		Walstonburg, Town of	17.43%				42,169	9/30/2033
94101	71180	Guilford County	10.20%	11.04%	0.05%	0.14%		
94102		Guil-Rand Fire Department	10.15%					
94108		Pinecroft-Sedgefield Fire Dist Inc	10.15%					
94109		Alamance Community Fire District	10.15%					
94111	71140	Greensboro, City of	10.21%	11.04%	0.06%	0.14%		
94112		Piedmont Triad Reg Water Auth	10.19%	11.04%	0.04%	0.14%		
94117		Greensboro A.B.C. Bd	10.26%		0.11%			
94118		Guilford Fire District #13 Inc	10.15%					
94121	71340	High Point, City of	10.21%	11.04%	0.06%	0.14%		
94127		High Point A.B.C. Bd	10.26%		0.11%			
94131		Jamestown, Town of	10.20%		0.05%			
94151	71060	Gibsonville, Town of	10.23%	11.04%	0.08%	0.14%		
94157		Gibsonville A.B.C. Board	10.15%					
94161		Oak Ridge, Town of	10.15%					
94168		Colfax Volunteer Fire Department	10.15%					
94171		Summerfield, Town of	10.15%					
94172		Summerfield Fire District	10.19%		0.04%			
94201	71200	Halifax County	10.21%	11.04%	0.06%	0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
94204		Halifax County A.B.C. Board	10.26%		0.11%			
94205		Halifax County Tourism Development Authority	10.25%		0.10%			
94209		Roanoke Rapids Sanitary District	10.21%		0.06%			
94211	70895	Enfield, Town of	10.36%	11.04%	0.21%	0.14%		
94221	72440	Roanoke Rapids, City of	10.22%	11.04%	0.07%	0.14%		
94231	73017	Weldon, Town of	10.29%	11.04%	0.14%	0.14%		
94241	72590	Scotland Neck, Town of	10.29%	11.04%	0.14%	0.14%		
94251		Hobgood, Town of	10.24%		0.09%			
94261	71615	Littleton, Town of	10.15%	11.04%		0.14%		
94301	71230	Harnett County	10.21%	11.04%	0.06%	0.14%		
94311	70760	Dunn, City of	10.22%	11.04%	0.07%	0.14%		
94313		Dunn Housing Authority	10.24%		0.09%			
94317		Dunn A.B.C. Board	10.19%		0.04%			
94321	71585	Lillington, Town of	10.19%	11.04%	0.04%	0.14%		
94331	70900	Erwin, Town of	10.25%	11.04%	0.10%	0.14%		
94341	70570	Coats, Town of	10.21%	11.04%	0.06%	0.14%		
94347		Angier A.B.C. Board	10.23%		0.08%			
94351	70038	Angier, Town of	10.15%	11.04%		0.14%		
94401	71250	Haywood County	10.21%	11.04%	0.06%	0.14%		
94403		Haywood County Tourism Development Authority	10.15%					
94408		Junaluska Sanitary District	10.20%		0.05%			
94411	73010	Waynesville, Town of	10.23%	11.04%	0.08%	0.14%		
94412		Waynesville A.B.C. Board	10.45%		0.30%			
94421	71685	Maggie Valley, Town of	10.15%	11.04%		0.14%		
94427		Maggie Valley A.B.C. Board	10.15%					
94428		Maggie Valley Sanitary Dist	10.15%					
94431	70362	Canton, Town of	10.21%	11.04%	0.06%	0.14%	174,288	6/30/2020
94437		Canton A.B.C. Board	15.03%				40,515	12/31/2027
94501	71275	Henderson County	10.20%	11.04%	0.05%	0.14%		
94511	71280	Hendersonville, City of	10.20%	11.04%	0.05%	0.14%		
94517		Hendersonville A.B.C. Bd	10.15%					
94521	71525	Laurel Park, Town of	10.21%	11.04%	0.06%	0.14%		
94527		Laurel Park A.B.C. Board	10.22%		0.07%			
94531		Flat Rock, Village of	10.15%					
94532		Blue Ridge Fire Department	10.20%		0.05%			
94541	70943	Fletcher, Town of	10.15%	11.04%		0.14%		
94547		Fletcher A.B.C. Board	10.15%					
94551		Mills River, Town of	10.23%		0.08%			
94601	71310	Hertford County	10.23%	11.04%	0.08%	0.14%		
94604		Hertford County A.B.C. Board	10.25%		0.10%			



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
94611	70007	Ahoskie, Town of	10.30%	11.04%	0.15%	0.14%		
94621	71970	Murfreesboro, Town of	10.15%	11.04%		0.14%		
94631		Winton, Town of	10.31%		0.16%			
94641		Cofield, Town of	10.15%					
94701	71370	Hoke County	10.24%	11.04%	0.09%	0.14%		
94704		Hoke County A.B.C. Board	10.29%		0.14%			
94711	72355	Raeford, Town of	10.25%	11.04%	0.10%	0.14%		
94801	71400	Hyde County	10.23%	11.04%	0.08%	0.14%		
94804		Hyde County A.B.C. Board	10.15%					
94812		Ocracoke Sanitary Dist	10.29%		0.14%			
94901	71420	Iredell County	10.21%	11.04%	0.06%	0.14%		
94908		Greater Statesville Development Corp	10.15%					
94911	72700	Statesville, City of	10.22%	11.04%	0.07%	0.14%		
94917		Statesville A.B.C. Board	10.34%		0.19%			
94921	71850	Mooresville, City of	10.20%	11.04%	0.05%	0.14%		
94923		Mooresville Housing Authority	10.21%		0.06%			
94927		Mooresville A.B.C. Board	10.24%		0.09%			
94931	72815	Troutman, Town of	10.29%	11.04%	0.14%	0.14%		
94937		Troutman A.B.C. Board	10.15%					
94941		Mi Connection Communications System	10.15%					
94947		Valdese A.B.C. Board	10.15%					
95001	71430	Jackson County	10.23%	11.04%	0.08%	0.14%		
95002		Tuckaseegee Water Authority	10.23%		0.08%			
95005		Fontana Regional Library	10.27%		0.12%			
95008		Southwestern NC Planning & Econ Dev Comm	10.22%		0.07%			
95009		Vaya Health	10.20%		0.05%			
95011	72750	Sylva, Town of	10.22%	11.04%	0.07%	0.14%		
95017		Jackson County A.B.C. Board	10.23%		0.08%			
95101	71460	Johnston County	10.20%	11.04%	0.05%	0.14%		
95103		Benson Housing Authority	14.08%				151,720	12/31/2036
95104		Johnston County A.B.C. Board	10.29%		0.14%			
95105		Public Library of Johnston Co and Smithfield	10.20%		0.05%			
95106		Archer Lodge, Town of	10.85%		0.17%		3,325	6/30/2025
95110		Johnston Health Center	10.25%		0.10%			
95111	72630	Smithfield, Town of	10.21%	11.04%	0.06%	0.14%		
95113		Smithfield Housing Authority	20.83%				151,737	6/30/2022
95121	72594	Selma, Town of	10.22%	11.04%	0.07%	0.14%		
95122		Micro, Town of	10.15%	13.51%		0.14%	9,783	3/31/2036
95123		Selma Housing Authority	10.23%		0.08%			
95131	70540	Clayton, Town of	10.20%	11.04%	0.05%	0.14%		



Appendix H: Detailed Table of Rates of Contributions Payable by Employer

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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2018 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
95141	70170	Benson, Town of	10.19%	11.04%	0.04%	0.14%		
95151	70954	Four Oaks, Town of	10.15%	11.04%		0.14%		
95161	72295	Pine Level, Town of	10.15%	11.04%		0.14%		
95171	71472	Kenly, Town of	10.15%	11.04%		0.14%		
95181	72349	Princeton, Town of	10.15%	11.04%		0.14%		
95191		Wilson's Mills, Town of	12.97%	13.86%		0.14%	24,962	6/30/2021
95201	71465	Jones County	10.21%	11.04%	0.06%	0.14%		
95204		Jones County A.B.C. Board	10.75%		0.60%			
95205		Neuse Regional Library-Jones County	10.43%		0.28%			
95211		Pollockville, Town of	10.54%		0.39%			
95221	71745	Maysville, Town of	10.15%	11.04%		0.14%		
95301	71535	Lee County	10.22%	11.04%	0.07%	0.14%		
95311	72565	Sanford, City of	10.15%	11.04%		0.14%		
95317		Sanford A.B.C. Board	10.30%		0.15%			
95321	70265	Broadway, Town of	10.27%	11.04%	0.12%	0.14%		
95401	71550	Lenoir County	10.22%	11.04%	0.07%	0.14%		
95404		Lenoir County A.B.C. Board	10.22%	11.04%	0.07%	0.14%		
95405		Neuse Regional Library	10.20%		0.05%			
95411	71500	Kinston, City of	10.24%	11.04%	0.09%	0.14%		
95413		Kinston Housing Authority	10.22%		0.07%			
95415		Kinston-Lenoir Co Pub Library	10.27%		0.12%			
95421	72305	Pink Hill, Town of	10.20%	11.04%	0.05%	0.14%		
95431		Lagrange, Town of	10.19%		0.04%			
95501	71590	Lincoln County	10.22%	11.04%	0.07%	0.14%		
95504		Lincoln County A.B.C. Board	11.29%				9,355	6/30/2025
95511	71600	Lincolnton, City of	10.23%	11.04%	0.08%	0.14%		
95513		Lincolnton Housing Authority	10.26%		0.11%			
95517		Lincolnton A.B.C. Board	10.30%		0.15%			
95601	71680	Macon County	10.23%	11.04%	0.08%	0.14%		
95611	70955	Franklin, Town of	10.22%	11.04%	0.07%	0.14%		
95617		Highlands A.B.C. Board	10.44%		0.29%			
95621	71335	Highlands, Town of	10.15%	11.04%		0.14%		
95701	71684	Madison County	10.24%	11.04%	0.09%	0.14%		
95711	71718	Mars Hill, Town of	10.22%	11.04%	0.07%	0.14%		
95721	71711	Marshall, Town of	10.25%	11.04%	0.10%	0.14%		
95733		Hot Springs Housing Authority	10.15%					
95801	71730	Martin County	10.23%	11.04%	0.08%	0.14%		
95802		Martin Co Travel & Tourism Auth	10.66%		0.51%			
95804		Martin County A.B.C. Board	10.19%		0.04%			
95811	73080	Williamston, Town of	10.15%	11.04%		0.14%		



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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2018 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
95813		Williamston Housing Authority	10.25%		0.10%		10,948	3/31/2019
95821		Oak City, Town of	10.15%					
95831		Hamilton, Town of	10.32%		0.17%			
95841		Jamesville, Town of	10.15%					
95851	72445	Robersonville, Town of	10.15%	11.04%		0.14%	77,364	12/31/2019
95853		Robersonville Authority	10.15%					
95901	71762	McDowell County	10.23%	11.04%	0.08%	0.14%		
95908		Pleasant Garden Fire Dept	10.15%					
95911	71710	Marion, Town of	10.23%	11.04%	0.08%	0.14%		
95917		Marion A.B.C. Board	10.15%					
95921	72140	Old Fort, Town of	10.15%	11.04%		0.14%		
96001	71770	Mecklenburg County	10.19%	11.04%	0.04%	0.14%		
96003		Charlotte Housing Authority	10.15%					
96004	71780	Mecklenburg County A.B.C. Board	10.25%	11.04%	0.10%	0.14%		
96005		Charlotte Mecklenburg Public Library	10.20%		0.05%			
96008		Mecklenburg Emer Med Svcs Agcy	10.17%		0.02%			
96009		Centralina Council Of Governments	10.15%					
96011	70480	Charlotte, City of	10.15%	11.04%		0.14%		
96012		Charlotte Regional Visitors Authority	10.15%					
96018		Charlotte Firemen's Ret Sys	10.15%					
96021	72300	Pineville, Town of	10.19%	11.04%	0.04%	0.14%		
96031	71775	Mint Hill, Town of	10.19%	11.04%	0.04%	0.14%		
96041	71397	Huntersville, Town of	10.15%	11.04%		0.14%		
96051	70625	Cornelius, Town of	10.15%	11.04%		0.14%		
96061	72679	Stallings, Town of	10.27%	11.04%	0.12%	0.14%		
96071	71740	Matthews, Town of	10.21%	11.04%	0.06%	0.14%		
96081	70724	Davidson, Town of	10.25%	11.04%	0.10%	0.14%		
96101	71788	Mitchell County	10.26%	11.04%	0.11%	0.14%		
96102		Mitchell Soil & Water Conservation Dist	10.15%					
96111	72678	Spruce Pine, Town of	10.26%	11.04%	0.11%	0.14%		
96121	70105	Bakersville, Town of	10.15%	11.04%		0.14%		
96201	71815	Montgomery County	10.22%	11.04%	0.07%	0.14%		
96204		Montgomery-Municipal A.B.C. Board	10.27%		0.12%			
96211	72685	Star, Town of	10.15%	11.04%		0.14%		
96221	72822	Troy, Town of	10.15%	11.04%		0.14%		
96231	70192	Biscoe, Town of	10.15%	11.04%		0.14%		
96241	70360	Candor, Town of	10.15%	11.04%		0.14%		
96251	71920	Mount Gilead, Town of	10.20%	11.04%	0.05%	0.14%		
96301	71830	Moore County	10.21%	11.04%	0.06%	0.14%		
96302	72776	Taylortown, Town of	10.15%	11.04%		0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
96304		Moore County A.B.C. Board	10.32%		0.17%			
96305		Moore County Tourism Development Authority	10.31%		0.16%			
96310		Moore County Airport Authority	10.27%		0.12%			
96311	72640	Southern Pines, Town of	10.20%	11.04%	0.05%	0.14%		
96312	70358	Cameron, Town of	10.15%	11.04%		0.14%		
96318		Sandhills Center	10.15%					
96321	72920	Vass, Town of	10.32%	11.04%	0.17%	0.14%		
96331	70005	Aberdeen, Town of	10.22%	11.04%	0.07%	0.14%		
96341	72443	Robbins, Town of	10.15%	11.04%		0.14%		
96351	72287	Pinehurst, Village of	10.21%	11.04%	0.06%	0.14%		
96361	72285	Pinebluff, Town of	10.34%	11.04%	0.19%	0.14%		
96371	73040	Whispering Pines, Village of	10.23%	11.04%	0.08%	0.14%		
96381	70953	Foxfire Village	10.23%	11.04%	0.08%	0.14%		
96391	70390	Carthage, Town of	10.15%	11.04%		0.14%		
96401	71990	Nash County	10.20%	11.04%	0.05%	0.14%		
96404	72000	Nash County A.B.C. Board	10.29%	11.04%	0.14%	0.14%		
96405		Braswell Memorial Library	10.15%				18,850	6/30/2020
96411	72675	Spring Hope, Town of	10.15%	11.04%		0.14%		
96421	71995	Nashville, Town of	10.22%	11.04%	0.07%	0.14%		
96431	71785	Middlesex, Town of	10.31%	11.04%	0.16%	0.14%		
96441	73045	Whitakers, Town of	10.15%	11.04%		0.14%		
96451	70104	Bailey, Town of	10.15%	11.04%		0.14%		
96461	72600	Sharpsburg, Town of	10.15%	11.04%		0.14%		
96501	72030	New Hanover County	10.20%	11.04%	0.05%	0.14%		
96502	72024	New Hanover Airport Auth	10.21%	11.04%	0.06%	0.14%		
96503		Wilmington Housing Authority	16.50%				787,555	6/30/2024
96504		New Hanover County A.B.C. Board	10.36%		0.21%			
96507		Cape Fear Public Utility Authority	10.15%					
96508		Lower Cape Fear Water & Sewer Auth	10.78%		0.63%			
96511	73165	Wrightsville Beach, Town of	10.21%	11.04%	0.06%	0.14%		
96512		Cape Fear Public Transportation Authority	10.15%					
96521	70375	Carolina Beach, Town of	10.15%	11.04%		0.14%		
96531	73090	Wilmington, City of	10.15%	11.04%		0.14%		
96541	71515	Kure Beach, Town of	10.28%	11.04%	0.13%	0.14%		
96601	72060	Northampton County	10.22%	11.04%	0.07%	0.14%		
96604		Northampton County A.B.C. Board	10.46%		0.31%			
96611	72432	Rich Square, Town of	10.15%	11.04%		0.14%		
96612		Choanoke Public Transportation Auth	10.15%					
96621	73162	Woodland, Town of	10.15%	11.04%		0.14%		
96631	71020	Garysburg, Town of	10.15%	11.04%		0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
96641	70620	Conway, Town of	10.15%	11.04%		0.14%		
96651	71032	Gaston, Town of	10.15%	11.04%		0.14%		
96661	71435	Jackson, Town of	10.15%	11.04%		0.14%		
96671		Severn, Town of	10.15%					
96681	72591	Seaboard, Town	14.86%	15.75%		0.14%	38,719	12/31/2025
96701	72150	Onslow County	10.20%	11.04%	0.05%	0.14%		
96704		Onslow County A.B.C. Board	10.28%		0.13%			
96708		Onslow Water & Sewer Authority	11.51%		0.14%		514,350	6/30/2027
96711	71440	Jacksonville, City of	10.21%	11.04%	0.06%	0.14%		
96721	72745	Swansboro, Town of	10.23%	11.04%	0.08%	0.14%		
96731	71380	Holly Ridge, Town of	10.24%	11.04%	0.09%	0.14%		
96733		Holly Ridge Housing Authority	10.20%		0.05%			
96741	72420	Richlands, Town of	10.15%	11.04%		0.14%		
96751	72789	North Topsail Beach, Town of	10.31%	11.04%	0.16%	0.14%		
96801	72170	Orange County	10.20%	11.04%	0.05%	0.14%		
96804		Orange County A.B.C. Board	10.21%		0.06%			
96808		Orange Water and Sewer Authority	10.19%		0.04%			
96811	70470	Chapel Hill, Town of	10.22%	11.04%	0.07%	0.14%		
96821	70372	Carrboro, Town of	10.20%	11.04%	0.05%	0.14%		
96831	71360	Hillsborough, Town of	10.20%	11.04%	0.05%	0.14%		
96901	72210	Pamlico County	10.22%	11.04%	0.07%	0.14%		
96911		Bayboro, Town of	10.15%					
96912	72195	Oriental, Town of	10.15%	11.04%		0.14%		
96918		Bay River Metro Sewerage District	10.29%		0.14%			
97001	72220	Pasquotank County	10.24%	11.04%	0.09%	0.14%		
97002		Pasquotank-Camden Ambulance Service	10.19%		0.04%			
97004		Pasquotank Co A.B.C. Board	10.31%		0.16%			
97005		East Albemarle Regional Library	10.23%		0.08%			
97008		Albemarle District Jail Commission	10.15%					
97011	70840	Elizabeth City	10.21%	11.04%	0.06%	0.14%		
97012		Elizabeth City-Pasquotank Co Airport Auth	12.95%				11,827	6/30/2021
97013		Elizabeth City Pasquotank County TDA	12.42%				25,188	6/30/2033
97015		Pasquotank-Camden Library	10.25%		0.10%			
97018		Elizabeth City-Pasquotank Co Industrial Development	10.20%		0.05%			
97101	72235	Pender County	10.21%	11.04%	0.06%	0.14%		
97104		Pender County A.B.C. Board	10.34%		0.19%			
97111	70300	Burgaw, Town of	10.15%	11.04%		0.14%		
97121	72790	Topsail Beach, Town of	10.28%	11.04%	0.13%	0.14%		
97131	72725	Surf City, Town of	10.20%	11.04%	0.05%	0.14%		
97201	72245	Perquimans County	10.23%	11.04%	0.08%	0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
97211	71300	Hertford, Town of	10.28%	11.04%	0.13%	0.14%		
97213		Hertford Housing Auth	10.15%					
97217		Hertford A.B.C. Board	10.45%		0.30%			
97221	73124	Winfall, Town of	10.15%	11.04%		0.14%		
97301	72250	Person County	10.21%	11.04%	0.06%	0.14%		
97302		Roxboro Housing Authority	10.15%					
97304		Person Co A.B.C. Bd	10.38%		0.23%			
97311	72520	Roxboro, City of	10.22%	11.04%	0.07%	0.14%		
97401	72310	Pitt County	10.20%	11.04%	0.05%	0.14%		
97402		Pitt-Greenville Conv & Vistors	10.15%					
97404	72320	Pitt County A.B.C. Board	10.20%	11.04%	0.05%	0.14%		
97405		Sheppard Memorial Library	10.25%		0.10%			
97408		Contennea Metropolitan Sewerage Dist	10.25%		0.10%			
97411	71160	Greenville, City of	10.20%	11.04%	0.05%	0.14%		
97412		Greenville Utilities Commission	10.19%		0.04%			
97413		Greenville Housing Authority	10.21%		0.06%			
97421	70930	Farmville, Town of	10.23%	11.04%	0.08%	0.14%		
97423		Farmville Housing Authority	17.09%				101,413	6/30/2024
97431	71170	Grifton, Town of	10.26%	11.04%	0.11%	0.14%		
97441	70157	Bethel, Town of	10.25%	11.04%	0.10%	0.14%		
97451	73150	Winterville, Town of	10.20%	11.04%	0.05%	0.14%		
97461	70100	Ayden, Town of	10.15%	11.04%		0.14%		
97471		Grimesland, Town of	10.33%		0.18%			
97481	72626	Simpson, Village of	10.15%	11.04%		0.14%		
97501	72340	Polk County	10.24%	11.04%	0.09%	0.14%		
97511	72823	Tryon, Town of	10.32%	11.04%	0.17%	0.14%		
97521	70581	Columbus, Town of	10.15%	11.04%		0.14%		
97527		Columbus A.B.C. Board	10.15%					
97531	72560	Saluda, City of	10.17%	11.04%	0.02%	0.14%		
97601	72380	Randolph County	10.20%	11.04%	0.05%	0.14%		
97607		Asheboro A.B.C. Board	10.15%					
97611	70064	Asheboro, City of	10.22%	11.04%	0.07%	0.14%		
97613		Asheboro Housing Authority	10.28%		0.13%			
97621	72377	Randleman, City of	10.21%	11.04%	0.06%	0.14%		
97623		Randleman Housing Authority	10.23%		0.08%			
97627		Randleman A.B.C. Board	10.20%		0.05%			
97631	71582	Liberty, Town of	10.21%	11.04%	0.06%	0.14%		
97637		Liberty A.B.C. Board	10.37%		0.22%			
97641	72375	Ramseur, Town of	10.15%	11.04%		0.14%		
97651	70063	Archdale, City of	10.25%	11.04%	0.10%	0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
97661		Trinity, City of	10.15%					
97701	72430	Richmond County	10.22%	11.04%	0.07%	0.14%		
97705		Sandhill Regional Library	10.23%		0.08%			
97711	72460	Rockingham, City of	10.23%	11.04%	0.08%	0.14%		
97713		Rockingham Authority	10.19%		0.04%			
97717		Hamlet A.B.C. Board	10.22%		0.07%			
97721	71220	Hamlet, City of	10.23%	11.04%	0.08%	0.14%		
97727		Rockingham A.B.C. Board	10.26%		0.11%			
97731		Ellerbe, Town of	10.15%					
97801	72450	Robeson County	10.21%	11.04%	0.06%	0.14%		
97802		Lumber River Council of Governments	10.18%		0.03%			
97803		Robeson County Housing Authority	10.31%		0.16%			
97805		Robeson County Public Library	10.27%		0.12%			
97811	71670	Lumberton, City of	10.23%	11.04%	0.08%	0.14%		
97817		Lumberton A.B.C. Board	10.15%					
97818		Lumberton Airport Comm	10.15%					
97821	70910	Fairmont, Town of	10.31%	11.04%	0.16%	0.14%		
97823		Fairmont Housing Authority	10.21%		0.06%			
97831	72540	St Pauls, Town of	10.21%	11.04%	0.06%	0.14%		
97837		St Paul's Brd of Alcoholic CTL	10.15%					
97840	71750	Maxton, Town of	15.22%	16.01%	0.10%	0.14%	187,208	6/30/2023
97841		Parkton, Town of	12.20%				17,490	9/30/2035
97847		Maxton A.B.C. Board	10.34%		0.19%			
97851	72228	Pembroke, Town of	10.26%	11.04%	0.11%	0.14%		
97853		Pembroke Housing Authority	10.15%					
97861	72510	Rowland, Town of	10.45%	11.04%	0.30%	0.14%		
97871	72395	Red Springs, Town of	16.85%	17.63%	0.11%	0.14%	462,439	6/30/2022
97877		Red Springs A.B.C. Board	10.15%					
97901	72470	Rockingham County	10.21%	11.04%	0.06%	0.14%		
97911	72400	Reidsville, City of	10.24%	11.04%	0.09%	0.14%		
97913		New Reidsville Housing Auth	10.29%		0.14%			
97917		Reidsville A.B.C. Board	10.22%		0.07%			
97921	71755	Mayodan, Town of	10.34%	11.04%	0.19%	0.14%		
97931	72721	Stoneville, Town of	10.15%	11.04%		0.14%		
97941	71683	Madison, Town of	10.26%	11.04%	0.11%	0.14%		
97947		Madison A.B.C. Board	13.71%				16,202	12/31/2022
97948		Madison-Mayodan Recreation Comm	10.15%					
97951	70815	Eden, City of	10.15%	11.04%		0.14%		
97957		Eden A.B.C. Board	10.15%					
98001	72490	Rowan County	10.21%	11.04%	0.06%	0.14%		



Appendix H: Detailed Table of Rates of Contributions Payable by Employer

The table below provides the total contribution rates payable for the year beginning July 1, 2020 by all participating employers.

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2018 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
98002		rowen Convention & Visitors Bureau	10.24%				394	6/30/2026
98003		Rowan Co Housing Authority	14.50%				65,622	6/30/2021
98004		Rowan County A.B.C. Board	10.30%		0.15%			
98008		Rowan Co Soil & Water Conv Dist	11.19%				1,920	6/30/2023
98011	72550	Salisbury, City of	10.21%	11.04%	0.06%	0.14%		
98013		Salisbury Housing Authority	10.15%				96,127	6/30/2020
98021	70812	East Spencer, Town of	10.33%	11.04%	0.18%	0.14%		
98023		East Spencer Housing Authority	10.20%		0.05%			
98031	72665	Spencer, Town of	10.24%	11.04%	0.09%	0.14%		
98041	70522	China Grove, Town of	10.20%	11.04%	0.05%	0.14%		
98051	71522	Landis, Town of	10.15%	11.04%		0.14%		
98061	71105	Granite Quarry, Town of	10.18%	11.04%	0.03%	0.14%		
98071	72475	Rockwell, Town of	10.15%	11.04%		0.14%		
98081		Faith, Town of	10.15%					
98091	70552	Cleveland, Town of	10.21%	11.04%	0.06%	0.14%		
98101	72530	Rutherford County	10.22%	11.04%	0.07%	0.14%		
98102		Broad River Water Authority	10.20%		0.05%		2,583	6/30/2020
98103		Rutherford Polk McDowell Dist Brd of Health	10.20%		0.05%			
98107		Forest City A.B.C. Board 168	10.15%					
98109		Isothermal Planning and Dev Comm	10.22%		0.07%			
98111	70950	Forest City, Town of	10.22%	11.04%	0.07%	0.14%		
98113		Forest City Housing Authority	10.15%					
98121	72670	Spindale, Town of	10.24%	11.04%	0.09%	0.14%		
98131	71518	Lake Lure, Town of	10.15%	11.04%		0.14%		
98141	72535	Rutherfordton, Town of	10.24%	11.04%	0.09%	0.14%		
98147		Rutherfordton A.B.C. Board	10.15%					
98161		Ellenboro, Town of	10.15%					
98201	72563	Sampson County	10.20%	11.04%	0.05%	0.14%		
98205		J C Holiday Mem Library	10.19%		0.04%			
98211	70555	Clinton, City of	10.22%	11.04%	0.07%	0.14%		
98218		Clinton A.B.C. Board	10.39%		0.24%			
98221		Salemburg, Town of	10.21%		0.06%			
98231	72050	Newton Grove, Town of	10.28%	11.04%	0.13%	0.14%		
98237		Roseboro A.B.C. Board	10.15%					
98241	71000	Garland, Town of	10.20%	11.04%	0.05%	0.14%		
98251		Turkey, Town of	10.29%		0.14%			
98261		Roseboro, Town of	10.25%		0.10%			
98271		Autryville, Town of	10.86%		0.71%			
98301	72580	Scotland County	10.23%	11.04%	0.08%	0.14%		
98304		Scotland County A.B.C. Board	10.33%		0.18%			



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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2018 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
98308		Laurinburg-Maxton Airport Commission	10.15%					
98311	71530	Laurinburg, City of	10.20%	11.04%	0.05%	0.14%		
98313		Laurinburg Housing Authority	16.94%		0.14%		874,920	12/31/2026
98321	72935	Wagram, Town of	10.24%	11.04%	0.09%	0.14%		
98331		Gibson, Town of	11.74%				6,556	3/31/2025
98401	72683	Stanly County	10.22%	11.04%	0.07%	0.14%		
98404		Locust A.B.C. Board	10.15%					
98411	70030	Calbemarle, City of	10.21%	11.04%	0.06%	0.14%		
98414	71786	Misenheimer, Village of	10.35%	11.04%	0.20%	0.14%		
98417		Albemarle A.B.C. Board	11.44%				5,698	6/30/2021
98421	72110	Norwood, Town of	10.32%	11.04%	0.17%	0.14%		
98427		Norwood A.B.C. Bd	10.15%					
98431	71620	Locust, City of	10.15%	11.04%		0.14%		
98441	72120	Oakboro, Town of	10.15%	11.04%		0.14%		
98451	70103	Badin, Town of	10.23%	11.04%	0.08%	0.14%		
98471		New London, Town of	10.15%					
98481	72680	Stanfield, Town of	10.15%	11.04%		0.14%		
98501	72720	Stokes County	10.23%	11.04%	0.08%	0.14%		
98511		Walnut Cove, Town of	10.23%		0.08%			
98517		Walnut Cove A.B.C. Board	10.15%					
98521	71487	King, City of	10.21%	11.04%	0.06%	0.14%		
98601	72730	Surry County	10.21%	11.04%	0.06%	0.14%		
98604		Yadkin Valley A.B.C. Board	10.15%					
98607		Pilot Mountain A.B.C. Board	10.15%					
98608		Yadkin Valley Sewer Authority	10.15%					
98611	72280	Pilot Mountain, Town of	10.23%	11.04%	0.08%	0.14%		
98621	70735	Dobson, Town of	10.23%	11.04%	0.08%	0.14%		
98627		Dobson A.B.C. Bd	10.15%					
98631	71910	Mount Airy, City of	10.31%	11.04%	0.16%	0.14%		
98637		Mount Airy Alcoholic Board of Control	10.29%		0.14%			
98641	70855	Elkin, Town of	10.26%	11.04%	0.11%	0.14%		
98701	72740	Swain County	10.23%	11.04%	0.08%	0.14%		
98711	70285	Bryson City, Town of	10.22%	11.04%	0.07%	0.14%		
98717		Bryson City A.B.C. Board	10.22%		0.07%			
98801	72800	Transylvania County	10.22%	11.04%	0.07%	0.14%		
98811	70260	Brevard, City of	10.22%	11.04%	0.07%	0.14%		
98817		Brevard A.B.C. Board	10.15%					
98901	72825	Tyrrell County	10.24%	11.04%	0.09%	0.14%		
98904		Tyrrell Co A.B.C. Board	10.22%		0.07%			
98911		Columbia, Town of	10.15%					



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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2018 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
99001	72830	Union County	10.20%	11.04%	0.05%	0.14%		
99011	71800	Monroe, City of	10.21%	11.04%	0.06%	0.14%		
99013		Monroe Housing Authority	10.26%		0.11%			
99014		Indian Trail A.B.C. Board	12.01%		0.14%		37,158	6/30/2034
99017		Monroe A.B.C. Board	10.24%		0.09%			
99021	71720	Marshville, Town of	10.22%	11.04%	0.07%	0.14%		
99022		Mineral Springs, Town of	14.85%				53,649	6/30/2033
99031	73125	Wingate, Town of	10.23%	11.04%	0.08%	0.14%		
99041	72995	Waxhaw, Town of	10.20%	11.04%	0.05%	0.14%		
99047		Waxhaw A.B.C. Board	10.15%					
99051		Indian Trail, Town of	10.19%		0.04%			
99061		Unionville, Town of	10.15%					
99071		Weddington, Town of	13.25%		0.09%		35,641	6/30/2028
99081		Marvin, Village of	10.15%					
99091		Wesley Chapel, Village of	10.15%					
99101	72890	Vance County	10.21%	11.04%	0.06%	0.14%		
99104		Vance County A.B.C. Bd	10.15%					
99109		Kerr-Tar Regional Council of Govts	10.19%		0.04%			
99110		Kerr Area Transportation Authority	10.15%					
99111	71270	Henderson, City of	10.23%	11.04%	0.08%	0.14%		
99201	72940	Wake County	10.19%	11.04%	0.04%	0.14%		
99202	71385	Holly Springs, Town of	10.20%	11.04%	0.05%	0.14%		
99203	72485	Rolesville, Town of	10.26%	11.04%	0.11%	0.14%		
99204	72950	Wake County A.B.C. Board	10.22%	11.04%	0.07%	0.14%		
99206	71882	Morrisville, Town of	10.19%	11.04%	0.04%	0.14%		
99207		Wake County Housing Authority	20.56%				1,114,328	12/31/2032
99208		Bayleaf Fire Department	10.15%					
99210		Electricities of NC	10.15%					
99211	72360	Raleigh, City of	10.15%	11.04%		0.14%		
99212		Durham Hwy Fire Protection Assoc	10.15%					
99213		Raleigh Housing Authority	10.21%		0.06%			
99218	72370	Raleigh-Durham Airport Authority	10.20%	11.04%	0.05%	0.14%		
99221	70400	Cary, Town of	10.20%	11.04%	0.05%	0.14%		
99222		Centennial Authority	10.18%		0.03%			
99231	73020	Wendell, Town of	10.19%	11.04%	0.04%	0.14%		
99241	73210	Zebulon, Town of	10.18%	11.04%	0.03%	0.14%		
99251	71010	Garner, Town of	10.19%	11.04%	0.04%	0.14%		
99252		Garner Fire Dept	10.17%		0.02%			
99261	70990	Fuquay-Varina, Town of	10.20%	11.04%	0.05%	0.14%		
99271	70050	Apex, Town of	10.19%	11.04%	0.04%	0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
99281	72960	Wake Forest, Town of	10.25%	11.04%	0.10%	0.14%		
99291	71510	Knightdale, Town of	10.18%	11.04%	0.03%	0.14%		
99301	72980	Warren County	10.23%	11.04%	0.08%	0.14%		
99304		Warren County A.B.C. Board	10.15%					
99311	72055	Norlina, Town of	10.15%	11.04%		0.14%		
99321	72991	Warrenton, Town of	17.00%	17.89%		0.14%	577,455	6/30/2035
99401	72985	Washington County	10.24%	11.04%	0.09%	0.14%		
99404		Washington County A.B.C. Board	10.26%		0.11%			
99405		Pettigrew Regional Library	10.25%		0.10%			
99411	72335	Plymouth, Town of	10.26%	11.04%	0.11%	0.14%		
99413		Plymouth Housing Authority	10.25%		0.10%			
99421		Roper, Town of	10.15%					
99431		Creswell, Town of	10.18%		0.03%			
99501	72983	Watauga County	10.24%	11.04%	0.09%	0.14%		
99502		Region D Council of Governments	10.15%					
99508		Blowing Rock Tourism Development Authority	11.45%				3,896	6/30/2021
99509		Watauga County District Tourism Dev Auth	10.15%					
99511	70240	Boone, Town of	10.20%	11.04%	0.05%	0.14%		
99521	70220	Blowing Rock, Town of	10.19%	11.04%	0.04%	0.14%		
99527		Blowing Rock A.B.C. Board	10.15%					
99531	72596	Seven Devils, Town of	15.13%	16.02%		0.14%	202,127	6/30/2026
99601	72997	Wayne County	10.22%	11.04%	0.07%	0.14%		
99602		Fork Township Sanitary Dist	10.17%		0.02%			
99603		Eastern Carolina Reg'l Housing Auth	10.15%					
99604		Wayne County A.B.C. Board	10.33%		0.18%	0.14%		
99609		Southern Wayne Sanitary District	10.20%		0.05%			
99610		Eastern Wayne Sanitary Dist	10.31%		0.16%			
99611	71070	Goldsboro, City of	10.21%	11.04%	0.06%	0.14%		
99613		Goldsboro Housing Authority	10.22%		0.07%			
99621	71940	Mount Olive, Town of	10.15%	11.04%		0.14%		
99623		Mt Olive Housing Authority	10.15%					
99631	70980	Fremont, Town of	10.15%	11.04%		0.14%		
99651	72270	Pikeville, Town of	10.15%	11.04%		0.14%		
99661	72977	Walnut Creek, Village of	10.15%	11.04%		0.14%	31,399	6/30/2020
99701	73075	Wilkes County	10.21%	11.04%	0.06%	0.14%		
99705		Appalachian Regional Library	10.15%					
99711	72105	North Wilkesboro, Town of	10.27%	11.04%	0.12%	0.14%		
99717		North Wilkesboro A.B.C. Board	10.22%		0.07%			
99721	73072	Wilkesboro, Town of	10.21%	11.04%	0.06%	0.14%		
99727		Wilkesboro A.B.C. Board	10.15%				49,394	6/30/2020



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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2018 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
99801	73110	Wilson County	10.20%	11.04%	0.05%	0.14%		
99802		Wilson County Tourism Development Auth	10.15%					
99804		Wilson County A.B.C. Board	10.24%		0.09%			
99811	73100	Wilson, City of	10.19%	11.04%	0.04%	0.14%		
99812		Wilson Economic Dev Council	10.15%					
99818		Wilson Cemetary Commission	10.15%					
99821	72684	Stantonsburg, Town of	10.15%	11.04%		0.14%		
99831	70195	Black Creek, Town of	10.15%	11.04%		0.14%		
99841		Lucama, Town of	10.20%		0.05%			
99851	70870	Elm City, Town of	10.15%	11.04%		0.14%		
99901	73170	Yadkin County	10.22%	11.04%	0.07%	0.14%		
99911	73180	Yadkinville, Town of	10.21%	11.04%	0.06%	0.14%		
99921	71467	Jonesville, Town of	10.34%	11.04%	0.19%	0.14%		
99931	70805	East Bend, Town of	10.26%	11.04%	0.11%	0.14%		
99941	70250	Boonville, Town of	10.15%	11.04%		0.14%		
99991		N C Assoc of Co Commissioners	10.19%		0.04%			
99999		N C League of Municipalities	10.19%		0.04%			

* Must be recalculated annually and adjusted according to each employer's actual experience. The estimated date for liquidation as of the valuation date does not constitute a guarantee that an employer will complete the liquidation as of the estimated date.

** Based on the preliminary contribution rate approved by the Board based on the Employer Contribution Rate Stabilization Policy. Total rate for Law Enforcement employees is subject to reduction for the court cost offset pursuant to G.S. 143-166.50(d).



Appendix I: Prior Service Contribution Rates Estimated Dates of Liquidation by Employer

The table below provides the contribution rates payable for the year beginning July 1, 2020 by the participating employers with an unfunded prior service liability balance at the valuation date.

Employer Code	LEO Employer Code	Employer	12/31/2018 Prior Service Liability	7/1/2020 Prior Service Rate	Original Date of Liquidation of Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
90114		Mebane, Town Of	4,260,359	10.50%	6/30/2033	6/30/2025
90307		Sparta A.B.C. Board	2,422	0.53%	12/31/2028	12/31/2028
90461		Morven, Town Of	690		6/30/2019	6/30/2019
90507		West Jefferson ABC Board	27,542	3.22%	6/30/2035	6/30/2031
90602		Avery County Fire Commission	277,548	6.25%	12/31/2038	6/30/2034
90651	72724	Sugar Mountain, Town Of	252,584	7.14%	3/31/2027	6/30/2024
90861	71556	Lewiston-Woodville, Town Of	4,653	1.04%	6/30/2024	6/30/2024
91009		Brunswick County Tourism Develop. Authority	7,790	1.01%	9/30/2031	6/30/2025
91013		Southeast Brunswick Sanitary District	220,688	5.81%	9/30/2039	6/30/2039
91020		Belville, Town Of	4,009	0.64%	6/30/2031	6/30/2023
91026		Town Of Navassa	271,887	7.27%	6/30/2035	6/30/2035
91047		Sunset Beach A.B.C. Board	5,643		9/30/2019	6/30/2019
91104		Woodfin Abc Commission	8,257	1.51%	9/30/2033	6/30/2023
91147		Weaverville A.B.C. Board	3,961	0.93%	9/30/2034	6/30/2021
91308		Cabarrus Co. Tourism Authority	51,325	0.67%	9/30/2032	6/30/2027
91321		Mount Pleasant, Town Of	32,490		12/31/2027	6/30/2020
91457		Lenoir A.B.C. Board	41,948	9.60%	3/31/2023	6/30/2021
91681	70080	Atlantic Beach, Town Of	1,094,093	6.23%	3/31/2028	6/30/2025
92351	71178	Grover, Town Of	3,875	1.97%	9/30/2020	9/30/2020
92614		Fayetteville Public Works Commission	7,054,690	5.23%	3/31/2027	6/30/2022
92661	72676	Spring Lake, Town Of	1,290,339	6.62%	9/30/2024	6/30/2024
92671		Falcon, Town Of	16,591	6.42%	6/30/2026	6/30/2026
92913		Thomasville Housing Authority	216,007	16.43%	6/30/2027	6/30/2024
92941		Midway, Town Of	11,508	2.29%	3/31/2038	3/31/2038
93031	70624	Cooleemee, Town Of	66,138	6.20%	9/30/2027	9/30/2027



Appendix I: Prior Service Contribution Rates Estimated Dates of Liquidation by Employer

The table below provides the contribution rates payable for the year beginning July 1, 2020 by the participating employers with an unfunded prior service liability balance at the valuation date.

Employer Code	LEO Employer Code	Employer	12/31/2018 Prior Service Liability	7/1/2020 Prior Service Rate	Original Date of Liquidation of Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
93212		Durham Convention and Visitors Bureau	535,405	5.71%	9/30/2028	6/30/2024
93618		Gaston Co. Economic Dev. Commission	55,185	10.07%	12/31/2022	12/31/2022
93647		Cherryville A.B.C. Board	26,146	13.21%	12/31/2023	6/30/2023
94002		Maury Sanitary Land District	627		3/31/2020	3/31/2020
94031		Walstonburg, Town Of	42,169	7.28%	9/30/2033	9/30/2033
94431	70362	Canton, Town Of	174,288		6/30/2020	6/30/2020
94437		Canton A.B.C. Board	40,515	4.88%	12/31/2027	12/31/2027
95103		Benson Housing Authority	151,720	3.93%	12/31/2036	12/31/2036
95106		Archer Lodge, Town Of	3,325	0.53%	9/30/2037	6/30/2025
95113		Smithfield Housing Authority	151,737	10.68%	6/30/2023	6/30/2022
95122		Micro, Town Of	9,783	2.47%	3/31/2036	3/31/2036
95191		Wilson's Mills, Town Of	24,962	2.82%	3/31/2032	6/30/2021
95504		Lincoln County A.B.C. Board	9,355	1.14%	12/31/2028	6/30/2025
95813		Williamston Housing Authority	10,948		3/31/2019	3/31/2019
95851	72445	Robersonville, Town Of	77,364		12/31/2019	12/31/2019
96405		Braswell Memorial Library	18,850		6/30/2026	6/30/2020
96503		Wilmington Housing Authority	787,555	6.35%	6/30/2024	6/30/2024
96681	72591	Seaboard, Town Of	38,719	4.71%	12/31/2025	12/31/2025
96708		Onslow Water & Sewage Authority	514,350	1.22%	12/31/2028	6/30/2027
97012		Elizabeth-Pasquotank Co Airport Authority	11,827	2.80%	9/30/2024	6/30/2021
97013		Elizabeth City-Pasquotank Co. Tourism Dev. Auth.	25,188	2.27%	6/30/2033	6/30/2033
97423		Farmville Housing Authority	101,413	6.94%	3/31/2028	6/30/2024
97840	71750	Maxton, Town Of	187,208	4.97%	6/30/2027	6/30/2023
97841		Town of Parkton	17,490	2.05%	9/30/2035	9/30/2035
97871	72395	Red Springs, Town Of	462,439	6.59%	6/30/2023	6/30/2022



Appendix I: Prior Service Contribution Rates Estimated Dates of Liquidation by Employer

The table below provides the contribution rates payable for the year beginning July 1, 2020 by the participating employers with an unfunded prior service liability balance at the valuation date.

Employer Code	LEO Employer Code	Employer	12/31/2018 Prior Service Liability	7/1/2020 Prior Service Rate	Original Date of Liquidation of Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
97947		Madison A.B.C. Board	16,202	3.56%	12/31/2022	12/31/2022
98002		Rowan County Tourism Development Board	394	0.09%	6/30/2026	6/30/2026
98003		Rowan County Housing Authority	65,622	4.35%	12/31/2021	6/30/2021
98008		Rowan Soil and Water Conservation District	1,920	1.04%	6/30/2023	6/30/2023
98013		Salisbury Housing Authority	96,127		12/31/2022	6/30/2020
98102		Broad River Water Authority	2,583		3/31/2025	6/30/2020
98313		Laurinburg Housing Authority	874,920	6.65%	12/31/2026	12/31/2026
98331	71051	Gibson, Town Of	6,556	1.59%	3/31/2025	3/31/2025
98417		Albemarle A.B.C. Board	5,698	1.29%	12/31/2023	6/30/2021
99014		Indian Trail Abc Board	37,158	1.72%	6/30/2039	6/30/2034
99022		Town Of Mineral Springs	53,649	4.70%	9/30/2034	6/30/2033
99071		Weddington, Town Of	35,641	3.01%	3/31/2029	6/30/2028
99207		Wake County Housing Authority	1,114,328	10.41%	12/31/2032	12/31/2032
99321	72991	Warrenton, Town Of	577,455	6.85%	9/30/2037	6/30/2035
99508		Blowing Rock Tourism Development Authority	3,896	1.30%	3/31/2029	6/30/2021
99531	72596	Seven Devils, Town Of	202,127	4.98%	6/30/2026	6/30/2026
99661	72977	Walnut Creek, Village Of	31,399		3/31/2026	6/30/2020
99727		Wilkesboro A.B.C. Board	49,394		3/31/2024	6/30/2020



Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
Aberdeen, Town of	96331	70005
Ahoskie, Town of	94611	70007
Airport Commission of Forsyth County	93402	
Alamance Commuity Fire District	94109	
Alamance County	90101	70020
Alamance Municipal A.B.C. Board	90117	
Alamance, Village of	90151	
Albemarle A.B.C. Board	98417	
Albemarle District Jail Commission	97008	
Albemarle Regional Health Services	90096	
Albemarle Regional Library	90805	
Albemarle Regional Planning & Development Comm	92109	
Alexander County	90201	70032
Alexander County Dept of S S	90206	
Alexander County Health Dept	90203	
Alexander County Public Library	90205	
Alleghany County	90301	70035
Alliance Behavioral Healthcare	93209	
Andrews, Town of	92021	70036
Angier A.B.C. Board	94347	
Angier, Town of	94351	70038
Anson County	90401	70040
Ansonville, Town of	90451	
Apex, Town of	99271	70050
Appalachian District Health Dept	90099	
Appalachian Regional Library	99705	
Archdale, City of	97651	70063
Archer Lodge, Town of	95106	
Ashe County	90501	70065
Asheboro A.B.C. Board	97607	
Asheboro Housing Authority	97613	
Asheboro, City of	97611	70064
Asheville A.B.C. Board	91127	70072
Asheville Regional Airport Authority	91128	70074
Asheville, City of	91121	70070
Atlantic Beach, Town of	91681	70080
Aulander, Town of	90811	70082
Aurora, Town of	90721	70085
Autryville, Town of	98271	
Avery County	90601	70090

Employer	Employer Code	LEO Employer Code
Avery County Fire Commission	90602	
Avery-Mitchell-Yancey Reg Library	90605	
Ayden, Town of	97461	70100
B.H.M. Regional Library	90705	
Badin, Town of	98451	70103
Bailey, Town of	96451	70104
Bakersville, Town of	96121	70105
Bald Head Island, Village of	91091	70107
Banner Elk, Town of	90611	70110
Bay River Metro Sewerage District	96918	
Bayboro, Town of	96911	
Bayleaf Fire Department	99208	
Beaufort County	90701	70130
Beaufort County A.B.C. Board	90704	
Beaufort Housing Authority	91633	
Beaufort, Town of	91631	70145
Beech Mountain, Town of	90631	70146
Belhaven, Town of	90731	70147
Belmont Housing Authority	93623	
Belmont, City of	93621	70150
Belville, Town of	91020	
Benson Housing Authority	95103	
Benson, Town of	95141	70170
Bermuda Run, Town of	93021	
Bertie County	90801	70180
Bertie County A.B.C. Board	90804	
Bertie-Martin Regional Jail Comm	90808	
Bessemer City, City of	93671	
Bethel, Town of	97441	70157
Beulaville, Town of	93111	70160
Biltmore Forest, Town of	91111	70190
Biscoe, Town of	96231	70192
Black Creek, Town of	99831	70195
Black Mountain A.B.C. Board	91154	
Black Mountain, Town of	91151	70200
Bladen County	90901	70210
Bladenboro, Town of	90941	70215
Blowing Rock A.B.C. Board	99527	
Blowing Rock Tourism Development Authority	99508	
Blowing Rock, Town of	99521	70220



Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
Blue Ridge Fire Department	94532	
Boiling Spring Lakes A.B.C. Board	91077	
Boiling Spring Lakes, City of	91071	70225
Boiling Springs, Town of	92331	70230
Boone, Town of	99511	70240
Boonville, Town of	99941	70250
Braswell Memorial Library	96405	
Brevard A.B.C. Board	98817	
Brevard, City of	98811	70260
Bridgeton, Town of	92561	
Broad River Water Authority	98102	
Broadway, Town of	95321	70265
Brookford, Town of	91861	70270
Brunswick Co Dept of Social Services	91006	
Brunswick Co Health Dept	91003	
Brunswick County	91001	70280
Brunswick County A.B.C. Board	91004	
Brunswick County Tourism Authority	91009	
Brunswick Regional Water and Sewer H2GO	91042	
Brunswick, Town of	92421	
Bryson City A.B.C. Board	98717	
Bryson City, Town of	98711	70285
Buncombe County	91101	70290
Bunn A.B.C. Board	93537	
Bunn, Town of	93531	70295
Burgaw, Town of	97111	70300
Burke Co Dept of Social Services	91206	
Burke Co Health Dept	91203	
Burke County	91201	70310
Burke County Tourism Dev. Authority	91208	
Burke-Catawba Dist Confinment	91202	
Burlington, City of	90111	70320
Burnsville, Town of	90011	70330
Butner, Town of	93931	
Cabarrus Co Public Health Auth	91306	
Cabarrus County	91301	70340
Cabarrus County Tourism Authority	91308	
Cajah's Mountain, Town of	91461	
Calabash A.B.C. Board	91007	
Calabash, Town of	91010	

Employer	Employer Code	LEO Employer Code
Calbemarle, City of	98411	70030
Caldwell County	91401	70350
Calypso, Town of	93171	
Camden County	91501	70357
Camden County A.B.C. Board	91504	
Cameron, Town of	96312	70358
Candor, Town of	96241	70360
Canton A.B.C. Board	94437	
Canton, Town of	94431	70362
Cape Carteret, Town of	91671	70365
Cape Fear Council of Governments	91008	
Cape Fear Public Transportation Authority	96512	
Cape Fear Public Utility Authority	96507	
Cape Fear Regional Jetport	91015	
Carolina Beach, Town of	96521	70375
Carolina Shores Town of	91024	
Carrboro, Town of	96821	70372
Carteret County	91601	70380
Carteret County A.B.C. Board	91604	70385
Carthage, Town of	96391	70390
Cary, Town of	99221	70400
Caswell Beach, Town of	91051	70405
Caswell Co Dept of Social Services	91706	
Caswell County	91701	70415
Caswell County A.B.C. Board	91704	
Catawba County	91801	70430
Catawba County A.B.C. Board	91804	70440
Catawba, Town of	91881	70441
Cedar Point, Town of	91691	
Centennial Authority	99222	
Centralina Council Of Governments	96009	
Chadbourn, Town of	92441	70450
Chapel Hill, Town of	96811	70470
Charlotte Firemen's Ret Sys	96018	
Charlotte Housing Authority	96003	
Charlotte Mecklenburg Public Library	96005	
Charlotte Regional Visitors Authority	96012	
Charlotte, City of	96011	70480
Chatham Co Housing Auth	91903	
Chatham County	91901	70490



Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
Chatham County A.B.C. Board	91904	
Cherokee County	92001	70500
Cherryvil A.B.C. Board	93647	
Cherryville, City of	93641	70520
China Grove, Town of	98041	70522
Choanoke Public Transportation Auth	96612	
Chocowinity, Town of	90751	70525
Chowan County	92101	70530
Chowan County A.B.C. Board	92104	
Claremont, City of	91821	70535
Clarkton, Town pf	90931	70537
Clay County	92201	70538
Clay County A.B.C. Board	92214	
Clayton, Town of	95131	70540
Clemmons Fire Department	93442	
Clemmons, Village of	93441	
Cleveland County	92301	70550
Cleveland County Water	92302	
Cleveland, Town of	98091	70552
Clinton A.B.C. Board	98218	
Clinton, City of	98211	70555
Coastal Carolina Regional Airport	92506	
Coastal Regional Solid Waste Mngt Auth	92508	
Coats, Town of	94341	70570
Cofield, Town of	94641	
Colerain, Town of	90813	70575
Colfax Volunteer Fire Department	94168	
Columbia, Town of	98911	
Columbus A.B.C. Board	97527	
Columbus County	92401	70580
Columbus, Town of	97521	70581
Concord A.B.C. Board	91317	
Concord, City of	91311	70590
Connelly Springs, Town of	91261	
Conover, Town of	91851	70610
Contennea Metropolitan Sewerage Dist	97408	
Conway, Town of	96641	70620
Cooleeeme, Town of	93031	70624
Cornelius, Town of	96051	70625
Cove City, Town of	92571	

Employer	Employer Code	LEO Employer Code
Cramerton A.B.C. Board	93604	
Cramerton, Town of	93631	70640
Craveb-Pamlico-Carteret Regional Library	92505	
Craven Co A.B.C. Bd	92504	
Craven County	92501	70650
Creedmoor, City of	93921	70660
Creswell, Town of	99431	
Cumberland Co A.B.C. Board	92604	70685
Cumberland County	92601	70680
Currituck Co A.B.C. Board	92704	
Currituck County	92701	70700
Dallas, Town of	93651	70705
Dare County	92801	70720
Dare County A.B.C. Board	92804	70721
Dare County Tourism Board	92802	
Davidson County	92901	70723
Davidson, Town of	96081	70724
Davie County	93001	70725
Davie Soil and Water Conservation Dist	93009	
Denton, Town of	92921	70730
Dobson A.B.C. Bd	98627	
Dobson, Town of	98621	70735
Drexel, Town of	91221	70745
Duck, Town of	92861	70755
Dunn A.B.C. Board	94317	
Dunn Housing Authority	94313	
Dunn, City of	94311	70760
Duplin County	93101	70770
Duplin County Toursim Development Authority	93103	
Durham Convention & Visitors Bureau	93212	
Durham County	93201	70790
Durham County A.B.C. Board	93204	70800
Durham Hwy Fire Protection Assoc	99212	
Durham, City of	93211	70780
East Albemarle Regional Library	97005	
East Bend, Town of	99931	70805
East Spencer Housing Authority	98023	
East Spencer, Town of	98021	70812
Eastern Band of Cherokee Indians	70505	70505
Eastern Carolina Reg'l Housing Auth	99603	



Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
Eastern Wayne Sanitary Dist	99610	
Eastover, Town of	92681	
Eastpointe Human Services	93108	
Eden A.B.C. Board	97957	
Eden, City of	97951	70815
Edenton, Town of	92111	70817
Edgecombe County	93301	70820
Edgecombe County A.B.C. Board	93304	
Edgecombe County Memorial Library	93305	
Electricities of NC	99210	
Elizabeth A.B.C. Board	90917	
Elizabeth City	97011	70840
Elizabeth City Pasquotank County TDA	97013	
Elizabeth City-Pasquotank Co Airport Auth	97012	
Elizabeth City-Pasquotank Co Industrial Development	97018	
Elizabethtown, Town of	90911	70850
Elk Park, Town of	90641	70860
Elkin, Town of	98641	70855
Ellenboro, Town of	98161	
Ellerbe, Town of	97731	
Elm City, Town of	99851	70870
Elon, Town of	90131	70880
Emerald Isle, Town of	91651	70890
Enfield, Town of	94211	70895
Erwin, Town of	94331	70900
Fair Bluff, Town of	92431	70908
Fairmont Housing Authority	97823	
Fairmont, Town of	97821	70910
Faison, Town of	93141	70920
Faith, Town of	98081	
Falcon Town of	92671	
Farmville Housing Authority	97423	
Farmville, Town of	97421	70930
Fayetteville Metropolitan Housing Auth	92613	
Fayetteville Public Works Commission	92614	
Fayetteville, City of	92611	70940
First Craven Sanitary Dist	92502	
Flat Rock, Village of	94531	
Fletcher A.B.C. Board	94547	
Fletcher, Town of	94541	70943

Employer	Employer Code	LEO Employer Code
Fontana Regional Library	95005	
Forest City A.B.C. Board 168	98107	
Forest City Housing Authority	98113	
Forest City, Town of	98111	70950
Fork Township Sanitary Dist	99602	
Forsyth County	93401	70951
Four Oaks, Town of	95151	70954
Foxfire Village	96381	70953
Franklin County	93501	70960
Franklin, Town of	95611	70955
Franklint A.B.C Board	93517	
Franklinton, Town of	93511	70970
Fremont, Town of	99631	70980
Fuquay-Varina, Town of	99261	70990
Garland, Town of	98241	71000
Garner Fire Dept	99252	
Garner, Town of	99251	71010
Garysburg, Town of	96631	71020
Gaston County	93601	71030
Gaston County Economic Dev Commission	93618	
Gaston, Town of	96651	71032
Gastonia A.B.C. Board	93617	
Gastonia, City of	93611	71040
Gates County	93701	71050
Gates County A.B.C. Board	93704	71052
Gibson, Town of	98331	71051
Gibsonville A.B.C. Board	94157	
Gibsonville, Town of	94151	71060
Glen Alpine, Town of	91241	71065
Goldsboro Housing Authority	99613	
Goldsboro, City of	99611	71070
Goldston-Gulf Sanitary District	91908	
Graham Co Health Dept	93803	
Graham County	93801	71085
Graham County Dept of S S	93806	
Graham, City of	90121	71080
Granite Falls A.B.C. Board	91417	
Granite Falls, Town of	91411	71090
Granite Quarry, Town of	98061	71105
Granville Co A.B.C. Bd	93904	



Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
Granville County	93901	71110
Granville County Hospital	93906	
Granville-Vance Public Health	93908	
Greater Statesville Development Corp	94908	
Green Level, Town of	90161	
Greene County	94001	71130
Greene County A.B.C. Board	94004	
Greensboro A.B.C. Bd	94117	71150
Greensboro, City of	94111	71140
Greenville Housing Authority	97413	
Greenville Utilities Commission	97412	
Greenville, City of	97411	71160
Grifton, Town of	97431	71170
Grimesland, Town of	97471	
Grover, Town of	92351	71178
Guilford County	94101	71180
Guilford Fire District #13 Inc	94118	
Guil-Rand Fire Department	94102	
Halifax County	94201	71200
Halifax County A.B.C. Board	94204	
Halifax County Tourism Development Authority	94205	
Hamilton, Town of	95831	
Hamlet A.B.C. Board	97717	
Hamlet, City of	97721	71220
Harnett County	94301	71230
Harrisburg, Town of	91441	
Havelock, City of	92531	71240
Haywood County	94401	71250
Haywood County Tourism Development Authority	94403	
Henderson County	94501	71275
Henderson, City of	99111	71270
Hendersonville A.B.C. Bd	94517	
Hendersonville, City of	94511	71280
Hertford A.B.C. Board	97217	71305
Hertford County	94601	71310
Hertford County A.B.C. Board	94604	71320
Hertford Housing Auth	97213	
Hertford, Town of	97211	71300
Hickory Conover Tourism Dev Auth	91812	
Hickory Public Housing Authority	91813	

Employer	Employer Code	LEO Employer Code
Hickory, City of	91811	71330
High Country A.B. C. Board	90617	
High Point A.B.C. Bd	94127	
High Point, City of	94121	71340
Highlands A.B.C. Board	95617	
Highlands, Town of	95621	71335
Hildebran, Town of	91251	
Hillsborough, Town of	96831	71360
Hobgood, Town of	94251	
Hoke County	94701	71370
Hoke County A.B.C. Board	94704	
Holden Beach, Town of	91014	71375
Holly Ridge Housing Authority	96733	
Holly Ridge, Town of	96731	71380
Holly Springs, Town of	99202	71385
Hookerton, Town of	94011	
Hope Mills, Town of	92631	71390
Hot Springs Housing Authority	95733	
Hudson, Town of	91431	71395
Huntersville, Town of	96041	71397
Hyde County	94801	71400
Hyde County A.B.C. Board	94804	
Indian Beach, Town of	91661	71405
Indian Trail A.B.C. Board	99014	
Indian Trail, Town of	99051	
Iredell County	94901	71420
Isothermal Planning and Dev Comm	98109	
J C Holiday Mem Library	98205	
Jackson County	95001	71430
Jackson County A.B.C. Board	95017	
Jackson, Town of	96661	71435
Jacksonville, City of	96711	71440
Jamestown, Town of	94131	71442
Jamesville, Town of	95841	
Jefferson, Town of	90511	71447
Johnston County	95101	71460
Johnston County A.B.C. Board	95104	
Johnston Health Center	95110	
Jones County	95201	71465
Jones County A.B.C. Board	95204	



Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
Jonesville, Town of	99921	71467
Junaluska Sanitary District	94408	
Kannapolis, City of	91331	71468
Kenansville A.B.C. Board	93127	
Kenansville, Town of	93121	71469
Kenly, Town of	95171	71472
Kernersville, Town of	93421	71470
Kerr Area Transportation Authority	99110	
Kerr-Tar Regional Council of Govts	99109	
Kill Devil Hills, Town of	92821	71480
King, City of	98521	71487
Kings Mountain A.B.C. Board	92327	
Kings Mountain, City of	92321	71490
Kinston Housing Authority	95413	
Kinston, City of	95411	71500
Kinston-Lenoir Co Pub Library	95415	
Kitty Hawk, Town of	92851	71507
Knightdale, Town of	99291	71510
Kure Beach, Town of	96541	71515
Lagrange, Town of	95431	71517
Lake Lure, Town of	98131	71518
Lake Waccamaw A.B.C. Board	92427	
Lake Waccamaw, Town of	92461	71519
Landis, Town of	98051	71522
Land-of-Sky Regional Council	91102	
Laurel Park A.B.C. Board	94527	
Laurel Park, Town of	94521	71525
Laurinburg Housing Authority	98313	
Laurinburg, City of	98311	71530
Laurinburg-Maxton Airport Commission	98308	
Lawndale, Town of	92341	71532
Lee County	95301	71535
Leland, Town of	91002	71540
Lenoir A.B.C. Board	91457	
Lenoir County	95401	71550
Lenoir County A.B.C. Board	95404	
Lenoir Housing Authority	91423	
Lenoir, City of	91451	71552
Lewiston Woodville, Town of	90861	71556
Lewisville, Town of	93451	

Employer	Employer Code	LEO Employer Code
Lexington A.B.C. Board	92917	
Lexington, City of	92931	71570
Liberty A.B.C. Board	97637	
Liberty, Town of	97631	71582
Lilesville, Town of	90421	71584
Lillington, Town of	94321	71585
Lincoln County	95501	71590
Lincoln County A.B.C. Board	95504	
Lincolnton A.B.C. Board	95517	
Lincolnton Housing Authority	95513	
Lincolnton, City of	95511	71600
Linden, Town of	92651	
Littleton, Town of	94261	71615
Locust A.B.C. Board	98404	
Locust, City of	98431	71620
Longview, Town of	91841	71640
Louisburg A.B.C. Board	93527	
Louisburg, Town of	93521	71650
Lowell, City of	93661	71655
Lower Cape Fear Water & Sewer Auth	96508	
Lucama, Town of	99841	71660
Lumber River Council of Governments	97802	
Lumberton A.B.C. Board	97817	
Lumberton Airport Comm	97818	
Lumberton, City of	97811	71670
Macclesfield, Town of	93341	
Macon County	95601	71680
Madison A.B.C. Board	97947	
Madison County	95701	71684
Madison, Town of	97941	71683
Madison-Mayodan Recreation Comm	97948	
Maggie Valley A.B.C. Board	94427	
Maggie Valley Sanitary Dist	94428	
Maggie Valley, Town of	94421	71685
Magnolia, Town of	93191	71690
Maiden, Town of	91831	71700
Manteo, Town of	92831	71705
Marion A.B.C. Board	95917	
Marion, Town of	95911	71710
Mars Hill, Town of	95711	71718



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Employer	Employer Code	LEO Employer Code
Marshall, Town of	95721	71711
Marshville, Town of	99021	71720
Martin Co Travel & Tourism Auth	95802	
Martin County	95801	71730
Martin County A.B.C. Board	95804	
Martin-Tyrrell-Washington Dist Health Dept	90092	
Marvin, Village of	99081	
Matthews, Town of	96071	71740
Maury Sanitary Land District	94002	
Maxton A.B.C. Board	97847	
Maxton, Town of	97840	71750
Mayodan, Town of	97921	71755
Maysville, Town of	95221	71745
Mcadenville, Town of	93610	71760
McDowell County	95901	71762
Mebane, City of	90114	
Mecklenburg County	96001	71770
Mecklenburg County A.B.C. Board	96004	71780
Mecklenburg Emer Med Svcs Agcy	96008	
Metro Sewerage Dist of Buncombe County	91108	
Mi Connection Communications System	94941	
Micro, Town of	95122	
Mid-Carolina Council Of Governments	92607	
Middlesex, Town of	96431	71785
Mideast Commission	90709	
Midland, Town of	91341	
Midway, Town of	92941	
Mills River, Town of	94551	
Mineral Springs, Town of	99022	
Mint Hill, Town of	96031	71775
Misenheimer, Village of	98414	71786
Mitchell County	96101	71788
Mitchell Soil & Water Conservation Dist	96102	
Mocksville-Cooleemee A.B.C. Board	93028	
Mocksville, Town of	93011	71790
Monroe A.B.C. Board	99017	
Monroe Housing Authority	99013	
Montgomery County	96201	71815
Montgomery-Municipal A.B.C. Board	96204	
Montreat, Town of	91161	71820

Employer	Employer Code	LEO Employer Code
Monroe, City of	99011	71800
Moore County	96301	71830
Moore County A.B.C. Board	96304	71840
Moore County Airport Authority	96310	
Moore County Tourism Development Authority	96305	
Mooresville A.B.C. Board	94927	
Mooresville Housing Authority	94923	
Mooresville, City of	94921	71850
Morehead City, Town of	91611	71860
Morganton A.B.C. Board	91217	71880
Morganton Housing Authority	91233	
Morganton, City of	91231	71870
Morrisville, Town of	99206	71882
Morven, Town of	90461	
Mount Airy Alcoholic Board of Control	98637	
Mount Airy, City of	98631	71910
Mount Gilead, Town of	96251	71920
Mount Holly, City of	93691	71930
Mount Olive, Town of	99621	71940
Mount Pleasant, Town of	91321	
Mt Olive Housing Authority	99623	
Mt Pleasant A.B.C. Board	91327	
Murfreesboro, Town of	94621	71970
Murphy A.B.C. Board	92017	
Murphy, Town of	92011	71975
N C Assoc of Co Commissioners	99991	
N C League of Municipalities	99999	
Nags Head, Town of	92811	71980
Nantahala Regional Library	92005	
Nash County	96401	71990
Nash County A.B.C. Board	96404	72000
Nashville, Town of	96421	71995
Navassa, Town of	91026	
Neuse Regional Library	95405	
Neuse Regional Library-Greene County	94005	
Neuse Regional Library-Jones County	95205	
Neuse River Council of Governments	92507	
New Bern, City of	92511	72020
New Edenton Housing Auth	92113	
New Hanover Airport Auth	96502	72024



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Employer	Employer Code	LEO Employer Code
New Hanover County	96501	72030
New Hanover County A.B.C. Board	96504	
New London, Town of	98471	
New Reidsville Housing Auth	97913	
Newland, Town of	90621	72032
Newport, Town of	91621	72035
Newton Grove, Town of	98231	72050
Newton, City of	91871	72040
Norlina, Town of	99311	72055
North Topsail Beach, Town of	96751	72789
North Wilkesboro A.B.C. Board	99717	
North Wilkesboro, Town of	99711	72105
Northampton County	96601	72060
Northampton County A.B.C. Board	96604	
Northwest, City of	91012	72076
Northwestern Regional Library	90305	
Norwood A.B.C. Bd	98427	
Norwood, Town of	98421	72110
Oak City, Town of	95821	
Oak Island A.B.C. Bd	91027	
Oak Island, Town of	91021	71630
Oak Ridge, Town of	94161	
Oakboro, Town of	98441	72120
Ocean Isle Beach A.B.C.	91067	
Ocean Isle Beach, Town of	91061	72135
Ocracoke Sanitary Dist	94812	
Old Fort, Town of	95921	72140
Onslow County	96701	72150
Onslow County A.B.C. Board	96704	72160
Onslow Water & Sewer Authority	96708	
Orange County	96801	72170
Orange County A.B.C. Board	96804	
Orange Water and Sewer Authority	96808	
Oriental, Town of	96912	72195
Oxford Housing Authority	93913	
Oxford, City of	93911	72200
Pamlico County	96901	72210
Parkton, Town of	97841	
Partners Behavioral Health Management	93609	
Pasquotank Co A.B.C. Board	97004	

Employer	Employer Code	LEO Employer Code
Pasquotank County	97001	72220
Pasquotank-Camden Ambulance Service	97002	
Pasquotank-Camden Library	97015	
Peachland, Town of	90441	
Pembroke Housing Authority	97853	
Pembroke, Town of	97851	72228
Pender County	97101	72235
Pender County A.B.C. Board	97104	
Perquimans County	97201	72245
Person Co A.B.C. Bd	97304	
Person County	97301	72250
Pettigrew Regional Library	99405	
Piedmont Triad Airport Authority	72265	72265
Piedmont Triad Reg Water Auth	94112	
Piedmont Triad Regional Council	93406	
Pikeville, Town of	99651	72270
Pilot Mountain A.B.C. Board	98607	
Pilot Mountain, Town of	98611	72280
Pine Knoll Shores, Town of	91641	72290
Pine Level, Town of	95161	72295
Pinebluff, Town of	96361	72285
Pinecroft-Sedgefield Fire Dist Inc	94108	
Pinehurst, Village of	96351	72287
Pinetops, Town of	93331	72296
Pineville, Town of	96021	72300
Pink Hill, Town of	95421	72305
Pitt County	97401	72310
Pitt County A.B.C. Board	97404	72320
Pitt-Greenville Conv & Vistors	97402	
Pittsboro, Town of	91921	72330
Pleasant Garden Fire Dept	95908	
Plymouth Housing Authority	99413	
Plymouth, Town of	99411	72335
Polk County	97501	72340
Polkton, Town of	90431	72345
Pollocksville, Town of	95211	
Princeton, Town of	95181	72349
Princeville, Town of	93351	72351
Public Library of Johnston Co and Smithfield	95105	
Raeford, Town of	94711	72355



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Employer	Employer Code	LEO Employer Code
Raleigh Housing Authority	99213	
Raleigh, City of	99211	72360
Raleigh-Durham Airport Authority	99218	72370
Ramseur, Town of	97641	72375
Randleman A.B.C. Board	97627	
Randleman Housing Authority	97623	
Randleman, City of	97621	72377
Randolph County	97601	72380
Ranlo, Town of	93681	72390
Red Springs A.B.C. Board	97877	
Red Springs, Town of	97871	72395
Region D Council of Governments	99502	
Reidsville A.B.C. Board	97917	
Reidsville, City of	97911	72400
Rhodhiss, Town of	91414	
Rich Square, Town of	96611	72432
Richlands, Town of	96741	72420
Richmond County	97701	72430
River Bend, Town of	92541	72435
Roanoke Rapids Sanitary District	94209	
Roanoke Rapids, City of	94221	72440
Robbins, Town of	96341	72443
Robbinsville, Town of	93821	
Robersonville Authority	95853	
Robersonville, Town of	95851	72445
Robeson County	97801	72450
Robeson County Housing Authority	97803	
Robeson County Public Library	97805	
Rockingham A.B.C. Board	97727	
Rockingham Authority	97713	
Rockingham County	97901	72470
Rockingham, City of	97711	72460
Rockwell, Town of	98071	72475
Rocky Mount, City of	93321	72480
Rocky Mount-Wilson Airport Authority	93323	
Rocky Mt Housing Authority	93333	
Rolesville, Town of	99203	72485
Roper, Town of	99421	
Rose Hill, Town of	93161	72487
Roseboro A.B.C. Board	98237	

Employer	Employer Code	LEO Employer Code
Roseboro, Town of	98261	72486
Rowan Co Housing Authority	98003	
Rowan Co Soil & Water Conv Dist	98008	
Rowan County	98001	72490
Rowan County A.B.C. Board	98004	72500
Rowen Convention & Visitors Bureau	98002	
Rowland, Town of	97861	72510
Roxboro, City of	97311	72520
Roxboro Housing Authority	97302	
Rural Hall, Town of	93431	
Rutherford College, Town of	91214	
Rutherford County	98101	72530
Rutherford Polk McDowell Dist Brd of Health	98103	
Rutherfordton A.B.C. Board	98147	
Rutherfordton, Town of	98141	72535
Salemburg, Town of	98221	72547
Salisbury Housing Authority	98013	
Salisbury, City of	98011	72550
Saluda, City of	97531	72560
Sampson County	98201	72563
Sandhill Regional Library	97705	
Sandhills Center	96318	
Sanford A.B.C. Board	95317	
Sanford, City of	95311	72565
Sawmills, Town of	91421	
Scotland County	98301	72580
Scotland County A.B.C. Board	98304	
Scotland Neck, Town of	94241	72590
Seaboard, Town	96681	72591
Seagrove, Town	72593	72593
Selma Housing Authority	95123	
Selma, Town of	95121	72594
Seven Devils, Town of	99531	72596
Severn, Town of	96671	72595
Shallotte A.B.C. Board	91057	
Shallotte, Town of	91081	72597
Sharpsburg, Town of	96461	72600
Shelby A.B.C. Board	92317	
Shelby, City of	92311	72610
Sheppard Memorial Library	97405	



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Employer	Employer Code	LEO Employer Code
Siler City A.B.C. Board	91917	
Siler City, Town of	91911	72625
Simpson, Village of	97481	72626
Skyland Vol Fire Dept	91138	
Smithfield Housing Authority	95113	
Smithfield, Town of	95111	72630
Snow Hill, Town of	94021	
South Eastern Economic Development Comm	90918	
South Granville Water and Sewer Authority	93910	
Southeast Brunswick Sanitary District	91013	
Southern Pines, Town of	96311	72640
Southern Shores, Town of	92841	72645
Southern Wayne Sanitary District	99609	
Southport A.B.C. Board	91017	
Southport, City of	91011	72650
Southwestern NC Planning & Econ Dev Comm	95008	
Sparta A.B.C. Board	90307	
Sparta, Town of	72657	72657
Spencer, Town of	98031	72665
Spindale, Town of	98121	72670
Spring Hope, Town of	96411	72675
Spring Lake, Town of	92661	72676
Spruce Pine, Town of	96111	72678
St James, Town of	91032	
St Paul's Brd of Alcoholic CTL	97837	
St Pauls, Town of	97831	72540
Stallings, Town of	96061	72679
Stanfield, Town of	98481	72680
Stanley, Town of	93602	72682
Stanly County	98401	72683
Stantonsburg, Town of	99821	72684
Star, Town of	96211	72685
Statesville A.B.C. Board	94917	72710
Statesville, City of	94911	72700
Stedman, Town of	92621	72715
Stokes County	98501	72720
Stoneville, Town of	97931	72721
Stovall, Town of	93914	
Sugar Mountain, Town of	90651	72724
Summerfield Fire District	94172	

Employer	Employer Code	LEO Employer Code
Summerfield, Town of	94171	
Sunset Beach A.B.C. Board	91047	
Sunset Beach, Town of	91041	72723
Surf City, Town of	97131	72725
Surry County	98601	72730
Swain County	98701	72740
Swansboro, Town of	96721	72745
Sylva, Town of	95011	72750
Tabor City, Town of	92451	72760
Tarboro Redevelopment Commission	93317	
Tarboro, Town of	93311	72770
Taylorsville, Town of	90211	72775
Taylortown, Town of	96302	72776
Teachey, Town of	93181	
Thomasville A.B.C. Board	92914	
Thomasville Housing Authority	92913	
Thomasville, City of	92911	72780
Tobaccoville, Village of	93471	
Toe River Health District	90098	
Topsail Beach, Town of	97121	72790
Town of Haw River	90141	71245
Transylvania County	98801	72800
Trent Woods, Town of	92521	72810
Triad Municipal A.B.C. Board	93417	73140
Triangle J Council of Governments	93219	
Trillium Health Resources	92513	
Trinity, City of	97661	
Troutman A.B.C. Board	94937	
Troutman, Town of	94931	72815
Troy, Town of	96221	72822
Tryon, Town of	97511	72823
Tuckaseegee Water Authority	95002	
Turkey, Town of	98251	
Tyrrell Co A.B.C. Board	98904	
Tyrrell County	98901	72825
Union County	99001	72830
Unionville, Town of	99061	
Upper Coastal Plain Council of Governements	93309	
Valdese A.B.C. Board	94947	
Valdese Housing Authority	91213	



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Valdese, Town of	91211	72883
Vance County	99101	72890
Vance County A.B.C. Bd	99104	
Vanceboro, Town of	92551	72910
Vass, Town of	96321	72920
Vaya Health	95009	
Wade, Town of	92641	
Wadesboro A.B.C. Board	90417	
Wadesboro Housing Authority	90413	
Wadesboro, Town of	90411	72930
Wagram, Town of	98321	72935
Wake County	99201	72940
Wake County A.B.C. Board	99204	72950
Wake County Housing Authority	99207	
Wake Forest, Town of	99281	72960
Walkertown, Town of	93461	
Wallace A.B.C. Bd	93157	
Wallace, Town of	93151	72970
Walnut Cove A.B.C. Board	98517	
Walnut Cove, Town of	98511	72975
Walnut Creek, Village of	99661	72977
Walstonburg, Town of	94031	
Warren County	99301	72980
Warren County A.B.C. Board	99304	72979
Warrenton, Town of	99321	72991
Warsaw A.B.C. Board	93137	
Warsaw, Town of	93131	72981
Washington County	99401	72985
Washington County A.B.C. Board	99404	
Washington Park, Town of	90741	
Washington, City of	90711	72990
Watauga County	99501	72983
Watauga County District Tourism Dev Auth	99509	
Water & Sewer Auth of Cabarrus County	91302	
Waxhaw A.B.C. Board	99047	
Waxhaw, Town of	99041	72995
Wayne County	99601	72997
Wayne County A.B.C. Board	99604	
Waynesville A.B.C. Board	94412	73015
Waynesville, Town of	94411	73010

Employer	Employer Code	LEO Employer Code
Weaverville A.B.C. Board	91147	
Weaverville, Town of	91141	73016
Weddington, Town of	99071	
Weldon, Town of	94231	73017
Wendell, Town of	99231	73020
Wesley Chapel, Village of	99091	
West Buncombe Fire Dept	91120	
West Columbus A.B.C. Board	92444	
West Jefferson A.B.C. Board	90507	
West Jefferson, Town of	90521	73025
Westarea Volunteer Fire Dept	92602	
Western Carteret Interlocal Cooperation Agency	91608	
Western NC Regional Air Quality	91107	
Western Piedmont Council of Gvmnts	91818	
Western Piedmont Regional Transit Authority	91819	
Whispering Pines, Village of	96371	73040
Whitakers, Town of	96441	73045
White Lake, Town of	90921	73050
Whiteville A.B.C. Board	92417	
Whiteville Housing Authority	92403	
Whiteville, City of	92411	73060
Wilkes County	99701	73075
Wilkesboro A.B.C. Board	99727	
Wilkesboro, Town of	99721	73072
Williamston Housing Authority	95813	
Williamston, Town of	95811	73080
Wilmington Housing Authority	96503	
Wilmington, City of	96531	73090
Wilson Cemetary Commission	99818	
Wilson County	99801	73110
Wilson County A.B.C. Board	99804	
Wilson County Tourism Development Auth	99802	
Wilson Economic Dev Council	99812	
Wilson, City of	99811	73100
Wilson's Mills, Town of	95191	
Windsor, Town of	90812	73122
Winfall, Town of	97221	73124
Wingate, Town of	99031	73125
Winston-Salem Housing Authority	93413	
Winston-Salem, City of	93411	73130



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Winterville, Town of	97451	73150
Winton, Town of	94631	73155
Woodfin A.B.C. Commission	91104	
Woodfin Sanitary Water and Sewer Dist	91109	
Woodfin, Town of	91171	73160
Woodland, Town of	96621	73162
Wrightsville Beach, Town of	96511	73165
Yadkin County	99901	73170

Employer	Employer Code	LEO Employer Code
Yadkin Valley A.B.C. Board	98604	
Yadkin Valley Sewer Authority	98608	
Yadkinville, Town of	99911	73180
Yancey County	90001	73190
Yancey Soil & Water Cons	90002	
Yanceyville, Town of	91719	73192
Youngsville, Town of	93541	73200
Zebulon, Town of	99241	73210