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# **Local Governmental Employees' Retirement System Principal Results of Actuarial Valuation as of December 31, 2019**

**October 29, 2020 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.

## Inputs

Member Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

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

# Membership Data

## 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 summary of the membership data used in this valuation compared to the prior valuation.

	12/31/2019	12/31/2018
Active Members	132,058	129,986
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	79,588	73,835
Retired members and survivors of deceased members currently receiving benefits	<u>75,002</u>	<u>72,087</u>
Total	286,648	275,908

The number of active members increased by 1.6% 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 4.0% 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.

# Membership Data

## 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

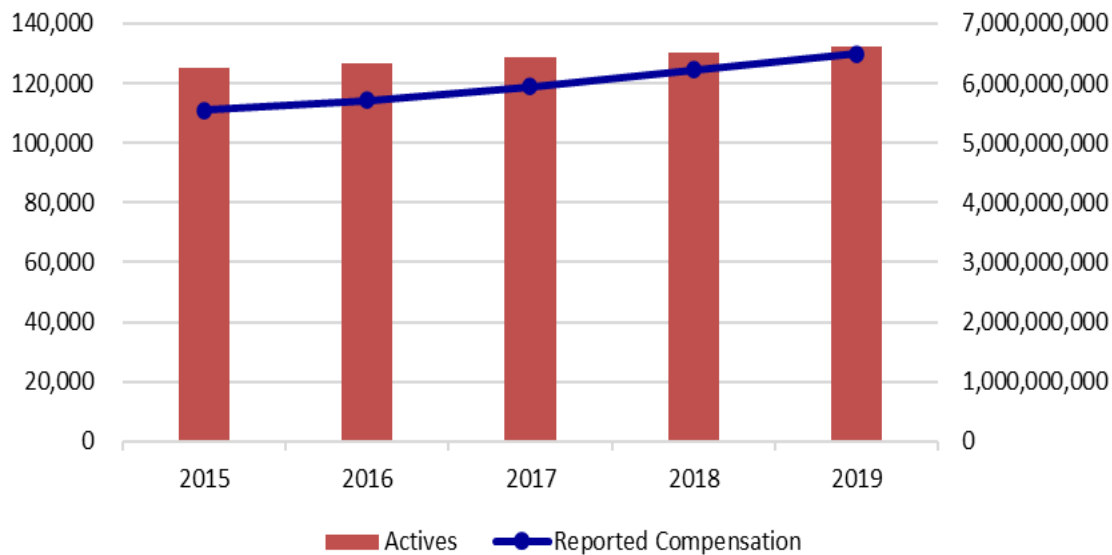
Employer Contributions

Benefit Enhancement

Additional Disclosures

Projections

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



Reported compensation has increased by 4.2%. 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.

# Membership Data

## 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

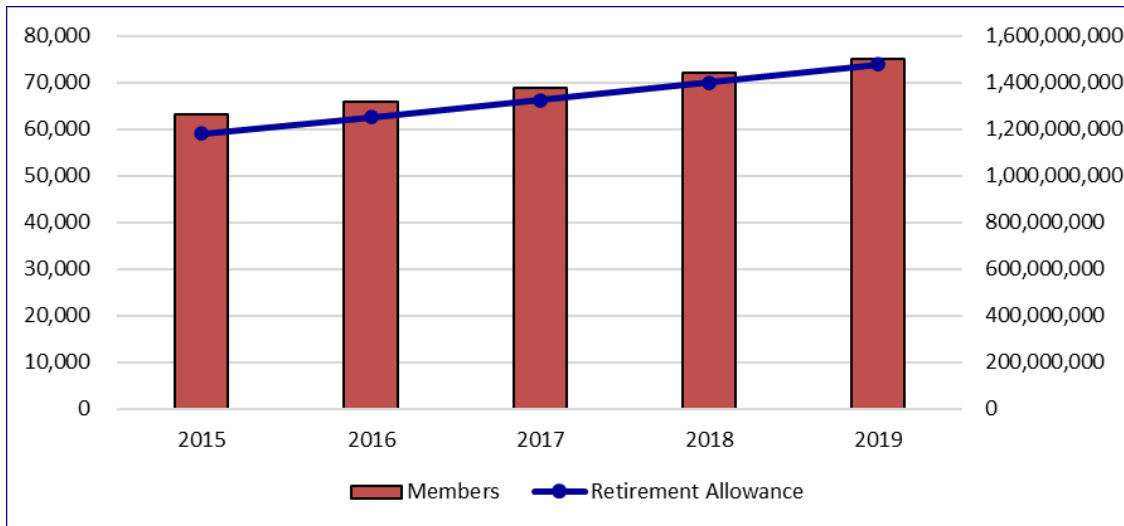
Employer Contributions

Benefit Enhancement

Additional Disclosures

Projections

The 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.

# Valuation Input

## Asset Data



### 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 details of the Market Value of Assets for the current and prior year's valuations.

Asset Data as of	12/31/2019	12/31/2018
Beginning of Year Market Value of Assets	25,045,130,611	25,918,361,041
Employer Contributions	593,620,018	521,319,795
Employee Contributions	423,480,874	406,122,445
Court Costs	2,817,521	2,803,215
Benefit Payments Other Than Refunds	(1,452,519,505)	(1,374,842,429)
Refunds	(59,643,764)	(61,462,168)
Administrative Expenses	(4,676,875)	(4,515,766)
Investment Income	3,676,489,417	(362,655,522)
Net Increase/(Decrease)	3,179,567,686	(873,230,430)
End of Year Value of Assets	28,224,698,297	25,045,130,611
Estimated Net Investment Return	14.83%	-1.41%

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

Currently, incoming contributions cover more than 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.

# Valuation Input

## Asset Data



### 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

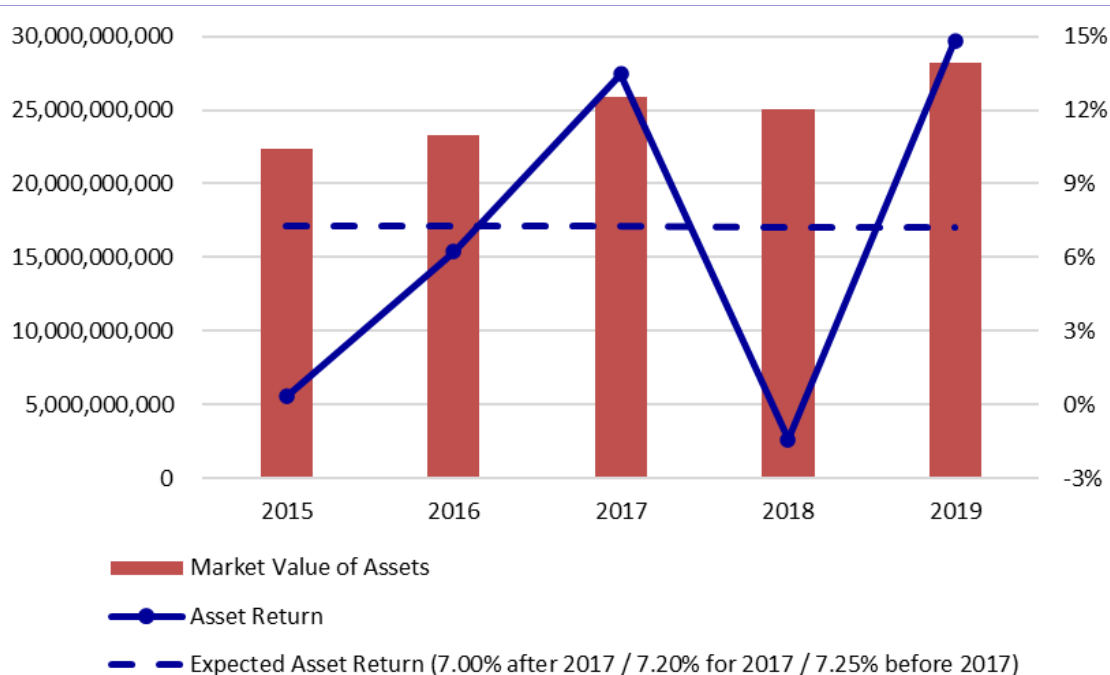
Employer Contributions

Benefit Enhancement

Additional Disclosures

Projections

The 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 14.83%, far above the expected return of 7.00%. The return on the actuarial value of assets which is used to determine the contribution rates fell short of the 7.00% expected return at 6.23%. This resulted in an increase in the UAAL of \$200 million. Market value returns have exceeded expectations twice in the last five years.

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



# Valuation Input

## Asset Data



### 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

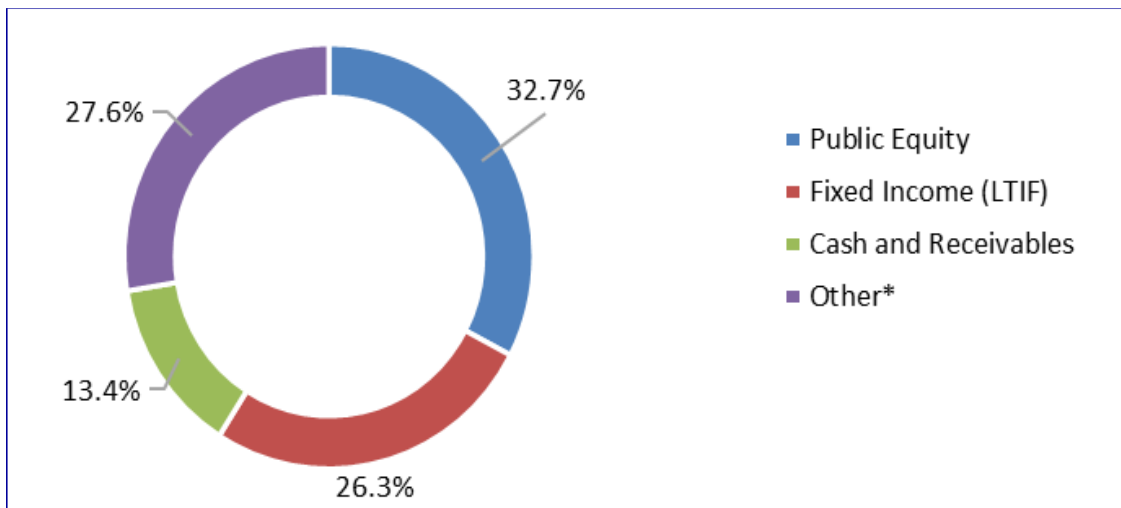
Employer Contributions

Benefit Enhancement

Additional Disclosures

Projections

The graph below provides the breakdown of the market value of assets at December 31, 2019 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.



# Benefit Provisions

## 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

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.

# Benefit Provisions

## 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

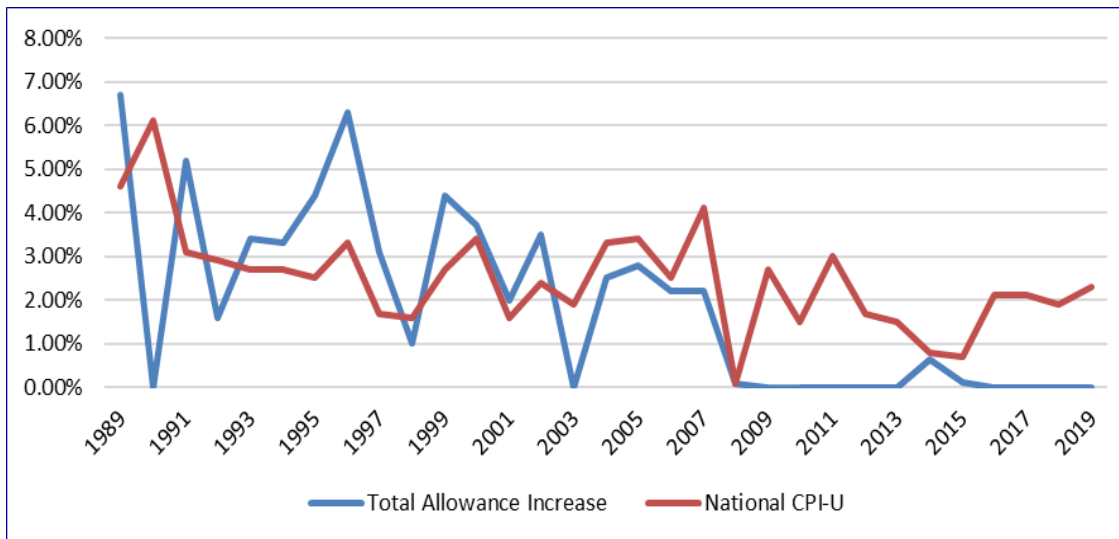
Employer Contributions

Benefit Enhancement

Additional Disclosures

Projections

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



Prior to 2000, asset returns generally exceeded expectations and allowance increases exceeded the cost of living. Subsequently, asset returns on average have been lower than expected leading to lower allowance increases. 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 the actuarial report.



# Actuarial Assumptions

## 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

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, 2019 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 was direct-rate smoothed over a three-year period.

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

# Funding Methodology

## 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 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 following “Objectives and Principles for Funding Public Sector Pension Plans” provides information on funding of Public Plans:

[https://www.actuary.org/sites/default/files/files/Public-Plans\\_IB-Funding-Policy\\_02-18-2014.pdf](https://www.actuary.org/sites/default/files/files/Public-Plans_IB-Funding-Policy_02-18-2014.pdf).

Page 15 of the following -

[https://www.ccactuaries.org/Portals/0/pdf/CCA\\_PPC\\_White\\_Paper\\_on\\_Public\\_Pension\\_Funding\\_Policy.pdf](https://www.ccactuaries.org/Portals/0/pdf/CCA_PPC_White_Paper_on_Public_Pension_Funding_Policy.pdf) - denotes Entry Age as a model practice for cost methods.

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



# Funding Methodology

## 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 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

Page 20 of the following

[https://www.ccactuaries.org/Portals/0/pdf/CCA\\_PPC\\_White\\_Paper\\_on\\_Public\\_Pension\\_Funding\\_Policy.pdf](https://www.ccactuaries.org/Portals/0/pdf/CCA_PPC_White_Paper_on_Public_Pension_Funding_Policy.pdf)

denotes the policy being used is an acceptable policy.

Almost all Public Sector Retirement Systems in the United States use asset valuation methods to alleviate contribution volatility. The use of a four- or five-year period is most common.

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



# Funding Methodology

## 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 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, like 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 years' experience.
- For fiscal years beginning after January 1, 2017, the sum of the "normal contribution" and the "accrued liability contribution" shall not be less than the employee contribution.

Page 26 of the following - [https://www.ccactuaries.org/Portals/0/pdf/CCA\\_PPC\\_White\\_Paper\\_on\\_Public\\_Pension\\_Funding\\_Policy.pdf](https://www.ccactuaries.org/Portals/0/pdf/CCA_PPC_White_Paper_on_Public_Pension_Funding_Policy.pdf) - suggests the Amortization Method is an acceptable practice.

When compared to other Public Sector Retirement Systems in the United States, the Amortization Method results in higher pension debt payments. This is because of:

- A shorter period of 12 years compared to a national average of 24
- Level dollar payments instead of payments designed to increase which is more typical in the Public Sector

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



# Funding Methodology

## 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

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, 2021.

- The unfunded initial prior service liability decreased from \$21.9M to \$18.3M during 2019.
- Using each employer's actual experience during 2019, we have determined that
  - Five (5) employers were granted relief at 7/1/2020
  - Seven (7) employers are expected to be granted relief at 7/1/2021 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

## 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 the calculation of the Actuarial Value of Assets (AVA) at the valuation date.

Asset Data as of	12/31/2019
Beginning of Year Actuarial Value of Assets	\$ 26,307,348,445
Beginning of Year Market Value of Assets	25,045,130,611
Total Contributions and Court Costs	1,019,918,413
Benefit Payments, Refunds and Administrative Expenses	<u>(1,516,840,144)</u>
Net Cash Flow	(496,921,731)
Expected Investment Return	1,736,061,038
Expected End of Year Market Value of Assets	26,284,269,918
End of Year Market Value of Assets	28,224,698,297
Excess of Market Value over Expected Market Value of Assets	1,940,428,379
80% of 2019 Asset Gain/(Loss)	1,552,342,703
60% of 2018 Asset Gain/(Loss)	(1,295,623,747)
40% of 2017 Asset Gain/(Loss)	578,434,209
20% of 2016 Asset Gain/(Loss)	<u>(45,501,103)</u>
Total Deferred Asset Gain/(Loss)	789,652,062
Preliminary End of Year Actuarial Value of Assets	27,435,046,235
Final End of Year Actuarial Value of Assets (not less than 80% and not greater than 120% of Market Value)	27,435,046,235
Estimated Net Investment Return on Actuarial Value	6.23%

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 and 2019, resulted in an actuarial value of asset return for calendar year 2019 of 6.23% and a recognized actuarial asset loss of \$200 million during 2019.

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



# Actuarial Value of Assets

## Inputs

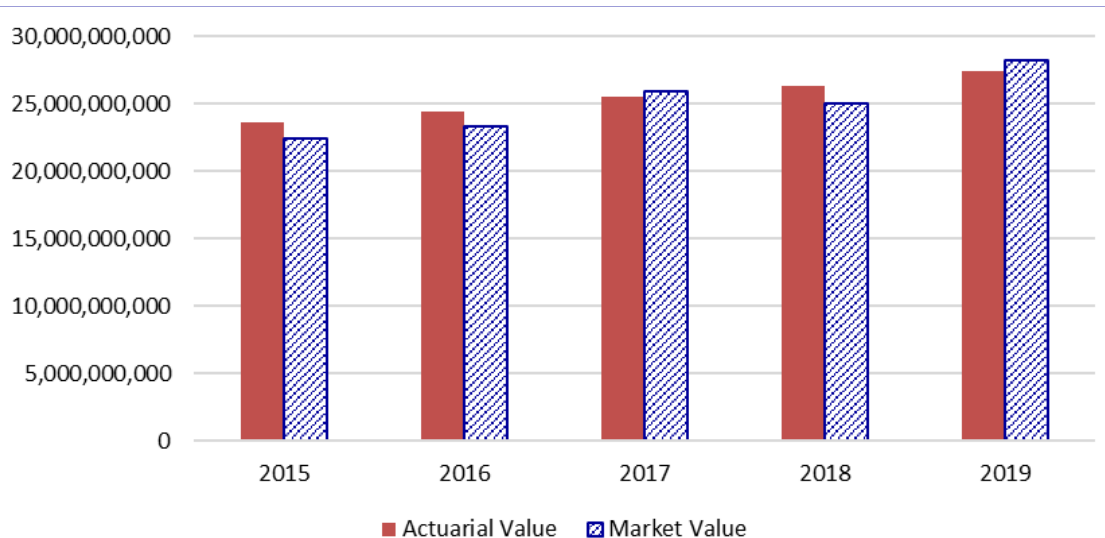
Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

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

The 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.



# Actuarial Value of Assets

## 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

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%
2019	7.00%	6.23%	14.83%	5.90%
20-Yr Average	7.22%	7.06%	5.90%	NA
Range	0.25%	9.30%	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 7.06% compares with an average market return of 5.90%. The difference is partially due to asset gains of the late 1990's being included in the actuarial value of assets and not in the market value. The range of returns is markedly more volatile 38.10% versus 9.30%. 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.

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

# Actuarial Value of Assets

## Inputs

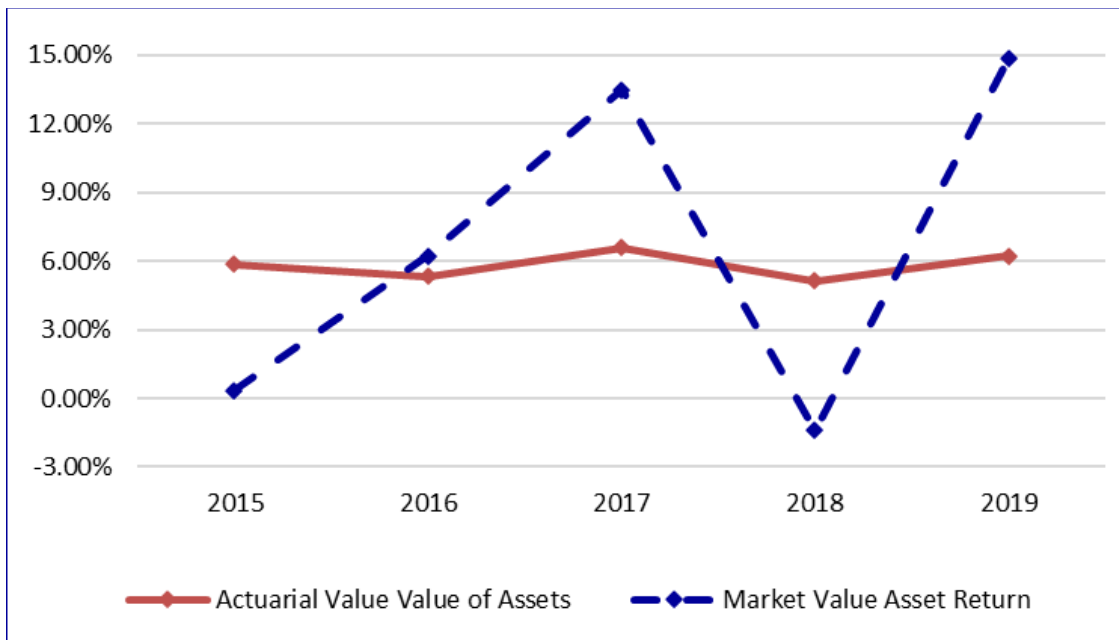
Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

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

The 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 14.83%. The actuarial value of assets smooths investment gains and losses. Lower than expected market returns in 2015, 2016 and 2018, resulted in an actuarial value of asset return for calendar year 2019 of 6.23% and a recognized loss of \$200 million during 2019.

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



# Actuarial Accrued Liability

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



The AAL increased from \$29.223 billion to \$30.701 billion during 2019. 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 \$144 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

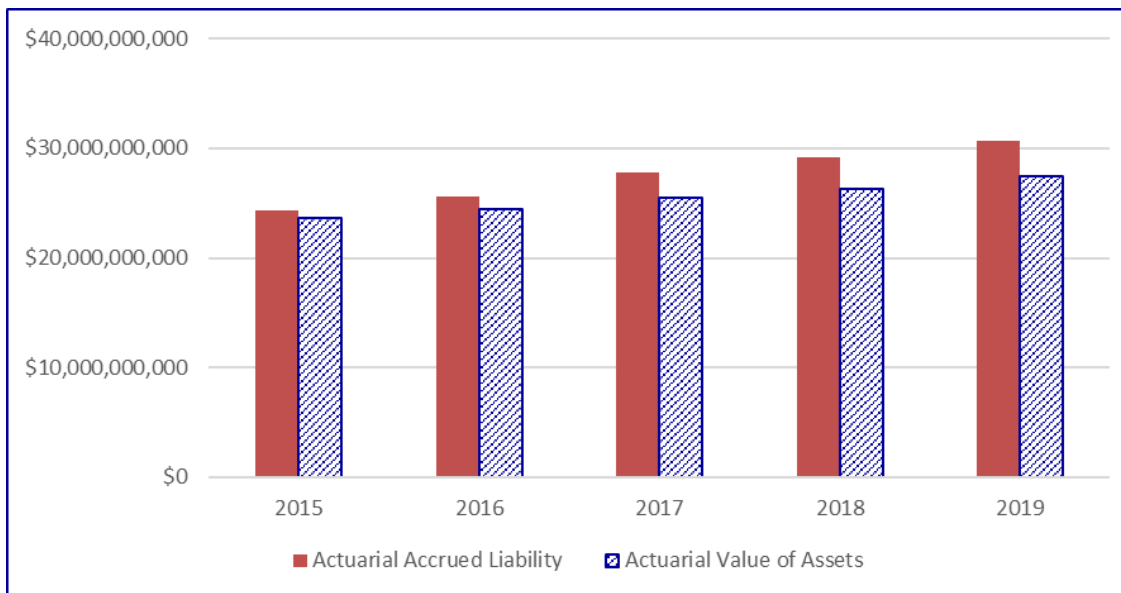
Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



### Results

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

The graph below provides a history of the actuarial accrued liability and actuarial value of assets.



The difference in the actuarial accrued liability and the actuarial value of assets is known as the Unfunded Actuarial Accrued Liability. The UAAL is \$3.248 billion as of 12/31/2019 and is to be paid off over a 12-year period.

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



# Net Actuarial Gain or Loss

## 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 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 12/31/2018	\$ 2,916
Normal Cost and Administrative Expense during 2019	801
Reduction due to Actual Contributions during 2019	(992)
Interest on UAAL, Normal Cost, and Contributions	198
Asset (Gain) / Loss	200
Actuarial Accrued Liability (Gain) / Loss	143
Impact of Assumption Changes	-
Impact of Legislative Changes	-
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2019	\$ 3,266

During 2019, the UAAL increased by \$350 million. The loss recognized in the Actuarial Value of Assets during the year increased the UAAL by \$200 million. Demographic losses were \$143 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



### Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



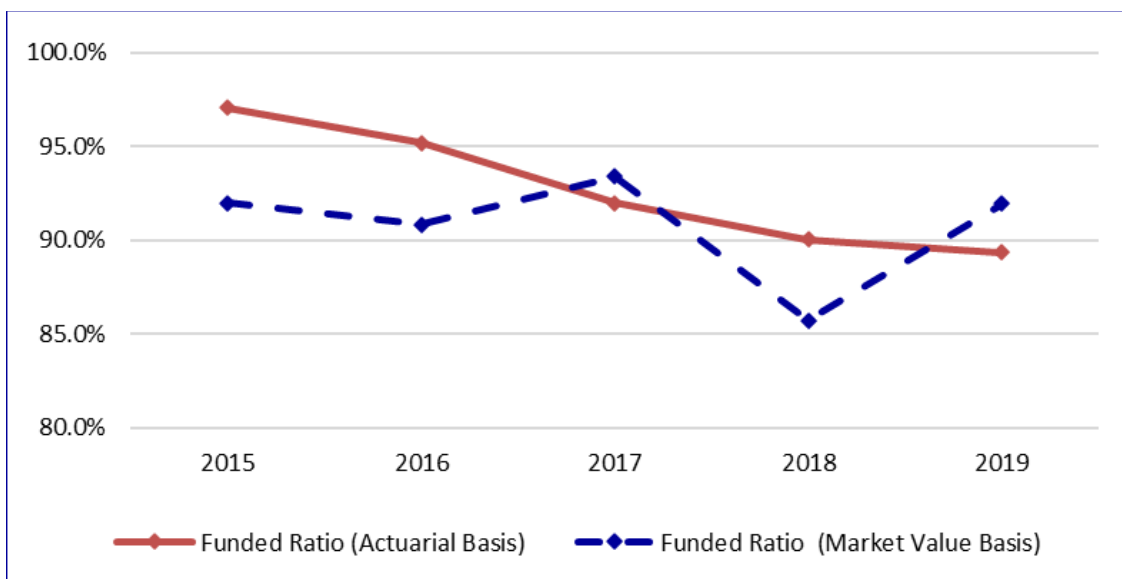
### Results

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

#### Funded Ratio

Employer Contributions  
Benefit Enhancement  
Additional Disclosures  
Projections

The 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 90.0% at December 31, 2018 to 89.4% at December 31, 2019.

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



# Employer Contributions

## Inputs

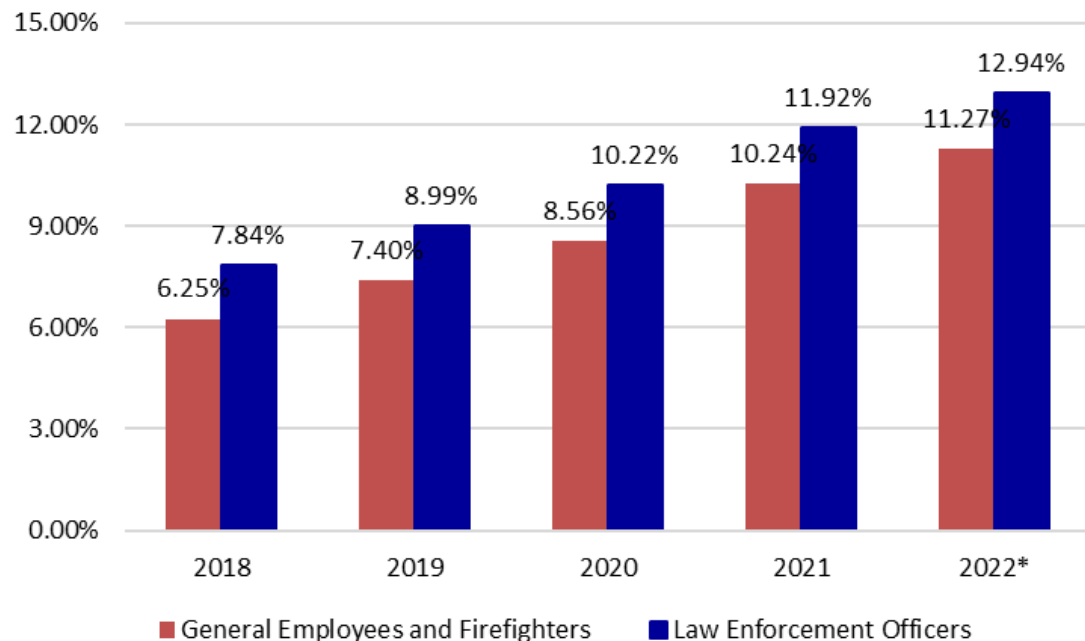
Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



## Results

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

The 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 during that fiscal year.  
Note that the actual contributions under ECRSP are not necessarily equal to the ADEC.

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.

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 11.35% of payroll for general employees and firefighters and 12.10% of payroll for law enforcement officers for fiscal year ending 2022.



# 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
12/31/2019	7/1/2021	11.27%	N/A	N/A	N/A
12/31/2018	7/1/2020	10.24%	0.00%	10.24%	10.15%
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%

\*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 2022 is 11.35% of payroll. The preliminary ADEC for fiscal year ending 2022 is 11.27% 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  
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 **Law Enforcement Officers**.

Valuation Date	Rate Effective	Preliminary ADEC	Change due to Legislation*	Final ADEC	Actual Contribution
12/31/2019	7/1/2021	12.94%	N/A	N/A	N/A
12/31/2018	7/1/2020	11.92%	0.00%	11.92%	10.90%
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%

\*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 2022 is 12.10% of payroll. The preliminary ADEC for fiscal year ending 2022 is 12.94% 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

## 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 ADEC and ECRSP contributions for both General Employees and Firefighters as well as Law Enforcement Officers in LGERS.

Valuation Date	Rate Effective	General Employees and Firefighters			Law Enforcement Officers		
		ADEC	ECRSP	Excess/ (Shortfall)	ADEC	ECRSP	Excess/ (Shortfall)
12/31/2019	7/1/2021	11.27%	11.35%	0.08%	12.94%	12.10%	-0.84%
12/31/2018	7/1/2020	10.24%	10.15%	-0.09%	11.92%	10.90%	-1.02%
12/31/2017	7/1/2019	8.56%	8.95%	0.39%	10.22%	9.70%	-0.52%
12/31/2016	7/1/2018	7.40%	7.75%	0.35%	8.99%	8.50%	-0.49%
12/31/2015	7/1/2017	6.25%	7.50%	1.25%	7.84%	8.25%	0.41%
12/31/2014	7/1/2016	5.50%	7.25%	1.75%	7.12%	8.00%	0.88%

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.

# 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 reconciliation of the actuarially determined employer contribution.

	General Employees and Firefighters	Law Enforcement Officers
Fiscal year ending June 30, 2021 Preliminary ADEC based on December 31, 2018 valuation	10.24%	11.92%
Impact of Legislative Changes	0.00%	0.00%
Fiscal year ending June 30, 2020 ADEC for Reconciliation	10.24%	11.92%
Changes Due to Anticipated Reduction in UAAL*	-0.22%	-0.22%
Change Due to Demographic (Gain)/Loss	0.27%	0.22%
Change Due to Investment (Gain)/Loss	0.37%	0.37%
Change Due to Contributions Greater than ADEC**	0.06%	0.06%
Impact of Assumption Changes	0.00%	0.00%
Impact of Direct Rate Smoothing Current Year	<u>0.55%</u>	<u>0.59%</u>
Fiscal year ending June 30, 2022 Preliminary ADEC based on December 31, 2019 valuation	11.27%	12.94%

\*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.

\*\* Employer contribution rate for Law Enforcement Officers during 2019 was less than the ADEC. In addition, reflects the impact of direct-rate smoothing.

The change in rate due to investment loss is based on the actuarial value of assets return of 6.23%, 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 last year of the deferred recognition of the 12/31/2017 discount rate change from 7.20% to 7.00%.

# Valuation Results

## Potential COLAs



### 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

- Based on the actuarial investment loss recognized in this December 31, 2019 valuation, no Cost-of-Living Adjustment (COLA) that would take effect on July 1, 2021, 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, 2022, may be granted by the Board following the December 31, 2020, valuation in the following circumstances:
  - If calendar year 2020 market value return is at least 2.5% (or about \$0.7B for LGERS), the plan is estimated to have an actuarial investment gain (rather than a loss) for 2020 and a COLA that would take effect on July 1, 2022, could be considered.
  - If calendar year 2020 market value return is at least 5.7% (or about \$1.6B for LGERS), the plan is estimated to have an actuarial investment gain (rather than a loss) for 2020 and such gain may be enough to provide a 1% COLA that would take effect on July 1, 2022.
    - Estimated actuarial investment gain of \$182.7M
    - Estimated cost of 1% COLA payable to retirees effective July 1, 2022 of \$178.3M

*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  
Funded Ratio  
Employer Contributions  
Benefit Enhancement  
**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	2.39%	4.70%	7.00%	9.31%	11.61%
Market Value of Assets	\$ 28,224,698,297	\$ 28,224,698,297	\$ 28,224,698,297	\$ 28,224,698,297	\$ 28,224,698,297
Actuarial Accrued Liability	\$ 55,344,088,677	\$ 40,193,860,423	\$ 30,700,921,303	\$ 24,463,800,355	\$ 20,241,603,067
Unfunded Accrued Liability (UAL)	\$ 27,119,390,380	\$ 11,969,162,126	\$ 2,476,223,006	\$ (3,760,897,942)	\$ (7,983,095,230)
Funded Ratio	51.0%	70.2%	91.9%	115.4%	139.4%
20-Year Amortization of UAL	\$ 1,762,751,140	\$ 980,154,097	\$ 250,097,556	N/A	N/A
(as % of general local revenue)	10.4%	5.8%	1.5%	N/A	N/A

Section 6(c) of Session Law 2016-108 requires that the actuarial valuation report for certain Retirement Systems 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 2.39% as of December 31, 2019.

The difference between the UAAL measured at 7.00% and 2.39% is \$24.6 billion at December 31, 2019.

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  
Employer Contributions  
Benefit Enhancement  
**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 2.39% falls 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 2.39% 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, 2019 valuation results
  - December 31, 2019 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 2020.
    - Second alternate deterministic projection assumes a 14% asset return for calendar year 2020.

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

# Valuation Results

## Projected Contribution Rates – General Employees and Firefighters



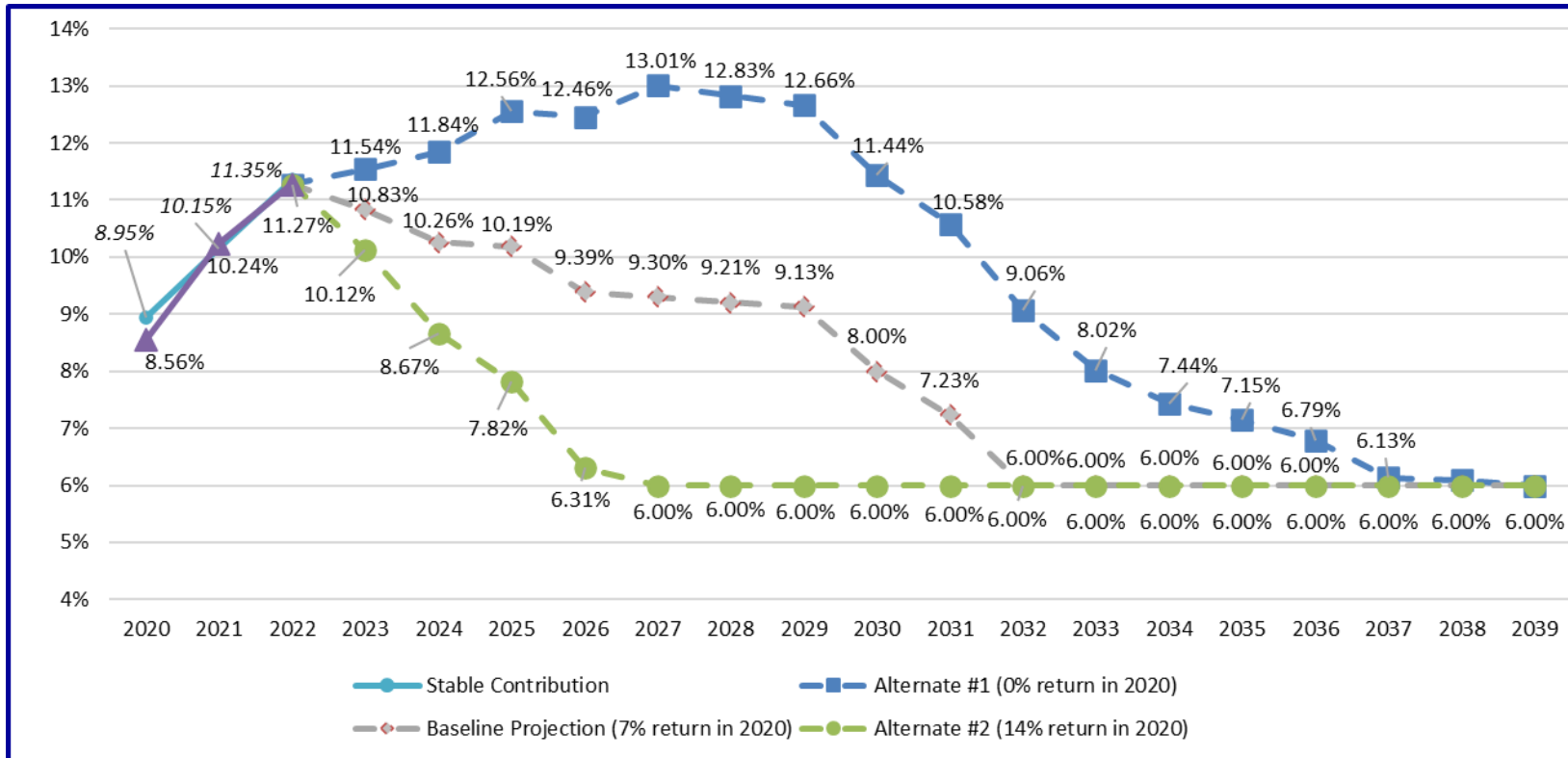
### Inputs

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



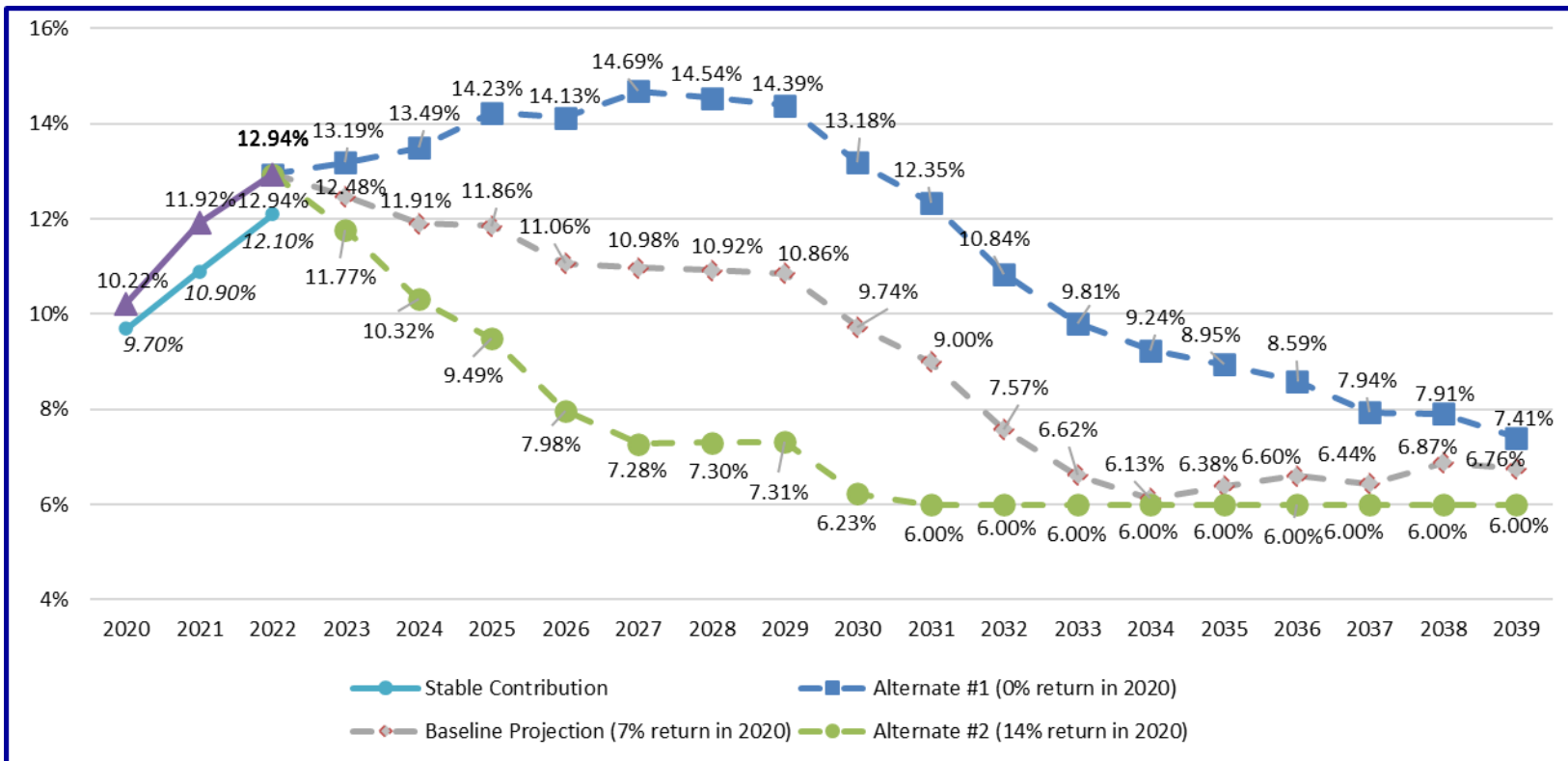
### Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



### Results

Actuarial Value of Assets  
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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

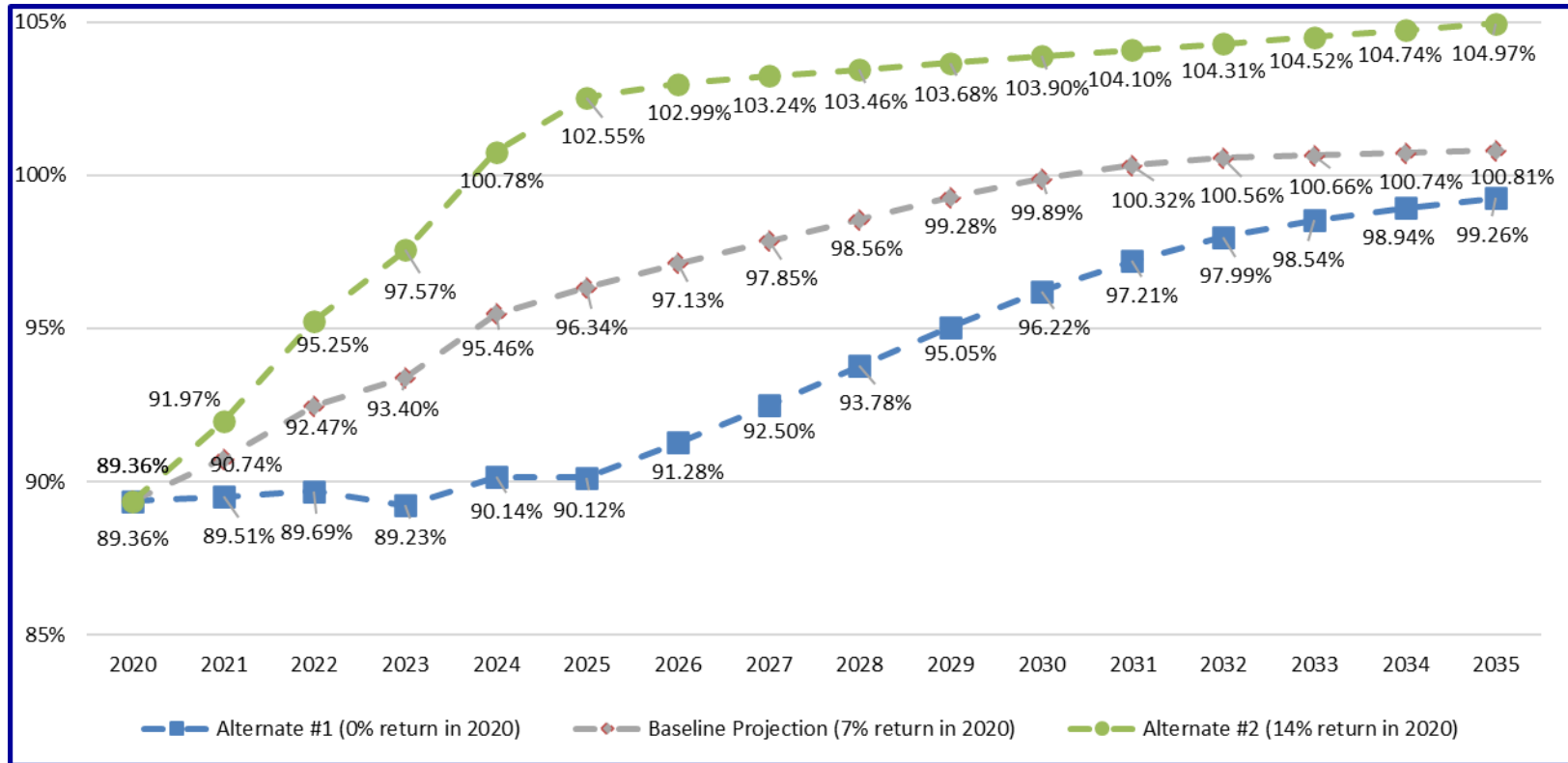
## Inputs

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  
Additional Disclosures  
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 14.83% compared to 7.00% assumed
- Increase in covered payroll of 4.2% compared to 3.5% expected
- First year of full ADEC calculation after 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 6/30/2022:
  - 11.35% of payroll for general employees and firefighters
  - 12.10% of payroll for law enforcement officers



# Key Takeaways (continued)

- Lower actuarially determined employer contribution rates for fiscal year ending June 30, 2022
  - 11.27% in the valuation compared to 11.96% in the baseline projection for general employees and firefighters
  - 12.94% in the valuation compared to 13.64% 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

*The experience and dedication you deserve*

# North Carolina Local Governmental Employees' Retirement System

Report on the Actuarial Valuation Prepared  
as of December 31, 2019

October 2020





# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

October 8, 2020

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, 2019. 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, 2019 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 stylized, handwritten signature in blue ink, consisting of a large 'L' followed by a series of loops and a horizontal stroke.

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

A handwritten signature in blue ink, appearing to read 'Jonathan T. Craven' with a stylized flourish at the end.

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



# Table of Contents

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<b>Executive Summary .....</b>	<b>1</b>
Overview .....	1
Purpose .....	1
Risk.....	2
Key Takeaways.....	3
<b>Section 1: Principal Results.....</b>	<b>4</b>
Table 1 – Summary of Principal Results .....	4
<b>Section 2: The Valuation Process .....</b>	<b>6</b>
Valuation Input: Membership Data.....	6
Valuation Input: Asset Data .....	9
Valuation Input: Benefit Provisions .....	11
Valuation Input: Actuarial Assumptions.....	12
Valuation Input: Funding Methodology.....	13
Valuation Results: Actuarial Value of Assets .....	14
Valuation Results: Actuarial Accrued Liability .....	16
Valuation Results: Funded Ratio .....	17
Valuation Results: Employer Contributions .....	19
Valuation Results: Projections .....	21
Valuation Results: Accounting Information.....	23
<b>Section 3: Membership Data .....</b>	<b>24</b>
Table 2 – Active Member Data .....	24
Table 3 – Terminated Vested Member Data .....	24
Table 4 – Data for Members Currently Receiving Benefits .....	25
<b>Section 4: Asset Data.....</b>	<b>26</b>
Table 5 – Market Value of Assets .....	26
Table 6 – Allocation of Investments by Category of the Market Value of Assets .....	26
Table 7 – Actuarial Value of Assets .....	27
Table 8 – Historical Asset Returns.....	28
<b>Section 5: Liability Results .....</b>	<b>29</b>
Table 9 – Liability Summary .....	29
Table 10 – Participating Employers .....	30
Table 11 – Reconciliation of Unfunded Actuarial Accrued Liability .....	31



# Table of Contents

---

<b>Section 6: Actuarially Determined Employer Contribution.....</b>	<b>32</b>
Table 12 – Calculation of the Actuarially Determined Employer Normal Contribution .....	33
Table 13 – Reconciliation of the Change in the Employer Normal Contribution Rates.....	34
Table 14 – Calculation of the New Amortization Base.....	35
Table 15 – Amortization Schedule for Unfunded Accrued Liability .....	35
Table 16 – Actuarially Determined Employer Contribution Rates for General Employees and Firefighters.....	36
Table 17 – Actuarially Determined Employer Contributions Rates for Law Enforcement Officers .....	36
Table 18 – Cost of Benefits Enhancements .....	37
<b>Section 7: Valuation Balance Sheet .....</b>	<b>38</b>
Table 19 – Valuation Balance Sheet on a Projected Basis.....	38
<b>Section 8: Accounting Results.....</b>	<b>39</b>
Table 20 – Number of Active and Retired Members.....	39
Table 21 – Schedule of Changes in Net Pension Liability (Asset) .....	40
Table 22 – Net Pension Liability (Asset) .....	40
Table 23 – Sensitivity of the Net Pension Liability (Asset) .....	41
Table 24 – Additional Information for GASB Statement No. 67 .....	41
<b>Section 9: Projections .....</b>	<b>42</b>
Key Projection Assumptions .....	42
Projected Actuarially Determined Employer Contribution Rates .....	43
Projected Funded Ratio.....	45
<b>Appendices .....</b>	<b>46</b>
Appendix A – Valuation Process and Glossary of Actuarial Terms.....	46
Appendix B – Detailed Tabulations of Member Data.....	52
Appendix C – Summary of Main Benefit and Contribution Provisions.....	66
Appendix D – Actuarial Assumptions and Methods.....	73
Appendix E – GASB 67 Fiduciary Net Position Projection.....	79
Appendix F – Additional Disclosures .....	83
Appendix G – Data for Section 2 Graphs.....	85
Appendix H– Detailed Table of Rates of Contributions Payable by Employers .....	90
Appendix I – Prior Service Contribution Rates and Estimated Dates of Liquidation by Employer.....	113
Appendix J – Participating Employers.....	116



# Executive Summary

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## 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, 2019, 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, 2020, RSD paid over \$6.5 billion in pensions to more than 320,000 retirees. And as of June 30, 2020, RSD's defined benefit plan assets were valued at over \$103 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 \$28 billion in assets and more than 285,000 members. This actuarial valuation report is our annual analysis of the financial health of LGERS. This report, prepared as of December 31, 2019, 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

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### 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)

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### 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, 2019 valuation as compared to the December 31, 2018 valuation were:

- Market value returns of 14.83% during calendar year 2019 compared to 7.00% assumed

When compared to the December 31, 2018 projections, the above resulted in:

- A higher funded ratio as of December 31, 2019 (89.4% in the valuation compared to 88.5% in the baseline projection)
- Lower actuarially determined employer contribution rates for fiscal year ending June 30, 2022
  - 11.27% in the valuation compared to 11.96% in the baseline projection for general employees and firefighters
  - 12.94% in the valuation compared to 13.64% in the baseline projection for law enforcement officers
- Actuarially determined employer contribution rates are slightly less than ECRSP rates for general employees and firefighters, and are somewhat greater than ECRSP rates for law enforcement officers
  - General Employees/Firefighter ECRSP of 11.35% vs. ADEC of 11.27%
  - Law Enforcement Officer ECRSP of 12.10% vs. ADEC of 12.94%

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.

More details can be found later in this report. We encourage readers to start with Sections 1 and 2 and refer to other sections for additional details as needed.



## Section 1: Principal Results

This report, prepared as of December 31, 2019, 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	12/31/2019	12/31/2018
Active Members		
Number	132,058	129,986
Reported Compensation	\$ 6,488,881,575	\$ 6,225,257,140
Valuation Compensation*	\$ 7,065,888,027	\$ 6,771,617,088
Retired Members and Survivors of Deceased Members Currently Receiving Benefits		
Number	75,002	72,087
Annual Allowances	\$ 1,479,483,328	\$ 1,400,113,021
Number of Participating Employers	892	896
Assets		
Actuarial Value (AVA)	\$ 27,435,046,235	\$ 26,307,348,445
Market Value (MVA)	\$ 28,224,698,297	\$ 25,045,130,611
Actuarial Accrued Liability (AAL)	\$ 30,700,921,303	\$ 29,223,126,652
Unfunded Accrued Liability (AAL – AVA)	\$ 3,265,875,068	\$ 2,915,778,207
Funded Ratio (AVA / AAL)**	89.4%	90.0%
Unfunded Initial Prior Service Liability	\$ 18,263,651	\$ 21,880,677

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

\*\*The Funded Ratio on a Market Value of Assets basis is 91.9% at December 31, 2019.



## Section 1: Principal Results

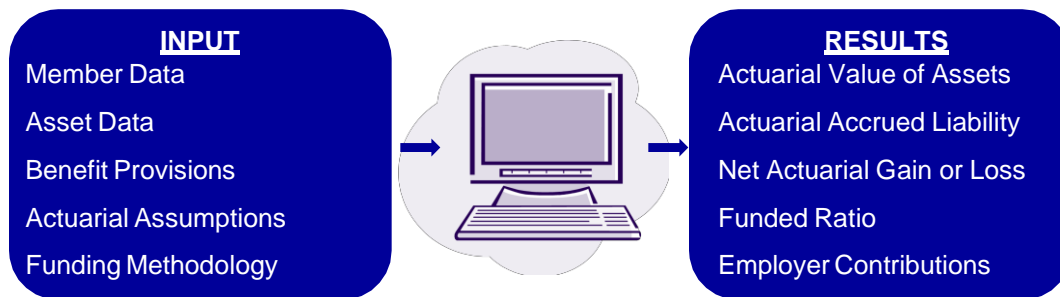
This report, prepared as of December 31, 2019, presents the results of the annual valuation of the system. The principal results of the valuation and a comparison with the preceding year's results are continued below.

**Table 1: Summary of Principal Results (continued)**

Valuation Results as of Results for Fiscal Year Ending	12/31/2019 6/30/2022	12/31/2018 6/30/2021
Actuarially Determined Employer Contribution (ADEC), as a percentage of payroll		
General Employees and Firefighters		
Normal Cost	5.44%	5.44%
Accrued Liability	<u>5.83%</u>	<u>5.35%</u>
Total Preliminary ADEC	11.27%	10.79%
Total Based on Direct Rate Smoothing	11.27%	10.24%
Impact of Legislative Changes	<u>N/A</u>	<u>0.00%</u>
Final ADEC	11.27%	10.24%
Law Enforcement Officers		
Normal Cost	7.11%	7.15%
Accrued Liability	<u>5.83%</u>	<u>5.35%</u>
Total Preliminary ADEC	12.94%	12.50%
Total Based on Direct Rate Smoothing	12.94%	11.92%
Impact of Legislative Changes	<u>N/A</u>	<u>0.00%</u>
Final ADEC	12.94%	11.92%
Board of Trustees Recommended Contribution Under the Employer Contribution Rate Stabilization Policy (ECRSP)		
General Employees and Firefighters	11.35%	10.15%
Law Enforcement Officers	12.10%	10.90%
<b>Current Funding in Effect at</b>	<b>7/1/2020</b>	<b>7/1/2019</b>
Employer Contribution Rate as a percentage of payroll		
General Employees and Firefighters	10.15%	8.95%
Law Enforcement Officers	10.90%	9.70%

## 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)

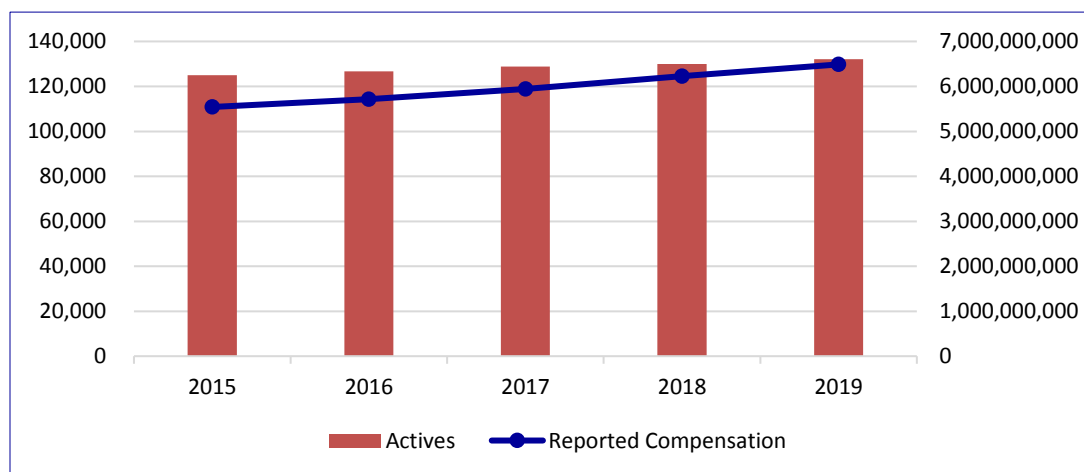
The table below provides a summary of the membership data used in this valuation compared to the prior valuation.

Number as of	12/31/2019	12/31/2018
Active Members	132,058	129,986
Terminated members and survivors of deceased members Entitled to benefits but not yet receiving benefits	79,588	73,835
Retired members and survivors of deceased members currently receiving benefits	<u>75,002</u>	<u>72,087</u>
Total	286,648	275,908

**Commentary:** The number of active members increased by 1.6% 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 4.0% 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 4.2%. 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.

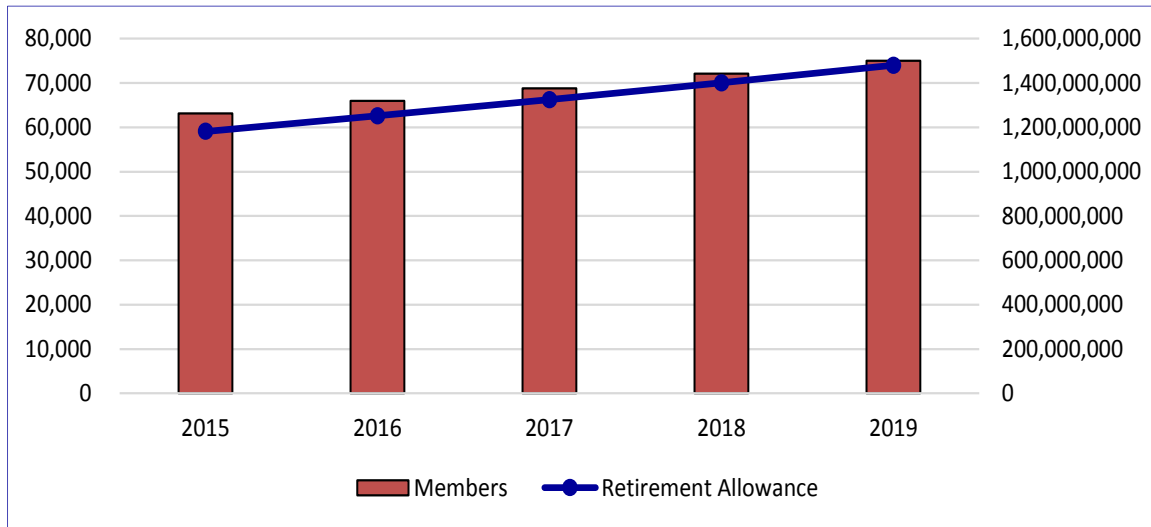


## Section 2: The Valuation Process

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.



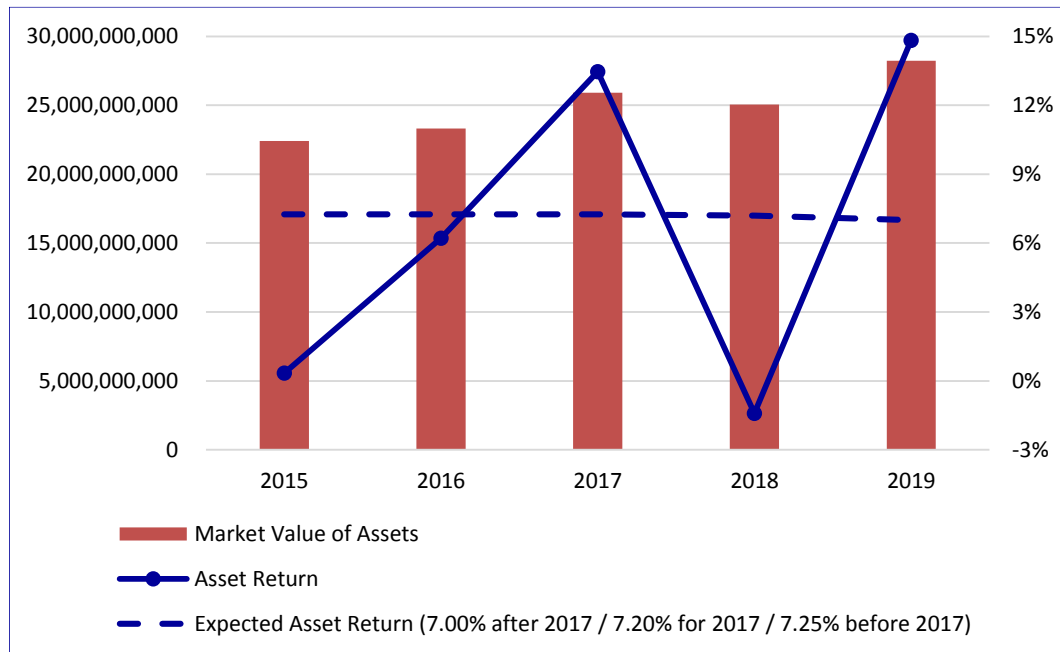
## Section 2: The Valuation Process

### 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 \$28.2 billion as of December 31, 2019 and \$25.0 billion as of December 31, 2018. The investment return for the market value of assets for calendar year 2019 was 14.83%.

**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 higher than the 7.0% assumed rate of return, resulting in lower required contributions and a higher funded ratio than anticipated as of the December 31, 2018 baseline projections presented in the December 31, 2018 actuarial report.

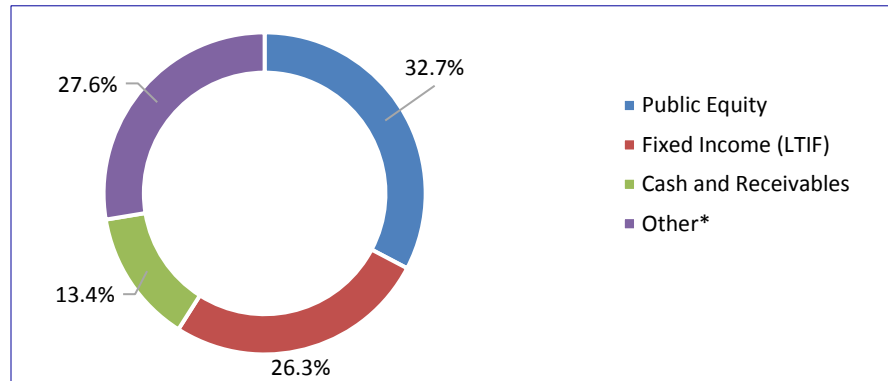


## Section 2: The Valuation Process

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, 2019 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

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### 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.



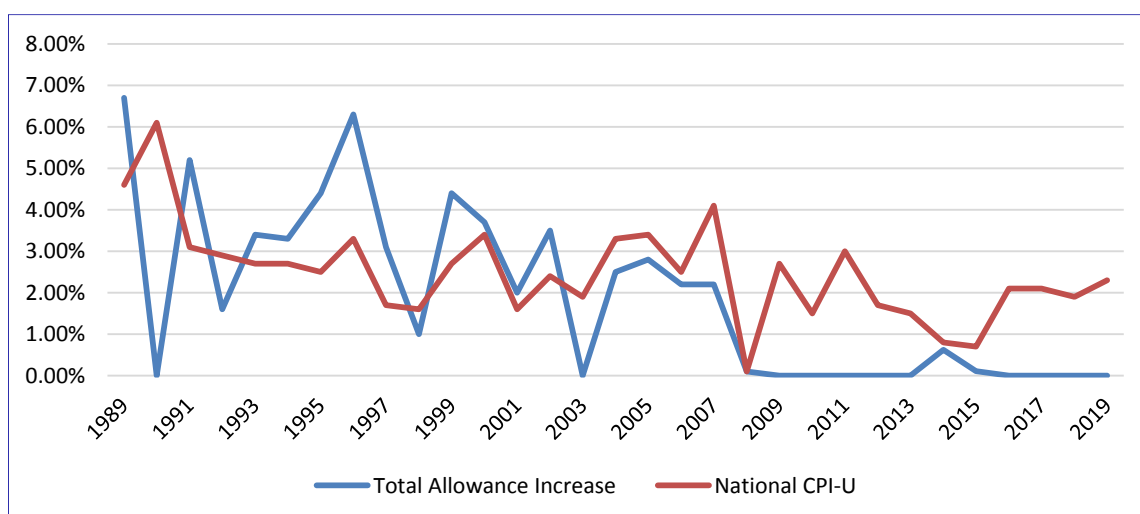
## Section 2: The Valuation Process

### 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.

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

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



\* Allowance increases are effective at July 1 the following year

**Commentary:** Prior to 2000, asset returns generally exceeded expectations and allowance increases exceeded the cost of living. Subsequently, asset returns on average have been lower than expected leading to lower allowance increases. 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, 2019 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

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### 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.

- Five (5) employers were granted relief at 7/1/2020
- Seven (7) employers are expected to be granted relief at 7/1/2021 based on this valuation

**Commentary:** 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 unfunded actuarial accrued liability over a much shorter period of time (12 years) compared to most other Public Sector Retirement Systems. As such it is a best practice in the industry.

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



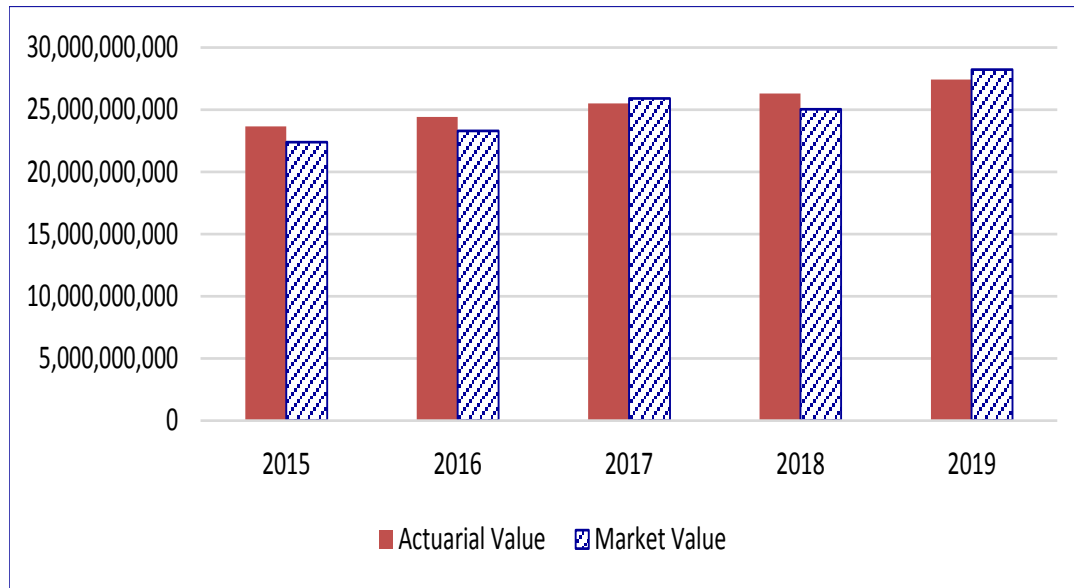
## Section 2: The Valuation Process

### 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 \$27.4 billion as of December 31, 2019 and \$26.3 billion as of December 31, 2018.

#### 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 greater than the actuarial value of assets, which is used to determine employer contributions. This indicates that overall there are unrecognized asset gains to be recognized in future valuations.

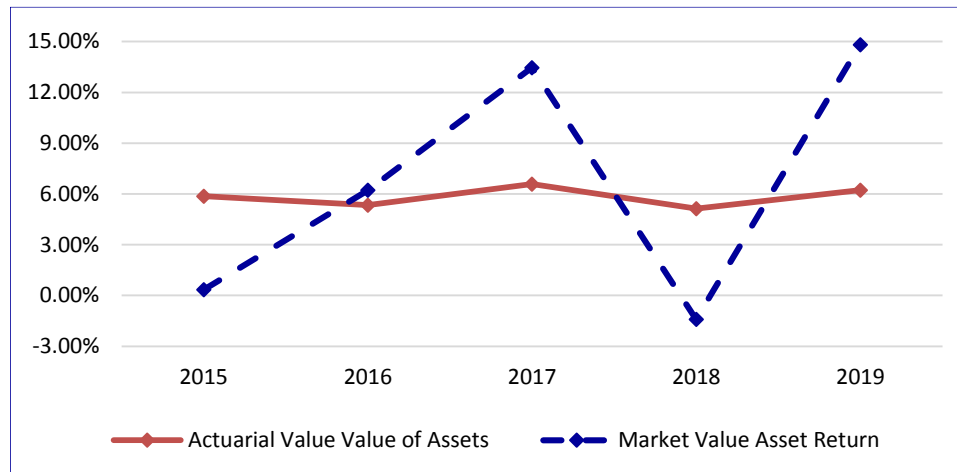


## Section 2: The Valuation Process

### 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 2019 was 14.83%. The actuarial value of assets smooths investment gains and losses. Lower than expected market returns, in 2015, 2016 and 2018, resulted in an actuarial value of asset return for calendar year 2019 of 6.23% and a recognized actuarial asset loss of \$200 million during 2019.

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



## Section 2: The Valuation Process

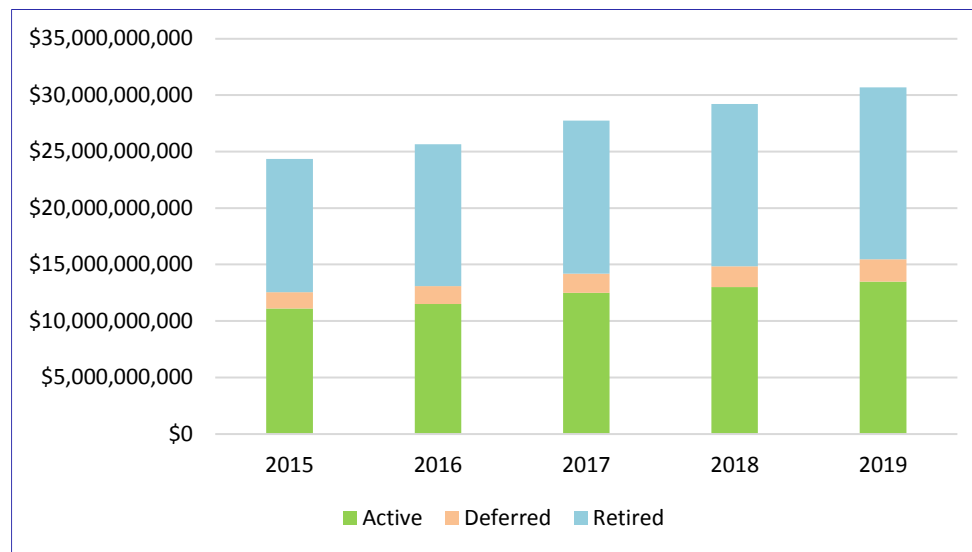
### Valuation Results: Actuarial Accrued Liability

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 \$29.223 billion to \$30.701 billion during 2019. 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 \$144 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

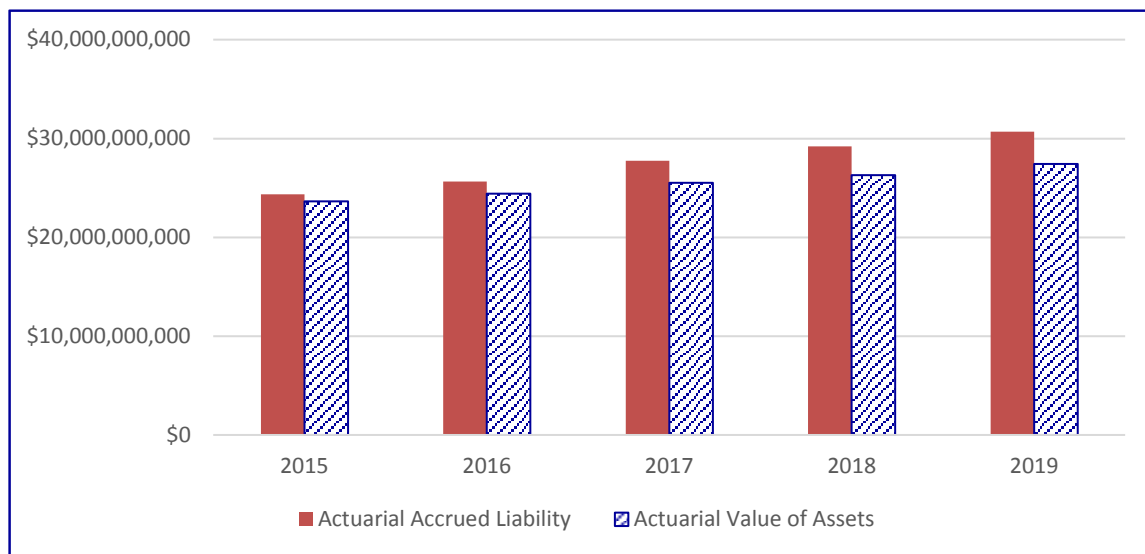
### Valuation Results: Funded Ratio

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: Actuarial Accrued Liability and Actuarial Value of Assets

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



**Commentary:** The actuarial value of assets basis is used for computing contributions to alleviate contribution volatility. The difference in the actuarial accrued liability and the actuarial value of assets is the amount of unfunded actuarial accrued liability to be paid off over a 12-year period.

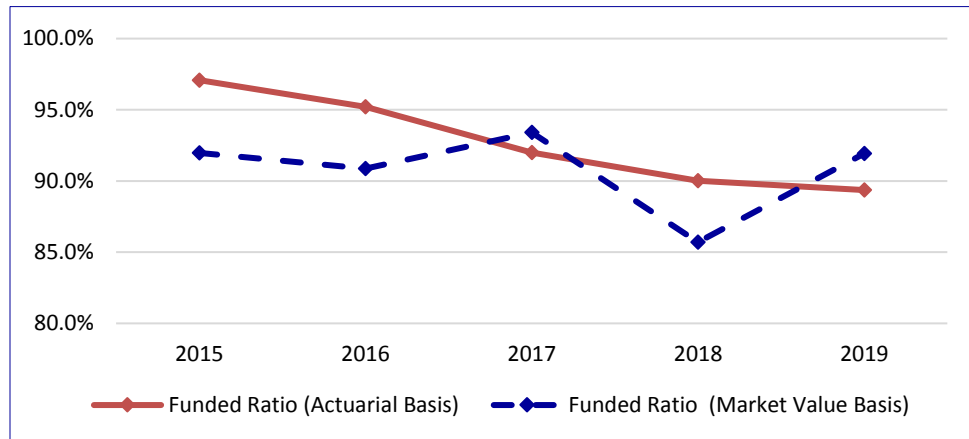


## Section 2: The Valuation Process

### 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 90.0% at December 31, 2018 to 89.4% at December 31, 2019.





## Section 2: The Valuation Process

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### 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, 2018 valuation resulted in a preliminary actuarially determined employer contribution rate of 10.24% of payroll for general employees and firefighters and 11.92% of payroll for law enforcement officers at July 1, 2020. 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 10.15% of payroll for general employees and firefighters and 10.90% of payroll for law enforcement officers at July 1, 2020. As a result of the December 31, 2019 valuation, the preliminary actuarial determined employer contribution rate is 11.27% of payroll for general employees and firefighters and 12.94% of payroll for law enforcement officers. Based on the ECRSP, the preliminary ECRSP contribution rate should be set at 11.35% of payroll for general employees and firefighters and 12.10% of payroll for law enforcement officers at July 1, 2021.

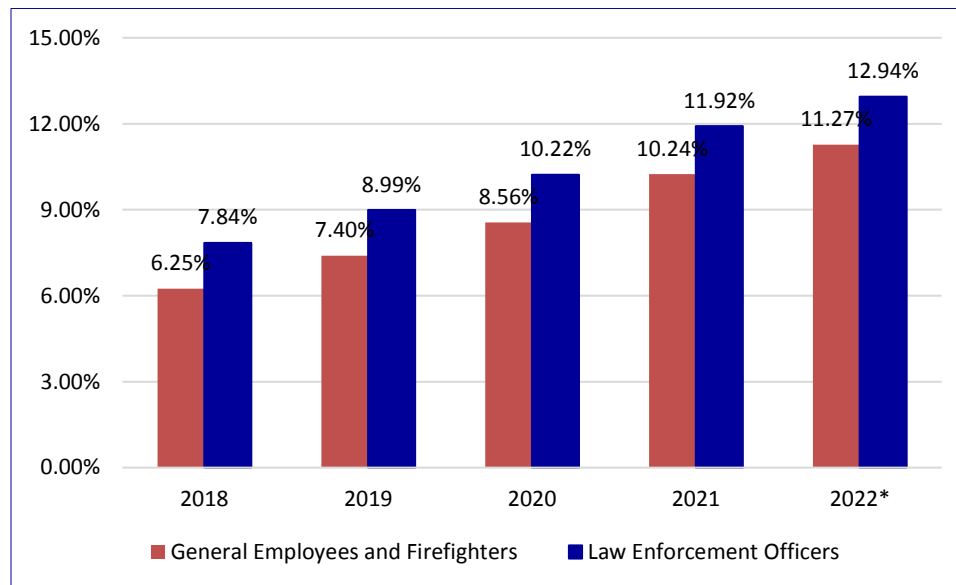


## Section 2: The Valuation Process

### Valuation Results: Employer Contributions (continued)

#### Graph 11: Actuarially Determined Employer 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

**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. In addition, the actual contributions under ECRSP are not necessarily equal to the ADEC..

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



## Section 2: The Valuation Process

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### 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, 2019 valuation results and 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)

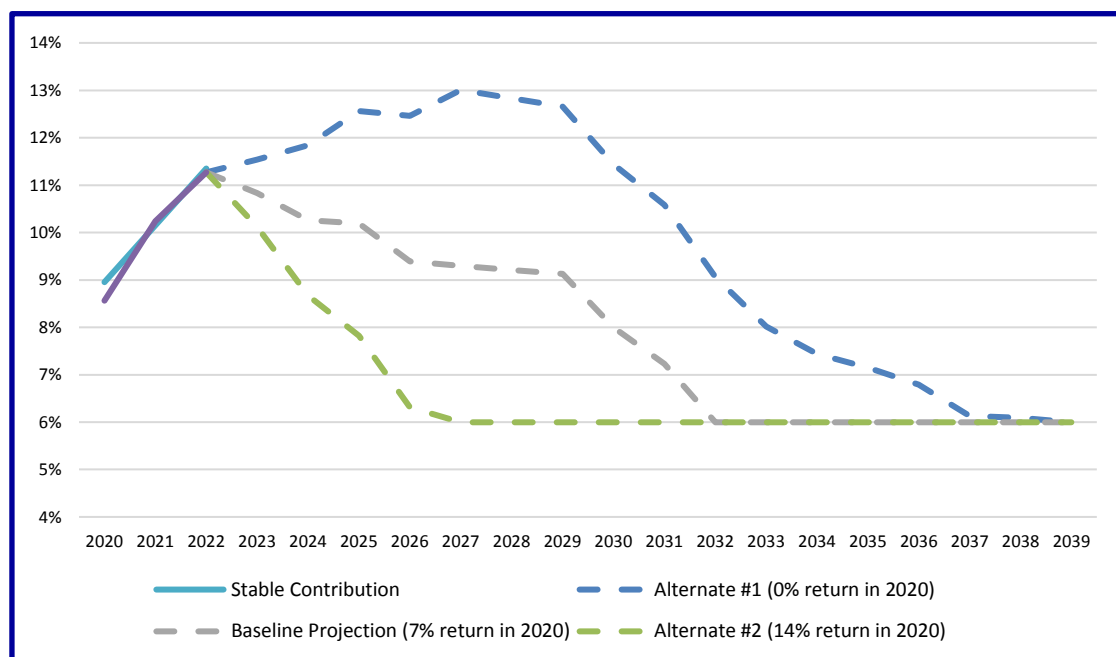
In addition, we have provided two alternate deterministic projections. The first alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 0.0% asset return for calendar year 2020. The second alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 14.0% asset return for calendar year 2020.

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.

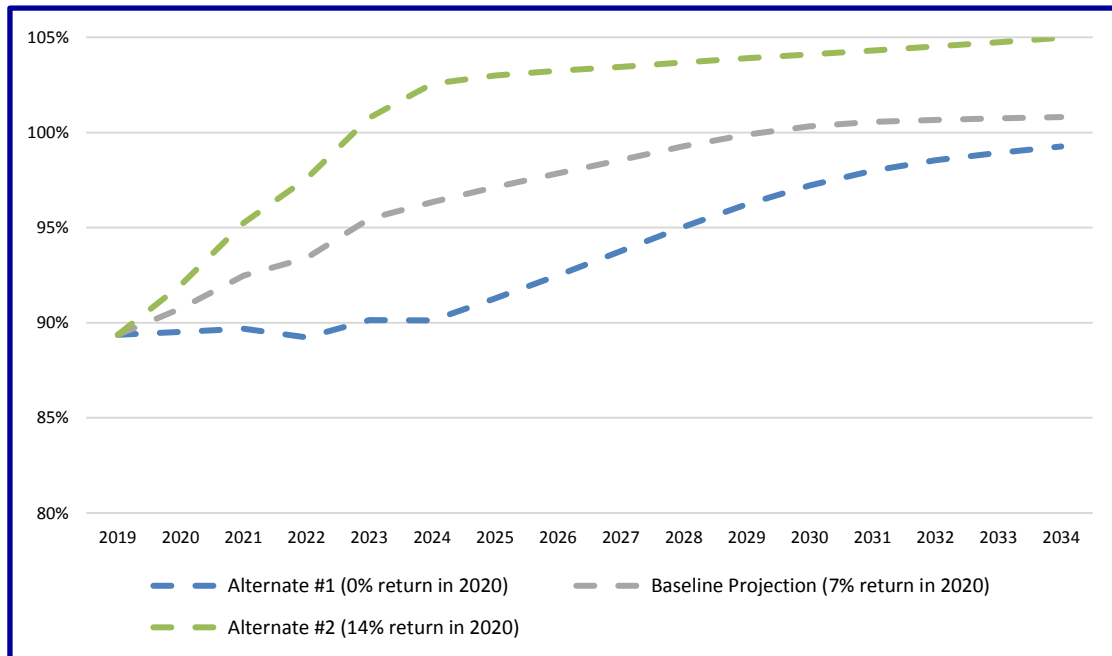


## Section 2: The Valuation Process

### 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, 2020, is \$3,573,426,000 (compared to \$2,730,922,000 for fiscal year ending June 30, 2019). 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	97,701	45.59	9.59	\$ 4,641,671,368
Firefighters	13,007	37.76	9.93	668,595,808
Law Enforcement Officers	<u>21,350</u>	<u>39.10</u>	<u>11.31</u>	<u>1,178,614,399</u>
Total	132,058	43.77	9.90	\$ 6,488,881,575

The table above includes members not in receipt of benefits who had reported compensation in 2019.

**Table 3: Terminated Vested Member Data**

	Member Count	Average Age	Average Service	Accumulated Contributions
General Employees	66,634	45.32	3.58	\$ 783,903,076
Firefighters	4,506	37.96	4.20	61,124,519
Law Enforcement Officers	<u>8,448</u>	<u>40.80</u>	<u>5.16</u>	<u>147,132,409</u>
Total	79,588	44.42	3.79	\$ 992,160,004

The table above includes members not in receipt of benefits who did not have reported compensation in 2019.



## Section 3: Membership Data

**Table 4: Data for Members Currently Receiving Benefits**

	Member Count	Average Age	Annual Retirement Allowances
<u>Retired Members (Healthy at Retirement)</u>			
General Employees	47,243	70.57	\$ 886,133,632
Firefighters	2,668	65.52	85,056,911
Law Enforcement Officers	<u>9,030</u>	<u>64.93</u>	<u>248,801,279</u>
Total	58,941	69.48	\$ 1,219,991,822
<u>Retired Members (Disabled at Retirement)*</u>			
General Employees	6,415	64.10	\$ 107,710,516
Firefighters	1,186	62.24	32,245,938
Law Enforcement Officers	<u>1,553</u>	<u>57.40</u>	<u>32,874,781</u>
Total	9,154	62.73	\$ 172,831,235
<u>Survivors of Deceased Members</u>			
General Employees	5,103	72.02	58,489,402
Firefighters	461	74.49	7,393,196
Law Enforcement Officers	<u>1,343</u>	<u>70.72</u>	<u>20,777,673</u>
Total	6,907	71.93	\$ 86,660,271
Grand Total	75,002	68.88	\$ 1,479,483,328

\* 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	12/31/2019	12/31/2018
Beginning of Year Market Value of Assets	\$ 25,045,130,611	\$ 25,918,361,041
Employer Contributions	593,620,018	521,319,795
Employee Contributions	423,480,874	406,122,445
Court Costs	2,817,521	2,803,215
Benefit Payments Other Than Refunds	(1,452,519,505)	(1,374,842,429)
Refunds	(59,643,764)	(61,462,168)
Administrative Expenses	(4,676,875)	(4,515,766)
Investment Income	<u>3,676,489,417</u>	<u>(362,655,522)</u>
Net Increase / (Decrease)	3,179,567,686	(873,230,430)
End of Year Market Value of Assets	\$ 28,224,698,297	\$ 25,045,130,611
Estimated Net Investment Return	14.83%	(1.41)%

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

Asset Data as of	12/31/2019	12/31/2018
Allocation by Dollar Amount		
Public Equity	\$ 9,233,219,503	\$ 9,071,091,374
Fixed Income (LTIF)	7,434,903,107	6,596,598,080
Cash and Receivables	3,790,398,830	1,847,663,468
Other *	<u>7,766,176,857</u>	<u>7,529,777,689</u>
Total Market Value of Assets	\$ 28,224,698,297	\$ 25,045,130,611
Allocation by Percentage of Asset Value		
Public Equity	32.7%	36.2%
Fixed Income (LTIF)	26.3%	26.3%
Cash and Receivables	13.4%	7.4%
Other *	<u>27.6%</u>	<u>30.1%</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	12/31/2019
Beginning of Year Actuarial Value of Assets	\$ 26,307,348,445
Beginning of Year Market Value of Assets	25,045,130,611
Total Contributions and Court Costs	1,019,918,413
Benefit Payments, Refunds and Administrative Expenses	<u>(1,516,840,144)</u>
Net Cash Flow	(496,921,731)
Expected Investment Return	1,736,061,038
Expected End of Year Market Value of Assets	26,284,269,918
End of Year Market Value of Assets	28,224,698,297
Excess of Market Value of Assets over Expected Market Value of Assets	1,940,428,379
80% of 2019 Asset Gain / (Loss)	1,552,342,703
60% of 2018 Asset Gain / (Loss)	(1,295,623,747)
40% of 2017 Asset Gain / (Loss)	578,434,209
20% of 2016 Asset Gain / (Loss)	<u>(45,501,103)</u>
Total Deferred Asset Gain / (Loss)	789,652,062
Preliminary End of Year Actuarial Value of Assets	27,435,046,235
Final End of Year Actuarial Value of Assets (not less than 80% and not greater than 120% of Market Value of Assets)	\$ 27,435,046,235
Estimated Net Investment Return	6.23%

**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 2015, 2016 and 2018, resulted in an actuarial value of asset return for calendar year 2019 of 6.23% and a recognized actuarial asset loss of \$200 million during 2019.



## 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%
2019	7.00%	6.23%	14.83%	5.90%
20-Yr Average	7.22%	7.06%	5.90%	NA
Range	0.25%	9.30%	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 7.06% compares with an average market return of 5.90%. The difference is partially due to asset gains of the late 1990's being included in the actuarial value. The range of returns on market value of assets is markedly more volatile, 38.10% versus 9.30%. 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	12/31/2019	12/31/2018
(a) Present Value of Future Benefits		
(1) Active Members	\$ 20,051,687,895	\$ 19,299,483,366
(2) Terminated Members	1,984,320,009	1,835,817,327
(3) Members Currently Receiving Benefits	<u>15,228,521,929</u>	<u>14,379,321,186</u>
(4) Total	\$ 37,264,529,833	\$ 35,514,621,879
(b) Present Value of Future Normal Costs		
(1) Employee Future Normal Costs	\$ 3,326,446,821	\$ 3,185,416,493
(2) Employer Future Normal Costs	<u>3,237,161,709</u>	<u>3,106,078,734</u>
(3) Total	\$ 6,563,608,530	\$ 6,291,495,227
(c) Actuarial Accrued Liability: (a4) – (b3)	\$ 30,700,921,303	\$ 29,223,126,652
(d) Actuarial Value of Assets	\$ 27,435,046,235	\$ 26,307,348,445
(e) Unfunded Actuarial Accrued Liability: (c) – (d)	\$ 3,265,875,068	\$ 2,915,778,207
(f) Unfunded Initial Service Liability*	\$ 18,263,651	\$ 21,880,677
(g) Unfunded Accrued Liability to be Amortized over 12 years: (e) – (f)	\$ 3,247,611,417	\$ 2,893,897,530

\*The unfunded initial prior service liability balance as of December 31, 2019 and the applicable employer contribution rate as of July 1, 2021 is provided in Appendix I, for participating employers with remaining initial prior service liability as of December 31, 2019. 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	12/31/2019	12/31/2018
Total Participating Employers	892	896
Employers Paying a Prior Service Liability Rate at Prior Valuation Date	68	80
Employers Completing Scheduled Payments Since Prior Valuation Date	3	1
Employers Granted Early Relief Since Prior Valuation Date	1	11
Total Participating Employers Paying a Prior Service Liability Rate at Valuation Date	64	68
Employers Granted Relief for Fiscal Year Beginning 6 Months after Valuation Date	5	1
Employers with Expected Relief for Fiscal Year Beginning 18 Months after Valuation Date	7	6



## 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 12/31/2018	\$ 2,916
Normal Cost and Administrative Expense during 2019	801
Reduction due to Actual Contributions during 2019	(992)
Interest on UAAL, Normal Cost, and Contributions	197
Asset (Gain) / Loss	200
Actuarial Accrued Liability (Gain) / Loss	144
Impact of Assumption Changes	-
Impact of Legislative Changes	-
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2019	\$ 3,266

**Commentary:** During 2019, the UAAL increased faster than expected primarily due to the asset loss during the year of \$200 million.



## **Section 6: Actuarially Determined Employer Contribution**

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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 2022, the ECRSP rates are 11.35% for general employees and firefighters and 12.10% 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 15.23%. 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 and prior years' valuations. 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 (ADEC)**

Valuation Date ADEC for Fiscal Year Ending	12/31/2019 6/30/2022	12/31/2018 6/30/2021
Normal Cost Rate Calculation		
(a) Normal Cost Rate		
General Employees and Firefighters	11.24%	11.24%
Law Enforcement Officers	13.11%	13.15%
(b) Expense Rate	6.00%	6.00%
(c) Expenses		
General Employees and Firefighters	0.20%	0.20%
Law Enforcement Officers	0.00%	0.00%
(d) Total Normal Cost Rate: (a) + (b) + (c)		
General Employees and Firefighters	5.44%	5.44%
Law Enforcement Officers	7.11%	7.15%
Accrued Liability Rate Calculation		
(e) Total Annual Amortization Payments*	\$ 425,655,621	\$ 374,777,085
(f) Projected Compensation**	\$ 7,301,604,347	\$ 6,998,774,399
(g) Accrued Liability Rate: (e) / (f)	5.83%	5.35%
Preliminary ADEC: (d) + (g)		
General Employees and Firefighters	11.27%	10.79%
Law Enforcement Officers	12.94%	12.50%
ADEC With Direct Rate Smoothing		
General Employees and Firefighters	11.27%	10.24%
Law Enforcement Officers	12.94%	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, 2019 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, 2021 (see Appendix I for more details).

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

**Table 13: Reconciliation of the Change in the ADEC Rates**

	General Employees and Firefighters	Law Enforcement Officers
Fiscal year ending June 30, 2021 Preliminary ADEC (based on December 31, 2018 valuation)	10.24%	11.92%
Impact of Legislative Changes	<u>0.00</u>	<u>0.00</u>
Fiscal year ending June 30, 2021 ADEC for Reconciliation	10.24%	11.92%
Change Due to Anticipated Reduction in UAAL*	(0.22)	(0.22)
Change Due to Demographic (Gain) / Loss	0.27	0.22
Change Due to Investment (Gain) / Loss	0.37	0.37
Change Due to Contributions Different from ADEC**	0.06	0.06
Impact of Assumption Change	0.00	0.00
Impact of Direct Rate Smoothing	0.55	0.59
Fiscal year ending June 30, 2022 Preliminary ADEC (based on December 31, 2019 valuation)	11.27%	12.94%

\*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.

\*\* Employer contribution rate for Law Enforcement Officers during 2019 was less than the ADEC. In addition, reflects the impact of direct-rate smoothing.





## 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 2018. 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	12/31/2019	12/31/2018
(a) Unfunded Actuarial Accrued Liability*	\$ 3,247,611,417	\$ 2,893,897,530
(b) Prior Years' Outstanding Balance	\$ 2,869,931,706	\$ 2,226,164,091
(c) New Amortization Base: (a) – (b)	\$ 377,679,711	\$ 667,733,439
(d) New Amortization Payment	\$ 50,878,535	\$ 89,952,672

\* Does not include the unfunded initial prior service liability

**Table 15: Amortization Schedule for Unfunded Accrued Liability**

Date Established	Original Balance	12/31/2019 Outstanding Balance	Annual Payment
December 31, 2015	\$ 677,367,798	\$ 641,688,567	\$ 91,580,649
December 31, 2016	472,513,055	479,263,151	63,772,841
December 31, 2017	961,083,903	1,034,505,208	129,470,924
December 31, 2018	667,733,439	714,474,780	89,952,672
December 31, 2019	377,679,711	377,679,711	50,878,535
Total		\$ 3,247,611,417	\$ 425,655,621



## 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
12/31/2019	7/1/2021	11.27%	N/A	N/A	N/A
12/31/2018	7/1/2020	10.24%	0.00%	10.24%	10.15%
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%

\*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
12/31/2019	7/1/2021	12.94%	N/A	N/A	N/A
12/31/2018	7/1/2020	11.92%	0.00%	11.92%	10.90%
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%

\*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, 2019 or December 31, 2018 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	12/31/2019	12/31/2018
Increase in UAAL for a 1% COLA	\$ 168,738,000	\$ 159,954,000
Increase in ADEC for a 1% COLA	0.31%	0.31%
Increase in UAAL for a 0.1% Increase in the Defined Benefit Formula	\$ 165,951,000	\$ 157,963,000
Increase in ADEC for a 0.1% Increase in the Defined Benefit Formula	0.36%	0.36%

The 1% COLA in the 12/31/2019 column would be effective July 1, 2021 and includes expected costs of COLAs paid for retirements after 12/31/2019 and before June 30, 2021. The COLA would be paid in full to retired members and survivors of deceased members on the retirement roll on July 1, 2020 and would be prorated for retired members and survivors of deceased members who commence benefits after July 1, 2020 but before June 30, 2021.

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 \$166.0 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 2021 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	12/31/2019	12/31/2018
<b>Assets</b>		
Current Actuarial Value of Assets		
Annuity Savings Fund	\$ 5,557,854,032	\$ 5,357,001,369
Pension Accumulation Fund	<u>21,877,192,203</u>	<u>20,950,347,076</u>
Total	\$ 27,435,046,235	\$ 26,307,348,445
Future Member Contributions to the Annuity Savings Fund	\$ 3,326,446,821	\$ 3,185,416,493
Prospective Contributions to the Pension Accumulation Fund		
Normal Contributions	\$ 3,237,161,709	\$ 3,106,078,734
Unfunded Accrued Liability Contributions	<u>3,265,875,068</u>	<u>2,915,778,207</u>
Total	\$ 6,503,036,777	\$ 6,021,856,941
Total Assets	<u>\$ 37,264,529,833</u>	<u>\$ 35,514,621,879</u>
<b>Liabilities</b>		
Annuity Savings Fund		
Past Member Contributions	\$ 5,557,854,032	\$ 5,357,001,369
Future Member Contributions	<u>3,326,446,821</u>	<u>3,185,416,493</u>
Total Contributions	\$ 8,884,300,853	\$ 8,542,417,862
Pension Accumulation Fund		
Benefits Currently in Payment	\$ 15,228,521,929	\$ 14,379,321,186
Benefits to be Paid to Current Active and Inactive Members	13,151,707,051	12,592,882,831
Reserve for Increases in Retirement Allowances	<u>0</u>	<u>0</u>
Total Benefits Payable	\$ 28,380,228,980	\$ 26,972,204,017
Total Liabilities	<u>\$ 37,264,529,833</u>	<u>\$ 35,514,621,879</u>



## Section 8: Accounting Results

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This section contains the accounting information for Governmental Accounting Standards Board (GASB) Statement No. 67 for fiscal year ending June 30, 2020 based on a valuation date of December 31, 2019.

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

The June 30, 2020 total pension liability presented in this section was determined by an actuarial valuation as of December 31, 2019, 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, 2019**

Group	Number
Retired members and survivors of deceased members currently receiving benefit	75,002
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	79,588
Active Members	<u>132,058</u>
Total	286,648



## 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, 2020	
<b>Total Pension Liability</b>	
Service Cost	\$ 841,148,000
Interest	2,037,306,000
Changes of Benefit Terms	0
Difference between Expected and Actual Experience	177,954,000
Change of Assumptions	0
Benefit Payments, including Refund of Member Contributions	<u>(1,551,217,000)</u>
Net Change in Total Pension Liability	1,505,191,000
Total Pension Liability - Beginning of Year	\$ 29,866,869,000
Total Pension Liability - End of Year	\$ 31,372,060,000
<b>Plan Fiduciary Net Position</b>	
Employer Contributions	\$ 640,969,000
Member Contributions	436,754,000
Net Investment Income	1,139,009,000
Benefit Payments, including Refund of Member Contributions	<u>(1,551,217,000)</u>
Administrative Expenses	<u>(4,889,000)</u>
Other	<u>2,061,000</u>
Net Change in Plan Fiduciary Net Position	662,687,000
Plan Fiduciary Net Position - Beginning of Year	\$ 27,135,947,000
Plan Fiduciary Net Position - End of Year	\$ 27,798,634,000

**Table 22: Net Pension Liability (Asset)**

Net Pension Liability (Asset)		
	June 30, 2020	June 30, 2019
Total Pension Liability	\$ 31,372,060,000	\$ 29,866,869,000
Plan Fiduciary Net Position	<u>27,798,634,000</u>	<u>27,135,947,000</u>
Net Pension Liability (Asset)	\$ 3,573,426,000	\$ 2,730,922,000
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (Asset)	88.61%	90.86%



## 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, 2020 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)	\$ 7,250,092,000	\$ 3,573,426,000	\$ 517,858,000

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 2021 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 with a minimum employer contribution rate of 6.00% of payroll in accordance with G.S. 128-30(d)(10). 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	12/31/2019
Actuarial Cost Method	Entry Age
Amortization Method	Level dollar closed
Amortization Period	12 year closed periods
Asset Valuation Method	Asset returns 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

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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, 2019 valuation results and 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 2020. 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 2020.

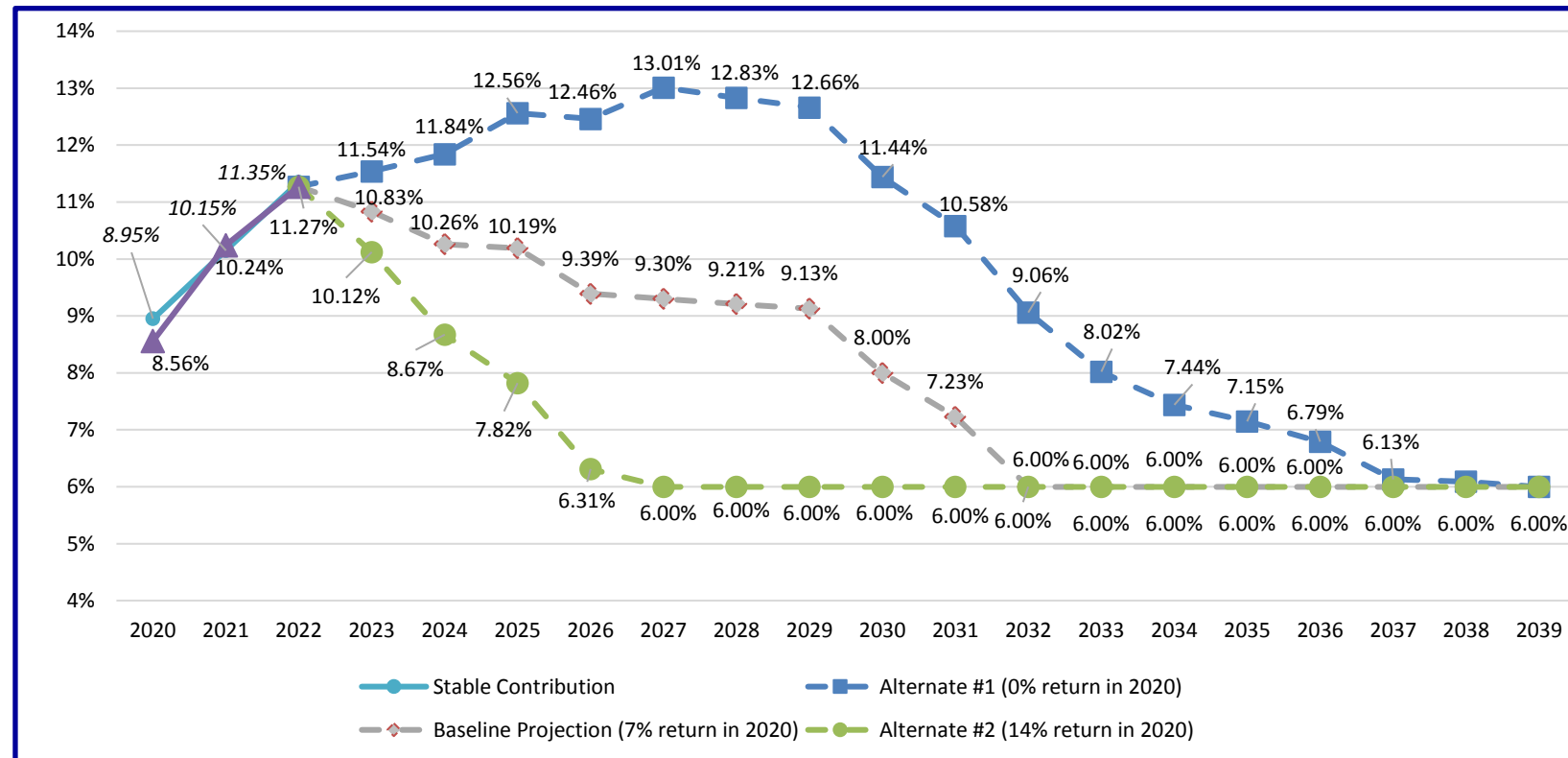




## Section 9: Projections

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

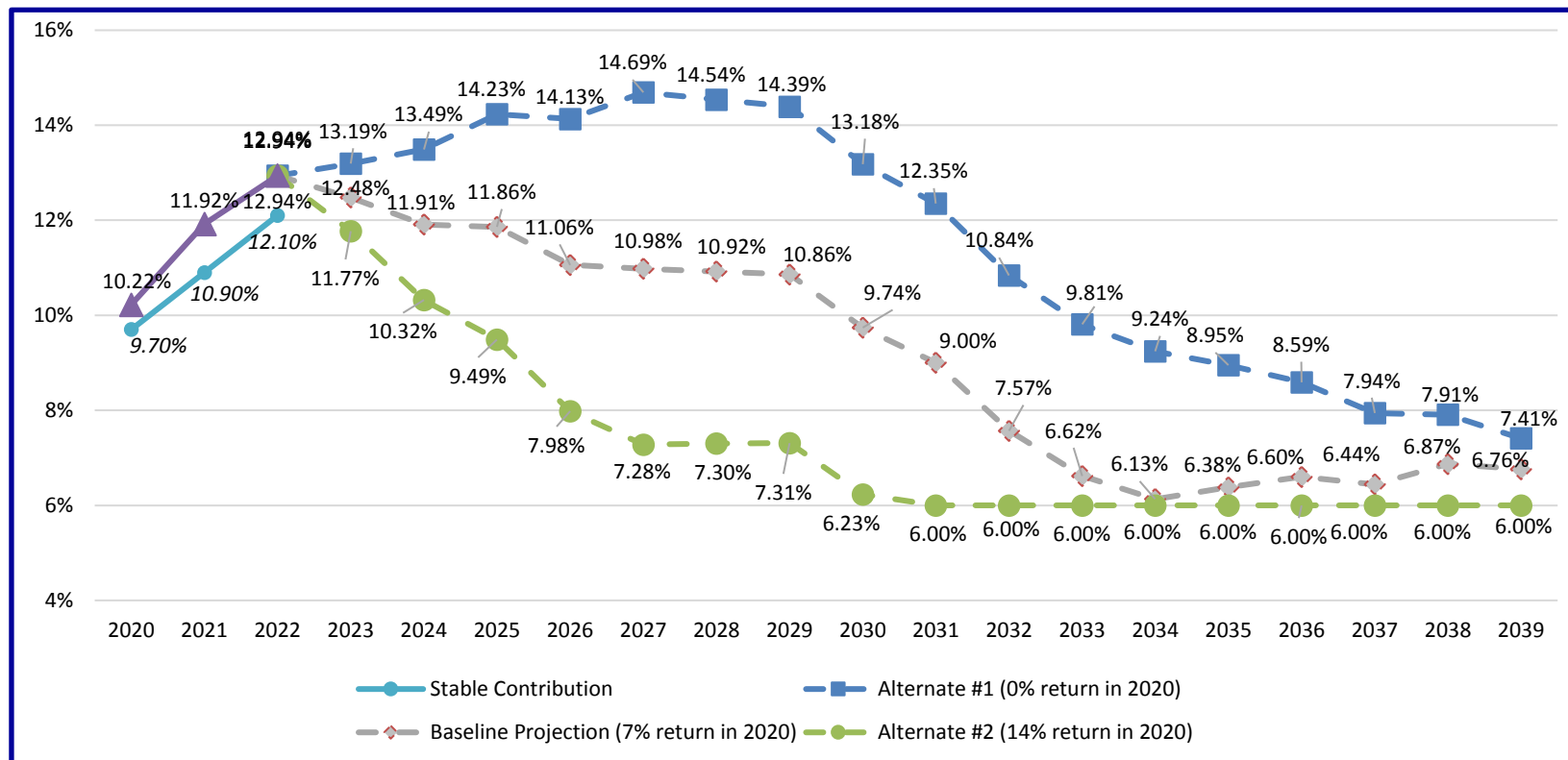




## Section 9: Projections

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

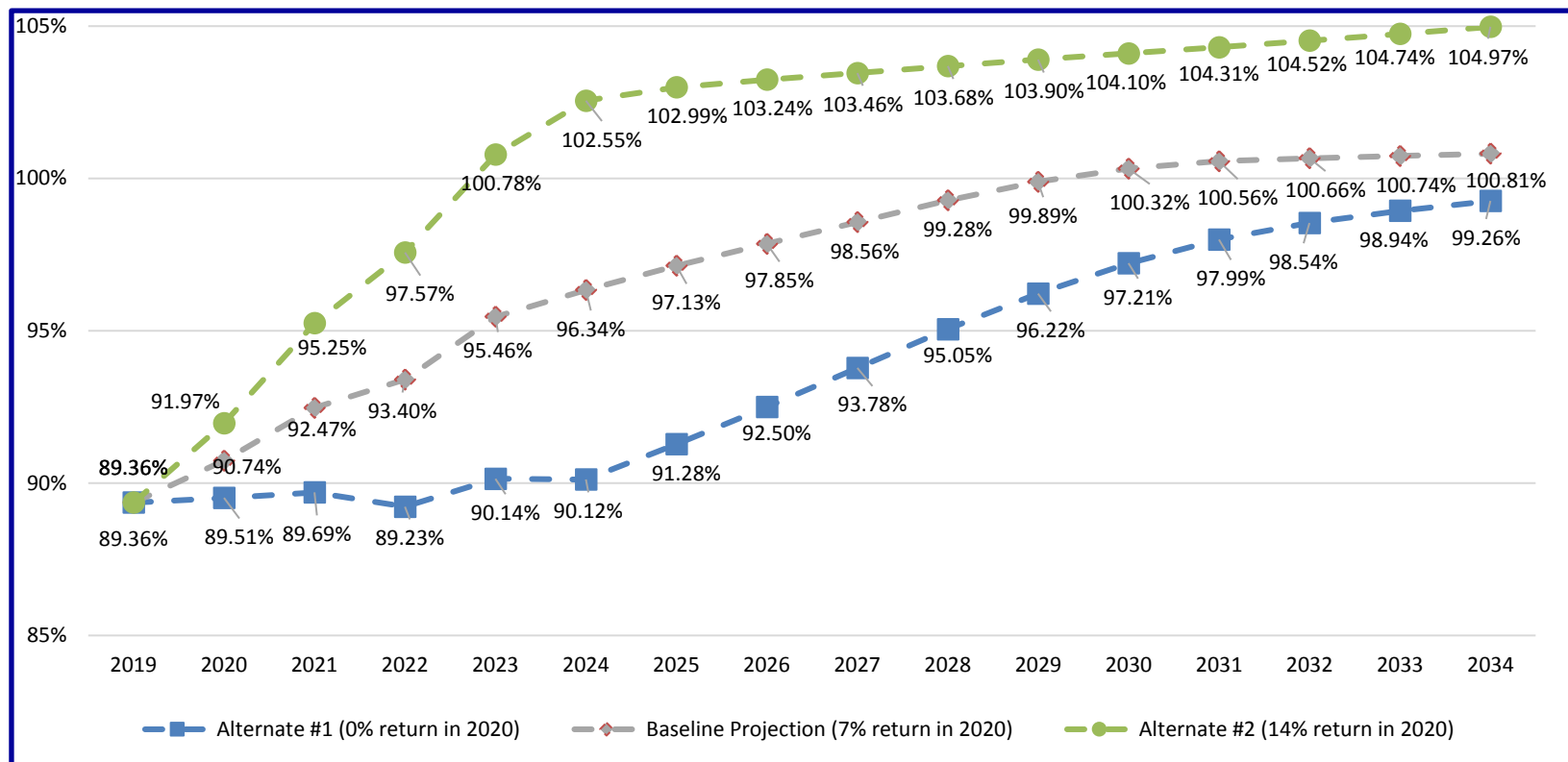




## Section 9: Projections

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

**Projected Funded Ratio**



## Appendix A: Valuation Process and Glossary of Actuarial Terms

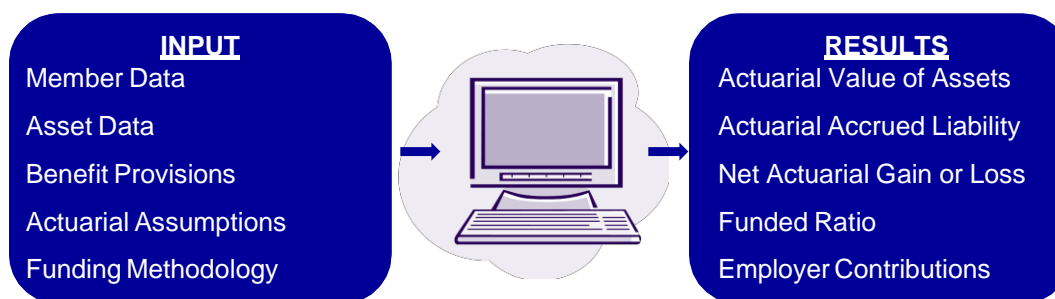
### Purpose of an Actuarial Valuation

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**

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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

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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

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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

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### 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

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**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, 2019**

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	1,345	4,213	51	0	0	0	0	0	0	0	5,609
	7,509	33,279	42,706	0	0	0	0	0	0	0	27,185
25 to 29	1,354	9,591	2,918	26	0	0	0	0	0	0	13,889
	7,972	38,435	46,028	50,951	0	0	0	0	0	0	37,084
30 to 34	883	6,947	5,904	2,082	62	0	0	0	0	0	15,878
	8,498	40,226	49,253	52,961	55,329	0	0	0	0	0	43,547
35 to 39	687	4,835	4,275	4,419	1,837	61	0	0	0	0	16,114
	8,614	42,016	50,235	56,062	59,092	62,902	0	0	0	0	48,650
40 to 44	551	4,021	3,321	3,205	3,440	1,610	25	0	0	0	16,173
	8,769	42,810	50,874	56,011	61,952	65,325	66,573	0	0	0	52,272
45 to 49	511	3,609	3,273	3,042	3,041	3,884	1,495	40	0	0	18,895
	9,055	42,513	50,505	55,420	60,288	68,233	73,047	67,104	0	0	55,686
50 to 54	410	3,138	2,734	2,700	2,511	2,683	2,534	510	10	0	17,230
	9,351	41,646	49,047	53,823	59,040	65,311	74,390	74,784	70,090	0	55,993
55 to 59	337	2,649	2,402	2,363	2,200	1,903	1,426	784	186	3	14,253
	8,810	42,829	49,205	53,078	54,924	60,727	67,373	75,579	74,998	78,488	53,739
60 to 64	193	1,526	1,696	1,657	1,527	1,256	801	469	217	90	9,432
	8,028	39,620	48,211	52,216	55,604	59,029	63,642	70,353	79,674	74,666	52,728
65 to 69	84	492	662	610	494	343	219	162	74	73	3,213
	7,219	34,217	47,909	52,845	57,379	60,307	63,349	65,439	77,900	88,833	52,022
70 & Over	50	307	295	229	181	118	63	49	33	47	1,372
	5,002	23,331	30,897	41,340	47,347	50,602	50,778	64,756	64,995	87,872	38,762
Total	6,405	41,328	27,531	20,333	15,293	11,858	6,563	2,014	520	213	132,058
	8,272	39,818	49,078	54,414	58,807	64,565	70,623	72,914	76,633	82,489	49,137



## 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, 2019**

Age	Men		Women	
	Number	Compensation	Number	Compensation
18	14	101,071	5	40,535
19	109	1,376,761	19	227,521
20	277	5,675,974	55	1,060,612
21	471	11,071,087	149	2,430,543
22	713	19,231,142	288	6,398,529
23	975	28,577,402	481	11,388,272
24	1,305	43,384,151	748	21,519,534
25	1,346	47,877,290	875	26,653,720
26	1,595	59,032,654	1,073	35,396,233
27	1,713	66,595,254	1,119	39,748,664
28	1,754	70,290,161	1,184	41,821,242
29	1,959	81,390,011	1,271	46,254,103
30	1,866	79,743,718	1,252	48,054,686
31	1,876	84,443,719	1,296	49,777,796
32	1,870	85,260,016	1,265	51,190,872
33	1,897	88,639,384	1,294	54,844,103
34	1,911	92,944,618	1,351	56,543,504
35	1,882	94,174,014	1,360	57,454,909
36	1,816	91,482,025	1,301	57,063,249
37	1,870	95,551,296	1,344	62,553,965
38	1,899	99,445,209	1,416	64,053,917
39	1,845	98,372,780	1,381	63,799,935
40	1,750	93,643,356	1,399	64,931,895
41	1,764	97,251,633	1,461	70,957,038
42	1,741	96,757,620	1,496	73,365,490
43	1,889	105,637,992	1,489	73,005,326
44	1,787	102,660,604	1,397	67,181,866
45	1,974	114,956,907	1,535	76,021,961
46	1,952	116,291,406	1,564	78,250,696
47	2,040	120,842,655	1,554	75,628,039
48	2,316	140,915,645	1,723	86,836,949
49	2,330	145,625,279	1,907	96,822,109
50	2,140	131,831,892	1,801	91,779,660
51	1,950	119,868,943	1,600	79,440,117
52	1,883	113,985,390	1,559	80,303,735
53	1,654	100,135,242	1,469	73,564,621
54	1,606	94,559,574	1,568	79,289,455
55	1,522	88,310,227	1,509	75,037,972
56	1,432	83,931,993	1,568	78,016,195
57	1,355	77,956,442	1,466	73,062,446



## 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, 2019 (continued)**

Age	Men		Women	
	Number	Compensation	Number	Compensation
58	1,315	75,703,212	1,436	73,210,786
59	1,217	69,670,610	1,433	71,046,375
60	1,088	62,415,112	1,301	63,698,442
61	1,016	58,910,356	1,147	55,416,833
62	908	52,228,266	1,033	50,186,595
63	766	42,952,122	830	41,934,320
64	648	36,591,493	695	32,993,064
65	501	29,054,488	580	28,161,980
66	376	20,774,302	372	18,733,580
67	312	17,403,276	256	12,669,041
68	244	13,086,978	209	9,567,057
69	200	10,118,567	163	7,578,134
70	171	7,989,300	129	5,326,691
71	128	5,279,355	98	3,818,506
72	91	3,776,542	88	3,479,517
73	88	3,668,789	75	3,152,486
74	64	2,281,955	54	1,773,895
75	41	1,363,211	29	1,160,360
76	41	1,617,902	38	1,312,497
77	47	1,631,045	28	1,071,968
78	28	714,296	9	227,948
79	20	650,582	9	242,219
80	18	534,157	7	159,911
81	9	245,439	5	180,884
82	12	457,361	6	132,669
83	8	188,174	4	137,724
84	2	76,297	4	55,759
85	2	49,933	8	177,571
86	2	27,498	0	0
87	1	9,953	0	0
88	1	11,364	1	36,279
90	2	66,619	0	0
91	1	15,187	0	0
92	1	46,231	0	0
93	1	18,988	0	0
95	0	0	1	14,973
Total	73,418	3,809,451,497	58,640	2,679,430,078



## 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, 2019**

Service	Men		Women	
	Number	Compensation	Number	Compensation
0	3,292	27,523,396	3,113	25,460,221
1	6,762	221,635,648	6,357	199,906,554
2	5,745	245,924,463	5,028	205,429,239
3	4,882	217,423,384	4,480	188,798,650
4	4,320	201,973,473	3,754	164,512,795
5	3,872	189,014,903	3,282	147,891,486
6	3,407	167,296,990	2,720	126,728,993
7	3,078	158,790,079	2,640	127,273,029
8	2,683	141,337,870	1,972	93,949,843
9	2,247	118,796,449	1,630	80,092,445
10	2,122	118,121,910	1,496	75,259,210
11	2,259	125,339,753	1,572	79,304,824
12	2,710	154,711,552	2,011	101,485,223
13	2,400	136,903,747	1,751	90,453,283
14	2,316	135,111,505	1,696	89,710,081
15	2,206	132,563,272	1,481	80,428,459
16	1,901	115,278,372	1,389	75,270,651
17	1,636	101,110,592	1,093	60,101,905
18	1,537	96,643,413	1,174	65,015,504
19	1,661	105,877,222	1,215	67,049,207
20	1,640	108,912,346	1,266	71,052,068
21	1,609	107,906,062	1,109	63,235,784
22	1,351	93,590,239	951	56,487,333
23	1,266	89,228,281	785	47,239,005
24	1,125	82,583,257	756	45,382,941
25	1,051	77,357,928	722	45,257,465
26	959	72,182,051	627	39,332,226
27	785	61,473,429	464	28,685,861
28	619	47,336,211	424	26,525,601
29	526	39,749,795	386	25,596,591
30	349	26,920,076	298	19,324,891
31	261	20,672,697	230	15,308,555
32	204	16,614,679	201	13,834,057
33	150	11,902,096	108	6,825,737
34	105	7,870,936	108	7,574,245
35	109	9,135,313	78	5,447,526



## 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, 2019 (continued)**

Service	Men		Women	
	Number	Compensation	Number	Compensation
36	47	3,614,880	54	3,545,041
37	51	4,535,675	37	2,385,685
38	41	3,433,524	29	1,833,987
39	36	3,374,434	38	2,543,306
40	21	1,878,508	23	1,617,427
41	24	2,460,921	18	1,051,336
42	18	1,566,648	17	1,182,145
43	10	886,139	16	1,159,269
44	8	1,002,035	11	679,229
45	5	435,238	4	404,272
46	2	290,824	6	367,421
47	2	319,764	4	187,078
48	2	103,200	6	450,714
49	2	215,196	4	355,469
50	2	252,887	2	184,520
51	1	152,286	0	0
52	1	115,949	0	0
53	0	0	1	97,887
54	0	0	1	47,681
58	0	0	1	49,357
65	0	0	1	56,766
Total	73,418	3,809,451,497	58,640	2,679,430,078



## 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, 2019**

Age	Men		Women	
	Number	Contributions	Number	Contributions
18	1	129	1	185
19	12	7,821	3	1,295
20	40	35,478	12	8,594
21	107	125,096	35	43,237
22	170	276,869	63	62,938
23	277	453,718	132	201,537
24	435	834,044	214	342,461
25	553	1,290,581	322	697,396
26	642	1,703,792	434	1,059,978
27	721	2,404,697	551	1,717,446
28	841	3,072,709	661	2,395,118
29	890	4,029,889	750	3,075,746
30	1,054	5,510,839	785	3,413,709
31	1,013	5,488,663	901	4,481,383
32	1,024	6,027,309	959	4,981,642
33	1,136	8,259,435	1,023	6,083,812
34	1,100	8,527,073	1,018	6,915,571
35	1,208	9,918,861	1,161	8,795,036
36	1,104	9,886,775	1,130	9,341,116
37	1,173	11,514,821	1,171	9,939,411
38	1,126	12,057,260	1,151	10,470,371
39	1,071	10,899,774	1,248	11,589,034
40	1,078	12,997,286	1,295	12,893,966
41	979	12,518,096	1,315	14,660,430
42	986	13,493,802	1,224	13,872,880
43	1,058	13,985,309	1,199	14,635,143
44	954	13,981,415	1,211	15,072,554
45	994	16,422,641	1,307	17,077,056
46	1,010	16,712,223	1,266	17,803,367
47	1,030	17,500,916	1,234	18,302,250
48	1,052	18,302,888	1,210	18,460,940
49	1,185	20,861,765	1,385	21,684,318
50	1,075	20,068,540	1,268	19,756,628
51	951	16,980,722	1,187	19,945,207
52	857	15,447,193	1,091	17,889,389
53	889	15,321,195	1,018	16,697,972
54	830	14,502,044	1,008	17,493,355
55	866	16,583,420	1,017	18,598,739
56	758	14,943,735	1,020	18,125,110
57	711	12,325,488	1,032	19,155,126
58	720	13,922,397	985	18,698,698
59	665	12,341,090	943	18,248,554



## 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, 2019 (continued)**

Age	Men		Women	
	Number	Contributions	Number	Contributions
60	562	11,534,789	801	16,717,768
61	414	8,022,498	714	14,851,157
62	398	7,900,127	643	12,486,625
63	374	6,439,418	506	10,644,861
64	346	6,213,508	487	8,269,795
65	321	5,396,537	413	7,690,768
66	209	3,273,029	275	4,614,815
67	166	2,261,273	251	4,251,409
68	162	2,075,330	199	2,461,664
69	125	1,101,929	190	2,798,894
70	119	871,499	154	2,223,813
71	83	644,309	104	1,078,833
72	39	177,185	30	485,530
73	37	235,581	19	96,583
74	26	178,156	12	54,513
75	9	12,646	5	55,727
76	7	29,088	6	83,234
77	12	159,455	7	69,832
78	11	24,027	5	8,374
79	8	28,574	3	54,945
80	8	102,289	0	0
81	5	5,117	3	27,911
82	0	0	5	23,269
83	2	9,673	0	0
84	6	73,877	1	22,546
85	2	3,049	4	13,497
86	3	7,720	1	1,619
87	4	5,570	1	50,361
88	1	3,928	0	0
90	2	4,428	0	0
100+	2	556	0	0
Total	37,809	468,332,963	41,779	523,827,041





## 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, 2019**

Age	Men		Women	
	Number	Allowances	Number	Allowances
<19	3	33,350	1	20,786
19	0	0	1	28,264
20	5	41,849	0	0
21	2	35,793	0	0
22	3	19,041	2	67,999
23	2	23,778	1	5,417
25	1	7,872	1	26,660
26	1	11,727	1	5,412
27	2	16,221	5	42,584
28	2	19,662	5	71,371
29	2	14,522	4	27,118
30	4	54,230	3	21,813
31	0	0	6	47,387
32	7	55,686	5	23,509
33	5	52,746	4	55,827
34	4	30,049	2	16,858
35	8	104,999	5	25,362
36	5	109,874	5	62,483
37	6	80,033	11	95,512
38	9	101,003	8	83,403
39	10	103,890	9	111,821
40	5	34,961	9	110,212
41	7	72,352	15	214,918
42	7	54,093	12	150,597
43	6	55,817	10	79,762
44	9	67,545	12	123,869
45	7	111,767	21	203,313
46	15	202,080	18	178,778
47	11	279,491	15	195,732
48	20	563,430	22	348,202
49	58	1,550,978	37	556,818
50	125	3,989,778	60	1,094,977
51	233	7,729,141	86	1,860,095
52	328	10,751,102	128	3,070,201
53	423	14,778,714	188	4,496,783
54	466	15,431,719	214	5,239,525
55	608	19,656,664	292	7,418,094
56	807	25,293,584	343	8,873,235
57	745	23,374,069	413	10,646,923
58	816	25,247,593	486	13,541,865
59	850	25,984,339	563	14,959,369



## 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, 2019 (continued)**

Age	Men		Women	
	Number	Allowances	Number	Allowances
60	855	25,952,021	678	17,179,985
61	937	26,699,883	804	19,345,932
62	965	26,488,934	1,007	22,503,456
63	1,169	30,413,176	1,126	22,295,422
64	1,191	29,662,657	1,218	23,013,495
65	1,296	32,204,327	1,389	25,166,301
66	1,409	33,747,540	1,505	26,620,679
67	1,471	33,855,101	1,642	28,357,055
68	1,512	33,801,856	1,684	26,517,668
69	1,522	32,803,927	1,617	26,023,632
70	1,379	29,939,280	1,576	25,639,292
71	1,408	29,626,090	1,555	24,154,073
72	1,408	28,130,252	1,553	23,690,209
73	1,434	28,023,185	1,608	24,175,182
74	909	17,682,010	1,150	16,801,208
75	921	17,610,901	1,093	16,344,907
76	749	13,673,726	990	13,634,934
77	802	15,057,279	1,027	14,033,540
78	613	10,617,380	867	11,455,001
79	557	10,012,026	740	9,570,295
80	510	8,762,861	720	9,422,402
81	429	7,335,981	691	8,855,937
82	417	7,138,975	583	7,373,493
83	402	6,785,518	597	7,097,864
84	342	5,874,657	519	6,633,379
85	292	4,629,055	471	5,801,089
86	251	3,572,515	410	4,791,024
87	214	3,356,058	392	4,422,663
88	189	2,837,325	357	4,090,979
89	145	2,148,131	303	3,757,886
90	106	1,656,926	249	2,509,965
91	95	1,326,119	218	2,736,388
92	75	1,244,849	178	1,930,064
93	51	683,217	172	1,750,554
94	34	472,432	95	1,180,830
95	28	381,081	74	615,855
96	20	277,698	65	682,058
97	14	183,918	35	380,430
98	15	167,308	39	316,235
99	2	26,242	17	128,982
100+	7	123,152	39	317,785
Total	31,772	741,131,111	34,076	565,520,982



## 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, 2019**

Annuity Type	Men		Women	
	Number	Allowances	Number	Allowances
0:Maximum	10,130	\$ 213,012,350	17,299	\$280,303,315
1:Option 1: 10-year guaranteed	213	4,381,443	305	3,550,631
2:Option 2: 100% joint and survivor	7,170	166,841,765	1,934	29,178,273
3:Option 3: 50% joint and survivor	1,896	49,135,088	987	18,078,874
4:Option 4: Social security leveling	2,595	64,019,539	3,189	64,270,348
5:Option 5- 2:100% joint and surv.	32	640,266	9	52,806
6:Option 5-3: 50% joint and surv.	16	451,951	13	226,441
7:Option 6-2: 100% joint and surv. w / pop-up	6,493	169,609,857	2,629	51,747,756
8:Option 6-3: 50% joint and surv. w / pop-up	2,180	62,071,982	1,845	42,232,746
9:Special	6	186,391	0	0
3:Survivor	1,041	\$ 10,780,479	5,866	\$ 75,879,792
Total	31,772	\$ 741,131,111	34,076	\$565,520,982



## 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, 2019**

Age	Men		Women	
	Number	Allowances	Number	Allowances
28	1	23,184	0	0
30	1	17,222	0	0
31	2	22,575	1	21,424
32	4	111,142	1	22,469
33	3	47,461	5	104,150
34	5	120,708	4	92,731
35	7	161,721	0	0
36	13	282,469	5	95,781
37	22	464,518	6	137,488
38	17	308,527	5	117,589
39	22	489,690	10	241,139
40	29	653,202	7	153,826
41	37	768,788	11	254,697
42	25	555,738	19	369,804
43	38	855,460	23	437,233
44	59	1,346,356	19	385,363
45	47	1,057,203	25	501,640
46	58	1,318,841	26	561,032
47	58	1,336,402	34	694,130
48	103	2,360,176	48	1,088,811
49	122	2,773,217	47	944,548
50	114	2,519,187	65	1,273,953
51	129	2,980,787	62	1,186,330
52	102	2,196,336	77	1,708,184
53	144	3,109,428	82	1,697,065
54	151	3,154,074	91	1,706,782
55	142	3,108,482	85	1,682,639
56	174	3,639,764	116	2,344,292
57	190	3,832,931	98	1,844,148
58	191	3,582,460	142	2,677,854
59	167	3,095,146	129	2,307,357
60	175	3,251,658	138	2,562,054
61	167	3,119,216	170	2,796,051
62	165	2,886,651	137	2,387,678
63	200	3,659,579	146	2,374,546
64	193	3,509,377	167	2,765,078



## 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, 2019 (continued)**

Age	Men		Women	
	Number	Allowances	Number	Allowances
65	213	4,049,471	144	2,403,205
66	194	3,909,906	139	2,239,292
67	177	3,563,720	123	1,937,406
68	213	4,752,372	145	2,267,263
69	185	3,767,487	103	1,689,579
70	186	4,127,092	103	1,519,914
71	175	3,577,646	116	1,828,393
72	161	3,467,030	90	1,258,525
73	156	3,253,512	103	1,456,511
74	124	2,497,559	86	1,172,786
75	123	2,513,974	76	1,010,067
76	85	1,646,599	79	1,013,676
77	81	1,615,025	70	936,849
78	50	1,026,655	40	409,663
79	63	1,092,666	45	611,832
80	39	660,441	43	512,708
81	37	686,343	35	405,999
82	37	596,306	25	280,411
83	26	497,470	17	189,885
84	29	459,641	19	181,506
85	17	258,484	9	97,576
86	15	220,085	14	132,618
87	8	114,033	9	73,027
88	8	88,979	5	32,811
89	7	100,882	4	45,197
90	4	84,819	5	46,964
91	1	21,741	1	8,330
92	2	36,571	3	25,658
93	1	19,847	1	3,844
94	1	24,757	1	5,028
95	0	0	1	10,529
96	1	9,045	2	20,088
99	0	0	1	6,395
Total	5,496	111,459,834	3,658	61,371,401



## 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, 2019**

Annuity Type	Men		Women	
	Number	Allowances	Number	Allowances
0:Maximum	3,817	\$ 82,029,310	3,149	\$ 53,483,221
1:Option 1: 10-year guaranteed	116	2,421,189	55	817,626
2:Option 2: 100% joint and survivor	385	5,999,476	77	965,544
3:Option 3: 50% joint and survivor	351	5,869,861	81	1,257,734
4:Option 4: Social security leveling	8	227,601	9	171,341
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	377	6,559,955	106	1,625,635
8:Option 6-3: 50% joint and surv. w / pop-up	424	8,032,494	180	3,043,297
9:Special	7	150,521	0	0
Total	5,496	\$111,459,834	3,658	\$ 61,371,401



## Appendix B: Detailed Tabulation of Member Data

**Table B-9: The Number and Annual Retirement Allowances of Retired Members and Survivors of Deceased Members Distributed by Amount of Annual Retirement Allowance of December 31, 2019**

Amount of Annual Retirement Allowance	Number of Retired Members and Survivors	Sum of Annual Retirement Allowances
\$0 - \$ 4,999	9,548	\$ 29,771,283
\$5,000 - \$9,999	13,353	99,909,915
\$10,000 - \$14,999	11,792	146,771,575
\$15,000 - \$19,999	9,841	171,571,450
\$20,000 - \$24,999	8,255	185,252,825
\$25,000 - \$29,999	6,632	181,691,528
\$30,000 - \$34,999	4,980	161,235,236
\$35,000 - \$39,999	3,618	135,260,243
\$40,000 - \$ 44,999	2,409	101,946,070
\$45,000 - \$49,999	1,575	74,567,378
\$50,000 & over	2,999	191,505,825
Total	75,002	\$ 1,479,483,328



## Appendix C: Summary of Main Benefit & Contribution Provision

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 Provision

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"><li>(i) <math>5/12</math> (<math>1/3</math>) of 1% for each month by which age is less than 60 (55), plus, if the member is not a law enforcement officer, <math>1/4</math> of 1% for each month by which age 60 is less than 65.</li><li>(ii) 5% times the difference between 30 years and creditable service at retirement.</li></ul> <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"><li>(i) <math>1/3</math> of 1% for each month by which his or her age is less than 55,</li><li>(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.</li></ul>
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 Provision

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### 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

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.

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.

The current interest rate on member contributions is 4%.

### 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. Law enforcement Officers, Firefighters and Rescue Squad Workers are eligible for this benefit at any age after 15 years of creditable service if death occurs in the line of duty,

### Death After Retirement

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.

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.

Upon the death of a beneficiary, a benefit may be provided by the Retiree's Contributory Death Benefit Plan.



## **Appendix C: Summary of Main Benefit & Contribution Provision**

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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.
Optional Arrangements at Retirement	<p>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:</p> <p>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</p> <p>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</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>
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 Provision**

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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 Provision**

### **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 Provision**

### 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

#### Annual Rates

Age	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:

<b><u>Annual Rate of Salary Increase</u></b>			
<u>Service</u>	<u>General Employees</u>	<u>Firefighters &amp; 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:

<b><u>Annual Rate of Death after Retirement</u></b>						
(Members Healthy at Retirement)						
<u>Age</u>	<u>General Employees</u>		<u>Firefighters &amp; 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 Enforcement	Fire & Rescue Squad
	Males	Females		
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
2020	\$ 28,224,698	\$ 423,953	\$ 670,275	\$ 1,772,443	\$ 12,684	\$ 1,951,956	\$ 29,485,756
2021	29,485,756	402,281	748,928	1,851,558	12,036	2,039,491	30,812,862
2022	30,812,862	383,870	772,360	1,932,614	11,485	2,129,791	32,154,784
2023	32,154,784	367,010	730,179	2,014,715	10,980	2,218,887	33,445,165
2024	33,445,165	351,220	699,648	2,101,240	10,508	2,304,659	34,688,944
2025	34,688,944	335,868	656,268	2,196,802	10,049	2,386,430	35,860,659
2026	35,860,659	320,618	611,606	2,295,380	9,592	2,463,013	36,950,923
2027	36,950,923	305,475	592,400	2,393,563	9,139	2,534,786	37,980,882
2028	37,980,882	290,407	576,509	2,491,493	8,688	2,602,464	38,950,081
2029	38,950,081	275,343	515,277	2,588,260	8,238	2,664,369	39,808,572
2030	39,808,572	260,598	422,552	2,682,429	7,797	2,717,540	40,519,036
2031	40,519,036	246,152	311,301	2,774,205	7,364	2,759,805	41,054,726
2032	41,054,726	232,057	187,382	2,861,722	6,943	2,789,558	41,395,058
2033	41,395,058	218,295	102,867	2,946,398	6,531	2,807,100	41,570,392
2034	41,570,392	204,556	77,012	3,029,211	6,120	2,815,176	41,631,805
2035	41,631,805	190,855	92,895	2,899,173	5,710	2,824,038	41,834,710
2036	41,834,710	177,448	94,227	2,976,135	5,309	2,835,192	41,960,133
2037	41,960,133	164,295	108,546	3,050,750	4,915	2,841,458	42,018,766
2038	42,018,766	151,209	124,928	3,121,196	4,524	2,843,265	42,012,448
2039	42,012,448	138,721	113,139	3,186,486	4,150	2,839,754	41,913,426
2040	41,913,426	126,646	126,646	3,246,614	3,789	2,830,815	41,747,130
2041	41,747,130	114,862	114,862	3,305,165	3,436	2,816,361	41,484,614
2042	41,484,614	102,995	102,995	3,361,892	3,081	2,795,229	41,120,859
2043	41,120,859	91,145	91,145	3,415,838	2,727	2,767,106	40,651,690
2044	40,651,690	79,337	79,337	3,466,482	2,374	2,731,721	40,073,229
2045	40,073,229	67,624	67,624	3,512,182	2,023	2,688,863	39,383,135
2046	39,383,135	56,327	56,327	3,551,981	1,685	2,638,421	38,580,544
2047	38,580,544	45,487	45,487	3,581,965	1,361	2,580,473	37,668,665
2048	37,668,665	35,263	35,263	3,599,855	1,055	2,515,333	36,653,614
2049	36,653,614	26,086	26,086	3,597,082	780	2,443,753	35,551,677
2050	35,551,677	19,338	19,338	3,569,404	579	2,367,112	34,387,483
2051	34,387,483	14,718	14,718	3,523,264	440	2,286,893	33,180,108
2052	33,180,108	11,308	11,308	3,463,552	338	2,204,200	31,943,034
2053	31,943,034	8,667	8,667	3,394,885	259	2,119,789	30,685,013
2054	30,685,013	6,611	6,611	3,317,733	198	2,034,242	29,414,546
2055	29,414,546	5,018	5,018	3,232,464	150	1,948,136	28,140,104
2056	28,140,104	3,789	3,789	3,142,174	113	1,861,948	26,867,343
2057	26,867,343	2,835	2,835	3,045,597	85	1,776,113	25,603,443
2058	25,603,443	2,109	2,109	2,944,247	63	1,691,078	24,354,429
2059	24,354,429	1,559	1,559	2,839,188	47	1,607,225	23,125,537
2060	23,125,537	1,142	1,142	2,731,343	34	1,524,885	21,921,329
2061	21,921,329	829	829	2,621,234	25	1,444,358	20,746,085
2062	20,746,085	596	596	2,510,069	18	1,365,900	19,603,090
2063	19,603,090	424	424	2,398,830	13	1,289,706	18,494,801
2064	18,494,801	300	300	2,288,003	9	1,215,931	17,423,320
2065	17,423,320	211	211	2,177,941	6	1,144,708	16,390,503
2066	16,390,503	146	146	2,068,954	4	1,076,156	15,397,993
2067	15,397,993	99	99	1,961,255	3	1,010,383	14,447,317
2068	14,447,317	67	67	1,855,103	2	947,486	13,539,832
2069	13,539,832	43	43	1,750,697	1	887,553	12,676,773
2070	12,676,773	27	27	1,648,203	1	830,665	11,859,288
2071	11,859,288	16	16	1,547,802	-	776,894	11,088,412

\*Employer contributions are not less than 6.00% of payroll in accordance with G.S. 128-30(d)(10).



## 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
2072	\$ 11,088,412	\$ 9	\$ 9	\$ 1,449,632	\$ -	\$ 726,310	\$ 10,365,108
2073	10,365,108	5	5	1,353,836	-	678,975	9,690,258
2074	9,690,258	2	2	1,260,555	-	634,945	9,064,651
2075	9,064,651	1	1	1,169,926	-	594,271	8,488,998
2076	8,488,998	-	-	1,082,067	-	556,998	7,963,930
2077	7,963,930	-	-	997,107	-	523,167	7,489,989
2078	7,489,989	-	-	915,169	-	492,810	7,067,630
2079	7,067,630	-	-	836,372	-	465,956	6,697,214
2080	6,697,214	-	-	760,836	-	442,626	6,379,004
2081	6,379,004	-	-	688,682	-	422,834	6,113,156
2082	6,113,156	-	-	620,032	-	406,587	5,899,712
2083	5,899,712	-	-	555,002	-	393,883	5,738,592
2084	5,738,592	-	-	493,707	-	384,714	5,629,599
2085	5,629,599	-	-	436,249	-	379,061	5,572,412
2086	5,572,412	-	-	382,716	-	376,900	5,566,595
2087	5,566,595	-	-	333,169	-	378,198	5,611,625
2088	5,611,625	-	-	287,640	-	382,917	5,706,902
2089	5,706,902	-	-	246,130	-	391,014	5,851,786
2090	5,851,786	-	-	208,602	-	402,447	6,045,631
2091	6,045,631	-	-	174,984	-	417,173	6,287,821
2092	6,287,821	-	-	145,161	-	435,140	6,577,799
2093	6,577,799	-	-	118,987	-	456,352	6,915,163
2094	6,915,163	-	-	96,283	-	480,749	7,299,629
2095	7,299,629	-	-	76,840	-	508,330	7,731,118
2096	7,731,118	-	-	60,423	-	539,099	8,209,795
2097	8,209,795	-	-	46,770	-	573,076	8,736,102
2098	8,736,102	-	-	35,603	-	610,302	9,310,801
2099	9,310,801	-	-	26,630	-	650,840	9,935,010
2100	9,935,010	-	-	19,558	-	694,778	10,610,231
2101	10,610,231	-	-	14,094	-	742,231	11,338,368
2102	11,338,368	-	-	9,961	-	793,343	12,121,750
2103	12,121,750	-	-	6,905	-	848,285	12,963,130
2104	12,963,130	-	-	4,696	-	907,258	13,865,691
2105	13,865,691	-	-	3,138	-	970,490	14,833,044
2106	14,833,044	-	-	2,065	-	1,038,242	15,869,221
2107	15,869,221	-	-	1,343	-	1,110,799	16,978,677
2108	16,978,677	-	-	868	-	1,188,478	18,166,286
2109	18,166,286	-	-	563	-	1,271,621	19,437,344
2110	19,437,344	-	-	368	-	1,360,601	20,797,577
2111	20,797,577	-	-	246	-	1,455,822	22,253,153
2112	22,253,153	-	-	168	-	1,557,715	23,810,700
2113	23,810,700	-	-	119	-	1,666,745	25,477,326
2114	25,477,326	-	-	86	-	1,783,410	27,260,651
2115	27,260,651	-	-	63	-	1,908,243	29,168,831
2116	29,168,831	-	-	46	-	2,041,817	31,210,602
2117	31,210,602	-	-	34	-	2,184,741	33,395,308
2118	33,395,308	-	-	25	-	2,337,671	35,732,954
2119	35,732,954	-	-	18	-	2,501,306	38,234,242

\*Employer contributions are not less than 6.00% of payroll in accordance with G.S. 128-30(d)(10).



## 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 2.21%	Using Single Discount Rate of 7.00%
2020	\$ 28,224,698	\$ 1,772,443	\$ 1,772,443	\$ -	\$ 1,713,485	\$ -	\$ 1,713,485
2021	29,485,756	1,851,558	1,851,558	-	1,672,868	-	1,672,868
2022	30,812,862	1,932,614	1,932,614	-	1,631,871	-	1,631,871
2023	32,154,784	2,014,715	2,014,715	-	1,589,902	-	1,589,902
2024	33,445,165	2,101,240	2,101,240	-	1,549,704	-	1,549,704
2025	34,688,944	2,196,802	2,196,802	-	1,514,189	-	1,514,189
2026	35,860,659	2,295,380	2,295,380	-	1,478,632	-	1,478,632
2027	36,950,923	2,393,563	2,393,563	-	1,441,009	-	1,441,009
2028	37,980,882	2,491,493	2,491,493	-	1,401,837	-	1,401,837
2029	38,950,081	2,588,260	2,588,260	-	1,361,012	-	1,361,012
2030	39,808,572	2,682,429	2,682,429	-	1,318,253	-	1,318,253
2031	40,519,036	2,774,205	2,774,205	-	1,274,163	-	1,274,163
2032	41,054,726	2,861,722	2,861,722	-	1,228,373	-	1,228,373
2033	41,395,058	2,946,398	2,946,398	-	1,181,981	-	1,181,981
2034	41,570,392	3,029,211	3,029,211	-	1,135,703	-	1,135,703
2035	41,631,805	2,899,173	2,899,173	-	1,015,841	-	1,015,841
2036	41,834,710	2,976,135	2,976,135	-	974,586	-	974,586
2037	41,960,133	3,050,750	3,050,750	-	933,664	-	933,664
2038	42,018,766	3,121,196	3,121,196	-	892,732	-	892,732
2039	42,012,448	3,186,486	3,186,486	-	851,782	-	851,782
2040	41,913,426	3,246,614	3,246,614	-	811,079	-	811,079
2041	41,747,130	3,305,165	3,305,165	-	771,688	-	771,688
2042	41,484,614	3,361,892	3,361,892	-	733,582	-	733,582
2043	41,120,859	3,415,838	3,415,838	-	696,592	-	696,592
2044	40,651,690	3,466,482	3,466,482	-	660,673	-	660,673
2045	40,073,229	3,512,182	3,512,182	-	625,591	-	625,591
2046	39,383,135	3,551,981	3,551,981	-	591,290	-	591,290
2047	38,580,544	3,581,965	3,581,965	-	557,272	-	557,272
2048	37,668,665	3,599,855	3,599,855	-	523,416	-	523,416
2049	36,653,614	3,597,082	3,597,082	-	488,797	-	488,797
2050	35,551,677	3,569,404	3,569,404	-	453,305	-	453,305
2051	34,387,483	3,523,264	3,523,264	-	418,173	-	418,173
2052	33,180,108	3,463,552	3,463,552	-	384,193	-	384,193
2053	31,943,034	3,394,885	3,394,885	-	351,940	-	351,940
2054	30,685,013	3,317,733	3,317,733	-	321,441	-	321,441
2055	29,414,546	3,232,464	3,232,464	-	292,691	-	292,691
2056	28,140,104	3,142,174	3,142,174	-	265,902	-	265,902
2057	26,867,343	3,045,597	3,045,597	-	240,869	-	240,869
2058	25,603,443	2,944,247	2,944,247	-	217,620	-	217,620
2059	24,354,429	2,839,188	2,839,188	-	196,126	-	196,126
2060	23,125,537	2,731,343	2,731,343	-	176,333	-	176,333
2061	21,921,329	2,621,234	2,621,234	-	158,154	-	158,154
2062	20,746,085	2,510,069	2,510,069	-	141,539	-	141,539
2063	19,603,090	2,398,830	2,398,830	-	126,417	-	126,417
2064	18,494,801	2,288,003	2,288,003	-	112,688	-	112,688
2065	17,423,320	2,177,941	2,177,941	-	100,250	-	100,250
2066	16,390,503	2,068,954	2,068,954	-	89,003	-	89,003
2067	15,397,993	1,961,255	1,961,255	-	78,851	-	78,851
2068	14,447,317	1,855,103	1,855,103	-	69,704	-	69,704
2069	13,539,832	1,750,697	1,750,697	-	61,477	-	61,477
2070	12,676,773	1,648,203	1,648,203	-	54,092	-	54,092



## 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 2.21%	Using Single Discount Rate of 7.00%
2071	\$ 11,859,288	\$ 1,547,802	\$ 1,547,802	\$ -	\$ 47,473	\$ -	\$ 47,473
2072	11,088,412	1,449,632	1,449,632	-	41,554	-	41,554
2073	10,365,108	1,353,836	1,353,836	-	36,269	-	36,269
2074	9,690,258	1,260,555	1,260,555	-	31,561	-	31,561
2075	9,064,651	1,169,926	1,169,926	-	27,375	-	27,375
2076	8,488,998	1,082,067	1,082,067	-	23,663	-	23,663
2077	7,963,930	997,107	997,107	-	20,379	-	20,379
2078	7,489,989	915,169	915,169	-	17,480	-	17,480
2079	7,067,630	836,372	836,372	-	14,930	-	14,930
2080	6,697,214	760,836	760,836	-	12,693	-	12,693
2081	6,379,004	688,682	688,682	-	10,738	-	10,738
2082	6,113,156	620,032	620,032	-	9,035	-	9,035
2083	5,899,712	555,002	555,002	-	7,558	-	7,558
2084	5,738,592	493,707	493,707	-	6,284	-	6,284
2085	5,629,599	436,249	436,249	-	5,189	-	5,189
2086	5,572,412	382,716	382,716	-	4,255	-	4,255
2087	5,566,595	333,169	333,169	-	3,461	-	3,461
2088	5,611,625	287,640	287,640	-	2,793	-	2,793
2089	5,706,902	246,130	246,130	-	2,234	-	2,234
2090	5,851,786	208,602	208,602	-	1,769	-	1,769
2091	6,045,631	174,984	174,984	-	1,387	-	1,387
2092	6,287,821	145,161	145,161	-	1,075	-	1,075
2093	6,577,799	118,987	118,987	-	824	-	824
2094	6,915,163	96,283	96,283	-	623	-	623
2095	7,299,629	76,840	76,840	-	465	-	465
2096	7,731,118	60,423	60,423	-	341	-	341
2097	8,209,795	46,770	46,770	-	247	-	247
2098	8,736,102	35,603	35,603	-	176	-	176
2099	9,310,801	26,630	26,630	-	123	-	123
2100	9,935,010	19,558	19,558	-	84	-	84
2101	10,610,231	14,094	14,094	-	57	-	57
2102	11,338,368	9,961	9,961	-	38	-	38
2103	12,121,750	6,905	6,905	-	24	-	24
2104	12,963,130	4,696	4,696	-	15	-	15
2105	13,865,691	3,138	3,138	-	10	-	10
2106	14,833,044	2,065	2,065	-	6	-	6
2107	15,869,221	1,343	1,343	-	4	-	4
2108	16,978,677	868	868	-	2	-	2
2109	18,166,286	563	563	-	1	-	1
2110	19,437,344	368	368	-	1	-	1
2111	20,797,577	246	246	-	1	-	1
2112	22,253,153	168	168	-	-	-	-
2113	23,810,700	119	119	-	-	-	-
2114	25,477,326	86	86	-	-	-	-
2115	27,260,651	63	63	-	-	-	-
2116	29,168,831	46	46	-	-	-	-
2117	31,210,602	34	34	-	-	-	-
2118	33,395,308	25	25	-	-	-	-
2119	35,732,954	18	18	-	-	-	-





## 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 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 19<sup>th</sup>, 2016.

Section 6(c) of Session Law 2016-1098 requires that the actuarial valuation report for certain Retirement Systems 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 2.39% at December 31, 2019 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 (2.39%) was used to establish an upper bound for sensitivity analysis (11.61%). The remaining rates illustrated represent mid-points between the selected rates. Table F-2 illustrates our best estimate of the plausibility of such rates. The lower bound of 2.39% falls below the 5<sup>th</sup> percentile of estimated future 30-year returns while the upper bound of 11.61% falls close to the 95<sup>th</sup> percentile of estimated future 30-year returns.

**Table F-1: Sensitivity of Valuation Results as of December 31, 2019**

Discount Rate	2.39%	4.70%	7.00%	9.31%	11.61%
Market Value of Assets	\$ 28,224,698,297	\$ 28,224,698,297	\$ 28,224,698,297	\$ 28,224,698,297	\$ 28,224,698,297
Actuarial Accrued Liability	\$ 55,344,088,677	\$ 40,193,860,423	\$ 30,700,921,303	\$ 24,463,800,355	\$ 20,241,603,067
Unfunded Accrued Liability (UAL)	\$ 27,119,390,380	\$ 11,969,162,126	\$ 2,476,223,006	\$ (3,760,897,942)	\$ (7,983,095,230)
Funded Ratio	51.0%	70.2%	91.9%	115.4%	139.4%
20-Year Amortization of UAL	\$ 1,762,751,140	\$ 980,154,097	\$ 250,097,556	N/A	N/A
(as % of general local revenue)	10.4%	5.8%	1.5%	N/A	N/A



## Appendix F: Additional Disclosures

**Table F-2: 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

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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
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
2019	132,058	6,488,881,575

**Graph 2: Retired Members and Survivors of Deceased Members**

	Retired and Survivors of Deceased Member Count	Retirement Allowance
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
2019	75,002	1,479,483,328

**Graph 3: Market Value of Assets and Asset Returns**

	Market Value of Assets	Asset Return
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%
2019	28,224,698,297	14.83%



## Appendix G: Data for Section 2 Graphs

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

	Total Allowance Increase	National CPI-U
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%
2019	0.00%	2.30%

\* 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
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
2019	27,435,046,235	28,224,698,297

**Graph 7: Asset Returns**

	Actuarial Value Value of Assets	Market Value Asset Return
2015	5.87%	0.34%
2016	5.34%	6.22%
2017	6.59%	13.47%
2018	5.13%	-1.41%
2019	6.23%	14.83%

**Graph 8: Actuarial Accrued Liability**

	Liability for Active Members	Liability for Deferred Members	Liability for Retired Members	Total Liability
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
2019	13,488,079,365	1,984,320,009	15,228,521,929	30,700,921,303



## 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
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
2019	37,264,529,833	30,700,921,303	27,435,046,235

**Graph 10: Funded Ratios**

	Funded Ratio (Actuarial Basis)	Funded Ratio (Market Value Basis)
2015	97.1%	92.0%
2016	95.2%	90.9%
2017	92.0%	93.4%
2018	90.0%	85.7%
2019	89.4%	91.9%

**Graph 11: Actuarially Determined Employer Contribution Rates**

Fiscal Year	General Employees and Firefighters	Law Enforcement Officers
2018	6.25%	7.84%
2019	7.40%	8.99%
2020	8.56%	10.22%
2021	10.24%	11.91%
2022*	11.27%	12.94%

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



## Appendix G: Data for Section 2 Graphs

**Graph 12: Projected Actuarially Determined Employer Contribution Rates**

	<b>Alternate #1 (0.0% 2020 Return)</b>	<b>Baseline Projection</b>	<b>Alternate #2 (14.0% 2020 Return)</b>
2020	8.56%	8.56%	8.56%
2021	10.24%	10.24%	10.24%
2022	11.27%	11.27%	11.27%
2023	11.54%	10.83%	10.12%
2024	11.84%	10.26%	8.67%
2025	12.56%	10.19%	7.82%
2026	12.46%	9.39%	6.31%
2027	13.01%	9.30%	6.00%
2028	12.83%	9.21%	6.00%
2029	12.66%	9.13%	6.00%
2030	11.44%	8.00%	6.00%
2031	10.58%	7.23%	6.00%
2032	9.06%	6.00%	6.00%
2033	8.02%	6.00%	6.00%
2034	7.44%	6.00%	6.00%
2035	7.15%	6.00%	6.00%
2036	6.79%	6.00%	6.00%
2037	6.13%	6.00%	6.00%

**Graph 13: Projected Funded Ratio**

	<b>Alternate #1 (0.0% 2020 Return)</b>	<b>Baseline Projection</b>	<b>Alternate #2 (14.0% 2020 Return)</b>
2019	89.36%	89.36%	89.36%
2020	89.51%	90.74%	91.97%
2021	89.69%	92.47%	95.25%
2022	89.23%	93.40%	97.57%
2023	90.14%	95.46%	100.78%
2024	90.12%	96.34%	102.55%
2025	91.28%	97.13%	102.99%
2026	92.50%	97.85%	103.24%
2027	93.78%	98.56%	103.46%
2028	95.05%	99.28%	103.68%
2029	96.22%	99.89%	103.90%
2030	97.21%	100.32%	104.10%
2031	97.99%	100.56%	104.31%
2032	98.54%	100.66%	104.52%
2033	98.94%	100.74%	104.74%
2034	99.26%	100.81%	104.97%



## 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, 2021 by all participating employers.

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2019 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		12.24%		0.14%		
	72265	Piedmont Triad Airport Authority		12.24%		0.14%		
	72593	Seagrove, Town		12.24%		0.14%		
	72657	Sparta, Town of		12.24%		0.14%		
90001	73190	Yancey County	11.43%	12.24%	0.08%	0.14%		
90002		Yancey Soil & Water Cons	11.35%					
90011	70330	Burnsville, Town of	11.44%	12.24%	0.09%	0.14%		
90092		Martin-Tyrrell-Washington Dist Health Dept	11.39%		0.04%			
90096		Albemarle Regional Health Services	11.42%		0.07%			
90098		Toe River Health District	11.41%		0.06%			
90099		Appalachian District Health Dept	11.38%		0.03%			
90101	70020	Alamance County	11.40%	12.24%	0.05%	0.14%		
90111	70320	Burlington, City of	11.42%	12.24%	0.07%	0.14%		
90114		Mebane, City of	21.85%	22.74%		0.14%	3,888,275	6/30/2025
90117		Alamance Municipal A.B.C. Board	11.55%		0.20%			
90121	71080	Graham, City of	11.35%	12.24%		0.14%		
90131	70880	Elon, Town of	11.39%	12.24%	0.04%	0.14%		
90141	71245	Town of Haw River	11.35%	12.24%		0.14%		
90151		Alamance, Village of	11.35%					
90161		Green Level, Town of	11.35%					
90201	70032	Alexander County	11.41%	12.24%	0.06%	0.14%		
90203		Alexander County Health Dept	11.39%		0.04%			
90205		Alexander County Public Library	11.43%		0.08%			
90206		Alexander County Dept of S S	11.40%		0.05%			
90211	72775	Taylorsville, Town of	11.35%	12.24%		0.14%		
90301	70035	Alleghany County	11.41%	12.24%	0.06%	0.14%		
90305		Northwestern Regional Library	11.46%		0.11%			
90307		Sparta A.B.C. Board	11.88%				2,305	12/31/2028
90401	70040	Anson County	11.43%	12.24%	0.08%	0.14%		
90411	72930	Wadesboro, Town of	11.43%	12.24%	0.08%	0.14%		
90413		Wadesboro Housing Authority	11.42%		0.07%			
90417		Wadesboro A.B.C. Board	11.50%		0.15%			
90421	71584	Lilesville, Town of	11.39%	12.24%	0.04%	0.14%		
90431	72345	Polkton, Town of	11.54%	12.24%	0.19%	0.14%		
90441		Peachland, Town of	11.35%					
90451		Ansonville, Town of	11.35%					
90461		Morven, Town of	11.35%					
90501	70065	Ashe County	11.41%	12.24%	0.06%	0.14%		
90507		West Jefferson A.B.C. Board	14.57%				25,778	6/30/2028





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			General Employees	Law Enforcement	General Employees	Law Enforcement		
90511	71447	Jefferson, Town of	11.35%	12.24%		0.14%		
90521	73025	West Jefferson, Town of	11.35%	12.24%		0.14%		
90601	70090	Avery County	11.44%	12.24%	0.09%	0.14%		
90602		Avery County Fire Commission	17.60%				267,130	6/30/2032
90605		Avery-Mitchell-Yancey Reg Library	11.46%		0.11%			
90611	70110	Banner Elk, Town of	11.35%	12.24%		0.14%		
90617		High Country A.B. C. Board	11.41%		0.06%			
90621	72032	Newland, Town of	11.35%	12.24%		0.14%		
90631	70146	Beech Mountain, Town of	11.35%	12.24%		0.14%		
90641		Elk Park, Town of	11.35%					
90651	72724	Sugar Mountain, Town of	18.49%	19.38%		0.14%	225,582	6/30/2024
90701	70130	Beaufort County	11.40%	12.24%	0.05%	0.14%		
90704		Beaufort County A.B.C. Board	11.57%		0.22%			
90705		B.H.M. Regional Library	11.49%		0.14%			
90709		Mideast Commission	11.40%		0.05%			
90711	72990	Washington, City of	11.41%	12.24%	0.06%	0.14%		
90721	70085	Aurora, Town of	11.51%	12.24%	0.16%	0.14%		
90731	70147	Belhaven, Town of	11.35%	12.24%		0.14%		
90741		Washington Park, Town of	11.35%					
90751	70525	Chocowinity, Town of	11.35%	12.24%		0.14%		
90801	70180	Bertie County	11.35%	12.24%		0.14%		
90804		Bertie County A.B.C. Board	11.49%		0.14%			
90805		Albemarle Regional Library	11.51%		0.16%			
90808		Bertie-Martin Regional Jail Comm	11.41%		0.06%			
90811		Aulander, Town of	11.43%		0.08%			
90812	73122	Windsor, Town of	11.35%	12.24%		0.14%		
90813		Colerain, Town of	11.58%		0.23%			
90861	71556	Lewiston Woodville, Town of	12.39%	13.28%		0.14%	2,955	6/30/2024
90901	70210	Bladen County	11.42%	12.24%	0.07%	0.14%		
90911	70850	Elizabethtown, Town of	11.43%	12.24%	0.08%	0.14%		
90917		Elizabeth A.B.C. Board	11.35%					
90918		South Eastern Economic Development Comm	11.37%		0.02%			
90921	73050	White Lake, Town of	11.46%	12.24%	0.11%	0.14%		
90931	70537	Clarkton, Town pf	11.41%	12.24%	0.06%	0.14%		
90941	70215	Bladenboro, Town of	11.35%	12.24%		0.14%		
91001	70280	Brunswick County	11.40%	12.24%	0.05%	0.14%		
91002	71540	Leland, Town of	11.35%	12.24%		0.14%		
91003		Brunswick Co Health Dept	11.39%		0.04%			
91004		Brunswick County A.B.C. Board	11.35%					
91006		Brunswick Co Dept of Social Services	11.39%		0.04%			



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

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			General Employees	Law Enforcement	General Employees	Law Enforcement		
91007		Calabash A.B.C. Board	11.35%					
91008		Cape Fear Council of Governments	11.35%					
91009		Brunswick County Tourism Authority	12.36%				7,207	6/30/2025
91010		Calabash, Town of	11.35%					
91011	72650	Southport, City of	11.44%	12.24%	0.09%	0.14%		
91012	72076	Northwest, City of	11.35%	12.24%		0.14%		
91013		Southeast Brunswick Sanitary District	17.26%		0.10%		208,717	9/30/2039
91014	71375	Holden Beach, Town of	11.35%	12.24%		0.14%		
91015		Cape Fear Regional Jetport	11.35%					
91017		Southport A.B.C. Board	11.62%		0.27%			
91020		Belville, Town of	11.99%				2,894	6/30/2023
91021	71630	Oak Island, Town of	11.43%	12.24%	0.08%	0.14%		
91024		Carolina Shores Town of	11.35%					
91026		Navassa, Town of	18.62%	19.51%		0.14%	254,499	6/30/2035
91027		Oak Island A.B.C. Bd	11.55%		0.20%			
91032		St James, Town of	11.35%					
91041	72723	Sunset Beach, Town of	11.39%	12.24%	0.04%	0.14%		
91042		Brunswick Regional Water and Sewer H2GO	11.35%					
91047		Sunset Beach A.B.C. Board	11.72%		0.37%			
91051	70405	Caswell Beach, Town of	11.35%	12.24%		0.14%		
91057		Shallotte A.B.C. Board	11.51%		0.16%			
91061	72135	Ocean Isle Beach, Town of	11.42%	12.24%	0.07%	0.14%		
91067		Ocean Isle Beach A.B.C.	11.47%		0.12%			
91071	70225	Boiling Spring Lakes, City of	11.42%	12.24%	0.07%	0.14%		
91077		Boiling Spring Lakes A.B.C. Board	11.35%					
91081	72597	Shallotte, Town of	11.35%	12.24%		0.14%		
91091	70107	Bald Head Island, Village of	11.41%	12.24%	0.06%	0.14%		
91101	70290	Buncombe County	11.39%	12.24%	0.04%	0.14%		
91102		Land-of-Sky Regional Council	11.41%		0.06%			
91104		Woodfin A.B.C. Commission	12.86%				6,654	6/30/2023
91107		Western NC Regional Air Quality	11.40%		0.05%			
91108		Metro Sewerage Dist of Buncombe County	11.40%		0.05%			
91109		Woodfin Sanitary Water and Sewer Dist	11.39%		0.04%			
91111	70190	Biltmore Forest, Town of	11.35%	12.24%		0.14%		
91120		West Buncombe Fire Dept	11.35%					
91121	70070	Asheville, City of	11.35%	12.24%		0.14%		
91127	70072	Asheville A.B.C. Board	11.44%	12.24%	0.09%	0.14%		
91128	70074	Asheville Regional Airport Authority	11.41%	12.24%	0.06%	0.14%		
91138		Skyland Vol Fire Dept	11.35%					
91141	73016	Weaverville, Town of	11.47%	12.24%	0.12%	0.14%		

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			General Employees	Law Enforcement	General Employees	Law Enforcement		
91147		Weaverville A.B.C. Board	11.35%				2,780	6/30/2021
91151	70200	Black Mountain, Town of	11.39%	12.24%	0.04%	0.14%		
91154		Black Mountain A.B.C. Board	11.53%		0.18%			
91161	71820	Montreat, Town of	11.42%	12.24%	0.07%	0.14%		
91171	73160	Woodfin, Town of	11.35%	12.24%		0.14%		
91201	70310	Burke County	11.41%	12.24%	0.06%	0.14%		
91202		Burke-Catawba Dist Confinment	11.35%					
91203		Burke Co Health Dept	11.41%		0.06%			
91206		Burke Co Dept of Social Services	11.40%		0.05%			
91208		Burke County Tourism Dev. Authority	11.35%					
91211	72883	Valdese, Town of	11.41%	12.24%	0.06%	0.14%		
91213		Valdese Housing Authority	11.35%					
91214		Rutherford College, Town of	11.35%					
91217		Morganton A.B.C. Board	11.62%		0.27%			
91221	70745	Drexel, Town of	11.39%	12.24%	0.04%	0.14%		
91231	71870	Morganton, City of	11.35%	12.24%		0.14%		
91233		Morganton Housing Authority	11.40%		0.05%			
91241	71065	Glen Alpine, Town of	11.44%	12.24%	0.09%	0.14%		
91251		Hildebran, Town of	11.35%					
91261		Connelly Springs, Town of	11.35%					
91301	70340	Cabarrus County	11.40%	12.24%	0.05%	0.14%	47,460	6/30/2027
91302		Water & Sewer Auth of Cabarrus County	11.39%		0.04%			
91306		Cabarrus Co Public Health Auth	11.38%		0.03%			
91308		Cabarrus County Tourism Authority	12.02%					
91311	70590	Concord, City of	11.39%	12.24%	0.04%	0.14%		
91317		Concord A.B.C. Board	11.47%		0.12%		13,041	6/30/2020
91321		Mount Pleasant, Town of	11.35%					
91331	71468	Kannapolis, City of	11.39%	12.24%	0.04%	0.14%		
91341		Midland, Town of	11.35%					
91401	70350	Caldwell County	11.40%	12.24%	0.05%	0.14%		
91411	71090	Granite Falls, Town of	11.41%	12.24%	0.06%	0.14%		
91414		Rhodhiss, Town of	11.35%					
91417		Granite Falls A.B.C. Board	11.56%		0.21%			
91421		Sawmills, Town of	11.35%					
91423		Lenoir Housing Authority	11.40%		0.05%			
91431	71395	Hudson, Town of	11.35%	12.24%		0.14%	39,354	6/30/2022
91441		Harrisburg, Town of	11.35%					
91451	71552	Lenoir, City of	11.50%	12.24%	0.15%	0.14%		
91457		Lenoir A.B.C. Board	20.95%					
91501	70357	Camden County	11.46%	12.24%	0.11%	0.14%		



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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2019 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
91504		Camden County A.B.C. Board	11.61%		0.26%			
91601	70380	Carteret County	11.43%	12.24%	0.08%	0.14%		
91604	70385	Carteret County A.B.C. Board	11.53%	12.24%	0.18%	0.14%		
91608		Western Carteret Interlocal Cooperation Agency	11.35%					
91611	71860	Morehead City, Town of	11.40%	12.24%	0.05%	0.14%		
91621	72035	Newport, Town of	11.35%	12.24%		0.14%		
91631	70145	Beaufort, Town of	11.41%	12.24%	0.06%	0.14%		
91633		Beaufort Housing Authority	11.35%					
91641	72290	Pine Knoll Shores, Town of	11.39%	12.24%	0.04%	0.14%		
91651	70890	Emerald Isle, Town of	11.35%	12.24%		0.14%		
91661	71405	Indian Beach, Town of	11.35%	12.24%		0.14%		
91671	70365	Cape Carteret, Town of	11.41%	12.24%	0.06%	0.14%		
91681	70080	Atlantic Beach, Town of	17.71%	18.47%	0.13%	0.14%	957,176	6/30/2025
91691		Cedar Point, Town of	11.35%					
91701	70415	Caswell County	11.44%	12.24%	0.09%	0.14%		
91704		Caswell County A.B.C. Board	11.63%		0.28%			
91706		Caswell Co Dept of Social Services	11.42%		0.07%			
91719		Yanceyville, Town of	11.38%		0.03%			
91801	70430	Catawba County	11.39%	12.24%	0.04%	0.14%		
91804		Catawba County A.B.C. Board	11.58%		0.23%			
91811	71330	Hickory, City of	11.40%	12.24%	0.05%	0.14%		
91812		Hickory Conover Tourism Dev Auth	11.35%					
91813		Hickory Public Housing Authority	11.39%		0.04%			
91818		Western Piedmont Council of Gvmts	11.35%					
91819		Western Piedmont Regional Transit Authority	11.60%		0.25%			
91821	70535	Claremont, City of	11.40%	12.24%	0.05%	0.14%		
91831	71700	Maiden, Town of	11.40%	12.24%	0.05%	0.14%		
91841	71640	Longview, Town of	11.40%	12.24%	0.05%	0.14%		
91851	70610	Conover, Town of	11.43%	12.24%	0.08%	0.14%		
91861	70270	Brookford, Town of	11.35%	12.24%		0.14%		
91871	72040	Newton, City of	11.41%	12.24%	0.06%	0.14%		
91881	70441	Catawba, Town of	11.35%	12.24%		0.14%		
91901	70490	Chatham County	11.40%	12.24%	0.05%	0.14%		
91903		Chatham Co Housing Auth	11.35%					
91904		Chatham County A.B.C. Board	11.55%		0.20%			
91908		Goldston-Gulf Sanitary District	11.35%					
91911	72625	Siler City, Town of	11.40%	12.24%	0.05%	0.14%		
91917		Siler City A.B.C. Board	11.43%		0.08%			
91921	72330	Pittsboro, Town of	11.41%	12.24%	0.06%	0.14%		
92001	70500	Cherokee County	11.45%	12.24%	0.10%	0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
92005		Nantahala Regional Library	11.48%		0.13%			
92011	71975	Murphy, Town of	11.44%	12.24%	0.09%	0.14%		
92017		Murphy A.B.C. Board	11.40%		0.05%			
92021	70036	Andrews, Town of	11.35%	12.24%		0.14%		
92101	70530	Chowan County	11.42%	12.24%	0.07%	0.14%		
92104		Chowan County A.B.C. Board	11.53%		0.18%			
92109		Albemarle Regional Planning & Development Comm	11.38%		0.03%			
92111	70817	Edenton, Town of	11.41%	12.24%	0.06%	0.14%		
92113		New Edenton Housing Auth	11.50%		0.15%			
92201	70538	Clay County	11.42%	12.24%	0.07%	0.14%		
92214		Clay County A.B.C. Board	11.35%					
92301	70550	Cleveland County	11.40%	12.24%	0.05%	0.14%		
92302		Cleveland County Water	11.35%					
92311	72610	Shelby, City of	11.41%	12.24%	0.06%	0.14%		
92317		Shelby A.B.C. Board	11.45%		0.10%			
92321	71490	Kings Mountain, City of	11.35%	12.24%		0.14%		
92327		Kings Mountain A.B.C. Board	11.59%		0.24%			
92331	70230	Boiling Springs, Town of	11.49%	12.24%	0.14%	0.14%		
92341		Lawndale, Town of	11.35%					
92351	71178	Grover, Town of	11.44%	12.24%	0.09%	0.14%	2,084	9/30/2020
92401	70580	Columbus County	11.44%	12.24%	0.09%	0.14%		
92403		Whiteville Housing Authority	11.35%					
92411	73060	Whiteville, City of	11.44%	12.24%	0.09%	0.14%		
92417		Whiteville A.B.C. Board	11.41%		0.06%			
92421		Brunswick, Town of	11.35%					
92427		Lake Waccamaw A.B.C. Board	11.60%		0.25%			
92431	70908	Fair Bluff, Town of	11.35%	12.24%		0.14%		
92441	70450	Chadbourn, Town of	11.35%	12.24%		0.14%		
92444		West Columbus A.B.C. Board	11.35%					
92451	72760	Tabor City, Town of	11.35%	12.24%		0.14%		
92461	71519	Lake Waccamaw, Town of	11.35%	12.24%		0.14%		
92501	70650	Craven County	11.41%	12.24%	0.06%	0.14%		
92502		First Craven Sanitary Dist	11.35%					
92504		Craven Co A.B.C. Bd	11.47%		0.12%			
92505		Craven-Pamlico-Carteret Regional Library	11.53%		0.18%			
92506		Coastal Carolina Regional Airport	11.65%		0.30%			
92507		Neuse River Council of Governments	11.37%		0.02%			
92508		Coastal Regional Solid Waste Mngt Auth	11.42%		0.07%			
92511	72020	New Bern, City of	11.41%	12.24%	0.06%	0.14%		
92513		Trillium Health Resources	11.39%		0.04%			



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
92521	72810	Trent Woods, Town of	11.43%	12.24%	0.08%	0.14%		
92531	71240	Havelock, City of	11.41%	12.24%	0.06%	0.14%		
92541	72435	River Bend, Town of	11.35%	12.24%		0.14%		
92551	72910	Vanceboro, Town of	11.35%	12.24%		0.14%		
92561		Bridgeton, Town of	11.35%	12.24%		0.14%		
92571		Cove City, Town of	11.35%					
92601	70680	Cumberland County	11.40%	12.24%	0.05%	0.14%		
92602		Westarea Volunteer Fire Dept	11.35%					
92604	70685	Cumberland Co A.B.C. Board	11.42%	12.24%	0.07%	0.14%		
92607		Mid-Carolina Council Of Governments	11.40%		0.05%			
92611	70940	Fayetteville, City of	11.41%	12.24%	0.06%	0.14%		
92613		Fayetteville Metropolitan Housing Auth	11.42%		0.07%			
92614		Fayetteville Public Works Commission	16.58%				5,299,667	6/30/2022
92621	72715	Stedman, Town of	11.35%	12.24%		0.14%		
92631	71390	Hope Mills, Town of	11.40%	12.24%	0.05%	0.14%		
92641		Wade, Town of	11.35%					
92651		Linden, Town of	11.35%					
92661	72676	Spring Lake, Town of	18.05%	18.86%	0.08%	0.14%	1,106,572	6/30/2024
92671		Falcon Town of	17.77%				15,165	6/30/2026
92681		Eastover, Town of	11.40%		0.05%			
92701	70700	Currituck County	11.41%	12.24%	0.06%	0.14%		
92704		Currituck Co A.B.C. Board	11.35%					
92801	70720	Dare County	11.41%	12.24%	0.06%	0.14%		
92802		Dare County Tourism Board	11.40%		0.05%			
92804	70721	Dare County A.B.C. Board	11.44%	12.24%	0.09%	0.14%		
92811	71980	Nags Head, Town of	11.40%	12.24%	0.05%	0.14%		
92821	71480	Kill Devil Hills, Town of	11.42%	12.24%	0.07%	0.14%		
92831	71705	Manteo, Town of	11.52%	12.24%	0.17%	0.14%		
92841	72645	Southern Shores, Town of	11.39%	12.24%	0.04%	0.14%		
92851	71507	Kitty Hawk, Town of	11.47%	12.24%	0.12%	0.14%		
92861	70755	Duck, Town of	11.35%	12.24%		0.14%		
92901	70723	Davidson County	11.42%	12.24%	0.07%	0.14%		
92911	72780	Thomasville, City of	11.43%	12.24%	0.08%	0.14%		
92913		Thomasville Housing Authority	27.78%				178,967	6/30/2024
92914		Thomasville A.B.C. Board	11.35%					
92917		Lexington A.B.C. Board	11.61%		0.26%			
92921	70730	Denton, Town of	11.35%	12.24%		0.14%		
92931	71570	Lexington, City of	11.41%	12.24%	0.06%	0.14%		
92941		Midway, Town of	13.64%				24,163	3/31/2038
93001	70725	Davie County	11.40%	12.24%	0.05%	0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
93009		Davie Soil and Water Conservation Dist	11.35%					
93011	71790	Mocksville, Town of	11.43%	12.24%	0.08%	0.14%		
93021		Bermuda Run, Town of	11.35%					
93028		Mocksville-Cooleemee A.B.C. Board	11.35%					
93031	70624	Cooleemee, Town of	17.55%	18.44%		0.14%	18,043	9/30/2027
93101	70770	Duplin County	11.44%	12.24%	0.09%	0.14%		
93103		Duplin County Tourism Development Authority	11.35%					
93108		Eastpointe Human Services	11.40%		0.05%			
93111	70160	Beulaville, Town of	11.41%	12.24%	0.06%	0.14%		
93121	71469	Kenansville, Town of	11.42%	12.24%	0.07%	0.14%		
93127		Kenansville A.B.C. Board	11.35%					
93131	72981	Warsaw, Town of	11.70%	12.24%	0.35%	0.14%		
93137		Warsaw A.B.C. Board	11.35%					
93141		Faison, Town of	11.44%		0.09%			
93151	72970	Wallace, Town of	11.35%	12.24%		0.14%		
93157		Wallace A.B.C. Bd	11.35%					
93161	72487	Rose Hill, Town of	11.46%	12.24%	0.11%	0.14%		
93171		Calypso, Town of	11.35%					
93181		Teachey, Town of	11.35%					
93191	71690	Magnolia, Town of	11.35%	12.24%		0.14%		
93201	70790	Durham County	11.39%	12.24%	0.04%	0.14%		
93204	70800	Durham County A.B.C. Board	11.45%	12.24%	0.10%	0.14%		
93209		Alliance Behavioral Healthcare	11.35%					
93211	70780	Durham, City of	11.35%	12.24%		0.14%		
93212		Durham Convention & Visitors Bureau	17.06%				439,425	6/30/2024
93219		Triangle J Council of Governments	11.39%		0.04%			
93301	70820	Edgecombe County	11.44%	12.24%	0.09%	0.14%		
93304		Edgecombe County A.B.C. Board	11.52%		0.17%			
93305		Edgecombe County Memorial Library	11.44%		0.09%			
93309		Upper Coastal Plain Council of Governments	11.41%		0.06%			
93311	72770	Tarboro, Town of	11.40%	12.24%	0.05%	0.14%		
93317		Tarboro Redevelopment Commission	11.41%		0.06%			
93321	72480	Rocky Mount, City of	11.40%	12.24%	0.05%	0.14%		
93323		Rocky Mount-Wilson Airport Authority	11.39%		0.04%			
93331	72296	Pinetops, Town of	11.44%	12.24%	0.09%	0.14%		
93333		Rocky Mt Housing Authority	11.35%					
93341		Macclesfield, Town of	11.40%		0.05%			
93351	72351	Princeville, Town of	11.35%	12.24%		0.14%		
93401	70951	Forsyth County	11.35%	12.24%		0.14%		
93406		Piedmont Triad Regional Council	11.49%		0.14%			





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			General Employees	Law Enforcement	General Employees	Law Enforcement		
93411	73130	Winston-Salem, City of	11.35%	12.24%		0.14%		
93413		Winston-Salem Housing Authority	11.42%		0.07%			
93417	73140	Triad Municipal A.B.C. Board	11.49%	12.24%	0.14%	0.14%		
93421	71470	Kernersville, Town of	11.35%	12.24%		0.14%		
93431		Rural Hall, Town of	11.40%		0.05%			
93441		Clemmons, Village of	11.35%					
93442		Clemmons Fire Department	11.35%					
93451		Lewisville, Town of	11.35%					
93461		Walkertown, Town of	11.35%					
93471		Tobaccoville, Village of	11.35%					
93501	70960	Franklin County	11.43%	12.24%	0.08%	0.14%		
93511	70970	Franklinton, Town of	11.35%	12.24%		0.14%		
93517		Franklinton A.B.C Board	11.61%		0.26%			
93521	71650	Louisburg, Town of	11.42%	12.24%	0.07%	0.14%		
93527		Louisburg A.B.C. Board	11.50%		0.15%			
93531	70295	Bunn, Town of	11.35%	12.24%		0.14%		
93537		Bunn A.B.C. Board	11.35%					
93541	73200	Youngsville, Town of	11.35%	12.24%		0.14%		
93601	71030	Gaston County	11.39%	12.24%	0.04%	0.14%		
93602	72682	Stanley, Town of	11.42%	12.24%	0.07%	0.14%		
93604		Cramerton A.B.C. Board	11.35%					
93609		Partners Behavioral Health Management	11.39%		0.04%			
93610		Mcadenville, Town of	11.39%		0.04%			
93611	71040	Gastonia, City of	11.35%	12.24%		0.14%		
93617		Gastonia A.B.C. Board	11.81%		0.46%			
93618		Gaston County Economic Dev Commission	21.42%				42,998	12/31/2022
93621	70150	Belmont, City of	11.35%	12.24%		0.14%		
93623		Belmont Housing Authority	11.35%					
93631	70640	Cramerton, Town of	11.55%	12.24%	0.20%	0.14%		
93641	70520	Cherryville, City of	11.46%	12.24%	0.11%	0.14%		
93647		Cherryville A.B.C. Board	24.56%				21,708	6/30/2023
93651	70705	Dallas, Town of	11.35%	12.24%		0.14%		
93661	71655	Lowell, City of	11.35%	12.24%		0.14%		
93671		Bessemer City, City of	11.53%	12.24%	0.18%	0.14%		
93681	72390	Ranlo, Town of	11.35%	12.24%		0.14%		
93691	71930	Mount Holly, City of	11.41%	12.24%	0.06%	0.14%		
93701	71050	Gates County	11.41%	12.24%	0.06%	0.14%		
93704		Gates County A.B.C. Board	11.59%		0.24%			
93801	71085	Graham County	11.35%	12.24%		0.14%		
93803		Graham Co Health Dept	11.39%		0.04%			





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			General Employees	Law Enforcement	General Employees	Law Enforcement		
93806	71110	Graham County Dept of S S	11.39%		0.04%			
93821		Robbinsville, Town of	11.45%		0.10%			
93901		Granville County	11.41%	12.24%	0.06%	0.14%		
93904		Granville Co A.B.C. Bd	11.57%		0.22%			
93906		Granville County Hospital	11.39%		0.04%			
93908	72200	Granville-Vance Public Health	11.39%		0.04%			
93910		South Granville Water and Sewer Authority	11.51%		0.16%			
93911		Oxford, City of	11.43%	12.24%	0.08%	0.14%		
93913		Oxford Housing Authority	11.42%		0.07%			
93914		Stovall, Town of	12.09%		0.74%			
93921	70660	Creedmoor, City of	11.35%	12.24%		0.14%		
93931	71130	Butner, Town of	11.48%	12.24%	0.13%	0.14%		
94001		Greene County	11.42%	12.24%	0.07%	0.14%		
94002		Maury Sanitary Land District	11.35%				130	3/31/2020
94004		Greene County A.B.C. Board	11.50%		0.15%			
94005		Neuse Regional Library-Greene County	11.65%		0.30%			
94011	71180	Hookerton, Town of	11.42%		0.07%			
94021		Snow Hill, Town of	11.35%	12.24%		0.14%		
94031		Walstonburg, Town of	18.63%				41,805	9/30/2033
94101		Guilford County	11.40%	12.24%	0.05%	0.14%		
94102		Guil-Rand Fire Department	11.35%					
94108	71140	Pinecroft-Sedgefield Fire Dist Inc	11.35%					
94109		Alamance Commuity Fire District	11.35%					
94111		Greensboro, City of	11.41%	12.24%	0.06%	0.14%		
94112		Piedmont Triad Reg Water Auth	11.40%	12.24%	0.05%	0.14%		
94117		Greensboro A.B.C. Bd	11.45%		0.10%			
94118	71340	Guilford Fire District #13 Inc	11.35%					
94121		High Point, City of	11.41%	12.24%	0.06%	0.14%		
94127		High Point A.B.C. Bd	11.50%		0.15%			
94131		Jamestown, Town of	11.40%		0.05%			
94151		Gibsonville, Town of	11.43%	12.24%	0.08%	0.14%		
94157	71060	Gibsonville A.B.C. Board	11.35%					
94161		Oak Ridge, Town of	11.35%					
94168		Colfax Volunteer Fire Department	11.35%					
94171		Summerfield, Town of	11.35%					
94172		Summerfield Fire District	11.38%		0.03%			
94201	71200	Halifax County	11.41%	12.24%	0.06%	0.14%		
94204		Halifax County A.B.C. Board	11.47%		0.12%			
94205		Halifax County Tourism Development Authority	11.46%		0.11%			
94209		Roanoke Rapids Sanitary District	11.41%		0.06%			



## 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, 2021 by all participating employers.

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2019 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
94211	70895	Enfield, Town of	11.50%	12.24%	0.15%	0.14%		
94221	72440	Roanoke Rapids, City of	11.43%	12.24%	0.08%	0.14%		
94231	73017	Weldon, Town of	11.50%	12.24%	0.15%	0.14%		
94241	72590	Scotland Neck, Town of	11.50%	12.24%	0.15%	0.14%		
94251		Hobgood, Town of	11.38%		0.03%			
94261	71615	Littleton, Town of	11.35%	12.24%		0.14%		
94301	71230	Harnett County	11.41%	12.24%	0.06%	0.14%		
94311	70760	Dunn, City of	11.42%	12.24%	0.07%	0.14%		
94313		Dunn Housing Authority	11.44%		0.09%			
94317		Dunn A.B.C. Board	11.36%		0.01%			
94321	71585	Lillington, Town of	11.39%	12.24%	0.04%	0.14%		
94331	70900	Erwin, Town of	11.45%	12.24%	0.10%	0.14%		
94341	70570	Coats, Town of	11.41%	12.24%	0.06%	0.14%		
94347		Angier A.B.C. Board	11.45%		0.10%			
94351	70038	Angier, Town of	11.35%	12.24%		0.14%		
94401	71250	Haywood County	11.41%	12.24%	0.06%	0.14%		
94403		Haywood County Tourism Development Authority	11.35%					
94408		Junaluska Sanitary District	11.41%		0.06%			
94411	73010	Waynesville, Town of	11.42%	12.24%	0.07%	0.14%		
94412		Waynesville A.B.C. Board	11.67%		0.32%			
94421	71685	Maggie Valley, Town of	11.35%	12.24%		0.14%		
94427		Maggie Valley A.B.C. Board	11.35%					
94428		Maggie Valley Sanitary Dist	11.35%					
94431	70362	Canton, Town of	11.42%	12.24%	0.07%	0.14%	61,913	6/30/2020
94437		Canton A.B.C. Board	16.23%				38,555	12/31/2027
94501	71275	Henderson County	11.40%	12.24%	0.05%	0.14%		
94511	71280	Hendersonville, City of	11.40%	12.24%	0.05%	0.14%		
94517		Hendersonville A.B.C. Bd	11.35%					
94521	71525	Laurel Park, Town of	11.41%	12.24%	0.06%	0.14%		
94527		Laurel Park A.B.C. Board	11.42%		0.07%			
94531		Flat Rock, Village of	11.35%					
94532		Blue Ridge Fire Department	11.39%		0.04%			
94541	70943	Fletcher, Town of	11.35%	12.24%		0.14%		
94547		Fletcher A.B.C. Board	11.35%					
94551		Mills River, Town of	11.44%		0.09%			
94601	71310	Hertford County	11.43%	12.24%	0.08%	0.14%		
94604		Hertford County A.B.C. Board	11.46%		0.11%			
94611	70007	Ahoskie, Town of	11.50%	12.24%	0.15%	0.14%		
94621	71970	Murfreesboro, Town of	11.35%	12.24%		0.14%		
94631		Winton, Town of	11.52%		0.17%			



## 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		12/31/2019 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
94641		Cofield, Town of	11.35%					
94701	71370	Hoke County	11.43%	12.24%	0.08%	0.14%		
94704		Hoke County A.B.C. Board	11.49%		0.14%			
94711	72355	Raeford, Town of	11.45%	12.24%	0.10%	0.14%		
94801	71400	Hyde County	11.42%	12.24%	0.07%	0.14%		
94804		Hyde County A.B.C. Board	11.35%					
94812		Ocracoke Sanitary Dist	11.50%		0.15%			
94901	71420	Iredell County	11.41%	12.24%	0.06%	0.14%		
94908		Greater Statesville Development Corp	11.35%					
94911	72700	Statesville, City of	11.41%	12.24%	0.06%	0.14%		
94917		Statesville A.B.C. Board	11.50%		0.15%			
94921	71850	Mooreville, City of	11.40%	12.24%	0.05%	0.14%		
94923		Mooreville Housing Authority	11.42%		0.07%			
94927		Mooreville A.B.C. Board	11.45%		0.10%			
94931	72815	Troutman, Town of	11.53%	12.24%	0.18%	0.14%		
94937		Troutman A.B.C. Board	11.35%					
94941		Mi Connection Communications System	11.35%					
94947		Valdese A.B.C. Board	11.35%					
95001	71430	Jackson County	11.42%	12.24%	0.07%	0.14%		
95002		Tuckaseegee Water Authority	11.43%		0.08%			
95005		Fontana Regional Library	11.46%		0.11%			
95008		Southwestern NC Planning & Econ Dev Comm	11.42%		0.07%			
95009		Vaya Health	11.40%		0.05%			
95010		Jackson County Tourism Development Authority	11.35%					
95011	72750	Sylva, Town of	11.40%	12.24%	0.05%	0.14%		
95017		Jackson County A.B.C. Board	11.43%		0.08%			
95101	71460	Johnston County	11.39%	12.24%	0.04%	0.14%		
95103		Benson Housing Authority	15.28%				157,609	12/31/2036
95104		Johnston County A.B.C. Board	11.50%		0.15%			
95105		Public Library of Johnston Co and Smithfield	11.39%		0.04%			
95106		Archer Lodge, Town of	12.06%		0.18%		2,956	6/30/2025
95110		Johnston Health Center	11.45%		0.10%			
95111	72630	Smithfield, Town of	11.41%	12.24%	0.06%	0.14%		
95113		Smithfield Housing Authority	22.03%				150,919	6/30/2023
95121	72594	Selma, Town of	11.42%	12.24%	0.07%	0.14%		
95122		Micro, Town of	11.35%	14.71%		0.14%	7,712	3/31/2036
95123		Selma Housing Authority	11.40%		0.05%			
95131	70540	Clayton, Town of	11.40%	12.24%	0.05%	0.14%		
95141	70170	Benson, Town of	11.40%	12.24%	0.05%	0.14%		
95151	70954	Four Oaks, Town of	11.35%	12.24%		0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
95161	72295	Pine Level, Town of	11.35%	12.24%		0.14%		
95171	71472	Kenly, Town of	11.35%	12.24%		0.14%		
95181	72349	Princeton, Town of	11.35%	12.24%		0.14%		
95191		Wilson's Mills, Town of	11.35%	12.24%		0.14%	19,160	6/30/2021
95201	71465	Jones County	11.40%	12.24%	0.05%	0.14%		
95204		Jones County A.B.C. Board	11.77%		0.42%			
95205		Neuse Regional Library-Jones County	11.67%		0.32%			
95211		Pollocksville, Town of	12.05%		0.70%			
95221	71745	Maysville, Town of	11.35%	12.24%		0.14%		
95301	71535	Lee County	11.44%	12.24%	0.09%	0.14%		
95311	72565	Sanford, City of	11.35%	12.24%		0.14%		
95317		Sanford A.B.C. Board	11.50%		0.15%			
95321	70265	Broadway, Town of	11.48%	12.24%	0.13%	0.14%		
95401	71550	Lenoir County	11.42%	12.24%	0.07%	0.14%		
95404		Lenoir County A.B.C. Board	11.44%	12.24%	0.09%	0.14%		
95405		Neuse Regional Library	11.39%		0.04%			
95411	71500	Kinston, City of	11.44%	12.24%	0.09%	0.14%		
95413		Kinston Housing Authority	11.42%		0.07%			
95415		Kinston-Lenoir Co Pub Library	11.46%		0.11%			
95421	72305	Pink Hill, Town of	11.40%	12.24%	0.05%	0.14%		
95431		Lagrange, Town of	11.39%		0.04%			
95501	71590	Lincoln County	11.42%	12.24%	0.07%	0.14%		
95504		Lincoln County A.B.C. Board	12.49%				7,209	6/30/2023
95511	71600	Lincolnton, City of	11.42%	12.24%	0.07%	0.14%		
95513		Lincolnton Housing Authority	11.46%		0.11%			
95517		Lincolnton A.B.C. Board	11.50%		0.15%			
95601	71680	Macon County	11.43%	12.24%	0.08%	0.14%		
95611	70955	Franklin, Town of	11.42%	12.24%	0.07%	0.14%		
95617		Highlands A.B.C. Board	11.66%		0.31%			
95621	71335	Highlands, Town of	11.35%	12.24%		0.14%		
95701	71684	Madison County	11.44%	12.24%	0.09%	0.14%		
95711	71718	Mars Hill, Town of	11.41%	12.24%	0.06%	0.14%		
95721	71711	Marshall, Town of	11.46%	12.24%	0.11%	0.14%		
95801	71730	Martin County	11.43%	12.24%	0.08%	0.14%		
95802		Martin Co Travel & Tourism Auth	11.37%		0.02%			
95804		Martin County A.B.C. Board	11.39%		0.04%			
95811	73080	Williamston, Town of	11.35%	12.24%		0.14%		
95813		Williamston Housing Authority	11.46%		0.11%			
95821		Oak City, Town of	11.35%					
95831		Hamilton, Town of	11.54%		0.19%			



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
95841		Jamesville, Town of	11.35%					
95851	72445	Robersonville, Town of	11.35%	12.24%		0.14%		
95853		Robersonville Authority	11.35%					
95901	71762	McDowell County	11.42%	12.24%	0.07%	0.14%		
95908		Pleasant Garden Fire Dept	11.35%					
95911	71710	Marion, Town of	11.43%	12.24%	0.08%	0.14%		
95917		Marion A.B.C. Board	11.35%					
95921	72140	Old Fort, Town of	11.35%	12.24%		0.14%		
96001	71770	Mecklenburg County	11.39%	12.24%	0.04%	0.14%		
96003		Charlotte Housing Authority	11.35%					
96004	71780	Mecklenburg County A.B.C. Board	11.45%	12.24%	0.10%	0.14%		
96005		Charlotte Mecklenburg Public Library	11.39%		0.04%			
96008		Mecklenburg Emer Med Svcs Agcy	11.37%		0.02%			
96009		Centralina Council Of Governments	11.35%					
96011	70480	Charlotte, City of	11.35%	12.24%		0.14%		
96012		Charlotte Regional Visitors Authority	11.35%					
96018		Charlotte Firemen's Ret Sys	11.35%					
96021	72300	Pineville, Town of	11.39%	12.24%	0.04%	0.14%		
96031	71775	Mint Hill, Town of	11.39%	12.24%	0.04%	0.14%		
96041	71397	Huntersville, Town of	11.35%	12.24%		0.14%		
96051	70625	Cornelius, Town of	11.35%	12.24%		0.14%		
96061	72679	Stallings, Town of	11.48%	12.24%	0.13%	0.14%		
96071	71740	Matthews, Town of	11.40%	12.24%	0.05%	0.14%		
96081	70724	Davidson, Town of	11.44%	12.24%	0.09%	0.14%		
96101	71788	Mitchell County	11.51%	12.24%	0.16%	0.14%		
96102		Mitchell Soil & Water Conservation Dist	11.35%					
96111	72678	Spruce Pine, Town of	11.46%	12.24%	0.11%	0.14%		
96121	70105	Bakersville, Town of	11.35%	12.24%		0.14%		
96201	71815	Montgomery County	11.43%	12.24%	0.08%	0.14%		
96204		Montgomery-Municipal A.B.C. Board	11.47%		0.12%			
96211	72685	Star, Town of	11.35%	12.24%		0.14%		
96221	72822	Troy, Town of	11.35%	12.24%		0.14%		
96231	70192	Biscoe, Town of	11.35%	12.24%		0.14%		
96241	70360	Candor, Town of	11.35%	12.24%		0.14%		
96251	71920	Mount Gilead, Town of	11.42%	12.24%	0.07%	0.14%		
96301	71830	Moore County	11.40%	12.24%	0.05%	0.14%		
96302	72776	Taylorstown, Town of	11.35%	12.24%		0.14%		
96304		Moore County A.B.C. Board	11.53%		0.18%			
96305		Moore County Tourism Development Authority	11.51%		0.16%			
96310		Moore County Airport Authority	11.48%		0.13%			



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
96311	72640	Southern Pines, Town of	11.40%	12.24%	0.05%	0.14%		
96312	70358	Cameron, Town of	11.35%	12.24%		0.14%		
96318		Sandhills Center	11.35%					
96321	72920	Vass, Town of	11.42%	12.24%	0.07%	0.14%		
96331	70005	Aberdeen, Town of	11.41%	12.24%	0.06%	0.14%		
96341	72443	Robbins, Town of	11.35%	12.24%		0.14%		
96351	72287	Pinehurst, Village of	11.41%	12.24%	0.06%	0.14%		
96361	72285	Pinebluff, Town of	11.54%	12.24%	0.19%	0.14%		
96371	73040	Whispering Pines, Village of	11.43%	12.24%	0.08%	0.14%		
96381	70953	Foxfire Village	11.44%	12.24%	0.09%	0.14%		
96391	70390	Carthage, Town of	11.35%	12.24%		0.14%		
96401	71990	Nash County	11.40%	12.24%	0.05%	0.14%		
96404	72000	Nash County A.B.C. Board	11.47%	12.24%	0.12%	0.14%		
96405		Braswell Memorial Library	11.35%				17,699	6/30/2021
96411	72675	Spring Hope, Town of	11.35%	12.24%		0.14%		
96421	71995	Nashville, Town of	11.42%	12.24%	0.07%	0.14%		
96431	71785	Middlesex, Town of	11.50%	12.24%	0.15%	0.14%		
96441	73045	Whitakers, Town of	11.35%	12.24%		0.14%		
96451	70104	Bailey, Town of	11.35%	12.24%		0.14%		
96461	72600	Sharpsburg, Town of	11.35%	12.24%		0.14%		
96501	72030	New Hanover County	11.40%	12.24%	0.05%	0.14%		
96502	72024	New Hanover Airport Auth	11.41%	12.24%	0.06%	0.14%		
96503		Wilmington Housing Authority	17.70%				699,479	6/30/2024
96504		New Hanover County A.B.C. Board	11.60%		0.25%			
96507		Cape Fear Public Utility Authority	11.35%					
96508		Lower Cape Fear Water & Sewer Auth	11.67%		0.32%			
96511	73165	Wrightsville Beach, Town of	11.41%	12.24%	0.06%	0.14%		
96512		Cape Fear Public Transportation Authority	11.35%					
96521	70375	Carolina Beach, Town of	11.35%	12.24%		0.14%		
96531	73090	Wilmington, City of	11.35%	12.24%		0.14%		
96541	71515	Kure Beach, Town of	11.51%	12.24%	0.16%	0.14%		
96601	72060	Northampton County	11.42%	12.24%	0.07%	0.14%		
96604		Northampton County A.B.C. Board	11.69%		0.34%			
96611	72432	Rich Square, Town of	11.35%	12.24%		0.14%		
96612		Choanoke Public Transportation Auth	11.35%					
96621	73162	Woodland, Town of	11.35%	12.24%		0.14%		
96631	71020	Garysburg, Town of	11.35%	12.24%		0.14%		
96641	70620	Conway, Town of	11.35%	12.24%		0.14%		
96651	71032	Gaston, Town of	11.35%	12.24%		0.14%		
96661	71435	Jackson, Town of	11.35%	12.24%		0.14%		



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			General Employees	Law Enforcement	General Employees	Law Enforcement		
96671		Severn, Town of	11.35%					
96681	72591	Seaboard, Town	16.06%	16.95%		0.14%	33,303	12/31/2025
96701	72150	Onslow County	11.40%	12.24%	0.05%	0.14%		
96704		Onslow County A.B.C. Board	11.46%		0.11%			
96708		Onslow Water & Sewer Authority	12.70%		0.13%		460,834	6/30/2027
96711	71440	Jacksonville, City of	11.41%	12.24%	0.06%	0.14%		
96721	72745	Swansboro, Town of	11.43%	12.24%	0.08%	0.14%		
96731	71380	Holly Ridge, Town of	11.40%	12.24%	0.05%	0.14%		
96733		Holly Ridge Housing Authority	11.35%					
96741	72420	Richlands, Town of	11.35%	12.24%		0.14%		
96751	72789	North Topsail Beach, Town of	11.53%	12.24%	0.18%	0.14%		
96801	72170	Orange County	11.40%	12.24%	0.05%	0.14%		
96804		Orange County A.B.C. Board	11.42%		0.07%			
96808		Orange Water and Sewer Authority	11.39%		0.04%			
96811	70470	Chapel Hill, Town of	11.41%	12.24%	0.06%	0.14%		
96821	70372	Carrboro, Town of	11.41%	12.24%	0.06%	0.14%		
96831	71360	Hillsborough, Town of	11.40%	12.24%	0.05%	0.14%		
96901	72210	Pamlico County	11.42%	12.24%	0.07%	0.14%		
96911		Bayboro, Town of	11.35%					
96912	72195	Oriental, Town of	11.35%	12.24%		0.14%		
96918		Bay River Metro Sewerage District	11.54%		0.19%			
97001	72220	Pasquotank County	11.43%	12.24%	0.08%	0.14%		
97002		Pasquotank-Camden Ambulance Service	11.39%		0.04%			
97004		Pasquotank Co A.B.C. Board	11.44%		0.09%			
97005		East Albemarle Regional Library	11.41%		0.06%			
97008		Albemarle District Jail Commission	11.35%					
97011	70840	Elizabeth City	11.41%	12.24%	0.06%	0.14%		
97012		Elizabeth City-Pasquotank Co Airport Auth	11.35%				7,385	6/30/2021
97013		Elizabeth City Pasquotank County TDA	13.62%				28,041	6/30/2033
97015		Pasquotank-Camden Library	11.45%		0.10%			
97018		Elizabeth City-Pasquotank Co Industrial Development	11.40%		0.05%			
97101	72235	Pender County	11.40%	12.24%	0.05%	0.14%		
97104		Pender County A.B.C. Board	11.47%		0.12%			
97111	70300	Burgaw, Town of	11.35%	12.24%		0.14%		
97121	72790	Topsail Beach, Town of	11.50%	12.24%	0.15%	0.14%		
97131	72725	Surf City, Town of	11.39%	12.24%	0.04%	0.14%		
97201	72245	Perquimans County	11.42%	12.24%	0.07%	0.14%		
97211	71300	Hertford, Town of	11.42%	12.24%	0.07%	0.14%		
97213		Hertford Housing Auth	11.35%					
97217		Hertford A.B.C. Board	11.67%		0.32%			





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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2019 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
97221	73124	Winfall, Town of	11.35%	12.24%		0.14%		
97301	72250	Person County	11.41%	12.24%	0.06%	0.14%		
97302		Roxboro Housing Authority	11.35%					
97304		Person Co A.B.C. Bd	11.59%		0.24%			
97311	72520	Roxboro, City of	11.43%	12.24%	0.08%	0.14%		
97401	72310	Pitt County	11.40%	12.24%	0.05%	0.14%		
97402		Pitt-Greenville Conv & Vistors	11.35%					
97404	72320	Pitt County A.B.C. Board	11.40%	12.24%	0.05%	0.14%		
97405		Sheppard Memorial Library	11.46%		0.11%			
97408		Contennea Metropolitan Sewerage Dist	11.42%		0.07%			
97411	71160	Greenville, City of	11.40%	12.24%	0.05%	0.14%		
97412		Greenville Utilities Commission	11.39%		0.04%			
97413		Greenville Housing Authority	11.41%		0.06%			
97421	70930	Farmville, Town of	11.40%	12.24%	0.05%	0.14%		
97423		Farmville Housing Authority	18.29%				91,269	6/30/2024
97431	71170	Grifton, Town of	11.47%	12.24%	0.12%	0.14%		
97441	70157	Bethel, Town of	11.45%	12.24%	0.10%	0.14%		
97451	73150	Winterville, Town of	11.40%	12.24%	0.05%	0.14%		
97461	70100	Ayden, Town of	11.35%	12.24%		0.14%		
97471		Grimesland, Town of	11.54%		0.19%			
97481	72626	Simpson, Village of	11.35%	12.24%		0.14%		
97501	72340	Polk County	11.43%	12.24%	0.08%	0.14%		
97511	72823	Tryon, Town of	11.46%	12.24%	0.11%	0.14%		
97521	70581	Columbus, Town of	11.35%	12.24%		0.14%		
97527		Columbus A.B.C. Board	11.35%					
97531	72560	Saluda, City of	11.38%	12.24%	0.03%	0.14%		
97601	72380	Randolph County	11.40%	12.24%	0.05%	0.14%		
97607		Asheboro A.B.C. Board	11.35%					
97611	70064	Asheboro, City of	11.42%	12.24%	0.07%	0.14%		
97613		Asheboro Housing Authority	11.49%		0.14%			
97621	72377	Randleman, City of	11.41%	12.24%	0.06%	0.14%		
97623		Randleman Housing Authority	11.43%		0.08%			
97627		Randleman A.B.C. Board	11.39%		0.04%			
97631	71582	Liberty, Town of	11.41%	12.24%	0.06%	0.14%		
97641	72375	Ramseur, Town of	11.35%	12.24%		0.14%		
97651	70063	Archdale, City of	11.44%	12.24%	0.09%	0.14%		
97661		Trinity, City of	11.35%					
97701	72430	Richmond County	11.41%	12.24%	0.06%	0.14%		
97705		Sandhill Regional Library	11.44%		0.09%			
97711	72460	Rockingham, City of	11.43%	12.24%	0.08%	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, 2021 by all participating employers.

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2019 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
97713		Rockingham Authority	11.41%		0.06%			
97717		Hamlet A.B.C. Board	11.42%		0.07%			
97721	71220	Hamlet, City of	11.43%	12.24%	0.08%	0.14%		
97727		Rockingham A.B.C. Board	11.47%		0.12%			
97731		Ellerbe, Town of	11.35%					
97801	72450	Robeson County	11.40%	12.24%	0.05%	0.14%		
97802		Lumber River Council of Governments	11.38%		0.03%			
97803		Robeson County Housing Authority	11.52%		0.17%			
97805		Robeson County Public Library	11.42%		0.07%			
97811	71670	Lumberton, City of	11.43%	12.24%	0.08%	0.14%		
97817		Lumberton A.B.C. Board	11.35%					
97818		Lumberton Airport Comm	11.35%					
97821	70910	Fairmont, Town of	11.52%	12.24%	0.17%	0.14%		
97823		Fairmont Housing Authority	11.41%		0.06%			
97831	72540	St Pauls, Town of	11.41%	12.24%	0.06%	0.14%		
97837		St Paul's Brd of Alcoholic CTL	11.35%					
97840	71750	Maxton, Town of	16.42%	17.21%	0.10%	0.14%	158,435	6/30/2023
97841		Parkton, Town of	13.40%				15,653	9/30/2035
97847		Maxton A.B.C. Board	11.53%		0.18%			
97851	72228	Pembroke, Town of	11.46%	12.24%	0.11%	0.14%		
97853		Pembroke Housing Authority	11.35%					
97861	72510	Rowland, Town of	11.60%	12.24%	0.25%	0.14%		
97871	72395	Red Springs, Town of	18.04%	18.83%	0.10%	0.14%	328,624	6/30/2022
97877		Red Springs A.B.C. Board	11.35%					
97901	72470	Rockingham County	11.40%	12.24%	0.05%	0.14%		
97911	72400	Reidsville, City of	11.44%	12.24%	0.09%	0.14%		
97913		New Reidsville Housing Auth	11.50%		0.15%			
97917		Reidsville A.B.C. Board	11.42%		0.07%			
97921	71755	Mayodan, Town of	11.50%	12.24%	0.15%	0.14%		
97931	72721	Stoneville, Town of	11.35%	12.24%		0.14%		
97941	71683	Madison, Town of	11.42%	12.24%	0.07%	0.14%		
97947		Madison A.B.C. Board	14.91%				12,955	12/31/2022
97948		Madison-Mayodan Recreation Comm	11.35%					
97951	70815	Eden, City of	11.35%	12.24%		0.14%		
97957		Eden A.B.C. Board	11.35%					
98001	72490	Rowan County	11.41%	12.24%	0.06%	0.14%		
98002		rowen Convention & Visitors Bureau	11.44%				370	6/30/2026
98003		Rowan Co Housing Authority	11.35%				38,516	6/30/2021
98004		Rowan County A.B.C. Board	11.53%		0.18%			
98008		Rowan Co Soil & Water Conv Dist	12.39%				1,567	6/30/2023



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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2019 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
98011	72550	Salisbury, City of	11.41%	12.24%	0.06%	0.14%	33,887	6/30/2020
98013		Salisbury Housing Authority	11.35%					
98021	70812	East Spencer, Town of	11.52%	12.24%	0.17%	0.14%		
98023		East Spencer Housing Authority	11.39%		0.04%			
98031	72665	Spencer, Town of	11.44%	12.24%	0.09%	0.14%		
98041	70522	China Grove, Town of	11.41%	12.24%	0.06%	0.14%	0	6/30/2020
98051	71522	Landis, Town of	11.35%	12.24%		0.14%		
98061	71105	Granite Quarry, Town of	11.38%	12.24%	0.03%	0.14%		
98071	72475	Rockwell, Town of	11.35%	12.24%		0.14%		
98081		Faith, Town of	11.35%					
98091	70552	Cleveland, Town of	11.40%	12.24%	0.05%	0.14%		
98101	72530	Rutherford County	11.41%	12.24%	0.06%	0.14%		
98102		Broad River Water Authority	11.40%		0.05%			
98103		Rutherford Polk McDowell Dist Brd of Health	11.40%		0.05%			
98107		Forest City A.B.C. Board 168	11.35%					
98109		Isothermal Planning and Dev Comm	11.43%		0.08%			
98111	70950	Forest City, Town of	11.41%	12.24%	0.06%	0.14%		
98113		Forest City Housing Authority	11.35%					
98121	72670	Spindale, Town of	11.44%	12.24%	0.09%	0.14%		
98131	71518	Lake Lure, Town of	11.35%	12.24%		0.14%		
98141	72535	Rutherfordton, Town of	11.43%	12.24%	0.08%	0.14%		
98147		Rutherfordton A.B.C. Board	11.35%					
98161		Ellenboro, Town of	11.35%					
98201	72563	Sampson County	11.40%	12.24%	0.05%	0.14%		
98205		J C Holiday Mem Library	11.39%		0.04%			
98211	70555	Clinton, City of	11.41%	12.24%	0.06%	0.14%		
98218		Clinton A.B.C. Board	11.41%		0.06%			
98221		Salemberg, Town of	11.39%		0.04%			
98231	72050	Newton Grove, Town of	11.39%	12.24%	0.04%	0.14%		
98237		Roseboro A.B.C. Board	11.35%					
98241	71000	Garland, Town of	11.42%	12.24%	0.07%	0.14%		
98251		Turkey, Town of	11.49%		0.14%			
98261		Roseboro, Town of	11.43%		0.08%			
98271		Autryville, Town of	11.38%		0.03%			
98301	72580	Scotland County	11.42%	12.24%	0.07%	0.14%		
98304		Scotland County A.B.C. Board	11.48%		0.13%		751,313	12/31/2026
98308		Laurinburg-Maxton Airport Commission	11.35%					
98311	71530	Laurinburg, City of	11.40%	12.24%	0.05%	0.14%		
98313		Laurinburg Housing Authority	18.13%		0.13%			
98321	72935	Wagram, Town of	11.42%	12.24%	0.07%	0.14%		

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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2019 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
98331		Gibson, Town of	12.94%					
98401	72683	Stanly County	11.42%	12.24%	0.07%	0.14%	4,966	3/31/2025
98404		Locust A.B.C. Board	11.35%					
98411	70030	Albemarle, City of	11.41%	12.24%	0.06%	0.14%		
98414	71786	Misenheimer, Village of	11.56%	12.24%	0.21%	0.14%		
98417		Albemarle A.B.C. Board	11.35%				3,727	6/30/2021
98421	72110	Norwood, Town of	11.52%	12.24%	0.17%	0.14%		
98427		Norwood A.B.C. Bd	11.35%					
98431	71620	Locust, City of	11.35%	12.24%		0.14%		
98441	72120	Oakboro, Town of	11.35%	12.24%		0.14%		
98451	70103	Badin, Town of	11.44%	12.24%	0.09%	0.14%		
98471		New London, Town of	11.35%					
98481	72680	Stanfield, Town of	11.35%	12.24%		0.14%		
98501	72720	Stokes County	11.42%	12.24%	0.07%	0.14%		
98511		Walnut Cove, Town of	11.42%		0.07%			
98517		Walnut Cove A.B.C. Board	11.35%					
98521	71487	King, City of	11.40%	12.24%	0.05%	0.14%		
98601	72730	Surry County	11.45%	12.24%	0.10%	0.14%		
98604		Yadkin Valley A.B.C. Board	11.35%					
98607		Pilot Mountain A.B.C. Board	11.35%					
98608		Yadkin Valley Sewer Authority	11.35%					
98611	72280	Pilot Mountain, Town of	11.45%	12.24%	0.10%	0.14%		
98621	70735	Dobson, Town of	11.43%	12.24%	0.08%	0.14%		
98627		Dobson A.B.C. Bd	11.35%					
98631	71910	Mount Airy, City of	11.51%	12.24%	0.16%	0.14%		
98637		Mount Airy Alcoholic Board of Control	11.48%		0.13%			
98641	70855	Elkin, Town of	11.43%	12.24%	0.08%	0.14%		
98701	72740	Swain County	11.43%	12.24%	0.08%	0.14%		
98711	70285	Bryson City, Town of	11.42%	12.24%	0.07%	0.14%		
98717		Bryson City A.B.C. Board	11.44%		0.09%			
98801	72800	Transylvania County	11.42%	12.24%	0.07%	0.14%		
98811	70260	Brevard, City of	11.42%	12.24%	0.07%	0.14%		
98817		Brevard A.B.C. Board	11.35%					
98901	72825	Tyrrell County	11.45%	12.24%	0.10%	0.14%		
98904		Tyrrell Co A.B.C. Board	11.42%		0.07%			
98911		Columbia, Town of	11.35%					
99001	72830	Union County	11.40%	12.24%	0.05%	0.14%		
99011	71800	Monroe, City of	11.41%	12.24%	0.06%	0.14%		
99013		Monroe Housing Authority	11.48%		0.13%			
99014		Indian Trail A.B.C. Board	13.28%		0.21%		37,338	6/30/2035



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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2019 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
99017		Monroe A.B.C. Board	11.46%		0.11%			
99021	71720	Marshville, Town of	11.43%	12.24%	0.08%	0.14%		
99022		Mineral Springs, Town of	16.05%				55,257	6/30/2034
99031	73125	Wingate, Town of	11.46%	12.24%	0.11%	0.14%		
99041	72995	Waxhaw, Town of	11.40%	12.24%	0.05%	0.14%		
99047		Waxhaw A.B.C. Board	11.35%					
99051		Indian Trail, Town of	11.40%		0.05%			
99061		Unionville, Town of	11.35%					
99071		Weddington, Town of	14.46%		0.10%		31,796	6/30/2027
99081		Marvin, Village of	11.35%					
99091		Wesley Chapel, Village of	11.35%					
99101	72890	Vance County	11.42%	12.24%	0.07%	0.14%		
99104		Vance County A.B.C. Bd	11.35%					
99109		Kerr-Tar Regional Council of Govts	11.40%		0.05%			
99110		Kerr Area Transportation Authority	11.35%					
99111	71270	Henderson, City of	11.43%	12.24%	0.08%	0.14%		
99201	72940	Wake County	11.39%	12.24%	0.04%	0.14%		
99202	71385	Holly Springs, Town of	11.39%	12.24%	0.04%	0.14%		
99203	72485	Rolesville, Town of	11.47%	12.24%	0.12%	0.14%		
99204	72950	Wake County A.B.C. Board	11.41%	12.24%	0.06%	0.14%		
99206	71882	Morrisville, Town of	11.39%	12.24%	0.04%	0.14%		
99207		Wake County Housing Authority	21.76%				1,103,712	6/30/2031
99208		Bayleaf Fire Department	11.35%					
99210		Electricities of NC	11.35%					
99211	72360	Raleigh, City of	11.35%	12.24%		0.14%		
99212		Durham Hwy Fire Protection Assoc	11.35%					
99213		Raleigh Housing Authority	11.42%		0.07%			
99218	72370	Raleigh-Durham Airport Authority	11.40%	12.24%	0.05%	0.14%		
99221	70400	Cary, Town of	11.39%	12.24%	0.04%	0.14%		
99222		Centennial Authority	11.38%		0.03%			
99231	73020	Wendell, Town of	11.40%	12.24%	0.05%	0.14%		
99241	73210	Zebulon, Town of	11.38%	12.24%	0.03%	0.14%		
99251	71010	Garner, Town of	11.39%	12.24%	0.04%	0.14%		
99252		Garner Fire Dept	11.37%		0.02%			
99261	70990	Fuquay-Varina, Town of	11.40%	12.24%	0.05%	0.14%		
99271	70050	Apex, Town of	11.39%	12.24%	0.04%	0.14%		
99281	72960	Wake Forest, Town of	11.44%	12.24%	0.09%	0.14%		
99291	71510	Knightdale, Town of	11.37%	12.24%	0.02%	0.14%		
99301	72980	Warren County	11.43%	12.24%	0.08%	0.14%		
99304		Warren County A.B.C. Board	11.35%					

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Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2019 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
99311	72055	Norlina, Town of	11.35%	12.24%		0.14%		
99321	72991	Warrenton, Town of	18.20%	19.09%		0.14%	562,919	6/30/2033
99401	72985	Washington County	11.44%	12.24%	0.09%	0.14%		
99404		Washington County A.B.C. Board	11.47%		0.12%			
99405		Pettigrew Regional Library	11.46%		0.11%			
99411	72335	Plymouth, Town of	11.47%	12.24%	0.12%	0.14%		
99413		Plymouth Housing Authority	11.44%		0.09%			
99421		Roper, Town of	11.35%					
99431		Creswell, Town of	11.39%		0.04%			
99501	72983	Watauga County	11.44%	12.24%	0.09%	0.14%		
99502		Region D Council of Governments	11.35%					
99508		Blowing Rock Tourism Development Authority	11.35%				2,566	6/30/2021
99509		Watauga County District Tourism Dev Auth	11.35%					
99511	70240	Boone, Town of	11.41%	12.24%	0.06%	0.14%		
99521	70220	Blowing Rock, Town of	11.39%	12.24%	0.04%	0.14%		
99527		Blowing Rock A.B.C. Board	11.35%					
99531	72596	Seven Devils, Town of	16.33%	17.22%		0.14%	181,831	6/30/2026
99601	72997	Wayne County	11.42%	12.24%	0.07%	0.14%		
99602		Fork Township Sanitary Dist	11.37%		0.02%			
99603		Eastern Carolina Reg'l Housing Auth	11.35%					
99604		Wayne County A.B.C. Board	11.49%		0.14%	0.14%		
99609		Southern Wayne Sanitary District	11.40%		0.05%			
99610		Eastern Wayne Sanitary Dist	11.50%		0.15%			
99611	71070	Goldsboro, City of	11.41%	12.24%	0.06%	0.14%		
99613		Goldsboro Housing Authority	11.41%		0.06%			
99621	71940	Mount Olive, Town of	11.35%	12.24%		0.14%		
99623		Mt Olive Housing Authority	11.35%					
99631	70980	Fremont, Town of	11.35%	12.24%		0.14%		
99651	72270	Pikeville, Town of	11.35%	12.24%		0.14%		
99661	72977	Walnut Creek, Village of	11.35%	12.24%		0.14%	11,639	6/30/2020
99701	73075	Wilkes County	11.40%	12.24%	0.05%	0.14%		
99705		Appalachian Regional Library	11.35%					
99711	72105	North Wilkesboro, Town of	11.46%	12.24%	0.11%	0.14%		
99717		North Wilkesboro A.B.C. Board	11.44%		0.09%			
99721	73072	Wilkesboro, Town of	11.41%	12.24%	0.06%	0.14%		
99727		Wilkesboro A.B.C. Board	11.35%				0	6/30/2020
99801	73110	Wilson County	11.40%	12.24%	0.05%	0.14%		
99802		Wilson County Tourism Development Auth	11.35%					
99804		Wilson County A.B.C. Board	11.44%		0.09%			
99811	73100	Wilson, City of	11.39%	12.24%	0.04%	0.14%		

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



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Employer Code	LEO Employer Code	Employer	<u>Total Rate**</u>		<u>Death Benefit Rate</u>		12/31/2019 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
99812		Wilson Economic Dev Council	11.35%					
99818		Wilson Cemetary Commission	11.35%					
99821	72684	Stantonsburg, Town of	11.35%	12.24%		0.14%		
99831	70195	Black Creek, Town of	11.35%	12.24%		0.14%		
99841		Lucama, Town of	11.41%		0.06%			
99851	70870	Elm City, Town of	11.35%	12.24%		0.14%		
99901	73170	Yadkin County	11.42%	12.24%	0.07%	0.14%		
99911	73180	Yadkinville, Town of	11.41%	12.24%	0.06%	0.14%		
99921	71467	Jonesville, Town of	11.56%	12.24%	0.21%	0.14%		
99931	70805	East Bend, Town of	11.45%	12.24%	0.10%	0.14%		
99941	70250	Boonville, Town of	11.35%	12.24%		0.14%		
99991		N C Assoc of Co Commissioners	11.39%		0.04%			
99999		N C League of Municipalities	11.39%		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, 2021 by the participating employers paying prior service liability rate at the valuation date.

Employer Code	LEO Employer Code	Employer	12/31/2019 Prior Service Liability	7/1/2021 Prior Service Rate	Original Date of Liquidation of Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
90114		Mebane, Town Of	3,888,275	10.50%	6/30/2033	6/30/2025
90307		Sparta A.B.C. Board	2,305	0.53%	12/31/2028	12/31/2028
90507		West Jefferson ABC Board	25,778	3.22%	6/30/2035	6/30/2028
90602		Avery County Fire Commission	267,130	6.25%	12/31/2038	6/30/2032
90651	72724	Sugar Mountain, Town Of	225,582	7.14%	3/31/2027	6/30/2024
90861	71556	Lewiston-Woodville, Town Of	2,955	1.04%	6/30/2024	6/30/2024
91009		Brunswick County Tourism Develop. Authority	7,207	1.01%	9/30/2031	6/30/2025
91013		Southeast Brunswick Sanitary District	208,717	5.81%	9/30/2039	9/30/2039
91020		Belville, Town Of	2,894	0.64%	6/30/2031	6/30/2023
91026		Town Of Navassa	254,499	7.27%	6/30/2035	6/30/2035
91104		Woodfin Abc Commission	6,654	1.51%	9/30/2033	6/30/2023
91147		Weaverville A.B.C. Board	2,780		9/30/2034	6/30/2021
91308		Cabarrus Co. Tourism Authority	47,460	0.67%	9/30/2032	6/30/2027
91321		Mount Pleasant, Town Of	13,041		12/31/2027	6/30/2020
91457		Lenoir A.B.C. Board	39,354	9.60%	3/31/2023	6/30/2022
91681	70080	Atlantic Beach, Town Of	957,176	6.23%	3/31/2028	6/30/2025
92351	71178	Grover, Town Of	2,084		9/30/2020	9/30/2020
92614		Fayetteville Public Works Commission	5,299,667	5.23%	3/31/2027	6/30/2022
92661	72676	Spring Lake, Town Of	1,106,572	6.62%	9/30/2024	6/30/2024
92671		Falcon, Town Of	15,165	6.42%	6/30/2026	6/30/2026
92913		Thomasville Housing Authority	178,967	16.43%	6/30/2027	6/30/2024
92941		Midway, Town Of	24,163	2.29%	3/31/2038	3/31/2038
93031	70624	Cooleemee, Town Of	18,043	6.20%	9/30/2027	9/30/2027
93212		Durham Convention and Visitors Bureau	439,425	5.71%	9/30/2028	6/30/2024
93618		Gaston Co. Economic Dev. Commission	42,998	10.07%	12/31/2022	12/31/2022





## 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, 2021 by the participating employers paying prior service liability rate at the valuation date.

Employer Code	LEO Employer Code	Employer	12/31/2019 Prior Service Liability	7/1/2021 Prior Service Rate	Original Date of Liquidation of Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
93647		Cherryville A.B.C. Board	21,708	13.21%	12/31/2023	6/30/2023
94002		Maury Sanitary Land District	130		3/31/2020	3/31/2020
94031		Walstonburg, Town Of	41,805	7.28%	9/30/2033	9/30/2033
94431	70362	Canton, Town Of	61,913		6/30/2020	6/30/2020
94437		Canton A.B.C. Board	38,555	4.88%	12/31/2027	12/31/2027
95103		Benson Housing Authority	157,609	3.93%	12/31/2036	12/31/2036
95106		Archer Lodge, Town Of	2,956	0.53%	9/30/2037	6/30/2025
95113		Smithfield Housing Authority	150,919	10.68%	6/30/2023	6/30/2023
95122		Micro, Town Of	7,712	2.47%	3/31/2036	3/31/2036
95191		Wilson's Mills, Town Of	19,160		3/31/2032	6/30/2021
95504		Lincoln County A.B.C. Board	7,209	1.14%	12/31/2028	6/30/2023
96405		Braswell Memorial Library	17,699		6/30/2026	6/30/2021
96503		Wilmington Housing Authority	699,479	6.35%	6/30/2024	6/30/2024
96681	72591	Seaboard, Town Of	33,303	4.71%	12/31/2025	12/31/2025
96708		Onslow Water & Sewage Authority	460,834	1.22%	12/31/2028	6/30/2027
97012		Elizabeth-Pasquotank Co Airport Authority	7,385		9/30/2024	6/30/2021
97013		Elizabeth City-Pasquotank Co. Tourism Dev. Auth.	28,041	2.27%	6/30/2033	6/30/2033
97423		Farmville Housing Authority	91,269	6.94%	3/31/2028	6/30/2024
97840	71750	Maxton, Town Of	158,435	4.97%	6/30/2027	6/30/2023
97841		Town of Parkton	15,653	2.05%	9/30/2035	9/30/2035
97871	72395	Red Springs, Town Of	328,624	6.59%	6/30/2023	6/30/2022
97947		Madison A.B.C. Board	12,955	3.56%	12/31/2022	12/31/2022
98002		Rowan County Tourism Development Board	370	0.09%	6/30/2026	6/30/2026
98003		Rowan County Housing Authority	38,516		12/31/2021	6/30/2021
98008		Rowan Soil and Water Conservation District	1,567	1.04%	6/30/2023	6/30/2023





## 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, 2021 by the participating employers paying prior service liability rate at the valuation date.

Employer Code	LEO Employer Code	Employer	12/31/2019 Prior Service Liability	7/1/2021 Prior Service Rate	Original Date of Liquidation of Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
98013		Salisbury Housing Authority	33,887		12/31/2022	6/30/2020
98102		Broad River Water Authority	0		3/31/2025	6/30/2020
98313		Laurinburg Housing Authority	751,313	6.65%	12/31/2026	12/31/2026
98331	71051	Gibson, Town Of	4,966	1.59%	3/31/2025	3/31/2025
98417		Albemarle A.B.C. Board	3,727		12/31/2023	6/30/2021
99014		Indian Trail Abc Board	37,338	1.72%	6/30/2039	6/30/2035
99022		Town Of Mineral Springs	55,257	4.70%	9/30/2034	6/30/2034
99071		Weddington, Town Of	31,796	3.01%	3/31/2029	6/30/2027
99207		Wake County Housing Authority	1,103,712	10.41%	12/31/2032	6/30/2031
99321	72991	Warrenton, Town Of	562,919	6.85%	9/30/2037	6/30/2033
99508		Blowing Rock Tourism Development Authority	2,566		3/31/2029	6/30/2021
99531	72596	Seven Devils, Town Of	181,831	4.98%	6/30/2026	6/30/2026
99661	72977	Walnut Creek, Village Of	11,639		3/31/2026	6/30/2020
99727		Wilkesboro A.B.C. Board	0		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
Alamance Community 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
Avery County Fire Commission	90602	70090

Employer	Employer Code	LEO Employer Code
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
Blue Ridge Fire Department	94532	70220



## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
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	
Calabash A.B.C. Board	91007	
Calabash, Town of	91010	
Albemarle, City of	98411	70030
Caldwell County	91401	70350

Employer	Employer Code	LEO Employer Code
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	
Chadbourne, 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
Chatham County A.B.C. Board	91904	
Cherokee County	92001	70500



## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
Cherryville 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 of	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
Contentnea Metropolitan Sewerage Dist	97408	
Conway, Town of	96641	70620
Cooleemee, Town of	93031	70624
Cornelius, Town of	96051	70625
Cove City, Town of	92571	
Cramerton A.B.C. Board	93604	
Cramerton, Town of	93631	70640

Employer	Employer Code	LEO Employer Code
Craven-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 Tourism 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	
Eastern Wayne Sanitary Dist	99610	70505
Eastover, Town of	92681	



## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
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
Fontana Regional Library	95005	
Forest City A.B.C. Board 168	98107	

Employer	Employer Code	LEO Employer Code
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
Franklinton 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	
Granville County	93901	71110
Granville County Hospital	93906	



## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
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	
Hickory, City of	91811	71330
High Country A.B. C. Board	90617	

Employer	Employer Code	LEO Employer Code
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, 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 County Tourism Development Authority	95010	
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	
Jonesville, Town of	99921	71467
Junaluska Sanitary District	94408	



## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
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	
Lexington A.B.C. Board	92917	
Lexington, City of	92931	71570

Employer	Employer Code	LEO Employer Code
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
Marshall, Town of	95721	71711
Marshville, Town of	99021	71720
Martin Co Travel & Tourism Auth	95802	





## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
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-Coolesme 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
Monroe, City of	99011	71800
Moore County	96301	71830
Moore County A.B.C. Board	96304	71840

Employer	Employer Code	LEO Employer Code
Moore County Airport Authority	96310	
Moore County Tourism Development Authority	96305	
Mooreville A.B.C. Board	94927	
Mooreville Housing Authority	94923	
Mooreville, 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	
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
New Hanover County	96501	72030
New Hanover County A.B.C. Board	96504	
New London, Town of	98471	
New Reidsville Housing Auth	97913	





## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
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	
Pasquotank County	97001	72220
Pasquotank-Camden Ambulance Service	97002	
Pasquotank-Camden Library	97015	
Peachland, Town of	90441	

Employer	Employer Code	LEO Employer Code
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
Raleigh Housing Authority	99213	
Raleigh, City of	99211	72360
Raleigh-Durham Airport Authority	99218	72370
Ramseur, Town of	97641	72375



## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
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	
Roseboro, Town of	98261	72486
Rowan Co Housing Authority	98003	
Rowan Co Soil & Water Conv Dist	98008	
Rowan County	98001	72490

Employer	Employer Code	LEO Employer Code
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	
Siler City A.B.C. Board	91917	
Siler City, Town of	91911	72625
Simpson, Village of	97481	72626
Skyland Vol Fire Dept	91138	



## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
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	
Summerfield, Town of	94171	
Sunset Beach A.B.C. Board	91047	
Sunset Beach, Town of	91041	72723
Surf City, Town of	97131	72725

Employer	Employer Code	LEO Employer Code
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	
Valdese, Town of	91211	72883
Vance County	99101	72890
Vance County A.B.C. Bd	99104	
Vanceboro, Town of	92551	72910



## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code
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
Weaverville A.B.C. Board	91147	
Weaverville, Town of	91141	73016
Weddington, Town of	99071	
Weldon, Town of	94231	73017

Employer	Employer Code	LEO Employer Code
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
Winterville, Town of	97451	73150
Winton, Town of	94631	73155
Woodfin A.B.C. Commission	91104	
Woodfin Sanitary Water and Sewer Dist	91109	

## Appendix J: Participating Employers



Employer	Employer Code	LEO Employer Code
Woodfin, Town of	91171	73160
Woodland, Town of	96621	73162
Wrightsville Beach, Town of	96511	73165
Yadkin County	99901	73170
Yadkin Valley A.B.C. Board	98604	
Yadkin Valley Sewer Authority	98608	

Employer	Employer Code	LEO Employer Code
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