



# North Carolina Local Governmental Employees' Retirement System

Principal Results of Actuarial Valuation as of December 31, 2021

October 27, 2022, Board of Trustees Meeting

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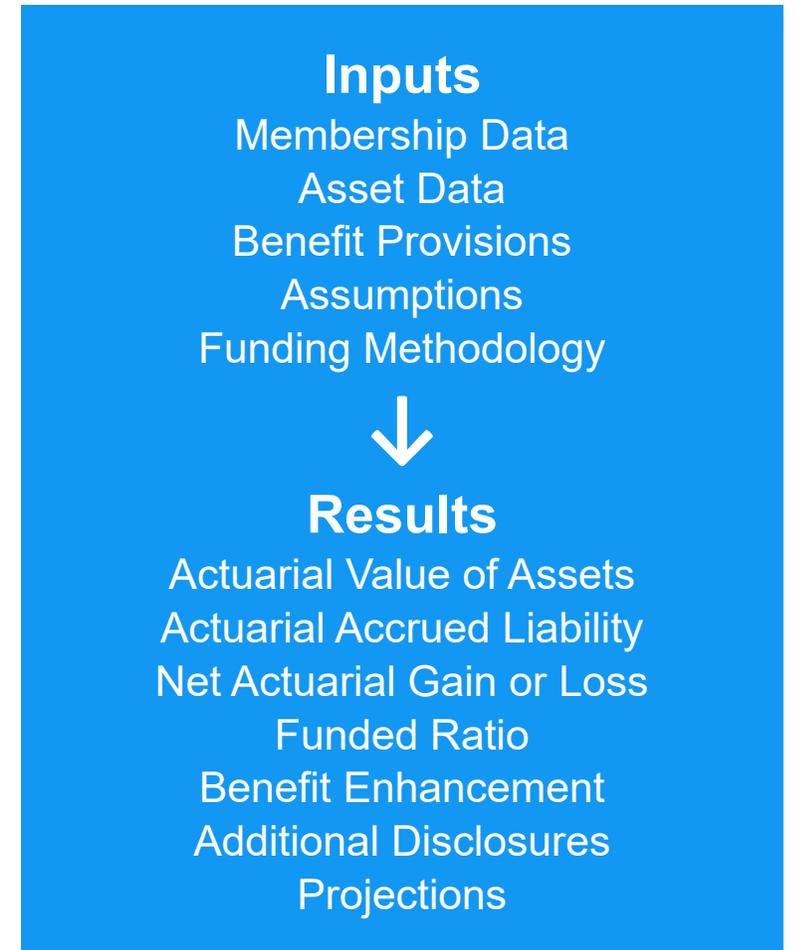
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# Purpose of the annual actuarial valuation

- 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.



# Valuation input

## 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

Projection

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

Number as of	12/31/2021	12/31/2020
Active members	132,235	132,397
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	93,473	84,914
Retired members and survivors of deceased members currently receiving benefits	<u>79,318</u>	<u>77,556</u>
Total	305,026	294,867

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

The number of active members decreased by 0.1% from the previous valuation date.

The decrease in the active population results in less benefits accruing, but also less contributions supporting the system.

The number of retired members and survivors of deceased members currently receiving benefits increased by 2.3% from the previous valuation.

The increase in retiree population is consistent with expectations.

# Valuation input

## Membership data: actives

### 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

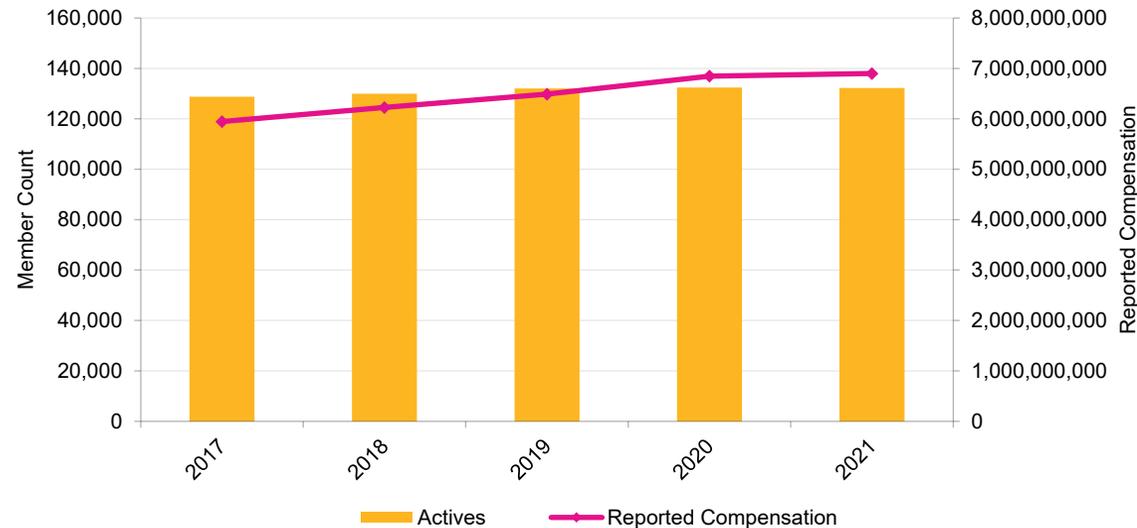
Employer Contributions

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.



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

Reported compensation has increased by 0.8% over the past year.

Total covered payroll\* is expected to increase by approximately 3.25% annually in the future.

Payroll that is increasing more slowly than we assume results in less benefits accruing than we anticipate, but also less contributions supporting the system.

\*Total covered payroll is retirement-eligible compensation paid to all members. It does not imply a 3.25% pay increase to all members.

# Valuation input

## Membership data: retirees and survivors receiving benefits

### 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

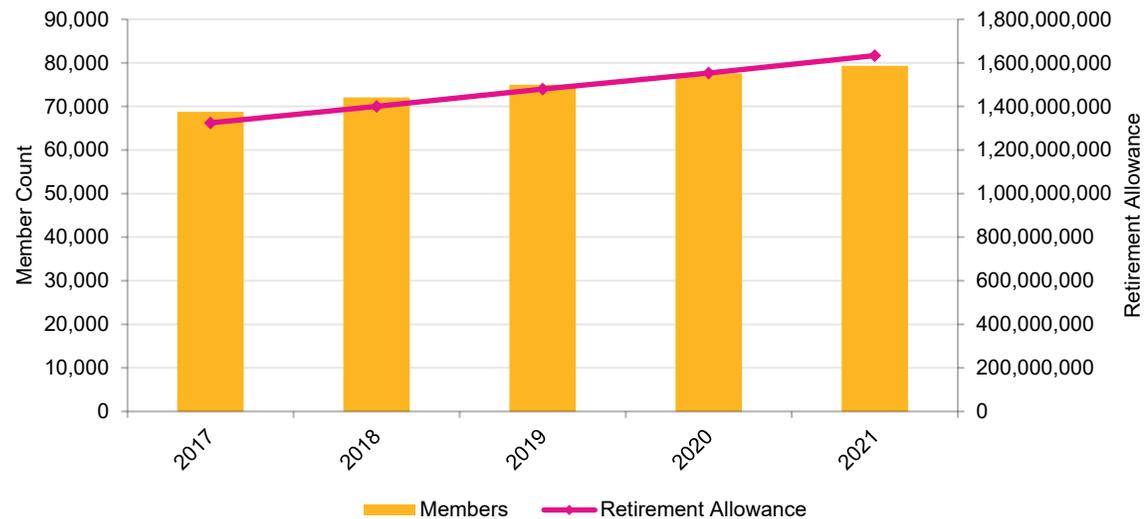
Employer Contributions

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.



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

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.

# Valuation input

## Asset data: market value

### 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	12/31/2021	12/31/2020
Beginning of Year Market Value of Assets	\$ 30,905,570,910	\$ 28,224,698,297
Employer Contributions	813,119,212	706,191,024
Employee Contributions	461,053,728	442,996,553
Court Costs	2,360,217	1,988,562
Benefit Payments Other Than Refunds	(1,609,920,723)	(1,531,981,296)
Refunds	(72,899,062)	(54,037,982)
Administrative Expenses	(5,399,241)	(5,112,894)
Investment Income	2,966,041,108	3,120,828,646
Net Increase/(Decrease)	2,554,355,239	2,680,872,613
End of Year Market Value of Assets	\$ 33,459,926,149	\$ 30,905,570,910
Estimated Net Investment Return on Market Value	9.66%	11.14%

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

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

Incoming contributions currently cover over 75% 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.

# Valuation input

## Asset data: historical market value and returns

### 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

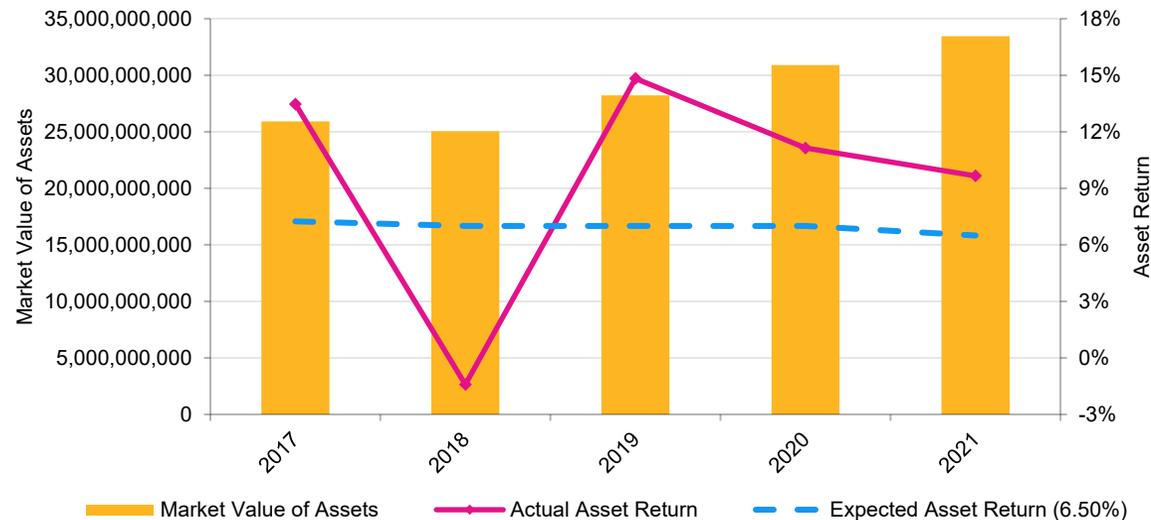
Employer Contributions

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.



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

The investment return for the market value of assets for 2021 was 9.66%, well above the expected return of 6.50%.

The return on the actuarial value of assets, which is used to determine the contribution rates, also exceeded the 6.50% expected return at 9.14%.

This resulted in a decrease in the Unfunded Actuarial Accrued Liability (UAAL) of \$770 million.

Market value returns have exceeded expectations four times in the last five years.

# Valuation input

## Asset data: asset allocation

**Inputs**

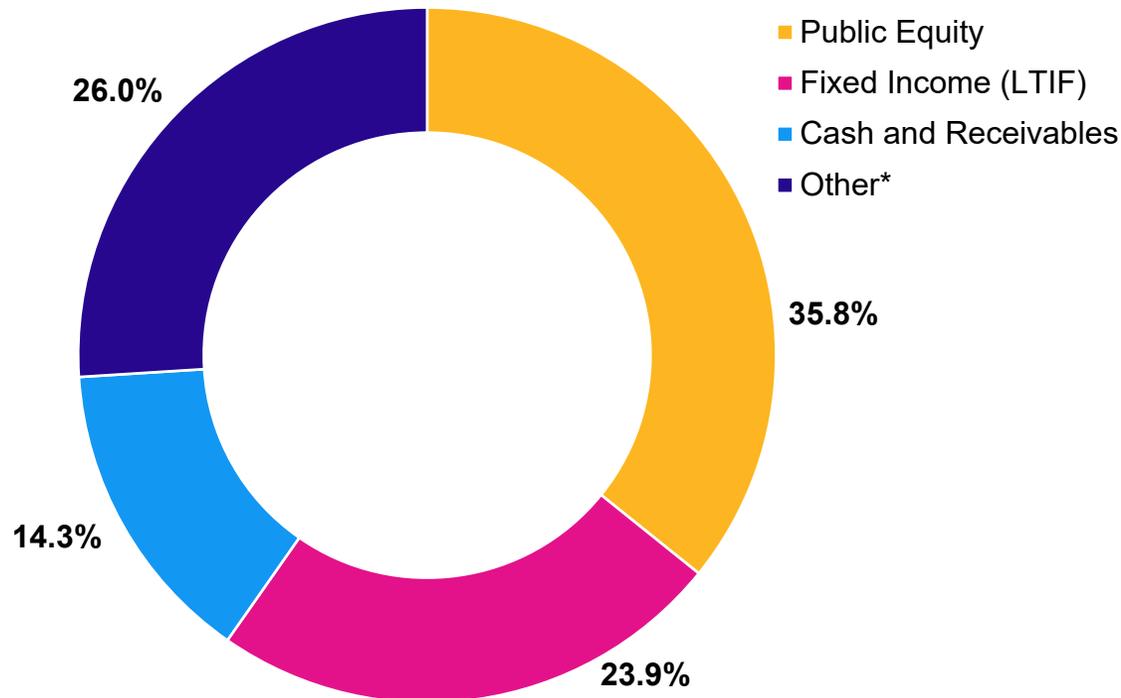
- Membership Data
- Asset Data**
- Benefit Provisions
- Assumptions
- Funding Methodology

↓

**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, 2021 by asset category.



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

Based on historical market returns, the current asset allocation, the current investment policy, and the expectation of future asset returns, as reviewed in the recent experience study, the 6.50% discount rate used in this valuation is reasonable and appropriate.

\* Other includes real estate, alternatives, inflation, and credit.

# Valuation input

## 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, Article 3.

- Since the prior valuation, the legislature enacted a one-time supplement for LGERS payees equal to 2% of the member's annual retirement allowance for the fiscal year ending June 30, 2023, payable in October 2022.
- The one-time supplements do not change the ongoing monthly benefits, and absent additional action by governing authorities, the payments will not recur in future years.
- No other significant changes in benefit provisions from the prior year's valuation.

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

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.

# Valuation input

## 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 – 6.50% per year
  - Salary increase (individual, varies by service and job type)
  - Inflation – 2.50%
  - Real wage growth – 0.75%

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

The assumptions used for the December 31, 2021, actuarial valuation are based on the experience study prepared as of December 31, 2019, and adopted by the Board of Trustees on January 28, 2021.

No assumption changes have been made since the prior valuation.

# Valuation input

## Funding methodology: actuarial cost method

### 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

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

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/docs/default-source/papers/ccappc\\_actuarial-funding-policies-and-practices-for-public-pension-plans.pdf](https://www.ccactuaries.org/docs/default-source/papers/ccappc_actuarial-funding-policies-and-practices-for-public-pension-plans.pdf) - denotes Entry Age Normal as a model practice for cost methods.

# Valuation input

## Funding methodology: asset valuation method

### 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

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

Page 20 of the following [https://www.ccactuaries.org/docs/default-source/papers/cca-ppc\\_actuarial-funding-policies-and-practices-for-public-pension-plans.pdf](https://www.ccactuaries.org/docs/default-source/papers/cca-ppc_actuarial-funding-policies-and-practices-for-public-pension-plans.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.

# Valuation input

## Funding methodology: amortization method

### 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.

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

Page 26 of the following [https://www.ccactuaries.org/docs/default-source/papers/cca-ppc\\_actuarial-funding-policies-and-practices-for-public-pension-plans.pdf](https://www.ccactuaries.org/docs/default-source/papers/cca-ppc_actuarial-funding-policies-and-practices-for-public-pension-plans.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 21
- Level dollar payments instead of payments designed to increase, which is more typical in the Public Sector

# Valuation results

## Actuarial value of assets: calculation

### 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	12/31/2021
Beginning of Year Actuarial Value of Assets	\$ 29,387,655,709
Beginning of Year Market Value of Assets	\$ 30,905,570,910
Total Contributions and Court Costs	1,276,533,157
Benefit Payments, Refunds and Administrative Expenses	(1,688,219,026)
Net Cash Flow	(411,685,869)
Expected Investment Return	1,995,692,948
Expected End of Year Market Value of Assets	32,489,577,989
End of Year Market Value of Assets	33,459,926,149
Excess of Market Value over Expected Market Value of Assets	970,348,160
80% of 2021 Asset Gain/(Loss)	776,278,528
60% of 2020 Asset Gain/(Loss)	696,142,675
40% of 2019 Asset Gain/(Loss)	776,171,352
20% of 2018 Asset Gain/(Loss)	(431,874,582)
Total Deferred Asset Gain/(Loss)	1,816,717,973
Preliminary End of Year Actuarial Value of Assets	31,643,208,176
Final End of Year Actuarial Value of Assets (not less than 80% and not greater than 120% of Market Value)	31,643,208,176
Estimated Net Investment Return on Actuarial Value	9.14%

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

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.

Higher than expected market returns in 2019, 2020 and 2021, resulted in an actuarial value of asset return for calendar year 2021 of 9.14% and a recognized actuarial asset gain of \$770 million during 2021.

Even after recognizing this gain, the assets at actuarial value were \$3.2 billion less than the actuarial accrued liability as of December 31, 2021.

# Valuation results

## Actuarial value of assets: comparison to market values

### Inputs

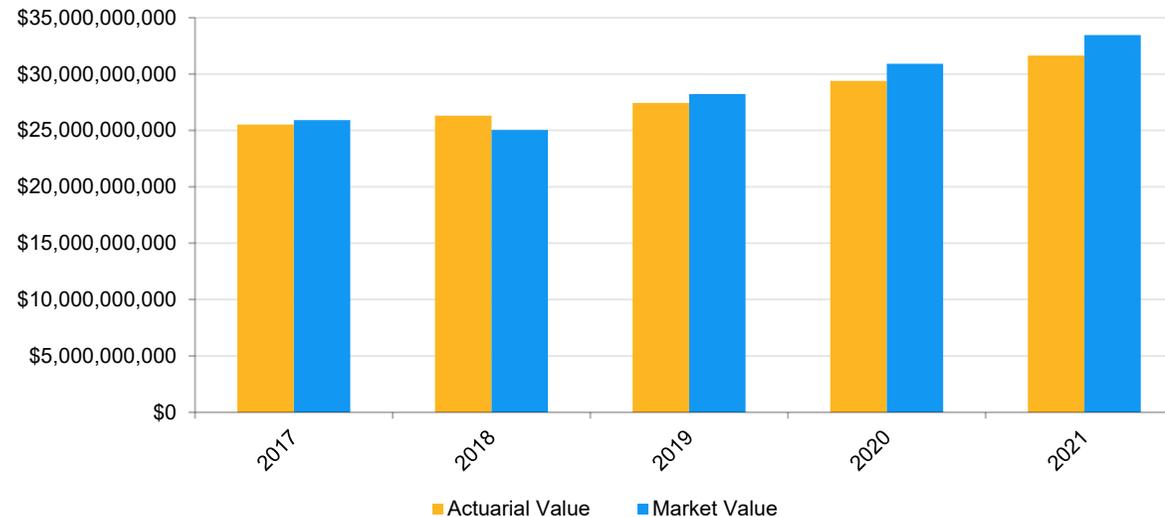
Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



### 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.



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

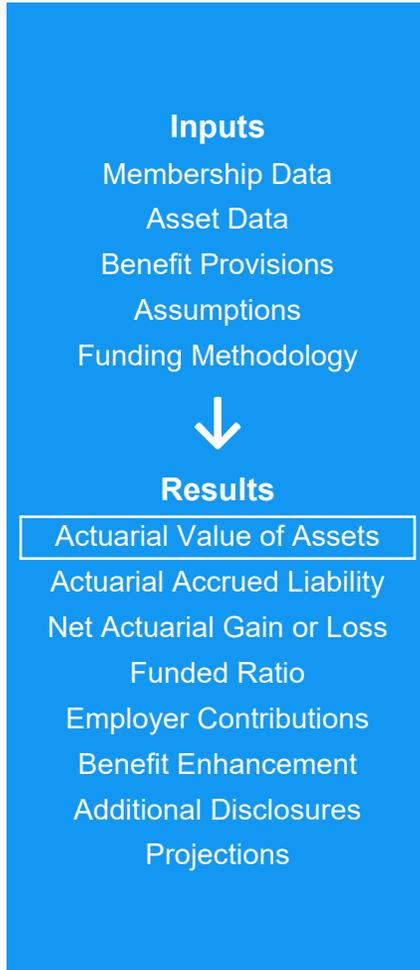
The market value of assets is higher than the actuarial value of assets, which is used to determine employer contributions.

This indicates that overall, there are unrecognized asset gains to be recognized in future valuations.

In fact, if the investments earn the expected 6.50% per year over the next four years, a gain will be recognized each of those years.

# Valuation results

## Actuarial value of assets: comparison to market returns



Calendar Year	Expected Asset Return	Actuarial Value of Asset Return	Market Value of Asset Return	20 Year Average Market Return
2002	7.25%	6.13%	-4.44%	N/A
2003	7.25%	8.52%	18.63%	N/A
2004	7.25%	9.00%	10.77%	N/A
2005	7.25%	8.58%	7.00%	N/A
2006	7.25%	9.19%	11.41%	N/A
2007	7.25%	9.03%	8.36%	N/A
2008	7.25%	2.97%	-19.47%	N/A
2009	7.25%	4.92%	14.94%	N/A
2010	7.25%	6.10%	11.53%	N/A
2011	7.25%	5.33%	2.14%	N/A
2012	7.25%	6.51%	11.79%	N/A
2013	7.25%	7.61%	12.21%	N/A
2014	7.25%	7.32%	6.19%	N/A
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%
2020	7.00%	8.79%	11.14%	6.32%
2021	6.50%	9.14%	9.66%	6.91%
20-Year Average	7.17%	6.90%	6.91%	N/A
20-Year Range	0.75%	6.22%	38.10%	N/A

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

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 6.90% compares with an average market return of 6.91%.

The range of returns on market value of assets is markedly more volatile, 38.10% versus 6.22%.

Using the actuarial value of assets versus market value results in much lower employer contribution volatility, while ensuring that the actuarial needs of LGERS are met.

# Valuation results

## Actuarial value of assets: five-year return history

### Inputs

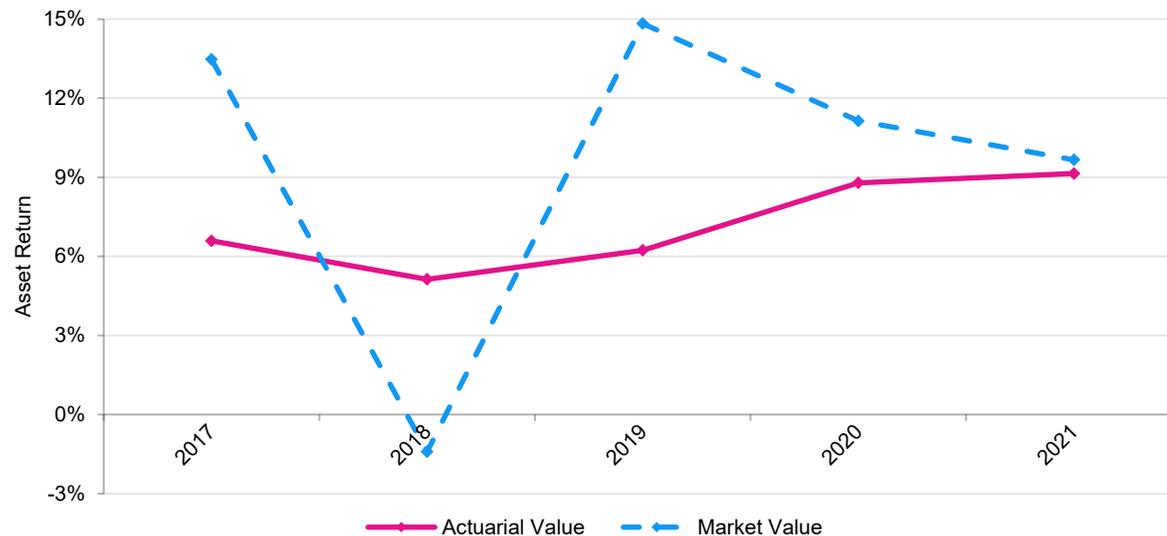
Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



### 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.



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

The investment return for the market value of assets for calendar year 2021 was 9.66%.

The actuarial value of assets smooths investment gains and losses.

Higher than expected market returns, in 2019, 2020 and 2021, resulted in an actuarial value of asset return for calendar year 2021 of 9.14% and a recognized actuarial asset gain of \$770 million during 2021.

Even after recognizing this gain, the assets at actuarial value were \$3.2 billion less than the actuarial accrued liability as of December 31, 2021.

# Valuation results

## Actuarial accrued liability

### Inputs

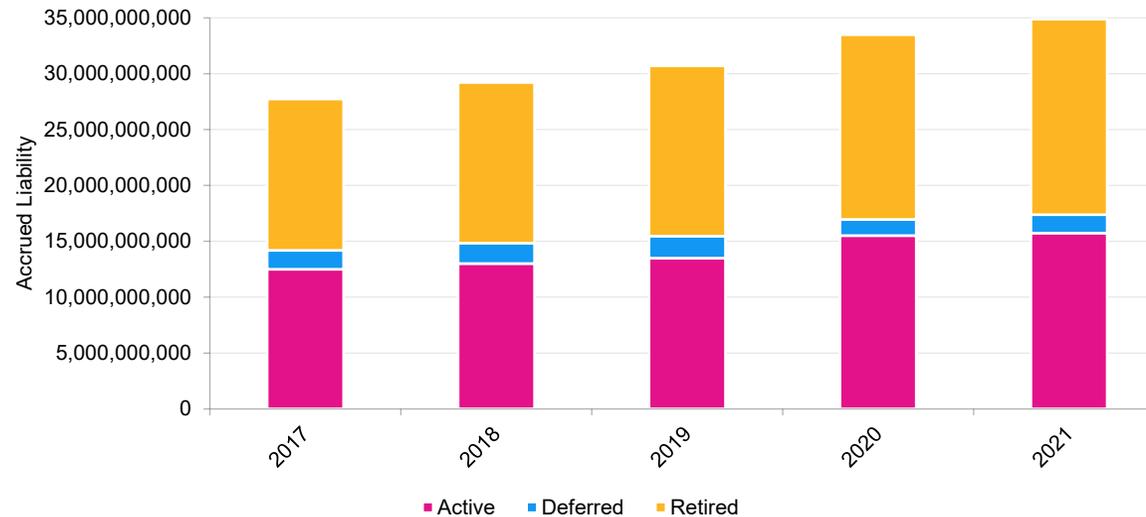
Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



### 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.



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

The AAL increased from \$33.5 billion to \$34.9 billion during 2021.

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 \$6.3 million lower than expected, resulting primarily from lower than expected pay increases and higher than expected mortality.

# Valuation results

## AVA and AAL

### Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology

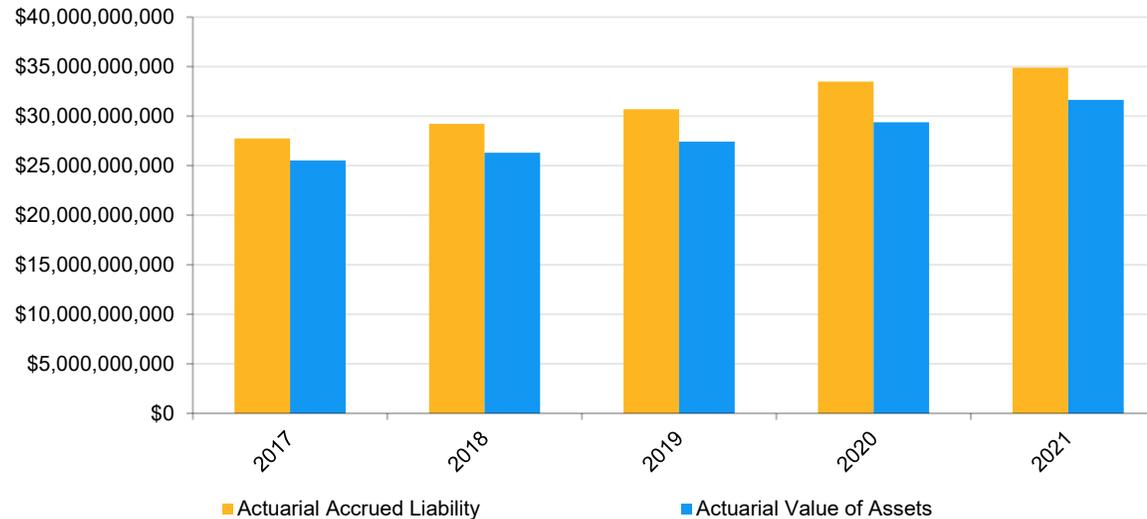


### Results

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.



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

The difference in the actuarial accrued liability and the actuarial value of assets is known as the Unfunded Actuarial Accrued Liability (UAAL).

The UAAL is \$3.2 billion as of 12/31/2021 and is to be paid off over a 12-year period.

# Valuation results

## 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 12/31/2020	\$ 4,098
Normal Cost and Administrative Expense during 2021	882
Reduction due to Actual Contributions during 2021	(1,277)
Interest on UAAL, Normal Cost, and Contributions	282
Asset (Gain)/Loss	(770)
Actuarial Accrued Liability (Gain)/Loss	(6)
Impact of Assumption Changes	-
Impact of Benefit Changes	<u>32</u>
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2021	\$ 3,241

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

During 2021, the UAAL decreased primarily due to the asset gain of \$770 million.

Demographic experience decreased the UAAL by \$6 million.

Benefit changes (one-time supplement payable in October 2022) increased the UAAL by \$32 million.

# Valuation results

## Funded ratio

### Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



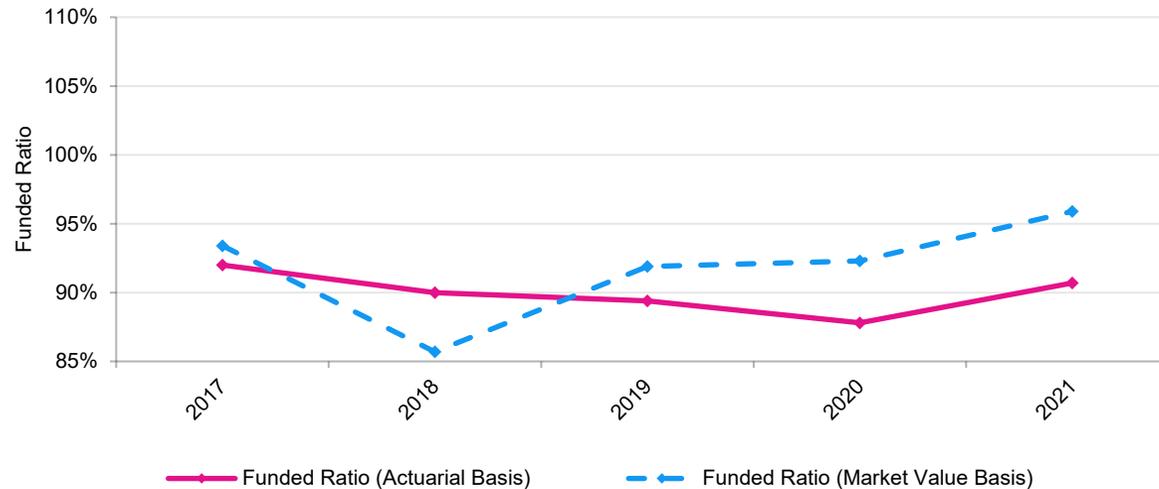
### Results

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.



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

The ratio of assets to liabilities shows the health of the plan on an accrued basis.

The actuarial value of assets basis is used for computing contributions to alleviate contribution volatility.

The funded ratio on an actuarial basis increased from 87.8% as of December 31, 2020, to 90.7% as of December 31, 2021.

The increase was primarily due to asset gains.

# Valuation results

## Employer contributions: actuarially determined rates

### Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



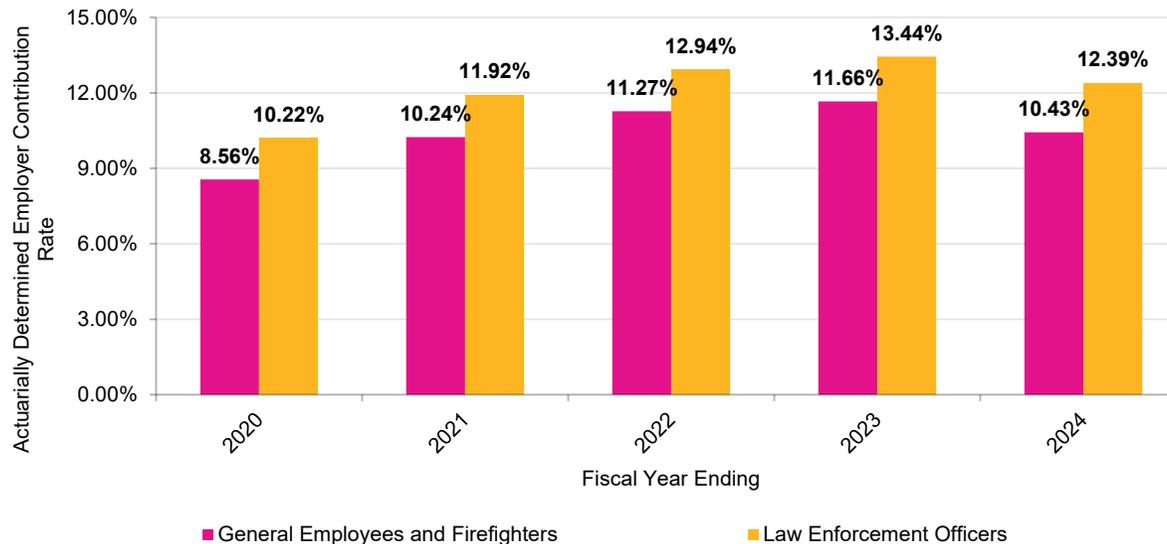
### Results

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.



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

The actuarially determined employer contribution rates include 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 member contributions.

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.

# Valuation results

## 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 Employer Contribution Rate Stabilization Policy (ECRSP) adopted by the Board of Trustees on April 29, 2021, and amended on January 27, 2022, requires that recommended contributions for general employees be set at 11.35% of payroll for fiscal year ending 2022 and will increase each fiscal year by 0.75% per year, with adjustments for the impact of any benefit or assumption changes that were made and not incorporated in the previous scheduled rate (other than the one-time supplement authorized by the Board under G.S. 128-27(k1) for the fiscal year ending in 2023), with the following additional adjustments, if applicable:
  - If the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year exceeds the adjusted scheduled employer contribution rate for that fiscal year by more than 1.00% of compensation, an increase equal to 50% of the difference is added to the adjusted scheduled employer contribution rate for the current and future fiscal years
  - Beginning July 1, 2024, if the adjusted scheduled employer contribution rate for that fiscal year exceeds the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year by more than 1.00% of compensation, a decrease equal to 50% of the difference, but not greater than 1.50% of compensation, is subtracted from the adjusted scheduled employer contribution rate for the current and future fiscal years
- Contribution rates for law enforcement officers will be 1.00% higher than contribution rates for general employees for fiscal year 2023. The 1.00% difference will increase by 0.25% each year until fiscal year 2027, when the contribution rates for law enforcement officers will be 2.00% higher than the contribution rates for general employees.

# Valuation results

## 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 Employer Contribution Rate Stabilization Policy (ECRSP) would result in a recommended contribution rate of 12.85% of payroll for general employees and 14.10% of payroll for law enforcement officers for fiscal year ending 2024.

- 12.23% is the actuarially determined employer contribution calculated in this most recent valuation prior to direct-rate smoothing for general employees and 14.65% for law enforcement officers.
- 10.43% is the actuarially determined employer contribution after direct-rate smoothing for general employees and 12.39% for law enforcement officers.

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

The ECRSP adopted by the Board of Trustees on April 29, 2021, and amended on January 27, 2022, requires that recommended contributions for general employees be set at 11.35% of payroll for FY 2022 with such amount increased by 0.75% per year for FY 2023 and 2024

Other adjustments will be made for:

- Benefit improvements (other than the one-time supplement for FY 2023) or
- If the ADEC exceeds the scheduled rate by more than 1%.

For FY 2023 and 2024, contribution rates for law-enforcement officers are set 1.00% and 1.25% higher than general employees, respectively

# Valuation results

## Employer contributions: 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 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	Benefit Changes*	Final ADEC	Actual Contribution
12/31/2021	7/1/2023	10.43%	N/A	N/A	N/A
12/31/2020	7/1/2022	11.22%	0.44%	11.66%	12.10%
12/31/2019	7/1/2021	11.27%	0.00%	11.27%	11.35%
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%

\* The benefit change for the contribution for fiscal year ending June 30, 2023, provided for a one-time supplement payment equal to 2% of the member's annual retirement allowance, payable in October 2022.

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

The funding policy contribution rate for fiscal year ending 2024 is 12.85% of payroll. The preliminary ADEC for fiscal year ending 2024 is 10.43% of payroll.

In addition to calculating the ADEC, we calculated the increase in ADEC for a permanent one-time 1% COLA to be 0.32% of payroll and the increase in UAAL to be \$189 million\*\*

We also calculated the increase in ADEC for a 0.01% increase in the Defined Benefit Formula to be 0.39% of payroll and the increase in UAAL to be \$187 million\*\*

\*\*Cost for all applicable members

# Valuation results

## Employer contributions: law enforcement officers

### Inputs

Membership Data  
 Asset Data  
 Benefit Provisions  
 Assumptions  
 Funding Methodology



### Results

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

The 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	Benefit Changes*	Final ADEC	Actual Contribution
12/31/2021	7/1/2023	12.39%	N/A	N/A	N/A
12/31/2020	7/1/2022	13.00%	0.44%	13.44%	13.10%
12/31/2019	7/1/2021	12.94%	0.00%	12.94%	12.10%
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%

\* The benefit change for the contribution for fiscal year ending June 30, 2023, provided for a one-time supplement payment equal to 2% of the member's annual retirement allowance, payable in October 2022.

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

The funding policy contribution rate for fiscal year ending 2024 is 14.10% of payroll. The preliminary ADEC for fiscal year ending 2024 is 12.39% of payroll.

In addition to calculating the ADEC, we calculated the increase in ADEC for a permanent one-time 1% COLA to be 0.32% of payroll and the increase in UAAL to be \$189 million\*\*

We also calculated the increase in ADEC for a 0.01% increase in the Defined Benefit Formula to be 0.39% of payroll and the increase in UAAL to be \$187 million\*\*

\*\*Cost for all applicable members

# Valuation results

## Employer contributions: ADEC and ECRSP history

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.

**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

Valuation Date	Rate Effective	General Employees and Firefighters			Law Enforcement Officers		
		ADEC	ECRSP	Excess / (Shortfall)	ADEC	ECRSP	Excess / (Shortfall)
12/31/2021	07/01/2023	10.43%	12.85%	2.42%	12.39%	14.10%	1.71%
12/31/2020	07/01/2022	11.66%	12.10%	0.44%	13.44%	13.10%	(0.34%)
12/31/2019	07/01/2021	11.27%	11.35%	0.08%	12.94%	12.10%	(0.84%)
12/31/2018	07/01/2020	10.24%	10.15%	(0.09%)	11.92%	10.90%	(1.02%)
12/31/2017	07/01/2019	8.56%	8.95%	0.39%	10.22%	9.70%	(0.52%)
12/31/2016	07/01/2018	7.40%	7.75%	0.35%	8.99%	8.50%	(0.49%)

# Valuation results

## 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, 2023 Preliminary ADEC (based on December 31, 2020 valuation)	11.22%	13.00%
Impact of Benefit Changes*	<u>0.44%</u>	<u>0.44%</u>
Fiscal year ending June 30, 2023 Final ADEC	11.66%	13.44%
Expected Change in UAAL**	0.25%	0.25%
Change Due to Demographic (Gain)/Loss	(0.16%)	(0.13%)
Change Due to Investment (Gain)/Loss	(1.31%)	(1.31%)
Change Due to Contributions Greater than ADEC***	(0.22%)	(0.22%)
Impact of Assumption Changes	0.00%	0.00%
Impact of Benefit Changes*	0.05%	0.05%
Impact of Direct Rate Smoothing	0.60%	0.75%
Reversal of one-time supplement cost	<u>(0.44%)</u>	<u>(0.44%)</u>
Fiscal year ending June 30, 2024 Preliminary ADEC (based on December 31, 2021 valuation)	10.43%	12.39%

\*LGERS benefit recipients will receive a one-time benefit supplement payment equal to 2% of the member's annual benefit amount for the fiscal year ending June 30, 2023, payable in October 2022.

\*\* Since the ADEC is for fiscal years that begin after the valuation date, and actual contributions are based on the ADEC for the current fiscal year, the timing of the actual contributions can cause an expected increase in UAAL as of the valuation date.

\*\*\*Employer contribution rates during 2021 were greater than the ADEC.

The change in rate due to investment gain is based on the actuarial value of assets return of 9.14%, which was greater than the 6.50% assumed return.

# Valuation results

## Potential COLAs and Supplements

### 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 December 31, 2021, valuation indicates actuarial investment gains commensurate with the value of either:
  - a Cost-of-Living Adjustment (COLA) that would take effect on July 1, 2023; or
  - a one-time supplement to participants in receipt of benefits on September 1, 2023, payable October 2023.Note, however, that the ECRSP would require an increase in the employer contribute rate to cover the cost of a COLA or supplement.
- Based on the methods and assumptions used for the projections discussed later in the presentation, the conditions for the Board to consider granting a COLA effective July 1, 2024, following the December 31, 2022, valuation would include the following minimal levels of investment return on market values of assets during 2022:
  - If calendar year 2022 market value return is at least negative 1.06% (or about negative \$0.35B for LGERS), the plan is estimated to have an actuarial investment gain (rather than a loss) for 2022 and such gain may be enough to provide some level of COLA effective July 1, 2024.
  - If calendar year 2022 market value return is at least 1.80% (or about \$0.60B for LGERS), the plan is estimated to have an actuarial investment gain (rather than a loss) for 2022 and such gain may be enough to provide a 1% COLA effective July 1, 2024.
    - Estimated actuarial investment gain of \$189.3M
    - Estimated cost of 1% COLA payable to retirees effective July 1, 2024 of \$189.3M

A detailed summary of the cost of benefit enhancements is provided in Section 6.

# Valuation results

## Potential COLAs and Supplements

### 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 methods and assumptions used for the projections discussed later in the presentation, the conditions for the Board to consider granting a **one-time supplement** to all in-receipt participants as of September 1, 2024 (payable in October 2024), following the December 31, 2022, valuation would include the following minimal levels of investment return on market values of assets during 2022:
  - If calendar year 2022 market value return is at least negative 1.06% (or about negative \$0.35B for LGERS), the plan is estimated to have an actuarial investment gain (rather than a loss) for 2022 and such gain may be enough to provide a one-time supplement payable in October 2024.
  - If calendar year 2022 market value return is at least negative 0.79% (or about negative \$0.26B for LGERS), the plan is estimated to have an actuarial investment gain (rather than a loss) for 2022 and such gain may be enough to provide a 1% one-time supplement payable in October 2024.
    - Estimated actuarial investment gain of \$17.9M
    - Estimated cost of 1% one-time supplement payable in October 2024 of \$17.9M

Note: Buck cannot provide legal advice. Neither this slide, nor any other slide, should 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 cost of benefit enhancements is provided in Section 6.

# Valuation results

## Potential COLA and supplement considerations

### 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 LGERS Board authority to act based on the December 31, 2021, valuation results is limited by statute (G.S. 128-27(k) pertaining to COLAs, or G.S. 128.27(k1) pertaining to Supplements):
  - Either a COLA can be granted or a Supplement can be paid, but not both
  - COLA or Supplement cannot be greater than calendar 2022 inflation
  - COLA or Supplement cannot be greater than 4%
  - The value of COLA or Supplement is limited to actuarial investment gain
- Type of increase
  - Supplement payable October 2023
  - Permanent effective July 1, 2023
- Immediate or 12-year funding
  - Immediate funding recommended for Supplement
  - 12-year funding could be considered for Permanent
  - The contribution increase is added to the ECRSP rate per policy adopted at April 2021 Board meeting and amended at January 2022 Board meeting.

A detailed summary of the cost of benefit enhancements is provided in Section 6.

# Valuation results

## Potential COLA considerations Actuarial investment gain to “spend”

### 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 amount of actuarial investment gain for calendar 2021 is \$770,000,000. The maximum amount of Permanent COLA based on this amount is 4.00%, which may be limited by actual CPI for 2022. The increase in ECRSP rate would be 1.28% of pay, payable over 12 years.

Impact on Employee Contribution Rate Stabilization Policy (ECRSP) Rate of Alternate Permanent One-Time-Cost-of-Living Increases				
Amount	None	1.00%	2.00%	4.00%
<b>Increase in UAAL</b>	\$ -	\$ 189,284,000	\$ 378,568,000	\$ 757,136,000
<b>ECRSP Rate Effective 7/1/2022</b>				
General Employees and Firefighters				
Preliminary ECRSP Rate	12.85%	12.85%	12.85%	12.85%
Impact of COLA	<u>0.00%</u>	<u>0.32%</u>	<u>0.64%</u>	<u>1.28%</u>
ECRSP after impact of COLA	12.85%	13.17%	13.49%	14.13%
Law Enforcement Officers				
Preliminary ECRSP Rate	14.10%	14.10%	14.10%	14.10%
Impact of COLA	<u>0.00%</u>	<u>0.32%</u>	<u>0.64%</u>	<u>1.28%</u>
ECRSP after impact of COLA	14.10%	14.42%	14.74%	15.38%

Considerations on the amount to be recommended are noted on slide 35.

A detailed summary of the cost of benefit enhancements is provided in Section 6.

# Valuation results

## Potential Supplement considerations Actuarial investment gain to “spend”

### 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 amount of actuarial investment gain for calendar 2021 is \$770,000,000. The maximum amount of one-time supplement based on this amount is 4.00%, which may be limited by actual CPI for 2022. The increase in ECRSP rate would be 0.92% of pay, payable in a single installment.

Impact on Employee Contribution Rate Stabilization Policy (ECRSP) Rate of Alternate One-Time Supplemental Payments				
Amount	None	1.00%	2.00%	4.00%
<b>Increase in UAAL</b>	\$ -	\$ 17,930,000	\$ 35,860,000	\$ 71,720,000
<b>ECRSP Rate Effective 7/1/2022</b>				
General Employees and Firefighters				
Preliminary ECRSP Rate	12.85%	12.85%	12.85%	12.85%
Impact of Supplement	<u>0.00%</u>	<u>0.23%</u>	<u>0.46%</u>	<u>0.92%</u>
ECRSP after impact of Supplement	12.85%	13.08%	13.31%	13.77%
Law Enforcement Officers				
Preliminary ECRSP Rate	14.10%	14.10%	14.10%	14.10%
Impact of Supplement	<u>0.00%</u>	<u>0.23%</u>	<u>0.46%</u>	<u>0.92%</u>
ECRSP after impact of Supplement	14.10%	14.33%	14.56%	15.02%

The cost of a 1% one-time supplement is \$17.9 million, or 0.23% of pay, payable for one year.  
Considerations on the amount to be recommended are noted on the next slide.

A detailed summary of the cost of benefit enhancements is provided in Section 6.

# Valuation results

## Potential COLA or Supplement considerations Actuarial investment gain to “spend”

### 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

- While granting a 4.00% COLA or Supplement is under Board Authority, the Board could consider the following reasons for granting an amount less than the maximum:
- Providing COLAs or Supplements under gain sharing works best when:
  - The amount of benefits granted are limited
  - The investment return assumed is lower than the expected return adjusted by the expected COLA or Supplement payouts
- Is the investment gain permanent?
  - Each valuation is expected to generate an actuarial gain or loss on investments
  - Asset-Liability study performed by DST provides a lower than 50% chance of funds achieving 6.50% return over both 10-year and 30-year time horizons
  - Current gain may be needed to offset future losses to keep contributions from rising more than anticipated
- Potential lower investment return
  - Board may decide to reduce investment return assumption further the next time it is revisited, based on Asset-Liability study or other inputs
  - If so, system’s liability increase could significantly exceed actuarial investment gains recognized in current valuation
- Employer contributions accounted for about 60% of total contributions over the past 5 years
- The unfunded liability of LGERS remains significant at \$3.2 billion.
- YTD 2022 investment returns have been far below the assumed return.

A detailed summary of the cost of benefit enhancements is provided in Section 6.

# Valuation results

## 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. All numbers are rounded to the billions\*.

Discount Rate	1.90%	4.20%	6.50%	8.80%	11.10%
Market Value of Assets	\$ 33.46	\$ 33.46	\$ 33.46	\$ 33.46	\$ 33.46
Actuarial Accrued Liability	\$ 66.15	\$ 46.70	\$ 34.88	\$ 27.27	\$ 22.16
Unfunded Accrued Liability (UAL)	\$ 32.69	\$ 13.24	\$ 1.42	\$ (6.19)	\$ (11.30)
Funded Ratio	50.6%	71.6%	95.9%	122.7%	151.0%
20-Year Amortization of UAL (as % of general local revenue)	\$ 2.02 9.8%	\$ 1.03 5.0%	\$ 0.14 0.7%	N/A N/A	N/A N/A

\*Numbers may not add due to rounding.

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

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

The 30-year Treasury rate is 1.90% as of December 31, 2021.

The difference between the UAAL measured at 6.50% and 1.90% is \$31.3 billion at December 31, 2021.

# Valuation results

## 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 commissioned by the DST Investment Management Division in 2022.

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 (2032)	0.4%	3.6%	5.7%	7.8%	11.1%
30 Years (2052)	3.3%	5.1%	6.3%	7.6%	9.3%

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

These results are summarized in the “NCRS Investment Policy Statement Review” presentation prepared by the DST Investment Management Division and dated May 25, 2022.

The lower bound of 1.90% 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 1.90% or lower based on the study performed in 2022.

# Valuation results

## Projections

### Inputs

Membership Data  
Asset Data  
Benefit Provisions  
Assumptions  
Funding Methodology



### Results

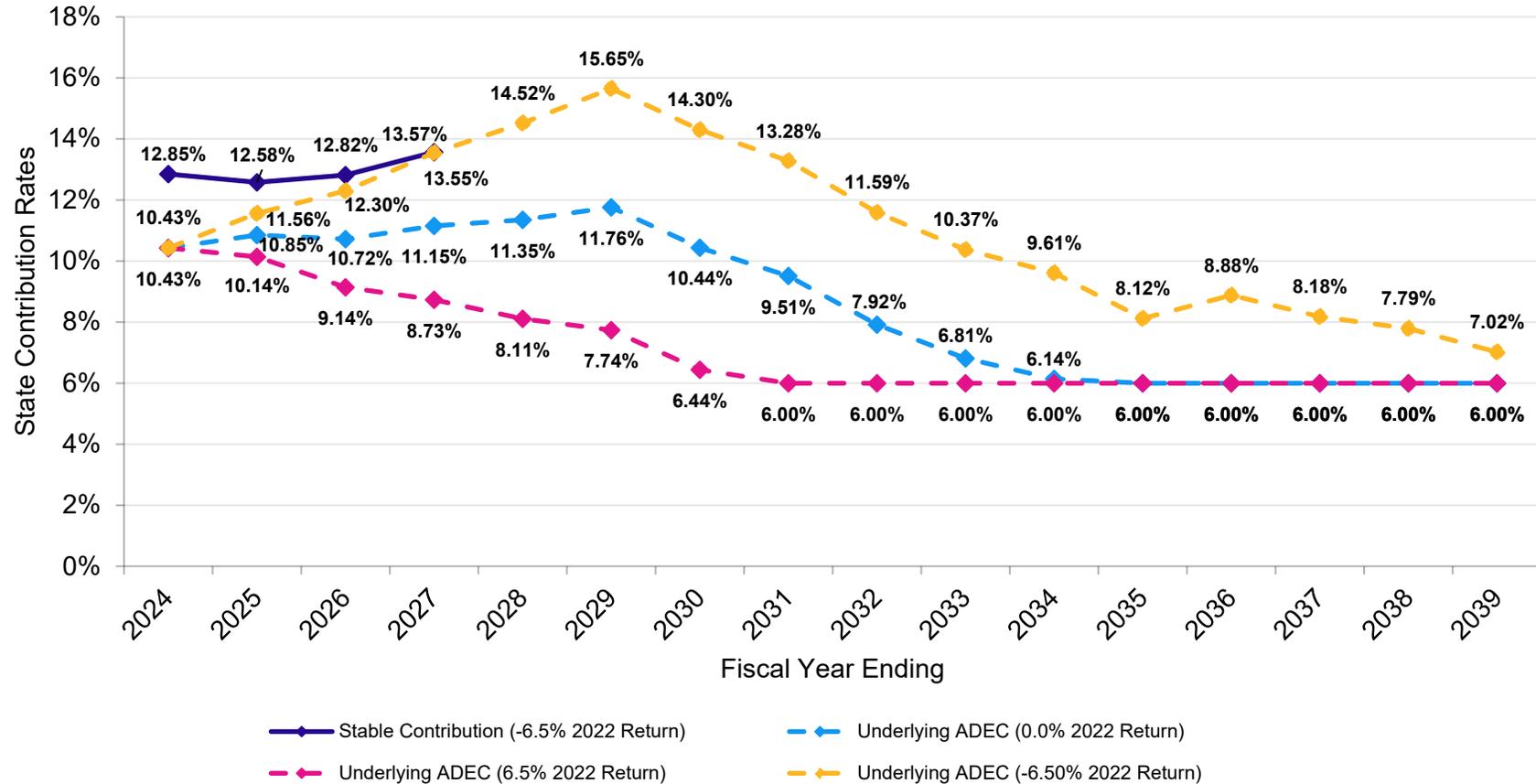
Actuarial Value of Assets  
Actuarial Accrued Liability  
Net Actuarial Gain or Loss  
Funded Ratio  
Employer Contributions  
Benefit Enhancement  
Additional Disclosures  
Projections

- 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, 2021 valuation results
  - December 31, 2021 valuation assumptions and methods to project future valuation results, including:
    - Valuation interest rate of 6.50% for all years
    - Investment return of 6.50% on market value of assets
- The contribution rate under the Employer Contribution Rate Stabilization Policy (ECRSP) is contributed until fiscal year ending 2027.
- The ADEC is contributed for fiscal years ending 2028 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, which is currently 6%.
- 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 2022.
  - Second alternate deterministic projection assumes a -6.5% asset return for calendar year 2022.

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

# Valuation results

## Projected contribution rates General Employees and Firefighters



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

# Valuation results

## Projected contribution rates Law Enforcement Officers

**Inputs**

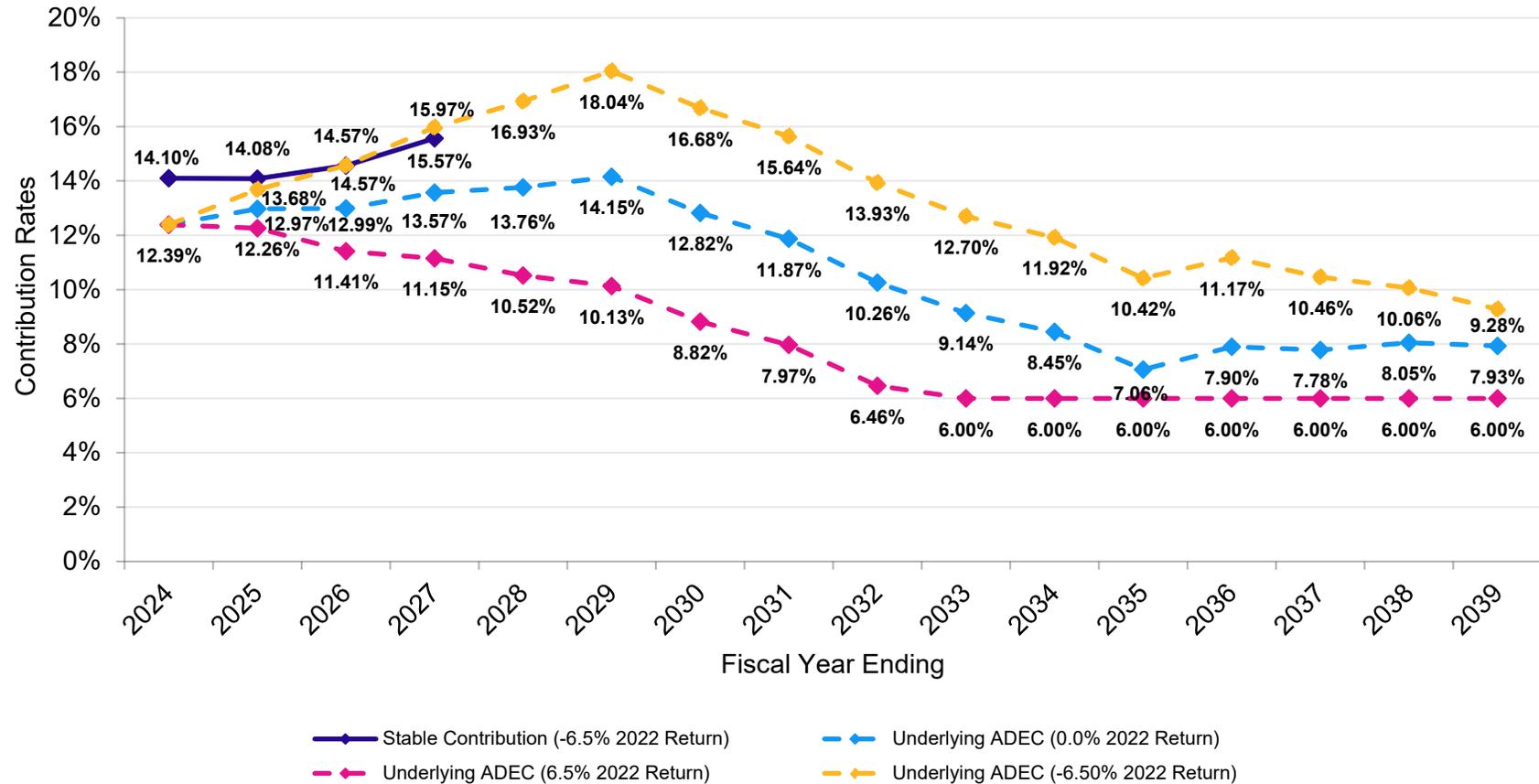
- Membership Data
- Asset Data
- Benefit Provisions
- Assumptions
- Funding Methodology

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**Results**

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

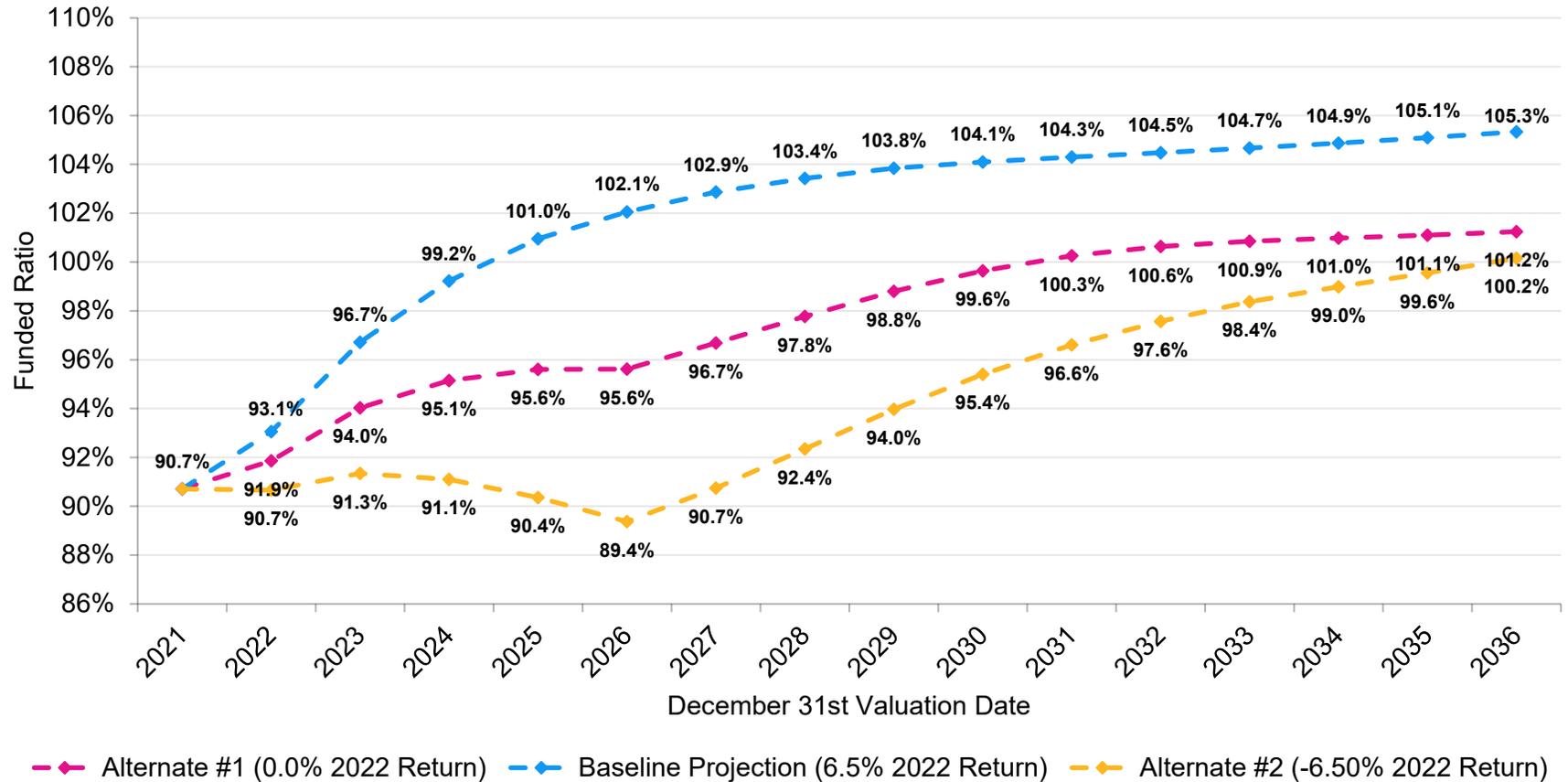
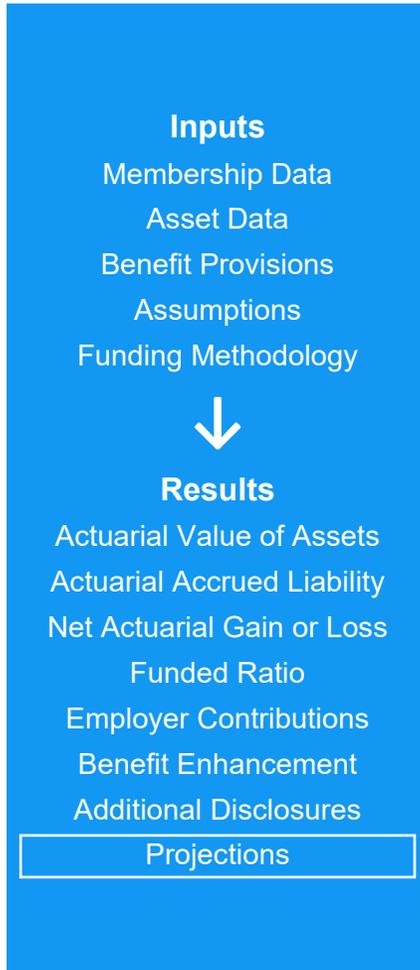
Projections



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

# Valuation results

## Projected funded ratio



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

# Key takeaways

- Key results of the December 31, 2021 valuation were:
  - Market value returns of 9.66% compared to 6.50% assumed
  - Continuation of direct-rate smoothing of the change in the employer contribution rate due to the changes in assumptions and methods over a 5-year period beginning with the December 31, 2020 valuation
  - Recent legislation signed into law since the prior valuation
    - One-time supplement payment for LGERS payees of 2% of their annual retirement allowance, payable in October 2022
  - Recommended contributions under the Employer Contribution Rate Stabilization Policy (ECRSP) adopted by the Board of Trustees on April 29, 2021 and amended on January 27, 2022. ECRSP rates for FYE 6/30/2024 (assuming no COLA or other benefit or assumption changes):
    - 12.85% of payroll for general employees and firefighters
    - 14.10% of payroll for law enforcement officers

# Key takeaways (continued)

When compared to the December 31, 2020 projections:

- A higher funded ratio as of December 31, 2021 (90.7% in the valuation compared to 90.2% in the baseline projection)
- Lower actuarially determined employer contribution rates for fiscal year ending June 30, 2024
  - 10.43% in the valuation compared to 10.82% in the baseline projection for general employees and firefighters
  - 12.39% in the valuation compared to 12.77% in the baseline projection for law enforcement officers
- Actuarially determined employer contribution rates are less than Employer Contribution Rate Stabilization Policy (ECRSP) rates for general employees and firefighters, and are less than ECRSP rates for law enforcement officers
  - General Employees/Firefighter ECRSP of 12.85% vs. ADEC of 10.43%
  - Law Enforcement Officer ECRSP of 14.10% vs. ADEC of 12.39%

# 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 for over 75 years, continued focus on these measures will be needed to maintain the sustainability of LGERS well into the future

# ASOP 27/35 disclosures

ASOPs 27 and 35 ask the actuary to disclose the information and analysis used to support the actuary's determination that the assumptions selected by the plan sponsor do not significantly conflict with what, in the actuary's professional judgment, are reasonable for the purpose of the measurement. In the case of the plan sponsor's selection of expected return on assets ("EROA"), the signing actuaries have used economic information and tools provided by Buck's Financial Risk Management ("FRM") practice. A spreadsheet tool created by the FRM team converts averages, standard deviations, and correlations from Buck's Capital Markets Assumptions ("CMA") that are used for stochastic forecasting into approximate percentile ranges for the arithmetic and geometric average returns. It is intended to suggest possible reasonable ranges for EROA without attempting to predict or select a specific best estimate rate of return. It takes into account the duration (horizon) of investment and the target allocation of assets in the portfolio to various asset classes. Based on the actuary's analysis, including consistency with other assumptions used in the valuation and the percentiles generated by the spreadsheet described above, the actuary believes the EROA, in the actuary's professional judgment, is reasonable for the purpose of the measurement.

# ASOP 56 disclosure

Actuarial Standard of Practice No. 56 (“ASOP 56”) provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. Buck uses third-party software in the performance of annual actuarial valuations and projections. The model is intended to calculate the liabilities associated with the provisions of the Plan using data and assumptions as of the measurement date under the accounting rules specified in this report. The output from the third-party vendor software is used as input to an internally developed model that applies applicable accounting rules to the liabilities derived and other inputs, such as Plan assets and contributions, to generate many of the exhibits found in this report. Buck has an extensive review process whereby the results of the liability calculations are checked using detailed sample output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other accounting outputs and the internal model are similarly reviewed in detail and at a high level for accuracy, reasonability, and consistency with prior results. Buck also reviews the third-party model when significant changes are made to the software. The review is performed by experts within the company who are familiar with applicable accounting rules as well as the manner in which the model generates its output. If significant changes are made to the internal model, extra checking and review are completed. Significant changes to the internal model that are applicable to multiple clients are generally developed, checked and reviewed by multiple experts within the company who are familiar with the details of the required changes.

# Certification

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, Buck performed no analysis of the potential range of such future differences, except for some limited analysis in financial projections or required disclosure information. Information contained in our report for plan years from December 31, 2017, to December 31, 2020, is based on valuations performed by the prior actuarial firm.

This report was prepared under our supervision and in accordance with all applicable Actuarial Standards of Practice. We are Fellows of the Society of Actuaries, Enrolled Actuaries, Members of the American Academy of Actuaries, and Fellows of the Conference of Consulting Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. We are available to discuss this report with you at your convenience.

Michael A. Ribble, FSA, EA, MAAA, FCA

Elizabeth A. Wiley, FSA, EA, MAAA, FCA





# **North Carolina Local Governmental Employees' Retirement System**

Report on the Actuarial Valuation  
Prepared as of December 31, 2021

October 2022



110 West Berry Street  
Suite 1300  
Fort Wayne, IN 46802

October 10, 2022

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, 2021. The report has been prepared in accordance with North Carolina General Statute 128-28(p). Information contained in our report for plan years from December 31, 2017, to December 31, 2020, is based on valuations performed by the prior actuarial firm.

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 Annual Comprehensive Financial Report, 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 Buck Global, LLC (Buck) to review any statement you wish to make on the results contained in this report. Buck 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 we reviewed for reasonableness and consistency with the prior valuation, these elements have not been audited by Buck and we cannot certify as to the accuracy and completeness of the data supplied. Sometimes assumptions are made by Buck 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 reasonable and comply with the Actuarial Standards of Practice ("ASOPs") 27 and 35 and the requirements of Governmental Accounting Standards Board (GASB) Statement No. 67. We prepared this

valuation in accordance with the requirements of this standard and in accordance with all applicable ASOPs.

The assumptions used for the December 31, 2021, actuarial valuation are based on the experience study prepared as of December 31, 2019, and adopted by the Board of Trustees on January 28, 2021. All assumptions other than the investment return assumption (i.e., the valuation interest rate) are discussed annually with the appropriate parties, and actuarial gain/loss experience is reviewed during each valuation, to see if any changes are needed. 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. All assumptions represent an estimate of future experience.

ASOPs 27 and 35 ask the actuary to disclose the information and analysis used to support the actuary's determination that the assumptions selected by the plan sponsor do not significantly conflict with what, in the actuary's professional judgment, are reasonable for the purpose of the measurement. In the case of the Board's selection of the investment return assumption, the signing actuaries have used economic information and tools provided by Buck's Financial Risk Management ("FRM") practice. A spreadsheet tool created by the FRM team converts averages, standard deviations, and correlations from Buck's Capital Markets Assumptions ("CMA") that are used for stochastic forecasting into approximate percentile ranges for the arithmetic and geometric average returns. It is intended to suggest possible reasonable ranges for the investment return assumption without attempting to predict or select a specific best estimate rate of return. It takes into account the duration (horizon) of investment and the target allocation of assets in the portfolio to various asset classes. Based on the actuaries' analysis, including consistency with other assumptions used in the valuation, the percentiles generated by the spreadsheet described above and review of actuarial gain/loss experience, the actuaries believe the assumptions, in the actuaries' professional judgment, are reasonable for the purpose of the measurement.

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 may be 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.

Actuarial Standard of Practice No. 56 ("ASOP 56") provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. In addition to the spreadsheet model discussed above, Buck uses third-party software in the performance of annual actuarial valuations and projections. The model is intended to calculate the liabilities associated with the provisions of the Plan using data and assumptions as of the measurement date under the accounting rules specified in this report. The output from the third-party vendor software is used as input to an internally developed model that applies applicable accounting rules to the liabilities derived and other inputs, such as Plan assets and contributions, to generate many of the exhibits found in this report. Buck has an extensive review process whereby the results of the liability calculations are checked using detailed sample output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other accounting outputs and the internal model are similarly reviewed in detail and at a high level for accuracy, reasonability, and consistency

with prior results. Buck also reviews the third-party model when significant changes are made to the software. The review is performed by experts within the company who are familiar with applicable accounting rules as well as the manner in which the model generates its output. If significant changes are made to the internal model, extra checking and review are completed. Significant changes to the internal model that are applicable to multiple clients are generally developed, checked and reviewed by multiple experts within the company who are familiar with the details of the required changes.

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, Buck performed no analysis of the potential range of such future differences, except for some limited analysis in financial projections or required disclosure information.

This report was prepared under our supervision and in accordance with all applicable Actuarial Standards of Practice. We are Fellows of the Society of Actuaries, Enrolled Actuaries, Members of the American Academy of Actuaries, and Fellows of the Conference of Consulting Actuaries. We meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. We are available to discuss this report with you at your convenience.

Respectfully submitted,

Buck Global, LLC (Buck)



Michael A. Ribble, FSA, EA, MAAA, FCA  
Principal, Retirement Actuary



Elizabeth A. Wiley, FSA, EA, MAAA, FCA  
Senior Consultant, Retirement Actuary

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# Executive Summary

## Overview

The North Carolina Retirement Systems Division (RSD) was established in 1941 to provide retirement benefits for public servants in the State of North Carolina. Today, under the management of the Department of State Treasurer, RSD administers seven public pension plans (defined benefit plans), three supplemental retirement plans (voluntary defined contributions plans), a health trust fund, a disability income plan, death benefit funds and a number of other benefit programs. As of December 31, 2021, 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, 2022, RSD paid over \$7.1 billion in pensions to more than 330,000 retirees. And as of June 30, 2022, RSD's defined benefit plan assets were valued at over \$110 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 \$33 billion in assets and more than 300,000 members. This actuarial valuation report is our annual analysis of the financial health of LGERS. This report, prepared as of December 31, 2021, 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 required 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 (continued)

## Risk

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

The primary areas of risk in this actuarial valuation are:

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

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

# Executive Summary (continued)

## Key Takeaways

The actuarial valuation is performed each year to replace the estimates the actuary assumed for the prior valuation with the actual events that happened. This past year, as expected, some of the assumptions used in the prior valuation were not realized. Key results of the December 31, 2021 valuation as compared to the December 31, 2020 valuation were:

- Market value returns of 9.66% during calendar year 2021 compared to 6.50% assumed
- Continuation of direct-rate smoothing of the change in the employer contribution rate due to the changes in assumptions and methods over a 5-year period beginning with the December 31, 2020 valuation
- Recent legislation signed into law since the prior valuation
  - One-time supplement payment for LGERS payees of 2% of the annual retirement allowance payable in October 2022

When compared to the December 31, 2020 projections, the above resulted in:

- A higher funded ratio as of December 31, 2021 (90.7% in the valuation compared to 90.2% in the baseline projection)
- Lower actuarially determined employer contribution rates for fiscal year ending June 30, 2024
  - 10.43% in the valuation compared to 10.82% in the baseline projection for general employees and firefighters
  - 12.39% in the valuation compared to 12.77% in the baseline projection for law enforcement officers
- Actuarially determined employer contribution rates are less than Employer Contribution Rate Stabilization Policy (ECRSP) rates for general employees and firefighters, and are less than ECRSP rates for law enforcement officers
  - General Employees/Firefighter ECRSP of 12.85% vs. ADEC of 10.43%
  - Law Enforcement Officer ECRSP of 14.10% vs. ADEC of 12.39%

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, 2021, 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	12/31/2021	12/31/2020
Active Members		
Number	132,235	132,397
Reported Compensation	\$ 6,898,855,515	\$ 6,846,115,903
Valuation Compensation*	\$ 7,549,539,124	\$ 7,409,219,872
Retired Members and Survivors of Deceased Members Currently Receiving Benefits		
Number	79,318	77,556
Annual Allowances	\$ 1,633,119,207	\$ 1,553,600,690
Number of Participating Employers	897**	891**
Assets		
Actuarial Value (AVA)	\$ 31,643,208,176	\$ 29,387,655,709
Market Value	\$ 33,459,926,149	\$ 30,905,570,910
Actuarial Accrued Liability (AAL)	\$ 34,884,123,410	\$ 33,485,232,590
Unfunded Accrued Liability (AAL-AVA)	\$ 3,240,915,234	\$ 4,097,576,881
Funded Ratio (AVA/AAL)**	90.7%	87.8%
Unfunded Initial Prior Service Liability	\$ 10,095,092	\$ 15,421,007

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

\*\* The number of participating employers shown in Appendices H and J include three additional employers joining after the valuation date for both plan years.

\*\*\* The Funded Ratio on a Market Value of Assets basis is 95.9% as of December 31, 2021.

## Section 1: Principal Results (continued)

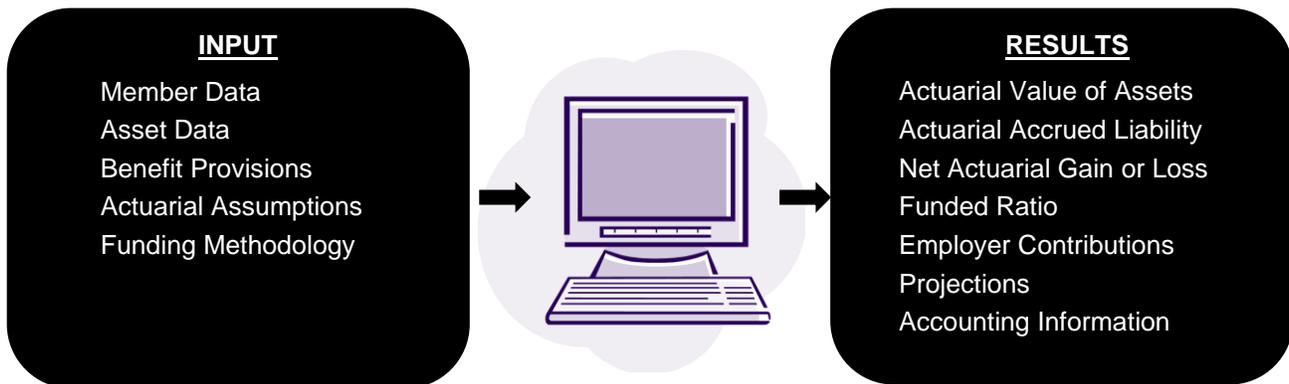
This report, prepared as of December 31, 2021, presents the results of the annual valuation of the system. The principal results of the valuation and a comparison with the preceding year's results are continued below.

Valuation results as of	12/31/2021	12/31/2020
Results for Fiscal Year Ending	6/30/2024	6/30/2023
Actuarially Determined Employer Contribution (ADEC), as a percentage of payroll		
General Employees and Firefighters		
Normal Cost	6.46%	6.52%
Accrued Liability	<u>5.77%</u>	<u>7.10%</u>
Total Preliminary ADEC	12.23%	13.62%
Total Based on Direct Rate Smoothing	10.43%	11.22%
Impact of Benefit Changes*	<u>N/A</u>	<u>0.44%</u>
Final ADEC	N/A	11.66%
Law Enforcement Officers		
Normal Cost	8.88%	8.91%
Accrued Liability	<u>5.77%</u>	<u>7.10%</u>
Total	14.65%	16.01%
Total Based on Direct Rate Smoothing	12.39%	13.00%
Impact of Benefit Changes*	<u>N/A</u>	<u>0.44%</u>
Final ADEC	N/A	13.44%
Board Approved Contribution under the Employer Contribution Rate Stabilization Policy (ECRSP)		
General Employees and Firefighters	12.85%	12.10%
Law Enforcement Officers	14.10%	13.10%
<b>Current Funding in Effect at</b>	<b>7/1/2022</b>	<b>7/1/2021</b>
Employer Contribution Rate as a percentage of payroll		
General Employees and Firefighters	12.10%	11.35%
Law Enforcement Officers	13.10%	12.10%

\* LGERS benefit recipients will receive a one-time benefit supplement payment equal to 2% of the member's annual retirement allowance for the fiscal year ending June 30, 2023, paid by October 2022. The one-time supplements do not change the ongoing monthly benefits, and absent additional action by governing authorities, the payments will not recur in future years.

## Section 2: 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.

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

Number as of	12/31/2021	12/31/2020
Active members	132,235	132,397
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	93,473	84,914
Retired members and survivors of deceased members currently receiving benefits	<u>79,318</u>	<u>77,556</u>
Total	305,026	294,867

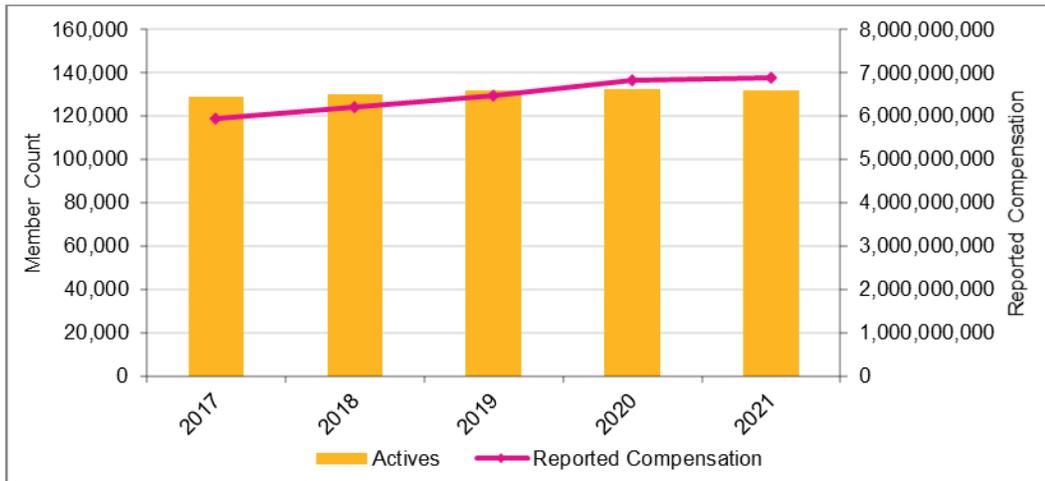
**Commentary:** The number of active members decreased by 0.1% from the previous valuation date. The decrease in the active population results in less benefits accruing, but also less contributions supporting the system. The number of retired members and survivors of deceased members currently receiving benefits increased by 2.3% from the previous valuation date. The increase in retiree population is consistent with expectations.

# Section 2: Valuation Process (continued)

## Valuation Input: Membership Data (continued)

**Graph 1: Active Members**

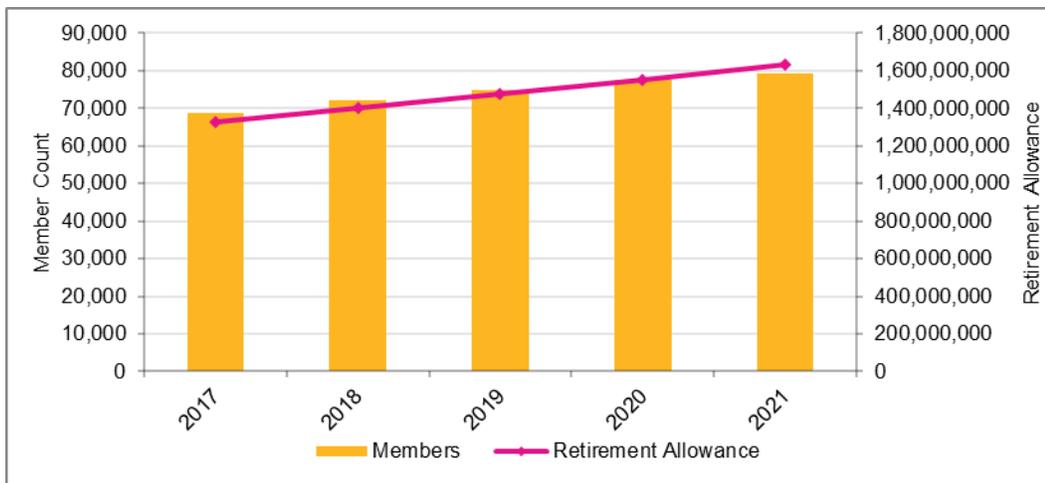
The graph below provides a history of the number of active members and reported compensation over the past five years.



**Commentary:** Reported compensation has increased by 0.8% over the last year. Covered payroll was expected to increase annually by 3.50% for valuations prior to December 31, 2020 and 3.25% annually beginning with the December 31, 2020 valuation. Payroll that is increasing more slowly than we assume results in less benefits accruing than we anticipate, but also less contributions supporting the system.

**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.

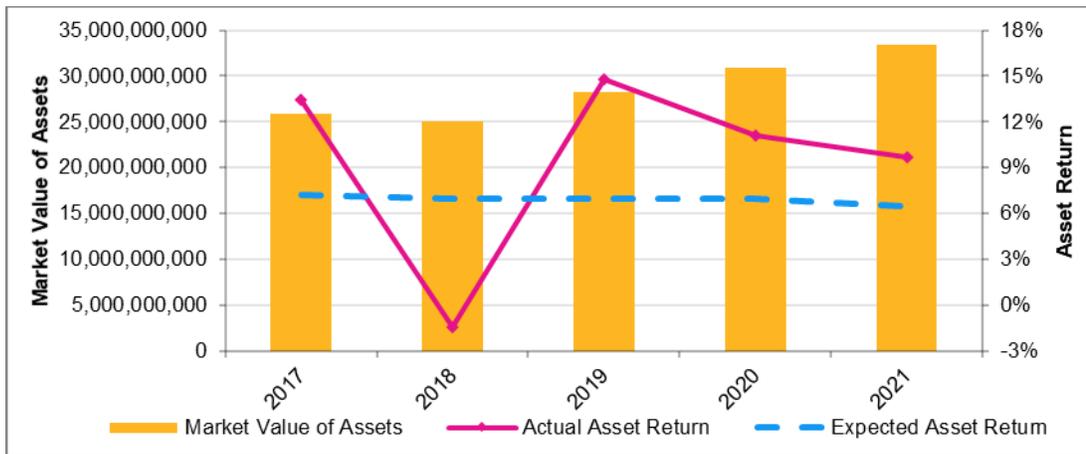
## Section 2: Valuation Process (continued)

### 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 \$33.5 billion as of December 31, 2021 and \$30.9 billion as of December 31, 2020. The investment return for the market value of assets for calendar year 2021 was 9.66%.

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

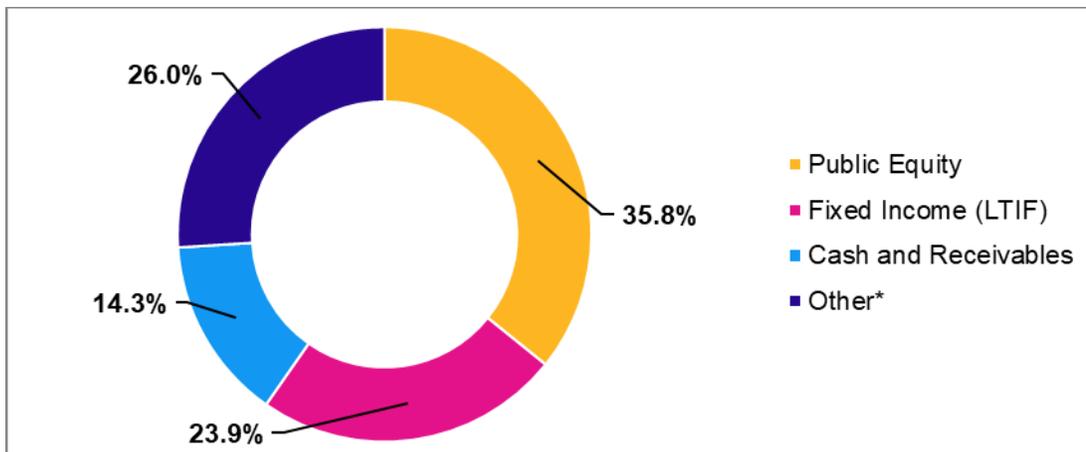
The graph below provides a history of the market value of assets and asset returns over the past five years.



**Commentary:** Market value returns during 2021 were greater than the 6.5% assumed rate of return. This resulted in lower actuarially determined contributions and a higher funded ratio than anticipated in the December 31, 2020 baseline projections presented in the December 31, 2020 actuarial report.

#### Graph 4: Allocation of Investments by Category

The graph below provides the breakdown of the market value of assets as of December 31, 2021 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 6.50% 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: Valuation Process (continued)

### Valuation Input: Benefit Provisions

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

There were no significant changes in benefit provisions from the prior year's valuation, other than a one-time benefit supplement payment equal to 2% of the member's annual retirement allowance for the fiscal year ending June 30, 2023, payable in October 2022. The one-time supplements do not change the ongoing monthly benefits, and absent additional action by governing authorities, the payments will not recur in future years.

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 final average 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. 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 needed 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, the system should review likely impacts of the shift and consider corresponding changes to actuarial assumptions, funding policy and/or benefit levels.

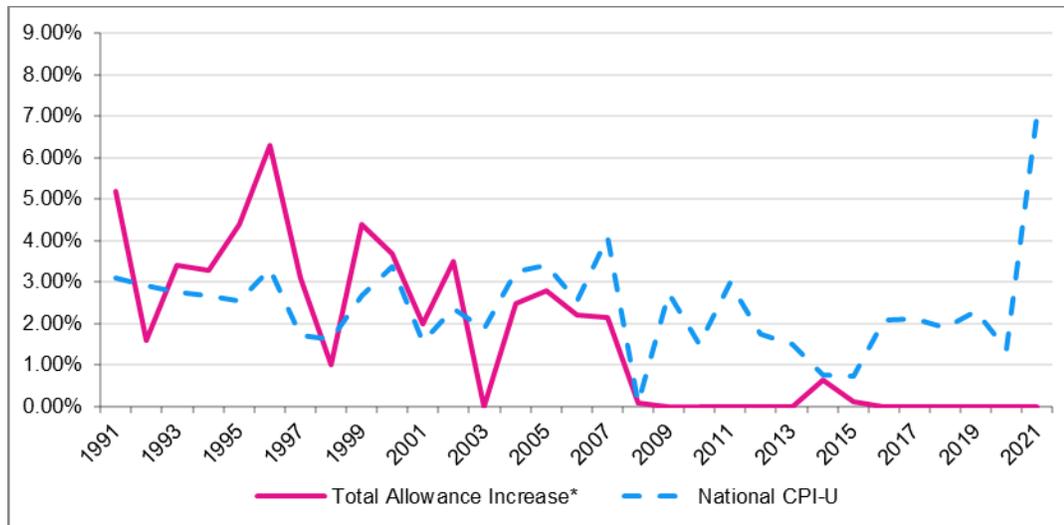
As noted previously, cost-of-living increases are periodically considered by the Board of Trustees to the extent that certain financial conditions are met. Specifically, benefit allowance increases are generally considered when the trust experiences sufficient investment gains to cover the additional 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, it is important to provide a benefit in retirement that does not get eroded by inflation.

## Section 2: Valuation Process (continued)

### Valuation Input: Benefit Provisions (continued)

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 as of 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, 2021 actuarial valuation are based on the experience study prepared as of December 31, 2019 and adopted by the Board of Trustees on January 28, 2021. There were no material assumptions and methods that were changed since the prior valuation.

## Section 2: Valuation Process (continued)

### 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.
  - 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 years' experience

These elements form the traditional components of the actuarially determined employer contribution. In the addition to the policies above there are also Direct-Rate Smoothing and ECRSP policies which are used in the determination of the final employer contribution rate. The Direct-Rate Smoothing and ECRSP are discussed in more length in Section 6.

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.

- Seven (7) employers were granted relief at 7/1/2021.
- Four (4) employers were granted relief at 7/1/2022.

**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.

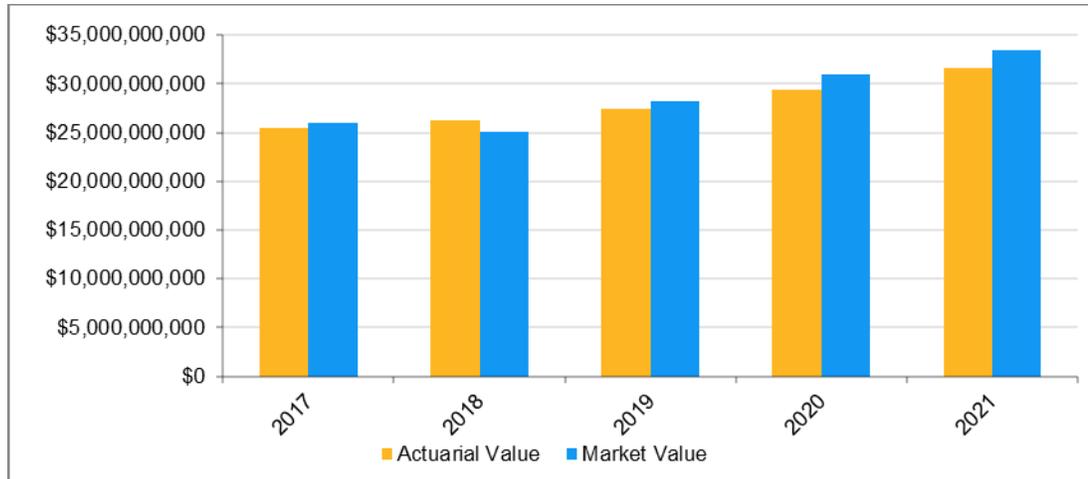
## Section 2: Valuation Process (continued)

### 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 \$31.6 billion as of December 31, 2021 and \$29.4 billion as of December 31, 2020.

#### Graph 6: Actuarial Value and Market Value of Assets

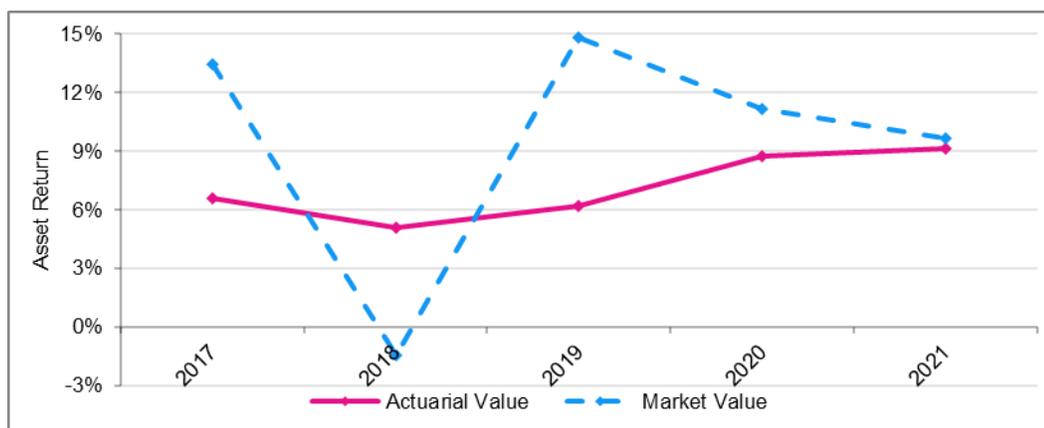
The graph below provides a history of the market value and actuarial value of assets over the past five years.



**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.

#### 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 2021 was 9.66%. The actuarial value of assets smooths investment gains and losses. Higher than expected market returns, in 2019, 2020 and 2021, resulted in an actuarial value of asset return for calendar year 2021 of 9.14% and a recognized actuarial asset gain of \$770 million during 2021. Even after recognizing this gain, the assets at actuarial value were \$3.2 billion less than the actuarial accrued liability as of December 31, 2021.

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

## Section 2: Valuation Process (continued)

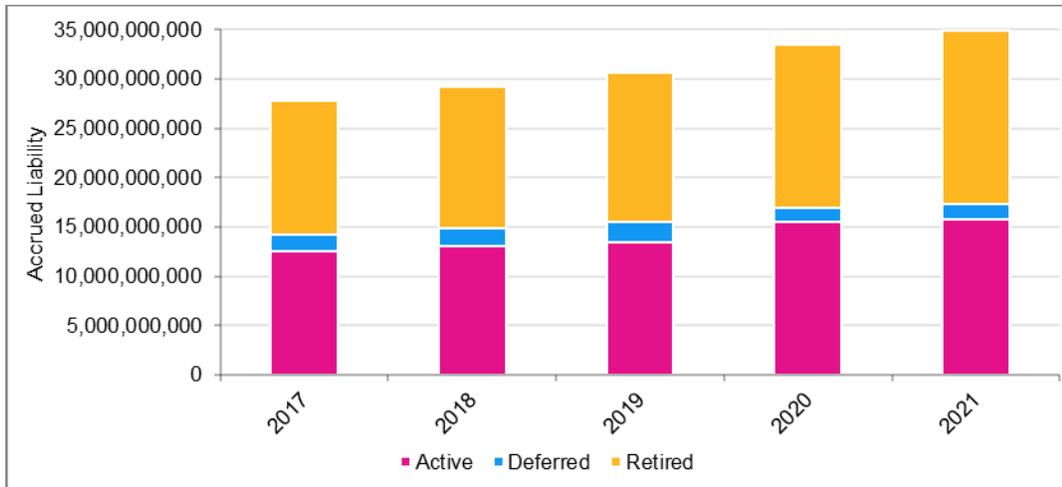
### Valuation Results: Actuarial Accrued Liability

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 \$33.485 billion to \$34.884 billion during 2021. 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 \$6.3 million lower than expected, resulting primarily from lower than expected pay increases and higher than expected mortality.

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

## Section 2: Valuation Process (continued)

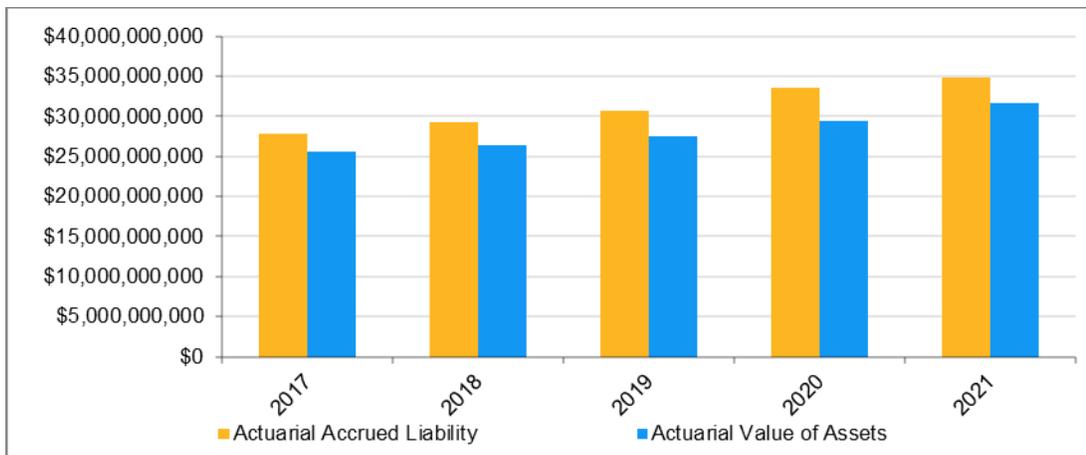
### Valuation Results: Funded Ratio

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 join 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

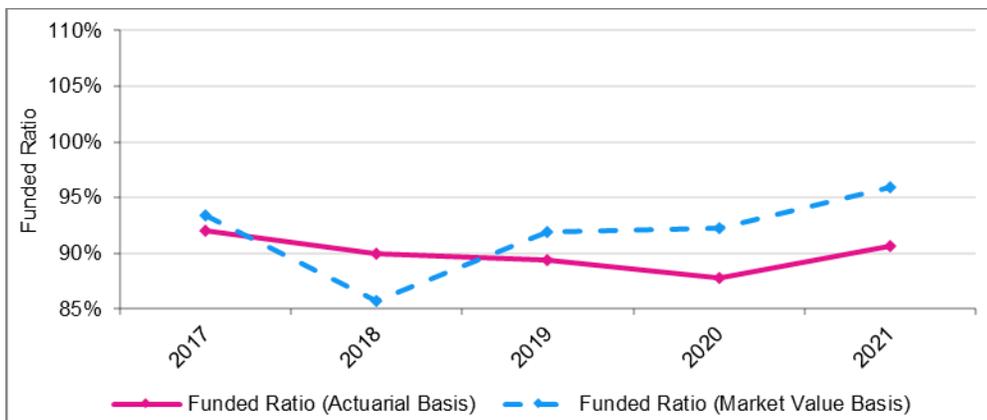
The graph below provides a history of the actuarial accrued liability compared to the actuarial value of assets over the past five years.



**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.

#### 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 increased from 87.8% as of December 31, 2020 to 90.7% as of December 31, 2021.

## Section 2: Valuation Process (continued)

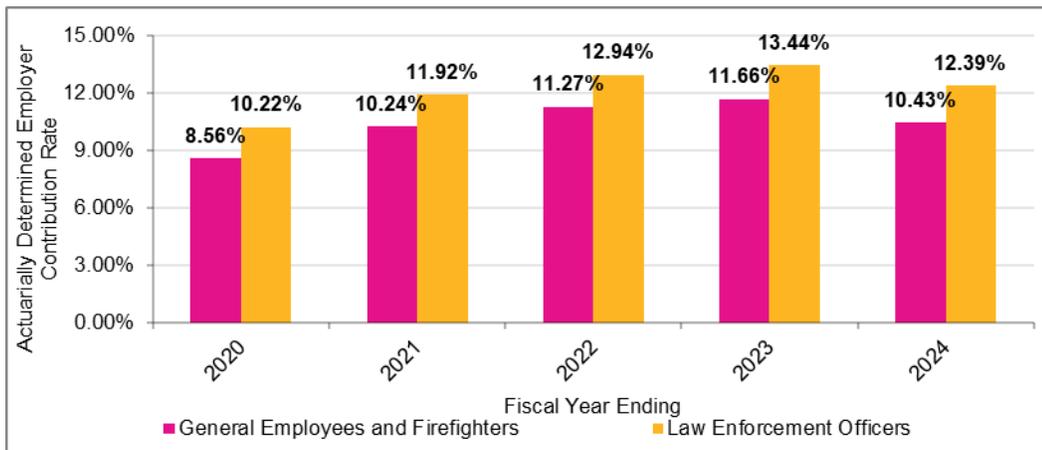
### Valuation Results: Employer Contributions

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 contribution rate is to be adjusted under the Board of Trustees' contribution rate policy, but may not be less than the normal contribution rate.

The December 31, 2020 valuation resulted in a preliminary actuarially determined employer contribution rate of 11.22% of payroll for general employees and firefighters and 13.00% of payroll for law enforcement officers at July 1, 2022. LGERS benefit recipients will receive a one-time benefit supplement payment equal to 2% of the member's annual retirement allowance for the fiscal year ending June 30, 2023, paid by October 2022. This added 0.44% of payroll to the actuarially determined contribution for fiscal 2023, so that the final actuarially determined employer contribution rate is 11.66% of payroll for general employees and firefighters and 13.44% of payroll for law enforcement officers at July 1, 2022. The Board of Trustees adopted a new Employer Contribution Rate Stabilization Policy (ECRSP) on April 29, 2021, which was amended on January 27, 2022. Based on the revised ECRSP, the preliminary ECRSP contribution rate should be set at 12.10% of payroll for general employees and firefighters and 13.10% of payroll for law enforcement officers at July 1, 2022. The December 31, 2021 valuation resulted in a preliminary actuarially determined employer contribution rate of 10.43% of payroll for general employees and firefighters and 12.39% of payroll for law enforcement officers at July 1, 2023. Based on the ECRSP, the preliminary ECRSP contribution rate should be set at 12.85% of payroll for general employees and firefighters and 14.10% of payroll for law enforcement officers at July 1, 2023.

#### 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 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: Valuation Process (continued)

### 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, 2021 valuation results and assumptions.

#### Key Projection Assumptions:

- Valuation interest rate of 6.50% for all years, with direct rate smoothing of the employer contribution rates over a five-year period beginning July 1, 2022.
- 6.50% 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 2027.
- The actuarially determined contribution rate is contributed for fiscal years ending 2028 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 April 29, 2021, and amended on January 27, 2022, requires that recommended contributions for general employees be set at 11.35% of payroll for fiscal year ending 2022 and will increase each fiscal year by 0.75% per year, with adjustments for the impact of any benefit or assumption changes that were made and not incorporated in the previous scheduled rate (other than the one-time supplement authorized by the Board under G.S. 128-27(k1) for the fiscal year ending in 2023), with the following additional adjustments, if applicable:

- (1) If the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year exceeds the adjusted scheduled employer contribution rate for that fiscal year by more than 1.00% of compensation, an increase equal to 50% of the difference is added to the adjusted scheduled employer contribution rate for the current and future fiscal years
- (2) Beginning July 1, 2024, if the adjusted scheduled employer contribution rate for that fiscal year exceeds the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year by more than 1.00% of compensation, a decrease equal to 50% of the difference, but not greater than 1.50% of compensation, is subtracted from the adjusted scheduled employer contribution rate for the current and future fiscal years

The ECRSP contribution rates for law enforcement officers will be 1.00% higher than contribution rates for general employees for fiscal year 2023. The 1.00% difference will increase by 0.25% each year until fiscal year 2027, when the contribution rates for law enforcement officers will be 2.00% higher than the contribution rates for general employees. Details on the projected contribution rates are shown in Section 9.

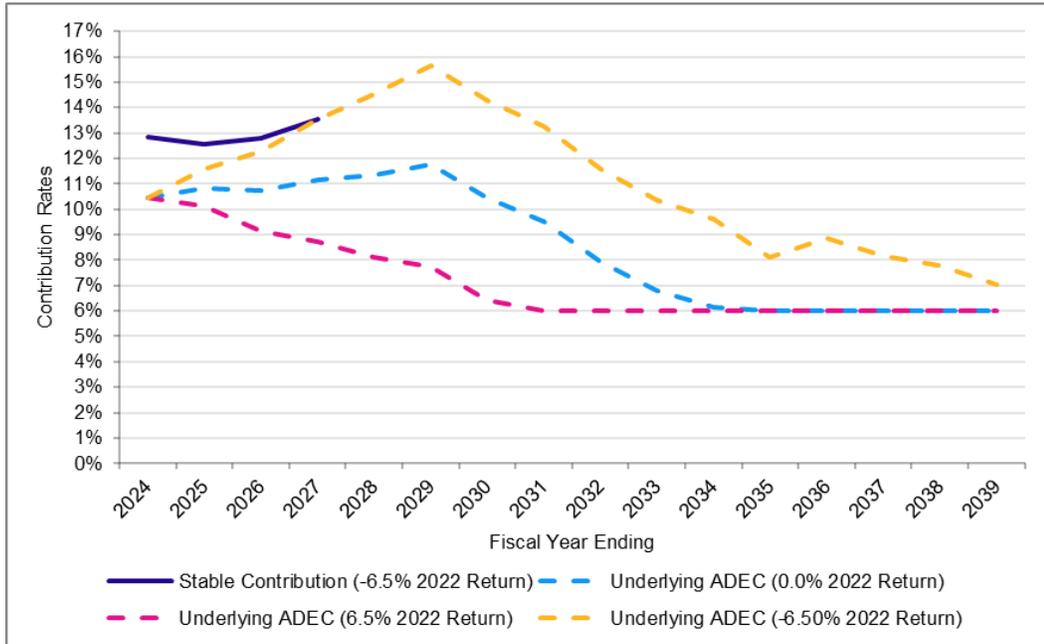
In addition, we have provided two alternate deterministic projections. The first alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a 0.0% asset return for calendar year 2022. The second alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a -6.5% asset return for calendar year 2022.

# Section 2: Valuation Process (continued)

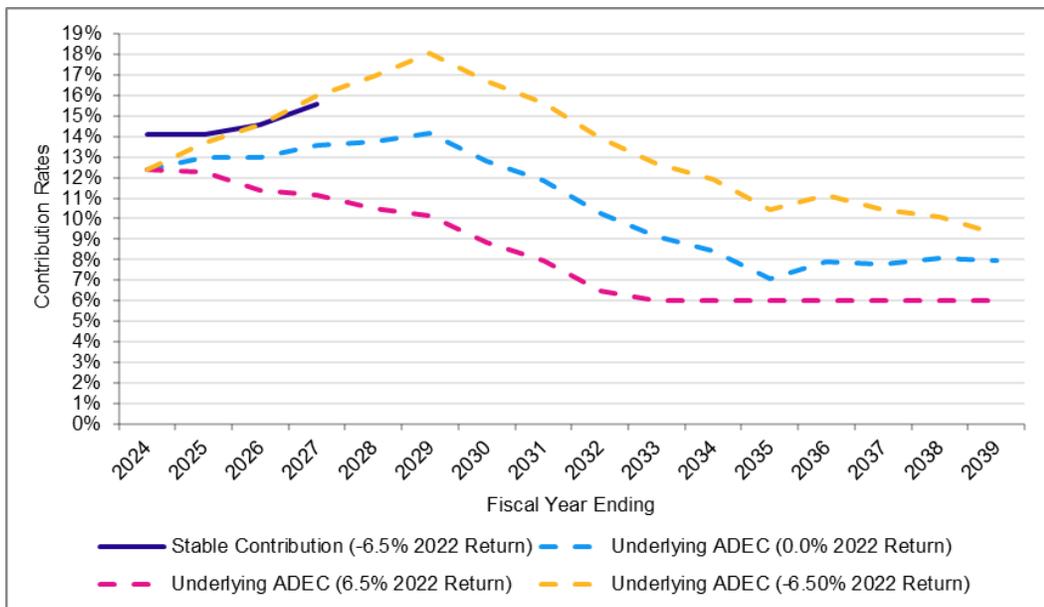
## Valuation Results: Projections (continued)

**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.



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



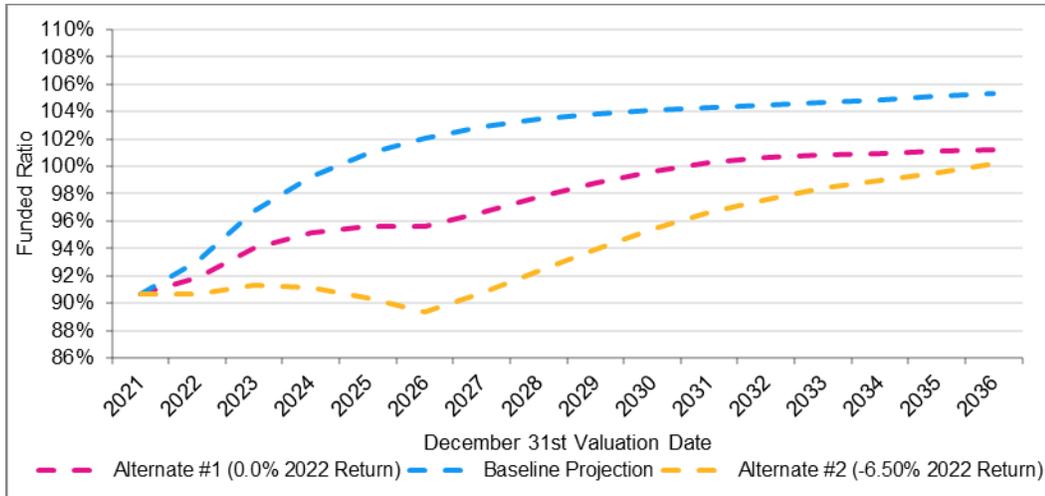
**Commentary:** The minimum employer contribution rate is equal to the employee contribution rate of 6.00%. The contribution rates shown in the graph above do not include an employer’s additional initial contribution for unfunded prior service cost accrued liability.

## Section 2: Valuation Process (continued)

### 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 6.50% return under the Baseline Projection is achieved, the funded ratio reaches the long-term target of 100% within 5 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 Account 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, 2022, is \$5,641,428,000 (compared to \$1,533,596,000 for fiscal year ending June 30, 2021). 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	97,480	45.61	9.55	\$ 4,905,619,845
Firefighters	13,630	37.60	9.84	751,926,462
Law Enforcement Officers	21,125	39.03	11.33	1,241,309,208
Total	132,235	43.73	9.86	\$ 6,898,855,515

The table above includes members not in receipt of benefits who had reported compensation in 2021.

**Table 3: Terminated Member Data**

	Member Count	Average Age	Average Service	Annual Deferred Retirement Allowances	Accumulated Contributions
<u>Terminated Vested Participants</u>					
General Employees	18,817	50.49	9.58	\$ 664,341,089	N/A
Firefighters	1,758	43.31	9.73	62,125,748	N/A
Law Enforcement Officers	3,947	44.04	9.94	145,547,985	N/A
Total	24,522	48.94	9.65	\$ 872,014,822	N/A
<u>Terminated Nonvested Participants</u>					
General Employees	59,061	43.66	1.54	N/A	\$ 258,402,156
Firefighters	4,083	35.98	1.83	N/A	21,365,686
Law Enforcement Officers	5,807	38.91	1.96	N/A	34,187,917
Total	68,951	42.81	1.59	N/A	\$ 313,955,759
Grand Total	93,473	44.42	3.70	\$ 872,014,822	\$ 313,955,759

The table above includes members not in receipt of benefits who did not have reported compensation in 2021.

## Section 3: Membership Data (continued)

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

	<b>Member Count</b>	<b>Average Age</b>	<b>Annual Retirement Allowances</b>
<u>Retired Members (Healthy at Retirement)</u>			
General Employees	50,105	70.99	\$ 980,096,554
Firefighters	2,981	65.79	97,290,349
Law Enforcement Officers	<u>9,818</u>	<u>64.93</u>	<u>283,624,682</u>
Total	62,904	69.80	\$ 1,361,011,585
<u>Retired Members (Disabled at Retirement)*</u>			
General Employees	6,168	64.93	\$ 105,736,970
Firefighters	1,202	62.53	33,056,529
Law Enforcement Officers	<u>1,601</u>	<u>57.86</u>	<u>34,559,341</u>
Total	8,971	63.35	\$ 173,352,840
<u>Survivors of Deceased Members</u>			
General Employees	5,485	71.97	\$ 66,433,858
Firefighters	500	73.79	8,424,268
Law Enforcement Officers	<u>1,458</u>	<u>70.61</u>	<u>23,896,656</u>
Total	7,443	71.83	\$ 98,754,782
Grand Total	79,318	69.26	\$ 1,633,119,207

\* 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	12/31/2021	12/31/2020
Beginning of Year Market Value of Assets	\$ 30,905,570,910	\$ 28,224,698,297
Employer Contributions	813,119,212	706,191,024
Employee Contributions	461,053,728	442,996,553
Court Costs	2,360,217	1,988,562
Benefit Payments Other Than Refunds	(1,609,920,723)	(1,531,981,296)
Refunds	(72,899,062)	(54,037,982)
Administrative Expenses	(5,399,241)	(5,112,894)
Investment Income	<u>2,966,041,108</u>	<u>3,120,828,646</u>
Net Increase/(Decrease)	2,554,355,239	2,680,872,613
End of Year Market Value of Assets	\$ 33,459,926,149	\$ 30,905,570,910
Estimated Net Investment Return on Market Value	9.66%	11.14%

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

Asset Data as of	12/31/2021	12/31/2020
Allocation by Dollar Amount		
Public Equity	\$ 11,982,868,255	\$ 11,364,288,681
Fixed Income (LTIF)	8,003,854,492	8,251,584,163
Cash and Receivables	4,790,545,988	3,362,801,559
Other*	<u>8,682,657,414</u>	<u>7,926,896,507</u>
Total Market Value of Assets	\$ 33,459,926,149	\$ 30,905,570,910
Allocation by Percentage of Asset Value		
Public Equity	35.8%	36.8%
Fixed Income (LTIF)	23.9%	26.7%
Cash and Receivables	14.3%	10.9%
Other*	<u>26.0%</u>	<u>25.6%</u>
Total Market Value of Assets	100.0%	100.0%

\* Real Estate, Alternatives, Inflation, and Credit

## Section 4: Asset Data (continued)

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	12/31/2021
Beginning of Year Actuarial Value of Assets	\$ 29,387,655,709
Beginning of Year Market Value of Assets	\$ 30,905,570,910
Total Contributions and Court Costs	1,276,533,157
Benefit Payments, Refunds and Administrative Expenses	<u>(1,688,219,026)</u>
Net Cash Flow	(411,685,869)
Expected Investment Return	1,995,692,948
Expected End of Year Market Value of Assets	32,489,577,989
End of Year Market Value of Assets	33,459,926,149
Excess of Market Value over Expected Market Value of Assets	970,348,160
80% of 2021 Asset Gain/(Loss)	776,278,528
60% of 2020 Asset Gain/(Loss)	696,142,675
40% of 2019 Asset Gain/(Loss)	776,171,352
20% of 2018 Asset Gain/(Loss)	<u>(431,874,582)</u>
Total Deferred Asset Gain/(Loss)	1,816,717,973
Preliminary End of Year Actuarial Value of Assets	31,643,208,176
Final End of Year Actuarial Value of Assets (not less than 80% and not greater than 120% of Market Value)	31,643,208,176
Estimated Net Investment Return on Actuarial Value	9.14%

**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 as of December 31, 2014.

Higher than expected market returns in 2019, 2020 and 2021, resulted in an actuarial value of asset return for calendar year 2021 of 9.14% and a recognized actuarial asset gain of \$770 million during 2021. Even after recognizing this gain, the assets at actuarial value were \$3.2 billion less than the actuarial accrued liability as of December 31, 2021.

## Section 4: Asset Data (continued)

The valuation assumes that the funds will earn a 6.50% asset return in all future years. 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
2002	7.25%	6.13%	-4.44%	N/A
2003	7.25%	8.52%	18.63%	N/A
2004	7.25%	9.00%	10.77%	N/A
2005	7.25%	8.58%	7.00%	N/A
2006	7.25%	9.19%	11.41%	N/A
2007	7.25%	9.03%	8.36%	N/A
2008	7.25%	2.97%	-19.47%	N/A
2009	7.25%	4.92%	14.94%	N/A
2010	7.25%	6.10%	11.53%	N/A
2011	7.25%	5.33%	2.14%	N/A
2012	7.25%	6.51%	11.79%	N/A
2013	7.25%	7.61%	12.21%	N/A
2014	7.25%	7.32%	6.19%	N/A
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%
2020	7.00%	8.79%	11.14%	6.32%
2021	6.50%	9.14%	9.66%	6.91%
20-Year Average	7.17%	6.90%	6.91%	N/A
20-Year Range	0.75%	6.22%	38.10%	N/A

**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 6.90% compares with an average market return of 6.91%. The range of returns on market value of assets is markedly more volatile, 38.10% versus 6.22%. 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	12/31/2021	12/31/2020
(a) Present Value of Future Benefits		
(1) Active Members	\$ 23,224,536,176	\$ 22,887,543,731
(2) Terminated Members	1,640,248,972	1,442,127,239
(3) Members Currently Receiving Benefits	17,504,732,597	16,527,449,324
(4) Total	\$ 42,369,517,745	\$ 40,857,120,294
(b) Present Value of Future Normal Costs		
(1) Employee Future Normal Costs	\$ 3,536,283,962	\$ 3,474,103,383
(2) Employer Future Normal Costs	3,949,110,373	3,897,784,321
(3) Total	\$ 7,485,394,335	\$ 7,371,887,704
(c) Actuarial Accrued Liability: (a4) - (b3)	\$ 34,884,123,410	\$ 33,485,232,590
(d) Actuarial Value of Assets	\$ 31,643,208,176	\$ 29,387,655,709
(e) Unfunded Accrued Liability: (c) - (d)	\$ 3,240,915,234	\$ 4,097,576,881
(f) Unfunded Initial Prior Service Liability*	\$ 10,095,092	\$ 15,421,007
(g) Unfunded Accrued Liability to be Amortized over 12 Years (e) - (f)	\$ 3,230,820,142	\$ 4,082,155,874

\* The unfunded initial prior service liability balance as of December 31, 2021 and the applicable employer contribution rate as of July 1, 2023 is provided in Appendix I, for participating employers with remaining initial prior service liability as of December 31, 2021. 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 join the system prior to November 1, 2015.

## Section 5: Liability Results (continued)

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	12/31/2021	12/31/2020
Total Participating Employers	897*	891*
Employers Paying a Prior Service Liability Rate at Prior Valuation Date	56	64
Employers Completing Scheduled Payments Since Prior Valuation Date	1	3
Employers Granted Early Relief Since Prior Valuation Date	7	5
Total Participating Employers Paying a Prior Service Liability Rate at Valuation Date	48	56
Employers Granted Relief for Fiscal Year Beginning 6 Months after Valuation Date	4	7
Employers with Expected Relief for Fiscal year Beginning 18 Months after Valuation Date	3	4

\* The number of participating employers shown in Appendices H and J include three additional employers joining after the valuation date for both plan years. Entries for December 31, 2020 have been revised from the prior report to reflect changes made subsequent to the issuance of that report.

## Section 5: Liability Results (continued)

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 12/31/2020	\$ 4,098
Normal Cost and Administrative Expense during 2021	882
Reduction due to Actual Contributions during 2021	(1,277)
Interest on UAAL, Normal Cost, and Contributions	282
Asset (Gain)/Loss	(770)
Actuarial Accrued Liability (Gain)/Loss	(6)
Impact of Assumption Changes	-
Impact of Benefit Changes	<u>32</u>
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2021	\$ 3,241

**Commentary:** During 2021, the UAAL decreased more than expected due primarily to an asset gain during the year of \$770 million. Additionally, demographic experience decreased the UAAL by \$6 million and benefit changes increased the UAAL by \$32 million.

## Section 6: Actuarially Determined Employer Contribution

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

LGERS benefit recipients will receive a one-time benefit supplement payment equal to 2% of the member's annual retirement allowance for the fiscal year ending June 30, 2023, payable in October 2022. The one-time supplements do not change the ongoing monthly benefits, and absent additional action by governing authorities, the payments will not recur in future years.

The Employer Contribution Rate Stabilization Policy (ECRSP) adopted by the Board of Trustees on April 29, 2021, and amended on January 27, 2022, requires that recommended contributions for general employees be set at 11.35% of payroll for fiscal year ending 2022 and will increase each fiscal year by 0.75% per year, with adjustments for the impact of any benefit or assumption changes that were made and not incorporated in the previous scheduled rate (other than the one-time supplement authorized by the Board under G.S. 128-27(k1) for the fiscal year ending in 2023), with the following additional adjustments, if applicable:

- (1) If the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year exceeds the adjusted scheduled employer contribution rate for that fiscal year by more than 1.00% of compensation, an increase equal to 50% of the difference is added to the adjusted scheduled employer contribution rate for the current and future fiscal years
- (2) Beginning July 1, 2024, if the adjusted scheduled employer contribution rate for that fiscal year exceeds the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year by more than 1.00% of compensation, a decrease equal to 50% of the difference, but not greater than 1.50% of compensation, is added to the adjusted scheduled employer contribution rate for the current and future fiscal years

The ECRSP contribution rates for law enforcement officers will be 1.00% higher than contribution rates for general employees for fiscal year 2023. The 1.00% difference will increase by 0.25% each year until fiscal year 2027, when the contribution rates for law enforcement officers will be 2.00% higher than the contribution rates for general employees.

## Section 6: Actuarially Determined Employer Contribution (continued)

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

**Table 12: Calculation of the Actuarially Determined Employer Contribution**

Valuation Date	12/31/2021	12/31/2020
ADEC for Fiscal Year Ending	6/30/2024	6/30/2023
Normal Cost Rate Calculation		
(a) Normal Cost Rate		
General Employees and Firefighters	12.33%	12.39%
Law Enforcement Officers	14.88%	14.91%
(b) Employee rate	6.00%	6.00%
(c) Expenses		
General Employees and Firefighters	0.13%	0.13%
Law Enforcement Officers	0.00%	0.00%
(d) Total Normal Cost Rate: (a) - (b) + (c)		
General Employees and Firefighters	6.46%	6.52%
Law Enforcement Officers	8.88%	8.91%
Accrued Liability Rate Calculation		
(e) Total Annual Amortization Payments*	\$ 447,155,812	\$ 540,200,277
(f) Projected Compensation**	7,748,900,026	7,605,240,537
(g) Accrued Liability Rate: (e) / (f)	5.77%	7.10%
Preliminary ADEC: (d) + (g)		
General Employees and Firefighters	12.23%	13.62%
Law Enforcement Officers	14.65%	16.01%
ADEC with Direct Rate Smoothing		
General Employees and Firefighters	10.43%	11.22%
Impact of Benefit Changes***	<u>N/A</u>	<u>0.44%</u>
Final ADEC	N/A	11.66%
Law Enforcement Officers	12.39%	13.00%
Impact of Benefit Changes***	<u>N/A</u>	<u>0.44%</u>
Final ADEC	N/A	13.44%

\* 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.

\*\*\* FY 2023 rates include One-Time Pension Supplement equal to 2% of the member's annual retirement allowance payable in October 2022. The one-time supplements do not change the ongoing monthly benefits, and absent additional action by governing authorities, the payments will not recur in future years.

## Section 6: Actuarially Determined Employer Contribution (continued)

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, 2021 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, 2023 (see Appendix I for more details).

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

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

	General Employees and Firefighters	Law Enforcement Officers
Fiscal year ending June 30, 2023 Preliminary ADEC (based on December 31, 2020 valuation)	11.22%	13.00%
Impact of Benefit Changes*	<u>0.44%</u>	<u>0.44%</u>
Fiscal year ending June 30, 2023 Final ADEC	11.66%	13.44%
Expected Change in UAAL**	0.25%	0.25%
Change Due to Demographic (Gain)/Loss	(0.16%)	(0.13%)
Change Due to Investment (Gain)/Loss	(1.31%)	(1.31%)
Change Due to Contributions Greater than ADEC***	(0.22%)	(0.22%)
Impact of Assumption Changes	0.00%	0.00%
Impact of Benefit Changes*	0.05%	0.05%
Impact of Direct Rate Smoothing	0.60%	0.75%
Reversal of one-time supplement cost	<u>(0.44%)</u>	<u>(0.44%)</u>
Fiscal year ending June 30, 2024 Preliminary ADEC (based on December 31, 2021 valuation)	10.43%	12.39%

\* LGERS benefit recipients will receive a one-time benefit supplement payment equal to 2% of the member's annual retirement allowance for the fiscal year ending June 30, 2023, payable in October 2022. The one-time supplements do not change the ongoing monthly benefits, and absent additional action by governing authorities, the payments will not recur in future years.

\*\* 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. Also, since the ADEC is for fiscal years that begin after the valuation date, and actual contributions are based on the ADEC for the current fiscal year, and since the ADECs have been increasing in recent years, the timing of the actual contributions can cause an expected increase in UAAL. In periods when the ADEC is decreasing from year to year, the timing of the actual contributions can accelerate the expected decrease in UAAL.

\*\*\* Employer contribution rates for General Employees and Law Enforcement during 2021 were greater than the ADEC.

## Section 6: Actuarially Determined Employer Contribution (continued)

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		12/31/2021	12/31/2020
(a)	Unfunded Actuarial Accrued Liability*	\$ 3,230,820,142	\$ 4,082,155,874
(b)	Prior Years' Outstanding Balances	\$ 3,943,620,512	\$ 3,134,575,986
(c)	New Amortization Base: (a) - (b)	\$ (712,800,370)	\$ 947,579,888
(d)	New Amortization Payment	\$ (93,044,465)	\$ 123,691,102

\* Does not include the unfunded initial prior service liability

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

Date Established	Original Balance	12/31/2021 Outstanding Balance	Annual Payment Effective July 1, 2023
—			
December 31, 2015	\$ 677,367,798	\$ 537,531,830	\$ 89,938,080
December 31, 2016	472,513,055	411,378,828	62,510,871
December 31, 2017	961,083,903	905,511,643	126,675,678
December 31, 2018	667,733,439	674,799,396	87,853,163
December 31, 2019	377,679,711	405,226,234	49,531,383
December 31, 2020	947,579,888	1,009,172,581	123,691,102
December 31, 2021	(712,800,370)	(712,800,370)	(93,044,465)
Total		\$ 3,230,820,142	\$ 447,155,812

## Section 6: Actuarially Determined Employer Contribution (continued)

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	Benefit Changes*	Final ADEC	Actual Contribution
12/31/2021	7/1/2023	10.43%	N/A	N/A	N/A
12/31/2020	7/1/2022	11.22%	0.44%	11.66%	12.10%
12/31/2019	7/1/2021	11.27%	0.00%	11.27%	11.35%
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%

\* Benefit changes for the contribution for fiscal year ending June 30, 2023 provided to LGERS benefit recipients a one-time supplement equal to 2% of the member's annual retirement allowance for the fiscal year ending June 30, 2023, paid by October 2022.

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

Valuation Date	Rate Effective	Preliminary ADEC	Benefit Changes*	Final ADEC	Actual Contribution
12/31/2021	7/1/2023	12.39%	N/A	N/A	N/A
12/31/2020	7/1/2022	13.00%	0.44%	13.44%	13.10%
12/31/2019	7/1/2021	12.94%	0.00%	12.94%	12.10%
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%

\* Benefit changes for the contribution for fiscal year ending June 30, 2023 provided to LGERS benefit recipients a one-time benefit supplement payment equal to 2% of the member's annual retirement allowance for the fiscal year ending June 30, 2023, paid by October 2022.

## Section 6: Actuarially Determined Employer Contribution (continued)

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, 2021 or December 31, 2020 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	12/31/2021	12/31/2020
Increase in the UAAL for a 1% COLA	189,284,000	183,045,000
Increase in the ADEC for a 1% COLA	0.32%	0.31%
Increase in the UAAL for a 0.1% Increase in the Defined Benefit Formula	186,871,000	179,508,000
Increase in the ADEC for a 0.1% Increase in the Defined Benefit Formula	0.39%	0.37%

The 1% COLA in the December 31, 2021 column would be effective July 1, 2023 and includes expected costs of COLAs paid for retirements after December 31, 2021 and before June 30, 2023. The COLA would be paid in full to retired members and survivors of deceased members on the retirement roll on July 1, 2022 and would be prorated for retired members and survivors of deceased members who commence benefits after July 1, 2022 but before June 30, 2023.

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 \$186.9 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 2023 is 4.00%
- (2) Amount of actuarial accrued liability that would be added if that COLA is granted: \$757.1 million
- (3) Amount that COLA would increase the underlying ADEC: 1.28%
- (4) ECRSP rate for General/Firefighters including the impact for this COLA: 14.13% (12.85% + 1.28%)
- (5) ECRSP rate for Law Enforcement Officers including the impact for this COLA: 15.38% (14.10% + 1.28%)

## Section 7: Valuation Balance Sheet

The valuation balance sheet shows the 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	12/31/2021	12/31/2020
<b>Assets</b>		
Current Actuarial Value of Assets		
Annuity Savings Fund	\$ 6,009,033,681	\$ 5,792,939,657
Pension Accumulation Fund	<u>25,634,174,495</u>	<u>23,594,716,052</u>
Total	\$ 31,643,208,176	\$ 29,387,655,709
Future Member Contributions to the Annuity Savings Fund	\$ 3,536,283,962	\$ 3,474,103,383
Prospective Contributions to the Pension Accumulation Fund		
Normal Contributions	\$ 3,949,110,373	\$ 3,897,784,321
Unfunded Accrued Liability Contributions	<u>3,240,915,234</u>	<u>4,097,576,881</u>
Total	\$ 7,190,025,607	\$ 7,995,361,202
Total Assets	\$ 42,369,517,745	\$ 40,857,120,294
<b>Liabilities</b>		
Annuity Savings Fund		
Past Member Contributions	\$ 6,009,033,681	\$ 5,792,939,657
Future Member Contributions	<u>3,536,283,962</u>	<u>3,474,103,383</u>
Total Contributions	\$ 9,545,317,643	\$ 9,267,043,040
Pension Accumulation Fund		
Benefits Currently in Payment	\$ 17,503,520,341	\$ 16,527,449,324
Benefits to be Paid to		
Current Active and Inactive Members	15,320,679,761	15,062,627,930
Reserve for Increases in Retirement Allowances	<u>0</u>	<u>0</u>
Total Benefits Payable	\$ 32,824,200,102	\$ 31,590,077,254
Total Liabilities	\$ 42,369,517,745	\$ 40,857,120,294

## Section 8: Accounting Results

This section contains the accounting information for Governmental Accounting Standards Board (GASB) Statement No. 67 for fiscal year ending June 30, 2022 based on a valuation date of December 31, 2021.

The June 30, 2022 total pension liability presented in this section was determined by an actuarial valuation as of December 31, 2021, 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, 2021**

<b>Group</b>	<b>Number</b>
Retired members and survivors of deceased members currently receiving benefits	79,318
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	93,473
Active members	<u>132,235</u>
Total	305,026

## Section 8: Accounting Results (continued)

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)**

<b>Schedule of Changes in Net Pension Liability as of June 30, 2022</b>	
<b>Total Pension Liability</b>	
Service Cost	\$ 904,200,000
Interest	2,225,081,000
Changes of Benefit Terms	33,159,000
Difference between Expected and Actual Experience	(31,778,000)
Change of Assumptions	0
Benefit Payments, including Refund of Member Contributions	<u>(1,732,564,000)</u>
Net Change in Total Pension Liability	\$ 1,398,098,000
Total Pension Liability - Beginning of Year	\$ 34,180,463,000
Total Pension Liability - End of Year	\$ 35,578,561,000
<b>Plan Fiduciary Net Position</b>	
Employer Contributions	\$ 880,449,000
Member Contributions	477,001,000
Net Investment Income	(2,331,589,000)
Benefit Payments, including Refund of Member Contributions	(1,732,564,000)
Administrative Expenses	(5,415,000)
Other	<u>2,384,000</u>
Net Change in Fiduciary Net Position	\$ (2,709,734,000)
Plan Fiduciary Net Position - Beginning of Year	\$ 32,646,867,000
Plan Fiduciary Net Position - End of Year	\$ 29,937,133,000

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

Calculation as of	June 30, 2022	June 30, 2021
Total Pension Liability	\$ 35,578,561,000	\$ 34,180,463,000
Plan Fiduciary Net Position	<u>29,937,133,000</u>	<u>32,646,867,000</u>
Net Pension Liability (Asset)	\$ 5,641,428,000	\$ 1,533,596,000
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	84.14%	95.51%

## Section 8: Accounting Results (continued)

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) as of June 30, 2022 to Changes in the Discount Rate**

	1% Decrease	Current	1% Increase
Discount Rate	5.50%	6.50%	7.50%
Net Pension Liability (Asset)	\$ 10,182,051,000	\$5,641,428,000	\$1,899,691,000

The discount rate used to measure the total pension liability was 6.50%. The projection of cash flows used to determine the discount rate assumed that for 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 through 2027, System contributions will follow the Employer Contribution Rate Stabilization Policy as adopted by the Board of Trustees on April 29, 2021, and amended on January 27, 2022, and "direct-rate smoothing" as adopted by the Board of Trustees on January 28, 2021. It is assumed that for fiscal years 2028 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). Investment earnings are based on actual returns through June 30, 2022, and on the assumed investment rate of return thereafter. In addition, future administrative expenses are assumed equal to 0.1% of projected pay, but no less than a flat rate per active and in-pay member equal to \$27 in 2022 and increased by 2.5% per year thereafter. Based on those assumptions, 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.

The information 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	12/31/2021
Actuarial Cost Method	Entry Age
Amortization Method	Level dollar closed
Amortization Period	12-year closed period
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*	6.50%
Projected Salary Increases**	3.25% - 8.25%
*Includes Inflation of	2.50%
**Includes Inflation and Productivity of	3.25%
Cost-of-living Adjustments	N/A

## Section 9: Projections

Projections of contribution requirements and funded status into the future can be helpful planning tools for stakeholders. This section provides such projections. The projections of the actuarial valuation are known as deterministic projections. Deterministic projections are based on one scenario in the future. The baseline deterministic projection is based on December 31, 2021 valuation results as assumptions.

### Key Projection Assumptions

- Valuation interest rate of 6.50% for all years in conjunction with direct rate smoothing of the employer contribution rate over a 5-year period beginning July 1, 2022.
- 6.50% 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 2027.
- The actuarially determined contribution rate is contributed for fiscal years ending 2028 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 April 29, 2021, and amended on January 27, 2022, requires that recommended contributions for general employees be set at 11.35% of payroll for fiscal year ending 2022 and will increase each fiscal year by 0.75% per year, with adjustments for the impact of any benefit or assumption changes that were made and not incorporated in the previous scheduled rate (other than the one-time supplement authorized by the Board under G.S. 128-27(k1) for the fiscal year ending in 2023), with the following additional adjustments, if applicable:

- (1) If the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year exceeds the adjusted scheduled employer contribution rate for that fiscal year by more than 1.00% of compensation, an increase equal to 50% of the difference is added to the adjusted scheduled employer contribution rate for the current and future fiscal years
- (2) Beginning July 1, 2024, if the adjusted scheduled employer contribution rate for that fiscal year exceeds the underlying actuarially determined employer contribution rate (ADEC) for a given fiscal year by more than 1.00% of compensation, a decrease equal to 50% of the difference, but not greater than 1.50% of compensation, is added to the adjusted scheduled employer contribution rate for the current and future fiscal years

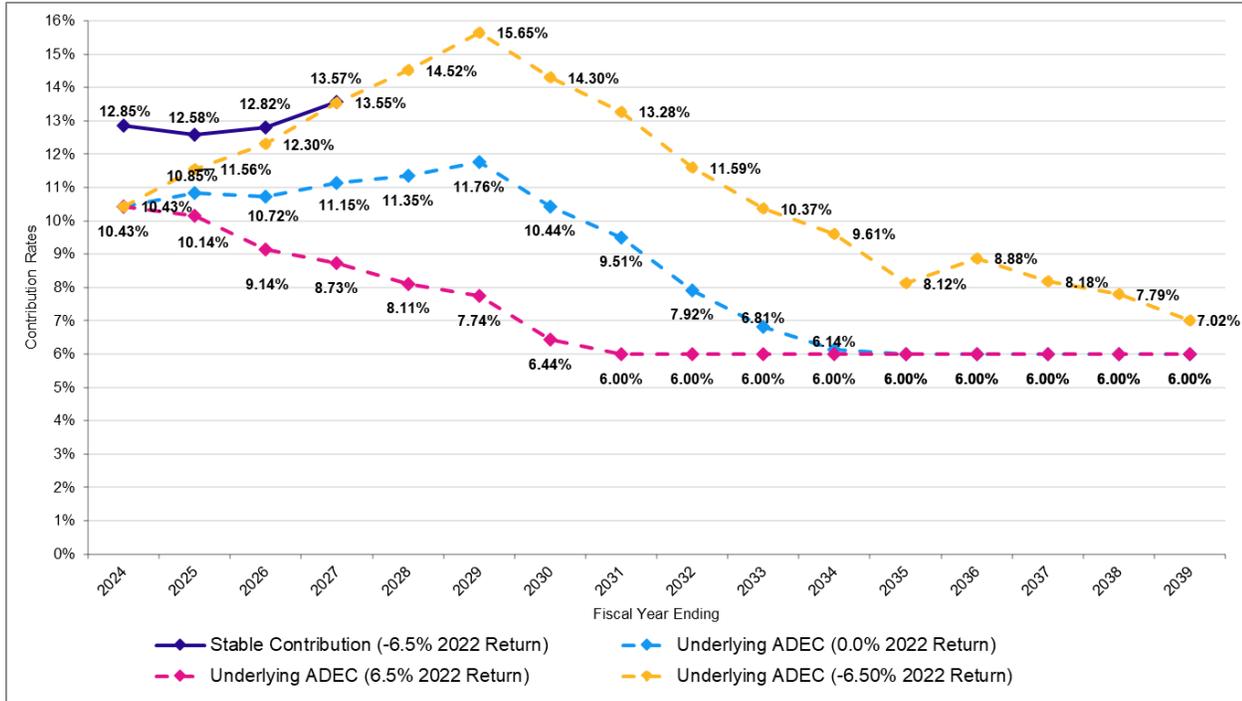
The ECRSP contribution rates for law enforcement officers will be 1.00% higher than contribution rates for general employees for fiscal year 2023. The 1.00% difference will increase by 0.25% each year until fiscal year 2027, when the contribution rates for law enforcement officers will be 2.00% higher than the 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 2022. The second alternate deterministic projection is based on the same assumptions as the baseline deterministic projection except that it assumes a -6.5% asset return for calendar year 2022.

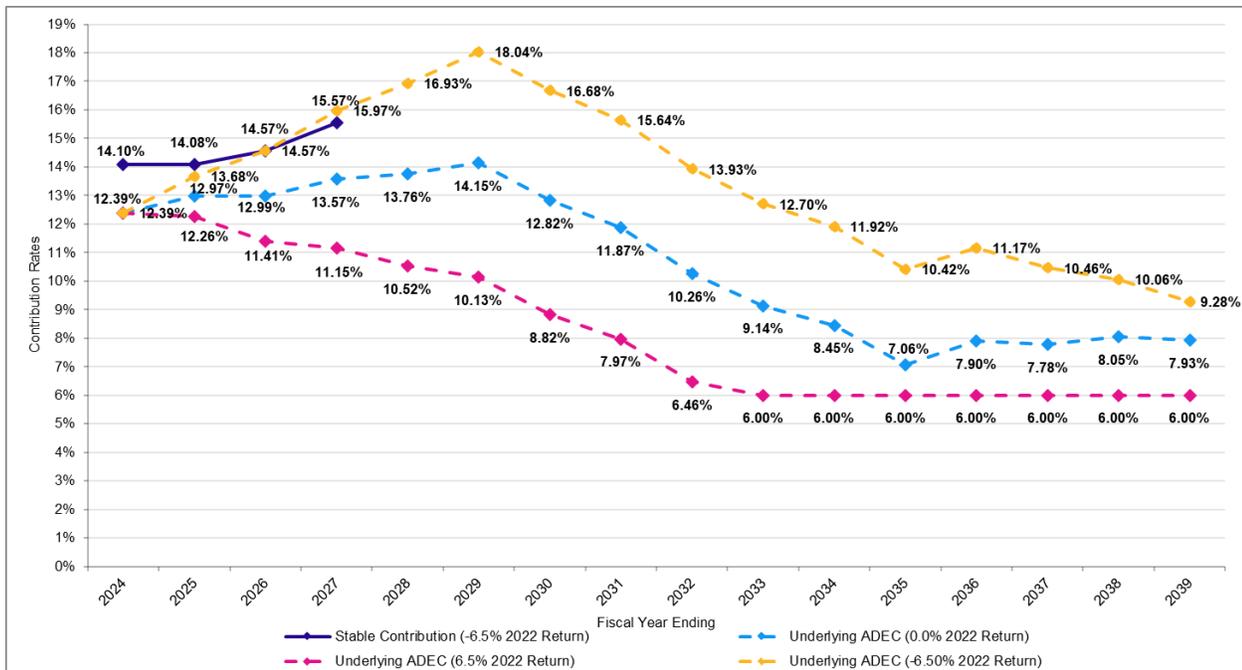
# Section 9: Projections (continued)

The graphs below provide 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



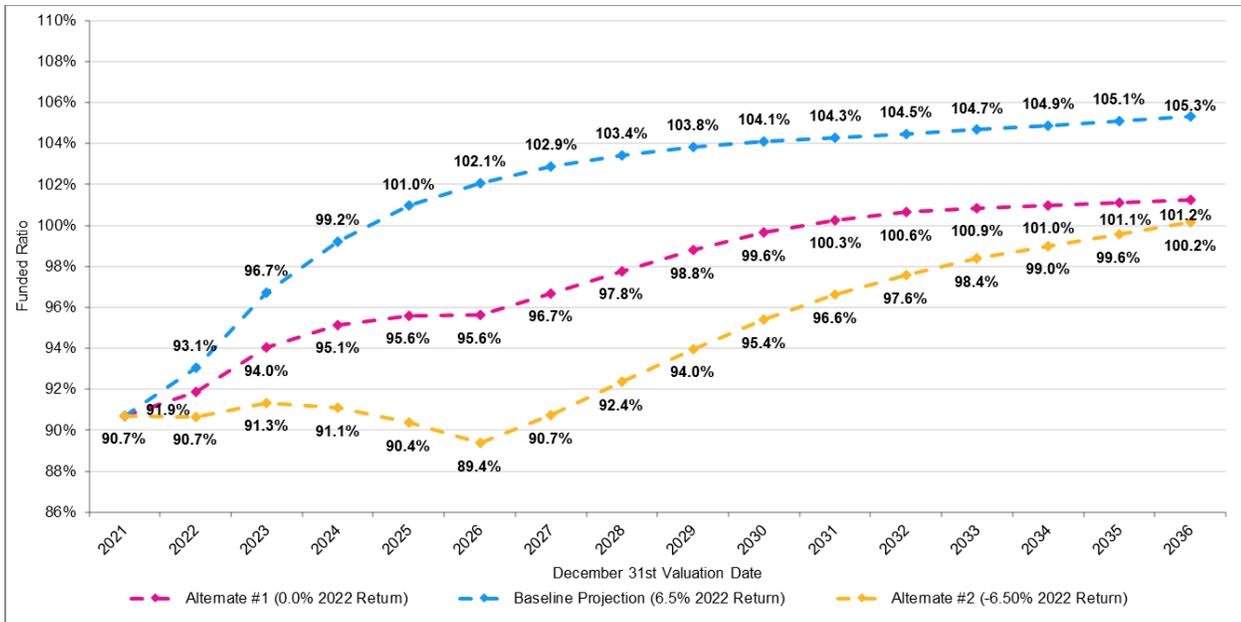
## Projected Actuarially Determined Employer Contribution Rates for Law Enforcement Officers



# Section 9: Projections (continued)

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

## Projected Funded Ratio



# Appendix A: Valuation Process and Glossary of Actuarial Terms

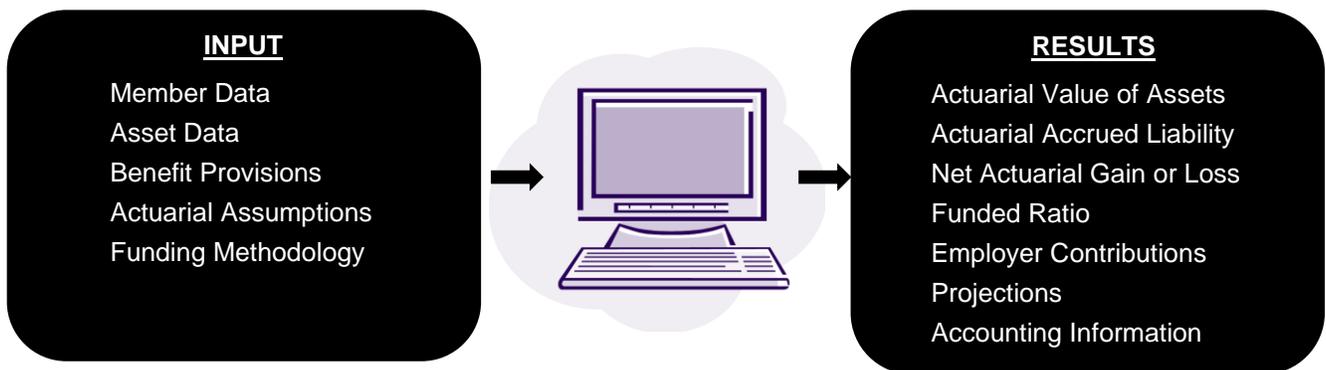
## Purpose of an Actuarial Valuation

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 "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."

## 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 (continued)

## Actuarial Valuation Process (continued)

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, 2024 and will be presented during 2025. 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 that 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 (continued)

## Actuarial Valuation Process (continued)

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 twenty-five years or less, but actuaries may 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, 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 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 (continued)

## Actuarial Valuation Process (continued)

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 6.50% 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 25 years. 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 largest 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. Buck 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 (continued)

## 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. This is 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.*

# Appendix A: Valuation Process and Glossary of Actuarial Terms (continued)

## Glossary (continued)

### 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 25) 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  
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.*

### Asset Valuation Method

The components of how the actuarial value of assets is to be developed.

### 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.*

# Appendix A: Valuation Process and Glossary of Actuarial Terms (continued)

## Glossary (continued)

### 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 Tabulations of Member Data

**Table B-1: Number and Average Reported Compensation of Active Members Distributed by Age and Service as of December 31, 2021**

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	1,592	4,172	88	0	0	0	0	0	0	0	5,852
	7,701	35,487	45,088	0	0	0	0	0	0	0	28,072
25 to 29	1,441	8,899	3,213	29	0	0	0	0	0	0	13,582
	8,277	40,895	49,264	52,860	0	0	0	0	0	0	39,440
30 to 34	1,156	6,555	6,625	1,810	57	0	0	0	0	0	16,203
	8,521	42,642	51,503	57,358	57,821	0	0	0	0	0	45,528
35 to 39	841	4,604	4,777	4,032	1,990	57	0	0	0	0	16,301
	8,792	44,571	53,846	60,090	62,880	66,665	0	0	0	0	51,594
40 to 44	759	3,795	3,682	3,005	3,560	1,536	36	0	0	0	16,373
	9,431	45,387	54,404	60,972	66,005	69,634	73,664	0	0	0	55,428
45 to 49	600	3,257	3,228	2,447	2,960	3,563	1,294	18	0	0	17,367
	8,984	44,987	54,304	59,262	64,165	72,433	77,179	75,016	0	0	58,815
50 to 54	554	3,070	3,145	2,424	2,726	2,867	3,014	433	12	0	18,245
	8,675	46,308	53,315	58,216	63,450	69,895	79,798	77,937	80,207	0	60,528
55 to 59	422	2,497	2,585	2,035	2,167	1,882	1,449	698	168	6	13,909
	8,652	45,203	52,243	56,807	59,880	64,260	72,617	82,399	78,704	77,209	57,106
60 to 64	216	1,582	1,922	1,469	1,586	1,338	820	417	237	75	9,662
	7,681	44,566	51,509	57,449	58,561	62,367	67,849	78,716	82,669	81,480	56,515
65 to 69	61	526	721	552	513	396	222	161	85	86	3,323
	7,934	40,290	49,419	56,212	58,386	63,241	67,841	70,033	76,122	88,094	55,286
70 & Up	24	339	306	230	204	117	66	53	32	47	1,418
	6,201	28,809	35,848	45,397	53,465	53,615	60,218	72,837	72,800	88,296	44,302
Total	7,666	39,296	30,292	18,033	15,763	11,756	6,901	1,780	534	214	132,235
	8,444	42,548	52,311	58,695	62,792	68,469	75,775	78,973	79,733	85,515	52,171

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-2: Number and Reported Compensation of Active Members Distributed by Age as of December 31, 2021**

Age	Men		Women	
	Number	Compensation	Number	Compensation
17	1	\$ 2,237	1	\$ 3,926
18	25	177,770	4	15,224
19	130	1,488,485	31	334,005
20	252	5,270,443	90	1,553,529
21	448	11,218,434	184	3,512,825
22	750	21,514,113	342	7,621,619
23	1,039	32,810,301	583	15,066,491
24	1,247	42,182,271	725	21,508,477
25	1,394	52,140,718	903	28,388,575
26	1,634	65,016,935	1,017	36,159,123
27	1,608	66,732,603	1,050	37,973,083
28	1,714	73,084,971	1,216	47,175,723
29	1,849	81,820,592	1,197	47,179,129
30	1,887	85,583,684	1,299	51,638,762
31	1,995	92,417,107	1,330	55,395,819
32	1,923	91,320,895	1,333	55,688,701
33	1,914	94,747,901	1,331	57,244,270
34	1,890	95,522,292	1,301	58,129,322
35	1,893	99,325,593	1,359	61,381,953
36	1,939	104,855,905	1,394	64,140,736
37	1,867	102,938,396	1,379	64,763,656
38	1,826	102,234,507	1,372	64,975,096
39	1,889	106,735,569	1,383	69,684,201
40	1,911	110,632,025	1,460	72,303,959
41	1,794	105,101,476	1,411	70,814,164
42	1,742	102,438,244	1,489	74,397,739
43	1,758	105,888,287	1,518	78,790,582
44	1,751	106,133,571	1,539	81,024,400
45	1,853	114,994,007	1,539	80,772,059
46	1,778	111,899,854	1,455	75,563,949
47	1,984	126,361,184	1,613	85,664,341
48	1,962	127,286,829	1,636	88,587,343
49	1,982	127,567,870	1,565	82,751,456
50	2,197	145,956,223	1,750	95,068,056
51	2,175	144,830,638	1,853	102,083,302
52	1,934	126,558,370	1,777	96,864,249
53	1,758	114,219,122	1,565	83,449,430
54	1,718	111,443,872	1,518	83,860,631
55	1,463	92,509,615	1,446	76,178,209
56	1,340	82,777,550	1,475	77,598,633

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-2: Number and Reported Compensation of Active Members Distributed by Age as of December 31, 2021 (continued)**

Age	Men		Women	
	Number	Compensation	Number	Compensation
57	1,297	\$ 80,095,631	1,447	\$ 76,354,595
58	1,316	81,504,279	1,478	77,880,300
59	1,271	76,774,797	1,376	72,619,330
60	1,176	71,633,287	1,287	70,020,737
61	1,054	63,385,686	1,227	63,751,333
62	868	52,976,858	1,038	53,650,192
63	747	47,177,539	874	45,160,997
64	645	40,252,721	746	38,035,650
65	553	33,410,996	564	31,213,001
66	418	24,927,385	415	20,408,960
67	280	16,470,569	302	14,731,570
68	225	12,671,968	205	10,791,717
69	199	11,060,345	162	8,027,756
70	171	9,360,427	124	6,044,971
71	132	7,195,376	98	4,619,769
72	105	4,398,946	89	3,792,576
73	100	4,442,850	63	2,487,124
74	55	2,297,877	48	2,158,031
75	62	2,785,371	49	2,110,596
76	44	1,683,548	27	1,000,565
77	33	1,238,971	17	656,046
78	28	926,971	28	1,012,908
79	33	1,156,814	16	691,272
80	20	518,104	5	137,804
81	16	534,744	6	246,515
82	11	318,710	3	57,537
83	3	67,916	1	21,964
84	6	191,592	5	118,496
85	5	74,857	2	89,246
86	2	87,173	1	9,722
87	2	46,730	4	75,280
90	0	0	1	40,903
92	2	73,549	0	0
94	1	48,259	0	0
Total	73,094	\$ 4,035,531,305	59,141	\$ 2,863,324,210

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-3: Number and Reported Compensation of Active Members Distributed by Service as of December 31, 2021**

Service	Men		Women	
	Number	Compensation	Number	Compensation
0	3,639	\$ 30,753,640	4,027	\$ 33,975,348
1	5,768	193,897,160	5,662	185,436,402
2	5,253	238,551,562	4,573	197,651,557
3	5,127	246,101,431	4,479	202,749,577
4	4,625	229,141,408	3,809	178,435,824
5	4,034	205,771,923	3,557	170,623,238
6	3,578	190,524,014	3,057	150,534,937
7	3,278	179,863,446	2,710	135,865,571
8	2,889	160,264,176	2,286	118,342,098
9	2,655	152,746,260	2,248	120,078,985
10	2,322	136,902,609	1,675	88,862,470
11	1,960	115,776,872	1,402	77,827,792
12	1,848	114,021,039	1,282	71,374,639
13	1,988	122,617,576	1,369	77,478,700
14	2,409	153,323,103	1,778	100,264,300
15	2,148	135,831,042	1,524	86,650,343
16	2,035	131,819,271	1,458	84,990,256
17	1,963	129,362,680	1,304	78,042,780
18	1,699	112,763,941	1,208	72,374,478
19	1,453	99,115,796	971	58,845,110
20	1,349	93,874,005	1,047	64,839,950
21	1,459	103,308,419	1,030	62,423,510
22	1,433	105,264,749	1,065	66,116,372
23	1,423	105,277,098	949	60,341,136
24	1,204	91,480,789	797	52,000,906
25	1,127	87,958,185	651	43,366,635
26	961	77,713,804	595	38,707,645
27	903	72,374,218	576	39,966,254
28	791	65,580,220	483	33,427,035
29	467	40,310,275	347	23,521,413
30	262	21,538,600	271	18,257,225
31	203	17,258,518	189	13,949,485
32	171	15,074,383	150	10,950,420
33	156	13,664,104	138	9,984,385
34	121	10,755,456	119	9,139,456
35	96	8,185,423	67	4,794,819
36	60	4,936,429	71	5,239,969
37	67	5,972,463	50	3,932,772
38	30	2,298,277	37	2,688,531
39	35	3,097,294	21	1,431,319

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-3: Number and Reported Compensation of Active Members Distributed by Service as of December 31, 2021 (continued)**

Service	Men		Women	
	Number	Compensation	Number	Compensation
40	25	\$ 2,326,549	19	\$ 1,287,662
41	25	2,398,155	24	1,715,936
42	14	1,429,854	9	935,171
43	9	884,634	12	675,976
44	11	862,039	11	674,131
45	4	435,122	7	478,435
46	8	1,058,201	6	394,259
47	2	148,821	3	344,221
48	1	188,646	4	251,052
49	0	0	3	156,659
50	1	69,376	3	285,423
51	1	147,775	3	283,099
52	2	249,391	1	97,051
53	1	157,861	0	0
54	1	103,223	0	0
55	0	0	1	97,839
56	0	0	1	49,252
60	0	0	1	53,372
67	0	0	1	61,030
Total	73,094	\$ 4,035,531,305	59,141	\$ 2,863,324,210

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-4: Number and Accumulated Contributions of Terminated Vested Members Distributed by Age as of December 31, 2021**

Age	Men		Women	
	Number	Contributions	Number	Contributions
18	1	\$ 99	0	\$ 0
19	15	8,440	6	1,925
20	57	62,891	18	11,925
21	125	186,154	45	51,871
22	262	430,826	78	93,100
23	405	792,405	215	340,541
24	498	1,258,216	322	664,696
25	635	1,747,697	465	1,182,429
26	800	2,636,145	575	1,733,748
27	891	3,120,255	685	2,483,242
28	1,025	4,163,065	808	3,014,869
29	1,054	4,958,449	919	4,101,348
30	1,178	5,758,628	1,002	5,045,727
31	1,228	7,408,560	1,131	6,125,073
32	1,359	8,947,550	1,103	6,313,479
33	1,246	8,984,955	1,205	7,407,113
34	1,277	9,529,713	1,230	8,121,959
35	1,373	11,968,771	1,274	9,181,292
36	1,300	12,591,540	1,268	10,423,121
37	1,380	13,726,424	1,385	11,624,866
38	1,240	12,881,641	1,345	12,817,068
39	1,328	15,673,877	1,366	13,719,339
40	1,260	16,033,661	1,341	13,921,669
41	1,216	15,755,721	1,417	15,300,812
42	1,208	16,686,474	1,460	16,072,735
43	1,149	16,750,303	1,490	18,442,356
44	1,117	17,137,093	1,399	17,963,682
45	1,168	17,724,235	1,335	18,093,396
46	1,066	17,418,931	1,346	19,134,775
47	1,130	19,926,820	1,436	20,299,570
48	1,117	20,624,279	1,404	21,590,366
49	1,144	21,700,786	1,372	22,074,487
50	1,174	22,245,341	1,355	21,947,747
51	1,255	22,942,565	1,525	24,701,304
52	1,172	21,762,507	1,411	23,083,357
53	1,048	20,010,816	1,301	22,671,871
54	948	17,440,197	1,162	20,450,225
55	962	17,030,585	1,120	18,842,814
56	881	15,082,304	1,112	20,333,351
57	938	18,032,738	1,097	20,579,858

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-4: Number and Accumulated Contributions of Terminated Vested Members Distributed by Age as of December 31, 2021 (continued)**

Age	Men		Women	
	Number	Contributions	Number	Contributions
58	812	\$ 16,239,535	1,104	\$ 20,879,834
59	784	14,985,435	1,107	22,764,213
60	748	15,432,950	975	19,916,220
61	580	11,409,735	797	15,449,745
62	520	10,854,071	730	14,634,173
63	403	8,020,180	682	14,381,061
64	391	7,448,948	610	11,576,349
65	349	5,892,873	439	8,666,819
66	277	4,800,575	370	6,234,208
67	252	3,301,083	309	4,947,662
68	212	3,439,135	259	3,857,689
69	166	2,237,812	233	3,852,551
70	168	2,379,068	194	2,337,995
71	108	1,002,540	152	2,405,870
72	100	714,792	111	1,335,183
73	44	301,666	37	459,297
74	40	149,733	28	461,227
75	34	219,675	19	122,636
76	26	227,395	18	183,749
77	10	44,820	4	37,973
78	10	158,785	6	78,927
79	12	193,012	9	79,576
80	10	20,986	4	13,139
81	7	17,201	6	67,028
82	8	101,293	1	13,859
83	4	9,287	4	260,681
84	0	0	3	11,677
85	2	9,673	0	0
86	7	75,000	2	23,188
87	2	3,294	3	13,694
88	2	7,422	0	0
89	3	5,438	1	50,361
90	1	3,928	0	0
92	2	4,428	0	0
95	0	0	1	288
96	0	0	1	36,584
100+	2	594		
Total	44,726	\$ 570,854,019	48,747	\$ 615,116,562

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-5: Number and Annual Retirement Allowances of Retired Members (Healthy at Retirement) and Survivors of Deceased Members Distributed by Age as of December 31, 2021**

Age	Men		Women	
	Number	Allowances	Number	Allowances
<20	4	\$ 45,366	2	\$ 21,754
21	0	0	2	33,495
22	6	101,405	0	0
23	3	50,682	0	0
24	6	49,595	3	85,061
25	2	23,778	2	19,270
27	2	12,656	2	31,189
28	3	53,850	1	5,412
29	3	46,791	6	54,559
30	5	68,290	5	71,371
31	3	63,212	6	48,981
32	6	66,868	4	22,705
33	1	26,565	8	66,195
34	8	72,803	9	71,908
35	5	52,746	5	65,514
36	6	52,276	3	31,157
37	10	113,489	7	55,660
38	6	118,146	6	65,826
39	8	142,877	14	113,796
40	10	102,049	10	108,372
41	10	104,838	13	237,272
42	7	56,329	14	139,810
43	7	72,352	19	263,309
44	8	62,831	13	162,634
45	9	93,918	10	79,762
46	11	100,217	17	192,176
47	8	145,194	26	269,191
48	28	759,480	23	246,637
49	45	1,555,117	29	472,491
50	130	4,562,212	47	899,548
51	253	8,363,421	109	2,521,425
52	349	12,590,044	145	3,465,324
53	414	15,280,576	162	4,170,133
54	498	17,990,562	217	5,890,576
55	635	22,750,341	290	7,863,501
56	715	23,969,841	334	8,835,375
57	795	26,750,247	412	11,064,158
58	899	29,915,397	461	12,701,148
59	825	26,783,002	506	13,749,388
60	945	29,735,889	669	18,348,097

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-5: Number and Annual Retirement Allowances of Retired Members (Healthy at Retirement) and Survivors of Deceased Members Distributed by Age as of December 31, 2021 (continued)**

Age	Men		Women	
	Number	Allowances	Number	Allowances
61	1,021	\$ 31,264,665	861	\$ 21,510,173
62	1,041	30,849,769	999	23,488,623
63	1,152	31,017,209	1,115	23,330,815
64	1,184	30,465,831	1,303	26,831,460
65	1,337	34,194,258	1,398	27,725,911
66	1,408	34,152,505	1,543	28,499,670
67	1,501	36,409,725	1,712	30,760,288
68	1,490	35,354,116	1,703	30,217,987
69	1,512	34,951,247	1,741	30,512,843
70	1,522	34,533,583	1,754	27,921,889
71	1,520	32,823,635	1,676	27,364,035
72	1,356	29,546,199	1,617	26,476,926
73	1,353	28,984,028	1,583	24,829,839
74	1,320	26,113,852	1,569	24,138,572
75	1,336	26,817,741	1,606	24,414,327
76	848	16,619,126	1,147	16,838,605
77	862	16,812,287	1,075	16,228,543
78	698	12,967,253	944	13,214,062
79	743	14,173,185	992	13,882,189
80	555	9,588,079	829	11,124,375
81	471	8,719,564	709	9,186,061
82	456	7,819,302	673	8,930,508
83	369	6,319,577	645	8,491,843
84	352	6,088,547	551	7,098,076
85	310	5,484,450	520	6,174,379
86	275	4,944,526	451	5,985,289
87	221	3,605,657	406	5,102,661
88	191	2,682,710	335	3,821,876
89	148	2,436,035	321	3,716,404
90	128	1,865,468	277	3,046,214
91	93	1,278,577	237	3,009,352
92	66	896,566	181	1,852,888
93	53	733,926	149	1,954,504
94	41	667,980	124	1,332,117
95	34	440,046	101	1,052,624
96	13	158,270	56	746,861
97	13	210,082	38	312,633
98	6	76,272	33	382,323
99	7	104,097	15	118,355
100+	11	203,008	42	317,882
Total	33,705	\$ 825,278,205	36,642	\$ 634,488,162

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-6: Number and Annual Retirement Allowances of Retired Members (Healthy at Retirement) and Survivors of Deceased Members Distributed by Annuity Type as of December 31, 2021**

Annuity Type	Men		Women	
	Number	Allowances	Number	Allowances
0: Maximum	10,435	\$ 230,821,052	18,270	\$ 309,390,202
1: Option 1: 10-yr guaranteed	140	3,048,101	205	2,468,826
2: Option 2: 100% joint and survivor	8,068	196,735,406	2,376	37,331,328
3: Option 3: 50% joint and survivor	1,952	52,144,226	1,110	21,629,872
4: Option 4: Social security leveling	2,578	64,156,692	3,307	66,616,084
5: Option 5-2: 100% joint and survivor	25	491,917	6	43,571
6: Option 5-3: 50% joint and survivor	9	295,914	8	160,897
7: Option 6-2: 100% joint and surv w/ pop-up	7,049	197,213,126	3,063	62,756,994
8: Option 6-3: 50% joint and surv w/ pop-up	2,280	67,471,827	2,019	48,117,839
9: Special	4	117,711	0	0
3: Survivor	1,165	12,782,233	6,278	85,972,549
Total	33,705	\$ 825,278,205	36,642	\$ 634,488,162

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-7: Number and Annual Retirement Allowances of Retired Members (Disabled at Retirement) Distributed by Age of December 31, 2021**

Age	Men		Women	
	Number	Allowances	Number	Allowances
28	1	\$ 22,506	0	\$ 0
29	1	23,629	0	0
30	2	54,383	2	44,950
31	3	70,419	0	0
32	6	119,939	1	17,982
33	5	135,386	2	47,266
34	10	258,074	1	22,469
35	4	89,585	5	104,150
36	12	363,131	5	117,503
37	14	340,583	2	61,133
38	15	354,187	6	114,478
39	21	445,709	9	193,666
40	21	468,520	6	137,389
41	33	778,246	13	344,289
42	35	830,340	9	200,751
43	48	1,068,044	15	368,269
44	36	835,781	20	385,722
45	51	1,225,034	25	495,648
46	73	1,828,892	22	467,957
47	56	1,299,773	24	484,833
48	74	1,733,213	29	605,107
49	77	1,905,853	40	876,138
50	118	2,753,620	52	1,231,411
51	135	3,154,600	60	1,216,408
52	127	2,851,791	71	1,420,604
53	136	3,185,739	68	1,313,438
54	109	2,363,855	76	1,671,579
55	150	3,223,730	87	1,839,800
56	159	3,377,220	96	1,870,160
57	151	3,272,092	93	1,904,720
58	185	3,869,075	126	2,531,500
59	190	3,839,123	104	1,911,039
60	191	3,573,240	145	2,753,321
61	175	3,240,072	137	2,465,493
62	181	3,286,185	144	2,644,773
63	159	2,956,167	168	2,771,348
64	170	2,951,011	143	2,417,326
65	191	3,520,890	149	2,363,814

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-7: Number and Annual Retirement Allowances of Retired Members (Disabled at Retirement) Distributed by Age of December 31, 2021 (continued)**

Age	Men		Women	
	Number	Allowances	Number	Allowances
66	181	\$ 3,343,947	158	\$ 2,579,716
67	194	3,724,709	131	2,190,291
68	174	3,572,508	136	2,196,048
69	164	3,359,842	114	1,818,001
70	190	4,316,146	137	2,165,971
71	166	3,481,509	91	1,509,484
72	167	3,798,151	99	1,452,392
73	155	3,206,221	99	1,544,938
74	145	3,113,903	89	1,240,362
75	138	2,907,985	92	1,340,329
76	102	2,109,444	75	1,026,146
77	101	2,025,401	65	859,622
78	68	1,368,156	68	835,372
79	66	1,399,340	61	818,342
80	43	897,112	32	328,402
81	50	900,879	38	542,979
82	27	477,687	35	441,001
83	28	493,104	26	316,436
84	23	365,375	17	223,021
85	18	376,861	15	168,015
86	19	334,503	17	164,115
87	11	176,220	6	55,852
88	10	142,114	9	73,856
89	5	67,765	4	26,772
90	5	63,739	4	23,709
91	3	34,263	4	45,197
92	4	84,819	4	38,848
93	1	21,741	0	0
94	1	23,072	1	5,376
95	1	19,847	1	3,844
97	0	0	1	10,529
98	1	9,045	0	0
100+	0	0	1	6,395
Total	5,386	\$ 111,885,045	3,585	\$ 61,467,795

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-8: Number and Annual Retirement Allowances of Retired Members (Disabled at Retirement) Distributed by Annuity Type of December 31, 2021**

Annuity Type	Men		Women	
	Number	Allowances	Number	Allowances
0: Maximum	3,674	\$ 80,496,476	3,057	\$ 52,967,883
1: Option 1: 10-yr guaranteed	90	1,923,433	44	669,469
2: Option 2: 100% joint and survivor	423	7,049,560	93	1,290,510
3: Option 3: 50% joint and survivor	340	5,895,404	84	1,324,941
4: Option 4: Social security leveling	7	192,811	7	127,932
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	411	7,607,803	120	1,967,405
8: Option 6-3: 50% joint and surv w / pop-up	423	8,399,610	179	3,112,652
9: Special	7	150,521	0	0
Total	5,386	\$ 111,885,045	3,585	\$ 61,467,795

## Appendix B: Detailed Tabulations of Member Data (continued)

**Table B-9: Number and Annual Retirement Allowances of Retired Members and Survivors of Deceased Members Distributed by Amount of Annual Retirement Allowance as of December 31, 2021**

<b>Amount of Annual Retirement Allowance</b>	<b>Number of Retired Members and Survivors *</b>	<b>Sum of Annual Retirement Allowance</b>
\$0 - \$4,999	9,753	\$ 30,453,690
\$5,000 - \$9,999	13,739	102,850,240
\$10,000 - \$14,999	12,351	153,848,908
\$15,000 - \$19,999	10,372	180,737,235
\$20,000 - \$24,999	8,765	196,702,849
\$25,000 - \$29,999	7,110	194,967,731
\$30,000 - \$34,999	5,482	177,561,228
\$35,000 - \$39,999	4,093	153,005,182
\$40,000 - \$44,999	2,792	118,203,122
\$45,000 - \$49,999	1,882	89,082,184
\$50,000 & over	3,691	235,706,839
<b>Total</b>	<b>80,030</b>	<b>\$ 1,633,119,207</b>

\* Includes 712 members with a separate DC transfer amount payable.

# Appendix C: Summary of Main Benefit and Contribution Provisions

The following summary presents the main benefit and contribution provisions of the system, as interpreted in preparing the actuarial valuation. Items in parentheses in the text are the provisions applicable only to law enforcement officers.

## Average final compensation

The average annual compensation during the four consecutive years of membership service producing the highest such average.

## Membership service

Service represented by regular contributions.

## Prior service

Service prior to the date of participation of the employer for which credit is allowed.

## Creditable service

The sum of prior service plus membership service and 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 completed 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 the unreduced retirement allowance.

#### Amount of Allowance

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 1/4 of 1% for each month by which the member's age at retirement is less than age 65 (55).

If a firefighter has not attained age 60 nor completed 30 or more years of service at the line of retirement, his or her allowance is the actuarial equivalent of the allowance payable at age 60.

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.

## Appendix C: Summary of Main Benefit and Contribution Provisions (continued)

### Amount of Allowance

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:

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

OR

### Condition for Allowance

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.

### Amount of Allowance

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:

- (i)  $1/3$  of 1% for each month by which his or her age is less than 55,
- (ii) 5% times the difference between 30 years and creditable service at retirement plus 4% times the difference between age 50 and the member's age at retirement.

## Disability Retirement Allowance

### Condition for Allowance

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.

### Amount of Allowance

On retirement for disability a member receives a service retirement allowance if he or she has attained age 65 (55) or upon 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 his or her service projected to age 65.

## Deferred and Early 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.

## Appendix C: Summary of Main Benefit and Contribution Provisions (continued)

### 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.

### 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

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

- Option 1 A member retiring prior to July 1, 1993, may elect that at his or her death within 10 years from his or her retirement date, an amount equal to his or her accumulated contributions at retirement, less 1/120 for each month he or she has received a retirement allowance, is paid to his or her estate, or to person(s) designated by the member, or
- Option 2 At the death of the member, his or her allowance shall be continued throughout the life of such other person as the member shall have designated at the time of his or her retirement, or
- Option 3 At the death of the member, one-half of his or her allowance shall be continued throughout the life of such other person as the member shall have designated at the time of his or her retirement.

## Appendix C: Summary of Main Benefit and Contribution Provisions (continued)

- Option 4 A member may elect to receive a retirement allowance in such amount that, together with his or her Social Security benefit, he or she will receive approximately the same income per annum before and after the earliest age at which he or she becomes eligible to receive the Social Security benefit.
- Option 5 A member retiring prior to July 1, 1993 may elect to receive a reduced retirement allowance under the provisions of Option 2 or Option 3 in conjunction with the provisions of Option 1.
- Option 6 The member may elect Option 2 or 3 with the added provision that should the designated beneficiary predecease the member, the allowance which would have been payable to the member had he or she not elected the option will be payable thereafter.

### Post-Retirement Increases in Allowance

Future increases in allowances may be granted by the Board of Trustees or the State in accordance with G.S. 128-27(k). The Board of Trustees may authorize one-time pension supplements in accordance with G.S. 128-27(k1).

### 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

For 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 or to another state 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.

# Appendix C: Summary of Main Benefit and Contribution Provisions (continued)

## 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.

## 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.

## 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

LGERS benefit recipients will receive a one-time benefit supplement payment equal to 2% of the member's annual retirement allowance for the fiscal year ending June 30, 2023, paid by October 2022. The one-time supplements do not change the ongoing monthly benefits, and absent additional action by governing authorities, the payments will not recur in future years.

## Appendix D: Actuarial Assumptions and Methods

Assumptions are based on the experience investigation prepared as of December 31, 2019 and adopted by the Board of Trustees on January 28, 2021 for use beginning with the December 31, 2020 annual actuarial valuation.

### Interest Rate

6.50% per annum, compounded annually.

### Price Inflation

2.50% per annum, compounded annually.

### Real Wage Growth

0.75% per annum.

### Payroll Growth

3.25% per annum.

### Separations From Active Service

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

#### Annual Rates of Withdrawal

Up to five years of membership						
Service	General Employees		Firefighters & Rescue Squad Workers		Law Enforcement Officers	
	Male	Female	Male	Female	Male	Female
0	0.1100	0.1100	0.0750	0.0750	0.0900	0.0900
1	0.1750	0.1750	0.1250	0.1250	0.0875	0.0875
2	0.1500	0.1550	0.1100	0.1100	0.0900	0.0900
3	0.1250	0.1300	0.1000	0.1000	0.0925	0.0925
4	0.1050	0.1150	0.1000	0.1000	0.0725	0.0725

After five years of membership						
Service	General Employees		Firefighters & Rescue Squad Workers		Law Enforcement Officers	
	Male	Female	Male	Female	Male	Female
25	0.1200	0.1750	0.0700	0.0700	0.1000	0.1000
30	0.0750	0.1100	0.0700	0.0700	0.0600	0.0600
35	0.0550	0.0900	0.0500	0.0500	0.0600	0.0600
40	0.0550	0.0700	0.0400	0.0400	0.0400	0.0400
45	0.0425	0.0500	0.0350	0.0350	0.0300	0.0300
50	0.0425	0.0450	0.0500	0.0500	0.0450	0.0450
55	0.0425	0.0450	0.0500	0.0500	0.0450	0.0450
60	0.0425	0.0450	0.0500	0.0500		

## Appendix D: Actuarial Assumptions and Methods (continued)

### Annual Rates of Mortality for Employees

(Base rates using Pub-2010 Amount weighted)

Age	General Employees		Firefighters & Rescue Squad Workers		Law Enforcement Officers	
	Male	Female	Male	Female	Male	Female
25	0.00028	0.00009	0.00037	0.00020	0.00037	0.00020
30	0.00036	0.00015	0.00041	0.00027	0.00041	0.00027
35	0.00047	0.00023	0.00047	0.00036	0.00047	0.00036
40	0.00066	0.00036	0.00059	0.00049	0.00059	0.00049
45	0.00098	0.00056	0.00082	0.00067	0.00082	0.00067
50	0.00149	0.00083	0.00120	0.00091	0.00120	0.00091
55	0.00219	0.00123	0.00175	0.00123	0.00175	0.00123
60	0.00319	0.00186	0.00264	0.00168	0.00264	0.00168
65	0.00468	0.00296	0.00410	0.00228	0.00410	0.00228
70	0.00703	0.00489	0.00766	0.00454	0.00766	0.00454
74	0.01001	0.00731	0.01263	0.00787	0.01263	0.00787

### Annual Rates of Disability

Age	General Employees		Firefighters & Rescue Squad Workers		Law Enforcement Officers	
	Male	Female	Male	Female	Male	Female
25	0.00040	0.00050	0.00060	0.00060	0.00060	0.00250
30	0.00050	0.00050	0.00100	0.00090	0.00100	0.00300
35	0.00050	0.00050	0.00070	0.00240	0.00200	0.00400
40	0.00100	0.00050	0.00400	0.00380	0.00300	0.00500
45	0.00200	0.00150	0.00400	0.00480	0.00400	0.00600
50	0.00300	0.00300	0.00800	0.00760	0.00400	0.00700
55	0.00500	0.00450	0.01200	0.01760	0.00400	0.00700
60	0.00650	0.00450	0.01500	0.02760	0.00400	0.00700
64	0.00650	0.00450	0.01500	0.03000	0.00400	0.00700

### Annual Rates of Retirement

General Employees

Age	Service						
	5	10	15	20	25	30	35
50				0.030	0.055	0.400	0.400
55				0.030	0.055	0.250	0.250
60	0.080	0.070	0.070	0.075	0.200	0.225	0.225
65	0.250	0.250	0.275	0.325	0.300	0.300	0.300
70	0.200	0.250	0.200	0.275	0.300	0.300	0.300
75	0.250	0.200	0.300	0.275	0.300	0.300	0.300
80	1.000	1.000	1.000	1.000	1.000	1.000	1.000

## Appendix D: Actuarial Assumptions and Methods (continued)

### Annual Rates of Retirement (continued)

#### General Employees (continued)

Female Age	Service						
	5	10	15	20	25	30	35
50				0.035	0.050	0.450	0.450
55				0.050	0.055	0.300	0.300
60	0.080	0.090	0.070	0.100	0.250	0.250	0.250
65	0.250	0.250	0.350	0.350	0.350	0.300	0.300
70	0.200	0.250	0.225	0.300	0.200	0.250	0.250
75	0.200	0.200	0.225	0.300	0.200	0.250	0.250
80	1.000	1.000	1.000	1.000	1.000	1.000	1.000

#### Firefighters & Rescue Squad Workers

Age	Service						
	5	10	15	20	25	30	35
50				0.0325	0.0425	0.5000	0.5000
55	0.1200	0.0575	0.0575	0.0325	0.0425	0.4000	0.4000
60	0.1000	0.0575	0.0575	0.1250	0.3500	0.4000	0.4000
65	0.1000	0.2500	0.2500	0.2500	0.3500	0.3250	0.3250
70	0.3200	0.2500	0.2500	0.2500	0.3500	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			0.040	0.035	0.030	0.825	0.825
55	0.150	0.225	0.300	0.350	0.600	0.500	0.500
60	0.150	0.150	0.125	0.250	0.325	0.250	0.250
65	0.175	0.200	0.250	0.250	0.375	0.300	0.300
70	0.175	0.300	0.350	0.200	0.375	0.275	0.275
75	1.000	1.000	1.000	1.000	1.000	1.000	1.000

### Salary Merit Increases

Total assumed salary increases are these merit rates added to the wage inflation assumption of 3.25% (2.50% price inflation plus 0.75% real wage growth). Representative values of the assumed annual rates of salary merit increases are as follows:

#### Annual Rates of Salary Increase

Service	General Employees	Firefighters & Rescue Squad Workers	Law Enforcement Officers
0	5.00%	4.75%	4.50%
5	2.70%	2.65%	2.60%
10	1.73%	1.68%	1.81%
15	1.08%	1.03%	1.36%
20	0.69%	0.64%	1.10%
25	0.55%	0.50%	0.85%
30	0.55%	0.50%	0.60%
35	0.00%	0.50%	0.35%
>=40	0.00%	0.00%	0.00%

## Appendix D: Actuarial Assumptions and Methods (continued)

### Post-Retirement Mortality

Representative values of the assumed post-retirement mortality rates as of 2010 (the most recent developed Public Pension mortality tables) prior to any mortality improvements are as follows:

#### Annual Rate of Post-Retirement Mortality (members healthy at retirement)

Age	General Employees		Firefighter, Rescue Squad Workers, & Law Enforcement Officers	
	Male	Female	Male	Female
55	0.00477	0.00286	0.00327	0.00279
60	0.00684	0.00384	0.00549	0.00482
65	0.01064	0.00613	0.00957	0.00832
70	0.01828	0.01063	0.01711	0.01438
75	0.03227	0.01883	0.03085	0.02483
80	0.05810	0.03360	0.05571	0.04287

#### Annual Rate of Death After Retirement

Age	(Contingent Survivors of Deceased members)		(Members Disabled at Retirement)			
	All Survivors		General Employees		Firefighters, Rescue Squad Workers, & Law Enforcement Officers	
	Male	Female	Male	Female	Male	Female
55	0.01147	0.00742	0.02355	0.01692	0.01818	0.01587
60	0.01450	0.00975	0.02785	0.01914	0.02280	0.01833
65	0.02086	0.01332	0.03524	0.02178	0.02677	0.02051
70	0.03221	0.01931	0.04599	0.02706	0.03353	0.02450
75	0.04971	0.02946	0.06347	0.03718	0.04344	0.03239
80	0.07802	0.04698	0.09259	0.05517	0.05921	0.04678

### Mortality Assumption

All mortality rates use Pub-2010 amount-weighted tables.

### Mortality Projection

All mortality rates are projected from 2010 using generational improvement with Scale MP-2019.

### Deaths After Retirement (General Employees)

Mortality rates are based on the General Mortality Table for Retirees. Rates for male members are first Set Forward 2 years, then are multiplied by 96% for ages under 81, and increase until reaching 100% at age 85 and above. Rates for female members are 100% for ages under 92, and increase until reaching 110% at age 94 and above. Because the retiree tables have no rates prior to age 50, the General Mortality Table for Employees is used for ages less than 50.

## **Appendix D: Actuarial Assumptions and Methods (continued)**

### **Deaths After Retirement (Firefighters, Rescue Squad Workers & Law Enforcement Officers)**

Mortality rates are based on the Safety Mortality Table for Retirees. Rates for all members are multiplied by 97% and Set Forward by 1 year. Because the retiree tables have no rates prior to age 45, the Safety Mortality Table for Employees is used for ages less than 45.

### **Deaths After Retirement (Survivors of Deceased Members)**

Mortality rates are based on the Below- median Teachers Mortality Table for Contingent Survivors. Rates for male members are Set Forward 3 years. Rates for female members are Set Forward 1 year. Because the contingent survivor tables have no rates prior to age 45, the Below-median Teachers Mortality Table for Employees is used for ages less than 45.

### **Deaths After Retirement (Disabled Members at Retirement)**

Mortality rates are based on the General Mortality Table for Disabled Retirees. Rates for General Employee male members are Set Forward 3 years, while Firefighter, Rescue Squad Worker & Law Enforcement Officer male members are Set Back 3 years. Rates for General Employee female members are Set Back 1 year, while Firefighter, Rescue Squad Worker & Law Enforcement Officer female members are Set Back 3 years.

### **Deaths Prior to Retirement**

Mortality rates for General Employees are based on the General Mortality Table for Employees. Mortality rates for Firefighters, Rescue Squad Workers & Law Enforcement Officers are based on the Safety Mortality Table for Employees.

### **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.

### **Timing of Assumptions**

All withdrawals, deaths, disabilities, retirements and salary increases are assumed to occur July 1 of each year. The timing of retirement changes from mid-year to beginning of year at and after the 100% retirement age.

## Appendix D: Actuarial Assumptions and Methods (continued)

### Leave Conversions

Sick leave can be converted to increase creditable service and used to meet the eligibility requirements for retirement. Unused vacation leave can be converted to increase creditable service or compensation, but does not add to the eligibility service. The assumed impact of these conversions is shown in the table below.

	General		Fire & Rescue Squad		Law Enforcement	
	Male	Female	Male	Female	Male	Female
Increase in AFC (percentage) – Unused Vacation Leave	1.50%	1.50%	1.75%	1.75%	1.50%	1.50%
<b>Increase in Creditable Service (years) - Unused Sick Leave</b>						
Credited	0.80	0.60	1.20	1.20	1.10	1.10
Eligibility	1.00	1.00	1.00	1.00	1.00	1.00

### Liability for Inactive Members

For inactive members with five or more years of service, without actual deferred benefit amounts a deferred benefit amount is estimated based on available data and contribution balances projecting backwards assuming 4% salary growth and 4% interest on contribution balances where necessary. For inactive members with less than five years of service the liability is equal to the member's accumulated contributions.

### Administrative Expenses

0.13% of payroll for general employees and firefighters is added to the normal cost.

### Marriage Assumption

100% married with male spouses three years older than female spouses.

### Missing Gender Code

For members reported on the data without a gender code, we use the prior year's code where available or assign a code.

### 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 and the probability of decrement during the year.

### Compensation Limits

No compensation limits are applied.

### Actuarial Cost Method

Entry age normal cost method. Entry age is established on an individual basis.

## Appendix D: Actuarial Assumptions and Methods (continued)

### 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:

The assumptions and methods used for the December 31, 2021 actuarial valuation are based on the experience study prepared as of December 31, 2019 and adopted by the Board of Trustees on January 28, 2021.

Since the prior valuation, a transition from the prior actuary to Buck resulted in valuation programming modifications and differences in methodology. The net impact of these changes resulted in no material change to the actuarial accrued liability.

# 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
2022	\$ 33,459,926	\$ 422,593	\$ 841,966	\$ 1,859,631	\$ 7,429	\$ (2,380,218)	\$ 30,477,207
2023	30,477,207	400,907	849,505	1,916,910	7,014	1,959,473	31,763,168
2024	31,763,168	408,724	902,038	2,009,712	6,630	2,042,035	33,099,623
2025	33,099,623	388,337	909,228	2,104,538	6,292	2,125,461	34,411,819
2026	34,411,819	369,368	1,167,830	2,200,069	5,983	2,215,374	35,958,339
2027	35,958,339	351,269	1,232,426	2,299,179	5,688	2,314,223	37,551,390
2028	37,551,390	333,513	1,117,822	2,402,572	5,400	2,410,238	39,004,991
2029	39,004,991	315,748	1,127,335	2,506,051	5,113	2,501,159	40,438,069
2030	40,438,069	298,551	1,054,380	2,607,439	4,955	2,588,186	41,766,792
2031	41,766,792	281,828	965,771	2,705,840	4,992	2,668,035	42,971,594
2032	42,971,594	265,852	857,574	2,799,612	5,022	2,739,375	44,029,761
2033	44,029,761	250,485	737,288	2,891,239	5,045	2,800,882	44,922,132
2034	44,922,132	235,090	647,469	2,982,827	5,067	2,852,592	45,669,389
2035	45,669,389	219,550	539,788	3,073,354	5,086	2,894,327	46,244,614
2036	46,244,614	204,404	501,533	3,160,355	5,101	2,927,225	46,712,320
2037	46,712,320	189,562	484,566	3,245,533	5,111	2,953,882	47,089,686
2038	47,089,686	174,688	413,981	3,325,720	5,116	2,973,112	47,320,631
2039	47,320,631	160,937	338,931	3,398,217	5,115	2,982,964	47,400,131
2040	47,400,131	147,793	233,153	3,464,587	5,108	2,982,205	47,293,587
2041	47,293,587	135,060	151,663	3,528,596	5,094	2,970,217	47,016,837
2042	47,016,837	122,263	122,263	3,591,338	5,073	2,948,873	46,613,825
2043	46,613,825	109,587	109,587	3,649,555	5,045	2,920,004	46,098,403
2044	46,098,403	97,221	97,221	3,703,489	5,008	2,883,988	45,468,336
2045	45,468,336	84,793	84,793	3,753,153	4,964	2,840,651	44,720,456
2046	44,720,456	72,511	72,511	3,798,686	4,910	2,789,798	43,851,680
2047	43,851,680	60,319	60,319	3,836,766	4,849	2,731,330	42,862,033
2048	42,862,033	48,469	48,469	3,864,367	4,781	2,665,365	41,755,188
2049	41,755,188	37,557	37,557	3,878,838	4,703	2,592,262	40,539,023
2050	40,539,023	27,586	27,586	3,879,020	4,618	2,512,571	39,223,128
2051	39,223,128	18,773	18,773	3,857,431	4,524	2,427,168	37,825,887
2052	37,825,887	12,900	12,900	3,808,484	4,423	2,337,538	36,376,318
2053	36,376,318	9,378	9,378	3,740,341	4,315	2,245,274	34,895,692
2054	34,895,692	6,867	6,867	3,660,857	4,201	2,151,419	33,395,787
2055	33,395,787	5,050	5,050	3,572,852	4,086	2,056,630	31,885,579
2056	31,885,579	3,720	3,720	3,478,779	3,965	1,961,392	30,371,667
2057	30,371,667	2,737	2,737	3,380,212	3,843	1,866,083	28,859,169
2058	28,859,169	2,010	2,010	3,278,463	3,722	1,770,983	27,351,987
2059	27,351,987	1,472	1,472	3,174,598	3,601	1,676,309	25,853,041
2060	25,853,041	1,074	1,074	3,069,419	3,482	1,582,220	24,364,508
2061	24,364,508	783	783	2,963,752	3,368	1,488,830	22,887,784
2062	22,887,784	568	568	2,847,159	3,254	1,406,158	21,744,665
2063	21,744,665	411	411	2,729,810	3,142	1,335,604	20,648,139
2064	20,648,139	296	296	2,613,025	3,030	1,268,062	19,600,738
2065	19,600,738	213	213	2,497,180	2,917	1,203,683	18,604,750
2066	18,604,750	151	151	2,382,596	2,803	1,142,610	17,662,263
2067	17,662,263	106	106	2,269,543	2,688	1,084,967	16,775,211
2068	16,775,211	74	74	2,158,273	2,572	1,030,868	15,945,382
2069	15,945,382	51	51	2,049,020	2,455	980,425	15,174,434
2070	15,174,434	34	34	1,941,990	2,338	933,741	14,463,915
2071	14,463,915	22	22	1,837,386	2,220	890,907	13,815,260

\* 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 (continued)

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	\$ 13,815,260	\$ 14	\$ 14	\$ 1,435,385	\$ 2,103	\$ 852,011	\$ 13,229,811
2073	13,229,811	9	9	1,336,162	1,986	817,133	12,708,814
2074	12,708,814	5	5	1,239,887	1,869	786,352	12,253,420
2075	12,253,420	3	3	1,146,713	1,753	759,735	11,864,695
2076	11,864,695	2	2	1,056,788	1,639	737,347	11,543,619
2077	11,543,619	1	1	970,249	1,527	719,250	11,291,095
2078	11,291,095	0	0	887,224	1,417	705,496	11,107,950
2079	11,107,950	0	0	807,836	1,309	696,134	10,994,939
2080	10,994,939	0	0	732,200	1,204	691,210	10,952,745
2081	10,952,745	0	0	660,424	1,102	690,767	10,981,986
2082	10,981,986	0	0	592,606	1,004	694,840	11,083,216
2083	11,083,216	0	0	528,829	911	703,464	11,256,940
2084	11,256,940	0	0	469,159	821	716,667	11,503,627
2085	11,503,627	0	0	413,640	736	734,481	11,823,732
2086	11,823,732	0	0	362,291	656	756,933	12,217,718
2087	12,217,718	0	0	315,102	581	784,053	12,686,088
2088	12,686,088	0	0	272,032	511	815,878	13,229,423
2089	13,229,423	0	0	233,007	446	852,444	13,848,414
2090	13,848,414	0	0	197,923	387	893,803	14,543,907
2091	14,543,907	0	0	166,640	333	940,013	15,316,947
2092	15,316,947	0	0	138,988	285	991,146	16,168,820
2093	16,168,820	0	0	114,768	241	1,047,294	17,101,105
2094	17,101,105	0	0	93,760	202	1,108,566	18,115,709
2095	18,115,709	0	0	75,726	169	1,175,094	19,214,908
2096	19,214,908	0	0	60,419	139	1,247,031	20,401,381
2097	20,401,381	0	0	47,584	114	1,324,565	21,678,248
2098	21,678,248	0	0	36,964	92	1,407,901	23,049,093
2099	23,049,093	0	0	28,301	74	1,497,283	24,518,001
2100	24,518,001	0	0	21,344	59	1,592,985	26,089,583
2101	26,089,583	0	0	15,848	46	1,695,314	27,769,003
2102	27,769,003	0	0	11,581	36	1,804,613	29,561,999
2103	29,561,999	0	0	8,328	28	1,921,262	31,474,905
2104	31,474,905	0	0	5,896	21	2,045,680	33,514,668
2105	33,514,668	0	0	4,111	17	2,178,321	35,688,861
2106	35,688,861	0	0	2,829	13	2,319,686	38,005,705
2107	38,005,705	0	0	1,925	10	2,470,309	40,474,079
2108	40,474,079	0	0	1,300	8	2,630,774	43,103,545
2109	43,103,545	0	0	875	6	2,801,702	45,904,366
2110	45,904,366	0	0	591	5	2,983,765	48,887,535
2111	48,887,535	0	0	403	4	3,177,677	52,064,805
2112	52,064,805	0	0	279	3	3,384,203	55,448,726
2113	55,448,726	0	0	197	2	3,604,161	59,052,688
2114	59,052,688	0	0	141	2	3,838,420	62,890,965
2115	62,890,965	0	0	103	2	4,087,910	66,978,770
2116	66,978,770	0	0	76	1	4,353,617	71,332,310
2117	71,332,310	0	0	56	1	4,636,598	75,968,851
2118	75,968,851	0	0	42	1	4,937,975	80,906,783
2119	80,906,783	0	0	31	1	5,258,940	86,165,691
2120	86,165,691	0	0	23	0	5,600,769	91,766,437
2121	91,766,437	0	0	16	0	5,964,818	97,731,239

\* 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 (continued)

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

Calendar Year	Beginning Fiduciary Position	Benefit Payments	Present Value of Benefit Payments				
			Funded Benefit Payments	Unfunded Benefit Payments	Funded Payments at 6.50%	Unfunded Payments at 3.54%	Using Single Discount Rate of 6.50%
2022	\$ 33,459,926	\$ 1,859,631	\$ 1,859,631	\$ 0	\$ 1,801,988	\$ 0	\$ 1,801,988
2023	30,477,207	1,916,910	1,916,910	0	1,744,124	0	1,744,124
2024	31,763,168	2,009,712	2,009,712	0	1,716,959	0	1,716,959
2025	33,099,623	2,104,538	2,104,538	0	1,688,236	0	1,688,236
2026	34,411,819	2,200,069	2,200,069	0	1,657,155	0	1,657,155
2027	35,958,339	2,299,179	2,299,179	0	1,626,110	0	1,626,110
2028	37,551,390	2,402,572	2,402,572	0	1,595,526	0	1,595,526
2029	39,004,991	2,506,051	2,506,051	0	1,562,672	0	1,562,672
2030	40,438,069	2,607,439	2,607,439	0	1,526,661	0	1,526,661
2031	41,766,792	2,705,840	2,705,840	0	1,487,582	0	1,487,582
2032	42,971,594	2,799,612	2,799,612	0	1,445,197	0	1,445,197
2033	44,029,761	2,891,239	2,891,239	0	1,401,404	0	1,401,404
2034	44,922,132	2,982,827	2,982,827	0	1,357,557	0	1,357,557
2035	45,669,389	3,073,354	3,073,354	0	1,313,388	0	1,313,388
2036	46,244,614	3,160,355	3,160,355	0	1,268,138	0	1,268,138
2037	46,712,320	3,245,533	3,245,533	0	1,222,833	0	1,222,833
2038	47,089,686	3,325,720	3,325,720	0	1,176,568	0	1,176,568
2039	47,320,631	3,398,217	3,398,217	0	1,128,842	0	1,128,842
2040	47,400,131	3,464,587	3,464,587	0	1,080,647	0	1,080,647
2041	47,293,587	3,528,596	3,528,596	0	1,033,438	0	1,033,438
2042	47,016,837	3,591,338	3,591,338	0	987,619	0	987,619
2043	46,613,825	3,649,555	3,649,555	0	942,374	0	942,374
2044	46,098,403	3,703,489	3,703,489	0	897,935	0	897,935
2045	45,468,336	3,753,153	3,753,153	0	854,438	0	854,438
2046	44,720,456	3,798,686	3,798,686	0	812,022	0	812,022
2047	43,851,680	3,836,766	3,836,766	0	770,106	0	770,106
2048	42,862,033	3,864,367	3,864,367	0	728,306	0	728,306
2049	41,755,188	3,878,838	3,878,838	0	686,416	0	686,416
2050	40,539,023	3,879,020	3,879,020	0	644,552	0	644,552
2051	39,223,128	3,857,431	3,857,431	0	601,845	0	601,845
2052	37,825,887	3,808,484	3,808,484	0	557,942	0	557,942
2053	36,376,318	3,740,341	3,740,341	0	514,516	0	514,516
2054	34,895,692	3,660,857	3,660,857	0	472,847	0	472,847
2055	33,395,787	3,572,852	3,572,852	0	433,314	0	433,314
2056	31,885,579	3,478,779	3,478,779	0	396,155	0	396,155
2057	30,371,667	3,380,212	3,380,212	0	361,437	0	361,437
2058	28,859,169	3,278,463	3,278,463	0	329,162	0	329,162
2059	27,351,987	3,174,598	3,174,598	0	299,281	0	299,281
2060	25,853,041	3,069,419	3,069,419	0	271,704	0	271,704
2061	24,364,508	2,963,752	2,963,752	0	246,339	0	246,339
2062	22,887,784	2,547,159	2,547,159	0	198,791	0	198,791
2063	21,744,665	2,429,810	2,429,810	0	178,059	0	178,059
2064	20,648,139	2,313,025	2,313,025	0	159,156	0	159,156
2065	19,600,738	2,197,180	2,197,180	0	141,957	0	141,957
2066	18,604,750	2,082,596	2,082,596	0	126,342	0	126,342
2067	17,662,263	1,969,543	1,969,543	0	112,191	0	112,191
2068	16,775,211	1,858,273	1,858,273	0	99,392	0	99,392
2069	15,945,382	1,749,020	1,749,020	0	87,839	0	87,839
2070	15,174,434	1,641,990	1,641,990	0	77,431	0	77,431
2071	14,463,915	1,537,386	1,537,386	0	68,073	0	68,073

# Appendix E: GASB 67 Fiduciary Net Position Projection (continued)

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

Calendar Year	Beginning Fiduciary Position	Benefit Payments	Present Value of Benefit Payments				
			Funded Benefit Payments	Unfunded Benefit Payments	Funded Payments at 6.50%	Unfunded Payments at 3.54%	Using Single Discount Rate of 6.50%
2072	\$ 13,815,260	\$ 1,435,385	\$ 1,435,385	\$ 0	\$ 59,678	\$ 0	\$ 59,678
2073	13,229,811	1,336,162	1,336,162	0	52,162	0	52,162
2074	12,708,814	1,239,887	1,239,887	0	45,449	0	45,449
2075	12,253,420	1,146,713	1,146,713	0	39,469	0	39,469
2076	11,864,695	1,056,788	1,056,788	0	34,153	0	34,153
2077	11,543,619	970,249	970,249	0	29,443	0	29,443
2078	11,291,095	887,224	887,224	0	25,280	0	25,280
2079	11,107,950	807,836	807,836	0	21,613	0	21,613
2080	10,994,939	732,200	732,200	0	18,394	0	18,394
2081	10,952,745	660,424	660,424	0	15,578	0	15,578
2082	10,981,986	592,606	592,606	0	13,125	0	13,125
2083	11,083,216	528,829	528,829	0	10,998	0	10,998
2084	11,256,940	469,159	469,159	0	9,162	0	9,162
2085	11,503,627	413,640	413,640	0	7,584	0	7,584
2086	11,823,732	362,291	362,291	0	6,237	0	6,237
2087	12,217,718	315,102	315,102	0	5,094	0	5,094
2088	12,686,088	272,032	272,032	0	4,129	0	4,129
2089	13,229,423	233,007	233,007	0	3,321	0	3,321
2090	13,848,414	197,923	197,923	0	2,649	0	2,649
2091	14,543,907	166,640	166,640	0	2,094	0	2,094
2092	15,316,947	138,988	138,988	0	1,640	0	1,640
2093	16,168,820	114,768	114,768	0	1,272	0	1,272
2094	17,101,105	93,760	93,760	0	975	0	975
2095	18,115,709	75,726	75,726	0	740	0	740
2096	19,214,908	60,419	60,419	0	554	0	554
2097	20,401,381	47,584	47,584	0	410	0	410
2098	21,678,248	36,964	36,964	0	299	0	299
2099	23,049,093	28,301	28,301	0	215	0	215
2100	24,518,001	21,344	21,344	0	152	0	152
2101	26,089,583	15,848	15,848	0	106	0	106
2102	27,769,003	11,581	11,581	0	73	0	73
2103	29,561,999	8,328	8,328	0	49	0	49
2104	31,474,905	5,896	5,896	0	33	0	33
2105	33,514,668	4,111	4,111	0	21	0	21
2106	35,688,861	2,829	2,829	0	14	0	14
2107	38,005,705	1,925	1,925	0	9	0	9
2108	40,474,079	1,300	1,300	0	6	0	6
2109	43,103,545	875	875	0	4	0	4
2110	45,904,366	591	591	0	2	0	2
2111	48,887,535	403	403	0	1	0	1
2112	52,064,805	279	279	0	1	0	1
2113	55,448,726	197	197	0	1	0	1
2114	59,052,688	141	141	0	0	0	0
2115	62,890,965	103	103	0	0	0	0
2116	66,978,770	76	76	0	0	0	0
2117	71,332,310	56	56	0	0	0	0
2118	75,968,851	42	42	0	0	0	0
2119	80,906,783	31	31	0	0	0	0
2120	86,165,691	23	23	0	0	0	0
2121	91,766,437	16	16	0	0	0	0

## 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, 2016.

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. This is 1.90% at December 31, 2021 and has been used as the lower bound of the sensitivity analysis presented. The range between the current discount rate (6.50%) and the 30-year treasury rate (1.90%) was used to establish an upper bound for sensitivity analysis (11.10%). 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 1.90% falls below the 5th percentile of estimated future 30-year returns while the upper bound of 11.10% falls close to the 95th percentile of estimated future 30-year returns.

**Table F-1: Sensitivity of Valuation Results as of December 31, 2021**

Discount Rate	1.90%	4.20%	6.50%	8.80%	11.10%
Market Value of Assets	\$ 33,459,926,149	\$ 33,459,926,149	\$ 33,459,926,149	\$ 33,459,926,149	\$ 33,459,926,149
Actuarial Accrued Liability	\$ 66,146,152,258	\$ 46,704,088,592	\$ 34,884,123,410	\$ 27,274,409,730	\$ 22,163,900,700
Unfunded Accrued Liability (UAL)	\$ 32,686,226,109	\$ 13,244,162,443	\$ 1,424,197,261	\$ (6,185,516,419)	\$ (11,296,025,449)
Funded Ratio	50.6%	71.6%	95.9%	122.7%	151.0%
20-Year Amortization of UAL (as % of general local revenue)	\$ 2,017,357,580 9.8%	\$ 1,033,520,766 5.0%	\$ 137,655,630 0.7%	N/A N/A	N/A N/A

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.

**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 (2032)	0.4%	3.6%	5.7%	7.8%	11.1%
30 Years (2052)	3.3%	5.1%	6.3%	7.6%	9.3%

## Appendix G: Data for Section 2 Graphs

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

### Graph 1: Active Members

	Active Member Count	Reported Compensation
2017	128,779	\$ 5,944,507,039
2018	129,986	6,225,257,140
2019	132,058	6,488,881,575
2020	132,397	6,846,115,903
2021	132,235	6,898,855,515

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

	Retired and Survivors of Deceased Member Count	Retirement Allowance
2017	68,766	\$ 1,324,257,015
2018	72,087	1,400,113,021
2019	75,002	1,479,483,328
2020	77,556	1,553,600,690
2021	79,318	1,633,119,207

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

	Market Value of Assets	Asset Return
2017	\$ 25,918,361,041	13.47%
2018	25,045,130,611	-1.41%
2019	28,224,698,297	14.83%
2020	30,905,570,910	11.14%
2021	33,459,926,149	9.66%

## Appendix G: Data for Section 2 Graphs (continued)

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

	<b>Total Allowance Increase*</b>	<b>National CPI-U</b>
1991	5.2%	3.1%
1992	1.6%	2.9%
1993	3.4%	2.7%
1994	3.3%	2.7%
1995	4.4%	2.5%
1996	6.3%	3.3%
1997	3.1%	1.7%
1998	1.0%	1.6%
1999	4.4%	2.7%
2000	3.7%	3.4%
2001	2.0%	1.6%
2002	3.5%	2.4%
2003	0.0%	1.9%
2004	2.5%	3.3%
2005	2.8%	3.4%
2006	2.2%	2.5%
2007	2.2%	4.1%
2008	0.1%	0.1%
2009	0.0%	2.7%
2010	0.0%	1.5%
2011	0.0%	3.0%
2012	0.0%	1.7%
2013	0.0%	1.5%
2014	0.6%	0.8%
2015	0.1%	0.7%
2016	0.0%	2.1%
2017	0.0%	2.1%
2018	0.0%	1.9%
2019	0.0%	2.3%
2020	0.0%	1.4%
2021	0.0%	7.0%

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

## Appendix G: Data for Section 2 Graphs (continued)

**Graph 6: Actuarial Value and Market Value of Assets**

	<b>Actuarial Value of Assets</b>	<b>Market Value of Assets</b>
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
2020	29,387,655,709	30,905,570,910
2021	31,643,208,176	33,459,926,149

**Graph 7: Asset Returns**

	<b>Actuarial Value Asset Return</b>	<b>Market Value Asset Return</b>
2017	6.59%	13.47%
2018	5.13%	-1.41%
2019	6.23%	14.83%
2020	8.79%	11.14%
2021	9.14%	9.66%

**Graph 8: Actuarial Accrued Liability**

	<b>Liability for Active Members</b>	<b>Liability for Deferred Members</b>	<b>Liability for Retired Members</b>	<b>Total Liability</b>
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
2020	15,515,656,027	1,442,127,239	16,527,449,324	33,485,232,590
2021	15,739,141,841	1,640,248,972	17,504,732,597	34,884,123,410

**Graph 9: Actuarial Accrued Liability and Actuarial Value of Assets**

	<b>Actuarial Accrued Liability</b>	<b>Actuarial Value of Assets</b>
2017	\$ 27,745,867,630	\$ 25,520,733,159
2018	\$ 29,223,126,652	\$ 26,307,348,445
2019	\$ 30,700,921,303	\$ 27,435,046,235
2020	\$ 33,485,232,590	\$ 29,387,655,709
2021	\$ 34,884,123,410	\$ 31,643,208,176

## Appendix G: Data for Section 2 Graphs (continued)

### Graph 10: Funded Ratios

	Funded Ratio (Actuarial Basis)	Funded Ratio (Market Value Basis)
2017	92.0%	93.4%
2018	90.0%	85.7%
2019	89.4%	91.9%
2020	87.8%	92.3%
2021	90.7%	95.9%

### Graph 11: Actuarially Determined Employer Contribution Rates

Fiscal Year Ending	General Employees and Firefighters	Law Enforcement Officers
2020	8.56%	10.22%
2021	10.24%	11.92%
2022	11.27%	12.94%
2023	11.66%	13.44%
2024	10.43%	12.39%

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

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

General and Fire

	Alternate #1 (0.0% 2022 Return)	Baseline Projection	Alternate #2 (-6.5% 2022 Return)
2024	10.43%	10.43%	10.43%
2025	10.85%	10.14%	11.56%
2026	10.72%	9.14%	12.30%
2027	11.15%	8.73%	13.55%
2028	11.35%	8.11%	14.52%
2029	11.76%	7.74%	15.65%
2030	10.44%	6.44%	14.30%
2031	9.51%	6.00%	13.28%
2032	7.92%	6.00%	11.59%
2033	6.81%	6.00%	10.37%
2034	6.14%	6.00%	9.61%
2035	6.00%	6.00%	8.12%
2036	6.00%	6.00%	8.88%
2037	6.00%	6.00%	8.18%
2038	6.00%	6.00%	7.79%
2039	6.00%	6.00%	7.02%

## Appendix G: Data for Section 2 Graphs (continued)

**Graph 12: Projected Actuarially Determined Employer Contribution Rates (continued)**

Law Enforcement Officers

	<b>Alternate #1 (0.0% 2022 Return)</b>	<b>Baseline Projection</b>	<b>Alternate #2 (-6.5% 2022 Return)</b>
2024	12.39%	12.39%	12.39%
2025	12.97%	12.26%	13.68%
2026	12.99%	11.41%	14.57%
2027	13.57%	11.15%	15.97%
2028	13.76%	10.52%	16.93%
2029	14.15%	10.13%	18.04%
2030	12.82%	8.82%	16.68%
2031	11.87%	7.97%	15.64%
2032	10.26%	6.46%	13.93%
2033	9.14%	6.00%	12.70%
2034	8.45%	6.00%	11.92%
2035	7.06%	6.00%	10.42%
2036	7.90%	6.00%	11.17%
2037	7.78%	6.00%	10.46%
2038	8.05%	6.00%	10.06%
2039	7.93%	6.00%	9.28%

**Graph 13: Projected Funded Ratio**

	<b>Alternate #1 (0.0% 2022 Return)</b>	<b>Baseline Projection</b>	<b>Alternate #2 (-6.5% 2022 Return)</b>
2021	90.7%	90.7%	90.7%
2022	91.9%	93.1%	90.7%
2023	94.0%	96.7%	91.3%
2024	95.1%	99.2%	91.1%
2025	95.6%	101.0%	90.4%
2026	95.6%	102.1%	89.4%
2027	96.7%	102.9%	90.7%
2028	97.8%	103.4%	92.4%
2029	98.8%	103.8%	94.0%
2030	99.6%	104.1%	95.4%
2031	100.3%	104.3%	96.6%
2032	100.6%	104.5%	97.6%
2033	100.9%	104.7%	98.4%
2034	101.0%	104.9%	99.0%
2035	101.1%	105.1%	99.6%
2036	101.2%	105.3%	100.2%

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

The table below provides the total contribution rates payable for the year beginning July 1, 2023 by all participating employers.

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 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		14.24%		0.14%		
	72265	Piedmont Triad Airport Authority		14.24%		0.14%		
	72593	Seagrove, Town		14.24%		0.14%		
	72657	Sparta, Town of		14.24%		0.14%		
90001	73190	Yancey County	12.90%	14.24%	0.05%	0.14%		
90002		Yancey Soil & Water Cons	12.85%					
90011	70330	Burnsville, Town of	12.92%	14.24%	0.07%	0.14%		
90092		Martin-Tyrrell-Washington Dist Health Dept	12.89%		0.04%			
90096		Albemarle Regional Health Services	12.90%		0.05%			
90098		Toe River Health District	12.91%		0.06%			
90099		Appalachian District Health Dept	12.88%		0.03%			
90101	70020	Alamance County	12.89%	14.24%	0.04%	0.14%		
90111	70320	Burlington, City of	12.90%	14.24%	0.05%	0.14%		
90114		Mebane, City of	23.35%	24.74%		0.14%	3,482,522	6/30/2026
90117		Alamance Municipal A.B.C. Board	12.96%		0.11%			
90121	71080	Graham, City of	12.85%	14.24%		0.14%		
90131	70880	Elon, Town of	12.89%	14.24%	0.04%	0.14%		
90141	71245	Haw River, Town of	12.85%	14.24%		0.14%		
90151		Alamance, Village of	12.85%					
90161		Green Level, Town of	12.85%					
90201	70032	Alexander County	12.91%	14.24%	0.06%	0.14%		
90203		Alexander County Health Dept	12.88%		0.03%			
90205		Alexander County Public Library	12.91%		0.06%			
90206		Alexander County Dept of S S	12.88%		0.03%			
90211	72775	Taylorsville, Town of	12.85%	14.24%		0.14%		
90301	70035	Alleghany County	12.90%	14.24%	0.05%	0.14%		
90305		Northwestern Regional Library	12.94%		0.09%			
90307		Sparta A.B.C. Board	13.38%				1,232	12/31/2028
90401	70040	Anson County	12.91%	14.24%	0.06%	0.14%		
90411	72930	Wadesboro, Town of	12.92%	14.24%	0.07%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
90413		Wadesboro Housing Authority	12.93%		0.08%			
90417		Wadesboro A.B.C. Board	12.98%		0.13%			
90421	71584	Lilesville, Town of	12.89%	14.24%	0.04%	0.14%		
90431	72345	Polkton, Town of	12.97%	14.24%	0.12%	0.14%		
90441		Peachland, Town of	12.85%					
90451		Ansonville, Town of	12.85%					
90461		Morven, Town of	12.85%					
90501	70065	Ashe County	12.90%	14.24%	0.05%	0.14%		
90507		West Jefferson A.B.C. Board	16.07%				20,297	6/30/2025
90511	71447	Jefferson, Town of	12.85%	14.24%		0.14%		
90521	73025	West Jefferson, Town of	12.85%	14.24%		0.14%		
90601	70090	Avery County	12.93%	14.24%	0.08%	0.14%		
90602	70090	Avery County Fire Commission	19.10%				254,489	6/30/2033
90605		Avery-Mitchell-Yancey Reg Library	12.93%		0.08%			
90611	70110	Banner Elk, Town of	12.85%	14.24%		0.14%		
90617		High Country A.B. C. Board	12.91%		0.06%			
90621	72032	Newland, Town of	12.85%	14.24%		0.14%		
90631	70146	Beech Mountain, Town of	12.85%	14.24%		0.14%		
90641	70860	Elk Park, Town of	12.85%					
90651	72724	Sugar Mountain, Town of	19.99%	21.38%		0.14%	143,536	6/30/2024
90701	70130	Beaufort County	12.88%	14.24%	0.03%	0.14%		
90704		Beaufort County A.B.C. Board	12.95%	14.24%	0.10%	0.14%		
90705		B.H.M. Regional Library	12.94%		0.09%			
90709		Mideast Commission	12.89%		0.04%			
90711	72990	Washington, City of	12.90%	14.24%	0.05%	0.14%		
90721	70085	Aurora, Town of	12.98%		0.13%			
90731	70147	Belhaven, Town of	12.85%	14.24%		0.14%		
90741		Washington Park, Town of	12.85%					
90751	70525	Chocowinity, Town of	12.85%	14.24%		0.14%		
90801	70180	Bertie County	12.85%	14.24%		0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
90804		Bertie County A.B.C. Board	12.98%		0.13%			
90805		Albemarle Regional Library	12.97%		0.12%			
90808		Bertie-Martin Regional Jail Comm	12.90%		0.05%			
90811	70082	Aulander, Town of	12.91%		0.06%			
90812	73122	Windsor, Town of	12.85%	14.24%		0.14%		
90813	70575	Colerain, Town of	13.07%		0.22%			
90861	71556	Lewiston Woodville, Town of	13.89%				1,187	6/30/2024
90901	70210	Bladen County	12.90%	14.24%	0.05%	0.14%		
90911	70850	Elizabethtown, Town of	12.91%	14.24%	0.06%	0.14%		
90917		Elizabeth A.B.C. Board	12.85%					
90918		Southeastern Economic Development Comm	12.87%		0.02%			
90921	73050	White Lake, Town of	12.90%	14.24%	0.05%	0.14%		
90931	70537	Clarkton, Town of	12.91%		0.06%			
90941	70215	Bladenboro, Town of	12.85%	14.24%		0.14%		
91001	70280	Brunswick County	12.89%	14.24%	0.04%	0.14%		
91002	71540	Leland, Town of	12.85%	14.24%		0.14%		
91003		Brunswick Co Health Dept	12.88%		0.03%			
91004		Brunswick County A.B.C. Board	12.85%					
91006		Brunswick Co Dept of Social Services	12.88%		0.03%			
91007		Calabash A.B.C. Board	12.85%					
91008		Cape Fear Council of Governments	12.85%					
91009		Brunswick County Tourism Authority	13.86%				6,045	6/30/2026
91010		Calabash, Town of	12.85%					
91011	72650	Southport, City of	12.90%	14.24%	0.05%	0.14%		
91012	72076	Northwest, City of	12.85%	14.24%		0.14%		
91013		Southeast Brunswick Sanitary District	18.77%		0.11%		220,352	6/30/2039
91014	71375	Holden Beach, Town of	12.85%	14.24%		0.14%		
91015		Cape Fear Regional Jetport	13.36%		0.51%			
91017		Southport A.B.C. Board	13.02%		0.17%			
91020		Belville, Town of	12.85%				654	6/30/2022

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
91021	71630	Oak Island, Town of	12.91%	14.24%	0.06%	0.14%		
91024		Carolina Shores Town of	12.85%					
91026		Navassa, Town of	20.12%	21.51%		0.14%	179,545	6/30/2035
91027		Oak Island A.B.C. Bd	13.01%		0.16%			
91032		St James, Town of	12.85%					
91041	72723	Sunset Beach, Town of	12.88%	14.24%	0.03%	0.14%		
91042		Brunswick Regional Water and Sewer H2GO	12.85%					
91047		Sunset Beach A.B.C. Board	13.15%		0.30%			
91051	70405	Caswell Beach, Town of	12.85%	14.24%		0.14%		
91057		Shallotte A.B.C. Board	12.98%		0.13%			
91061	72135	Ocean Isle Beach, Town of	12.90%	14.24%	0.05%	0.14%		
91067		Ocean Isle Beach A.B.C.	12.95%		0.10%			
91071	70225	Boiling Spring Lakes, City of	12.90%	14.24%	0.05%	0.14%		
91077		Boiling Spring Lakes A.B.C. Board	12.85%					
91081	72597	Shallotte, Town of	12.85%	14.24%		0.14%		
91091	70107	Bald Head Island, Village of	12.90%	14.24%	0.05%	0.14%		
91101	70290	Buncombe County	12.88%	14.24%	0.03%	0.14%		
91102		Land-of-Sky Regional Council	12.89%		0.04%			
91104		Woodfin A.B.C. Commission	12.85%				1,443	6/30/2022
91107		Western Nc Regional Air Quality	12.89%		0.04%			
91108		Metro Sewerage Dist of Buncombe County	12.89%		0.04%			
91109		Woodfin Sanitary Water and Sewer Dist	12.89%		0.04%			
91111	70190	Biltmore Forest, Town of	12.85%	14.24%		0.14%		
91120		West Buncombe Fire Dept	12.85%					
91121	70070	Asheville, City of	12.85%	14.24%		0.14%		
91127	70072	Asheville A.B.C. Board	12.91%	14.24%	0.06%	0.14%		
91128	70074	Asheville Regional Airport Authority	12.90%	14.24%	0.05%	0.14%		
91138		Skyland Vol Fire Dept	12.85%					
91141	73016	Weaverville, Town of	12.94%	14.24%	0.09%	0.14%		
91147		Weaverville A.B.C. Board	12.85%					

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
91151	70200	Black Mountain, Town of	12.88%	14.24%	0.03%	0.14%		
91154		Black Mountain A.B.C. Board	12.94%		0.09%			
91161	71820	Montreat, Town of	12.89%	14.24%	0.04%	0.14%		
91171	73160	Woodfin, Town of	12.85%	14.24%		0.14%		
91201	70310	Burke County	12.90%	14.24%	0.05%	0.14%		
91203		Burke Co Health Dept	12.89%		0.04%			
91206		Burke Co Dept of Social Services	12.89%		0.04%			
91208		Burke County Tourism Dev. Authority	12.85%					
91211	72883	Valdese, Town of	12.91%	14.24%	0.06%	0.14%		
91213		Valdese Housing Authority	12.85%					
91214		Rutherford College, Town of	12.85%					
91217	71880	Morganton A.B.C. Board	12.95%		0.10%			
91221	70745	Drexel, Town of	12.89%	14.24%	0.04%	0.14%		
91231	71870	Morganton, City of	12.85%	14.24%		0.14%		
91233		Morganton Housing Authority	12.90%		0.05%			
91241	71065	Glen Alpine, Town of	12.89%	14.24%	0.04%	0.14%		
91251		Hildebran, Town of	12.85%					
91261		Connelly Springs, Town of	12.85%					
91301	70340	Cabarrus County	12.89%	14.24%	0.04%	0.14%		
91302		Water & Sewer Auth of Cabarrus County	12.88%		0.03%			
91306		Cabarrus Co Public Health Auth	12.87%		0.02%			
91308		Cabarrus County Tourism Authority	13.52%				41,298	6/30/2030
91311	70590	Concord, City of	12.88%	14.24%	0.03%	0.14%		
91317		Concord A.B.C. Board	12.92%		0.07%			
91321		Mount Pleasant, Town of	12.85%					
91327		Mount Pleasant A.B.C. Board	12.89%		0.04%			
91331	71468	Kannapolis, City of	12.89%	14.24%	0.04%	0.14%		
91341		Midland, Town of	12.85%					
91401	70350	Caldwell County	12.89%	14.24%	0.04%	0.14%		
91411	71090	Granite Falls, Town of	12.91%	14.24%	0.06%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
91414		Rhodhiss, Town of	12.85%	14.24%		0.14%		
91417		Granite Falls A.B.C. Board	12.99%		0.14%			
91421		Sawmills, Town of	12.85%					
91423		Lenoir Housing Authority	12.91%		0.06%			
91431	71395	Hudson, Town of	12.85%	14.24%		0.14%		
91441		Harrisburg, Town of	12.85%					
91451	71552	Lenoir, City of	12.97%	14.24%	0.12%	0.14%		
91457		Lenoir A.B.C. Board	12.85%					
91461		Cajah's Mountain, Town of	12.85%					
91501	70357	Camden County	12.91%	14.24%	0.06%	0.14%		
91504		Camden County A.B.C. Board	13.04%		0.19%			
91601	70380	Carteret County	12.90%	14.24%	0.05%	0.14%		
91604	70385	Carteret County A.B.C. Board	12.93%	14.24%	0.08%	0.14%		
91608		Western Carteret Interlocal Cooperation Agency	12.85%					
91611	71860	Morehead City, Town of	12.89%	14.24%	0.04%	0.14%		
91621	72035	Newport, Town of	12.85%	14.24%		0.14%		
91631	70145	Beaufort, Town of	12.89%	14.24%	0.04%	0.14%		
91633		Beaufort Housing Authority	12.85%					
91641	72290	Pine Knoll Shores, Town of	12.88%	14.24%	0.03%	0.14%		
91651	70890	Emerald Isle, Town of	12.85%	14.24%		0.14%		
91661	71405	Indian Beach, Town of	12.85%	14.24%		0.14%		
91671	70365	Cape Carteret, Town of	12.89%	14.24%	0.04%	0.14%		
91681	70080	Atlantic Beach, Town of	19.18%	20.47%	0.10%	0.14%	641,690	6/30/2025
91691		Cedar Point, Town of	12.85%					
91701	70415	Caswell County	12.85%					
91704		Caswell County A.B.C. Board	12.98%		0.13%			
91706		Caswell Co Dept of Social Services	12.85%					
91719	73192	Yanceyville, Town of	12.88%		0.03%			
91801	70430	Catawba County	12.89%	14.24%	0.04%	0.14%		
91804	70440	Catawba County A.B.C. Board	13.00%		0.15%			

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
91811	71330	Hickory, City of	12.89%	14.24%	0.04%	0.14%		
91812		Hickory Conover Tourism Dev Auth	12.85%					
91813		Hickory Public Housing Authority	12.88%		0.03%			
91818		Western Piedmont Council of Gvmts	12.85%					
91819		Western Piedmont Regional Transit Authority	13.07%		0.22%			
91821	70535	Claremont, City of	12.89%	14.24%	0.04%	0.14%		
91831	71700	Maiden, Town of	12.89%	14.24%	0.04%	0.14%		
91841	71640	Longview, Town of	12.89%	14.24%	0.04%	0.14%		
91851	70610	Conover, Town of	12.91%	14.24%	0.06%	0.14%		
91861	70270	Brookford, Town of	12.85%					
91871	72040	Newton, City of	12.90%	14.24%	0.05%	0.14%		
91881	70441	Catawba, Town of	12.85%	14.24%		0.14%		
91901	70490	Chatham County	12.89%	14.24%	0.04%	0.14%		
91903		Chatham Co Housing Auth	12.85%					
91904		Chatham County A.B.C. Board	12.97%		0.12%			
91908		Goldston-Gulf Sanitary District	12.85%					
91911	72625	Siler City, Town of	12.89%	14.24%	0.04%	0.14%		
91917		Siler City A.B.C. Board	12.91%		0.06%			
91921	72330	Pittsboro, Town of	12.90%	14.24%	0.05%	0.14%		
92001	70500	Cherokee County	12.93%	14.24%	0.08%	0.14%		
92005		Nantahala Regional Library	13.05%		0.20%			
92011	71975	Murphy, Town of	12.94%	14.24%	0.09%	0.14%		
92017		Murphy A.B.C. Board	12.91%		0.06%			
92021	70036	Andrews, Town of	12.85%	14.24%		0.14%		
92101	70530	Chowan County	12.90%	14.24%	0.05%	0.14%		
92104		Chowan County A.B.C. Board	12.98%		0.13%			
92109		Albemarle Regional Planning & Develop. Comm	12.89%		0.04%			
92111	70817	Edenton, Town of	12.90%	14.24%	0.05%	0.14%		
92113		New Edenton Housing Auth	12.92%		0.07%			
92201	70538	Clay County	12.91%	14.24%	0.06%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
92214		Clay County A.B.C. Board	12.85%					
92301	70550	Cleveland County	12.89%	14.24%	0.04%	0.14%		
92302		Cleveland County Water	12.85%					
92311	72610	Shelby, City of	12.90%	14.24%	0.05%	0.14%		
92317		Shelby A.B.C. Board	12.94%		0.09%			
92321	71490	Kings Mountain, City of	12.95%	14.24%	0.10%	0.14%		
92327		Kings Mountain A.B.C. Board	13.06%		0.21%			
92331	70230	Boiling Springs, Town of	12.94%	14.24%	0.09%	0.14%		
92341	71532	Lawndale, Town of	12.85%					
92351	71178	Grover, Town of	12.92%		0.07%			
92401	70580	Columbus County	12.92%	14.24%	0.07%	0.14%		
92403		Whiteville Housing Authority	12.85%					
92411	73060	Whiteville, City of	12.92%	14.24%	0.07%	0.14%		
92417		Whiteville A.B.C. Board	12.86%		0.01%			
92421		Brunswick, Town of	12.85%					
92427		Lake Waccamaw A.B.C. Board	13.10%		0.25%			
92431	70908	Fair Bluff, Town of	12.85%	14.24%		0.14%		
92441	70450	Chadbourn, Town of	12.85%	14.24%		0.14%		
92444		West Columbus A.B.C. Board	12.85%					
92451	72760	Tabor City, Town of	12.85%	14.24%		0.14%		
92461	71519	Lake Waccamaw, Town of	12.85%	14.24%		0.14%		
92501	70650	Craven County	12.90%	14.24%	0.05%	0.14%		
92502		First Craven Sanitary Dist	12.85%					
92504		Craven Co A.B.C. Bd	12.93%		0.08%			
92505		Craven-Pamlico-Carteret Regional Library	12.96%		0.11%			
92506		Coastal Carolina Regional Airport	13.08%		0.23%			
92507		Neuse River Council of Governments	12.87%		0.02%			
92508		Coastal Regional Solid Waste Mngt Auth	12.92%		0.07%			
92511	72020	New Bern, City of	12.90%	14.24%	0.05%	0.14%		
92513		Trillium Health Resources	12.88%		0.03%			

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
92521	72810	Trent Woods, Town of	12.91%	14.24%	0.06%	0.14%		
92531	71240	Havelock, City of	12.89%	14.24%	0.04%	0.14%		
92541	72435	River Bend, Town of	12.85%	14.24%		0.14%		
92551	72910	Vanceboro, Town of	12.85%	14.24%		0.14%		
92561		Bridgeton, Town of	12.85%	14.24%		0.14%		
92571		Cove City, Town of	12.85%					
92601	70680	Cumberland County	12.89%	14.24%	0.04%	0.14%		
92602		Westarea Volunteer Fire Dept	12.85%					
92604	70685	Cumberland Co A.B.C. Board	12.90%	14.24%	0.05%	0.14%		
92607		Mid-Carolina Council of Governments	12.92%		0.07%			
92611	70940	Fayetteville, City of	12.90%	14.24%	0.05%	0.14%		
92613		Fayetteville Metropolitan Housing Auth	12.90%		0.05%			
92614		Fayetteville Public Works Commission	12.85%					6/30/2022
92621	72715	Stedman, Town of	12.85%	14.24%		0.14%		
92631	71390	Hope Mills, Town of	12.90%	14.24%	0.05%	0.14%		
92641		Wade, Town of	12.85%					
92651		Linden, Town of	12.85%					
92661	72676	Spring Lake, Town of	19.53%	20.86%	0.06%	0.14%	639,426	9/30/2024
92671		Falcon Town of	19.27%				12,092	6/30/2026
92681		Eastover, Town of	12.90%		0.05%			
92701	70700	Currituck County	12.90%	14.24%	0.05%	0.14%		
92704		Currituck Co A.B.C. Board	12.85%					
92801	70720	Dare County	12.89%	14.24%	0.04%	0.14%		
92802		Dare County Tourism Board	12.88%		0.03%			
92804	70721	Dare County A.B.C. Board	12.92%	14.24%	0.07%	0.14%		
92811	71980	Nags Head, Town of	12.89%	14.24%	0.04%	0.14%		
92821	71480	Kill Devil Hills, Town of	12.90%	14.24%	0.05%	0.14%		
92831	71705	Manteo, Town of	12.94%	14.24%	0.09%	0.14%		
92841	72645	Southern Shores, Town of	12.88%	14.24%	0.03%	0.14%		
92851	71507	Kitty Hawk, Town of	12.95%	14.24%	0.10%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
92861	70755	Duck, Town of	12.85%	14.24%		0.14%		
92901	70723	Davidson County	12.91%	14.24%	0.06%	0.14%		
92911	72780	Thomasville, City of	12.91%	14.24%	0.06%	0.14%		
92913		Thomasville Housing Authority	29.28%				109,622	6/30/2024
92914		Thomasville A.B.C. Board	12.85%					
92917		Lexington A.B.C. Board	13.01%		0.16%			
92921	70730	Denton, Town of	12.85%	14.24%		0.14%		
92931	71570	Lexington, City of	12.89%	14.24%	0.04%	0.14%		
92941		Midway, Town of	15.14%				20,889	3/31/2038
93001	70725	Davie County	12.89%	14.24%	0.04%	0.14%		
93009		Davie Soil and Water Conservation Dist	12.85%					
93011	71790	Mocksville, Town of	12.90%		0.05%			
93021		Bermuda Run, Town of	12.85%					
93028		Mocksville-Cooleemee A.B.C. Board	12.93%		0.08%			
93031	70624	Cooleemee, Town of	19.05%	20.44%		0.14%	13,382	6/30/2025
93101	70770	Duplin County	12.92%	14.24%	0.07%	0.14%		
93108		Eastpointe Human Services	12.88%		0.03%			
93111	70160	Beulaville, Town of	12.91%	14.24%	0.06%	0.14%		
93121	71469	Kenansville, Town of	12.93%	14.24%	0.08%	0.14%		
93127		Kenansville A.B.C. Board	12.85%					
93131	72981	Warsaw, Town of	13.01%	14.24%	0.16%	0.14%		
93137		Warsaw A.B.C. Board	12.85%					
93141	70920	Faison, Town of	12.90%		0.05%			
93151	72970	Wallace, Town of	12.85%	14.24%		0.14%		
93157		Wallace A.B.C. Bd	12.85%					
93161	72487	Rose Hill, Town of	12.94%	14.24%	0.09%	0.14%		
93171		Calypso, Town of	12.85%					
93181		Teachey, Town of	12.85%					
93191	71690	Magnolia, Town of	12.85%	14.24%		0.14%		
93201	70790	Durham County	12.89%	14.24%	0.04%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
93204	70800	Durham County A.B.C. Board	12.90%		0.05%			
93209		Alliance Behavioral Healthcare	12.85%					
93211	70780	Durham, City of	12.85%	14.24%		0.14%		
93212		Durham Convention & Visitors Bureau	18.56%				392,012	6/30/2027
93219		Triangle J Council of Governments	12.88%		0.03%			
93301	70820	Edgecombe County	12.91%	14.24%	0.06%	0.14%		
93304		Edgecombe County A.B.C. Board	12.97%		0.12%			
93305		Edgecombe County Memorial Library	12.91%		0.06%			
93309		Upper Coastal Plain Council of Governments	12.89%		0.04%			
93311	72770	Tarboro, Town of	12.89%	14.24%	0.04%	0.14%		
93317		Tarboro Redevelopment Commission	12.91%		0.06%			
93321	72480	Rocky Mount, City of	12.89%	14.24%	0.04%	0.14%		
93323		Rocky Mount-Wilson Airport Authority	12.90%		0.05%			
93331	72296	Pinetops, Town of	12.93%	14.24%	0.08%	0.14%		
93333		Rocky Mt Housing Authority	12.85%					
93341		Macclesfield, Town of	12.87%		0.02%			
93351	72351	Princeville, Town of	12.85%					
93401	70951	Forsyth County	12.85%	14.24%		0.14%		
93406		Piedmont Triad Regional Council	12.95%		0.10%			
93411	73130	Winston-Salem, City of	12.85%	14.24%		0.14%		
93413		Winston-Salem Housing Authority	12.90%		0.05%			
93417	73140	Triad Municipal A.B.C. Board	12.95%	14.24%	0.10%	0.14%		
93421	71470	Kernersville, Town of	12.85%	14.24%		0.14%		
93431		Rural Hall, Town of	12.89%		0.04%			
93441		Clemmons, Village of	12.85%					
93442		Clemmons Fire Department	12.85%					
93451		Lewisville, Town of	12.85%					
93461		Walkertown, Town of	12.85%					
93471		Tobaccoville, Village of	12.85%					
93501	70960	Franklin County	12.92%	14.24%	0.07%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
93511	70970	Franklinton, Town of	12.85%	14.24%		0.14%		
93517		Franklinton A.B.C Board	13.00%		0.15%			
93521	71650	Louisburg, Town of	12.91%	14.24%	0.06%	0.14%		
93527		Louisburg A.B.C. Board	12.94%		0.09%			
93531	70295	Bunn, Town of	12.85%	14.24%		0.14%		
93537		Bunn A.B.C. Board	12.85%					
93541	73200	Youngsville, Town of	12.85%	14.24%		0.14%		
93601	71030	Gaston County	12.88%	14.24%	0.03%	0.14%		
93602	72682	Stanley, Town of	12.91%	14.24%	0.06%	0.14%		
93604		Cramerton A.B.C. Board	12.85%					
93609		Partners Behavioral Health Management	12.89%		0.04%			
93610	71760	McAdenville, Town of	12.89%		0.04%			
93611	71040	Gastonia, City of	12.85%	14.24%		0.14%		
93617		Gastonia A.B.C. Board	13.09%		0.24%			
93618		Gaston County Economic Dev Commission	12.85%				15,836	12/31/2022
93621	70150	Belmont, City of	12.85%	14.24%		0.14%		
93623		Belmont Housing Authority	12.85%					
93631	70640	Cramerton, Town of	13.00%	14.24%	0.15%	0.14%		
93641	70520	Cherryville, City of	12.92%	14.24%	0.07%	0.14%		
93647		Cherryville A.B.C. Board	12.85%				10,908	6/30/2023
93651	70705	Dallas, Town of	12.85%	14.24%		0.14%		
93661	71655	Lowell, City of	12.85%	14.24%		0.14%		
93671		Bessemer City, City of	12.96%	14.24%	0.11%	0.14%		
93681	72390	Ranlo, Town of	12.85%	14.24%		0.14%		
93691	71930	Mount Holly, City of	12.89%	14.24%	0.04%	0.14%		
93701	71050	Gates County	12.91%	14.24%	0.06%	0.14%		
93704	71052	Gates County A.B.C. Board	13.05%		0.20%			
93801	71085	Graham County	12.85%	14.24%		0.14%		
93803		Graham Co Health Dept	12.89%		0.04%			
93806		Graham County Dept of S S	12.88%		0.03%			

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
93821		Robbinsville, Town of	12.94%		0.09%			
93901	71110	Granville County	12.90%	14.24%	0.05%	0.14%		
93904		Granville Co A.B.C. Bd	13.00%		0.15%			
93906		Granville County Hospital	12.88%		0.03%			
93908		Granville-Vance Public Health	12.88%		0.03%			
93910		South Granville Water and Sewer Authority	12.95%		0.10%			
93911	72200	Oxford, City of	12.91%	14.24%	0.06%	0.14%		
93913		Oxford Housing Authority	12.91%		0.06%			
93914		Stovall, Town of	13.11%		0.26%			
93921	70660	Creedmoor, City of	12.85%	14.24%		0.14%		
93931		Butner, Town of	12.94%	14.24%	0.09%	0.14%		
94001	71130	Greene County	12.91%	14.24%	0.06%	0.14%		
94002		Maury Sanitary Land District	12.85%					
94004		Greene County A.B.C. Board	12.98%		0.13%			
94005		Neuse Regional Library-Greene County	13.02%		0.17%			
94011		Hookerton, Town of	12.87%		0.02%			
94021		Snow Hill, Town of	12.85%	14.24%		0.14%		
94031		Walstonburg, Town of	20.13%				39,474	9/30/2033
94101	71180	Guilford County	12.89%	14.24%	0.04%	0.14%		
94102		Guil-Rand Fire Department	12.85%					
94108		Pinecroft-Sedgefield Fire Dist Inc	12.85%					
94109		Alamance Community Fire District	12.85%					
94111	71140	Greensboro, City of	12.90%	14.24%	0.05%	0.14%		
94112		Piedmont Triad Reg Water Auth	12.90%	14.24%	0.05%	0.14%		
94117	71150	Greensboro A.B.C. Bd	12.92%		0.07%			
94118		Guilford Fire District #13 Inc	12.85%					
94121	71340	High Point, City of	12.89%	14.24%	0.04%	0.14%		
94127		High Point A.B.C. Bd	12.93%		0.08%			
94131	71442	Jamestown, Town of	12.89%		0.04%			
94151	71060	Gibsonville, Town of	12.91%	14.24%	0.06%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
94157		Gibsonville A.B.C. Board	12.85%					
94161		Oak Ridge, Town of	12.85%					
94168		Colfax Volunteer Fire Department	12.85%					
94171		Summerfield, Town of	12.85%					
94172		Summerfield Fire District	12.88%		0.03%			
94201	71200	Halifax County	12.90%	14.24%	0.05%	0.14%		
94204		Halifax County A.B.C. Board	12.91%		0.06%			
94205		Halifax County Tourism Development Authority	12.97%		0.12%			
94209		Roanoke Rapids Sanitary District	12.91%		0.06%			
94211	70895	Enfield, Town of	12.97%	14.24%	0.12%	0.14%		
94221	72440	Roanoke Rapids, City of	12.91%	14.24%	0.06%	0.14%		
94231	73017	Weldon, Town of	12.94%	14.24%	0.09%	0.14%		
94241	72590	Scotland Neck, Town of	12.97%	14.24%	0.12%	0.14%		
94251		Hobgood, Town of	12.91%		0.06%			
94261	71615	Littleton, Town of	12.85%	14.24%		0.14%		
94301	71230	Harnett County	12.90%	14.24%	0.05%	0.14%		
94311	70760	Dunn, City of	12.91%	14.24%	0.06%	0.14%		
94313		Dunn Housing Authority	12.95%		0.10%			
94317		Dunn A.B.C. Board	12.95%		0.10%			
94321	71585	Lillington, Town of	12.88%	14.24%	0.03%	0.14%		
94331	70900	Erwin, Town of	12.93%	14.24%	0.08%	0.14%		
94341	70570	Coats, Town of	12.90%	14.24%	0.05%	0.14%		
94347		Angier A.B.C. Board	12.88%		0.03%			
94351	70038	Angier, Town of	12.85%	14.24%		0.14%		
94401	71250	Haywood County	12.89%	14.24%	0.04%	0.14%		
94403		Haywood County Tourism Development Authority	12.85%					
94408		Junaluska Sanitary District	12.91%		0.06%			
94411	73010	Waynesville, Town of	12.91%	14.24%	0.06%	0.14%		
94412	73015	Waynesville A.B.C. Board	12.97%		0.12%			
94415		Foothills Regional Airport Authority	12.85%					

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
94417		Monroe-Union County Economic Development Commission	12.85%					
94421	71685	Maggie Valley, Town of	12.85%	14.24%		0.14%		
94427		Maggie Valley A.B.C. Board	12.85%					
94428		Maggie Valley Sanitary Dist	12.85%					
94431	70362	Canton, Town of	12.91%	14.24%	0.06%	0.14%		
94437		Canton A.B.C. Board	17.73%				35,252	6/30/2027
94501	71275	Henderson County	12.89%	14.24%	0.04%	0.14%		
94511	71280	Hendersonville, City of	12.89%	14.24%	0.04%	0.14%		
94517		Hendersonville A.B.C. Bd	12.85%					
94521	71525	Laurel Park, Town of	12.91%	14.24%	0.06%	0.14%		
94527		Laurel Park A.B.C. Board	12.92%		0.07%			
94531		Flat Rock, Village of	12.85%					
94532	70220	Blue Ridge Fire Department	12.88%		0.03%			
94537		Stokesdale, Town of	12.85%					
94541	70943	Fletcher, Town of	12.85%	14.24%		0.14%		
94547		Fletcher A.B.C. Board	12.85%					
94551		Mills River, Town of	12.93%		0.08%			
94601	71310	Hertford County	12.91%	14.24%	0.06%	0.14%		
94604	71320	Hertford County A.B.C. Board	12.95%		0.10%			
94611	70007	Ahoskie, Town of	12.94%	14.24%	0.09%	0.14%		
94621	71970	Murfreesboro, Town of	12.85%	14.24%		0.14%		
94631	73155	Winton, Town of	13.02%		0.17%			
94641		Cofield, Town of	12.85%					
94701	71370	Hoke County	12.91%	14.24%	0.06%	0.14%		
94704		Hoke County A.B.C. Board	12.92%		0.07%			
94711	72355	Raeford, Town of	12.92%	14.24%	0.07%	0.14%		
94801	71400	Hyde County	12.91%	14.24%	0.06%	0.14%		
94804		Hyde County A.B.C. Board	12.85%					
94812		Ocracoke Sanitary Dist	12.92%		0.07%			
94901	71420	Iredell County	12.89%	14.24%	0.04%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
94908		Greater Statesville Development Corp	12.85%					
94911	72700	Statesville, City of	12.90%	14.24%	0.05%	0.14%		
94917	72710	Statesville A.B.C. Board	12.96%		0.11%			
94921	71850	Mooreville, City of	12.89%	14.24%	0.04%	0.14%		
94923		Mooreville Housing Authority	12.88%		0.03%			
94927		Mooreville A.B.C. Board	12.92%		0.07%			
94931	72815	Troutman, Town of	12.95%	14.24%	0.10%	0.14%		
94937		Troutman A.B.C. Board	12.85%					
94941		Mi Connection Communications System	12.85%					
94947		Valdese A.B.C. Board	12.85%					
95001	71430	Jackson County	12.91%	14.24%	0.06%	0.14%		
95002		Tuckaseegee Water Authority	12.91%		0.06%			
95005		Fontana Regional Library	12.93%		0.08%			
95008		Southwestern Nc Planning & Econ Dev Comm	12.90%		0.05%			
95009		Vaya Health	12.88%		0.03%			
95010		Jackson County Tourism Development Authority	12.85%					
95011	72750	Sylva, Town of	12.89%	14.24%	0.04%	0.14%		
95017		Jackson County A.B.C. Board	12.92%		0.07%			
95101	71460	Johnston County	12.89%	14.24%	0.04%	0.14%		
95103		Benson Housing Authority	16.78%				157,092	6/30/2036
95104		Johnston County A.B.C. Board	12.94%		0.09%			
95105		Public Library of Johnston Co And Smithfield	12.89%		0.04%			
95106		Archer Lodge, Town of	13.61%		0.23%		2,105	6/30/2024
95110		Johnston Health Center	12.93%		0.08%			
95111	72630	Smithfield, Town of	12.90%	14.24%	0.05%	0.14%		
95113		Smithfield Housing Authority	12.85%				74,122	6/30/2023
95121	72594	Selma, Town of	12.90%	14.24%	0.05%	0.14%		
95122		Micro, Town of	12.85%	16.71%		0.14%	12,564	6/30/2028
95123		Selma Housing Authority	12.89%		0.04%			
95131	70540	Clayton, Town of	12.89%	14.24%	0.04%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
95141	70170	Benson, Town of	12.89%	14.24%	0.04%	0.14%		
95151	70954	Four Oaks, Town of	12.85%	14.24%		0.14%		
95161	72295	Pine Level, Town of	12.85%	14.24%		0.14%		
95171	71472	Kenly, Town of	12.85%	14.24%		0.14%		
95181	72349	Princeton, Town of	12.85%	14.24%		0.14%		
95191		Wilson's Mills, Town of	12.85%	14.24%		0.14%		
95201	71465	Jones County	12.89%	14.24%	0.04%	0.14%		
95204		Jones County A.B.C. Board	13.02%		0.17%			
95205		Neuse Regional Library-Jones County	12.85%					
95211		Pollocksville, Town of	13.30%		0.45%			
95221	71745	Maysville, Town of	12.85%	14.24%		0.14%		
95301	71535	Lee County	12.92%	14.24%	0.07%	0.14%		
95311	72565	Sanford, City of	12.85%	14.24%		0.14%		
95317		Sanford A.B.C. Board	12.96%		0.11%			
95321	70265	Broadway, Town of	12.95%	14.24%	0.10%	0.14%		
95401	71550	Lenoir County	12.90%	14.24%	0.05%	0.14%		
95404		Lenoir County A.B.C. Board	12.92%	14.24%	0.07%	0.14%		
95405		Neuse Regional Library	12.90%		0.05%			
95411	71500	Kinston, City of	12.91%	14.24%	0.06%	0.14%		
95413		Kinston Housing Authority	12.90%		0.05%			
95415		Kinston-Lenoir Co Pub Library	12.94%		0.09%			
95421	72305	Pink Hill, Town of	12.90%	14.24%	0.05%	0.14%		
95431	71517	Lagrange, Town of	12.89%		0.04%			
95501	71590	Lincoln County	12.90%	14.24%	0.05%	0.14%		
95504		Lincoln County A.B.C. Board	12.85%				4,031	6/30/2023
95511	71600	Lincolnton, City of	12.90%	14.24%	0.05%	0.14%		
95513		Lincolnton Housing Authority	12.93%		0.08%			
95517		Lincolnton A.B.C. Board	12.98%		0.13%			
95601	71680	Macon County	12.90%	14.24%	0.05%	0.14%		
95611	70955	Franklin, Town of	12.91%	14.24%	0.06%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
95617		Highlands A.B.C. Board	13.06%		0.21%			
95621	71335	Highlands, Town of	12.85%	14.24%		0.14%		
95701	71684	Madison County	12.93%	14.24%	0.08%	0.14%		
95711	71718	Mars Hill, Town of	12.90%	14.24%	0.05%	0.14%		
95721	71711	Marshall, Town of	12.96%	14.24%	0.11%	0.14%		
95733		Hot Springs Housing Authority	12.85%					
95801	71730	Martin County	12.92%	14.24%	0.07%	0.14%		
95802		Martin Co Travel & Tourism Auth	13.13%		0.28%			
95804		Martin County A.B.C. Board	12.89%		0.04%			
95811	73080	Williamston, Town of	12.85%	14.24%		0.14%		
95813		Williamston Housing Authority	12.94%		0.09%			
95821		Oak City, Town of	12.85%					
95831		Hamilton, Town of	12.92%		0.07%			
95841		Jamesville, Town of	12.85%					
95851	72445	Robersonville, Town of	12.85%	14.24%		0.14%		
95853		Robersonville Authority	12.85%					
95901	71762	McDowell County	12.90%	14.24%	0.05%	0.14%		
95908		Pleasant Garden Fire Dept	12.85%					
95911	71710	Marion, Town of	12.91%	14.24%	0.06%	0.14%		
95917		Marion A.B.C. Board	12.85%					
95921	72140	Old Fort, Town of	12.85%	14.24%		0.14%		
96001	71770	Mecklenburg County	12.88%	14.24%	0.03%	0.14%		
96003		Charlotte Housing Authority	12.85%					
96004	71780	Mecklenburg County A.B.C. Board	12.91%	14.24%	0.06%	0.14%		
96005		Charlotte Mecklenburg Public Library	12.88%		0.03%			
96008		Mecklenburg Emer Med Svcs Agcy	12.87%		0.02%			
96009		Centralina Council of Governments	12.85%					
96011	70480	Charlotte, City of	12.85%	14.24%		0.14%		
96012		Charlotte Regional Visitors Authority	12.85%					
96018		Charlotte Firemen's Ret Sys	12.85%					

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
96021	72300	Pineville, Town of	12.89%	14.24%	0.04%	0.14%		
96031	71775	Mint Hill, Town of	12.89%	14.24%	0.04%	0.14%		
96041	71397	Huntersville, Town of	12.85%	14.24%		0.14%		
96051	70625	Cornelius, Town of	12.85%	14.24%		0.14%		
96061	72679	Stallings, Town of	12.93%	14.24%	0.08%	0.14%		
96071	71740	Matthews, Town of	12.90%	14.24%	0.05%	0.14%		
96081	70724	Davidson, Town of	12.92%	14.24%	0.07%	0.14%		
96101	71788	Mitchell County	12.96%	14.24%	0.11%	0.14%		
96102		Mitchell Soil & Water Conservation Dist	12.85%					
96111	72678	Spruce Pine, Town of	12.93%	14.24%	0.08%	0.14%		
96121	70105	Bakersville, Town of	12.85%	14.24%		0.14%		
96201	71815	Montgomery County	12.90%	14.24%	0.05%	0.14%		
96204		Montgomery-Municipal A.B.C. Board	12.94%		0.09%			
96211	72685	Star, Town of	12.85%	14.24%		0.14%		
96221	72822	Troy, Town of	12.85%	14.24%		0.14%		
96231	70192	Biscoe, Town of	12.85%	14.24%		0.14%		
96241	70360	Candor, Town of	12.85%	14.24%		0.14%		
96251	71920	Mount Gilead, Town of	12.92%	14.24%	0.07%	0.14%		
96301	71830	Moore County	12.90%	14.24%	0.05%	0.14%		
96302	72776	Taylortown, Town of	12.85%	14.24%		0.14%		
96304	71840	Moore County A.B.C. Board	12.95%		0.10%			
96305		Moore County Tourism Development Authority	12.93%		0.08%			
96310		Moore County Airport Authority	12.96%		0.11%			
96311	72640	Southern Pines, Town of	12.89%	14.24%	0.04%	0.14%		
96312	70358	Cameron, Town of	12.85%					
96318		Sandhills Center	12.85%					
96321	72920	Vass, Town of	12.91%	14.24%	0.06%	0.14%		
96331	70005	Aberdeen, Town of	12.91%	14.24%	0.06%	0.14%		
96341	72443	Robbins, Town of	12.85%	14.24%		0.14%		
96351	72287	Pinehurst, Village of	12.89%	14.24%	0.04%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
96361	72285	Pinebluff, Town of	13.04%	14.24%	0.19%	0.14%		
96371	73040	Whispering Pines, Village of	12.91%	14.24%	0.06%	0.14%		
96381	70953	Foxfire Village	12.93%	14.24%	0.08%	0.14%		
96391	70390	Carthage, Town of	12.85%	14.24%		0.14%		
96401	71990	Nash County	12.89%	14.24%	0.04%	0.14%		
96404	72000	Nash County A.B.C. Board	12.94%	14.24%	0.09%	0.14%		
96405		Braswell Memorial Library	12.85%					
96411	72675	Spring Hope, Town of	12.85%	14.24%		0.14%		
96421	71995	Nashville, Town of	12.90%	14.24%	0.05%	0.14%		
96431	71785	Middlesex, Town of	12.96%	14.24%	0.11%	0.14%		
96441	73045	Whitakers, Town of	12.85%	14.24%		0.14%		
96451	70104	Bailey, Town of	12.85%	14.24%		0.14%		
96461	72600	Sharpsburg, Town of	12.85%	14.24%		0.14%		
96501	72030	New Hanover County	12.89%	14.24%	0.04%	0.14%		
96502	72024	New Hanover Airport Auth	12.90%		0.05%			
96503		Wilmington Housing Authority	19.20%				466,575	6/30/2024
96504		New Hanover County A.B.C. Board	13.03%		0.18%			
96507		Cape Fear Public Utility Authority	12.85%					
96508		Lower Cape Fear Water & Sewer Auth	12.92%		0.07%			
96511	73165	Wrightsville Beach, Town of	12.90%	14.24%	0.05%	0.14%		
96512		Cape Fear Public Transportation Authority	12.85%					
96521	70375	Carolina Beach, Town of	12.85%	14.24%		0.14%		
96531	73090	Wilmington, City of	12.85%	14.24%		0.14%		
96541	71515	Kure Beach, Town of	12.97%	14.24%	0.12%	0.14%		
96601	72060	Northampton County	12.91%	14.24%	0.06%	0.14%		
96604		Northampton County A.B.C. Board	13.07%		0.22%			
96611	72432	Rich Square, Town of	12.85%					
96612		Choanoke Public Transportation Auth	12.85%					
96621	73162	Woodland, Town of	12.85%	14.24%		0.14%		
96631	71020	Garysburg, Town of	12.85%	14.24%		0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
96641	70620	Conway, Town of	12.85%	14.24%		0.14%		
96651	71032	Gaston, Town of	12.85%	14.24%		0.14%		
96661	71435	Jackson, Town of	12.85%					
96671	72595	Severn, Town of	12.85%					
96681	72591	Seaboard, Town	17.56%				29,242	12/31/2025
96701	72150	Onslow County	12.89%	14.24%	0.04%	0.14%		
96704	72160	Onslow County A.B.C. Board	12.93%		0.08%			
96708		Onslow Water & Sewer Authority	14.17%		0.10%		423,005	6/30/2028
96711	71440	Jacksonville, City of	12.90%	14.24%	0.05%	0.14%		
96721	72745	Swansboro, Town of	12.90%	14.24%	0.05%	0.14%		
96722		Sweepsonville, Town of	12.85%					
96731	71380	Holly Ridge, Town of	12.90%	14.24%	0.05%	0.14%		
96741	72420	Richlands, Town of	12.85%	14.24%		0.14%		
96751	72789	North Topsail Beach, Town of	12.96%	14.24%	0.11%	0.14%		
96801	72170	Orange County	12.89%	14.24%	0.04%	0.14%		
96804		Orange County A.B.C. Board	12.89%		0.04%			
96808		Orange Water and Sewer Authority	12.88%		0.03%			
96811	70470	Chapel Hill, Town of	12.90%	14.24%	0.05%	0.14%		
96821	70372	Carrboro, Town of	12.90%	14.24%	0.05%	0.14%		
96831	71360	Hillsborough, Town of	12.89%	14.24%	0.04%	0.14%		
96901	72210	Pamlico County	12.92%	14.24%	0.07%	0.14%		
96911		Bayboro, Town of	12.85%					
96912	72195	Oriental, Town of	12.85%	14.24%		0.14%		
96918		Bay River Metro Sewerage District	12.97%		0.12%			
97001	72220	Pasquotank County	12.91%	14.24%	0.06%	0.14%		
97002		Pasquotank-Camden Ambulance Service	12.88%		0.03%			
97004		Pasquotank Co A.B.C. Board	12.90%		0.05%			
97005		East Albemarle Regional Library	12.90%		0.05%			
97008		Albemarle District Jail Commission	12.85%					
97011	70840	Elizabeth City	12.90%	14.24%	0.05%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
97012		Elizabeth City-Pasquotank Co Airport Auth	12.85%					
97013		Elizabeth City Pasquotank County TDA	15.12%				28,641	6/30/2031
97015		Pasquotank-Camden Library	12.93%		0.08%			
97018		Elizabeth City-Pasquotank Co Industrial Development	12.97%		0.12%			
97101	72235	Pender County	12.89%	14.24%	0.04%	0.14%		
97104		Pender County A.B.C. Board	12.95%		0.10%			
97111	70300	Burgaw, Town of	12.85%	14.24%		0.14%		
97121	72790	Topsail Beach, Town of	12.93%	14.24%	0.08%	0.14%		
97131	72725	Surf City, Town of	12.89%	14.24%	0.04%	0.14%		
97201	72245	Perquimans County	12.90%	14.24%	0.05%	0.14%		
97211	71300	Hertford, Town of	12.92%		0.07%			
97213		Hertford Housing Auth	12.85%					
97217	71305	Hertford A.B.C. Board	12.97%		0.12%			
97221	73124	Winfall, Town of	12.85%					
97301	72250	Person County	12.90%	14.24%	0.05%	0.14%		
97302		Roxboro Housing Authority	12.85%					
97304		Person Co A.B.C. Bd	13.02%		0.17%			
97311	72520	Roxboro, City of	12.91%	14.24%	0.06%	0.14%		
97401	72310	Pitt County	12.89%	14.24%	0.04%	0.14%		
97402		Pitt-Greenville Conv & Visitors	12.85%					
97404	72320	Pitt County A.B.C. Board	12.91%	14.24%	0.06%	0.14%		
97405		Sheppard Memorial Library	12.93%		0.08%			
97408		Contennea Metropolitan Sewerage Dist	12.91%		0.06%			
97411	71160	Greenville, City of	12.89%	14.24%	0.04%	0.14%		
97412		Greenville Utilities Commission	12.88%		0.03%			
97413		Greenville Housing Authority	12.91%		0.06%			
97421	70930	Farmville, Town of	12.90%	14.24%	0.05%	0.14%		
97423		Farmville Housing Authority	19.79%				57,932	6/30/2025
97431	71170	Grifton, Town of	12.94%	14.24%	0.09%	0.14%		
97441	70157	Bethel, Town of	12.90%	14.24%	0.05%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
97451	73150	Winterville, Town Of	12.89%	14.24%	0.04%	0.14%		
97461	70100	Ayden, Town Of	12.85%	14.24%		0.14%		
97471		Grimesland, Town Of	12.93%		0.08%			
97481	72626	Simpson, Village Of	12.85%					
97501	72340	Polk County	12.91%	14.24%	0.06%	0.14%		
97511	72823	Tryon, Town Of	12.91%	14.24%	0.06%	0.14%		
97517		Tryon A.B.C. Board	12.89%		0.04%			
97521	70581	Columbus, Town Of	12.85%	14.24%		0.14%		
97527		Columbus A.B.C. Board	12.85%					
97531	72560	Saluda, City Of	12.89%	14.24%	0.04%	0.14%		
97601	72380	Randolph County	12.89%	14.24%	0.04%	0.14%		
97607		Asheboro A.B.C. Board	12.85%					
97611	70064	Asheboro, City Of	12.90%	14.24%	0.05%	0.14%		
97613		Asheboro Housing Authority	12.94%		0.09%			
97621	72377	Randleman, City Of	12.90%	14.24%	0.05%	0.14%		
97623		Randleman Housing Authority	12.91%		0.06%			
97627		Randleman A.B.C. Board	12.89%		0.04%			
97631	71582	Liberty, Town Of	12.90%	14.24%	0.05%	0.14%		
97637		Liberty A.B.C. Board	12.85%					
97641	72375	Ramseur, Town Of	12.85%	14.24%		0.14%		
97651	70063	Archdale, City Of	12.93%	14.24%	0.08%	0.14%		
97661		Trinity, City Of	12.85%					
97701	72430	Richmond County	12.90%	14.24%	0.05%	0.14%		
97705		Sandhill Regional Library	12.94%		0.09%			
97711	72460	Rockingham, City Of	12.91%	14.24%	0.06%	0.14%		
97713		Rockingham Authority	12.89%		0.04%			
97717		Hamlet A.B.C. Board	12.92%		0.07%			
97721	71220	Hamlet, City Of	12.91%	14.24%	0.06%	0.14%		
97727		Rockingham A.B.C. Board	12.93%		0.08%			
97731		Ellerbe, Town Of	12.85%					

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
97801	72450	Robeson County	12.89%	14.24%	0.04%	0.14%		
97802		Lumber River Council of Governments	12.88%		0.03%			
97803		Robeson County Housing Authority	12.99%		0.14%			
97805		Robeson County Public Library	12.91%		0.06%			
97811	71670	Lumberton, City of	12.91%	14.24%	0.06%	0.14%		
97817		Lumberton A.B.C. Board	12.85%					
97818		Lumberton Airport Comm	12.85%					
97821	70910	Fairmont, Town of	12.97%	14.24%	0.12%	0.14%		
97823		Fairmont Housing Authority	12.91%		0.06%			
97831	72540	St Paul's, Town of	12.91%	14.24%	0.06%	0.14%		
97837		St Paul's Brd of Alcoholic Ctl	12.85%					
97840	71750	Maxton, Town of	12.92%	14.24%	0.07%	0.14%	78,801	6/30/2023
97841		Parkton, Town of	14.90%	16.29%		0.14%	24,127	6/30/2035
97847		Maxton A.B.C. Board	13.02%		0.17%			
97851	72228	Pembroke, Town of	12.92%	14.24%	0.07%	0.14%		
97853		Pembroke Housing Authority	12.85%					
97861	72510	Rowland, Town of	12.92%	14.24%	0.07%	0.14%		
97871	72395	Red Springs, Town of	12.93%	14.24%	0.08%	0.14%		6/30/2022
97877		Red Springs A.B.C. Board	12.85%					
97901	72470	Rockingham County	12.89%	14.24%	0.04%	0.14%		
97911	72400	Reidsville, City of	12.92%	14.24%	0.07%	0.14%		
97913		New Reidsville Housing Auth	12.96%		0.11%			
97917		Reidsville A.B.C. Board	12.92%		0.07%			
97921	71755	Mayodan, Town of	12.95%	14.24%	0.10%	0.14%		
97931	72721	Stoneville, Town of	12.85%	14.24%		0.14%		
97941	71683	Madison, Town of	12.90%	14.24%	0.05%	0.14%		
97947		Madison A.B.C. Board	12.85%				5,425	12/31/2022
97948		Madison-Mayodan Recreation Comm	12.85%					
97951	70815	Eden, City of	12.85%	14.24%		0.14%		
97957		Eden A.B.C. Board	12.85%					

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
98001	72490	Rowan County	12.90%	14.24%	0.05%	0.14%		
98002		Rowen Convention & Visitors Bureau	12.94%				130	6/30/2026
98003		Rowan Co Housing Authority	12.85%					
98004	72500	Rowan County A.B.C. Board	12.96%		0.11%			
98008		Rowan Co Soil & Water Conv Dist	12.85%				788	6/30/2023
98011	72550	Salisbury, City of	12.89%	14.24%	0.04%	0.14%		
98013		Salisbury Housing Authority	12.85%					
98021	70812	East Spencer, Town of	12.93%	14.24%	0.08%	0.14%		
98023		East Spencer Housing Authority	12.88%		0.03%			
98031	72665	Spencer, Town of	12.91%	14.24%	0.06%	0.14%		
98041	70522	China Grove, Town of	12.90%	14.24%	0.05%	0.14%		
98051	71522	Landis, Town of	12.85%	14.24%		0.14%		
98061	71105	Granite Quarry, Town of	12.88%	14.24%	0.03%	0.14%		
98071	72475	Rockwell, Town of	12.85%	14.24%		0.14%		
98081		Faith, Town of	12.85%					
98091	70552	Cleveland, Town of	12.90%	14.24%	0.05%	0.14%		
98101	72530	Rutherford County	12.90%	14.24%	0.05%	0.14%		
98102		Broad River Water Authority	12.89%		0.04%			
98103		Rutherford Polk McDowell Dist Brd of Health	12.88%		0.03%			
98107		Forest City A.B.C. Board 168	12.85%					
98109		Isothermal Planning And Dev Comm	12.90%		0.05%			
98111	70950	Forest City, Town of	12.90%	14.24%	0.05%	0.14%		
98113		Forest City Housing Authority	12.85%					
98121	72670	Spindale, Town of	12.91%	14.24%	0.06%	0.14%		
98131	71518	Lake Lure, Town of	12.85%	14.24%		0.14%		
98141	72535	Rutherfordton, Town of	12.89%	14.24%	0.04%	0.14%		
98147		Rutherfordton A.B.C. Board	12.85%					
98161		Ellenboro, Town of	12.85%					
98201	72563	Sampson County	12.89%	14.24%	0.04%	0.14%		
98205		J C Holiday Mem Library	12.87%		0.02%			

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
98211	70555	Clinton, City of	12.90%	14.24%	0.05%	0.14%		
98218		Clinton A.B.C. Board	12.97%		0.12%			
98221	72547	Salemburg, Town of	12.90%		0.05%			
98231	72050	Newton Grove, Town of	12.89%	14.24%	0.04%	0.14%		
98237		Roseboro A.B.C. Board	12.85%					
98241	71000	Garland, Town of	12.92%		0.07%			
98251		Turkey, Town of	12.99%		0.14%			
98261	72486	Roseboro, Town of	12.93%		0.08%			
98271		Autryville, Town of	12.89%		0.04%			
98301	72580	Scotland County	12.90%	14.24%	0.05%	0.14%		
98304		Scotland County A.B.C. Board	12.93%		0.08%			
98308		Laurinburg-Maxton Airport Commission	12.85%					
98311	71530	Laurinburg, City of	12.90%	14.24%	0.05%	0.14%		
98313		Laurinburg Housing Authority	19.58%		0.08%		584,551	12/31/2026
98321	72935	Wagram, Town of	12.92%	14.24%	0.07%	0.14%		
98331	71051	Gibson, Town of	14.44%				2,759	3/31/2025
98401	72683	Stanly County	12.91%	14.24%	0.06%	0.14%		
98404		Locust A.B.C. Board	12.85%					
98411	70030	Albemarle, City of	12.90%	14.24%	0.05%	0.14%		
98414	71786	Misenheimer, Village of	13.04%	14.24%	0.19%	0.14%		
98417		Albemarle A.B.C. Board	12.85%					
98421	72110	Norwood, Town of	12.91%	14.24%	0.06%	0.14%		
98427		Norwood A.B.C. Bd	12.85%					
98431	71620	Locust, City of	12.85%	14.24%		0.14%		
98441	72120	Oakboro, Town of	12.85%	14.24%		0.14%		
98451	70103	Badin, Town of	12.90%	14.24%	0.05%	0.14%		
98471		New London, Town of	12.85%					
98481	72680	Stanfield, Town of	12.85%	14.24%		0.14%		
98501	72720	Stokes County	12.90%	14.24%	0.05%	0.14%		
98511	72975	Walnut Cove, Town of	12.90%		0.05%			

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
98517		Walnut Cove A.B.C. Board	12.85%					
98521	71487	King, City of	12.89%	14.24%	0.04%	0.14%		
98601	72730	Surry County	12.93%	14.24%	0.08%	0.14%		
98604		Yadkin Valley A.B.C. Board	12.85%					
98607		Pilot Mountain A.B.C. Board	12.85%					
98608		Yadkin Valley Sewer Authority	12.85%					
98611	72280	Pilot Mountain, Town of	12.89%	14.24%	0.04%	0.14%		
98621	70735	Dobson, Town of	12.91%	14.24%	0.06%	0.14%		
98627		Dobson A.B.C. Bd	12.85%					
98631	71910	Mount Airy, City of	12.99%	14.24%	0.14%	0.14%		
98637		Mount Airy Alcoholic Board of Control	12.93%		0.08%			
98641	70855	Elkin, Town of	12.91%	14.24%	0.06%	0.14%		
98701	72740	Swain County	12.91%	14.24%	0.06%	0.14%		
98711	70285	Bryson City, Town of	12.91%	14.24%	0.06%	0.14%		
98717		Bryson City A.B.C. Board	12.93%		0.08%			
98801	72800	Transylvania County	12.90%	14.24%	0.05%	0.14%		
98811	70260	Brevard, City of	12.91%	14.24%	0.06%	0.14%		
98817		Brevard A.B.C. Board	12.85%					
98901	72825	Tyrrell County	12.94%	14.24%	0.09%	0.14%		
98904		Tyrrell Co A.B.C. Board	12.93%		0.08%			
98911		Columbia, Town of	12.85%					
99001	72830	Union County	12.89%	14.24%	0.04%	0.14%		
99011	71800	Monroe, City of	12.89%	14.24%	0.04%	0.14%		
99013		Monroe Housing Authority	12.91%		0.06%			
99014		Indian Trail A.B.C. Board	14.67%		0.10%		31,751	6/30/2039
99017		Monroe A.B.C. Board	12.93%		0.08%			
99021	71720	Marshville, Town of	12.90%	14.24%	0.05%	0.14%		
99022		Mineral Springs, Town of	17.55%				53,094	9/30/2034
99031	73125	Wingate, Town of	12.93%	14.24%	0.08%	0.14%		
99041	72995	Waxhaw, Town of	12.89%	14.24%	0.04%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
99047		Waxhaw A.B.C. Board	12.85%					
99051		Indian Trail, Town of	12.89%		0.04%			
99061		Unionville, Town of	12.85%					
99071		Weddington, Town of	16.00%		0.14%		28,793	3/31/2029
99081		Marvin, Village of	12.85%					
99091		Wesley Chapel, Village of	12.85%					
99101	72890	Vance County	12.91%	14.24%	0.06%	0.14%		
99104		Vance County A.B.C. Bd	12.85%					
99109		Kerr-Tar Regional Council of Govts	12.89%		0.04%			
99110		Kerr Area Transportation Authority	12.85%					
99111	71270	Henderson, City of	12.92%	14.24%	0.07%	0.14%		
99201	72940	Wake County	12.88%	14.24%	0.03%	0.14%		
99202	71385	Holly Springs, Town of	12.88%	14.24%	0.03%	0.14%		
99203	72485	Rolesville, Town of	12.93%	14.24%	0.08%	0.14%		
99204	72950	Wake County A.B.C. Board	12.90%	14.24%	0.05%	0.14%		
99206	71882	Morrisville, Town of	12.88%	14.24%	0.03%	0.14%		
99207		Wake County Housing Authority	23.26%				1,063,189	6/30/2031
99208		Bayleaf Fire Department	12.85%					
99210		Electricities of NC	12.85%					
99211	72360	Raleigh, City of	12.85%	14.24%		0.14%		
99212		Durham Hwy Fire Protection Assoc	12.85%					
99213		Raleigh Housing Authority	12.91%		0.06%			
99218	72370	Raleigh-Durham Airport Authority	12.88%	14.24%	0.03%	0.14%		
99219		Lincolnton-Lincoln County Airport Authority	12.85%					
99221	70400	Cary, Town of	12.88%	14.24%	0.03%	0.14%		
99222		Centennial Authority	12.88%		0.03%			
99231	73020	Wendell, Town of	12.88%	14.24%	0.03%	0.14%		
99241	73210	Zebulon, Town of	12.88%	14.24%	0.03%	0.14%		
99251	71010	Garner, Town of	12.89%	14.24%	0.04%	0.14%		
99252		Garner Fire Dept	12.87%		0.02%			

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
99261	70990	Fuquay-Varina, Town of	12.89%	14.24%	0.04%	0.14%		
99271	70050	Apex, Town of	12.88%	14.24%	0.03%	0.14%		
99281	72960	Wake Forest, Town of	12.92%	14.24%	0.07%	0.14%		
99291	71510	Knightdale, Town of	12.88%	14.24%	0.03%	0.14%		
99301	72980	Warren County	12.92%	14.24%	0.07%	0.14%		
99304	72979	Warren County A.B.C. Board	12.85%					
99311	72055	Norlina, Town of	12.85%	14.24%		0.14%		
99321	72991	Warrenton, Town of	19.70%	21.09%		0.14%	538,856	6/30/2033
99401	72985	Washington County	12.91%	14.24%	0.06%	0.14%		
99404		Washington County A.B.C. Board	12.95%		0.10%			
99405		Pettigrew Regional Library	12.92%		0.07%			
99411	72335	Plymouth, Town of	12.94%	14.24%	0.09%	0.14%		
99413		Plymouth Housing Authority	12.92%		0.07%			
99421		Roper, Town of	12.85%					
99431		Creswell, Town of	12.90%		0.05%			
99501	72983	Watauga County	12.92%	14.24%	0.07%	0.14%		
99502		Region D Council of Governments	12.85%					
99508		Blowing Rock Tourism Development Authority	12.85%					
99509		Watauga County District Tourism Dev Auth	12.85%					
99511	70240	Boone, Town of	12.90%	14.24%	0.05%	0.14%		
99521	70220	Blowing Rock, Town of	12.88%	14.24%	0.03%	0.14%		
99527		Blowing Rock A.B.C. Board	12.85%					
99531	72596	Seven Devils, Town of	17.83%	19.22%		0.14%	144,336	6/30/2026
99601	72997	Wayne County	12.91%	14.24%	0.06%	0.14%		
99602		Fork Township Sanitary Dist	12.88%		0.03%			
99603		Eastern Carolina Reg'L Housing Auth	12.85%					
99604		Wayne County A.B.C. Board	12.95%	14.24%	0.10%	0.14%		
99609		Southern Wayne Sanitary District	12.88%		0.03%			
99610	70505	Eastern Wayne Sanitary Dist	12.97%		0.12%			
99611	71070	Goldsboro, City of	12.90%	14.24%	0.05%	0.14%		

## Appendix H: Detailed Table of Rates of Contributions Payable by Employers (continued)

Employer Code	LEO Employer Code	Employer	Total Rate**		Death Benefit Rate		12/31/2021 Unfunded Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
			General Employees	Law Enforcement	General Employees	Law Enforcement		
99613		Goldsboro Housing Authority	12.90%		0.05%			
99621	71940	Mount Olive, Town of	12.85%	14.24%		0.14%		
99623		Mt Olive Housing Authority	12.85%					
99624		Washington Housing Authority	12.85%					
99631	70980	Fremont, Town of	12.85%	14.24%		0.14%		
99651	72270	Pikeville, Town of	12.85%	14.24%		0.14%		
99661	72977	Walnut Creek, Village of	12.85%	14.24%		0.14%		
99701	73075	Wilkes County	12.89%	14.24%	0.04%	0.14%		
99705		Appalachian Regional Library	12.85%					
99711	72105	North Wilkesboro, Town of	12.94%	14.24%	0.09%	0.14%		
99717		North Wilkesboro A.B.C. Board	12.92%		0.07%			
99721	73072	Wilkesboro, Town of	12.90%	14.24%	0.05%	0.14%		
99727		Wilkesboro A.B.C. Board	12.85%					
99801	73110	Wilson County	12.89%	14.24%	0.04%	0.14%		
99802		Wilson County Tourism Development Auth	12.85%					
99804		Wilson County A.B.C. Board	12.90%		0.05%			
99811	73100	Wilson, City of	12.88%	14.24%	0.03%	0.14%		
99812		Wilson Economic Dev Council	12.85%					
99818		Wilson Cemetery Commission	12.85%					
99821	72684	Stantonsburg, Town of	12.85%	14.24%		0.14%		
99831	70195	Black Creek, Town of	12.85%	14.24%		0.14%		
99841	71660	Lucama, Town of	12.90%		0.05%			
99851	70870	Elm City, Town of	12.85%					
99901	73170	Yadkin County	12.90%	14.24%	0.05%	0.14%		
99911	73180	Yadkinville, Town of	12.91%	14.24%	0.06%	0.14%		
99921		Jonesville, Town of	13.03%	14.24%	0.18%	0.14%		
99931		East Bend, Town of	12.95%	14.24%	0.10%	0.14%		
99941		Boonville, Town of	12.85%	14.24%		0.14%		
99991		N C Assoc of Co Commissioners	12.88%		0.03%			
99999		N C League of Municipalities	12.88%		0.03%			

\* 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: Unfunded Contribution Rates and Estimated Dates of Liquidation by Employer

The table below provides the contribution rates payable for the year beginning July 1, 2023 by the participating employers paying prior service liability rate at the valuation date.

Employer Code	LEO Employer Code	Employer	12/31/2021 Prior Service Liability	7/1/2023 Prior Service Rate	Original Date of Liquidation of Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
90114		Mebane, City Of	3,482,522	10.50%	6/30/2033	6/30/2026
90307		Sparta A.B.C. Board	1,232	0.53%	12/31/2028	12/31/2028
90507		West Jefferson A.B.C. Board	20,297	3.22%	6/30/2035	6/30/2025
90602	70090	Avery County Fire Commission	254,489	6.25%	12/31/2038	6/30/2033
90651	72724	Sugar Mountain, Town Of	143,536	7.14%	3/31/2027	6/30/2024
90861	71556	Lewiston Woodville, Town Of	1,187	1.04%	6/30/2024	6/30/2024
91009		Brunswick County Tourism Authority	6,045	1.01%	9/30/2031	6/30/2026
91013		Southeast Brunswick Sanitary District	220,352	5.81%	9/30/2039	6/30/2039
91020		Belville, Town Of	654		6/30/2031	6/30/2022
91026		Navassa, Town Of	179,545	7.27%	6/30/2035	6/30/2035
91104		Woodfin A.B.C. Commission	1,443		9/30/2033	6/30/2022
91308		Cabarrus County Tourism Authority	41,298	0.67%	9/30/2032	6/30/2030
91681	70080	Atlantic Beach, Town Of	641,690	6.23%	3/31/2028	6/30/2025
92614		Fayetteville Public Works Commission	-		3/31/2027	6/30/2022
92661	72676	Spring Lake, Town Of	639,426	6.62%	9/30/2024	9/30/2024
92671		Falcon Town Of	12,092	6.42%	6/30/2026	6/30/2026
92913		Thomasville Housing Authority	109,622	16.43%	6/30/2027	6/30/2024
92941		Midway, Town Of	20,889	2.29%	3/31/2038	3/31/2038
93031	70624	Cooleemee, Town Of	13,382	6.20%	9/30/2027	6/30/2025
93212		Durham Convention & Visitors Bureau	392,012	5.71%	9/30/2028	6/30/2027
93618		Gaston County Economic Dev Commission	15,836		12/31/2022	12/31/2022
93647		Cherryville A.B.C. Board	10,908		12/31/2023	6/30/2023
94031		Walstonburg, Town Of	39,474	7.28%	9/30/2033	9/30/2033
94437		Canton A.B.C. Board	35,252	4.88%	12/31/2027	6/30/2027
95103		Benson Housing Authority	157,092	3.93%	12/31/2036	6/30/2036
95106		Archer Lodge, Town Of	2,105	0.53%	9/30/2037	6/30/2024
95113		Smithfield Housing Authority	74,122		6/30/2023	6/30/2023
95122		Micro, Town Of	12,564	2.47%	3/31/2036	6/30/2028
95504		Lincoln County A.B.C. Board	4,031		12/31/2028	6/30/2023
96503		Wilmington Housing Authority	466,575	6.35%	6/30/2024	6/30/2024

## Appendix I: Unfunded Contribution Rates and Estimated Dates of Liquidation by Employer (continued)

Employer Code	LEO Employer Code	Employer	12/31/2021 Prior Service Liability	7/1/2023 Prior Service Rate	Original Date of Liquidation of Prior Service Liability	Estimated Date of Liquidation of Prior Service Liability*
96681	72591	Seaboard, Town	29,242	4.71%	12/31/2025	12/31/2025
96708		Onslow Water & Sewer Authority	423,005	1.22%	12/31/2028	6/30/2028
97013		Elizabeth City Pasquotank County TDA	28,641	2.27%	6/30/2033	6/30/2031
97423		Farmville Housing Authority	57,932	6.94%	3/31/2028	6/30/2025
97840	71750	Maxton, Town Of	78,801		6/30/2027	6/30/2023
97841		Parkton, Town Of	24,127	2.05%	9/30/2035	6/30/2035
97871	72395	Red Springs, Town Of	-		6/30/2023	6/30/2022
97947		Madison A.B.C. Board	5,425		12/31/2022	12/31/2022
98002		Rowen Convention & Visitors Bureau	130	0.09%	6/30/2026	6/30/2026
98008		Rowan Co Soil & Water Conv Dist	788		6/30/2023	6/30/2023
98313		Laurinburg Housing Authority	584,551	6.65%	12/31/2026	12/31/2026
98331	71051	Gibson, Town Of	2,759	1.59%	3/31/2025	3/31/2025
99014		Indian Trail A.B.C. Board	31,751	1.72%	6/30/2039	6/30/2039
99022		Mineral Springs, Town Of	53,094	4.70%	9/30/2034	9/30/2034
99071		Weddington, Town Of	28,793	3.01%	3/31/2029	3/31/2029
99207		Wake County Housing Authority	1,063,189	10.41%	12/31/2032	6/30/2031
99321	72991	Warrenton, Town Of	538,856	6.85%	9/30/2037	6/30/2033
99531	72596	Seven Devils, Town Of	144,336	4.98%	6/30/2026	6/30/2026

\* 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.

## Appendix J: Participating Employers

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Aberdeen, Town Of	96331	70005	Avery County Fire Commission	90602	70090
Ahoskie, Town Of	94611	70007	Avery-Mitchell-Yancey Reg Library	90605	
Alamance Community Fire District	94109		Ayden, Town Of	97461	70100
Alamance County	90101	70020	B.H.M. Regional Library	90705	
Alamance Municipal A.B.C. Board	90117		Badin, Town Of	98451	70103
Alamance, Village Of	90151		Bailey, Town Of	96451	70104
Albemarle A.B.C. Board	98417		Bakersville, Town Of	96121	70105
Albemarle District Jail Commission	97008		Bald Head Island, Village Of	91091	70107
Albemarle Regional Health Services	90096		Banner Elk, Town Of	90611	70110
Albemarle Regional Library	90805		Bay River Metro Sewerage District	96918	
Albemarle Regional Planning & Development Comm	92109		Bayboro, Town Of	96911	
Albemarle, City Of	98411	70030	Bayleaf Fire Department	99208	
Alexander County	90201	70032	Beaufort County	90701	70130
Alexander County Dept of S S	90206		Beaufort County A.B.C. Board	90704	
Alexander County Health Dept	90203		Beaufort Housing Authority	91633	
Alexander County Public Library	90205		Beaufort, Town Of	91631	70145
Alleghany County	90301	70035	Beech Mountain, Town Of	90631	70146
Alliance Behavioral Healthcare	93209		Belhaven, Town Of	90731	70147
Andrews, Town Of	92021	70036	Belmont Housing Authority	93623	
Angier A.B.C. Board	94347		Belmont, City Of	93621	70150
Angier, Town Of	94351	70038	Belville, Town Of	91020	
Anson County	90401	70040	Benson Housing Authority	95103	
Ansonville, Town Of	90451		Benson, Town Of	95141	70170
Apex, Town Of	99271	70050	Bermuda Run, Town Of	93021	
Appalachian District Health Dept	90099		Bertie County	90801	70180
Appalachian Regional Library	99705		Bertie County A.B.C. Board	90804	
Archdale, City Of	97651	70063	Bertie-Martin Regional Jail Comm	90808	
Archer Lodge, Town Of	95106		Bessemer City, City Of	93671	
Ashe County	90501	70065	Bethel, Town Of	97441	70157
Asheboro A.B.C. Board	97607		Beulaville, Town Of	93111	70160
Asheboro Housing Authority	97613		Biltmore Forest, Town Of	91111	70190
Asheboro, City Of	97611	70064	Biscoe, Town Of	96231	70192
Asheville A.B.C. Board	91127	70072	Black Creek, Town Of	99831	70195
Asheville Regional Airport Authority	91128	70074	Black Mountain A.B.C. Board	91154	
Asheville, City Of	91121	70070	Black Mountain, Town Of	91151	70200
Atlantic Beach, Town Of	91681	70080	Bladen County	90901	70210
Aulander, Town Of	90811	70082	Bladenboro, Town Of	90941	70215
Aurora, Town Of	90721	70085	Blowing Rock A.B.C. Board	99527	
Autryville, Town Of	98271		Blowing Rock Tourism Development Authority	99508	
Avery County	90601	70090	Blowing Rock, Town Of	99521	70220

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Blue Ridge Fire Department	94532	70220	Calypso, Town of	93171	
Boiling Spring Lakes A.B.C. Board	91077		Camden County	91501	70357
Boiling Spring Lakes, City of	91071	70225	Camden County A.B.C. Board	91504	
Boiling Springs, Town of	92331	70230	Cameron, Town of	96312	70358
Boone, Town of	99511	70240	Candor, Town of	96241	70360
Boonville, Town of	99941		Canton A.B.C. Board	94437	
Braswell Memorial Library	96405		Canton, Town of	94431	70362
Brevard A.B.C. Board	98817		Cape Carteret, Town of	91671	70365
Brevard, City of	98811	70260	Cape Fear Council of Governments	91008	
Bridgeton, Town of	92561		Cape Fear Public Transportation Authority	96512	
Broad River Water Authority	98102		Cape Fear Public Utility Authority	96507	
Broadway, Town of	95321	70265	Cape Fear Regional Jetport	91015	
Brookford, Town of	91861	70270	Carolina Beach, Town of	96521	70375
Brunswick Co Dept of Social Services	91006		Carolina Shores Town of	91024	
Brunswick Co Health Dept	91003		Carrboro, Town of	96821	70372
Brunswick County	91001	70280	Carteret County	91601	70380
Brunswick County A.B.C. Board	91004		Carteret County A.B.C. Board	91604	70385
Brunswick County Tourism Authority	91009		Carthage, Town of	96391	70390
Brunswick Regional Water and Sewer H2GO	91042		Cary, Town of	99221	70400
Brunswick, Town of	92421		Caswell Beach, Town of	91051	70405
Bryson City A.B.C. Board	98717		Caswell Co Dept of Social Services	91706	
Bryson City, Town of	98711	70285	Caswell County	91701	70415
Buncombe County	91101	70290	Caswell County A.B.C. Board	91704	
Bunn A.B.C. Board	93537		Catawba County	91801	70430
Bunn, Town of	93531	70295	Catawba County A.B.C. Board	91804	70440
Burgaw, Town of	97111	70300	Catawba, Town of	91881	70441
Burke Co Dept of Social Services	91206		Cedar Point, Town of	91691	
Burke Co Health Dept	91203		Centennial Authority	99222	
Burke County	91201	70310	Centralina Council Of Governments	96009	
Burke County Tourism Dev. Authority	91208		Chadbourn, Town of	92441	70450
Burlington, City of	90111	70320	Chapel Hill, Town of	96811	70470
Burnsville, Town of	90011	70330	Charlotte Firemen's Ret Sys	96018	
Butner, Town of	93931		Charlotte Housing Authority	96003	
Cabarrus Co Public Health Auth	91306		Charlotte Mecklenburg Public Library	96005	
Cabarrus County	91301	70340	Charlotte Regional Visitors Authority	96012	
Cabarrus County Tourism Authority	91308		Charlotte, City of	96011	70480
Cajah's Mountain, Town of	91461		Chatham Co Housing Auth	91903	
Calabash A.B.C. Board	91007		Chatham County	91901	70490
Calabash, Town of	91010		Chatham County A.B.C. Board	91904	
Caldwell County	91401	70350	Cherokee County	92001	70500

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Cherryville A.B.C. Board	93647		Craven Co A.B.C. Bd	92504	
Cherryville, City of	93641	70520	Craven County	92501	70650
China Grove, Town of	98041	70522	Craven-Pamlico-Carteret Regional Library	92505	
Choanoke Public Transportation Auth	96612		Creedmoor, City of	93921	70660
Chocowinity, Town of	90751	70525	Creswell, Town of	99431	
Chowan County	92101	70530	Cumberland Co A.B.C. Board	92604	70685
Chowan County A.B.C. Board	92104		Cumberland County	92601	70680
Claremont, City of	91821	70535	Currituck Co A.B.C. Board	92704	
Clarkton, Town pf	90931	70537	Currituck County	92701	70700
Clay County	92201	70538	Dallas, Town of	93651	70705
Clay County A.B.C. Board	92214		Dare County	92801	70720
Clayton, Town of	95131	70540	Dare County A.B.C. Board	92804	70721
Clemmons Fire Department	93442		Dare County Tourism Board	92802	
Clemmons, Village of	93441		Davidson County	92901	70723
Cleveland County	92301	70550	Davidson, Town of	96081	70724
Cleveland County Water	92302		Davie County	93001	70725
Cleveland, Town of	98091	70552	Davie Soil and Water Conservation Dist	93009	
Clinton A.B.C. Board	98218		Denton, Town of	92921	70730
Clinton, City of	98211	70555	Dobson A.B.C. Bd	98627	
Coastal Carolina Regional Airport	92506		Dobson, Town of	98621	70735
Coastal Regional Solid Waste Mngt Auth	92508		Drexel, Town of	91221	70745
Coats, Town of	94341	70570	Duck, Town of	92861	70755
Cofield, Town of	94641		Dunn A.B.C. Board	94317	
Colerain, Town of	90813	70575	Dunn Housing Authority	94313	
Colfax Volunteer Fire Department	94168		Dunn, City of	94311	70760
Columbia, Town of	98911		Duplin County	93101	70770
Columbus A.B.C. Board	97527		Durham Convention & Visitors Bureau	93212	
Columbus County	92401	70580	Durham County	93201	70790
Columbus, Town of	97521	70581	Durham County A.B.C. Board	93204	70800
Concord A.B.C. Board	91317		Durham Hwy Fire Protection Assoc	99212	
Concord, City of	91311	70590	Durham, City of	93211	70780
Connelly Springs, Town of	91261		East Albemarle Regional Library	97005	
Conover, Town of	91851	70610	East Bend, Town of	99931	
Contentnea Metropolitan Sewerage Dist	97408		East Spencer Housing Authority	98023	
Conway, Town of	96641	70620	East Spencer, Town of	98021	70812
Cooleemee, Town of	93031	70624	Eastern Band of Cherokee Indians	70505	70505
Cornelius, Town of	96051	70625	Eastern Carolina Reg'l Housing Auth	99603	
Cove City, Town of	92571		Eastern Wayne Sanitary Dist	99610	70505
Cramerton A.B.C. Board	93604		Eastover, Town of	92681	
Cramerton, Town of	93631	70640	Eastpointe Human Services	93108	

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Eden A.B.C. Board	97957		Forest City Housing Authority	98113	
Eden, City of	97951	70815	Forest City, Town of	98111	70950
Edenton, Town of	92111	70817	Fork Township Sanitary Dist	99602	
Edgecombe County	93301	70820	Forsyth County	93401	70951
Edgecombe County A.B.C. Board	93304		Four Oaks, Town of	95151	70954
Edgecombe County Memorial Library	93305		Foxfire Village	96381	70953
Electricities of NC	99210		Franklin County	93501	70960
Elizabeth A.B.C. Board	90917		Franklin, Town of	95611	70955
Elizabeth City	97011	70840	Franklinton A.B.C Board	93517	
Elizabeth City Pasquotank County TDA	97013		Franklinton, Town of	93511	70970
Elizabeth City-Pasquotank Co Airport Auth	97012		Fremont, Town of	99631	70980
Elizabeth City-Pasquotank Co Industrial Development	97018		Fuquay-Varina, Town of	99261	70990
Elizabethtown, Town of	90911	70850	Garland, Town of	98241	71000
Elk Park, Town of	90641	70860	Garner Fire Dept	99252	
Elkin, Town of	98641	70855	Garner, Town of	99251	71010
Ellenboro, Town of	98161		Garysburg, Town of	96631	71020
Ellerbe, Town of	97731		Gaston County	93601	71030
Elm City, Town of	99851	70870	Gaston County Economic Dev Commission	93618	
Elon, Town of	90131	70880	Gaston, Town of	96651	71032
Emerald Isle, Town of	91651	70890	Gastonia A.B.C. Board	93617	
Enfield, Town of	94211	70895	Gastonia, City of	93611	71040
Erwin, Town of	94331	70900	Gates County	93701	71050
Fair Bluff, Town of	92431	70908	Gates County A.B.C. Board	93704	71052
Fairmont Housing Authority	97823		Gibson, Town of	98331	71051
Fairmont, Town of	97821	70910	Gibsonville A.B.C. Board	94157	
Faison, Town of	93141	70920	Gibsonville, Town of	94151	71060
Faith, Town of	98081		Glen Alpine, Town of	91241	71065
Falcon Town of	92671		Goldsboro Housing Authority	99613	
Farmville Housing Authority	97423		Goldsboro, City of	99611	71070
Farmville, Town of	97421	70930	Goldston-Gulf Sanitary District	91908	
Fayetteville Metropolitan Housing Auth	92613		Graham Co Health Dept	93803	
Fayetteville Public Works Commission	92614		Graham County	93801	71085
Fayetteville, City of	92611	70940	Graham County Dept of S S	93806	
First Craven Sanitary Dist	92502		Graham, City of	90121	71080
Flat Rock, Village of	94531		Granite Falls A.B.C. Board	91417	
Fletcher A.B.C. Board	94547		Granite Falls, Town of	91411	71090
Fletcher, Town of	94541	70943	Granite Quarry, Town of	98061	71105
Fontana Regional Library	95005		Granville Co A.B.C. Bd	93904	
Foothills Regional Airport Authority	94415		Granville County	93901	71110
Forest City A.B.C. Board 168	98107		Granville County Hospital	93906	

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Granville-Vance Public Health	93908		High Country A.B. C. Board	90617	
Greater Statesville Development Corp	94908		High Point A.B.C. Bd	94127	
Green Level, Town of	90161		High Point, City of	94121	71340
Greene County	94001	71130	Highlands A.B.C. Board	95617	
Greene County A.B.C. Board	94004		Highlands, Town of	95621	71335
Greensboro A.B.C. Bd	94117	71150	Hildebran, Town of	91251	
Greensboro, City of	94111	71140	Hillsborough, Town of	96831	71360
Greenville Housing Authority	97413		Hobgood, Town of	94251	
Greenville Utilities Commission	97412		Hoke County	94701	71370
Greenville, City of	97411	71160	Hoke County A.B.C. Board	94704	
Grifton, Town of	97431	71170	Holden Beach, Town of	91014	71375
Grimesland, Town of	97471		Holly Ridge, Town of	96731	71380
Grover, Town of	92351	71178	Holly Springs, Town of	99202	71385
Guilford County	94101	71180	Hookerton, Town of	94011	
Guilford Fire District #13 Inc	94118		Hope Mills, Town of	92631	71390
Guil-Rand Fire Department	94102		Hot Springs Housing Authority	95733	
Halifax County	94201	71200	Hudson, Town of	91431	71395
Halifax County A.B.C. Board	94204		Huntersville, Town of	96041	71397
Halifax County Tourism Development Authority	94205		Hyde County	94801	71400
Hamilton, Town of	95831		Hyde County A.B.C. Board	94804	
Hamlet A.B.C. Board	97717		Indian Beach, Town of	91661	71405
Hamlet, City of	97721	71220	Indian Trail A.B.C. Board	99014	
Harnett County	94301	71230	Indian Trail, Town of	99051	
Harrisburg, Town of	91441		Iredell County	94901	71420
Havelock, City of	92531	71240	Isothermal Planning and Dev Comm	98109	
Haw River, Town of	90141	71245	J C Holiday Mem Library	98205	
Haywood County	94401	71250	Jackson County	95001	71430
Haywood County Tourism Development Authority	94403		Jackson County A.B.C. Board	95017	
Henderson County	94501	71275	Jackson County Tourism Development Authority	95010	
Henderson, City of	99111	71270	Jackson, Town of	96661	71435
Hendersonville A.B.C. Bd	94517		Jacksonville, City of	96711	71440
Hendersonville, City of	94511	71280	Jamestown, Town of	94131	71442
Hertford A.B.C. Board	97217	71305	Jamesville, Town of	95841	
Hertford County	94601	71310	Jefferson, Town of	90511	71447
Hertford County A.B.C. Board	94604	71320	Johnston County	95101	71460
Hertford Housing Auth	97213		Johnston County A.B.C. Board	95104	
Hertford, Town of	97211	71300	Johnston Health Center	95110	
Hickory Conover Tourism Dev Auth	91812		Jones County	95201	71465
Hickory Public Housing Authority	91813		Jones County A.B.C. Board	95204	
Hickory, City of	91811	71330	Jonesville, Town of	99921	

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Junaluska Sanitary District	94408		Lexington, City of	92931	71570
Kannapolis, City of	91331	71468	Liberty A.B.C. Board	97637	
Kenansville A.B.C. Board	93127		Liberty, Town of	97631	71582
Kenansville, Town of	93121	71469	Lilesville, Town of	90421	71584
Kenly, Town of	95171	71472	Lillington, Town of	94321	71585
Kernersville, Town of	93421	71470	Lincoln County	95501	71590
Kerr Area Transportation Authority	99110		Lincoln County A.B.C. Board	95504	
Kerr-Tar Regional Council of Govts	99109		Lincolnton A.B.C. Board	95517	
Kill Devil Hills, Town of	92821	71480	Lincolnton Housing Authority	95513	
King, City of	98521	71487	Lincolnton, City of	95511	71600
Kings Mountain A.B.C. Board	92327		Lincolnton-Lincoln County Airport Authority	99219	
Kings Mountain, City of	92321	71490	Linden, Town of	92651	
Kinston Housing Authority	95413		Littleton, Town of	94261	71615
Kinston, City of	95411	71500	Locust A.B.C. Board	98404	
Kinston-Lenoir Co Pub Library	95415		Locust, City of	98431	71620
Kitty Hawk, Town of	92851	71507	Longview, Town of	91841	71640
Knightdale, Town of	99291	71510	Louisburg A.B.C. Board	93527	
Kure Beach, Town of	96541	71515	Louisburg, Town of	93521	71650
Lagrange, Town of	95431	71517	Lowell, City of	93661	71655
Lake Lure, Town of	98131	71518	Lower Cape Fear Water & Sewer Auth	96508	
Lake Waccamaw A.B.C. Board	92427		Lucama, Town of	99841	71660
Lake Waccamaw, Town of	92461	71519	Lumber River Council of Governments	97802	
Landis, Town of	98051	71522	Lumberton A.B.C. Board	97817	
Land-of-Sky Regional Council	91102		Lumberton Airport Comm	97818	
Laurel Park A.B.C. Board	94527		Lumberton, City of	97811	71670
Laurel Park, Town of	94521	71525	Macclesfield, Town of	93341	
Laurinburg Housing Authority	98313		Macon County	95601	71680
Laurinburg, City of	98311	71530	Madison A.B.C. Board	97947	
Laurinburg-Maxton Airport Commission	98308		Madison County	95701	71684
Lawndale, Town of	92341	71532	Madison, Town of	97941	71683
Lee County	95301	71535	Madison-Mayodan Recreation Comm	97948	
Leland, Town of	91002	71540	Maggie Valley A.B.C. Board	94427	
Lenoir A.B.C. Board	91457		Maggie Valley Sanitary Dist	94428	
Lenoir County	95401	71550	Maggie Valley, Town of	94421	71685
Lenoir County A.B.C. Board	95404		Magnolia, Town of	93191	71690
Lenoir Housing Authority	91423		Maiden, Town of	91831	71700
Lenoir, City of	91451	71552	Manteo, Town of	92831	71705
Lewiston Woodville, Town of	90861	71556	Marion A.B.C. Board	95917	
Lewisville, Town of	93451		Marion, Town of	95911	71710
Lexington A.B.C. Board	92917		Mars Hill, Town of	95711	71718

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Marshall, Town of	95721	71711	Montgomery-Municipal A.B.C. Board	96204	
Marshville, Town of	99021	71720	Montreat, Town of	91161	71820
Martin Co Travel & Tourism Auth	95802		Moore County	96301	71830
Martin County	95801	71730	Moore County A.B.C. Board	96304	71840
Martin County A.B.C. Board	95804		Moore County Airport Authority	96310	
Martin-Tyrrell-Washington Dist Health Dept	90092		Moore County Tourism Development Authority	96305	
Marvin, Village of	99081		Mooreville A.B.C. Board	94927	
Matthews, Town of	96071	71740	Mooreville Housing Authority	94923	
Maury Sanitary Land District	94002		Mooreville, City of	94921	71850
Maxton A.B.C. Board	97847		Morehead City, Town of	91611	71860
Maxton, Town of	97840	71750	Morganton A.B.C. Board	91217	71880
Mayodan, Town of	97921	71755	Morganton Housing Authority	91233	
Maysville, Town of	95221	71745	Morganton, City of	91231	71870
Mcadenville, Town of	93610	71760	Morrisville, Town of	99206	71882
McDowell County	95901	71762	Morven, Town of	90461	
Mebane, City of	90114		Mount Airy Alcoholic Board of Control	98637	
Mecklenburg County	96001	71770	Mount Airy, City of	98631	71910
Mecklenburg County A.B.C. Board	96004	71780	Mount Gilead, Town of	96251	71920
Mecklenburg Emer Med Svcs Agcy	96008		Mount Holly, City of	93691	71930
Metro Sewerage Dist of Buncombe County	91108		Mount Olive, Town of	99621	71940
Mi Connection Communications System	94941		Mount Pleasant A.B.C. Board	91327	
Micro, Town of	95122		Mount Pleasant, Town of	91321	
Mid-Carolina Council Of Governments	92607		Mt Olive Housing Authority	99623	
Middlesex, Town of	96431	71785	Murfreesboro, Town of	94621	71970
Mideast Commission	90709		Murphy A.B.C. Board	92017	
Midland, Town of	91341		Murphy, Town of	92011	71975
Midway, Town of	92941		N C Assoc of Co Commissioners	99991	
Mills River, Town of	94551		N C League of Municipalities	99999	
Mineral Springs, Town of	99022		Nags Head, Town of	92811	71980
Mint Hill, Town of	96031	71775	Nantahala Regional Library	92005	
Misenheimer, Village of	98414	71786	Nash County	96401	71990
Mitchell County	96101	71788	Nash County A.B.C. Board	96404	72000
Mitchell Soil & Water Conservation Dist	96102		Nashville, Town of	96421	71995
Mocksville, Town of	93011	71790	Navassa, Town of	91026	
Mocksville-Cooleemee A.B.C. Board	93028		Neuse Regional Library	95405	
Monroe A.B.C. Board	99017		Neuse Regional Library-Greene County	94005	
Monroe Housing Authority	99013		Neuse Regional Library-Jones County	95205	
Monroe, City of	99011	71800	Neuse River Council of Governments	92507	
Monroe-Union County Economic Development Commission	94417		New Bern, City of	92511	72020
Montgomery County	96201	71815	New Edenton Housing Auth	92113	

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
New Hanover Airport Auth	96502	72024	Pasquotank Co A.B.C. Board	97004	
New Hanover County	96501	72030	Pasquotank County	97001	72220
New Hanover County A.B.C. Board	96504		Pasquotank-Camden Ambulance Service	97002	
New London, Town of	98471		Pasquotank-Camden Library	97015	
New Reidsville Housing Auth	97913		Peachland, Town of	90441	
Newland, Town of	90621	72032	Pembroke Housing Authority	97853	
Newport, Town of	91621	72035	Pembroke, Town of	97851	72228
Newton Grove, Town of	98231	72050	Pender County	97101	72235
Newton, City of	91871	72040	Pender County A.B.C. Board	97104	
Norlina, Town of	99311	72055	Perquimans County	97201	72245
North Topsail Beach, Town of	96751	72789	Person Co A.B.C. Bd	97304	
North Wilkesboro A.B.C. Board	99717		Person County	97301	72250
North Wilkesboro, Town of	99711	72105	Pettigrew Regional Library	99405	
Northampton County	96601	72060	Piedmont Triad Airport Authority	72265	72265
Northampton County A.B.C. Board	96604		Piedmont Triad Reg Water Auth	94112	
Northwest, City of	91012	72076	Piedmont Triad Regional Council	93406	
Northwestern Regional Library	90305		Pikeville, Town of	99651	72270
Norwood A.B.C. Bd	98427		Pilot Mountain A.B.C. Board	98607	
Norwood, Town of	98421	72110	Pilot Mountain, Town of	98611	72280
Oak City, Town of	95821		Pine Knoll Shores, Town of	91641	72290
Oak Island A.B.C. Bd	91027		Pine Level, Town of	95161	72295
Oak Island, Town of	91021	71630	Pinebluff, Town of	96361	72285
Oak Ridge, Town of	94161		Pinecroft-Sedgefield Fire Dist Inc	94108	
Oakboro, Town of	98441	72120	Pinehurst, Village of	96351	72287
Ocean Isle Beach A.B.C.	91067		Pinetops, Town of	93331	72296
Ocean Isle Beach, Town of	91061	72135	Pineville, Town of	96021	72300
Ocracoke Sanitary Dist	94812		Pink Hill, Town of	95421	72305
Old Fort, Town of	95921	72140	Pitt County	97401	72310
Onslow County	96701	72150	Pitt County A.B.C. Board	97404	72320
Onslow County A.B.C. Board	96704	72160	Pitt-Greenville Conv & Vistors	97402	
Onslow Water & Sewer Authority	96708		Pittsboro, Town of	91921	72330
Orange County	96801	72170	Pleasant Garden Fire Dept	95908	
Orange County A.B.C. Board	96804		Plymouth Housing Authority	99413	
Orange Water and Sewer Authority	96808		Plymouth, Town of	99411	72335
Oriental, Town of	96912	72195	Polk County	97501	72340
Oxford Housing Authority	93913		Polkton, Town of	90431	72345
Oxford, City of	93911	72200	Pollocksville, Town of	95211	
Pamlico County	96901	72210	Princeton, Town of	95181	72349
Parkton, Town of	97841		Princeville, Town of	93351	72351
Partners Behavioral Health Management	93609		Public Library of Johnston Co and Smithfield	95105	

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Raeford, Town of	94711	72355	Roseboro A.B.C. Board	98237	
Raleigh Housing Authority	99213		Roseboro, Town of	98261	72486
Raleigh, City of	99211	72360	Rowan Co Housing Authority	98003	
Raleigh-Durham Airport Authority	99218	72370	Rowan Co Soil & Water Conv Dist	98008	
Ramseur, Town of	97641	72375	Rowan County	98001	72490
Randleman A.B.C. Board	97627		Rowan County A.B.C. Board	98004	72500
Randleman Housing Authority	97623		rowen Convention & Visitors Bureau	98002	
Randleman, City of	97621	72377	Rowland, Town of	97861	72510
Randolph County	97601	72380	Roxboro Housing Authority	97302	
Ranlo, Town of	93681	72390	Roxboro, City of	97311	72520
Red Springs A.B.C. Board	97877		Rural Hall, Town of	93431	
Red Springs, Town of	97871	72395	Rutherford College, Town of	91214	
Region D Council of Governments	99502		Rutherford County	98101	72530
Reidsville A.B.C. Board	97917		Rutherford Polk McDowell Dist Brd of Health	98103	
Reidsville, City of	97911	72400	Rutherfordton A.B.C. Board	98147	
Rhodhiss, Town of	91414		Rutherfordton, Town of	98141	72535
Rich Square, Town of	96611	72432	Salemburg, Town of	98221	72547
Richlands, Town of	96741	72420	Salisbury Housing Authority	98013	
Richmond County	97701	72430	Salisbury, City of	98011	72550
River Bend, Town of	92541	72435	Saluda, City of	97531	72560
Roanoke Rapids Sanitary District	94209		Sampson County	98201	72563
Roanoke Rapids, City of	94221	72440	Sandhill Regional Library	97705	
Robbins, Town of	96341	72443	Sandhills Center	96318	
Robbinsville, Town of	93821		Sanford A.B.C. Board	95317	
Robersonville Authority	95853		Sanford, City of	95311	72565
Robersonville, Town of	95851	72445	Sawmills, Town of	91421	
Robeson County	97801	72450	Scotland County	98301	72580
Robeson County Housing Authority	97803		Scotland County A.B.C. Board	98304	
Robeson County Public Library	97805		Scotland Neck, Town of	94241	72590
Rockingham A.B.C. Board	97727		Seaboard, Town	96681	72591
Rockingham Authority	97713		Seagrove, Town	72593	72593
Rockingham County	97901	72470	Selma Houing Authority	95123	
Rockingham, City of	97711	72460	Selma, Town of	95121	72594
Rockwell, Town of	98071	72475	Seven Devils, Town of	99531	72596
Rocky Mount, City of	93321	72480	Severn, Town of	96671	72595
Rocky Mount-Wilson Airport Authority	93323		Shallotte A.B.C. Board	91057	
Rocky Mt Housing Authority	93333		Shallotte, Town of	91081	72597
Rolesville, Town of	99203	72485	Sharpsburg, Town of	96461	72600
Roper, Town of	99421		Shelby A.B.C. Board	92317	
Rose Hill, Town of	93161	72487	Shelby, City of	92311	72610

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Sheppard Memorial Library	97405		Sugar Mountain, Town of	90651	72724
Siler City A.B.C. Board	91917		Summerfield Fire District	94172	
Siler City, Town of	91911	72625	Summerfield, Town of	94171	
Simpson, Village of	97481	72626	Sunset Beach A.B.C. Board	91047	
Skyland Vol Fire Dept	91138		Sunset Beach, Town of	91041	72723
Smithfield Housing Authority	95113		Surf City, Town of	97131	72725
Smithfield, Town of	95111	72630	Surry County	98601	72730
Snow Hill, Town of	94021		Swain County	98701	72740
South Eastern Economic Development Comm	90918		Swansboro, Town of	96721	72745
South Granville Water and Sewer Authority	93910		Sweptonville, Town of	96722	
Southeast Brunswick Sanitary District	91013		Sylva, Town of	95011	72750
Southern Pines, Town of	96311	72640	Tabor City, Town of	92451	72760
Southern Shores, Town of	92841	72645	Tarboro Redevelopment Commission	93317	
Southern Wayne Sanitary District	99609		Tarboro, Town of	93311	72770
Southport A.B.C. Board	91017		Taylorsville, Town of	90211	72775
Southport, City of	91011	72650	Taylortown, Town of	96302	72776
Southwestern NC Planning & Econ Dev Comm	95008		Teachey, Town of	93181	
Sparta A.B.C. Board	90307		Thomasville A.B.C. Board	92914	
Sparta, Town of	72657	72657	Thomasville Housing Authority	92913	
Spencer, Town of	98031	72665	Thomasville, City of	92911	72780
Spindale, Town of	98121	72670	Tobaccoville, Village of	93471	
Spring Hope, Town of	96411	72675	Toe River Health District	90098	
Spring Lake, Town of	92661	72676	Topsail Beach, Town of	97121	72790
Spruce Pine, Town of	96111	72678	Transylvania County	98801	72800
St James, Town of	91032		Trent Woods, Town of	92521	72810
St Paul's Brd of Alcoholic CTL	97837		Triad Municipal A.B.C. Board	93417	73140
St Pauls, Town of	97831	72540	Triangle J Council of Governments	93219	
Stallings, Town of	96061	72679	Trillium Health Resources	92513	
Stanfield, Town of	98481	72680	Trinity, City of	97661	
Stanley, Town of	93602	72682	Troutman A.B.C. Board	94937	
Stanly County	98401	72683	Troutman, Town of	94931	72815
Stantonsburg, Town of	99821	72684	Troy, Town of	96221	72822
Star, Town of	96211	72685	Tryon A.B.C. Board	97517	
Statesville A.B.C. Board	94917	72710	Tryon, Town of	97511	72823
Statesville, City of	94911	72700	Tuckaseegee Water Authority	95002	
Stedman, Town of	92621	72715	Turkey, Town of	98251	
Stokes County	98501	72720	Tyrrell Co A.B.C. Board	98904	
Stokesdale, Town of	94537		Tyrrell County	98901	72825
Stoneville, Town of	97931	72721	Union County	99001	72830
Stovall, Town of	93914		Unionville, Town of	99061	

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Upper Coastal Plain Council of Governements	93309		Wayne County	99601	72997
Valdese A.B.C. Board	94947		Wayne County A.B.C. Board	99604	
Valdese Housing Authority	91213		Waynesville A.B.C. Board	94412	73015
Valdese, Town of	91211	72883	Waynesville, Town of	94411	73010
Vance County	99101	72890	Weaverville A.B.C. Board	91147	
Vance County A.B.C. Bd	99104		Weaverville, Town of	91141	73016
Vanceboro, Town of	92551	72910	Weddington, Town of	99071	
Vass, Town of	96321	72920	Weldon, Town of	94231	73017
Vaya Health	95009		Wendell, Town of	99231	73020
Wade, Town of	92641		Wesley Chapel, Village of	99091	
Wadesboro A.B.C. Board	90417		West Buncombe Fire Dept	91120	
Wadesboro Housing Authority	90413		West Columbus A.B.C. Board	92444	
Wadesboro, Town of	90411	72930	West Jefferson A.B.C. Board	90507	
Wagram, Town of	98321	72935	West Jefferson, Town of	90521	73025
Wake County	99201	72940	Westarea Volunteer Fire Dept	92602	
Wake County A.B.C. Board	99204	72950	Western Carteret Interlocal Cooperation Agency	91608	
Wake County Housing Authority	99207		Western NC Regional Air Quality	91107	
Wake Forest, Town of	99281	72960	Western Piedmont Council of Gvmts	91818	
Walkertown, Town of	93461		Western Piedmont Regional Transit Authority	91819	
Wallace A.B.C. Bd	93157		Whispering Pines, Village of	96371	73040
Wallace, Town of	93151	72970	Whitakers, Town of	96441	73045
Walnut Cove A.B.C. Board	98517		White Lake, Town of	90921	73050
Walnut Cove, Town of	98511	72975	Whiteville A.B.C. Board	92417	
Walnut Creek, Village of	99661	72977	Whiteville Housing Authority	92403	
Walstonburg, Town of	94031		Whiteville, City of	92411	73060
Warren County	99301	72980	Wilkes County	99701	73075
Warren County A.B.C. Board	99304	72979	Wilkesboro A.B.C. Board	99727	
Warrenton, Town of	99321	72991	Wilkesboro, Town of	99721	73072
Warsaw A.B.C. Board	93137		Williamston Housing Authority	95813	
Warsaw, Town of	93131	72981	Williamston, Town of	95811	73080
Washington County	99401	72985	Wilmington Housing Authority	96503	
Washington County A.B.C. Board	99404		Wilmington, City of	96531	73090
Washington Housing Authority	99624		Wilson Cemetary Commission	99818	
Washington Park, Town of	90741		Wilson County	99801	73110
Washington, City of	90711	72990	Wilson County A.B.C. Board	99804	
Watauga County	99501	72983	Wilson County Tourism Development Auth	99802	
Watauga County District Tourism Dev Auth	99509		Wilson Economic Dev Council	99812	
Water & Sewer Auth of Cabarrus County	91302		Wilson, City of	99811	73100
Waxhaw A.B.C. Board	99047		Wilson's Mills, Town of	95191	
Waxhaw, Town of	99041	72995	Windsor, Town of	90812	73122

## Appendix J: Participating Employers (continued)

Employer	Employer Code	LEO Employer Code	Employer	Employer Code	LEO Employer Code
Winfall, Town of	97221	73124	Wrightsville Beach, Town of	96511	73165
Wingate, Town of	99031	73125	Yadkin County	99901	73170
Winston-Salem Housing Authority	93413		Yadkin Valley A.B.C. Board	98604	
Winston-Salem, City of	93411	73130	Yadkin Valley Sewer Authority	98608	
Winterville, Town of	97451	73150	Yadkinville, Town of	99911	73180
Winton, Town of	94631	73155	Yancey County	90001	73190
Woodfin A.B.C. Commission	91104		Yancey Soil & Water Cons	90002	
Woodfin Sanitary Water and Sewer Dist	91109		Yanceyville, Town of	91719	73192
Woodfin, Town of	91171	73160	Youngsville, Town of	93541	73200
Woodland, Town of	96621	73162	Zebulon, Town of	99241	73210