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National Guard Pension Fund Principal Results of Actuarial Valuation as of December 31, 2020

October 28, 2021 Board of Trustees Meeting

Larry Langer, ASA, FCA, EA, MAAA

Wendy Ludbrook, FSA, FCA, EA, MAAA



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Valuation Input

Member Data



Inputs

Membership Data

Asset Data

Benefit Provisions

Assumptions

Funding Methodology



Results

Actuarial Value of Assets

Actuarial Accrued Liability

Net Actuarial Gain or Loss

Funded Ratio

Employer Contributions

Benefit Enhancement

Additional Disclosures

Projections

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

Number as of	12/31/2020	12/31/2019
Active Members	5,056	5,141
Terminated Members Entitled to Benefits but Not Yet Receiving	4,777	4,379
Retired Members Currently Receiving Benefits	<u>4,739</u>	<u>4,713</u>
Total	14,572	14,233

The total number of active members increased by 1.7% from the previous valuation date and the total number of terminated members increased by 9.1%.

The decrease was primarily due to service data clean-ups that the Guard performed.

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

Valuation Input

Asset Data



- Inputs
 - Membership Data
 - Asset Data**
 - Benefit Provisions
 - Assumptions
 - Funding Methodology
- ↓
- Results
 - Actuarial Value of Assets
 - Actuarial Accrued Liability
 - Net Actuarial Gain or Loss
 - Funded Ratio
 - Employer Contributions
 - Benefit Enhancement
 - Additional Disclosures
 - Projections

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

Asset Data as of	12/31/2020	12/31/2019
Beginning of Year Market Value of Assets	\$ 146,197,432	\$ 126,526,718
Contributions	11,031,715	10,051,824
Benefit Payments	(8,925,039)	(8,915,240)
Expenses	(88,859)	(46,945)
Investment Income	16,201,298	18,581,075
Net Increase/(Decrease)	18,219,115	19,670,714
End of Year Value of Assets	\$ 164,416,547	\$ 146,197,432
Estimated Net Investment Return	11.01%	14.62%

National Guard Pension Fund Assets are held in trust and are invested for the exclusive benefit of plan members.

Over the long term, benefit payments and administrative expenses not covered by contributions are expected to be covered with investment income, illustrating the benefits of following actuarial pre-funding since inception.



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.

Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2019	\$ 19.3
Normal Cost and Administrative Expense during 2020	0.4
Reduction due to Actual Contributions during 2020	(11.0)
Interest on UAAL, Normal Cost, and Contributions	1.0
Asset (Gain) / Loss	(2.3)
Actuarial Accrued Liability (Gain) / Loss	4.4
Impact of Assumption Changes	4.4
Impact of Legislative Changes	0.0
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2020	\$ 16.2

Changes in the Actuarial Accrued Liability (AAL) increased the UAAL by \$4.4 million. This increase was primarily due to data clean-ups that the Guard performed.

The impact of the assumption changes due to the experience study increased the UAAL by \$4.4 million

These losses were partially offset by a gain recognized in the actuarial value of assets during the year which decreased the UAAL by \$2.3 million.

In addition, based on the SCRSP, there were contributions made in excess of the ADEC.

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

Valuation Results

Funded Ratio



- Inputs**
- Membership Data
- Asset Data
- Benefit Provisions
- Assumptions
- Funding Methodology
- ↓
- Results**
- Actuarial Value of Assets
- Actuarial Accrued Liability
- Net Actuarial Gain or Loss
- Funded Ratio**
- Employer Contributions
- Benefit Enhancement
- Additional Disclosures
- Projections

The table below provides a summary of the results of this valuation compared to the prior valuation

Valuation Results as of	12/31/2020	12/31/2019
Assets		
Actuarial Value (AVA)	\$ 156,856,964	\$ 142,486,044
Market Value (MVA)	\$ 164,416,547	\$ 146,197,432
Actuarial Accrued Liability (AAL)	\$ 173,089,662	\$ 161,797,526
Unfunded Accrued Liability (AAL - AVA)	\$ 16,232,698	\$ 19,311,482
Funded Ratio (AVA / AAL)	90.6%	88.1%

Due to a history of retroactive benefit increases, the funded status of this plan was lower than the others in the North Carolina Retirement Systems.

The funded ratio increased from 88.1% to 90.6% as of 12/31/2020. This is primarily due to additional SCRSP contributions.



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 (ADEC).

Fiscal year ending June 30, 2022 Preliminary ADEC (based on December 31, 2019 valuation)	\$ 6,382,278
Impact of Legislative Changes	<u>0</u>
Fiscal year ending June 30, 2022 Final ADEC	\$ 6,382,278
Change Due to Demographic (Gain)/Loss*	604,911
Change Due to Investment (Gain)/Loss	(307,193)
Change Due to Administrative Expense (Gain)/Loss	42,000
Impact of Assumption Changes	1,273,897
Impact of New SCRSP	(502,970)
Direct Rate Smoothing	<u>(616,741)</u>
Fiscal year ending June 30, 2023 Preliminary ADEC (based on December 31, 2020 valuation)	\$ 6,876,182

*Majority of the loss is due to data clean-up

The change in contribution due to assumption changes of \$1,273,897 is due to the changes in the assumptions and methods in the December 31, 2019 experience study.

The impact of direct-rate smoothing is the first year of the five-year deferred recognition of these assumption changes.

The new SCRSP further decreased the contribution by \$502,970.

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

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 summary of the employer contribution development for this valuation compared to the prior valuation.

Results for Fiscal Year Ending	6/30/2023	6/30/2022
Actuarially Determined Employer Contribution (ADEC)		
Normal Cost	\$ 1,085,481	\$ 329,704
Accrued Liability	6,407,442	6,052,574
Total	\$ 7,492,923	\$ 6,382,278
Final ADEC Based on Direct Rate Smoothing	\$ 6,876,182	\$ 6,382,278
Additional Contribution Under State Contribution Rate Stabilization Policy (SCRSP)*	4,155,533	4,649,437
Total Contribution	\$ 11,031,715	\$ 11,031,715
Appropriation Act for Fiscal Year Ending	6/30/2022	6/30/2021
Legislative Appropriation	N/A	\$ 11,031,715

*According to the SCRSP adopted on April 29, 2021 and effective July 1, 2023 through June 30, 2027, the recommended contribution is the greater of:

- (1) The appropriation recommended by the Board for the current year or
- (2) The underlying actuarially determined contribution rate (ADEC) plus \$2,000,000

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



Experience Study

- The assumptions used for the December 31, 2020 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.
- Material assumptions and methods that were changed since the prior valuation:
 - The investment return assumption was lowered from 7.00% to 6.50%
 - The inflation assumption was lowered from 3.00% to 2.50%
 - The withdrawal rates, retirement rates, and mortality assumptions were changed
 - Administrative expenses of \$150,000 were added to the normal cost
 - Normal Cost is loaded \$725,000 to account for active members with less than 7 years of service that are not included in the valuation.

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

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

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

Wendy Ludbrook, FSA, EA, FCA, MAAA
Consulting Actuary



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North Carolina National Guard Pension Fund

Report on the Actuarial Valuation
Prepared as of December 31, 2020

October 2021





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

October 13, 2021

Board of Trustees
Teachers' and State Employees'
Retirement System of North Carolina
3200 Atlantic Avenue
Raleigh, NC 27604

Members of the Board:

We submit herewith our report on the actuarial valuation of the National Guard Pension Fund of North Carolina (referred to as "the Fund") prepared as of December 31, 2020. The report has been prepared in accordance with Chapter 127A of the North Carolina General Statutes. Information contained in our report for plan years prior to December 31, 2017 is based upon valuations performed by the prior actuary.

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

The results of this report are based upon participant data supplied by the Retirement Systems Division (RSD) and financial data supplied by the Financial Operations Division. CMC reviewed the data for reasonableness and consistency with data for the prior valuation, but performed no audit of the data. The results of this report are dependent on the accuracy of the data. Sometimes assumptions are made by CMC to interpret membership data that is imperfect. The valuation does not include members with less than seven years of service. Effective with the December 31, 2020 actuarial valuations, the liabilities have been adjusted to reflect the expected impact of these members. Furthermore, in order to be eligible to receive a benefit from the National Guard Pension Fund, members are required to have twenty years of total military service, of which at least fifteen must be North Carolina National Guard service. Since the North Carolina National Guard service amounts that we receive may be incomplete, the valuation liabilities for active and terminated vested members are determined based only on reported total military service. The net impact of these data issues is unclear.

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

3550 Busbee Pkwy, Suite 250, Kennesaw, GA 30144
Phone (678) 388-1700 • Fax (678) 388-1730
www.CavMacConsulting.com
Offices in Kennesaw, GA • Bellevue, NE



The assumptions used for the December 31, 2020 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. The economic assumptions with respect to investment yield and inflation have been based upon a review of the existing portfolio structure as well as recent and anticipated experience.

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

In order to prepare the results in this report we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

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

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

Respectfully Submitted,

A handwritten signature in blue ink, consisting of stylized initials 'LL'.

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

A handwritten signature in blue ink, reading 'Wendy Ludbrook'.

Wendy Ludbrook, FSA, EA, FCA, MAAA
Consulting Actuary



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Section 1: Summary of Principal Results

1. This report, prepared as of December 31, 2020, presents the results of the actuarial valuation of the Fund. For convenience of reference, 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	12/31/2020	12/31/2019
Active Members		
Number	5,056	5,141
Retired Members and Survivors of Deceased Members Currently Receiving Benefits		
Number	4,739	4,713
Annual Pensions	\$ 8,796,359	\$ 8,758,523
Terminated Members Entitled to but Not Yet Receiving Benefits		
Number	4,777	4,379
Annual Deferred Pensions	\$ 8,467,830	\$ 7,880,040
Assets		
Actuarial Value (AVA)	\$ 156,856,964	\$ 142,486,044
Market Value (MVA)	\$ 164,416,547	\$ 146,197,432
Actuarial Accrued Liability (AAL)	\$ 173,089,662	\$ 161,797,526
Unfunded Accrued Liability (AAL - AVA)	\$ 16,232,698	\$ 19,311,482
Funded Ratio (AVA / AAL)*	90.6%	88.1%
Results for Fiscal Year Ending	6/30/2023	6/30/2022
Actuarially Determined Employer Contribution (ADEC)		
Normal Cost	\$ 1,085,481	\$ 329,704
Accrued Liability	6,407,442	6,052,574
Total	\$ 7,492,923	\$ 6,382,278
Final ADEC Based on Direct Rate Smoothing	\$ 6,876,182	\$ 6,382,278
Additional Contribution Under State Contribution Rate Stabilization Policy (SCRSP)*	4,155,533	4,649,437
Total Contribution	\$ 11,031,715	\$ 11,031,715
Appropriation Act for Fiscal Year Ending	6/30/2022	6/30/2021
Legislative Appropriation	N/A	\$ 11,031,715

*The Funded Ratio on a Market Value of Assets basis is **95.0%** at **December 31, 2020**.

** According to the SCRSP adopted on April 29, 2021 and effective July 1, 2023 through June 30, 2027, the provision in the previous SCRSP regarding not including excess contributions resulting from General Assembly contributions in excess of the ADEC has been eliminated. The provision recommending that the appropriation be the greater of (1) or (2) below remains as long as funded percentage is less than 100%:

(1) Appropriation recommended by Board for current year

(2) Underlying actuarially determined employer contribution rate (ADEC) plus \$2,000,000.

The ADEC for fiscal year ending June 30, 2023 has been determined under the new SCRSP.



Section 1: Summary of Principal Results

2. The following table shows a reconciliation of the change in the actuarially determined employer contribution from \$6,382,278 based on the December 31, 2019 valuation to \$6,876,182 based on the December 31, 2020 valuation.

Table 2: Reconciliation of Change in Actuarially Determined Employer Contribution (ADEC)

Fiscal year ending June 30, 2022 Preliminary ADEC (based on December 31, 2019 valuation)	\$ 6,382,278
Impact of Legislative Changes	0
Fiscal year ending June 30, 2022 Final ADEC	\$ 6,382,278
Change Due to Demographic (Gain)/Loss*	604,911
Change Due to Investment (Gain)/Loss	(307,193)
Change Due to Administrative Expense (Gain)/Loss	42,000
Impact of Assumption Changes	1,273,897
Impact of New SCRSP	(502,970)
Direct Rate Smoothing	(616,741)
Fiscal year ending June 30, 2023 Preliminary ADEC (based on December 31, 2020 valuation)	\$ 6,876,182

*Majority of loss due to data clean-up.



Section 1: Summary of Principal Results

3. Tables summarizing the membership of the Fund as of the valuation date are shown in Section 2.
4. The valuation balance sheet showing the assets and liabilities of the Fund as of the current and previous valuation dates is provided in Section 3.
5. An allocation of investments by category is shown in Section 4.
6. Comments on the experience and actuarial gains/losses during the valuation year are provided in Section 5.
7. Comments on the actuarially determined employer contribution are provided in Section 6.
8. Accounting information to be disclosed in the financial statements of the Plan is provided in Section 7.
9. Comments on risks to the fund are provided in Section 8.
10. Appendix A of this report presents the development of the actuarial value of assets.
11. Appendix B of this report presents the development of the amortization of the unfunded accrued liability.
12. Appendix C of this report outlines the full set of actuarial assumptions and methods employed.
13. Appendix D gives a summary of the benefit provisions of the Fund.
14. Appendix E provides the projection of cash flows used to determine the discount rate under GASB Statement No. 67.
15. Appendix F provides detailed tabulations of the membership of the Fund as of the valuation date.



Section 2: Membership Data

Data regarding the membership of the Fund for use as a basis for the valuation were furnished by the Retirement Systems Division. The following table summarizes the membership of the Fund as of December 31, 2020 upon which the valuation was based. Detailed tabulations of the data are given in Appendix F.

Table 3: Membership of the Fund as of December 31, 2020

	Member Count	Average Age	Average Service	Annual Pensions
Active Members	5,056	37.13	15.58	N/A
Retired Members Currently Receiving Benefits	4,739	72.29	N/A	\$ 8,796,359
Terminated Members Entitled to Benefits but Not Yet Receiving Benefits	4,777	56.98	N/A	\$ 8,467,830



Section 3: Valuation Balance Sheet

The following valuation balance sheet shows the assets and liabilities of the Pension Fund as of the current valuation date of December 31, 2020. Appendix A summarizes the development of the actuarial value of assets.

Table 4: Valuation Balance Sheet Showing the Present and Prospective Assets and Liabilities of the North Carolina National Guard Pension Fund Prepared as of December 31, 2020

Assets	
Current Actuarial Value of Assets	\$ 156,856,964
Present Value of Prospective Contributions Payable by State	
Normal Contributions	\$ 959,530
Unfunded Accrued Liability Contributions	<u>16,232,698</u>
Total Prospective Contributions by State	<u>\$ 17,192,228</u>
Total Assets	<u>\$ 174,049,192</u>
Liabilities	
Present Value of Pensions Payable to Retired Members Currently Receiving Benefits	\$ 77,241,539
Present Value of Deferred Pensions Payable to Terminated Members Entitled to Benefits but Not Yet Receiving Benefits	72,332,892
Present Value of Prospective Pensions to Active Members included in the Valuation	24,474,761
Reserve for Increases in Retirement Pensions	<u>0</u>
Total Liabilities	<u>\$ 174,049,192</u>

The valuation balance sheet shows that the total present value of the prospective benefit payments as of December 31, 2020 amounts to \$174,049,192. Of this amount, \$77,241,539 represents the present value of future pension payments to retired members currently receiving benefits, \$24,474,761 represents the present value of prospective pensions which will become payable to present active members and \$72,332,892 represents the present value of future pension payments to terminated members entitled to benefits but not yet receiving benefits. Against these liabilities, the Fund has an actuarial value of assets of \$156,856,964 leaving a balance of \$17,192,228 to be provided by future contributions of the State. Of this amount, \$959,530 represents the present value of prospective normal contributions, and the balance of \$16,232,698 represents the present value of unfunded accrued liability contributions.



Section 4: Asset Allocation

The following table shows an allocation of investments by category as of December 31, 2020.

Table 5: Allocation of Investments by Category for the National Guard Pension Fund as of December 31, 2020

Cash and Receivables	10.6%
Fixed Income (LTIF)	26.0%
Public Equity	35.7%
Other*	<u>27.7%</u>
Total	100.0%

* Real Estate, Alternatives, Inflation and Credit.



Section 5: Comments on Experience and Gains/Losses

The following table shows a detailed reconciliation of the change in unfunded accrued liability since the prior valuation.

Table 6: Reconciliation of Change in Unfunded Actuarial Accrued Liability Since the Prior Valuation
(in millions)

Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2019	\$ 19.3
Normal Cost and Administrative Expense during 2020	0.4
Reduction due to Actual Contributions during 2020	(11.0)
Interest on UAAL, Normal Cost, and Contributions	1.0
Asset (Gain) / Loss	(2.3)
Actuarial Accrued Liability (Gain) / Loss	4.4
Impact of Assumption Changes	4.4
Impact of Legislative Changes	0.0
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2020	\$ 16.2

Commentary: During 2020, the UAAL increased more than expected due to the impact of assumption changes during the year of \$4.4 million and a demographic loss of \$4.4 million. This was offset by an asset gain during the year of \$2.3 million.



Section 6: Actuarially Determined Employer Contribution

The normal cost contribution is the cost of benefits accruing in the current year under the actuarial funding method. The valuation indicates that the annual normal cost contribution payable by the State is equal to \$41.63 multiplied by the number of active members with seven or more years of service. Based on 5,056 active members included in the valuation, the normal contribution is \$210,481. In addition, there is \$150,000 required for administrative expenses and \$725,000 added to the normal cost to account for members with less than 7 years of service that are not included in the valuation.

The unfunded actuarial accrued liability is amortized within a 12-year period through an annual unfunded accrued liability contribution. According to the SCRSP adopted on April 29, 2021, and effective July 1, 2023 through June 30, 2027, the provision in the previous SCRSP regarding not including excess contributions resulting from General Assembly contributions in excess of the ADEC has been eliminated. The provision recommending that the appropriation be the greater of (1) or (2) below remains as long as the funded percentage is less than 100%:

- (1) Appropriation recommended by Board for current year
- (2) Underlying actuarially determined employer contribution rate (ADEC) plus \$2,000,000

The ADEC for fiscal year ending June 30, 2023 has been determined under the new SCRSP. On this basis, the UAAL used to determine the ADEC for the fiscal year ending June 30, 2023, is equal to \$16,232,698. Had the excess contributions been excluded per the previous SCRSP, the UAAL would have been \$20,085,878. The change in UAAL has been amortized as a gain over 12 years.

Based on the present membership and the amortization schedule described above, the following table shows the total annual contributions payable by the State for the fiscal years ending June 30, 2023 and June 30, 2022.

Table 7: Actuarially Determined Employer Contribution (ADEC)

Contribution	Annual Amount FY Ending 6/30/2023	Annual Amount FY Ending 6/30/2022
Normal Cost	\$ 210,481	\$ 282,704
Administrative Expenses	150,000	47,000
Load for New Entrants	725,000	-
Total	\$ 1,085,481	\$ 329,704
Accrued Liability	6,407,442	6,052,574
Total	\$ 7,492,923	\$ 6,382,278
Impact of Direct Rate Smoothing	(616,741)	-
Preliminary ADEC	\$ 6,876,182	\$ 6,382,278



Section 7: Accounting Information

The section contains the accounting information for Governmental Accounting Standards Board (GASB) Statement No. 67 for fiscal year ending June 30, 2021 based on a valuation date of December 31, 2020.

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

The June 30, 2021 total pension liability presented in this section was determined by an actuarial valuation as of December 31, 2020, 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 8: Number of Active and Retired Members
as of December 31, 2020**

Group	Number
Retired members and survivors of deceased members currently receiving benefits	4,739
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	4,777
Active Members	<u>5,056</u>
Total	14,572



Section 7: Accounting Information

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 9: Schedule of Changes in Net Pension Liability (Asset)

Schedule of Changes in Net Pension Liability as of June 30, 2021	
Total Pension Liability	
Service Cost	\$ 276,000
Interest	11,097,000
Changes of Benefit Terms	0
Difference between Expected and Actual Experience	4,599,000
Change of Assumptions	4,601,000
Benefit Payments, including Refund of Member Contributions	<u>(8,915,000)</u>
Net Change in Total Pension Liability	11,658,000
Total Pension Liability – Beginning of Year	\$ 162,913,000
Total Pension Liability – End of Year	\$ 174,571,000
Plan Fiduciary Net Pension	
Employer Contributions	\$ 11,032,000
Member Contributions	0
Net Investment Income	27,365,000
Benefit Payments, including Refund of Member Contributions	(8,915,000)
Administrative Expenses	(94,000)
Other	<u>1,000</u>
Net Change in Plan Fiduciary Net Pension	29,389,000
Plan Fiduciary Net Pension – Beginning of Year	\$ 146,376,000
Plan Fiduciary Net Pension – End of Year	\$ 175,765,000

Table 10: Net Pension Liability (Asset)

Net Pension Liability (Asset)		
	June 30, 2021	June 30, 2020
Total Pension Liability	\$ 174,571,000	\$ 162,913,000
Plan Fiduciary Net Position	<u>175,765,000</u>	<u>146,376,000</u>
Net Pension Liability (Asset)	\$ (1,194,000)	\$ 16,537,000
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (Asset)	100.68%	89.85%



Section 7: Accounting Information

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

Table 11: Sensitivity of the Net Pension Liability (Asset) at June 30, 2021 to Changes in the Discount Rate

Sensitivity of the Net Pension Liability to Changes in the Discount Rate			
	1% Decrease	Current	1% Increase
Discount Rate	5.50%	6.50%	7.50%
Net Pension Liability (Asset)	\$ 19,977,000	\$ (1,194,000)	\$ (18,590,000)

The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the current funding policy, including “direct-rate smoothing” as adopted by the Board of Trustees on January 28, 2021. 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. Additional SCRSP contributions are not included in Appendix E.

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

Table 12: Additional Information for GASB Statement No. 67

Valuation Date	12/31/2020
Actuarial Cost Method	Entry Age
Amortization Method	Level dollar closed
Amortization Period	12 year closed periods
Asset Valuation Method	Asset returns in excess of or less than the expected return on market value of assets reflected over a five-year period (not greater than 120% of market value and not less than 80% of market value)
Actuarial Assumptions:	
Investment Rate of Return*	6.50%
Projected Salary Increases	N/A
*Includes Inflation of	2.50%
Cost-of-living Adjustments	N/A



Section 8: 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.
- 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.
- 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.



Appendix A: Development of Actuarial Value of Assets

Asset Data as of	12/31/2020
Beginning of Year Market Value of Assets	\$ 146,197,432
Contributions	11,031,715
Benefit Payments and Administrative Expenses	<u>(9,013,898)</u>
Net Cash Flow	2,017,817
Expected Investment Return	10,303,249
Expected End of Year Market Value of Assets	158,518,498
End of Year Market Value of Assets	164,416,547
Excess of Market Value over Expected Market Value of Assets	5,898,049
80% of 2020 Asset Gain/(Loss)	4,718,439
60% of 2019 Asset Gain/(Loss)	5,812,027
40% of 2018 Asset Gain/(Loss)	(4,316,623)
20% of 2017 Asset Gain/(Loss)	<u>1,345,740</u>
Total Deferred Asset Gain/(Loss)	7,559,583
Preliminary End of Year Actuarial Value of Assets	156,856,964
Final End of Year Actuarial Value of Assets (not less than 80% and not greater than 120% of Market Value)	156,856,964
Estimated Net Investment Return on Actuarial Value	8.61%
Estimated Net Investment Return on Market Value	11.01%

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. Higher than expected market returns, in 2017, 2019, and 2020, resulted in an actuarial value of asset return for calendar year 2020 of 8.61% and a recognized actuarial asset gain of \$2.3 million during 2020.



Appendix B: Amortization Schedule for Unfunded Actuarial Accrued Liability

Date Established	Original Balance	12/31/2020 Outstanding Balance	Annual Payment
December 31, 2009	\$ 40,483,684	\$ 12,659,667	\$ 5,473,719
December 31, 2010	(2,911,753)	(1,232,512)	(392,438)
December 31, 2011	(2,233,724)	(1,175,858)	(300,119)
December 31, 2012	(515,855)	(321,161)	(69,099)
December 31, 2013	4,219,347	3,005,312	563,512
December 31, 2014	7,361,464	5,859,076	980,321
December 31, 2015	16,021,040	13,998,972	2,127,207
December 31, 2016	796,884	753,596	105,424
December 31, 2017	1,856,450	1,879,457	244,689
December 31, 2018	(9,816,470)	(10,566,392)	(1,291,545)
December 31, 2019*	(10,786,025)	(11,541,047)	(1,414,550)
December 31, 2020	<u>2,913,588</u>	<u>2,913,588</u>	<u>380,321</u>
Total		\$ 16,232,698	\$ 6,407,442

*Excludes appropriated contributions in excess of the ADEC



Appendix C: Actuarial Assumptions and Methods

The assumptions used for the December 31, 2020 on the experience study 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.

Active Members: Normal Cost is loaded \$725,000 to account for active members with less than 7 years of service that are not included in the valuation.

Separations From Active Service: Assumed annual rates of separation from active service are as follows:

Annual Rates of Withdrawal				
Age	Service			
	<=6	7-9	10-19	>=20
<=50	0.000	0.175	0.110	0.150
50-54	0.000	0.175	0.110	0.200
>=55	0.000	0.175	0.110	0.250

Deaths Prior to Retirement: Representative values of the assumed pre-retirement mortality rates prior to any mortality improvements are as follows:

Annual Rates of Mortality		
Age	Males	Females
25	0.00028	0.00009
30	0.00036	0.00015
35	0.00047	0.00023
40	0.00066	0.00036
45	0.00098	0.00056
50	0.00149	0.00083
55	0.00219	0.00123
60	0.00319	0.00186

Service Retirement: Assumed annual rates of retirement from active service are as follows:

Annual Rates of Retirement		
Age	Service	
	<=19	>=20
<=55	0.000	0.150
55-59	0.000	0.250
60-64	0.000	0.500
>=65	0.000	1.000



Appendix C: Actuarial Assumptions and Methods

Deaths After Retirement: Representative values of the assumed post-retirement mortality rates prior to any mortality improvements are as follows:

Annual Rates of Mortality				
	Service Retirements		Contingent Annuitants	
Age	Males	Females	Males	Females
55	0.00455	0.00272	0.01147	0.00742
60	0.00649	0.00365	0.01450	0.00975
65	0.00963	0.00582	0.02086	0.01332
70	0.01610	0.01010	0.03221	0.01931
75	0.02818	0.01789	0.04971	0.02946
80	0.05037	0.03360	0.07802	0.04698
85	0.09064	0.06515	0.12468	0.07945
90	0.15479	0.12636	0.19956	0.13258

Deaths After Retirement (Healthy at Retirement): Mortality rates are based on the Pub 2010 General Retirees Mortality Table (Benefits Weighted) adjusted 105.50% for males and as follows for females:

Age	Factor	Age	Factor
< 76	95%	83	103%
76	96%	84	104%
77	97%	85	105%
78	98%	86	106%
79	99%	87	107%
80	100%	88	108%
81	101%	89	109%
82	102%	>=90	110%



Appendix C: Actuarial Assumptions and Methods

Deaths After Retirement (Contingent Annuitants): Mortality rates are based on the Pub-2010 Teachers Contingent Annuitant Below Median Mortality Table (Benefits Weighted) set forward 3 years for males and 1 year for females.

Mortality Projection: Post-retirement mortality rates are projected from 2010 using generational improvement with Scale MP-2019.

Deaths Prior to Retirement: Mortality Rates are based on the Pub 2010 General Employees Mortality Table (Benefits Weighted).

Timing of Assumptions: All withdrawals, deaths and retirements 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.

Administrative Expenses: \$150,000 added to Normal Cost.

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 based on inspection.

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

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

Asset Valuation Method: Actuarial value, as developed in Appendix A. 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 used for the December 31, 2020 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. Material assumptions and methods that were changed since the prior valuation:

- The investment return assumption was lowered from 7.00% to 6.50%
- The inflation assumption was lowered from 3.00% to 2.50%
- The withdrawal rates, retirement rates and mortality assumptions were changed
- Administrative expenses of \$150,000 were added to Normal Cost
- Normal Cost is loaded \$725,000 to account for active members with less than 7 years of service that are not included in the valuation.



Appendix D: Summary of Main Plan Provisions

Membership

All members of the North Carolina National Guard with seven years of service are eligible to be members of the Fund.

Benefits

Service Retirement Pension

Condition for Pension	A member who retires after he or she has attained age 60 and has credit for 20 years of military service, including at least 15 years of North Carolina national guard duty, both reserve and active, and who has received an honorable discharge, is entitled to a monthly pension.
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Amount of Pension	The amount of the pension is equal to \$105 per month for 20 years of creditable service with an additional \$10.50 per month for each additional year of such service, provided that the total pension shall not exceed \$210 per month.
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Deferred Early Retirement Pension

Condition for Pension	A member whose service is terminated after he or she has credit for 20 years of military service, including at least 15 years of North Carolina national guard duty, both reserve and active, and who has received an honorable discharge, is eligible to receive a deferred retirement pension commencing at age 60.
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Amount of Pension	The amount is the same as that for a service retirement.
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Normal Form	Life Annuity.
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Optional Form	None.
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Contributions

The State makes annual contributions sufficient to meet the cost of the benefits under the Fund.

Changes Since Prior Valuation	None.
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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
2021	\$ 164,417	\$ -	\$ 7,035	\$ 11,209	\$ 150	\$ 10,549	\$ 170,641
2022	170,641	-	6,264	11,494	129	10,920	176,203
2023	176,203	-	4,872	11,802	111	11,228	180,390
2024	180,390	-	866	12,077	96	11,364	180,447
2025	180,447	-	-	12,381	83	11,330	179,313
2026	179,313	-	-	12,561	72	11,251	177,931
2027	177,931	-	-	12,734	62	11,156	176,291
2028	176,291	-	-	12,873	53	11,045	174,411
2029	174,411	-	-	12,988	45	10,920	172,297
2030	172,297	-	-	13,085	39	10,780	169,953
2031	169,953	-	-	13,158	33	10,625	167,387
2032	167,387	-	-	13,134	28	10,459	164,684
2033	164,684	-	-	13,004	23	10,288	161,945
2034	161,945	-	-	12,859	19	10,114	159,182
2035	159,182	-	-	12,705	16	9,940	156,400
2036	156,400	-	-	12,483	13	9,766	153,671
2037	153,671	-	-	12,227	11	9,597	151,030
2038	151,030	-	-	12,006	9	9,433	148,448
2039	148,448	-	-	11,761	7	9,273	145,953
2040	145,953	-	13	11,559	6	9,117	143,518
2041	143,518	-	10	11,362	5	8,965	141,127
2042	141,127	-	8	11,148	4	8,817	138,800
2043	138,800	-	7	10,931	3	8,672	136,546
2044	136,546	-	5	10,721	3	8,533	134,360
2045	134,360	-	4	10,460	2	8,399	132,300
2046	132,300	-	3	10,181	2	8,274	130,394
2047	130,394	-	3	9,930	1	8,158	128,625
2048	128,625	-	2	9,685	1	8,051	126,992
2049	126,992	-	1	9,438	1	7,953	125,506
2050	125,506	-	1	9,166	1	7,865	124,205
2051	124,205	-	1	8,892	-	7,789	123,103
2052	123,103	-	1	8,560	-	7,728	122,272
2053	122,272	-	-	8,231	-	7,684	121,725
2054	121,725	-	-	7,887	-	7,660	121,498
2055	121,498	-	-	7,538	-	7,656	121,616
2056	121,616	-	-	7,185	-	7,675	122,107
2057	122,107	-	-	6,815	-	7,719	123,010
2058	123,010	-	-	6,436	-	7,790	124,364
2059	124,364	-	-	6,059	-	7,890	126,196
2060	126,196	-	-	5,693	-	8,021	128,523
2061	128,523	-	-	5,340	-	8,183	131,366
2062	131,366	-	-	5,001	-	8,379	134,743
2063	134,743	-	-	4,675	-	8,609	138,677
2064	138,677	-	-	4,363	-	8,874	143,188
2065	143,188	-	-	4,065	-	9,177	148,300
2066	148,300	-	-	3,782	-	9,519	154,037
2067	154,037	-	-	3,511	-	9,900	160,426
2068	160,426	-	-	3,254	-	10,324	167,495
2069	167,495	-	-	3,010	-	10,791	175,276
2070	175,276	-	-	2,778	-	11,304	183,802



Appendix E: GASB 67 Fiduciary Net Position Projection

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

Calendar Year	Beginning Fiduciary Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Position
2071	\$ 183,802	\$ -	\$ -	\$ 2,558	\$ -	\$ 11,865	\$ 193,109
2072	193,109	-	-	2,350	-	12,477	203,236
2073	203,236	-	-	2,152	-	13,142	214,226
2074	214,226	-	-	1,964	-	13,862	226,124
2075	226,124	-	-	1,787	-	14,641	238,977
2076	238,977	-	-	1,620	-	15,482	252,839
2077	252,839	-	-	1,461	-	16,388	267,766
2078	267,766	-	-	1,312	-	17,363	283,816
2079	283,816	-	-	1,173	-	18,411	301,054
2080	301,054	-	-	1,042	-	19,535	319,548
2081	319,548	-	-	920	-	20,741	339,369
2082	339,369	-	-	807	-	22,033	360,596
2083	360,596	-	-	702	-	23,416	383,310
2084	383,310	-	-	607	-	24,896	407,598
2085	407,598	-	-	521	-	26,477	433,555
2086	433,555	-	-	442	-	28,167	461,279
2087	461,279	-	-	372	-	29,971	490,878
2088	490,878	-	-	310	-	31,897	522,465
2089	522,465	-	-	256	-	33,952	556,161
2090	556,161	-	-	209	-	36,144	592,096
2091	592,096	-	-	168	-	38,481	630,409
2092	630,409	-	-	133	-	40,972	671,248
2093	671,248	-	-	104	-	43,628	714,771
2094	714,771	-	-	80	-	46,458	761,149
2095	761,149	-	-	61	-	49,473	810,560
2096	810,560	-	-	45	-	52,685	863,200
2097	863,200	-	-	33	-	56,107	919,274
2098	919,274	-	-	24	-	59,752	979,003
2099	979,003	-	-	16	-	63,635	1,042,621
2100	1,042,621	-	-	11	-	67,770	1,110,380
2101	1,110,380	-	-	7	-	72,174	1,182,547
2102	1,182,547	-	-	5	-	76,865	1,259,407
2103	1,259,407	-	-	3	-	81,861	1,341,265
2104	1,341,265	-	-	2	-	87,182	1,428,446
2105	1,428,446	-	-	1	-	92,849	1,521,294
2106	1,521,294	-	-	1	-	98,884	1,620,177
2107	1,620,177	-	-	-	-	105,312	1,725,488
2108	1,725,488	-	-	-	-	112,157	1,837,645
2109	1,837,645	-	-	-	-	119,447	1,957,092
2110	1,957,092	-	-	-	-	127,211	2,084,303
2111	2,084,303	-	-	-	-	135,480	2,219,782
2112	2,219,782	-	-	-	-	144,286	2,364,068
2113	2,364,068	-	-	-	-	153,664	2,517,732
2114	2,517,732	-	-	-	-	163,653	2,681,385
2115	2,681,385	-	-	-	-	174,290	2,855,675
2116	2,855,675	-	-	-	-	185,619	3,041,294
2117	3,041,294	-	-	-	-	197,684	3,238,978
2118	3,238,978	-	-	-	-	210,534	3,449,512
2119	3,449,512	-	-	-	-	224,218	3,673,730
2120	3,673,730	-	-	-	-	238,792	3,912,522



Appendix E: GASB 67 Fiduciary Net Position Projection

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

Calendar Year	Beginning Fiduciary Position	Benefit Payments	Funded Benefit Payments	Unfunded Benefit Payments	Present Value of Benefit Payments		
					Funded Payments at 6.50%	Unfunded Payments at 2.16%	Using Single Discount Rate of 6.50%
2021	\$ 164,417	\$ 11,209	\$ 11,209	\$ -	\$ 10,862	\$ -	\$ 10,862
2022	170,641	11,494	11,494	-	10,458	-	10,458
2023	176,203	11,802	11,802	-	10,083	-	10,083
2024	180,390	12,077	12,077	-	9,688	-	9,688
2025	180,447	12,381	12,381	-	9,325	-	9,325
2026	179,313	12,561	12,561	-	8,884	-	8,884
2027	177,931	12,734	12,734	-	8,456	-	8,456
2028	176,291	12,873	12,873	-	8,027	-	8,027
2029	174,411	12,988	12,988	-	7,605	-	7,605
2030	172,297	13,085	13,085	-	7,194	-	7,194
2031	169,953	13,158	13,158	-	6,792	-	6,792
2032	167,387	13,134	13,134	-	6,366	-	6,366
2033	164,684	13,004	13,004	-	5,919	-	5,919
2034	161,945	12,859	12,859	-	5,495	-	5,495
2035	159,182	12,705	12,705	-	5,098	-	5,098
2036	156,400	12,483	12,483	-	4,703	-	4,703
2037	153,671	12,227	12,227	-	4,326	-	4,326
2038	151,030	12,006	12,006	-	3,988	-	3,988
2039	148,448	11,761	11,761	-	3,668	-	3,668
2040	145,953	11,559	11,559	-	3,385	-	3,385
2041	143,518	11,362	11,362	-	3,124	-	3,124
2042	141,127	11,148	11,148	-	2,878	-	2,878
2043	138,800	10,931	10,931	-	2,650	-	2,650
2044	136,546	10,721	10,721	-	2,441	-	2,441
2045	134,360	10,460	10,460	-	2,236	-	2,236
2046	132,300	10,181	10,181	-	2,043	-	2,043
2047	130,394	9,930	9,930	-	1,871	-	1,871
2048	128,625	9,685	9,685	-	1,714	-	1,714
2049	126,992	9,438	9,438	-	1,568	-	1,568
2050	125,506	9,166	9,166	-	1,430	-	1,430
2051	124,205	8,892	8,892	-	1,303	-	1,303
2052	123,103	8,560	8,560	-	1,177	-	1,177
2053	122,272	8,231	8,231	-	1,063	-	1,063
2054	121,725	7,887	7,887	-	957	-	957
2055	121,498	7,538	7,538	-	858	-	858
2056	121,616	7,185	7,185	-	768	-	768
2057	122,107	6,815	6,815	-	684	-	684
2058	123,010	6,436	6,436	-	607	-	607
2059	124,364	6,059	6,059	-	536	-	536
2060	126,196	5,693	5,693	-	473	-	473
2061	128,523	5,340	5,340	-	417	-	417
2062	131,366	5,001	5,001	-	366	-	366
2063	134,743	4,675	4,675	-	322	-	322
2064	138,677	4,363	4,363	-	282	-	282
2065	143,188	4,065	4,065	-	247	-	247
2066	148,300	3,782	3,782	-	215	-	215
2067	154,037	3,511	3,511	-	188	-	188
2068	160,426	3,254	3,254	-	163	-	163
2069	167,495	3,010	3,010	-	142	-	142
2070	175,276	2,778	2,778	-	123	-	123



Appendix E: GASB 67 Fiduciary Net Position Projection

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

Calendar Year	Beginning Fiduciary Position	Benefit Payments	Funded Benefit Payments	Unfunded Benefit Payments	Present Value of Benefit Payments		
					Funded Payments at 6.50%	Unfunded Payments at 2.16%	Using Single Discount Rate of 6.50%
2071	\$ 183,802	\$ 2,558	\$ 2,558	\$ -	\$ 106	\$ -	\$ 106
2072	193,109	2,350	2,350	-	92	-	92
2073	203,236	2,152	2,152	-	79	-	79
2074	214,226	1,964	1,964	-	68	-	68
2075	226,124	1,787	1,787	-	58	-	58
2076	238,977	1,620	1,620	-	49	-	49
2077	252,839	1,461	1,461	-	42	-	42
2078	267,766	1,312	1,312	-	35	-	35
2079	283,816	1,173	1,173	-	29	-	29
2080	301,054	1,042	1,042	-	25	-	25
2081	319,548	920	920	-	20	-	20
2082	339,369	807	807	-	17	-	17
2083	360,596	702	702	-	14	-	14
2084	383,310	607	607	-	11	-	11
2085	407,598	521	521	-	9	-	9
2086	433,555	442	442	-	7	-	7
2087	461,279	372	372	-	6	-	6
2088	490,878	310	310	-	4	-	4
2089	522,465	256	256	-	3	-	3
2090	556,161	209	209	-	3	-	3
2091	592,096	168	168	-	2	-	2
2092	630,409	133	133	-	1	-	1
2093	671,248	104	104	-	1	-	1
2094	714,771	80	80	-	1	-	1
2095	761,149	61	61	-	1	-	1
2096	810,560	45	45	-	-	-	-
2097	863,200	33	33	-	-	-	-
2098	919,274	24	24	-	-	-	-
2099	979,003	16	16	-	-	-	-
2100	1,042,621	11	11	-	-	-	-
2101	1,110,380	7	7	-	-	-	-
2102	1,182,547	5	5	-	-	-	-
2103	1,259,407	3	3	-	-	-	-
2104	1,341,265	2	2	-	-	-	-
2105	1,428,446	1	1	-	-	-	-
2106	1,521,294	1	1	-	-	-	-
2107	1,620,177	-	-	-	-	-	-
2108	1,725,488	-	-	-	-	-	-
2109	1,837,645	-	-	-	-	-	-
2110	1,957,092	-	-	-	-	-	-
2111	2,084,303	-	-	-	-	-	-
2112	2,219,782	-	-	-	-	-	-
2113	2,364,068	-	-	-	-	-	-
2114	2,517,732	-	-	-	-	-	-
2115	2,681,385	-	-	-	-	-	-
2116	2,855,675	-	-	-	-	-	-
2117	3,041,294	-	-	-	-	-	-
2118	3,238,978	-	-	-	-	-	-
2119	3,449,512	-	-	-	-	-	-
2120	3,673,730	-	-	-	-	-	-



Appendix F: Detailed Tabulations of Member Data

Table F-1: The Number of Active Members Distributed by Age and Service as of December 31, 2020

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	0	0	92	0	0	0	0	0	0	0	92
25 to 29	0	0	754	203	0	0	0	0	0	0	957
30 to 34	0	0	259	784	239	0	0	0	0	0	1,282
35 to 39	0	0	94	267	462	162	0	0	0	0	985
40 to 44	0	0	35	99	186	292	62	0	0	0	674
45 to 49	0	0	10	58	83	105	149	46	0	0	451
50 to 54	0	0	2	22	72	92	82	111	33	0	414
55 to 59	0	0	0	2	19	33	28	40	54	8	184
60 to 64	0	0	0	0	1	2	1	6	3	4	17
65 to 69	0	0	0	0	0	0	0	0	0	0	0
70 & Over	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1,246	1,435	1,062	686	322	203	90	12	5,056



Appendix F: Detailed Tabulations of Member Data

**Table F-2: The Number of Active Members Distributed by Age
as of December 31, 2020**

Age	Number
23	18
24	74
25	158
26	179
27	197
28	215
29	208
30	269
31	248
32	270
33	253
34	242
35	188
36	185
37	224
38	199
39	189
40	178
41	165
42	116
43	121
44	94
45	86
46	101
47	91
48	80
49	93
50	106
51	92
52	87
53	69
54	60
55	55
56	43
57	39
58	30
59	17
60	12
61	4
62	1
Total	5,056



Appendix F: Detailed Tabulations of Member Data

Table F-3: The Number of Active Members Distributed by Service as of December 31, 2020

Service	Number
7	477
8	407
9	362
10	299
11	290
12	263
13	303
14	280
15	246
16	204
17	197
18	190
19	225
20	206
21	150
22	123
23	111
24	96
25	67
26	78
27	69
28	57
29	51
30	47
31	48
32	39
33	34
34	35
35	33
36	16
37	15
38	17
39	9
40	5
41	6
42	1
Total	5,056



Appendix F: Detailed Tabulations of Member Data

Table F-4: The Number and Deferred Annual Retirement Pensions of Terminated Vested Members Distributed by Age as of December 31, 2020

Age	Number	Pensions
29	1	\$ 2,520
30	4	10,080
31	3	7,560
32	4	10,080
33	5	12,600
34	4	10,080
35	5	12,600
36	7	17,640
37	5	8,820
38	9	12,726
39	12	17,010
40	24	35,910
41	28	38,304
42	42	58,716
43	45	64,008
44	60	86,688
45	75	115,290
46	90	140,112
47	107	168,714
48	117	184,464
49	156	261,198
50	192	319,158
51	203	349,524
52	212	369,684
53	233	412,020
54	250	450,072
55	261	454,734
56	323	579,096
57	304	537,390
58	323	588,294
59	306	572,670
60	228	437,976



Appendix F: Detailed Tabulations of Member Data

Table F-4: The Number and Deferred Annual Retirement Pensions of Terminated Vested Members Distributed by Age as of December 31, 2020 (continued)

Age	Number	Pensions
61	139	\$ 251,496
62	88	162,540
63	76	142,002
64	75	137,340
65	62	117,810
66	57	105,840
67	43	81,900
68	28	50,778
69	29	52,668
70	34	67,284
71	53	93,744
72	69	128,142
73	70	123,228
74	64	122,346
75	44	83,412
76	50	95,004
77	30	58,590
78	36	69,678
79	20	37,422
80	19	38,808
81	11	18,774
82	6	12,474
83	4	8,064
84	7	12,474
85	7	13,734
86	1	1,386
87	1	1,512
88	1	1,512
89	4	8,820
90	2	4,662
91	5	11,214
92	2	3,780
93	2	3,654
Total	4,777	\$ 8,467,830



Appendix F: Detailed Tabulations of Member Data

Table F-5: The Number and Annual Retirement Pensions of Retired Members Distributed by Age as of December 31, 2020

Age	Number	Pensions
60	67	117,432
61	169	310,332
62	166	294,564
63	167	306,936
64	177	321,678
65	151	283,993
66	165	302,864
67	163	292,805
68	209	372,982
69	260	473,410
70	275	495,925
71	284	520,015
72	313	569,772
73	312	558,383
74	302	540,000
75	205	387,576
76	196	362,715
77	173	323,190
78	153	292,812
79	108	196,614
80	78	149,436
81	78	162,540
82	98	193,044
83	84	166,935
84	70	143,190
85	60	124,488
86	58	118,692
87	43	93,114
88	35	68,796
89	26	52,920
90	24	49,392
91	25	51,534
92	23	49,266
93	10	21,042
94	5	12,600
95	1	2,520
97	4	8,946
100	2	3,906
Total	4,739	\$ 8,796,359