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National Guard Pension Fund Principal Results of Actuarial Valuation as of December 31, 2019

October 29, 2020 Board of Trustees Meeting

Larry Langer, ASA, FCA, EA, MAAA

Jonathan Craven, ASA, FCA, EA, MAAA

Wendy Ludbrook, FSA, FCA, EA, MAAA





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	12/31/2019	12/31/2018
Active Members	5,141	5,511
Terminated Members Entitled to Benefits but Not Yet Receiving Benefits	4,379	5,304
Retired Members Currently Receiving Benefits	<u>4,713</u>	<u>4,621</u>
Total	14,233	15,436

The total number of active members decreased by 6.7% from the previous valuation date and the total number of terminated members decreased by 17.4%. The decrease was primarily due to service data clean-ups that the Guard performed and data procedure changes.

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

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Actuarial Value of Assets

Actuarial Accrued Liability

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Additional Disclosures

Projections

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

Asset Data as of	12/31/2019	12/31/2018
Beginning of Year Market Value of Assets	\$ 126,526,718	\$ 128,243,463
Contributions	10,051,824	8,997,543
Benefit Payments	(8,915,240)	(8,769,311)
Expenses	(46,945)	(133,715)
Investment Income	18,581,075	(1,811,262)
Net Increase/(Decrease)	19,670,714	(1,716,745)
End of Year Value of Assets	\$ 146,197,432	\$ 126,526,718
Estimated Net Investment Return	14.62%	-1.41%

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

Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2018	\$ 37.5
Normal Cost and Administrative Expense during 2019	0.4
Reduction due to Actual Contributions during 2019	(10.1)
Interest on UAAL, Normal Cost, and Contributions	2.3
Asset (Gain) / Loss	1.1
Actuarial Accrued Liability (Gain) / Loss	(11.9)
Impact of Assumption Changes	0.0
Impact of Legislative Changes	0.0
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2019	\$ 19.3

Changes in the Actuarial Accrued Liability (AAL) decreased the UAAL by \$11.9 million. This decrease was primarily due to service data clean-ups that the Guard performed as well as data procedure changes (resulting in about a 5% improvement in the funded percentage in 2019). In addition, based on the SCRSP, there were contributions made in excess of the ADEC. These gains in the AAL were partially offset by the loss recognized in the actuarial value of assets during the year which increased the UAAL by \$1.1 million.

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	12/31/2019	12/31/2018
Assets		
Actuarial Value (AVA)	\$ 142,486,044	\$ 133,139,365
Market Value (MVA)	\$ 146,197,432	\$ 126,526,718
 Actuarial Accrued Liability (AAL)	 \$ 161,797,526	 \$ 170,653,291
Unfunded Accrued Liability (AAL - AVA)	\$ 19,311,482	\$ 37,513,926
Funded Ratio (AVA / AAL)	88.1%	78.0%

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 78.0% to 88.1% as of 12/31/2019. This is primarily due to service data clean-up and data procedure changes, as well as additional SCRSP contributions.



Employer Contributions

Inputs

Membership Data
Asset Data
Benefit Provisions
Assumptions
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Results

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

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

Fiscal year ending June 30, 2021 Preliminary ADEC (based on December 31, 2018 valuation)	\$ 7,794,373
Impact of Legislative Changes	<u>0</u>
Fiscal year ending June 30, 2021 Final ADEC	\$ 7,794,373
Change Due to Demographic (Gain)/Loss*	(1,641,802)
Change Due to Investment (Gain)/Loss	149,256
Change Due to Administrative Expense (Gain)/Loss	(87,000)
Impact of Assumption Changes	0
Direct Rate Smoothing	<u>167,451</u>
Fiscal year ending June 30, 2022 Preliminary ADEC (based on December 31, 2019 valuation)	\$ 6,382,278

*Majority of gain due to data clean-up and procedure changes

The change in rate due to investment loss is based on the actuarial value of assets returns, which was less than the 7.00% assumed return. The impact of the asset loss was an increase in employer contribution of \$149,256. Demographic gains decreased the contribution by \$1,641,802, primarily due to data clean-up and procedure changes.

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



Employer Contributions

Inputs

Membership Data
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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

The table below provides a summary of the employer contribution development for this valuation compared to the prior valuation.

Results for Fiscal Year Ending	6/30/2022	6/30/2021
Actuarially Determined Employer Contribution (ADEC)		
Normal Cost	\$ 329,704	\$ 456,228
Accrued Liability	6,052,574	7,505,597
Total	\$ 6,382,278	\$ 7,961,825
Final ADEC Based on Direct Rate Smoothing	\$ 6,382,278	\$ 7,794,373
Additional Contribution Under State Contribution Rate Stabilization Policy (SCRSP)	4,649,437	3,237,342
Total Contribution	\$ 11,031,715	\$ 11,031,715
Appropriation Act for Fiscal Year Ending	6/30/2021	6/30/2020
Legislative Appropriation	\$ 11,031,715	\$ 11,031,715

*According to the SCRSP adopted on April 25, 2019 and effective through June 30, 2022, if the General Assembly appropriates contributions that exceed the ADEC, such excess contributions, and the earnings thereon as estimated by the consulting actuary, should be excluded in future years when estimating the unfunded actuarial accrued liability that must be amortized. This provision is intended to ensure that any contributions exceeding the ADEC are not used to reduce the ADEC in a subsequent year within the term of this policy. The results of SCRSP have been reflected in this valuation.

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



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

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



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve

North Carolina National Guard Pension Fund

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

October 2020





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

October 8, 2020

Board of Trustees
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, 2019. 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 (CAFR) and it summarizes census data. Use of this report for any other purposes or by anyone other than OSC and its auditors, or North Carolina Retirement 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. 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 appear to be incomplete, the valuation liabilities for active and terminated vested members are determined based only on reported total military service. For non-retired members reported by the Army National Guard as of December 31, 2019, who were not reported as of December 31, 2018, total military service was calculated to be five years longer than North Carolina National Guard service. This process was recommended by RSD staff based on information provided by the Army National Guard about limitations of the data provided as of December 31, 2019. 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).



The assumptions used for the December 31, 2019 actuarial valuation are based on the experience study prepared as of December 31, 2014 and adopted by the Board of Trustees on January 21, 2016, as further updated to use a discount rate of 7.00% in conjunction with direct-rate smoothing of the employer contribution rate, as adopted by the Board of Trustees on April 26, 2018. The economic assumptions with respect to investment yield, salary increase and inflation have been based upon a review of the existing portfolio structure as well as recent and anticipated experience.

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

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

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

Respectfully Submitted,

A stylized, handwritten signature in blue ink, consisting of two large, flowing loops.

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

A handwritten signature in blue ink, written in a cursive style that includes the first letters of the first and last names.

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



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Section 1: Summary of Principal Results

1. This report, prepared as of December 31, 2019, 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	12/31/2019	12/31/2018
Active Members Number	5,141	5,511
Retired Members and Survivors of Deceased Members Currently Receiving Benefits Number	4,713	4,621
Annual Pensions	\$ 8,758,523	\$ 8,621,788
Terminated Members Entitled to but Not Yet Receiving Benefits Number	4,379	5,304
Annual Deferred Pensions	\$ 7,880,040	\$ 8,820,378
Assets		
Actuarial Value (AVA)	\$ 142,486,044	\$ 133,139,365
Market Value (MVA)	\$ 146,197,432	\$ 126,526,718
Actuarial Accrued Liability (AAL)	\$ 161,797,526	\$ 170,653,291
Unfunded Accrued Liability (AAL - AVA)	\$ 19,311,482	\$ 37,513,926
Funded Ratio (AVA / AAL)*	88.1%	78.0%
Results for Fiscal Year Ending	6/30/2022	6/30/2021
Actuarially Determined Employer Contribution (ADEC)		
Normal Cost	\$ 329,704	\$ 456,228
Accrued Liability	6,052,574	7,505,597
Total	\$ 6,382,278	\$ 7,961,825
Final ADEC Based on Direct Rate Smoothing	\$ 6,382,278	\$ 7,794,373
Additional Contribution Under State Contribution Rate Stabilization Policy (SCRSP)**	4,649,437	3,237,342
Total Contribution	\$ 11,031,715	\$ 11,031,715
Appropriation Act for Fiscal Year Ending	6/30/2021	6/30/2020
Legislative Appropriation	\$ 11,031,715	\$ 11,031,715

*The Funded Ratio on a Market Value of Assets basis is **90.4%** at **December 31, 2019**.

** According to the SCRSP adopted on April 25, 2019 and effective through June 30, 2022, if the General Assembly appropriates contributions that exceed the ADEC, such excess contributions, and the earnings thereon as estimated by the consulting actuary, should be excluded in future years when estimating the unfunded actuarial accrued liability that must be amortized. This provision is intended to ensure that any contributions exceeding the ADEC are not used to reduce the ADEC in a subsequent year within the term of this policy. The ADEC determined for fiscal year ending June 30, 2022 has been determined in accordance with this policy.



Section 1: Summary of Principal Results

2. The following table shows a reconciliation of the change in the actuarially determined employer contribution from \$7,794,373 based on the December 31, 2018 valuation to \$6,382,278 based on the December 31, 2019 valuation.

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

Fiscal year ending June 30, 2021 Preliminary ADEC (based on December 31, 2018 valuation)	\$ 7,794,373
Impact of Legislative Changes	0
Fiscal year ending June 30, 2021 Final ADEC	\$ 7,794,373
Change Due to Demographic (Gain)/Loss*	(1,641,802)
Change Due to Investment (Gain)/Loss	149,256
Change Due to Administrative Expense (Gain)/Loss	(87,000)
Impact of Assumption Changes	0
Direct Rate Smoothing	167,451
Fiscal year ending June 30, 2022 Preliminary ADEC (based on December 31, 2019 valuation)	\$ 6,382,278

*Majority of gain due to data clean-up.



Section 1: Summary of Principal Results

1. Tables summarizing the membership of the Fund as of the valuation date are shown in Section 2.
2. 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.
3. An allocation of investments by category is shown in Section 4.
4. Comments on the experience and actuarial gains/losses during the valuation year are provided in Section 5.
5. Comments on the actuarially determined employer contribution are provided in Section 6.
6. Accounting information to be disclosed in the financial statements of the Plan is provided in Section 7.
7. Comments on risks to the fund are provided in Section 8.
8. Appendix A of this report presents the development of the actuarial value of assets.
9. Appendix B of this report presents the development of the amortization of the unfunded accrued liability.
10. Appendix C of this report outlines the full set of actuarial assumptions and methods employed.
11. Appendix D gives a summary of the benefit provisions of the Fund.
12. Appendix E provides the projection of cash flows used to determine the discount rate under GASB Statement No. 67.
13. 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, 2019 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, 2019

	Member Count	Average Age	Average Service	Annual Pensions
Active Members	5,141	37.02	15.41	N/A
Retired Members Currently Receiving Benefits	4,713	72.05	N/A	\$ 8,758,523
Terminated Members Entitled to Benefits but Not Yet Receiving Benefits	4,379	55.68	N/A	\$ 7,880,040



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, 2019. 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, 2019

Assets	
Current Actuarial Value of Assets	\$ 142,486,044
Present Value of Prospective Contributions Payable by State	
Normal Contributions	\$ 1,458,416
Unfunded Accrued Liability Contributions	<u>19,311,482</u>
Total Prospective Contributions by State	<u>\$ 20,769,898</u>
Total Assets	<u><u>\$ 163,255,942</u></u>
Liabilities	
Present Value of Pensions Payable to Retired Members Currently Receiving Benefits	\$ 77,034,827
Present Value of Deferred Pensions Payable to Terminated Members Entitled to Benefits but Not Yet Receiving Benefits	62,865,982
Present Value of Prospective Pensions to Active Members included in the Valuation	23,355,133
Reserve for Increases in Retirement Pensions	<u>0</u>
Total Liabilities	<u><u>\$ 163,255,942</u></u>

The valuation balance sheet shows that the total present value of the prospective benefit payments as of December 31, 2019 amounts to \$163,255,942. Of this amount, \$77,034,827 represents the present value of future pension payments to retired members currently receiving benefits, \$23,355,133 represents the present value of prospective pensions which will become payable to present active members and \$62,865,982 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 \$142,486,044 leaving a balance of \$20,769,898 to be provided by future contributions of the State. Of this amount, \$1,458,416 represents the present value of prospective normal contributions, and the balance of \$19,311,482 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, 2019.

Table 5: Allocation of Investments by Category for the National Guard Pension Fund as of December 31, 2019

Cash and Receivables	13.2%
Fixed Income (LTIF)	25.9%
Public Equity	32.2%
Other*	<u>28.7%</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 12/31/2018	\$ 37.5
Normal Cost and Administrative Expense during 2019	0.4
Reduction due to Actual Contributions during 2019	(10.1)
Interest on UAAL, Normal Cost, and Contributions	2.3
Asset (Gain) / Loss	1.1
Actuarial Accrued Liability (Gain) / Loss	(11.9)
Impact of Assumption Changes	0.0
Impact of Legislative Changes	0.0
Unfunded Actuarial Accrued Liability (UAAL) as of 12/31/2019	\$ 19.3

Commentary: Changes in the Actuarial Accrued Liability (AAL) decreased the UAAL by \$11.9 million. This decrease was primarily due to data clean-up that the Guard performed (resulting in about a 5% improvement in the funded percentage in 2019). The gain in the AAL was partially offset by the loss recognized in the actuarial value of assets during the year which increased the UAAL by \$1.1 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 \$54.99 multiplied by the number of active members with seven or more years of service. Based on 5,141 active members included in the valuation, the normal contribution is \$282,704.

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 25, 2019 and effective through June 30, 2022, if the General Assembly appropriates contributions that exceed the ADEC, such excess contributions, and the earnings thereon as estimated by the consulting actuary, should be excluded in future years when estimating the unfunded actuarial accrued liability that must be amortized. This provision is intended to ensure that any contributions exceeding the ADEC are not used to reduce the ADEC in a subsequent year within the term of this policy. On this basis, the UAAL used to determine the ADEC for the fiscal year ending June 30, 2022, is equal to \$20,353,631. Assuming that this unfunded accrued liability is amortized based on the amortization schedule shown in Appendix B, with the payments covering both the principal amount and the accruing interest thereon at the rate of 7.00% per annum, the annual unfunded actuarial accrued liability contribution would be \$6,052,574.

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, 2022 and June 30, 2021.

Table 7: Actuarially Determined Employer Contribution (ADEC)

Contribution	Annual Amount FY Ending 6/30/2022	Annual Amount FY Ending 6/30/2021
Normal Cost	\$ 282,704	\$ 322,228
Administrative Expenses	47,000	134,000
Total	\$ 329,704	\$ 456,228
Accrued Liability	6,052,574	7,505,597
Total	\$ 6,382,278	\$ 7,961,825
Impact of Direct Rate Smoothing	-	(167,452)
Preliminary ADEC	\$ 6,382,278	\$ 7,794,373



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, 2020 based on a valuation date of December 31, 2019.

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

The June 30, 2020 total pension liability presented in this section was determined by an actuarial valuation as of December 31, 2019, based on the assumptions, methods and plan provisions described in this report. The actuarial cost method used to develop the total pension liability is the Entry Age Normal Cost method, as required by GASB Statement No. 67.

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

**Table 8: Number of Active and Retired Members
as of December 31, 2019**

Group	Number
Retired members and survivors of deceased members currently receiving benefits	4,713
Terminated members and survivors of deceased members entitled to benefits but not yet receiving benefits	4,379
Active Members	<u>5,141</u>
Total	14,233



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, 2020	
Total Pension Liability	
Service Cost	\$ 315,000
Interest	11,746,000
Changes of Benefit Terms	0
Difference between Expected and Actual Experience	(12,364,000)
Change of Assumptions	0
Benefit Payments, including Refund of Member Contributions	<u>(9,018,000)</u>
Net Change in Total Pension Liability	(9,321,000)
 Total Pension Liability – Beginning of Year	 \$ 172,234,000
Total Pension Liability – End of Year	\$ 162,913,000
Plan Fiduciary Net Pension	
Employer Contributions	\$ 11,032,000
Member Contributions	0
Net Investment Income	5,871,000
Benefit Payments, including Refund of Member Contributions	(9,018,000)
Administrative Expenses	(83,000)
Other	<u>1,000</u>
Net Change in Plan Fiduciary Net Pension	7,803,000
 Plan Fiduciary Net Pension – Beginning of Year	 \$ 138,573,000
Plan Fiduciary Net Pension – End of Year	\$ 146,376,000

Table 10: Net Pension Liability (Asset)

Net Pension Liability (Asset)		
	June 30, 2020	June 30, 2019
Total Pension Liability	\$ 162,913,000	\$ 172,234,000
Plan Fiduciary Net Position	<u>146,376,000</u>	<u>138,573,000</u>
Net Pension Liability (Asset)	\$ 16,537,000	\$ 33,661,000
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (Asset)	89.85%	80.46%



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, 2020 to Changes in the Discount Rate**

Sensitivity of the Net Pension Liability to Changes in the Discount Rate			
	1% Decrease	Current	1% Increase
Discount Rate	6.00%	7.00%	8.00%
Net Pension Liability (Asset)	\$36,456,000	\$16,537,000	\$180,000

The discount rate used to measure the total pension liability was 7.00%. The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the current funding policy, including “direct-rate smoothing” as adopted by the Board of Trustees on April 26, 2018. 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 employer contribution rate.

Table 12: Additional Information for GASB Statement No. 67

Valuation Date	12/31/2019
Actuarial Cost Method	Entry Age
Amortization Method	Level dollar closed
Amortization Period	12 year closed periods
Asset Valuation Method	Asset returns in excess of or less than the expected return on market value of assets reflected over a five-year period (not greater than 120% of market value and not less than 80% of market value)
Actuarial Assumptions:	
Investment Rate of Return*	7.00%
Projected Salary Increases	N/A
*Includes Inflation of	3.00%
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	12/31/2019
Beginning of Year Market Value of Assets	\$ 126,526,718
Contributions	10,051,824
Benefit Payments and Administrative Expenses	<u>(8,962,185)</u>
Net Cash Flow	1,089,639
Expected Investment Return	8,894,363
Expected End of Year Market Value of Assets	136,510,720
End of Year Market Value of Assets	146,197,432
Excess of Market Value over Expected Market Value of Assets	9,686,712
80% of 2019 Asset Gain/(Loss)	7,749,370
60% of 2018 Asset Gain/(Loss)	(6,474,934)
40% of 2017 Asset Gain/(Loss)	2,691,479
20% of 2016 Asset Gain/(Loss)	<u>(254,527)</u>
Total Deferred Asset Gain/(Loss)	3,711,388
Preliminary End of Year Actuarial Value of Assets	142,486,044
Final End of Year Actuarial Value of Assets (not less than 80% and not greater than 120% of Market Value)	142,486,044
Estimated Net Investment Return on Actuarial Value	6.18%
Estimated Net Investment Return on Market Value	14.62%

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. Lower than expected market returns in 2015, 2016 and 2018 resulted in an actuarial value of asset return for calendar year 2019 of 6.18% and a recognized actuarial asset loss of \$1.1 million during 2019.



Appendix B: Amortization Schedule for Unfunded Actuarial Accrued Liability

Date Established	Original Balance	12/31/2019 Outstanding Balance*	Annual Payment
December 31, 2009	\$ 40,483,684	\$ 17,153,451	\$ 5,505,105
December 31, 2010	(2,911,753)	(1,534,276)	(395,553)
December 31, 2011	(2,233,724)	(1,391,999)	(303,149)
December 31, 2012	(515,855)	(367,767)	(69,942)
December 31, 2013	4,219,347	3,361,246	571,555
December 31, 2014	7,361,464	6,438,924	996,293
December 31, 2015	16,021,040	15,177,158	2,166,057
December 31, 2016	796,884	808,270	107,552
December 31, 2017	1,856,450	1,998,272	250,089
December 31, 2018	(9,816,470)	(10,503,623)	(1,322,410)
December 31, 2019	(10,786,025)	(10,786,025)	(1,453,023)
Total		\$ 20,353,631	\$ 6,052,574

*Excludes appropriated contributions in excess of the ADEC



Appendix C: Actuarial Assumptions and Methods

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

Interest Rate: 7.00% per annum, compounded annually.

Active Members: The valuation excludes all active members with less than 7 years of service.

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

Annual Rates of Withdrawal*

Age	Service			
	<=6	7-9	10-14	15-19
<=24	0.000	0.150	0.080	0.050
25-29	0.000	0.150	0.080	0.050
30-34	0.000	0.150	0.080	0.050
35-39	0.000	0.150	0.080	0.050
40-44	0.000	0.150	0.080	0.050
45-49	0.000	0.150	0.080	0.050
>=50	0.000	0.150	0.080	0.050

*Applied only to members with less than 20 years of service.

Annual Rates of

Age	Male	Female	Disability*
	Mortality*	Mortality*	
25	.0005	.0002	.0001
30	.0005	.0002	.0004
35	.0005	.0003	.0010
40	.0006	.0004	.0029
45	.0010	.0007	.0049
50	.0017	.0011	.0084
55	.0028	.0017	.0144
60	.0047	.0024	.0240

*Base mortality rates as of 2014.



Appendix C: Actuarial Assumptions and Methods

Annual Rates of Retirement

<u>Age</u>	<u>Service</u>	
	<u><=19</u>	<u>>=20</u>
<=54	0.000	0.150
55-59	0.000	0.200
60-64	0.000	0.750
>=65	0.000	1.000

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

Annual Rates of Death After Retirement

<u>Age</u>	<u>Male Retirees (Healthy at Retirement)</u>	<u>Female Retirees (Healthy at Retirement)</u>	<u>Male Retirees (Disabled at Retirement)</u>	<u>Female Retirees (Disabled at Retirement)</u>
55	.0057	.0036	.0234	.0145
60	.0078	.0052	.0266	.0170
65	.0110	.0080	.0317	.0209
70	.0168	.0129	.0403	.0282
75	.0268	.0209	.0543	.0410
80	.0447	.0348	.0766	.0610

Deaths After Retirement (Healthy at Retirement): Mortality rates are based on the RP-2014 Total Data Set for Healthy Annuitants Mortality Table.

Death After Retirement (Disabled at Retirement): Mortality rates are based on the RP-2014 Total Data Set for Disabled Annuitants Mortality Table.

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

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

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



Appendix C: Actuarial Assumptions and Methods

Administrative Expenses: Prior year's actual administrative expenses are added to Normal Cost.

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: None.



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.

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.

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.

Amount of Pension

The amount is the same as that for a service retirement.

Normal Form

Life Annuity.

Optional Form

None.

Contributions

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

Changes Since Prior Valuation

None.



Appendix E: GASB 67 Fiduciary Net Position Projection

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

Calendar Year	Beginning Fiduciary Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Position
2020	\$ 146,197	\$ -	\$ 8,221	\$ 10,546	\$ 47	\$ 10,152	\$ 153,977
2021	153,977	-	6,966	10,798	42	10,645	160,749
2022	160,749	-	6,217	11,064	37	11,084	166,949
2023	166,949	-	3,273	11,373	33	11,407	170,224
2024	170,224	-	613	11,654	30	11,535	170,687
2025	170,687	-	949	11,980	26	11,568	171,198
2026	171,198	-	1,116	12,189	24	11,602	171,703
2027	171,703	-	847	12,395	21	11,621	171,755
2028	171,755	-	47	12,564	19	11,592	170,811
2029	170,811	-	-	12,706	16	11,519	169,608
2030	169,608	-	-	12,831	14	11,431	168,193
2031	168,193	-	-	12,939	12	11,328	166,569
2032	166,569	-	-	12,947	11	11,214	164,825
2033	164,825	-	-	12,849	9	11,095	163,062
2034	163,062	-	-	12,736	7	10,976	161,295
2035	161,295	-	-	12,613	6	10,856	159,533
2036	159,533	-	38	12,424	5	10,741	157,882
2037	157,882	-	25	12,203	4	10,633	156,332
2038	156,332	-	21	12,008	4	10,531	154,872
2039	154,872	-	17	11,793	3	10,436	153,529
2040	153,529	-	14	11,625	2	10,347	152,264
2041	152,264	-	11	11,453	2	10,265	151,084
2042	151,084	-	9	11,292	2	10,188	149,987
2043	149,987	-	7	11,128	1	10,116	148,982
2044	148,982	-	6	10,962	1	10,052	148,076
2045	148,076	-	4	10,768	1	9,995	147,306
2046	147,306	-	3	10,553	1	9,948	146,704
2047	146,704	-	3	10,386	-	9,912	146,233
2048	146,233	-	2	10,237	-	9,884	145,882
2049	145,882	-	1	10,085	-	9,865	145,662
2050	145,662	-	1	9,920	-	9,855	145,598
2051	145,598	-	1	9,723	-	9,857	145,734
2052	145,734	-	-	9,442	-	9,876	146,168
2053	146,168	-	-	9,169	-	9,916	146,915
2054	146,915	-	-	8,859	-	9,979	148,036
2055	148,036	-	-	8,534	-	10,069	149,570
2056	149,570	-	-	8,193	-	10,188	151,565
2057	151,565	-	-	7,815	-	10,341	154,091
2058	154,091	-	-	7,426	-	10,531	157,195
2059	157,195	-	-	7,046	-	10,761	160,910
2060	160,910	-	-	6,674	-	11,034	165,270
2061	165,270	-	-	6,312	-	11,352	170,310
2062	170,310	-	-	5,959	-	11,717	176,068
2063	176,068	-	-	5,618	-	12,131	182,581
2064	182,581	-	-	5,288	-	12,599	189,891
2065	189,891	-	-	4,970	-	13,121	198,042
2066	198,042	-	-	4,664	-	13,702	207,081
2067	207,081	-	-	4,371	-	14,345	217,055
2068	217,055	-	-	4,089	-	15,053	228,020
2069	228,020	-	-	3,819	-	15,830	240,031



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
2070	\$ 240,031	\$ -	\$ -	\$ 3,560	\$ -	\$ 16,680	\$ 253,150
2071	253,150	-	-	3,313	-	17,607	267,444
2072	267,444	-	-	3,076	-	18,615	282,984
2073	282,984	-	-	2,849	-	19,711	299,846
2074	299,846	-	-	2,632	-	20,899	318,113
2075	318,113	-	-	2,424	-	22,185	337,874
2076	337,874	-	-	2,225	-	23,575	359,224
2077	359,224	-	-	2,034	-	25,076	382,266
2078	382,266	-	-	1,852	-	26,695	407,108
2079	407,108	-	-	1,679	-	28,440	433,869
2080	433,869	-	-	1,513	-	30,319	462,675
2081	462,675	-	-	1,356	-	32,341	493,659
2082	493,659	-	-	1,208	-	34,515	526,966
2083	526,966	-	-	1,069	-	36,851	562,748
2084	562,748	-	-	939	-	39,360	601,169
2085	601,169	-	-	818	-	42,054	642,405
2086	642,405	-	-	706	-	44,944	686,642
2087	686,642	-	-	605	-	48,044	734,082
2088	734,082	-	-	512	-	51,368	784,938
2089	784,938	-	-	429	-	54,931	839,440
2090	839,440	-	-	356	-	58,749	897,833
2091	897,833	-	-	291	-	62,838	960,380
2092	960,380	-	-	235	-	67,219	1,027,364
2093	1,027,364	-	-	187	-	71,909	1,099,086
2094	1,099,086	-	-	146	-	76,931	1,175,871
2095	1,175,871	-	-	112	-	82,307	1,258,066
2096	1,258,066	-	-	85	-	88,062	1,346,043
2097	1,346,043	-	-	63	-	94,221	1,440,200
2098	1,440,200	-	-	46	-	100,812	1,540,967
2099	1,540,967	-	-	33	-	107,867	1,648,801
2100	1,648,801	-	-	23	-	115,415	1,764,194
2101	1,764,194	-	-	15	-	123,493	1,887,671
2102	1,887,671	-	-	10	-	132,137	2,019,798
2103	2,019,798	-	-	7	-	141,386	2,161,177
2104	2,161,177	-	-	4	-	151,282	2,312,455
2105	2,312,455	-	-	2	-	161,872	2,474,324
2106	2,474,324	-	-	1	-	173,203	2,647,525
2107	2,647,525	-	-	1	-	185,327	2,832,851
2108	2,832,851	-	-	-	-	198,300	3,031,150
2109	3,031,150	-	-	-	-	212,181	3,243,331
2110	3,243,331	-	-	-	-	227,033	3,470,364
2111	3,470,364	-	-	-	-	242,925	3,713,289
2112	3,713,289	-	-	-	-	259,930	3,973,219
2113	3,973,219	-	-	-	-	278,125	4,251,345
2114	4,251,345	-	-	-	-	297,594	4,548,939
2115	4,548,939	-	-	-	-	318,426	4,867,365
2116	4,867,365	-	-	-	-	340,716	5,208,080
2117	5,208,080	-	-	-	-	364,566	5,572,646
2118	5,572,646	-	-	-	-	390,085	5,962,731
2119	5,962,731	-	-	-	-	417,391	6,380,122



Appendix E: GASB 67 Fiduciary Net Position Projection

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

Calendar Year	Beginning Fiduciary Position	Benefit Payments	Funded Benefit Payments	Unfunded Benefit Payments	Present Value of Benefit Payments		
					Funded Payments at 7.00%	Unfunded Payments at 2.21%	Using Single Discount Rate of 7.00%
2020	\$ 146,197	\$ 10,546	\$ 10,546	\$ -	\$ 10,195	\$ -	\$ 10,195
2021	153,977	10,798	10,798	-	9,756	-	9,756
2022	160,749	11,064	11,064	-	9,342	-	9,342
2023	166,949	11,373	11,373	-	8,975	-	8,975
2024	170,224	11,654	11,654	-	8,595	-	8,595
2025	170,687	11,980	11,980	-	8,257	-	8,257
2026	171,198	12,189	12,189	-	7,852	-	7,852
2027	171,703	12,395	12,395	-	7,462	-	7,462
2028	171,755	12,564	12,564	-	7,069	-	7,069
2029	170,811	12,706	12,706	-	6,681	-	6,681
2030	169,608	12,831	12,831	-	6,306	-	6,306
2031	168,193	12,939	12,939	-	5,943	-	5,943
2032	166,569	12,947	12,947	-	5,557	-	5,557
2033	164,825	12,849	12,849	-	5,155	-	5,155
2034	163,062	12,736	12,736	-	4,775	-	4,775
2035	161,295	12,613	12,613	-	4,419	-	4,419
2036	159,533	12,424	12,424	-	4,069	-	4,069
2037	157,882	12,203	12,203	-	3,735	-	3,735
2038	156,332	12,008	12,008	-	3,435	-	3,435
2039	154,872	11,793	11,793	-	3,152	-	3,152
2040	153,529	11,625	11,625	-	2,904	-	2,904
2041	152,264	11,453	11,453	-	2,674	-	2,674
2042	151,084	11,292	11,292	-	2,464	-	2,464
2043	149,987	11,128	11,128	-	2,269	-	2,269
2044	148,982	10,962	10,962	-	2,089	-	2,089
2045	148,076	10,768	10,768	-	1,918	-	1,918
2046	147,306	10,553	10,553	-	1,757	-	1,757
2047	146,704	10,386	10,386	-	1,616	-	1,616
2048	146,233	10,237	10,237	-	1,488	-	1,488
2049	145,882	10,085	10,085	-	1,370	-	1,370
2050	145,662	9,920	9,920	-	1,260	-	1,260
2051	145,598	9,723	9,723	-	1,154	-	1,154
2052	145,734	9,442	9,442	-	1,047	-	1,047
2053	146,168	9,169	9,169	-	951	-	951
2054	146,915	8,859	8,859	-	858	-	858
2055	148,036	8,534	8,534	-	773	-	773
2056	149,570	8,193	8,193	-	693	-	693
2057	151,565	7,815	7,815	-	618	-	618
2058	154,091	7,426	7,426	-	549	-	549
2059	157,195	7,046	7,046	-	487	-	487
2060	160,910	6,674	6,674	-	431	-	431
2061	165,270	6,312	6,312	-	381	-	381
2062	170,310	5,959	5,959	-	336	-	336
2063	176,068	5,618	5,618	-	296	-	296
2064	182,581	5,288	5,288	-	260	-	260
2065	189,891	4,970	4,970	-	229	-	229
2066	198,042	4,664	4,664	-	201	-	201
2067	207,081	4,371	4,371	-	176	-	176
2068	217,055	4,089	4,089	-	154	-	154
2069	228,020	3,819	3,819	-	134	-	134



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 Using Single Discount Rate of		
					Funded Payments at 7.00%	Unfunded Payments at 2.21%	7.00%
2070	\$ 240,031	\$ 3,560	\$ 3,560	\$ -	\$ 117	\$ -	\$ 117
2071	253,150	3,313	3,313	-	102	-	102
2072	267,444	3,076	3,076	-	88	-	88
2073	282,984	2,849	2,849	-	76	-	76
2074	299,846	2,632	2,632	-	66	-	66
2075	318,113	2,424	2,424	-	57	-	57
2076	337,874	2,225	2,225	-	49	-	49
2077	359,224	2,034	2,034	-	42	-	42
2078	382,266	1,852	1,852	-	35	-	35
2079	407,108	1,679	1,679	-	30	-	30
2080	433,869	1,513	1,513	-	25	-	25
2081	462,675	1,356	1,356	-	21	-	21
2082	493,659	1,208	1,208	-	18	-	18
2083	526,966	1,069	1,069	-	15	-	15
2084	562,748	939	939	-	12	-	12
2085	601,169	818	818	-	10	-	10
2086	642,405	706	706	-	8	-	8
2087	686,642	605	605	-	6	-	6
2088	734,082	512	512	-	5	-	5
2089	784,938	429	429	-	4	-	4
2090	839,440	356	356	-	3	-	3
2091	897,833	291	291	-	2	-	2
2092	960,380	235	235	-	2	-	2
2093	1,027,364	187	187	-	1	-	1
2094	1,099,086	146	146	-	1	-	1
2095	1,175,871	112	112	-	1	-	1
2096	1,258,066	85	85	-	-	-	-
2097	1,346,043	63	63	-	-	-	-
2098	1,440,200	46	46	-	-	-	-
2099	1,540,967	33	33	-	-	-	-
2100	1,648,801	23	23	-	-	-	-
2101	1,764,194	15	15	-	-	-	-
2102	1,887,671	10	10	-	-	-	-
2103	2,019,798	7	7	-	-	-	-
2104	2,161,177	4	4	-	-	-	-
2105	2,312,455	2	2	-	-	-	-
2106	2,474,324	1	1	-	-	-	-
2107	2,647,525	1	1	-	-	-	-
2108	2,832,851	-	-	-	-	-	-
2109	3,031,150	-	-	-	-	-	-
2110	3,243,331	-	-	-	-	-	-
2111	3,470,364	-	-	-	-	-	-
2112	3,713,289	-	-	-	-	-	-
2113	3,973,219	-	-	-	-	-	-
2114	4,251,345	-	-	-	-	-	-
2115	4,548,939	-	-	-	-	-	-
2116	4,867,365	-	-	-	-	-	-
2117	5,208,080	-	-	-	-	-	-
2118	5,572,646	-	-	-	-	-	-
2119	5,962,731	-	-	-	-	-	-



Appendix F: Detailed Tabulations of Member Data

Table F-1: The Number of Active Members Distributed by Age and Service as of December 31, 2019

Age	Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	0	0	114	0	0	0	0	0	0	0	114
25 to 29	0	0	725	250	0	0	0	0	0	0	975
30 to 34	0	0	268	813	199	0	0	0	0	0	1,280
35 to 39	0	0	102	272	514	142	0	0	0	0	1,030
40 to 44	0	0	32	108	191	251	56	0	0	0	638
45 to 49	0	0	10	63	91	138	165	51	0	0	518
50 to 54	0	0	0	28	72	88	82	112	27	0	409
55 to 59	0	0	0	2	14	27	27	42	45	9	166
60 to 64	0	0	0	0	1	4	3	0	1	2	11
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	1,251	1,536	1,082	650	333	205	73	11	5,141



Appendix F: Detailed Tabulations of Member Data

**Table F-2: The Number of Active Members Distributed by Age
as of December 31, 2019**

Age	Number
23	22
24	92
25	144
26	166
27	210
28	194
29	261
30	281
31	281
32	269
33	250
34	199
35	198
36	226
37	218
38	208
39	180
40	179
41	129
42	130
43	101
44	99
45	114
46	96
47	91
48	96
49	121
50	106
51	88
52	81
53	70
54	64
55	47
56	46
57	31
58	24
59	18
60	8
61	2
62	1
Total	5,141



Appendix F: Detailed Tabulations of Member Data

**Table F-3: The Number of Active Members Distributed by Service
as of December 31, 2019**

Service	Number
7	523
8	409
9	319
10	313
11	275
12	351
13	324
14	273
15	222
16	205
17	198
18	246
19	211
20	175
21	147
22	129
23	116
24	83
25	85
26	79
27	63
28	54
29	52
30	52
31	43
32	37
33	40
34	33
35	23
36	15
37	19
38	8
39	8
40	9
41	2
Total	5,141



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, 2019

Age	Number	Pensions
28	1	\$ 2,520
29	4	10,080
30	3	7,560
31	4	10,080
32	5	12,600
33	4	10,080
34	5	12,600
35	7	17,640
36	2	5,040
37	4	6,300
38	7	10,458
39	19	29,988
40	20	27,216
41	34	46,872
42	34	48,762
43	54	76,860
44	64	96,264
45	77	117,810
46	97	151,956
47	104	163,674
48	149	248,094
49	177	293,832
50	186	315,756
51	208	360,738
52	223	387,324
53	242	430,794
54	253	444,276
55	312	560,826



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, 2019 (continued)

Age	Number	Pensions
56	280	\$ 500,850
57	292	550,242
58	264	511,308
59	248	489,636
60	195	382,914
61	76	143,010
62	62	122,346
63	61	114,030
64	52	100,422
65	50	94,878
66	37	71,946
67	22	40,572
68	23	42,840
69	25	52,038
70	37	71,064
71	47	93,492
72	59	104,958
73	66	127,512
74	43	83,790
75	39	76,734
76	28	54,054
77	28	54,810
78	21	38,052
79	16	33,642
80	5	9,954
84	2	3,906
86	1	2,520
87	1	2,520
Total	4,379	\$ 7,880,040



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, 2019

Age	Number	Pensions
60	65	113,862
61	161	285,744
62	161	296,226
63	176	320,292
64	150	280,843
65	167	307,778
66	165	297,341
67	211	376,888
68	262	475,048
69	279	502,603
70	288	527,323
71	316	573,678
72	323	578,795
73	309	552,474
74	210	396,270
75	198	366,747
76	184	344,862
77	163	312,720
78	113	205,434
79	83	158,886
80	84	172,494
81	100	197,706
82	89	176,133
83	81	164,106
84	65	135,324
85	60	122,346
86	52	108,675
87	41	80,892
88	33	68,040
89	30	63,504
90	29	57,771
91	32	63,252
92	14	29,988
93	8	20,160
94	3	7,560
95	1	2,016
96	4	8,946
99	3	5,796
Total	4,713	\$ 8,758,523