



Disability Income Plan of North Carolina

Principal Results of Actuarial Valuation as of December 31, 2022

October 26, 2023, Board of Trustees Meeting

Barry J. Goldberg, ASA, MAAA, FCA

Christian Hershey, ASA, MAAA

Disability Income Plan

Principal December 31, 2022 Actuarial Valuation Results

Valuation results as of	December 31, 2022	December 31, 2021
Active Members		
Teachers' and State Employees' Retirement System (TSERS)	297,802	300,310
Optional Retirement Program (ORP)	<u>21,093</u>	<u>21,002</u>
Total	318,895	321,312
Reported Compensation		
TSERS	\$ 16,141,902,861	\$ 15,312,224,584
ORP	<u>2,172,404,422</u>	<u>2,030,862,358</u>
Total	\$ 18,314,307,283	\$ 17,343,086,942
Valuation Compensation ¹		
TSERS	\$ 17,592,582,912	\$ 16,627,734,686
ORP	<u>2,339,932,584</u>	<u>2,174,535,360</u>
Total	\$ 19,932,515,496	\$ 18,802,270,046
Number of beneficiaries receiving extended short-term or long-term disability benefits	4,322	4,757
Annual reported benefits	\$ 49,970,821	\$ 52,437,477

¹ Reported compensation adjusted to reflect the assumed rate of pay increase prior to the valuation date.

Disability Income Plan

Principal December 31, 2022 Actuarial Valuation Results

Asset and Liabilities as of	December 31, 2022	December 31, 2021
Assets		
Actuarial Value	\$ 300,151,811	\$ 321,657,532
Market Value	\$ 261,531,147	\$ 318,872,382
Liability for currently disabled members	\$ 212,971,339	\$ 235,714,341
Deficit/(Surplus)versus Actuarial Value	\$ (87,180,472)	\$ (85,943,191)
ADC Rate for Fiscal Year Ending (FYE)	June 30, 2025	June 30, 2024
Preliminary Actuarially Determined Contribution (ADC) Rate		
Normal Cost	0.11%	0.12%
Accrued Liability	<u>N/A</u>	<u>N/A</u>
Total	0.11%	0.12%
ADC Rate with Direct Rate Smoothing	0.11%	0.11%
Impact of Legislative Changes	<u>N/A</u>	<u>0.00%</u>
Final ADC Rate ¹	N/A	0.11%

¹ For FYE 2025, the final ADC Rate may be adjusted to reflect Plan changes or legislation that occurs after the date of this report.

Disability Income Plan

Employer Contribution Rate History

Valuation Date	Fiscal Year Ending	Preliminary ADC Rate	Change Due to Legislation	Final ADC Rate	Appropriated Rate
12/31/2022	6/30/2025	0.11% ¹	N/A	N/A	N/A
12/31/2021	6/30/2024	0.11% ²	0.00%	0.11%	0.11%
12/31/2020	6/30/2023	0.10% ²	0.00%	0.10%	0.10%
12/31/2019	6/30/2022	0.09%	0.00%	0.09%	0.09%
12/31/2018	6/30/2021	0.09%	0.00%	0.09%	0.09%
12/31/2017	6/30/2020	0.15%	(0.05%)	0.10%	0.10%
12/31/2016	6/30/2019	0.13%	0.00%	0.13%	0.14%

¹ This ADC Rate is a preliminary rate that will become the final ADC Rate if no legislation is enacted after the date that this report is issued that would affect the determination of the ADC Rate for the fiscal year ending in 2025.

² The preliminary ADC rate prior to application of direct-rate smoothing is 0.12% for fiscal year ending June 30, 2024, and 0.11% for fiscal year ending June 30, 2023.

Disability Income Plan

Reconciliation of the Actuarially Determined Contribution

Fiscal Year Ending June 30, 2024 Preliminary ADC Rate (Based on the December 31, 2021 Valuation)	0.11%
Impact of Legislative Changes	<u>0.00%</u>
Fiscal Year Ending June 30, 2024 Final ADC Rate	0.11%
Change Due to Demographic (Gain)/Loss	(0.02%)
Change Due to Updates to Actuarial Valuation	0.00%
Change Due to Changes in Assumptions	0.00%
Change Due to Investment (Gain)/Loss	0.01%
Change Due to Contribution (Greater)/Less than ADC	<u>0.00%</u>
Preliminary ADC Rate	0.10%
Impact of Direct Rate Smoothing	0.01%
Impact of Legislative Changes	<u>0.00%</u>
Fiscal Year Ending June 30, 2025 Final ADC Rate (Based on the December 31, 2022 Valuation)	0.11%

Certification

The funded status measurements included in this report are based on the assumptions and methods used to determine the Plan's obligations and asset values as of the valuation and/or measurement date. Funded status measurements for financial accounting purposes may not be appropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations. Likewise, funded status measurements for financial accounting purposes may not be appropriate for assessing the need for or the amount of future actuarially determined contributions. Funded status measurements would also be different if the market value of assets was used in these calculations instead of an actuarial value of assets.

Buck, A Gallagher Company, does not provide legal, investment, or accounting advice. Thus, the information in this report is not intended to supersede or supplant the advice and interpretations of the System, OSC, or their legal, investing, or accounting partners.

The undersigned are familiar with the near-term and/or long-term aspects of other postemployment benefit plan valuations and collectively meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained in this report. All sections of this report, including any appendices and attachments, are considered an integral part of the actuarial opinions.

Certification

This report has been prepared in accordance with Actuarial Standard of Practice No. 6, as well as all other applicable Actuarial Standards of Practice, and we are available to answer questions about it.

Barry J. Goldberg, ASA, MAAA, FCA Christian Hershey, ASA, MAAA





Disability Income Plan of North Carolina

Report on the Actuarial Valuation
Prepared as of December 31, 2022

October 2023



200 Plaza Drive
Secaucus, NJ 07096

October 13, 2023

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

Members of the Board:

This report presents the results of the actuarial valuation of the Disability Income Plan of North Carolina (referred to as "DIPNC", "Disability Income Plan", or "Plan"), prepared as of December 31, 2022. Information contained in our report for plan years prior to December 31, 2021, is based upon valuations performed by the prior actuarial firm.

The primary purpose of the valuation report is to provide the actuarially determined employer contribution rates for DIPNC during the fiscal year ending on June 30, 2025, to describe the current financial condition of DIPNC, to analyze changes in such condition, and to summarize the census data, financial information, assumptions, methods, and plan provisions used to prepare these results.

Additional Information and Disclosures

The information contained in this report is intended to be used by the Board of Trustees for the Teachers' and State Employees' Retirement System of North Carolina (System) for Plan funding purposes for the fiscal year ending on June 30, 2025, and its use for other purposes may not be appropriate. Calculations for purposes other than funding the DIPNC benefits described in this report may produce significantly different results.

This report may also be used in conjunction with other materials for the purposes of auditing the Plan. However, the use of this report for any other purposes or by any parties other than the System and its auditors may not be appropriate and may result in mistaken conclusions because of a failure to appreciate the limitations of census and financial data, understand applicable assumptions and methods, or correctly identify situations that would render the report inappropriate for a given purpose. The attached pages should not be provided without a copy of this cover letter. Because of the risk of misinterpretation of actuarial results, you should ask Buck, A Gallagher Company (Buck) to review any statement you wish to make on the results contained in this report. Buck will not accept any liability for any such statement made without prior review.

The results contained in this report were prepared by qualified actuaries according to generally accepted actuarial principles and practices, and in compliance with Actuarial Standards of Practice issued by the Actuarial Standards Board. Our understanding is that the System has made no changes to the Plan's funding policy since the prior valuation. Thus, actuarially determined employer contribution (ADC) rates as of the valuation date were developed based on the contribution allocation procedure described in GASB Statement Nos. 43 and 45, as approved by the System during prior periods.

The measurement of Plan obligations used as the basis for much of the information presented in this report was performed as of December 31, 2022 (“the valuation date”) based on the following information provided by the System for valuation purposes:

- Census data for active and disabled members as of December 31, 2022
- Current plan provisions, including changes since December 31, 2021; and,
- Pertinent financial information as of December 31, 2022.

This information is summarized throughout this report. We did not audit the supplied information, but it was reviewed for reasonableness and consistency. In certain situations, the supplied information was adjusted to account for normal differences in collection dates and/or methods. As a result, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it is reliable for the purposes stated herein. The results and conclusions contained in this report depend on the integrity of this information, and if any of the supplied information or analyses change, our results and conclusions may be different, and this report may need to be revised. Likewise, this report may need to be revised to reflect any significant event that affects the Plan after the valuation date.

Valuation results as of December 31, 2022 are based on the assumptions and methods adopted by the Board on January 28, 2021 and prescribed for use in the Plan’s December 31, 2020 annual actuarial valuation, which are summarized in various sections of this report. We have evaluated the assumptions and methods prescribed by the Board and believe that they are reasonable for the purposes of preparing the measurements described above. We will continue to monitor material assumptions.

The actuarial cost method and the asset valuation method used for funding purposes were selected by the System during prior periods and prescribed for use beginning with the Plan’s December 31, 2020 annual actuarial valuation. We believe that these methods are appropriate for funding purposes. Actuarial methods such as the actuarial cost methods, asset valuation methods, and amortization methods used in the contribution allocation procedure are designed to recognize changes in an orderly fashion over a period of years. In certain situations, the actuarial methods used in an allocation procedure may have the effect of deferring changes in contributions or costs into later years. Likewise, the use of these methods could produce deferred gains or losses if any material underlying assumption is not met over a long period of time.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: retiree group benefits program experience differing from that anticipated by the assumptions; changes in assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan’s funded status); and changes in retiree group benefits program provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates and are sensitive to changes in these approximations and estimates. Small variations in these approximations and estimates may lead to significant changes in actuarial measurements. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, we have not performed an analysis of the potential range of such future differences. This report does not consider all possible scenarios.

Actuarial Standard of Practice No. 56 ("ASOP 56") provides guidance to actuaries when performing actuarial services with respect to designing, developing, selecting, modifying, using, reviewing, or evaluating models. Buck uses in-house and third-party software in the performance of annual actuarial valuations and projections. The models are intended to calculate the liabilities associated with the provisions of the plan using data and assumptions as of the measurement date under the accounting standards specified in this report. Further, the models apply those accounting standards to the liabilities derived and other inputs, such as plan assets and contributions, to generate the calculations found in this report. Buck has an extensive review process whereby the results of the liability calculations are checked using detailed sample output, changes from year to year are summarized by source, and significant deviations from expectations are investigated. Other accounting outputs are similarly reviewed in detail and at a high level for accuracy, reasonability and consistency with prior results. Buck also reviews the models when significant changes are made to the software. The review is performed by experts within the company who are familiar with applicable accounting rules as well as the manner in which the models generate their output.

The funded status measurements included in this report are based on the assumptions and methods used to determine the Plan's obligations and asset values as of the valuation and/or measurement date. Funded status measurements would be different if the market value of assets was used in these calculations instead of an actuarial value of assets.

Buck does not provide legal, investment, or accounting advice. Thus, the information in this report is not intended to supersede or supplant the advice and interpretations of the System or its legal, investing, or accounting partners.

The undersigned are familiar with the near-term and/or long-term aspects of other postemployment benefit plan valuations and collectively meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained in this report. All sections of this report, including any appendices and attachments, are considered an integral part of the actuarial opinions. We are available to answer questions about this report or the information provided herein.

Respectfully submitted,



Barry J. Goldberg, ASA, MAAA, FCA
Principal, Health
Buck, A Gallagher Company



Christian Hershey, ASA, MAAA
Sr. Actuarial Consultant, Health
Buck, A Gallagher Company

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Section 1: Introduction

This report presents the results of the actuarial valuation of the Disability Income Plan of North Carolina, prepared as of December 31, 2022. The purpose of the valuation is to determine the present value of future payments to disabled members as of December 31, 2022, to determine the expected cost of new claims for 2022, and to provide the actuarially determined employer contribution (ADC) rate based on the System's funding policy, which is centered on the guidance provided in GASB Statements No. 43 and 45.

Appendix A presents detailed tabulations of the active membership of the Plan as of the valuation date.

Appendix B presents detailed tabulations of the disabled membership of the Plan as of the valuation date.

Appendix C presents the development of the Actuarial Value of Assets.

Appendix D provides the full set of actuarial assumptions and methods employed for funding purposes.

The valuation was based on provisions of the Plan as amended through December 31, 2022. A summary of the main Plan provisions used for valuation purposes appears in Appendix E.

Section 2: Principal Results

The table below provides the principal results of the valuation and a comparison with the preceding year's results.

Table 1: Summary of Principal Results

Valuation Results as of	December 31, 2022	December 31, 2021
Active Members		
Teachers' and State Employees' Retirement System (TSERS)	297,802	300,310
Optional Retirement Program (ORP)	<u>21,093</u>	<u>21,002</u>
Total	318,895	321,312
Reported Compensation		
TSERS	\$ 16,141,902,861	\$ 15,312,224,584
ORP	<u>2,172,404,422</u>	<u>2,030,862,358</u>
Total	\$ 18,314,307,283	\$ 17,343,086,942
Valuation Compensation*		
TSERS	\$ 17,592,582,912	\$ 16,627,734,686
ORP	<u>2,339,932,584</u>	<u>2,174,535,360</u>
Total	\$ 19,932,515,496	\$ 18,802,270,046
Number of beneficiaries receiving extended short term or long-term disability benefits	4,322	4,757
Annual reported benefits	\$ 49,970,821	\$ 52,437,477
Asset and Liabilities as of	December 31, 2022	December 31, 2021
Assets		
Actuarial Value	\$ 300,151,811	\$ 321,657,532
Market Value	\$ 261,531,147	\$ 318,872,382
Liability for currently disabled members	\$ 212,971,339	\$ 235,714,341
Deficit/(Surplus) versus Actuarial Value	\$ (87,180,472)	\$ (85,943,191)
ADC Rate for Fiscal Year Ending (FYE)	June 30, 2025	June 30, 2024
Preliminary Actuarially Determined Contribution (ADC) Rate		
Normal Cost	0.11%	0.12%
Accrued Liability	<u>N/A</u>	<u>N/A</u>
Total	0.11%	0.12%
ADC Rate with Direct Rate Smoothing**	0.11%	0.11%
Impact of Legislative Changes	<u>N/A</u>	<u>0.00%</u>
Final ADC Rate***	N/A	0.11%

* Reported compensation adjusted to reflect the assumed rate of pay increase prior to the valuation date.

** Assumption and method changes first reflected in the December 31, 2020 actuarial valuation are phased into the ADC rate using 5-year direct rate smoothing. The ADC rate for FY 2023 and FY 2024 were reduced by 0.01% for direct rate smoothing. The direct rate smoothing increase for FY 2025 is 0.00%.

***For FYE 2025, the final ADC Rate may be adjusted to reflect Plan changes or legislation that occurs after the date of this report.

Section 2: Principal Results (continued)

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

Fiscal Year Ending June 30, 2024 Preliminary ADC Rate (Based on the December 31, 2021 Valuation)	0.11%
Impact of Legislative Changes	<u>0.00%</u>
Fiscal Year Ending June 30, 2024 Final ADC Rate	0.11%
Change Due to Demographic (Gain)/Loss	(0.02%)
Change Due to Changes in Assumptions	0.00%
Change Due to Investment (Gain)/Loss	0.01%
Change Due to Contribution (Greater)/Less than ADC	<u>0.00%</u>
Preliminary ADC Rate	0.10%
Impact of Direct Rate Smoothing*	0.01%
Impact of Legislative Changes	<u>0.00%</u>
Fiscal Year Ending June 30, 2025 Final ADC Rate (Based on the December 31, 2022 Valuation)	0.11%

* The ADC rate for FY 2024 was reduced by 0.01% due to direct rate smoothing. The direct rate smoothing increase for FY 2025 is 0.00%.

Section 2: Principal Results (continued)

Table 3: History of Actuarially Determined contribution (ADC) Rates and Appropriated Rates

Valuation Date	Fiscal Year Ending	Preliminary ADC Rate	Change Due to Legislation	Final ADC Rate	Appropriated Rate
12/31/2022	6/30/2025	0.11% ¹	N/A	N/A	N/A
12/31/2021	6/30/2024	0.11% ²	0.00%	0.11%	0.11%
12/31/2020	6/30/2023	0.10% ²	0.00%	0.10%	0.10%
12/31/2019	6/30/2022	0.09%	0.00%	0.09%	0.09%
12/31/2018	6/30/2021	0.09%	0.00%	0.09%	0.09%
12/31/2017	6/30/2020	0.15%	(0.05%)	0.10%	0.10%
12/31/2016	6/30/2019	0.13%	0.00%	0.13%	0.14%
12/31/2015	6/30/2018	0.14%	0.00%	0.14%	0.14%
12/31/2014	6/30/2017	0.38%	0.00%	0.38%	0.38%

¹ This ADC Rate is a preliminary rate that will become the final ADC Rate if no legislation is enacted after the date that this report is issued that would affect the determination of the ADC Rate for the fiscal year ending in 2025.

² The preliminary ADC rate prior to application of direct-rate smoothing is 0.12% for fiscal year ending June 30, 2024, and 0.11% for fiscal year ending June 30, 2023.

Section 2: Principal Results (continued)

The table below provides the schedule of funding progress, which presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liability for benefits.

The aggregate cost method used for Plan funding purposes does not identify or separately amortize unfunded liabilities. Thus, information about the Plan's funded status and funding progress have been prepared using the entry age normal (level percentage of pay) actuarial cost method as an approximation.

Table 4: Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Entry Age Actuarial Liability (AAL) (b)	Unfunded AAL (UAAL) (b) – (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) – (a)] / (c)
12/31/13	442,422,332	522,940,655	80,518,323	84.6%	14,294,017,494	0.56%
12/31/14	450,598,573	503,060,332	52,461,759	89.6%	14,459,666,607	0.36%
12/31/15	439,955,539	395,950,392	(44,005,147)	111.1%	14,718,736,311	(0.30%)
12/31/16	442,086,171	392,674,478	(49,411,693)	112.6%	15,178,136,876	(0.33%)
12/31/17	424,219,638	383,166,480	(41,053,158)	110.7%	15,763,887,688	(0.26%)
12/31/18	389,599,221	345,399,709	(44,199,512)	112.8%	16,329,558,053	(0.27%)
12/31/19	361,335,426	326,431,066	(34,904,360)	110.7%	16,933,847,753	(0.21%)
12/31/20	340,568,712	323,115,513	(17,453,199)	105.4%	17,481,355,002	(0.10%)
12/31/21	321,657,532	320,183,088	(1,474,444)	100.5%	17,343,086,942	(0.01%)
12/31/22	300,151,811	294,445,719	(5,706,092)	101.9%	18,314,307,283	(0.03%)

Please note that the funded status measures shown above do not indicate whether or not the Plan would have sufficient assets if it were terminated, nor do they indicate what level of future contributions would be required.

Section 3: Membership Data

Data for 297,802 active members of the Teachers' and State Employees' Retirement System with reported compensation of \$16,141,902,861 and 21,093 members of the Optional Retirement Program with reported compensation of \$2,172,404,422 were furnished by the Retirement Systems Division as of December 31, 2022. The reported compensation includes annual longevity payments. The number and reported compensation of active members distributed by age and service as of December 31, 2022, are shown in Appendix A.

The contributory membership service requirement for short-term disability benefits under the Plan is one year and the contributory membership service requirement for long-term disability benefits under the Plan is five years.

The Retirement Systems Division also supplied data for 4,322 disabled employees in receipt of annual extended short-term and long-term disability benefits totaling \$49,970,821 as of the valuation date. Of this number, 42 disabled employees are grandfathered under all provisions of the prior Disability Salary Continuation Plan and 4,280 are receiving extended short-term and long-term disability benefits under the provisions of this Plan. Appendix B presents a comparison of the number and annual amount of benefits payable as of the current and previous valuation dates.

Section 4: Assets

Asset information taken into account in this valuation is based principally on information reported by the Retirement Systems Division. The tables below provide the details of the Market Value of Assets for the current and prior years' valuations.

Table 5: Market Value of Assets

Asset Data as of	12/31/2022	12/31/2021
Beginning of Year Market Value of Assets	\$ 318,872,382	\$ 352,063,991
Employer Contributions	19,457,112	16,344,741
Benefit Payments	(39,137,062)	(42,942,877)
Administrative Expenses	(972,796)	(939,280)
Investment Income	<u>(36,688,489)</u>	<u>(5,654,193)</u>
Net Increase/(Decrease)	(57,341,235)	(33,191,609)
End of Year Market Value of Assets	\$ 261,531,147	\$ 318,872,382
Estimated Net Investment Return on Market Value	-11.89%	-1.67%

The Actuarial Value of Assets for the Plan is \$300,151,811 as of the valuation date based on the “five-year smoothed value” asset valuation method selected by the System. Under this method, investment gains and losses are recognized in equal portions over a five-year period. The development of the Actuarial Value of Assets as of the valuation date is provided in Appendix C.

The following table shows an allocation of investments by category as of December 31, 2022.

Table 6: Allocation of Investments by Category as of December 31, 2022

Cash and Receivables	10.1%
Fixed income (LTIF)	89.9%
Public Equity	0.0%
Other*	<u>0.0%</u>
Total	100.0%

* Real Estate, Alternatives, Inflation, and Credit.

Section 5: Condition of the Plan

The following table shows the assets and liabilities of the Plan as of the current valuation date of December 31, 2022. The items shown in the table, other than the actuarial value of assets, are present values actuarially determined as of the valuation date.

Table 7: Statement of Condition of the Plan as of December 31, 2022

Present value of prospective benefits payable to all disabled members as of the valuation date for:	
Extended STD and LTD approved claims	\$ 178,662,403
LTD incurred but not reported claims	34,308,936
STD incurred but not reported claims	<u>0</u>
Total claim liability	\$ 212,971,339
Actuarial Valuation of Assets at end of year	\$ 300,151,811
Deficit/(Surplus) as of December 31, 2022	\$ (87,180,472)
Prospective present value of benefits for current active members	\$ 271,849,649
Present value of benefits not covered by Actuarial Value of Assets	\$ 184,669,177
Present value of future compensation for active members	\$186,798,031,976
Level contribution as a percentage of compensation to fund present value of benefits not covered by Actuarial Value of Assets	0.10%
Estimated administrative expenses	<u>0.01%</u>
Preliminary actuarially determined contribution rate as of December 31, 2022	0.11%
Actuarially determined contribution rate as of December 31, 2022 with Direct Rate Smoothing	0.11%

Claim liabilities are equal to the present value of future claim payments that the Plan is obligated to make to members who are disabled as of the valuation date. The claim liabilities are separated into two classifications, which reflect the status of each claim as of the valuation date.

- (a) Approved claim liabilities are for extended short-term and long-term disabilities which have occurred, have been approved, and are in payment status as of the valuation date.
- (b) LTD incurred but not reported liabilities are for disabilities which have occurred but are not in payment status as of the valuation date. These liabilities are estimated based on the one-year term cost for expected disablements during the year following the valuation date and a reserve of 14/12 of the term cost is added to account for the time after disability to receive LTD benefits.

The method of determining claim liabilities and the assumptions used are described in Appendix D.

Section 6: Experience

Section 5 shows that the surplus under the Plan has increased by \$1,237,281 from \$85,943,191 to \$87,180,472 since the previous valuation date.

The following table shows a detailed reconciliation of the change in the Plan's Deficit / (Surplus)—the difference between the Total Claim Liability and the Actuarial Value of Assets— since the prior valuation.

Table 8: Reconciliation of Change in Deficit/(Surplus) Since the Prior Valuation

Prior Year Deficit/ (Surplus)	\$ (85,943,191)
Actual Contributions During the Period	(19,457,112)
Receivable Contributions	0
Interest Adjustment	(2,867,995)
IBNR Experience	1,182,430
Demographic Experience	(24,598,739)
Asset Loss/ (Gain)*	10,195,199
Assumption Changes	0
Current Year IBNR Claims	<u>34,308,936</u>
Current Year Deficit/(Surplus)	\$ (87,180,472)

* The Plan's Actuarial Value of Assets is the basis for the asset (gain)/loss reported above.

Appendix A: Detailed Tabulation of Active Member Data

Table A-1: Number and Average Reported Compensation of Active Members Distributed by Age and Service as of December 31, 2022

Age	Creditable Service										Total
	Under 1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 & over	
Under 25	6,046	5,300	40	-	-	-	-	-	-	-	11,386
	\$ 18,031	\$ 41,367	\$ 41,738								\$ 28,977
25 - 29	5,648	15,199	4,518	14	-	-	-	-	-	-	25,379
	\$ 20,044	\$ 45,530	\$ 50,378	\$ 54,885							\$ 40,726
30 - 34	4,508	11,515	13,286	3,614	16	-	-	-	-	-	32,939
	\$ 22,480	\$ 50,316	\$ 54,490	\$ 58,966	\$ 50,270						\$ 49,139
35 - 39	3,713	9,816	9,920	9,431	3,944	31	-	-	-	-	36,855
	\$ 22,675	\$ 55,501	\$ 61,289	\$ 63,574	\$ 65,972	\$ 55,608					\$ 56,938
40 - 44	3,188	8,593	8,932	6,943	10,832	3,401	38	-	-	-	41,927
	\$ 22,361	\$ 54,114	\$ 64,547	\$ 68,170	\$ 68,981	\$ 69,415	\$ 69,206				\$ 61,346
45 - 49	2,636	7,412	8,009	6,373	8,286	9,064	2,837	13	-	-	44,630
	\$ 21,812	\$ 52,660	\$ 60,077	\$ 68,972	\$ 70,485	\$ 71,641	\$ 73,617	\$ 74,392			\$ 63,001
50 - 54	2,352	6,901	7,646	6,808	8,786	7,468	7,358	832	5	-	48,156
	\$ 21,866	\$ 51,873	\$ 58,432	\$ 64,711	\$ 67,908	\$ 71,125	\$ 75,248	\$ 80,888	\$ 68,476		\$ 63,250
55 - 59	1,884	5,669	6,100	5,474	7,642	6,099	4,302	1,526	218	2	38,916
	\$ 21,818	\$ 52,599	\$ 55,823	\$ 60,436	\$ 62,512	\$ 68,698	\$ 72,487	\$ 81,949	\$ 76,758	*	\$ 60,672
60 - 64	1,049	3,626	4,364	3,930	5,111	4,212	2,253	1,062	506	74	26,187
	\$ 22,100	\$ 49,696	\$ 55,752	\$ 59,737	\$ 61,788	\$ 66,576	\$ 74,731	\$ 92,005	\$ 86,257	\$ 83,088	\$ 60,852
65 - 69	397	1,171	1,699	1,396	1,568	1,034	744	502	263	163	8,937
	\$ 19,415	\$ 50,140	\$ 59,343	\$ 65,509	\$ 66,633	\$ 71,274	\$ 85,120	\$ 108,294	\$ 117,034	\$ 92,856	\$ 67,191
70 & over	200	539	566	524	552	382	246	193	152	229	3,583
	\$ 16,941	\$ 44,597	\$ 51,315	\$ 60,666	\$ 64,862	\$ 77,862	\$ 85,528	\$ 114,049	\$ 140,915	\$ 134,022	\$ 69,486
Total	31,621	75,741	65,080	44,507	46,737	31,691	17,778	4,128	1,144	468	318,895
	\$ 20,978	\$ 50,301	\$ 58,073	\$ 64,163	\$ 66,814	\$ 70,088	\$ 74,796	\$ 89,003	\$ 98,707	\$ 111,355	\$ 57,430

* To protect the privacy of beneficiary information, total reported compensation is not shown for groups with fewer than 5 individuals.

Appendix A: Detailed Tabulation of Active Member Data (continued)

Table A-2: Number and Reported Compensation of Active Members Distributed by Age and Gender as of December 31, 2022

Age	Male		Female	
	Number	Compensation	Number	Compensation
Under 19	23	\$ 211,050	37	\$ 299,575
19	60	958,478	99	1,297,591
20	158	3,469,643	225	4,045,704
21	223	5,506,562	491	9,236,267
22	524	13,494,766	1,682	36,297,225
23	895	27,600,892	2,686	80,084,339
24	1,125	39,681,555	3,158	107,744,782
25	1,212	45,740,534	3,255	118,656,794
26	1,380	56,213,850	3,504	134,189,681
27	1,450	62,150,945	3,606	143,806,801
28	1,634	72,117,214	3,711	153,663,084
29	1,715	79,467,139	3,912	167,586,794
30	1,724	81,983,314	4,209	187,452,412
31	1,933	95,805,003	4,439	203,865,943
32	2,001	104,903,018	4,725	226,036,802
33	2,074	113,439,408	4,797	237,876,847
34	2,117	119,059,115	4,920	248,171,859
35	2,115	124,858,433	4,883	253,279,884
36	2,137	133,365,618	4,919	260,911,013
37	2,232	141,562,205	5,186	281,992,506
38	2,309	148,078,668	5,295	293,240,402
39	2,420	161,237,347	5,359	299,933,724
40	2,478	164,897,218	5,807	330,206,928
41	2,396	162,634,866	5,793	334,124,088
42	2,551	174,821,023	5,936	345,083,835
43	2,503	176,600,650	6,061	356,696,996
44	2,522	176,962,590	5,880	350,010,276
45	2,518	178,179,409	6,296	373,247,188
46	2,563	184,989,080	6,127	361,452,691
47	2,567	184,946,849	6,122	363,618,183
48	2,729	195,006,047	6,420	381,973,883
49	2,769	199,214,245	6,519	389,118,352
50	2,895	210,442,959	6,617	393,566,905
51	2,992	216,044,543	7,102	420,636,162
52	3,091	225,099,213	7,235	430,428,730
53	2,858	208,212,271	6,629	391,859,194
54	2,650	195,491,014	6,087	354,066,273
55	2,483	179,766,804	5,852	331,113,057
56	2,419	173,658,308	5,473	306,152,016
57	2,486	176,686,678	5,208	290,294,499

* To protect the privacy of beneficiary information, total reported compensation is not shown for groups with fewer than 5 individuals.

Appendix A: Detailed Tabulation of Active Member Data (continued)

Table A-2: Number and Reported Compensation of Active Members Distributed by Age and Gender as of December 31, 2022 (continued)

Age	Male		Female	
	Number	Compensation	Number	Compensation
58	2,385	\$ 167,015,919	5,215	\$ 290,860,744
59	2,370	168,904,882	5,025	276,659,499
60	2,199	150,997,245	4,632	251,850,754
61	1,995	132,366,627	4,172	227,948,033
62	1,770	129,128,005	3,421	194,583,053
63	1,477	109,320,933	2,750	155,860,580
64	1,326	100,762,151	2,445	140,720,996
65	1,144	88,874,716	1,753	102,876,970
66	865	67,885,249	1,304	76,888,597
67	650	48,897,131	922	55,142,625
68	556	46,672,306	677	39,045,304
69	469	39,196,908	597	35,001,956
70	371	29,967,699	418	24,512,533
71	317	25,606,730	347	19,764,335
72	244	18,996,602	268	15,675,619
73	210	16,914,603	186	9,359,897
74	179	15,061,348	141	7,487,589
75	128	10,849,445	112	6,615,556
76	103	8,327,479	81	4,412,854
77	81	8,015,890	48	2,402,979
78	53	4,997,612	46	2,127,243
79	46	3,754,612	34	1,726,385
80	38	3,191,689	24	1,049,425
81	22	2,365,410	11	435,892
82	9	649,755	10	337,757
83	12	851,959	9	622,766
84	6	810,980	3	*
85	5	154,186	1	*
86	3	*	2	*
87	3	*	-	-
88	2	*	1	*
89	4	*	1	*
90	1	*	1	*
91	-	-	1	*
92	1	*	-	-
93	-	-	-	-
94	-	-	-	-
95	-	-	-	-
Over 95	-	-	-	-
Total	97,975	\$ 6,416,584,491	220,920	\$ 11,897,722,792

* To protect the privacy of beneficiary information, total reported compensation is not shown for groups with fewer than 5 individuals.

Appendix A: Detailed Tabulation of Active Member Data (continued)

Table A-3: Number and Reported Compensation of Active Members Distributed by Service and Gender as of December 31, 2022

Service	Male		Female	
	Number	Compensation	Number	Compensation
0	9,196	223,505,865	22,425	439,838,100
1	7,017	360,143,814	18,348	797,025,492
2	4,762	276,787,736	11,033	535,801,271
3	5,557	333,846,491	12,460	610,167,792
4	5,217	320,496,185	11,347	575,609,546
5	4,700	292,022,110	10,191	533,027,030
6	4,578	292,984,451	9,703	517,503,746
7	4,149	273,535,803	8,505	471,700,899
8	3,778	250,500,852	8,167	454,367,077
9	3,602	243,844,887	7,707	449,888,106
10	3,552	242,873,972	7,523	436,140,262
11	2,710	193,957,214	5,785	354,208,548
12	2,947	208,805,802	5,880	359,713,131
13	1,865	135,860,152	4,561	284,876,502
14	3,057	226,636,566	6,627	412,621,889
15	3,167	232,872,627	7,248	450,984,948
16	3,059	231,555,963	7,249	459,835,645
17	2,786	209,286,365	6,575	417,604,719
18	2,582	193,344,086	6,315	398,121,459
19	2,356	181,222,817	5,400	347,850,301
20	1,891	149,224,638	4,542	299,447,141
21	1,977	157,901,731	4,700	305,712,553
22	1,920	152,130,484	4,696	306,092,825
23	1,876	155,140,342	4,498	297,500,383
24	1,679	138,187,786	3,912	259,828,412
25	1,488	122,090,684	3,268	222,586,119
26	1,315	110,188,835	2,908	202,659,403
27	1,161	97,429,820	2,443	170,987,310
28	989	85,779,036	2,001	144,529,898
29	741	68,160,129	1,464	105,319,594
30	511	52,042,556	910	71,250,101
31	339	34,912,164	483	36,849,055
32	316	32,727,423	460	37,646,115
33	255	29,545,175	378	29,394,391
34	178	19,456,628	298	23,581,404

* To protect the privacy of beneficiary information, total reported compensation is not shown for groups with fewer than 5 individuals.

Appendix A: Detailed Tabulation of Active Member Data (continued)

Table A-3: Number and Reported Compensation of Active Members Distributed by Service and Gender as of December 31, 2022 (continued)

Service	Male		Female	
	Number	Compensation	Number	Compensation
35	146	\$ 15,596,109	226	\$ 18,529,071
36	109	12,603,970	131	11,332,971
37	94	10,943,173	129	11,169,798
38	66	8,125,487	101	9,123,751
39	65	9,083,556	77	6,412,910
40	50	7,292,882	57	5,734,450
41	28	3,673,726	37	3,323,829
42	33	4,517,524	20	1,273,589
43	21	2,882,948	24	1,731,704
44	19	2,829,549	31	2,549,369
45	19	3,138,555	20	1,456,230
46	8	1,358,009	12	1,061,848
47	10	1,521,496	11	1,178,071
48	9	1,253,716	9	796,735
49	4	*	5	360,739
50	7	740,796	4	*
51	3	*	3	*
52	3	*	7	531,454
53	3	*	2	*
54	3	*	2	*
55	1	*	-	-
56	-	-	-	-
57	-	-	-	-
58	-	-	-	-
59	-	-	-	-
Over 60	1	*	2	*
Total	97,975	\$ 6,416,584,491	220,920	\$ 11,897,722,792

* To protect the privacy of beneficiary information, total reported compensation is not shown for groups with fewer than 5 individuals.

Appendix B: Detailed Tabulation of Disabled Member Data

Table B-1: Number and Annual Amount of Disability Benefits Reported for Each Disability Group

Disability Group	As of December 31, 2022		As of December 31, 2021	
	Number	Annual Reported Benefits	Number	Annual Reported Benefits
Disabled Prior to January 1, 1988	42	\$ 83,858	47	\$ 95,904
Disabled after December 31, 1987	<u>4,280</u>	<u>\$ 49,886,963</u>	<u>4,710</u>	<u>\$ 52,341,573</u>
Total	4,322	\$ 49,970,821	4,757	\$ 52,437,477

Appendix B: Detailed Tabulation of Disabled Member Data (continued)

Table B-2: Number and Annual Long-Term Disability Benefits of Members Disabled Prior to January 1, 1988 by Age and Gender as of December 31, 2022

Age	Male		Female	
	Number	Allowances	Number	Allowances
57	0	0	0	0
58	0	0	0	0
59	0	0	0	0
60	0	0	0	0
61	0	0	0	0
62	0	0	1	*
63	0	0	0	0
64	0	0	0	0
65	0	0	0	0
66	0	0	2	*
67	0	0	4	*
68	1	*	1	*
69	0	0	1	*
70	2	*	3	*
71	0	0	0	0
72	1	*	1	*
73	0	0	1	*
74	0	0	2	*
75	0	0	4	*
76	1	*	2	*
77	0	0	0	0
78	0	0	1	*
79	2	*	0	0
80	0	0	1	*
81	0	0	2	*
82	1	*	1	*
83	0	0	0	0
84	0	0	1	*
85	1	*	1	*
86	0	0	0	0
87	0	0	1	*
88	0	0	0	0
89	0	0	0	0
90	0	0	0	0
91	0	0	0	0
92	0	0	0	0
93	0	0	2	*
94	0	0	0	0
95	0	0	0	0
Over 95	0	0	1	*
Total	9	13,307	33	70,551

* To protect the privacy of beneficiary information, total allowances are not shown for groups with fewer than 5 individuals

Appendix B: Detailed Tabulation of Disabled Member Data (continued)

Table B-3: Number and Annual Disability Benefits of Members Disabled After December 31, 1987 by Age and Gender as of December 31, 2022

Age	Male		Female	
	Number	Allowances	Number	Allowances
Under 26	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	0	0	1	*
30	0	0	2	*
31	0	0	1	*
32	2	*	2	*
33	0	0	1	*
34	0	0	5	70,263
35	1	*	6	55,176
36	2	*	6	107,132
37	3	*	5	100,839
38	4	*	13	175,013
39	2	*	13	133,675
40	5	74,087	19	391,604
41	5	70,753	19	254,354
42	7	53,312	17	258,106
43	7	144,180	28	512,239
44	8	50,369	40	588,003
45	20	300,252	41	632,777
46	22	355,787	60	931,537
47	22	288,078	63	1,023,688
48	35	501,765	61	935,047
49	36	402,022	74	1,001,230
50	34	550,832	96	1,241,204
51	41	615,064	113	1,652,279
52	45	694,296	132	1,857,733
53	43	591,237	128	1,691,606
54	46	595,731	159	2,384,938
55	70	792,199	152	1,952,033
56	73	827,681	198	2,309,433
57	70	758,147	202	2,162,408
58	87	864,273	232	2,599,876
59	86	762,824	229	2,147,228
60	68	600,972	176	1,940,728
61	87	962,751	202	1,809,272

* To protect the privacy of beneficiary information, total allowances are not shown for groups with fewer than 5 individuals

Appendix B: Detailed Tabulation of Disabled Member Data (continued)

Table B–3: Number and Annual Disability Benefits of Members Disabled After December 31, 1987 by Age and Gender as of December 31, 2022 (continued)

Age	Male		Female	
	Number	Allowances	Number	Allowances
62	69	618,052	205	2,009,706
63	93	813,508	179	1,511,243
64	90	785,320	178	1,707,254
65	2	*	3	*
66	1	*	1	*
67	3	*	1	*
68	0	0	0	0
69	1	*	1	*
70	0	0	0	0
71	2	*	3	*
72	1	*	1	*
73	2	*	2	*
74	0	0	1	*
75	0	0	3	*
76	0	0	0	0
77	1	*	1	*
78	0	0	1	*
79	0	0	1	*
80	0	0	1	*
81	0	0	0	0
82	0	0	0	0
83	0	0	0	0
84	2	*	0	0
85	0	0	2	*
86	0	0	0	0
87	0	0	0	0
88	0	0	1	*
89	0	0	0	0
90	0	0	0	0
91	0	0	0	0
92	0	0	0	0
93	0	0	0	0
94	0	0	0	0
95	0	0	1	*
Over 95	0	0	0	0
Total	1,198	13,418,875	3,082	36,468,089

* To protect the privacy of beneficiary information, total allowances are not shown for groups with fewer than 5 individuals.

Appendix C: Development of the Actuarial Value of Assets

The Actuarial Value of Assets is determined using a method that attempts to “flatten” the peaks and valleys inherent in market values of assets. Under the “five-year smoothed value” asset valuation method selected by the System, investment gains and losses are recognized in equal portions over a five-year period. The calculation of the Actuarial Value of Assets is based on a formula that is mathematically equivalent to the process described above:

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

where,

MV is the market value of assets as of the valuation date; and,

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

However, the resulting Actuarial Value of Assets cannot be less than 80% or more than 120% of the market value of assets as of the measurement date. The development of the Actuarial Value of Assets as of December 31, 2022 is shown in the table below:

Development of the Actuarial Value of Assets for the Year Ending	December 31, 2022
Market Value of Assets, Beginning of Year	\$ 318,872,382
Employer Contributions	\$ 19,457,112
Employer Contributions Receivable	0
Benefit Payments and Administrative Expenses	(40,109,858)
Net Cash Flow	\$ (20,652,746)
Expected Investment Return	\$ 9,258,669
Expected Market Value of Assets, End of Year	\$ 307,478,305
Market Value of Assets, End of Year	\$ 261,531,147
Excess Market Value over Expected Market Value of Assets	\$ (45,947,158)
80% of 2021 Asset Gain/(Loss)	\$ (36,757,727)
60% of 2020 Asset Gain/(Loss)	(9,483,662)
40% of 2019 Asset Gain/(Loss)	4,557,948
20% of 2018 Asset Gain/(Loss)	3,062,777
Total Deferred Asset Gain/(Loss)	\$ (38,620,664)
Preliminary Actuarial Value of Assets, End of Year (not less than 80% and not greater than 120% of Market Value)	\$ 300,151,811
Final End of Year Actuarial Value of Assets	\$ 300,151,811
Estimated Net Investment Return on Actuarial Value	(0.27%)

Appendix D: Actuarial Assumptions and Methods

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

Economic Assumptions

Discount Rate

3.00% per year, compounded annually.

Expected Rate of Return on Assets

3.00% per year, net of investment expenses.

Expected Long-term Rates of Inflation

Both general and wage inflation are assumed to be 2.50% per year.

Expected Long-term Real Wage Growth

0.75% per year.

Expected Across-the-Board Salary Increases

For disability events that first occur on or after January 1, 1988, extended STD and LTD benefits (before reductions) are assumed to increase 3.25% per year. Otherwise, no increases have been assumed.

Expected Long-term National Average Wage Growth

3.25% per year for the purposes of calculating Social Security benefits.

Expected Future Increases in Social Security Benefits

For disability events that first occur on or after January 1, 1988, Social Security disability benefits are assumed to increase by 2.50% per year. Otherwise, no increases have been assumed.

Expected Administrative Expenses Included in Normal Cost

Estimated administrative expenses equal to 0.01% of payroll were included in the normal cost rate.

Appendix D: Actuarial Assumptions and Methods (continued)

Demographic Assumptions

Separations From Active Service

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

Rates of Withdrawal

Up to five years of membership								
Service	General Employees		Teachers, Librarians, and Counselors		Law Enforcement Officers		Other Education	
	Male	Female	Male	Female	Male	Female	Male	Female
0	0.0900	0.0900	0.0500	0.0350	0.0350	0.0350	0.0900	0.0700
1	0.1700	0.1750	0.1750	0.1650	0.0925	0.0925	0.1900	0.1750
2	0.1500	0.1575	0.1550	0.1550	0.0925	0.0925	0.1700	0.1550
3	0.1250	0.1400	0.1450	0.1375	0.0950	0.0950	0.1300	0.1250
4	0.1100	0.1150	0.1150	0.1150	0.0800	0.0800	0.1100	0.1075

After five years of Membership								
Service	General Employees		Teachers, Librarians, and Counselors		Law Enforcement Officers		Other Education	
	Male	Female	Male	Female	Male	Female	Male	Female
25	0.2500	0.2500	0.3000	0.3500	0.0750	0.0750	0.2500	0.2500
30	0.1250	0.1200	0.0900	0.1000	0.0750	0.0750	0.1000	0.1500
35	0.0750	0.1000	0.0600	0.0575	0.0350	0.0350	0.0550	0.0750
40	0.0500	0.0575	0.0475	0.0400	0.0250	0.0250	0.0500	0.0650
45	0.0400	0.0400	0.0375	0.0350	0.0200	0.0200	0.0500	0.0475
50	0.0400	0.0400	0.0425	0.0400	0.0200	0.0200	0.0500	0.0450
55	0.0400	0.0400	0.0425	0.0400			0.0400	0.0350
60	0.0400	0.0400	0.0425	0.0400			0.0400	0.0350

Appendix D: Actuarial Assumptions and Methods (continued)

Pre-Retirement Mortality

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

Annual Rates of Mortality for Employees (Base rates using Pub-2010 Amount Weighted)								
Service	General Employees		Teachers, Librarians, and Counselors		Law Enforcement Officers		Other Education	
	Male	Female	Male	Female	Male	Female	Male	Female
25	0.00028	0.00009	0.00016	0.00009	0.00037	0.00020	0.00028	0.00009
30	0.00036	0.00015	0.00022	0.00014	0.00041	0.00027	0.00036	0.00015
35	0.00047	0.00023	0.00030	0.00020	0.00047	0.00036	0.00047	0.00023
40	0.00066	0.00036	0.00042	0.00031	0.00059	0.00049	0.00066	0.00036
45	0.00098	0.00056	0.00067	0.00048	0.00082	0.00067	0.00098	0.00056
50	0.00149	0.00083	0.00111	0.00073	0.00120	0.00091	0.00149	0.00083
55	0.00219	0.00123	0.00172	0.00107	0.00175	0.00123	0.00219	0.00123
60	0.00319	0.00186	0.00264	0.00161	0.00264	0.00168	0.00319	0.00186
65	0.00468	0.00296	0.00435	0.00270	0.00410	0.00228	0.00468	0.00296
70	0.00703	0.00489	0.00709	0.00485	0.00766	0.00454	0.00703	0.00489
74	0.01001	0.00731	0.00993	0.00809	0.01263	0.00787	0.01001	0.00731

Retirements

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

Annual Rates of Retirement

General Employees - Males							
Age	Service						
	5	10	15	20	25	30	35
50				0.030	0.040	0.600	0.600
55				0.030	0.040	0.400	0.350
60	0.090	0.070	0.070	0.100	0.225	0.400	0.270
65	0.180	0.250	0.250	0.300	0.400	0.275	0.300
70	0.180	0.250	0.225	0.225	0.250	0.300	0.300
75	1.000	1.000	1.000	1.000	1.000	1.000	1.000

General Employees - Females							
Age	Service						
	5	10	15	20	25	30	35
50				0.035	0.040	0.400	0.400
55				0.040	0.040	0.400	0.250
60	0.070	0.080	0.090	0.095	0.200	0.400	0.250
65	0.200	0.250	0.300	0.300	0.350	0.350	0.300
70	0.150	0.200	0.225	0.250	0.350	0.300	0.300
75	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Appendix D: Actuarial Assumptions and Methods (continued)

Annual Rates of Retirement (continued)

Teachers, Librarians, and Counselors - Males							
Age	Service						
	5	10	15	20	25	30	35
50				0.030	0.030	0.700	0.700
55				0.045	0.030	0.400	0.450
60	0.085	0.080	0.100	0.100	0.300	0.400	0.300
65	0.175	0.225	0.250	0.325	0.400	0.300	0.250
70	0.175	0.225	0.250	0.250	0.250	0.150	0.300
75	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Teachers, Librarians, and Counselors - Females							
Age	Service						
	5	10	15	20	25	30	35
50				0.050	0.045	0.650	0.750
55				0.050	0.045	0.400	0.375
60	0.080	0.100	0.100	0.130	0.250	0.500	0.375
65	0.250	0.300	0.250	0.350	0.475	0.450	0.400
70	0.225	0.250	0.300	0.300	0.300	0.400	0.325
75	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Law Enforcement Officers							
Age	Service						
	5	10	15	20	25	30	35
50			0.040	0.050	0.050	0.900	0.800
55	0.200	0.200	0.350	0.350	0.500	0.950	0.650
60	0.100	0.200	0.125	0.250	0.250	0.500	0.500
65	0.150	0.450	0.250	0.250	0.250	0.500	0.500
70	0.250	0.150	0.250	0.250	0.250	0.250	0.500
75	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Other Education Employees - Males							
Age	Service						
	5	10	15	20	25	30	35
50				0.035	0.045	0.500	0.500
55				0.040	0.050	0.300	0.300
60	0.080	0.070	0.100	0.090	0.200	0.300	0.275
65	0.100	0.250	0.250	0.300	0.275	0.250	0.275
70	0.100	0.250	0.250	0.225	0.300	0.250	0.350
75	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Appendix D: Actuarial Assumptions and Methods (continued)

Annual Rates of Retirement (continued)

Other Education Employees - Females							
Age	Service						
	5	10	15	20	25	30	35
50				0.045	0.045	0.400	0.500
55				0.045	0.060	0.300	0.300
60	0.070	0.090	0.100	0.100	0.300	0.375	0.300
65	0.175	0.250	0.250	0.300	0.350	0.300	0.350
70	0.150	0.200	0.225	0.200	0.275	0.200	0.350
75	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Salary Merit Increases

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

Service	General Employees	Teachers, Librarians and Counselors	Law Enforcement Officers	Other Education
0	3.00%	4.05%	4.80%	4.25%
5	1.80%	2.87%	3.10%	2.65%
10	1.10%	2.04%	2.00%	1.85%
15	0.60%	1.13%	0.80%	1.33%
20	0.50%	0.00%	0.80%	0.83%
25	0.40%	0.00%	0.80%	0.33%
30	0.00%	0.00%	0.40%	0.00%
>=35	0.00%	0.00%	0.00%	0.00%

Post-Retirement Mortality

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

Annual Rates of Post-Retirement Mortality (Healthy Members at Retirement)								
Service	General Employees		Teachers, Librarians, and Counselors		Law Enforcement Officers		Other Education	
	Male	Female	Male	Female	Male	Female	Male	Female
55	0.00455	0.00272	0.00335	0.00266	0.00327	0.00279	0.00455	0.00272
60	0.00649	0.00365	0.00471	0.00344	0.00549	0.00482	0.00649	0.00365
65	0.00963	0.00582	0.00672	0.00456	0.00957	0.00832	0.00963	0.00582
70	0.01610	0.01010	0.01183	0.00789	0.01711	0.01438	0.01610	0.01010
75	0.02818	0.01789	0.02187	0.01499	0.03085	0.02483	0.02818	0.01789
80	0.05037	0.03360	0.04030	0.02895	0.05571	0.04287	0.05037	0.03360

Appendix D: Actuarial Assumptions and Methods (continued)

Annual Rates of Post-Retirement Mortality						
Age	Contingent Survivors of Deceased Members		Members Disabled at Retirement			
	All Survivors		Non-Law Enforcement Officers		Law Enforcement Officers	
	Male	Female	Male	Female	Male	Female
55	0.01147	0.00742	0.02355	0.01692	0.01818	0.01587
60	0.01450	0.00975	0.02785	0.01914	0.02280	0.01833
65	0.02086	0.01332	0.03524	0.02178	0.02677	0.02051
70	0.03221	0.01931	0.04599	0.02706	0.03353	0.02450
75	0.04971	0.02946	0.06347	0.03718	0.04344	0.03239
80	0.07802	0.04698	0.09259	0.05517	0.05921	0.04678

Mortality Assumption

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

Mortality Projection

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

Deaths After Retirement (General Employees and Other Education)

Mortality rates are based on the General Mortality Table for Retirees. Rates for male members are multiplied by 105.5% at all ages. Rates for female members are multiplied by 95% for ages under 76, increased by 1% for each age up to age 90 and by 110% for all ages greater than 89. Because the retiree tables have no rates prior to age 50, the General Mortality Table for Employees is used for ages less than 50.

Deaths After Retirement (Teachers)

Mortality rates are based on the Below-median Teachers Mortality Table for Retirees. Rates for male members are multiplied by 96% for ages under 83, increased by 2% for each age up to 87 and by 106% for all ages greater than 86. Rates for female members are multiplied by 101% for age 81, increased by 1% for each age up to 85, and by 105% for all ages greater than 84. Because the retiree tables have no rates prior to age 55, the Below-median Teachers Mortality Table for Employees is used for ages less than 55.

Deaths After Retirement (Law Enforcement Officers)

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

Deaths After Retirement (Survivors of Deceased Members)

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

Appendix D: Actuarial Assumptions and Methods (continued)

Deaths After Retirement (Disabled Members at Retirement)

Mortality rates are based on the General Mortality Table for Disabled Retirees. Rates for male members not in Law Enforcement are Set Forward 3 years, while male members in Law Enforcement are Set Back 3 years. Rates for female members not in Law Enforcement are Set Back 1 year, while female members in Law Enforcement are Set Back 3 years.

Deaths Prior to Retirement

Mortality rates are based on the General Mortality Table for Employees for all employees except law enforcement officers. Mortality rates for law enforcement officers are based on the Safety Mortality Table for Employees.

Disability Rates

The table below provides age and gender based annual rates of disability per 1,000 lives exposed at sample ages:

Age	Male	Age	Female
20–24	0.74	20–24	0.65
25–29	0.74	25–29	0.65
30–34	1.06	30–34	2.52
35–39	1.91	35–39	2.54
40–44	2.43	40–44	3.8
45–49	3.19	45–49	4.97
50–55	5.31	50–53	8.38
56–61	7.37	54–62	7.63
62–64	5.96	63–64	5.05

These rates differ from the disability rates shown in the prior year report. It has been confirmed with the prior actuary that the rates shown above are the rates used in the prior valuation, and are comparable to the rates in the 12/31/2019 report after reflecting the experience study adopted for the 12/31/2020 valuation.

Decrement Timing and Adjustment

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

Appendix D: Actuarial Assumptions and Methods (continued)

Disability Claim Termination Rates

Monthly select disability claim termination rates were used for the first 24 months of disability. The following tables contain age-at-disability and gender-based rates of disability claim termination per 1,000 lives for sample durations of disability:

Males

Disability Duration (in months)	Age at Disability								
	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64
5	187.7	166.3	150.7	135.4	121.8	108.3	94.4	83.9	75.6
10	51.5	44.4	38.3	33.3	29.5	26.6	23.1	21.2	19.8
15	32.7	27.9	23.7	20.2	17.8	16.1	13.8	12.6	12.0
20	23.0	20.1	17.1	14.7	12.8	11.6	9.6	9.0	8.6
24	20.6	18.1	15.4	13.3	11.4	10.2	8.3	7.7	7.3

Females

Disability Duration (in months)	Age at Disability								
	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64
5	177.5	157.7	139.5	126.0	115.0	106.0	96.0	88.7	81.3
10	46.5	40.8	36.5	33.2	31.0	29.1	26.3	24.6	22.6
15	29.7	25.8	22.6	20.2	18.4	17.1	15.2	14.1	13.0
20	21.8	18.7	16.3	14.3	12.8	11.8	10.2	9.5	8.9
24	19.8	16.8	14.6	12.7	11.2	10.3	8.6	8.1	7.5

Annual select and ultimate disability claim termination rates were used after the first 24 months of disability, with select rates effective from 5 to 25 years. The following tables contain age-at-disability and gender-based rates of disability claim termination per 1,000 lives for sample durations of disability:

Males

Disability Duration (in years)	Age at Disability								
	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64
5	94.7	83.8	72.9	63.5	56.3	51.2	42.3	43.8	43.2
10	42.0	40.3	36.3	32.2	30.0	31.2	34.3	38.0	40.9
15	29.2	28.3	28.4	27.3	28.3	32.2	35.9	40.8	47.2
20	25.2	26.3	29.3	31.4	36.1	42.2	47.8	58.5	68.4
25	28.3	28.5	33.6	36.2	38.1	53.1	59.6	88.8	129.4

Appendix D: Actuarial Assumptions and Methods (continued)

Females

Disability Duration (in Years)	Age at Disability								
	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64
5	90.9	76.3	64.7	55.4	48.5	44.4	37.2	38.5	37.1
10	40.0	35.6	29.3	25.4	23.0	23.0	24.5	27.9	29.5
15	28.5	26.5	22.4	20.6	20.5	22.2	25.1	26.2	37.5
20	26.8	23.8	21.8	21.5	24.2	27.7	31.9	39.8	55.7
25	27.6	25.5	25.1	24.2	27.1	41.7	41.5	76.6	130.2

Dates of Disability

The date of disability is the calendar month, day, and year on which a claimant meets the definition of disability under Plan. This date is used to estimate the member's age-at-disability and the duration of the member's disability, which are used in the determination of the applicable monthly select, and annual select and ultimate, disability claim termination rates described above.

The Retirement Systems Division (RSD) did not provide date of disability or age-at-disability for members who are receiving extended short-term and long-term disability benefits under the Plan as of December 31, 2022. As instructed by RSD, we assumed that dates of disability for these members occurred twelve months before their benefit start dates. We note that benefit start dates could be deferred as a result of member decisions, any delay in the disability application and/or certification process(es), or any change in the applicable disability program (for example, if a new benefit start date would be generated for members who begin receiving long-term disability benefits after having exhausted extended short-term disability benefits). Nevertheless, we believe that the prescribed method is a reasonable approach because, generally speaking, members must have been enrolled for twelve months under the short-term disability program before extended short-term or long-term disability benefits can be paid, and the number of members whose estimated dates of disability reflect more recent event dates than actual experience would support is likely not significant.

Assumed Social Security Disability Benefit Approval Rates

Future Disabled Members

50% of members who had less than five years of service as of July 31, 2007 are assumed to receive approval for Social Security disability benefits from the conclusion of the waiting period and prior to the completion of four years of disability. All other members are assumed to receive approval for Social Security disability benefits.

Current Disabled Members

Actual Social Security disability benefit approval information is used where available. If actual Social Security disability decisions are not available, 50% of currently disabled members who had less than five years of service as of July 31, 2007 are assumed to receive approval for Social Security disability benefits. Otherwise, all other currently disabled members are assumed to receive approval for Social Security disability benefits.

Future State Health Plan Enrollment

Not applicable on a prospective basis. DIPNC does not pay any health care related benefits except to reimburse employers for health care costs during the second six months of the short-term disability period for members whose benefits were effective before July 1, 2019.

Appendix D: Actuarial Assumptions and Methods (continued)

Other Assumptions and Methods

Gross Benefit Adjustments

Our understanding is that the gross benefit amounts provided by the Retirement Systems Division (RSD) as of December 31, 2022 reflect the multipliers and/or limits applicable to the disability program in which the claimant is enrolled, as reported on the census data. For the purposes of estimating incurred but not reported (IBNR) liabilities, gross benefit amounts payable to members who are currently receiving extended short-term disability benefits were adjusted to reflect the multipliers used under the long-term disability program. However, if “unlimited” gross benefits were not provided on the census data, we assumed that claimants would have the highest allowable gross benefit under the Plan’s long-term disability provisions if the highest allowable extended short-term gross benefit was provided on the census data.

Social Security Benefit Offsets

Future Disabled Members

Estimated projected Social Security benefits for future disabled members are based on expected long-term National Average Wage growth assumptions, assumptions about future increases in Social Security benefits, valuation salaries from age at entry to future decrement dates, and the Social Security benefit determination rules applicable to the law year in effect on future decrement dates.

Estimated projected Social Security retirement benefits were adjusted to reflect reductions / increases for early / late commencement.

Current Disabled Members

Social Security benefit offsets were not provided for some claimants—for example, members who are currently receiving extended short-term disability benefits—as of December 31, 2022. We estimated Social Security benefits for affected claimants based on the relevant assumptions listed above, wages at termination projected backward reflecting relative changes in National Average Wages to member aged 20, and the Social Security benefit determination rules applicable to the 2022 law year. We did not estimate Social Security benefits for claimants with more than three years of disability.

Other Offsets

No additional offsets—including but not limited to Worker’s Compensation, VA benefits, and Outside Earnings—other than those reported, have been assumed.

Reported Compensation

Calendar year compensation provided by the System’s office.

Valuation Compensation

Reported compensation adjusted to reflect the assumed rate of pay as of the valuation date and the probability of decrement during the year.

Compensation Limits

No compensation limits are applied.

Marriage Assumption

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

Appendix D: Actuarial Assumptions and Methods (continued)

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.

Valuation Date

December 31, 2022

Benefits Not Valued

None.

Actuarial Cost Method

The funding valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently 3.00%), of each member's expected benefits at future disability events is determined, based upon age, service, and gender. The calculations take into account the probability of a member's disability, recovery from disability, death, retirement, or termination of employment prior to receiving benefits under the Plan. The present value of the expected benefits payable on account of active members is added to the present value of the expected future payments to currently disabled members to obtain the present value of all expected benefits payable by the Plan.

The actuarial cost method is a procedure for allocating the actuarial present value of postemployment benefits and expenses to time periods. The method used for funding purposes is known as the Aggregate actuarial cost method, and has the following characteristics:

- (i) The annual normal cost is determined for the entire group active participants rather than individually for each participant.
- (ii) This cost method does not identify or separately amortize unfunded actuarial liabilities. Thus, actuarial gains (losses), as they occur, reduce (increase) future normal costs.

The Aggregate actuarial cost method allocates the actuarial present value of postemployment benefits for all active participants and currently disabled members in excess of the Actuarial Value of Assets on a level basis over the present value of projected compensation for all active participants between the valuation date and the date that the last employee retires (collectively).

The portion of the actuarial present value allocated to the valuation year is called the normal cost. Under the Aggregate actuarial cost method, the annual normal cost is a percentage of the year-by-year projected total covered compensation for all employees. This actuarial cost method does not produce an Actuarial Accrued Liability, so the Actuarial Accrued Liability based on the Entry Age Normal (Level Percentage of Pay) actuarial cost method is often reported in connection with results based on the Aggregate actuarial cost method.

The actuarial cost method was prescribed by the System for the purposes of preparing the actuarially determined employer contribution rate for the Plan as of December 31, 2022.

Appendix D: Actuarial Assumptions and Methods (continued)

Asset Valuation Method

The Actuarial Value of Assets for the funding valuation is determined using the “five-year smoothed value” asset valuation method, which attempts to “flatten” the peaks and valleys inherent in market values of assets. Under this method, investment gains and losses are recognized in equal portions over a five-year period. Investment gains and losses are determined by comparing the actual return on market value for a given period to the anticipated earnings over the same period if the market value of assets at the beginning of the period, contributions, benefit payments, and administrative expenses during the period earned the expected rate of return for the portion of the period that each was expected to be including in, or excluded from, plan assets. The expected rate of return for this purpose is equal to the expected long-term rate of return assumption selected at the beginning of the experience period (in this case, 3.00% as of January 1, 2022). The resulting Actuarial Value of Assets cannot be less than 80% or more than 120% of the market value of assets. Please see Appendix C for the development of the Actuarial Value of Assets as of the valuation date.

The asset valuation method was prescribed by the System for the purposes of preparing the actuarially determined employer contribution rate for the Plan as of December 31, 2022.

Incurred But Not Reported Claims (IBNR)

IBNR claims are based on the one-year term cost for expected disablements during the year. For long-term disability, a reserve of 14/12 of the term cost is added to account for the waiting time after disability to receive LTD benefits. As of the December 31, 2022 valuation, the assumed timing of the IBNR benefit payments was adjusted to remove a one-year delay.

Funding Policy

The actuarial cost method, asset valuation method, and other components of the contribution allocation procedure were considered and approved by the Board during the most recent experience study. ADC rates as of the valuation date were developed based on the Plan’s Normal Cost as a percent of pay plus an allowance for administrative expenses, as approved by the System.

Other Assumptions and Methods

Unless otherwise stated above, all other actuarial assumptions and methods are the same as those used for the purpose of determining periodic funding contributions as of December 31, 2020.

Please see the December 31, 2021 actuarial valuation report for additional information about the data, assumptions, methods, and plan provisions used to prepare results as of the December 31, 2021 measurement date. Likewise, additional information concerning historical results can be found in the relevant actuarial valuation report for each valuation date. Please keep in mind that any information that may be included in this report for periods prior to December 31, 2021 was produced by other actuarial consulting firms.

Changes in Funding Assumptions and Methods Since the Prior Valuation

The assumptions used for the December 31, 2022 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 assumed timing of the IBNR benefit payments was adjusted to remove a one-year delay. There were no other material assumptions or methods that were changed since the prior valuation.

Appendix E: Summary of Main Benefit Provisions

This summary of main benefit provisions is intended to describe only the principal features of the Disability Income Plan of North Carolina (DIPNC, or the Plan), a cost-sharing, multiple employer defined benefit OPEB plan sponsored by the Teachers' and State Employees' Retirement System of North Carolina (the System) as interpreted for valuation purposes. All actual eligibility requirements and benefit amounts will be determined in accordance with the Plan document and any System practices, processes, and procedures.

Overview of the Plan

The Disability Income Plan of North Carolina became effective January 1, 1988. The Plan replaced the Disability Salary Continuation Plan for Teachers and State Employees of North Carolina (DSC Plan). Those beneficiaries disabled prior to January 1, 1988 continue to be covered under the provisions of the DSC Plan as in effect December 31, 1987. Beneficiaries disabled on or after January 1, 1988 are covered under the provisions of the Disability Income Plan.

Membership in the Plan

All teachers and other employees who are in active service and are members of the Teachers' and State Employees' Retirement System (TSERS) or the UNC Optional Retirement Program (ORP) on or after January 1, 1988 are eligible to participate in the Plan.

Definition of Disability

The mental or physical incapacity for the further performance of duty of a beneficiary; provided that such incapacity was not the result of terrorist activity, of active participation in a riot, of the commission or attempt to commit a felony, or of the intentional self-infliction of an injury.

Definition of Base Rate of Compensation

The regular monthly rate of compensation not including pay for shift premiums, overtime, or other types of extraordinary pay as determined by the Board of Trustees.

Definition of Annual Longevity Payment

Full-time and part-time (20 hours or more) permanent, probationary, and time-limited employees are eligible for annual longevity payments, whereas, part-time (less than 20 hours) and temporary employees are not eligible for these payments.

Annual longevity pay amounts are based on the length of total State service and a percentage of the eligible employee's annual base rate of compensation on the date of eligibility. Longevity pay amounts are determined by multiplying the eligible employee's annual base rate of compensation by the appropriate percentage from the following table:

Years of Total State Service	Longevity Pay Percentage
Under 10 years	0.00%
10 but less than 15 years	1.50%
15 but less than 20 years	2.25%
20 but less than 25 years	3.25%
25 or more years	4.50%

Appendix E: Summary of Main Benefit Provisions (continued)

Short-Term Disability Benefits

Eligibility for Short-Term Disability Benefits

Prior to June 25, 2018, any participant who becomes disabled and is no longer able to perform his usual occupation after at least 365 calendar days succeeding his date of initial employment and at least one year of contributing membership service in the System may be eligible for STD benefits.

Effective June 25, 2018, any participant who becomes disabled and is no longer able to perform his or her usual occupation may be eligible for STD benefits provided all of the following conditions are met:

- (1) Application for the benefit occurs at least 365 calendar days succeeding the participant's date of initial employment as a teacher or employee;
- (2) The participant has at least one year of contributing membership service earned within 36 calendar months immediately preceding the date of disability. Salary continuation (see below) used during the period shall count toward this one-year requirement;
- (3) The member applies for short-term disability within one year of the end of the waiting period;
- (4) The participant's employer and attending physician certify that the participant is mentally or physically incapacitated for the further performance of duty; and,
- (5) The participant's incapacity was incurred at the time of active employment and has been continuous thereafter.

Waiting Period

A beneficiary shall receive no benefits from the Plan for a period of 60 continuous calendar days from the onset of disability determined as the last actual day of service, the day that the physician certified the disability, or the day succeeding at least 365 calendar days after the commencement of service as a teacher or employee, whichever is later.

Salary Continuation Benefits

During the waiting period, a beneficiary may be paid such salary continuation as provided by an employer through the use of sick leave, vacation leave or any other salary continuation.

A disabled beneficiary may elect to receive any such salary continuation in lieu of STD benefits provided such election shall not extend the 365 days duration of the STD period.

Commencement of STD Benefits

The STD benefit commences on the first day succeeding the waiting period.

Monthly STD Benefit Amounts

50% of 1/12th of the annual base rate of compensation last payable to the beneficiary prior to the beginning of the STD period plus 50% of 1/12th of the annual longevity payment to which the beneficiary would be eligible, to a maximum of \$3,000 per month, reduced by any other benefits that are payable to the beneficiary including but not limited to:

- (1) Monthly temporary total Workers' Compensation payments by any employer*;
- (2) Monthly Veterans Administration (VA) disability payments for the same (or for a related) disability;
- (3) Monthly benefits payable under other Federal or certain statutory disability plans;

* However, STD benefits are not offset by permanent, partial Workers' Compensation benefits.

Appendix E: Summary of Main Benefit Provisions (continued)

- (4) Monthly wages or other income paid by public or private employers in excess of the participant's earnable allowance. If a beneficiary has earnings in excess of the STD benefit, the STD benefit shall be also reduced on a dollar-for-dollar basis by the amount that exceeds the STD benefit; and,
- (5) Monthly severance pay as a result of a reduction-in-force from the State.

Post Disability Benefit Adjustments

The compensation upon which the STD benefit is calculated may be increased by any percentage across-the-board salary increases granted by the General Assembly.

Duration of STD Benefits

STD benefits are payable for up to 365 days following the waiting period. Benefits are paid by the employer outside of the trust.

Extended Short-Term Disability Benefits

Eligibility for Extended Short-Term Disability Benefits

Any beneficiary who completes 365 days of short-term disability benefits may be eligible to receive extended STD benefits if the disability is expected to end during the extended period, and the extension is approved by the Medical Board.

Waiting Period

There is no waiting period for extended STD benefits. However, a member must exhaust STD benefits before extended STD benefits can be paid.

Salary Continuation Benefits

Same as for STD benefits.

Commencement of Extended STD Benefits

The extended STD benefit commences on the first day succeeding the conclusion of the short-term disability period.

Monthly Extended STD Benefit Amounts

Same as STD benefit amounts.

Post Disability Benefit Adjustments

Same as for STD benefits.

Duration of Extended STD Benefits

Extended STD benefits are payable for up to an additional 365 days beyond the initial 365 day short-term period. During this extended period, STD benefits are paid directly from the trust.

Appendix E: Summary of Main Benefit Provisions (continued)

Long-Term Disability Benefits

Eligibility for Long-Term Disability Benefits

Any beneficiary who has five or more years of contributing membership service in the System, earned within the 96 calendar months prior to becoming disabled or the cessation of continuous salary continuation payments, whichever is later, may be eligible to receive LTD benefits from the Plan upon approval by the Board of Trustees provided that the disability is likely to be permanent, and the beneficiary or participant withdraws from active service by terminating employment as a teacher or State employee.

Waiting Period

There is no waiting period for LTD benefits. However, a member must exhaust STD benefits before LTD benefits can be paid.

Salary Continuation Benefits

A disabled beneficiary may elect to receive any such salary continuation in lieu of LTD benefits provided such election shall not extend the first 36 consecutive calendar months of the LTD period.

Commencement of LTD Benefits

Benefits commence on the first day succeeding the conclusion of the short-term disability period provided the beneficiary makes application for such benefits within 180 days after the short-term disability period ceases or after salary continuation payments cease, whichever is later.

Monthly LTD Benefit Amounts

65% of 1/12th of the annual base rate of compensation last payable to the beneficiary prior to the beginning of the STD benefit period plus 65% of 1/12th of the annual longevity payment to which the beneficiary would be eligible, to a maximum of \$3,900 per month, reduced by any other benefits that are payable to the beneficiary including but not limited to:

- (1) Monthly primary Social Security disability benefits*;
- (2) Monthly temporary total or partial Workers' Compensation payments by any employer;
- (3) Monthly Veterans Administration (VA) disability payments for the same (or for a related) disability; Monthly benefits payable under other Federal or certain statutory disability plans;
- (4) Monthly benefits payable from TSERS, or other retirement systems supported by the State;
- (5) Monthly benefits payable through other insurance plans to which the State contributes;
- (6) Monthly wages or other income paid by public or private employers in excess of the participant's earnable allowance; and,
- (7) Monthly severance pay as a result of a reduction-in-force from the State.

** For members with less than five years of service as of July 31, 2007, LTD benefits terminate after 36 months if the member has not been approved for Social Security disability benefits. Otherwise, the beneficiary's benefit shall be reduced by an amount—as determined by the Board of Trustees—equal to the primary Social Security disability benefit to which the beneficiary might have been entitled had the beneficiary been awarded Social Security disability benefits. We did not estimate Social Security benefits for claimants with more than three years of disability.*

However, in any event, the monthly LTD benefit payable after all offsets have been deducted cannot be less than \$10 per month.

Appendix E: Summary of Main Benefit Provisions (continued)

Post Disability Benefit Adjustments

The compensation upon which the long-term disability benefit is calculated may be increased by any percentage across-the-board salary increases granted by the General Assembly. Benefits shall be reduced by future increases granted by the Social Security Administration.

Duration of LTD Benefits

Under N.C. G.S. § 135-112, some participants who were actively employed on January 1, 1988 and started receiving LTD benefits before completing 5 years of contributory membership service will receive lifetime benefits in lieu of service accruals under the System.

For all other participants, the LTD benefit is payable until the earliest date at which the beneficiary is eligible for an unreduced service retirement allowance from TSERS, or the termination of disability, whichever occurs first.

Please see the actuarial valuation report for TSERS presented concurrently with this report for a complete description of the eligibility requirements related to TSERS unreduced service retirement allowances for various employee groups.

DSC Plan Long-Term Disability Benefits

Eligibility for DSC Plan Long-Term Disability Benefits

Only participants who were first disabled prior to January 1, 1988 and are currently receiving LTD payments are eligible for LTD benefits under the predecessor Disability Salary Continuation Plan (DSC Plan).

Monthly DSC Plan LTD Benefit Amounts

60% of monthly salary to a maximum of \$1,000 per month reduced by benefits payable from other plans including but not limited to:

- (1) Social Security benefits payable:
Before July 1, 1974—full family benefits.
On or after July 1, 1974—primary benefits only;
- (2) Workers' Compensation, and other Federal and certain statutory disability benefits;
- (3) Benefits payable from TSERS, or other retirement systems supported by the State;
- (4) Benefits payable through other insurance plans to which the State contributes; and,
- (5) Wages or other income paid by public or private employers in excess of the participant's earnable allowance.

Post Disability Benefit Adjustments

DSC Plan LTD benefits shall not be increased by future across-the-board salary increases granted by the General Assembly nor decreased by any future increases granted by the Social Security Administration.

Duration of DSC Plan LTD Benefits

The LTD benefit under the DSC Plan is payable until the termination of disability.

Appendix E: Summary of Main Benefit Provisions (continued)

Termination of Disability Benefits

Disability benefits will end—and all future disability benefits will be forfeited—if a beneficiary receives a refund of his or her contributions or, in the case of STD benefits, starts receiving a retirement benefit from the System. Disability benefits can also be terminated by member request.

Plan benefits may be terminated by the System for reasons including but not limited to:

- (1) The beneficiary returns to a contributing membership position with TSERS or ORP;
- (2) Beneficiary earnings consistently exceed his or her earnable allowance;
- (3) A medical professional does not continue to certify the beneficiary's disability when a reexamination is requested by the Medical Board;
- (4) The Medical Board certifies that the beneficiary is no longer disabled;
- (5) The beneficiary did not have 5 years of service as of July 31, 2007 and was denied or did not receive approval for Social Security disability benefits after receiving 36 months of LTD payments;
- (6) The beneficiary becomes eligible (or would have become eligible) for a TSERS unreduced service retirement benefit while he or she is receiving LTD benefits; or
- (7) The beneficiary dies.

Contributions

The Plan is funded solely through contributions made by the State and/or employing units. Participants do not contribute.

Changes in Benefit Provisions Since the Prior Valuation

Buck reviewed legislative changes with RSD and no material changes since the prior valuation were identified.