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*The experience and dedication you deserve*

# **Disability Income Plan of North Carolina Principal Actuarial Valuation Results as of December 31, 2020**

## **October 28, 2021 Board of Trustees Meeting**

**Larry Langer, ASA, FCA, EA, MAAA**

**Wendy Ludbrook FSA, FCA, EA, MAAA**



Disability Income Plan  
**Principal December 31, 2020**  
**Actuarial Valuation Results**



Valuation Results as of	December 31, 2020	December 31, 2019
Active Members		
Teachers' and State Employees' Retirement System (TSERS)	302,771	305,962
Optional Retirement Program (ORP)	<u>21,266</u>	<u>22,052</u>
Total	324,037	328,014
Reported Compensation		
TSERS	\$ 15,287,665,011	\$ 14,886,467,797
ORP	<u>2,193,689,991</u>	<u>2,047,379,956</u>
Total	\$ 17,481,355,002	\$ 16,933,847,753
Valuation Compensation*		
TSERS	\$ 16,423,317,494	\$ 16,105,740,207
ORP	<u>2,193,689,991</u>	<u>2,253,346,631</u>
Total	\$ 18,617,007,484	\$ 18,359,086,838
Number of beneficiaries receiving extended short-term or long-term disability benefits	5,328	5,684
Annual reported benefits	\$ 59,830,205	\$ 63,083,128

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

Disability Income Plan  
**Principal December 31, 2020**  
**Actuarial Valuation Results**



Asset and Liabilities as of	December 31, 2020	December 31, 2019
<b>Assets</b>		
Actuarial Value	\$ 340,568,712	\$ 361,335,426
Market Value	\$ 352,063,991	\$ 363,446,509
Liability for currently disabled members	\$ 267,847,204	\$ 271,027,525
Deficit/(Surplus) versus Actuarial Value	\$ (72,721,508)	\$ (90,307,901)
<b>ADC Rate for Fiscal Year Ending (FYE)</b>		
	<b>June 30, 2023</b>	<b>June 30, 2022</b>
Preliminary Actuarially Determined Contribution (ADC) Rate		
Normal Cost	0.11%	0.09%
Accrued Liability	<u>N/A</u>	<u>N/A</u>
Total	0.11%	0.09%
ADC Rate with Direct Rate Smoothing	0.10%	N/A
Impact of Legislative Changes	<u>N/A</u>	<u>N/A</u>
Final ADC Rate**	N/A	N/A

\*\* For FYE 2022 and 2023, 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
12/31/2020	6/30/2023	0.11%	N/A	0.10% <sup>1</sup>	N/A
12/31/2019	6/30/2022	0.09%	N/A	0.09% <sup>1</sup>	N/A
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%

<sup>1</sup> 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 2022 or 2023.



# Experience Study

- The assumptions used for the December 31, 2020 actuarial valuation are based on the experience study prepared as of December 31, 2019 and adopted by the Board of Trustees on January 28, 2021.
- Material assumptions and methods that were changed since the prior valuation:
  - The investment return assumption was lowered from 3.75% to 3.00%
  - The inflation assumption was lowered from 3.00% to 2.50%
  - The real wage growth assumption was increased from 0.50% to 0.75%
  - The payroll growth assumption was lowered from 3.50% to 3.25%
  - The withdrawal rates, retirement rates, disability rates, mortality assumption, and annual rate of salary increase assumptions were changed
  - The marriage assumption was changed from assuming male spouses are four years older than female spouses to assume that male spouses are three years older than female spouses
  - The long-term health care cost trend rates were updated to better reflect the anticipated impact, as of June 30, 2021, of changes in medical inflation, utilization, leverage in the plan design, and improvements in technology on expected active (non-Medicare primary) subscriber 70/30 plan health care premium rates in future periods



# Certification

Cavanaugh Macdonald Consulting, LLC was retained as the actuary for the Disability Income Plan of North Carolina (the Plan) and has prepared this December 31, 2020 actuarial valuation report for the Plan. 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 the purposes stated herein, and its use for other purposes may not be appropriate. Calculations for purposes other than those described in this report may produce significantly different results.

Additional information and disclosures related to the census and financial data, assumptions, methods, and Plan information provided by the System for valuation purposes can be found in the unabridged December 31, 2020 actuarial valuation report for the Plan. Results prior to December 31, 2017 were provided by the prior consulting actuary.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. Retiree group benefits models necessarily rely on the use of approximations and estimates, and small variations in these approximations and estimates may lead to significant changes in actuarial measurements. Because of limited scope, Cavanaugh Macdonald Consulting performed no analysis of the potential range of such future differences, except for some limited analysis in required disclosure information. **This report does not consider all possible scenarios.**



# Certification

The funded status measurements included in this report are based on the assumptions and methods used as of the valuation and/or measurement date. These funded status measurements 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. 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.

Cavanaugh Macdonald Consulting 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.

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

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

Alisa Bennett, FSA, EA, FCA, MAAA  
Principal and Consulting Actuary



Cavanaugh Macdonald  
CONSULTING, LLC

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# Disability Income Plan of North Carolina

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

October 2021





# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

October 8, 2021

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, 2020.

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, 2023, 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.

In addition, the report contains information that will be used by the Office of the State Controller (OSC) in its Comprehensive Annual Financial Report, and provides the DIPNC information required under Governmental Accounting Standards Board (GASB) Statement No. 74 for the fiscal year ending on June 30, 2021 based on a valuation date of December 31, 2020.

### **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, 2023 and Plan accounting purposes for the fiscal year ending on June 30, 2021, and its use for other purposes may not be appropriate. Calculations for purposes other than funding the DIPNC benefits described in this report or reporting the Plan accounting information required under GASB 74, 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, OSC, 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. None of the attached pages should be provided to any other parties without a copy of this cover letter. Moreover, no person or entity may make any representations or warranties based on any statements or conclusions contained in this report without the express written consent of Cavanaugh Macdonald Consulting.

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, 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 financial accounting information provided in this report reflects our current understanding of GASB 74, including any applicable guidance provided by the System, or its audit partners as of the date of this report.

The measurement of Plan obligations used as the basis for much of the information presented in this report was performed as of December 31, 2020 ("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, 2020;
- Current plan provisions, including changes since December 31, 2019;
- Pertinent financial information as of December 31, 2020; and,
- Unaudited financial information as of June 30, 2021.

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, 2020 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. All GASB 74 assumptions—including, but not limited to, discount rates, expected rates of return on assets, long-term health care cost trend rates, and expected active employee health care coverage election assumptions—have been selected by the System's governing bodies for the measurement of the Plan's benefit obligations as of June 30, 2021 based on the December 31, 2020 valuation date, and should reflect best estimates of anticipated Plan experience. 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 in the Plan's December 31, 2020 annual actuarial valuation. We believe that these methods are appropriate for funding purposes. Additionally, the actuarial cost method, the asset valuation method, and the amortization methods are prescribed under GASB rules for financial accounting purposes as of the June 30, 2020 and June 30, 2021 measurement dates. Actuarial methods such as the actuarial cost methods, asset valuation methods, and amortization methods used in the contribution allocation procedure (for funding purposes) and cost allocation procedure (for financial accounting purposes) 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 other than the sensitivity to changes in the discount rate and healthcare cost trend rates required by GASB 74. **This report does not consider all possible scenarios.**

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.

Cavanaugh Macdonald Consulting 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.



We are available to answer questions about this report or the information provided herein.

Respectfully submitted,

A handwritten signature in blue ink that reads 'Alisa Bennett'.

Alisa Bennett, FSA, EA, FCA, MAAA  
Principal and Consulting Actuary

A handwritten signature in blue ink that reads 'Larry Langer'.

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

A handwritten signature in blue ink that reads 'Wendy Ludbrook'.

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



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## Section 1: Introduction

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This report presents the results of the actuarial valuation of the Disability Income Plan of North Carolina, prepared as of December 31, 2020. The purpose of the valuation is to determine the present value of future payments to disabled members as of December 31, 2020, to determine the expected cost of new claims for 2020, 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, and to provide the financial accounting information required under GASB Statement No. 74 for postemployment benefits.

Appendix A presents detailed tabulations of the active membership of the Plan as of the valuation date. Likewise, 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 June 30, 2021. A summary of the main Plan provisions used for valuation purposes appears in Appendix E.

Appendices F and G of this report present the projection of the Plan's fiduciary net position and present value of benefits required under GASB 74



## Section 2: Summary of Principal Results

The principal results of the valuation and a comparison with the preceding year's results are provided in the table below:

**Table 1: Summary of Principal Results**

Valuation Results as of	December 31, 2020	December 31, 2019
<b>Active Members</b>		
Teachers' and State Employees' Retirement System (TSERS)	302,771	305,962
Optional Retirement Program (ORP)	<u>21,266</u>	<u>22,052</u>
Total	324,037	328,014
<b>Reported Compensation</b>		
TSERS	\$ 15,287,665,011	\$ 14,886,467,797
ORP	<u>2,193,689,991</u>	<u>2,047,379,956</u>
Total	\$ 17,481,355,002	\$ 16,933,847,753
<b>Valuation Compensation*</b>		
TSERS	\$ 16,423,317,494	\$ 16,105,740,207
ORP	<u>2,193,689,991</u>	<u>2,253,346,631</u>
Total	\$ 18,617,007,484	\$ 18,359,086,838
Number of beneficiaries receiving extended short-term or long-term disability benefits	5,328	5,684
Annual reported benefits	\$ 59,830,205	\$ 63,083,128
<b>Asset and Liabilities as of</b>		
<b>December 31, 2020</b>		
<b>December 31, 2019</b>		
<b>Assets</b>		
Actuarial Value	\$ 340,568,712	\$ 361,335,426
Market Value	\$ 352,063,991	\$ 363,446,509
Liability for currently disabled members	\$ 267,847,204	\$ 271,027,525
Deficit/(Surplus) versus Actuarial Value	\$ (72,721,508)	\$ (90,307,901)
<b>ADC Rate for Fiscal Year Ending (FYE)</b>		
<b>June 30, 2023</b>		
<b>June 30, 2022</b>		
<b>Preliminary Actuarially Determined Contribution (ADC) Rate</b>		
Normal Cost	0.11%	0.09%
Accrued Liability	<u>N/A</u>	<u>N/A</u>
Total	0.11%	0.09%
ADC Rate with Direct Rate Smoothing	0.10%	N/A
Impact of Legislative Changes	<u>N/A</u>	<u>N/A</u>
Final ADC Rate**	N/A	N/A

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

\*\* For FYE 2023, the ADC Rate may be adjusted to reflect Plan changes that occur after the date of this report.



## Section 2: Summary of Principal Results

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

Fiscal Year Ending June 30, 2022 Preliminary ADC Rate (Based on the December 31, 2019 Valuation)	0.09%
Impact of Legislative Changes	<u>0.00%</u>
Fiscal Year Ending June 30, 2022 Final ADC Rate	0.09%
Change Due to Demographic (Gain)/Loss	0.01%
Change Due to Changes in Assumptions	0.01%
Change Due to Investment (Gain)/Loss	0.00%
Change Due to Contribution (Greater)/Less than ADC	<u>0.00%</u>
Preliminary ADC Rate	0.11%
Impact of Direct Rate Smoothing	-0.01%
Impact of Legislative Changes	<u>0.00%</u>
Fiscal Year Ending June 30, 2023 Final ADC Rate (Based on the December 31, 2020 Valuation)	0.10%

**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
12/31/2020	6/30/2023	0.11%	N/A	N/A	N/A
12/31/2019	6/30/2022	0.09%	N/A	N/A	N/A
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%



## Section 2: Summary of Principal Results

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 Accrued 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%)

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 302,771 active members of the Teachers' and State Employees' Retirement System with reported compensation of \$15,287,665,011 and 21,266 members of the Optional Retirement Program with reported compensation of \$2,193,689,991 were furnished by the Retirement Systems Division as of December 31, 2020. The reported compensation includes annual longevity payments. The number and reported compensation of active members distributed by age and service as of December 31, 2020, 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 5,328 disabled employees in receipt of annual extended short-term and long-term disability benefits totaling \$59,830,205 as of the valuation date. Of this number, 52 disabled employees are grandfathered under all provisions of the prior Disability Salary Continuation Plan and 5,276 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

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Asset information taken into account in this valuation is based principally on information reported by the Retirement Systems Division. The market value of assets for the Plan is \$352,063,991 as of December 31, 2020.

The Actuarial Value of Assets for the Plan is \$340,568,712 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, 2020.

**Table 5: Allocation of Investments by Category  
as of December 31, 2020**

Cash and Receivables	7.8%
Fixed income (LTIF)	92.2%
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, 2020. The items shown in the table, other than the Actuarial Value of Assets, are actuarially determined present values or contribution rates as of the valuation date.

**Table 6: Statement of Condition of the Plan as of December 31, 2020**

Present value of prospective benefits payable to all disabled members as of the valuation date for:	
Extended STD and LTD approved claims	\$ 230,493,911
LTD incurred but not reported claims	37,353,293
STD incurred but not reported claims	-
Total claim liability	\$ 267,847,204
Actuarial Valuation of Assets at end of year	\$ 340,568,712
Deficit/(Surplus) as of December 31, 2020	\$ (72,721,508)
Prospective present value of benefits for current active members	\$ 252,683,285
Present value of benefits not covered by Actuarial Value of Assets	\$ 179,961,777
Present value of future compensation for active members	\$ 179,126,179,260
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, 2020	0.11%
Actuarially determined contribution rate as of December 31, 2020 with Direct Rate Smoothing	0.10%

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 assumptions and methods used to determine claim liabilities are described in Appendix D.



## Section 6: Experience

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Section 5 shows that the surplus under the Plan has decreased by \$16,586,392 from \$90,307,901 to \$72,721,508 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 7: Reconciliation of Change in Deficit / (Surplus)  
Since the Prior Valuation**

Prior Year Deficit/ (Surplus)	\$	(90,307,901)
Prior Year IBNR Claims		(37,736,582)
Actual Contributions During the Period		(17,235,226)
Receivable Contributions		0
Interest Adjustment		(5,121,854)
Aging of the In-Payment Population		8,541,832
Extended STD Experience		1,003,492
LTD Experience		27,537,497
Asset Loss/ (Gain) <sup>1</sup>		(2,089,840)
Assumption Changes		5,333,781
Current Year IBNR Claims		37,353,293
Current Year Deficit/(Surplus)	\$	(72,721,508)

<sup>1</sup>The Plan's Actuarial Value of Assets is the basis for the asset (gain)/loss reported above.



## Section 7: Accounting Information

This section contains the accounting information for GASB 74 for the fiscal year ending on June 30, 2021, based on a December 31, 2020 valuation date. The Plan is assumed to be a cost-sharing, other than insured, defined benefit OPEB plan without a special funding situation where assets are accumulated in a trust that meets the criteria outlined in paragraph 3 of GASB 74. Additionally, the System elected not to restate results for any period prior to the adoption of GASB 74.

The June 30, 2021 total OPEB liability presented in this section was determined by an actuarial valuation as of December 31, 2020, based on the assumptions, methods and plan provisions described in this report. The actuarial cost method used to develop the total pension liability is the Entry Age Normal Cost method, as required by GASB Statement No. 74.

GASB Statement No. 74 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 Disabled Members  
as of December 31, 2020**

Membership Group	Number
Disabled members currently receiving extended short-term and long-term disability benefits	5,328
Inactive plan members entitled to, but not currently receiving benefits	-
Active members, including those in the waiting period or on short-term disability	324,037
Total membership	329,365

A 3.00% discount rate was used to measure the Plan's Total OPEB Liability as of June 30, 2021. The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the current funding policy. Based on those assumptions, the Plan's fiduciary net position (PFNP) was projected to be available to make all projected future benefit payments to current Plan members. Please see Appendices F and G for additional details.



## Section 7: Accounting Information

GASB Statement No. 74 set forth certain items of information to be disclosed in the financial statements of the Plan. The tables below provide the reconciliation of changes in the Net OPEB Liability / (Asset) (NOL).

**Table 9: Reconciliation of Changes in Net OPEB Liability / (Asset)**

Fiscal Year Ending On	June 30, 2021
<b>Total OPEB Liability</b>	
Service Cost	\$ 23,010,000
Interest	10,969,000
Changes in Benefit Terms	0
Difference Between Expected and Actual Experience	15,758,000
Changes of Assumptions or Other Inputs	(2,935,000)
Net Benefit Payments	(47,453,000)
<b>Net Change in Total OPEB Liability</b>	<b>\$ (651,000)</b>
<b>Total OPEB Liability – Beginning of Year</b>	<b>\$ 316,039,000</b>
<b>Total OPEB Liability – End of Year</b>	<b>\$ 315,388,000</b>
 <b>Plan Fiduciary Net Position</b>	
Employer Contributions	\$ 16,226,000
Member Contributions	N/A
Net Investment Income	(1,292,000)
Net Benefit Payments	(47,453,000)
Administrative Expenses	(879,000)
Other	(113,000)
<b>Net Change in Plan Fiduciary Net Position</b>	<b>\$ (33,511,000)</b>
<b>Plan Fiduciary Net Position – Beginning of Year</b>	<b>\$ 365,233,000</b>
<b>Plan Fiduciary Net Position – End of Year</b>	<b>\$ 331,722,000</b>



## Section 7: Accounting Information

**Table 10: Schedule of the Net OPEB Liability / (Asset)**

Measurement Date as of	June 30, 2021	June 30, 2020
Total OPEB Liability	\$ 315,388,000	\$ 316,039,000
Plan Fiduciary Net Position	331,722,000	365,233,000
Net OPEB Liability (Asset)	\$ (16,334,000)	\$ (49,194,000)
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability (Asset)	105.18%	115.57%
Covered Payroll	\$17,481,355,002	\$ 16,933,847,753
Net OPEB Liability (Asset) as a Percentage of Covered Payroll	(0.09%)	(0.29%)

The sensitivity of the NOL to changes in the discount rate must be disclosed under GASB 74. The table below provides the NOL of the Plan determined using the current discount rate of 3.00%, as well as what the Plan's NOL would be if the discount rate was 1-percentage-point lower or 1-percentage-point higher than the current rate:

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

	1% Decrease	Current	1% Increase
Discount Rate	2.00%	3.00%	4.00%
Net OPEB Liability (Asset)	\$ (10,313,000)	\$ (16,334,000)	\$ (21,904,000)

A 3.00% discount rate was used to measure the Plan's Total OPEB Liability as of June 30, 2021. The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the current funding policy. Based on those assumptions, the Plan's fiduciary net position (PFNP) was projected to be available to make all projected future benefit payments to current Plan members. Please see Appendices F and G for additional details.



## Section 7: Accounting Information

The sensitivity of the NOL to changes in health care cost trend rates must also be disclosed under GASB 74. The table below provides the NOL of the Plan determined using current health care cost trend rates, as well as what the Plan's NOL would be if health care cost trend rates were 1-percentage-point lower or 1-percentage-point higher than current health care cost trend rates:

**Table 12: Sensitivity of the Net OPEB Liability / (Asset) at June 30, 2021 to Changes in Healthcare Cost Trend Rates**

	1% Decrease	Current	1% Increase
Initial Trend Rate	5.00%-8.50%	6.00%-9.50%	7.00%-10.50%
Ultimate Trend Rate	4.00%	5.00%	6.00%
Net OPEB Liability (Asset)	\$ (17,192,000)	\$ (16,334,000)	\$ (15,265,000)

The table below provides a reconciliation of the preliminary employer actuarially determined contribution rate to the final actuarially determined contribution amount for fiscal year ending on June 30, 2021. The preliminary actuarially determined contribution rate is based on the Plan's actuarial valuation as of December 31, 2018.

**Table 13: Development of the Actuarially Determined Contribution Amount for the Fiscal Year Ending June 30, 2021**

Fiscal Year Ending	June 30, 2021
Preliminary Actuarially Determined Contribution Rate	
Normal Cost	0.09%
Accrued Liability	<u>N/A</u>
Total	0.09%
Impact of Legislative Changes	<u>0.00%</u>
Final Actuarially Determined Contribution Rate	0.09%
Actual Payroll for Year Ending June 30, 2021	18,028,883,000
Actuarially Determined Contribution	16,225,995



## Section 7: Accounting Information

The tables below provide the actuarially determined contribution (ADC) rate for the employer as a percentage of payroll, determined in accordance with the Plan's funding policy, and a summary of the key assumptions and methods used in the determination of the ADC rate.

**Table 14: Fiscal Year 2021 / 2022 Actuarially Determined Contribution (ADC) Rate based on the Valuation as of December 31, 2020**

ADC Rate Component	Rate
Normal Cost	0.09%
Actuarial Accrued Liability	N/A
Total	0.09%

**Table 15: Additional Information About the Determination of the Fiscal Year 2022 / 2023 ADC Rate for GASB 74 Disclosures**

Valuation Date	December 31, 2020
Actuarial Cost Method	Aggregate
Amortization Method	Level percentage of payroll
Amortization Period	The aggregate cost method does not identify or separately amortize unfunded liabilities
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*	3.00%
Projected Salary Increases**	3.25% – 8.05%
* Includes Inflation of	2.50%
** Includes Inflation and Productivity of	3.25%
Cost-of-living Adjustments	3.25% for gross long-term disability benefits
State Health Plan	
Active Subscriber Premiums	
2020 70 / 30 Plan	\$0 per month on or after July 1, 2019
Healthcare Cost Trend Rates	From 6.00% in 2021 grading down to 5.00% in 2026 for pre-65 medical From 9.50% in 2021 grading down to 5.00% in 2030 for prescription drugs
Future State Health Plan Enrollment	100% of active employees will elect to enroll in the 70 / 30 Plan option
Expected Administrative Expenses Included in Normal Cost	0.01% of payroll



# Appendix A: Detailed Tabulation of Active Member Data

**Table A-1: The Number and Average Reported Compensation of Active Members Distributed by Age and Service as of December 31, 2020**

Age	Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25	2,959	4,709	30								7,698
	\$13,651	\$34,936	\$35,534								\$26,757
25 to 29	2,981	18,820	4,732	14							26,547
	\$14,973	\$40,085	\$45,103	*							\$38,165
30 to 34	2,122	14,009	15,060	3,002	33						34,226
	\$18,522	\$44,627	\$48,997	\$53,586	\$46,646						\$45,719
35 to 39	1,548	11,383	10,345	9,906	4,379	40					37,601
	\$18,861	\$49,749	\$54,926	\$57,469	\$59,621	\$52,182					\$53,088
40 to 44	1,221	9,600	9,072	7,479	10,395	3,843	29				41,639
	\$17,731	\$48,754	\$57,710	\$62,244	\$62,923	\$63,130	\$56,177				\$57,088
45 to 49	1,029	8,523	8,258	7,243	8,027	9,427	3,051	10			45,568
	\$17,361	\$47,072	\$54,232	\$61,860	\$62,268	\$65,044	\$67,209	*			\$57,793
50 to 54	923	7,715	7,924	7,549	8,450	7,641	7,414	1,143	8		48,767
	\$16,264	\$46,659	\$51,984	\$57,759	\$61,201	\$63,295	\$69,029	\$71,030	*		\$57,770
55 to 59	692	6,069	6,350	6,307	7,569	6,664	4,488	1,862	270	6	40,277
	\$15,016	\$45,994	\$50,620	\$54,333	\$56,392	\$60,078	\$65,931	\$72,691	\$70,763	*	\$55,407
60 to 64	342	3,890	4,641	4,565	5,406	4,713	2,885	1,263	543	129	28,377
	\$14,879	\$47,652	\$51,133	\$54,756	\$55,400	\$59,237	\$70,327	\$81,622	\$82,745	\$69,544	\$56,957
65 to 69	130	1,185	1,768	1,770	1,700	1,235	874	572	318	181	9,733
	\$14,666	\$45,460	\$55,983	\$58,577	\$62,147	\$66,835	\$79,580	\$100,972	\$108,704	\$88,347	\$64,163
70 & Up	42	503	597	589	608	429	267	200	147	222	3,604
	\$10,700	\$41,003	\$50,098	\$54,105	\$61,062	\$75,996	\$85,914	\$108,522	\$140,515	\$118,706	\$67,766
Total	13,989	86,406	68,777	48,424	46,567	33,992	19,008	5,050	1,286	538	324,037
	\$16,148	\$44,888	\$52,220	\$58,000	\$60,188	\$62,844	\$68,905	\$79,129	\$93,187	\$96,189	\$53,465

\* Average reported compensation is not shown for age / service groups with fewer than 20 individuals.



## Appendix A: Detailed Tabulation of Active Member Data

**Table A-2: The Number and Reported Compensation of Active Members Distributed by Age and Gender as of December 31, 2020**

Age	Male		Female	
	Number	Compensation	Number	Compensation
Under 19	4	*	1	*
19	18	*	31	398,184
20	81	1,394,528	73	1,115,958
21	174	4,221,271	227	3,933,375
22	326	8,590,887	714	13,892,119
23	639	16,866,348	1,875	44,189,340
24	955	30,713,407	2,580	80,408,674
25	1,175	41,478,742	3,040	103,195,530
26	1,427	53,539,460	3,459	124,750,726
27	1,551	60,430,377	3,834	143,534,894
28	1,644	66,751,187	4,180	162,344,756
29	1,835	77,950,871	4,402	179,156,337
30	1,942	86,256,084	4,668	196,493,246
31	2,104	95,830,240	4,757	205,560,241
32	2,075	100,279,509	4,799	216,050,043
33	2,070	102,490,589	4,811	217,803,264
34	2,136	113,878,025	4,864	230,143,608
35	2,209	122,905,875	4,861	235,818,316
36	2,307	128,237,042	5,041	253,616,707
37	2,332	135,393,298	5,033	256,740,680
38	2,453	147,929,300	5,303	274,580,921
39	2,444	145,457,169	5,618	295,479,720
40	2,476	155,018,618	5,611	301,090,697
41	2,547	162,117,729	5,711	304,116,023
42	2,456	154,449,627	5,746	315,312,018
43	2,568	164,844,409	5,882	321,038,983
44	2,580	169,956,171	6,062	329,138,511
45	2,498	165,336,527	5,806	317,268,099
46	2,682	176,264,636	6,196	337,271,981
47	2,788	179,552,351	6,267	341,221,765
48	2,836	187,106,023	6,487	349,322,297
49	3,070	201,141,248	6,938	379,027,169
50	3,307	216,967,671	7,587	409,179,355
51	3,133	213,385,839	7,279	398,849,691
52	2,950	202,471,302	6,815	369,798,556
53	2,782	184,337,705	6,256	330,244,419
54	2,626	174,953,646	6,032	317,077,910
55	2,644	174,065,112	5,710	292,706,106
56	2,577	166,859,308	5,557	283,789,773
57	2,528	166,361,191	5,574	288,760,656

\* Total reported compensation is not shown for groups with fewer than 20 individuals.



## Appendix A: Detailed Tabulation of Active Member Data

**Table A-2: The Number and Reported Compensation of Active Members Distributed by Age and Gender as of December 31, 2020 (continued)**

Age	Male		Female	
	Number	Compensation	Number	Compensation
58	2,525	162,785,689	5,400	272,837,616
59	2,399	151,174,177	5,363	272,281,089
60	2,357	150,579,179	4,893	248,676,401
61	2,094	137,952,814	4,403	227,300,596
62	1,971	131,171,212	3,794	196,609,162
63	1,694	116,366,530	3,082	163,969,541
64	1,437	98,356,839	2,652	145,299,988
65	1,159	80,541,058	2,070	114,453,434
66	947	71,365,390	1,348	74,700,037
67	773	60,980,223	989	57,332,846
68	585	45,910,084	736	40,519,373
69	518	42,947,025	608	35,746,247
70	418	34,980,169	484	27,883,998
71	287	21,839,900	287	14,680,493
72	269	20,809,120	230	11,137,943
73	223	18,863,753	190	10,363,750
74	201	16,079,454	165	9,161,666
75	114	9,410,376	99	5,093,271
76	90	7,005,191	72	3,825,341
77	77	6,262,971	56	2,827,889
78	67	4,912,504	51	2,084,464
79	47	4,619,298	27	1,196,164
80	25	2,125,138	14	*
81	20	1,492,129	11	*
82	16	*	7	*
83	14	*	2	*
84	9	*	3	*
85	5	*	4	*
86	3	*		
87	4	*	2	*
88	1	*	4	*
89	1	*	1	*
90				
91	2	*		
92				
93				
94				
95			1	*
Over 95			1	*
Total	101,301	6,159,818,336	222,736	11,321,536,666

\* Total reported compensation is not shown for groups with fewer than 20 individuals.

# Appendix B: Detailed Tabulation of Disabled Member Data



**Table A-3: The Number and Reported Compensation of Active Members Distributed by Service and Gender as of December 31, 2020**

Service	Male		Female	
	Number	Compensation	Number	Compensation
0	3,948	70,620,770	10,041	155,268,354
1	7,399	330,055,468	17,357	654,442,505
2	7,388	380,602,272	16,020	682,826,995
3	6,312	331,417,889	13,619	604,950,033
4	5,882	322,769,481	12,429	571,528,767
5	5,390	304,368,654	11,157	525,073,961
6	4,779	271,342,512	10,148	496,006,698
7	4,408	258,769,585	9,083	453,031,455
8	4,070	238,242,041	8,754	437,950,116
9	3,620	221,097,726	7,368	385,663,976
10	3,155	195,773,310	6,498	351,016,614
11	2,773	174,811,814	5,595	306,450,543
12	2,439	170,726,932	5,202	287,147,229
13	3,686	233,939,294	8,005	437,304,111
14	3,315	221,458,347	7,756	429,987,474
15	3,344	221,430,701	7,909	438,499,650
16	3,064	203,141,890	7,114	400,881,996
17	2,847	196,027,693	6,558	374,132,410
18	2,504	170,985,328	5,774	335,071,596
19	2,157	154,505,050	5,296	308,099,868
20	2,221	159,393,639	5,700	329,566,546
21	2,119	155,124,477	5,301	308,151,613
22	2,013	149,284,136	4,944	289,158,188
23	1,865	135,311,869	4,359	258,274,110
24	1,634	121,322,035	3,836	230,593,374
25	1,565	118,721,081	3,404	209,728,672
26	1,361	104,069,864	2,824	177,085,293
27	1,436	114,408,730	2,552	163,143,784
28	1,119	93,659,719	2,192	144,423,732
29	865	71,243,307	1,690	113,265,364
30	527	47,879,241	1,020	71,098,370
31	516	48,908,701	791	56,068,055
32	326	31,847,683	615	42,573,385
33	281	26,575,598	463	31,442,684
34	195	19,510,408	316	23,696,280
35	146	15,212,958	223	17,636,351
36	134	14,103,433	207	16,293,416
37	107	12,865,474	152	11,128,164
38	87	11,136,222	104	8,457,483
39	55	6,627,718	71	6,377,362
40	60	6,808,103	59	4,301,821

\* Total reported compensation is not shown for groups with fewer than 20 individuals.

## Appendix B: Detailed Tabulation of Disabled Member Data



**Table A-3: The Number and Reported Compensation of Active Members Distributed by Service and Gender as of December 31, 2020 (continued)**

Service	Male		Female	
	Number	Compensation	Number	Compensation
41	28	3,362,978	42	2,768,203
42	42	5,483,345	47	3,651,576
43	30	4,278,174	43	2,948,539
44	16	*	28	2,292,953
45	16	*	14	*
46	13	*	9	*
47	9	*	14	*
48	10	*	8	*
49	8	*	8	*
50	4	*	5	*
51	6	*	7	*
52	1	*		
53	4	*	2	*
54	1	*		
55				
56				
57				
58			1	*
59			1	*
60	1	*		
Over 60			1	*
Total	101,301	6,159,818,336	222,736	11,321,536,666

\* Total reported compensation is not shown for groups with fewer than 20 individuals.

## Appendix B: Detailed Tabulation of Disabled Member Data



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

Disability Group	As of December 31, 2020		As of December 31, 2019	
	Number	Annual Reported benefits	Number	Annual Reported Benefits
Disabled Prior to January 1, 1988	52	\$ 102,787	65	\$ 146,468
Disabled after December 31, 1987	<u>5,276</u>	<u>\$ 59,727,418</u>	<u>5,619</u>	<u>\$ 62,936,660</u>
Total	5,328	\$ 59,830,205	5,684	\$ 63,083,128

# Appendix B: Detailed Tabulation of Disabled Member Data



**Table B-2: The Number and Annual Long-Term Disability Benefits of Members Disabled Prior to January 1, 1988 by Age and Gender as of December 31, 2020**

Age	Male		Female	
	Number	Allowances	Number	Allowances
57				
58				
59				
60			1	*
61				
62				
63				
64			2	*
65			5	*
66	1	*	2	*
67			2	*
68	2	*	3	*
69				
70	2	*	1	*
71			1	*
72			2	*
73			4	*
74	1	*	2	*
75				
76			1	*
77	2	*		
78			2	*
79	1	*	2	*
80	1	*	1	*
81				
82			1	*
83	1	*	1	*
84				
85			1	*
86				
87				
88				
89			1	*
90			1	*
91			2	*
92				
93				
94				
95			1	*
Over 95			2	*
Total	11	*	41	*

\* To protect the privacy of beneficiary information, total allowances are not shown for groups with fewer than 20 individuals.

# Appendix B: Detailed Tabulation of Disabled Member Data



**Table B-3: The Number and Annual Disability Benefits of Members Disabled After December 31, 1987 by Age and Gender as of December 31, 2020**

Age	Male		Female	
	Number	Allowances	Number	Allowances
Under 26				
26				
27				
28				
29	1	*	1	*
30	1	*	2	*
31			1	*
32	1	*	2	*
33			9	*
34	1	*	4	*
35	2	*	7	*
36	4	*	9	*
37	3	*	11	*
38	5	*	13	*
39	4	*	14	*
40	6	*	18	*
41	8	*	27	399,880
42	7	*	37	474,829
43	18	*	40	725,414
44	16	*	54	852,606
45	24	277,204	50	730,401
46	32	440,550	64	1,015,577
47	32	328,601	75	1,311,734
48	37	696,252	97	1,175,390
49	44	636,202	110	1,707,512
50	55	867,338	124	1,927,508
51	45	479,190	135	1,801,552
52	51	686,349	162	2,471,299
53	78	970,109	155	2,096,529
54	68	859,238	176	1,875,342
55	75	793,512	208	2,403,799
56	87	901,676	223	2,591,364
57	87	796,270	222	2,003,618
58	111	1,124,836	234	2,614,672
59	116	1,108,452	305	2,592,267
60	79	669,360	255	2,649,960
61	106	1,015,463	194	1,908,244

\* To protect the privacy of beneficiary information, total allowances are not shown for groups with fewer than 20 individuals.

# Appendix B: Detailed Tabulation of Disabled Member Data



**Table B-3: The Number and Annual Disability Benefits of Members Disabled After December 31, 1987 by Age and Gender as of December 31, 2020 (continued)**

Age	Male		Female	
	Number	Allowances	Number	Allowances
62	113	1,005,635	215	1,962,447
63	102	862,734	223	2,076,358
64	107	780,770	202	1,908,939
65	16	*	21	196,031
66	2	*	1	*
67	2	*	2	*
68				
69	2	*	2	*
70	1	*	2	*
71	1	*	2	*
72			2	*
73			3	*
74				
75	1	*	1	*
76			1	*
77			1	*
78			1	*
79				
80				
81			1	*
82	2	*		
83			3	*
84				
85				
86			1	*
87				
88				
89				
90				
91				
92				
93			1	*
94				
95				
Over 95				
Total	1,553	16,631,769	3,723	43,095,649

\* To protect the privacy of beneficiary information, total allowances are not shown for groups with fewer than 20 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, 2020 is shown in the table below:

Development of the Actuarial Value of Assets for the Year Ending	December 31, 2020
Market Value of Assets, Beginning of Year	\$ 363,446,509
Employer Contributions	\$ 17,235,226
Employer Contributions Receivable	0
Benefit Payments and Administrative Expenses	(52,977,852)
Net Cash Flow	\$ (35,742,626)
Expected Investment Return	\$ 12,965,238
Expected Market Value of Assets, End of Year	\$ 340,669,121
Market Value of Assets, End of Year	\$ 352,063,991
Excess Market Value over Expected Market Value of Assets	\$ 11,394,870
80% of 2019 Asset Gain/(Loss)	\$ 9,115,896
60% of 2018 Asset Gain/(Loss)	9,188,330
40% of 2017 Asset Gain/(Loss)	(6,205,486)
20% of 2016 Asset Gain/(Loss)	(603,461)
Total Deferred Asset Gain/(Loss)	\$ 11,495,279
Preliminary Actuarial Value of Assets, End of Year	\$ 340,568,712
Final End of Year Actuarial Value of Assets (not less than 80% and not greater than 120% of Market Value)	\$ 340,568,712
Estimated Net Investment Return on Actuarial Value	4.36%



## 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 (adopted December 31, 2017).

#### Expected Claims Administration Expenses

None. Our understanding is that approximately \$73,000 is budgeted for annual expenses related to claims administration during the fiscal year ending June 30, 2022. As a result, budgeted claims administration expenses are immaterial to the Plan's actuarially determined contribution rate calculations as of December 31, 2020.

#### Employers' Share of State Health Plan

##### Monthly Active Subscriber Premiums (adopted December 31, 2019)

Calendar Year	Monthly Premium Per Active Subscriber
2021	\$0 <sup>1</sup>

<sup>1</sup> The Financial Accountability, Integrity, and Recovery (FAIR) Act of 2018 amended the Plan's eligibility criteria for STD benefits to eliminate employer reimbursements for the "second six months" of short-term disability benefits that begin on or after July 1, 2019.



## Appendix D: Actuarial Assumptions and Methods

### Long-term Health Care Cost Trend Rates

Annual health care premium rates are expected to increase in future years as a result of medical inflation, utilization, leverage in the plan design, and improvements in technology adjusted for any implicit and/or explicit cost containment features. The assumed rates of increases in expected active (non-Medicare primary) subscriber 70 / 30 plan health care premium rates vary by year, as shown in the table below (adopted December 31, 2020):

Year Ending June 30	Medical Non-Medicare	Prescription Drug
2021 <sup>2</sup>	6.00%	9.50%
2022	6.00%	9.00%
2023	6.00%	8.50%
2024	6.00%	8.00%
2025	5.50%	7.50%
2026	5.00%	7.00%
2027	5.00%	6.50%
2028	5.00%	6.00%
2029	5.00%	5.50%
2030+	5.00%	5.00%

<sup>2</sup> Initial trend rates (for the year ending June 30, 2021) were used to project premium rates backward from 2021 to entry year in measurements of benefit obligations based on the Entry Age Normal actuarial cost method.



## Appendix D: Actuarial Assumptions and Methods

### DEMOGRAPHIC ASSUMPTIONS

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

Annual Rates of Withdrawal								
Up to five years of membership								
	General Employees		Teachers, Librarians and Counselors		Law Enforcement Officers		Other Education	
Service	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								
	General Employees		Teachers, Librarians and Counselors		Law Enforcement Officers		Other Education	
Age	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

**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)								
	General Employees		Teachers, Librarians and Counselors		Law Enforcement Officers		Other Education	
Age	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							
Male	Service						
Age	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
Female	Service						
Age	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

### Teachers, Librarians and Counselors

Male	Service						
Age	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

Female	Service						
Age	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

	Service						
Age	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



## Appendix D: Actuarial Assumptions and Methods

Other Education							
Male	Service						
Age	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

  

Female	Service						
Age	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 Increases:** Representative values of the assumed annual rates of salary increases are as follows:

Annual Rate of Salary Increase (Merit + Wage Inflation)				
Service	General Employees	Teachers, Librarians and Counselors	Law Enforcement Officers	Other Education
0	7.50%	7.30%	8.05%	7.50%
5	5.90%	6.12%	6.35%	5.90%
10	5.10%	5.29%	5.25%	5.10%
15	4.58%	4.38%	4.05%	4.58%
20	4.08%	3.25%	4.05%	4.08%
25	3.58%	3.25%	4.05%	3.58%
30	3.25%	3.25%	3.65%	3.25%
>=35	3.25%	3.25%	3.25%	3.25%



## Appendix D: Actuarial Assumptions and Methods

**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								
(Members Healthy at Retirement)								
	General Employees		Teachers, Librarians and Counselors		Law Enforcement Officers		Other Education	
Age	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

Annual Rates of Post-Retirement Mortality						
	(Contingent Survivors of Deceased members)		(Members Disabled at Retirement)			
	All Survivors		Non - Law Enforcement Officers		Law Enforcement Officers	
Age	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.



## Appendix D: Actuarial Assumptions and Methods

**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.

**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	0.180	20–24	0.144
25–29	0.180	25–29	0.144
30–34	0.287	30–34	0.640
35–39	0.588	35–39	0.720
40–44	0.840	40–44	1.200
45–49	1.232	45–49	1.760
50–55	2.303	50–53	2.560
56–61	3.458	54–62	3.360
62–64	3.017	63–64	2.400

### 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

### 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:

Duration of Disability (Months)	Male								
	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

Duration of Disability (Months)	Female								
	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



## Appendix D: Actuarial Assumptions and Methods

### Disability Claim Termination Rates (continued)

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:

Duration of Disability (Years)	Male								
	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

Duration of Disability (Years)	Female								
	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



## Appendix D: Actuarial Assumptions and Methods

### 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, 2020. 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

<b>Future Disabled Members</b>	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.
<b>Current Disabled Members</b>	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

100% of active employees will elect to enroll in the 70 / 30 Plan option prior to July 1, 2019. Otherwise, no active employees are assumed to participate in the State Health Plan on or after July 1, 2019<sup>3</sup>.

## 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, 2019 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

<sup>3</sup> The Financial Accountability, Integrity, and Recovery (FAIR) Act of 2018 amended the Plan's eligibility criteria for STD benefits to eliminate employer reimbursements for the "second six months" of short-term disability benefits that begin on or after July 1, 2019.



## Appendix D: Actuarial Assumptions and Methods

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, 2019. 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 age 20, and the Social Security benefit determination rules applicable to the 2020 law year.

### 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.

**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, 2020

### Benefits Not Valued

None.

### Actuarial Cost Method

The 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



## Appendix D: Actuarial Assumptions and Methods

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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, 2020.

### **Asset Valuation Method**

The Actuarial Value of Assets for this purpose 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, 3.75% as of January 1, 2020). 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, 2020.

### **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.

### **Funding Policy**

The actuarial cost method, asset valuation method, and other components of the contribution



## Appendix D: Actuarial Assumptions and Methods

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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, 2019.

Please see the December 31, 2019 actuarial valuation report for additional information about the data, assumptions, methods, and plan provisions used to prepare results as of the December 31, 2019 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, 2017 was produced by other actuarial consulting firms.

### Changes in Funding Assumptions and Methods Since the Prior Valuation

The assumptions used for the December 31, 2020 actuarial valuation are based on the experience study prepared as of December 31, 2019 and adopted by the Board of Trustees on January 28, 2021. Material assumptions and methods that were changed since the prior valuation:

- The investment return assumption was lowered from 3.75% to 3.00%
- The inflation assumption was lowered from 3.00% to 2.50%
- The real wage growth assumption was increased from 0.50% to 0.75%
- The payroll growth assumption was lowered from 3.50% to 3.25%
- The withdrawal rates, retirement rates, disability rates, mortality assumption, and annual rate of salary increase assumptions were changed
- The marriage assumption was changed from assuming male spouses are four years older than female spouses to assume that male spouses are three years older than female spouses
- Long-term health care cost trend rates were updated to better reflect the anticipated impact, as of June 30, 2021, of changes in medical inflation, utilization, leverage in the plan design, and improvements in technology on expected active (non-Medicare primary) subscriber 70 / 30 plan health care premium rates in future periods.



## 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**

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### **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.



## Appendix E: Summary of Main Benefit Provisions

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### 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<sup>4</sup>;
- (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;
- (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.

### State Health Plan Coverage Benefit

The employer's-share of the premium for State Health Plan coverage under the 70 / 30 Plan option will continue to be paid by the employer on behalf of beneficiaries who have five or more years of contributing membership service on the date that STD payments begin. Beneficiaries who do not meet this requirement are permitted to enroll in a State Health Plan option while they are receiving STD benefits, but they must pay the associated premium for the coverage option that they elect.

### 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. The first six months of benefits are payable by the employer outside of the trust. The remaining six months are also paid by the employer outside of the trust. However, the employer may request reimbursement from the trust for short-term disability benefits and State Health Plan premiums paid during this "second six month" period.

Effective July 1, 2019, the Plan will no longer reimburse employers for short-term disability or State Health Plan premiums paid during the "second six month" period for disabilities occurring on or after that date.

## 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.

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<sup>4</sup> However, STD benefits are not offset by permanent, partial Workers' Compensation benefits.



## **Appendix E: Summary of Main Benefit Provisions**

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### **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.

### **State Health Plan Coverage Benefit**

The State Health Plan trust pays the employer's share of the premium for beneficiaries who are receiving extended STD benefits.

### **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

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### 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 the conclusion of the short-term disability period or the conclusion of salary continuation, 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:

- Monthly primary Social Security disability benefits<sup>5</sup>;
- (1) Monthly temporary total or partial 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;
  - (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.

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<sup>5</sup> 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.



## Appendix E: Summary of Main Benefit Provisions

### Monthly LTD Benefit Amounts (continued)

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

### State Health Plan Coverage Benefit

The State Health Plan trust pays the employer's share of the premium for beneficiaries who are receiving LTD benefits.

### 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 December 31, 2019 actuarial valuation report for TSERS 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**

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### **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**

There were no changes in the Plan's benefit provisions as of June 30, 2021 since the prior valuation.



## Appendix F: GASB 74 Projection of Fiduciary Net Position

**Table F-1: Projection of Fiduciary Net Position (\$ in Thousands)**

Calendar Year	Beginning Fiduciary Net Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Net Position
2021	\$ 352,064	\$ 0	\$ 16,755	\$ 54,759	\$ 885	\$ 9,983	\$ 323,159
2022	323,159	0	16,612	50,454	856	9,178	297,638
2023	297,638	0	16,494	48,811	832	8,436	272,925
2024	272,925	0	15,614	46,265	811	7,719	249,182
2025	249,182	0	14,823	43,412	793	7,038	226,839
2026	226,839	0	14,079	39,831	776	6,410	206,720
2027	206,720	0	13,351	37,029	758	5,838	188,122
2028	188,122	0	12,635	33,837	739	5,317	171,499
2029	171,499	0	11,923	30,943	718	4,851	156,612
2030	156,612	0	11,206	27,844	695	4,440	143,719
2031	143,719	0	10,496	25,007	671	4,086	132,623
2032	132,623	0	9,800	22,419	645	3,781	123,141
2033	123,141	0	9,114	20,096	618	3,522	115,062
2034	115,062	0	8,439	17,973	589	3,301	108,240
2035	108,240	0	7,775	16,168	559	3,114	102,402
2036	102,402	0	7,128	14,386	528	2,956	97,572
2037	97,572	0	6,497	12,739	496	2,827	93,662
2038	93,662	0	5,892	11,207	463	2,724	90,608
2039	90,608	0	5,328	9,863	431	2,644	88,286
2040	88,286	0	4,794	8,660	400	2,585	86,605
2041	86,605	0	4,270	7,549	367	2,544	85,504
2042	85,504	0	3,760	6,452	333	2,520	85,000
2043	85,000	0	3,257	5,383	297	2,514	85,092
2044	85,092	0	2,772	4,400	260	2,525	85,728
2045	85,728	0	2,313	3,480	223	2,551	86,888
2046	86,888	0	1,891	2,698	188	2,592	88,484
2047	88,484	0	1,506	2,109	154	2,643	90,371
2048	90,371	0	1,161	1,608	123	2,703	92,504
2049	92,504	0	850	1,171	92	2,769	94,860
2050	94,860	0	579	781	65	2,842	97,435
2051	97,435	0	385	474	44	2,921	100,222
2052	100,222	0	265	328	31	3,005	103,133
2053	103,133	0	184	244	23	3,093	106,143
2054	106,143	0	128	185	16	3,183	109,253
2055	109,253	0	89	141	12	3,277	112,467
2056	112,467	0	62	108	10	3,373	115,784
2057	115,784	0	43	83	10	3,473	119,207
2058	119,207	0	30	64	10	3,576	122,738
2059	122,738	0	21	50	10	3,682	126,380
2060	126,380	0	14	39	10	3,791	130,136
2061	130,136	0	9	30	10	3,904	134,009
2062	134,009	0	6	23	10	4,020	138,003
2063	138,003	0	4	17	10	4,140	142,120
2064	142,120	0	3	13	10	4,263	146,363
2065	146,363	0	2	10	10	4,391	150,735
2066	150,735	0	1	7	10	4,522	155,241
2067	155,241	0	1	5	10	4,657	159,884
2068	159,884	0	0	3	10	4,796	164,667
2069	164,667	0	0	2	10	4,940	169,595
2070	169,595	0	0	2	10	5,088	174,671



## Appendix F: GASB 74 Projection of Fiduciary Net Position

**Table F-1: Projection of Fiduciary Net Position (\$ in Thousands)**

Calendar Year	Beginning Fiduciary Net Position	Member Contributions	Employer Contributions	Benefit Payments	Administrative Expenses	Investment Earnings	Ending Fiduciary Net Position
2071	174,671	0	0	1	10	5,240	179,900
2072	179,900	0	0	1	10	5,397	185,286
2073	185,286	0	0	0	10	5,558	190,834
2074	190,834	0	0	0	10	5,725	196,549
2075	196,549	0	0	0	10	5,896	202,435
2076	202,435	0	0	0	10	6,073	208,498
2077	208,498	0	0	0	10	6,255	214,743
2078	214,743	0	0	0	10	6,442	221,175
2079	221,175	0	0	0	10	6,635	227,800
2080	227,800	0	0	0	10	6,834	234,624
2081	234,624	0	0	0	10	7,039	241,652
2082	241,652	0	0	0	10	7,249	248,892
2083	248,892	0	0	0	10	7,467	256,348
2084	256,348	0	0	0	10	7,690	264,028
2085	264,028	0	0	0	10	7,921	271,939
2086	271,939	0	0	0	0	8,158	280,097
2087	280,097	0	0	0	0	8,403	288,500
2088	288,500	0	0	0	0	8,655	297,155
2089	297,155	0	0	0	0	8,915	306,070
2090	306,070	0	0	0	0	9,182	315,252
2091	315,252	0	0	0	0	9,458	324,710
2092	324,710	0	0	0	0	9,741	334,451
2093	334,451	0	0	0	0	10,034	344,484
2094	344,484	0	0	0	0	10,335	354,819
2095	354,819	0	0	0	0	10,645	365,464
2096	365,464	0	0	0	0	10,964	376,427
2097	376,427	0	0	0	0	11,293	387,720
2098	387,720	0	0	0	0	11,632	399,352
2099	399,352	0	0	0	0	11,981	411,332
2100	411,332	0	0	0	0	12,340	423,672
2101	423,672	0	0	0	0	12,710	436,383
2102	436,383	0	0	0	0	13,091	449,474
2103	449,474	0	0	0	0	13,484	462,958
2104	462,958	0	0	0	0	13,889	476,847
2105	476,847	0	0	0	0	14,305	491,152
2106	491,152	0	0	0	0	14,735	505,887
2107	505,887	0	0	0	0	15,177	521,064
2108	521,064	0	0	0	0	15,632	536,696
2109	536,696	0	0	0	0	16,101	552,796
2110	552,796	0	0	0	0	16,584	569,380
2111	569,380	0	0	0	0	17,081	586,462
2112	586,462	0	0	0	0	17,594	604,056
2113	604,056	0	0	0	0	18,122	622,177
2114	622,177	0	0	0	0	18,665	640,843
2115	640,843	0	0	0	0	19,225	660,068
2116	660,068	0	0	0	0	19,802	679,870
2117	679,870	0	0	0	0	20,396	700,266
2118	700,266	0	0	0	0	21,008	721,274
2119	721,274	0	0	0	0	21,638	742,912
2120	742,912	0	0	0	0	22,287	765,199



# Appendix G: GASB 74 Present Value of Projected Benefit Payments

**Table G-1: Present Value of Projected Benefit Payments (\$ in Thousands)**

Calendar Year	Beginning Fiduciary Net Position	Benefit Payments	Funded Benefit Payments	Unfunded Benefit Payments	Present Value of Projected Benefit Payments		
					Funded Payments at 3.00%	Unfunded Payments at 2.16%	Using Single Discount Rate Equal to 3.00%
2021	\$ 352,064	\$ 54,759	\$ 54,759	\$ -	\$ 53,955	\$ -	\$ 53,955
2022	323,159	50,454	50,454	0	48,266	0	48,266
2023	297,638	48,811	48,811	0	45,334	0	45,334
2024	272,925	46,265	46,265	0	41,718	0	41,718
2025	249,182	43,412	43,412	0	38,005	0	38,005
2026	226,839	39,831	39,831	0	33,855	0	33,855
2027	206,720	37,029	37,029	0	30,556	0	30,556
2028	188,122	33,837	33,837	0	27,109	0	27,109
2029	171,499	30,943	30,943	0	24,068	0	24,068
2030	156,612	27,844	27,844	0	21,027	0	21,027
2031	143,719	25,007	25,007	0	18,335	0	18,335
2032	132,623	22,419	22,419	0	15,958	0	15,958
2033	123,141	20,096	20,096	0	13,888	0	13,888
2034	115,062	17,973	17,973	0	12,059	0	12,059
2035	108,240	16,168	16,168	0	10,532	0	10,532
2036	102,402	14,386	14,386	0	9,098	0	9,098
2037	97,572	12,739	12,739	0	7,822	0	7,822
2038	93,662	11,207	11,207	0	6,681	0	6,681
2039	90,608	9,863	9,863	0	5,708	0	5,708
2040	88,286	8,660	8,660	0	4,866	0	4,866
2041	86,605	7,549	7,549	0	4,118	0	4,118
2042	85,504	6,452	6,452	0	3,417	0	3,417
2043	85,000	5,383	5,383	0	2,768	0	2,768
2044	85,092	4,400	4,400	0	2,197	0	2,197
2045	85,728	3,480	3,480	0	1,687	0	1,687
2046	86,888	2,698	2,698	0	1,270	0	1,270
2047	88,484	2,109	2,109	0	963	0	963
2048	90,371	1,608	1,608	0	713	0	713
2049	92,504	1,171	1,171	0	504	0	504
2050	94,860	781	781	0	327	0	327
2051	97,435	474	474	0	192	0	192
2052	100,222	328	328	0	129	0	129
2053	103,133	244	244	0	94	0	94
2054	106,143	185	185	0	69	0	69
2055	109,253	141	141	0	51	0	51
2056	112,467	108	108	0	38	0	38
2057	115,784	83	83	0	28	0	28
2058	119,207	64	64	0	21	0	21
2059	122,738	50	50	0	16	0	16
2060	126,380	39	39	0	12	0	12
2061	130,136	30	30	0	9	0	9
2062	134,009	23	23	0	7	0	7
2063	138,003	17	17	0	5	0	5
2064	142,120	13	13	0	4	0	4
2065	146,363	10	10	0	3	0	3
2066	150,735	7	7	0	2	0	2
2067	155,241	5	5	0	1	0	1
2068	159,884	3	3	0	1	0	1
2069	164,667	2	2	0	1	0	1
2070	169,595	2	2	0	0	0	0



# Appendix G: GASB 74 Present Value of Projected Benefit Payments

**Table G-1: Present Value of Projected Benefit Payments (\$ in Thousands)**

Calendar Year	Beginning Fiduciary Net Position	Benefit Payments	Funded Benefit Payments	Unfunded Benefit Payments	Present Value of Projected Benefit Payments		
					Funded Payments at 3.00%	Unfunded Payments at 2.16%	Using Single Discount Rate Equal to 3.00%
2071	174,671	1	1	0	0	0	0
2072	179,900	1	1	0	0	0	0
2073	185,286	0	0	0	0	0	0
2074	190,834	0	0	0	0	0	0
2075	196,549	0	0	0	0	0	0
2076	202,435	0	0	0	0	0	0
2077	208,498	0	0	0	0	0	0
2078	214,743	0	0	0	0	0	0
2079	221,175	0	0	0	0	0	0
2080	227,800	0	0	0	0	0	0
2081	234,624	0	0	0	0	0	0
2082	241,652	0	0	0	0	0	0
2083	248,892	0	0	0	0	0	0
2084	256,348	0	0	0	0	0	0
2085	264,028	0	0	0	0	0	0
2086	271,939	0	0	0	0	0	0
2087	280,097	0	0	0	0	0	0
2088	288,500	0	0	0	0	0	0
2089	297,155	0	0	0	0	0	0
2090	306,070	0	0	0	0	0	0
2091	315,252	0	0	0	0	0	0
2092	324,710	0	0	0	0	0	0
2093	334,451	0	0	0	0	0	0
2094	344,484	0	0	0	0	0	0
2095	354,819	0	0	0	0	0	0
2096	365,464	0	0	0	0	0	0
2097	376,427	0	0	0	0	0	0
2098	387,720	0	0	0	0	0	0
2099	399,352	0	0	0	0	0	0
2100	411,332	0	0	0	0	0	0
2101	423,672	0	0	0	0	0	0
2102	436,383	0	0	0	0	0	0
2103	449,474	0	0	0	0	0	0
2104	462,958	0	0	0	0	0	0
2105	476,847	0	0	0	0	0	0
2106	491,152	0	0	0	0	0	0
2107	505,887	0	0	0	0	0	0
2108	521,064	0	0	0	0	0	0
2109	536,696	0	0	0	0	0	0
2110	552,796	0	0	0	0	0	0
2111	569,380	0	0	0	0	0	0
2112	586,462	0	0	0	0	0	0
2113	604,056	0	0	0	0	0	0
2114	622,177	0	0	0	0	0	0
2115	640,843	0	0	0	0	0	0
2116	660,068	0	0	0	0	0	0
2117	679,870	0	0	0	0	0	0
2118	700,266	0	0	0	0	0	0
2119	721,274	0	0	0	0	0	0
2120	742,912	0	0	0	0	0	0