Actuarial Review of the 2022 Accounting Disclosures for the North Carolina Office of the State Auditor

March 2023

Review of GASB Statement Nos. 68 and 75 Schedules

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March 15, 2023

Mr. Jacob Taitague, CPA
Assistant State Auditor
Office of the State Auditor
2 S. Salisbury St.
20601 Mail Service Center
Raleigh, North Carolina 27699-0600

Re: North Carolina Actuarial Review of 2022 Accounting Disclosures for GASB Statement Nos. 68 and 75

Dear Mr. Taitague:

Gabriel, Roeder, Smith & Company (GRS) is pleased to present this report of an Actuarial Review of the 2022 Accounting Disclosures related to the North Carolina Retirement System. We are grateful to the Office of the State Auditor for their responsiveness and assistance throughout the actuarial review process. In addition, we wish to thank the consultants of Buck Global ("Buck") and The Segal Group ("Segal") for their cooperation and assistance with this project.

This project is separated into two engagements. This is a report covering the work of the second engagement. A report covering the work of the first engagement was issued on November 21, 2022.

The second engagement is described as follows:

Evaluate the actuarial valuations of the following plans used in the State's financial statements for the period ended June 30, 2022:

- The Teachers and State Employees Retirement System of North Carolina (TSERS);
- The Local Governmental Employees Retirement System of North Carolina (LGERS);
- The Register of Deeds Supplemental Pension Fund of North Carolina (RODSPF);
- The North Carolina Retiree Health Benefits Plan (RHB); and
- The Disability Income Plan of North Carolina (DIPNC).

Specifically, this review will provide reasonable assurance regarding the accuracy of the following:

1. The employer allocation percentage for each participating employer as reported on the Schedules of Employer Allocations for each pension and OPEB plan.

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2. The total for the following columns of the Schedule of Pension amounts by Employer for each pension plan:

   - Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments;
   - Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions;
   - Proportionate Share of Plan Pension Expense; and
   - Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions.

3. The total for the following columns of the Schedule of OPEB amounts by Employer for each OPEB plan:

   - Net Difference Between Projected and Actual Investment Earnings on OPEB Plan Investments;
   - Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions;
   - Proportionate Share of Plan OPEB Expense; and
   - Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions.

This report builds on the report we issued under Phase I, where we reviewed the assumptions, underlying valuation results and the schedules prepared for the GASB Statement Nos. 67 and 74.

The purpose of this report is to provide the results of our actuarial review, described above, including:

- An opinion regarding the reasonableness and accuracy of the actuarial assumptions, actuarial cost methods, procedures, and valuation results; and
- Certification that the plans' actuarial valuation was prepared in accordance with pronouncements issued by the Governmental Accounting Standards Board (GASB), principles and practices prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures.

This report was prepared at the request of the Office of the State Auditor of North Carolina (OSA) for the purposes stated above. It may not be suitable for other purposes. This report may be shared with parties other than the OSA, but only with the OSA's permission and only in its entirety. GRS is not responsible for unauthorized use of this report.

In our opinion, the methods and assumptions used in the 2022 GASB Statement Nos. 68 and 75 calculations of the aforementioned plans are reasonable and comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 68 and 75 and comply with practices promulgated by the Actuarial Standards. The intended audience is the OSA. The authors of this report are available to answer questions.

Abra D. Hill and Jeffrey T. Tebeau are Members of the American Academy of Actuaries (MAAA), and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Abra D. Hill

Abra D. Hill, ASA, FCA, MAAA

Jeffrey T. Tebeau, FSA, EA, FCA, MAAA

ADH/JTT:rmn

EXECUTIVE SUMMARY

Executive Summary

Background

Gabriel, Roeder, Smith & Company (GRS) was engaged by the Office of the State Auditor to review calculations related to the 2022 disclosures the State will include in its Comprehensive Annual Financial Report.

This report covers the work of the second engagement. A report covering the work of the first engagement was issued November 21, 2022. In that report we stated the following:

> *"In our opinion, the assumptions and methods used in the December 31, 2021 valuations of the aforementioned plans are reasonable and comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 74 and comply with practices promulgated by the Actuarial Standards.*
>
> *Based on our test lives review and our review of the funding and GASB reports, we certify that the plans' actuarial valuation was prepared in accordance with pronouncements issued by the Governmental Accounting Standards Board (GASB), principles and practices prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures."*

The second engagement builds on the first engagement and reviews the schedules used for GASB Statement Nos. 68 and 75. The second engagement is described as follows:

Evaluate the actuarial valuations of the following plans used in the State's financial statements for the period ended June 30, 2022:

- The Teachers and State Employees Retirement System of North Carolina (TSERS);
- The Local Governmental Employees Retirement System of North Carolina (LGERS);
- The Register of Deeds Supplemental Pension Fund of North Carolina (RODSPF);
- The North Carolina Retiree Health Benefits Plan (RHB); and
- The Disability Income Plan of North Carolina (DIPNC).

Specifically, this review will provide reasonable assurance regarding the accuracy of the following:

1. The employer allocation percentage for each participating employer as reported on the Schedules of Employer Allocations for each pension and OPEB plan.
2. The total for the following columns of the Schedule of Pension amounts by Employer for each pension plan:
    - Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments;
    - Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions;
    - Proportionate Share of Plan Pension Expense; and
    - Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions.

3. The total for the following columns of the Schedule of OPEB amounts by Employer for each OPEB plan:

   - Net Difference Between Projected and Actual Investment Earnings on OPEB Plan Investments;
   - Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions;
   - Proportionate Share of Plan OPEB Expense; and
   - Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions.

The balance of this report is organized by System/Plan:

Section 1 – TSERS
Section 2 – LGERS
Section 3 – RODSPF
Section 4 – RHB
Section 5 – DIPNC
Section 6 – Comments, Conclusions and Recommendations

Conclusion

In our opinion, the assumptions and methods used in the 2021 funding valuations (and 2022 GASB valuations) of the aforementioned plans are reasonable and comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 68 and 75 and the practices promulgated by the Actuarial Standards.

Based on our review of the actuarial valuations and GASB reports, we certify that the actuarial information provided for the employers' financial statements for compliance with GASB Statement Nos. 68 and 75 was prepared in accordance with pronouncements issued by the GASB, principles and practices prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures.

SECTION 1

TSERS

TSERS

Employer Allocation

We have reviewed the calculation of the Employer Allocation. For this portion of the project we received a spreadsheet that contained a row for each employer indicating the following:

- Employer Number;
- Employer Description;
- Present Value of Future Salary; and
- Employer Allocation Percent.

We received a second spreadsheet containing the schedule of pension amounts by employer.

The employer allocation was performed based on the proportion of each employer's present value of future salary to the plan's total present value of future salary. Paragraph 48a of GASB Statement No. 68 states, in part:

> *The basis for the employer's proportion should be consistent with the manner in which contributions to the pension plan, excluding those to separately finance specific liabilities of an individual employer to the pension plan, are determined.*

We agree that the use of the present value of future pay to determine the employer allocation is reasonable under this paragraph.

We previously reviewed the underlying assumptions for the development of the present value of future pay during Phase I and found the assumptions to be reasonable. In addition, our test life review under Phase I confirmed the calculations to be reasonable.

We were able to replicate the proportionate share by employer, based on the data contained in the allocation spreadsheet.

Schedule of Pension Amounts by Employer

Using the two spreadsheets discussed above, we matched the employer proportion from the first spreadsheet and recalculated the numbers in the second spreadsheet. All the numbers we tested were within $1.

With the exception of rounding, we were able to match all the employer share amounts we tested. Note, data was not sufficient to test the difference between the actual employer contribution and the employers' proportionate share from the prior year.

Other Comments

We reviewed all the other 2022 numbers in the GASB Statement No. 68 letter for consistency with the previous reports (used to review the Liability calculations under Phase I). We were able to confirm or reasonably replicate all of the current year numbers. We were able to reconcile the Net Pension Liability (NPL) from year to year after accounting for the differences in the “Other” category, of which $13.078M is due to timing differences explained on page 3 of the GASB Statement No. 68 letter. See the reconciliation in the Appendix.

SECTION 2

LGERS

LGERS

Employer Allocation

We have reviewed the calculation of the Employer Allocation. For this portion of the project we received a spreadsheet that contained a row for each employer indicating the following:

- Employer Number;
- Employer Description;
- Present Value of Future Salary; and
- Employer Allocation Percent.

We received a second spreadsheet containing the schedule of pension amounts by employer.

The employer allocation was performed based on the proportion of each employer's present value of future salary to the plan's total present value of future salary. Paragraph 48a of GASB Statement No. 68 states, in part:

> *The basis for the employer's proportion should be consistent with the manner in which contributions to the pension plan, excluding those to separately finance specific liabilities of an individual employer to the pension plan, are determined.*

We agree that the use of the present value of future pay to determine the employer allocation is reasonable under this paragraph.

We previously reviewed the underlying assumptions for the development of the present value of future pay during Phase I and found the assumptions to be reasonable. In addition, our test life review under Phase I confirmed the calculations to be reasonable.

We were able to replicate the proportionate share by employer, based on the data contained in the allocation spreadsheet.

Schedule of Pension Amounts by Employer

Using the two spreadsheets discussed above, we matched the employer proportion from the first spreadsheet and recalculated the numbers in the second spreadsheet. All the numbers we tested were within $1.

With the exception of rounding, we were able to match all the employer share amounts we tested. Note, data was not sufficient to test the difference between the actual employer contribution and the employers' proportionate share from the prior year.

Other Comments

We reviewed all the other 2022 numbers in the GASB Statement No. 68 letter for consistency with the previous reports (used to review the Liability calculations under Phase I). We were able to confirm or reasonably replicate all of the current year numbers. We were able to reconcile the NPL from year to year after accounting for the differences in the "Other" category, of which $4.524M is due to timing differences explained on page 3 of the GASB Statement No. 68 letter. See the reconciliation in the Appendix.

SECTION 3

RODSPF

RODSPF

Employer Allocation

We have reviewed the calculation of the Employer Allocation. For this portion of the project we received a spreadsheet that contained a row for each employer indicating the following:

- Employer Description;
- Fiscal Year Contributions; and
- Employer Allocation Percent.

We received a second spreadsheet containing the schedule of pension amounts by employer.

The employer allocation was performed based on the proportion of each employer's fiscal year contribution to the plan's total fiscal year contribution. Paragraph 48a of GASB Statement No. 68 states, in part:

> *The basis for the employer's proportion should be consistent with the manner in which contributions to the pension plan, excluding those to separately finance specific liabilities of an individual employer to the pension plan, are determined.*

We agree that the use of the current contributions to determine the employer allocation is reasonable under this paragraph.

We were able to replicate the proportionate share by employer, based on the data contained in the allocation spreadsheet.

Schedule of Pension Amounts by Employer

Using the two spreadsheets discussed above, we matched the employer proportion from the first spreadsheet and recalculated the numbers in the second spreadsheet. Most numbers tested were within $1 with the exceptions being just over $1.

With the exception of rounding, we were able to match all the employer share amounts we tested. Rounding in the share amounts for this plan does not appear to be consistent with the rounding in the other plans. While this is not a material issue, we recommend changing the rounding to be consistent with the other plans.

Other Comments

We reviewed all the other 2022 numbers in the GASB Statement No. 68 letter for consistency with the previous reports (used to review the Liability calculations under Phase I). We were able to confirm or reasonably replicate all of the current year numbers and reconcile the NPL from year to year. See the reconciliation in the Appendix.

SECTION 4

RHB

RHB

Employer Allocation

We have reviewed the calculation of the Employer Allocation. For this portion of the project we received a spreadsheet that contained a row for each employer indicating the following:

- Employer Number;
- Employer Description;
- Present Value of Future Salary; and
- Employer Allocation Percent.

We received a second spreadsheet containing the schedule of OPEB amounts by employer.

The employer allocation was performed based on the proportion of each employer's present value of future salary to the plan's total present value of future salary. Paragraph 59a of GASB Statement No. 75 states, in part:

> *The basis for the employer's proportion should be consistent with the manner in which contributions to the OPEB plan, excluding those associated with separately financed specific liabilities of an individual employer to the OPEB plan, are determined. The use of the employer's projected long-term contribution effort to the OPEB plan (including that of nonemployer contributing entities that provide support for the employer but that are not in a special funding situation) as compared to the total projected long-term contribution effort of all employers and all nonemployer contributing entities to determine the employer's proportion is encouraged.*

We agree that the use of the present value of future pay to determine the employer allocation is reasonable under this paragraph.

We previously reviewed the underlying assumptions for the development of the present value of future pay during Phase I and found the assumptions to be reasonable. In addition, our test life review under Phase I confirmed the calculations to be reasonable. However, there was an additional assumption employed in the GASB Statement No. 75 calculations related to the expected rate of return on fund assets. Since this differs from the discount rate, it was not reviewed in Phase I. We understand the assets of the RHB are invested similarly to the assets of TSERS. We reviewed the investment return of TSERS and determined it to be near the upper end of the reasonable range at 6.50%, as applicable for the period beginning July 1, 2021 (during our 2021/22 review). We, therefore, believe it to be reasonable and appropriate for use in this report.

We were able to replicate the proportionate share by employer, based on the data contained in the allocation spreadsheet.

Schedule of OPEB Amounts by Employer

Using the two spreadsheets discussed on the prior page, we matched the employer proportion from the first spreadsheet and recalculated the numbers in the second spreadsheet. Most numbers tested were within $1 with the exceptions being under $3.

With the exception of rounding, we were able to match all the employer share amounts we tested. Rounding in the share amounts for this plan does not appear to be consistent with the rounding in the other plans. While this is not a material issue, we recommend changing the rounding to be consistent with the other plans.

Other Comments

We reviewed all the other 2022 numbers in the GASB Statement No. 75 report for consistency with the previous reports (used to review the Liability calculations under Phase I). We were not quite able to reconcile the Net OPEB Liability (NOL) from year to year even after accounting for differences in the "Other" category, of which $101 thousand is due to timing differences and $180.5 million due to additional contributions explained on page 6 of the GASB Statement No. 75 report. We believe the discrepancy of $1 thousand dollars is due to using differing amounts for the administrative expenses line item. Page 15 of Segal's report shows an amount of $174 thousand while page 20 shows $175 thousand. See the reconciliation of the NOL in the Appendix.

In addition to the above findings, we were unable to replicate the total OPEB Expense of $2,648,336 thousand as reported in the 2022 GASB Statement No. 75 report. We believe the discrepancy is in the recognition of the "Differences between Projected and Actual Earnings on OPEB Plan Investments" that first occurred in the year 2018. Page 24 of Segal's report shows that $17,865 thousand of inflows were scheduled to be recognized in the OPEB Expense. However, we could not match the "Recognition of beginning of year deferred outflows of resources as OPEB expense" amount of $682,917 on page 20 or the "Net difference between projected and actual earnings on OPEB plan investments" amount of $205,637 on page 21 using that amount. The difference between our calculation and Segal's is $3,046 thousand, which is the same as the net decrease to the OPEB expenses from the inflow recognized in 2022 attributable to the 2018 difference between projected and actual earnings.

We discussed these items with OSA staff and they indicated that the variances are considered trivial misstatements.

SECTION 5

DIPNC

DIPNC

We have reviewed the calculation of the Employer Allocation. For this portion of the project we received a spreadsheet that contained a row for each employer indicating the following:

- Employer Number;
- Employer Description;
- Present Value of Future Salary; and
- Employer Allocation Percent.

We received a second spreadsheet containing the schedule of OPEB amounts by employer.

The employer allocation was performed based on the proportion of each employer's present value of future salary to the plan's total present value of future salary. Paragraph 59a of GASB Statement No. 75 states, in part:

> *The basis for the employer's proportion should be consistent with the manner in which contributions to the OPEB plan, excluding those associated with separately financed specific liabilities of an individual employer to the OPEB plan, are determined. The use of the employer's projected long-term contribution effort to the OPEB plan (including that of nonemployer contributing entities that provide support for the employer but that are not in a special funding situation) as compared to the total projected long-term contribution effort of all employers and all nonemployer contributing entities to determine the employer's proportion is encouraged.*

We agree that the use of the present value of future pay to determine the employer allocation is reasonable under this paragraph.

We previously reviewed the underlying assumptions for the development of the present value of future pay during Phase I and found the assumptions to be reasonable. In addition, our test life review under Phase I confirmed the calculations to be reasonable.

We were able to replicate the proportionate share by employer, based on the data contained in the allocation spreadsheet.

Schedule of OPEB Amounts by Employer

Using the two spreadsheets discussed above, we matched the employer proportion from the first spreadsheet and recalculated the numbers in the second spreadsheet. All the numbers we tested were within $1.

With the exception of rounding, we were able to match all the employer share amounts we tested. Note data was not sufficient to test the difference between the actual employer contribution and the employers' proportionate share from the prior year.

Other Comments

We reviewed all the other 2022 numbers in the GASB Statement No. 75 letter for consistency with the previous reports (used to review the Liability calculations under Phase I). We were able to reconcile the NOL from year to year after accounting for differences in the “Other” category, of which $2 thousand is due to timing differences explained on page 3 of the GASB Statement No. 75 letter. See the reconciliation in the Appendix.

SECTION 6

COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

Comments

We would like to thank Segal and Buck for their cooperation in the completion of this review.

We were unable to match the calculation of the OPEB Expense presented in the RHB GASB No. 75 report. We believe the difference lies in the recognition of deferred inflows related to the projected and actual earnings on OPEB plan investments that occurred in 2018. In discussions with OSA staff, they indicated that the variance is considered a trivial misstatement.

Conclusions

In our opinion, the assumptions and methods used in the 2021 funding valuations (and 2022 GASB valuations) of the aforementioned plans are reasonable and comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 68 and 75 and comply with practices promulgated by the Actuarial Standards.

We certify that the plans' actuarial valuation was prepared in accordance with pronouncements issued by the Governmental Accounting Standards Board (GASB), principles and practices prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures.

Recommendations for Future Years

We have the following recommendations for future valuations:

- Evaluate whether or not the closure of the RHB should result in a different process for determining the employer allocation.
- See recommendations from the Phase I report (issued November 21, 2022).

APPENDIX

NET PENSION LIABILITY/NET OPEB LIABILITY RECONCILIATION

Net Pension Liability/Net OPEB Liability

		TSERS	LGERS	RODSPF	RHB	DIPNC
	Beginning of year					
1)	Net Pension Liability (NPL)/Net OPEB Liability (NOL)	$ 4,682,601,000	$ 1,533,596,000	$ (19,213,000)	$ 30,915,593,000	$ (16,334,000)
2)	Deferred inflows and outflows (Net deferrals)	$ (3,888,439,000)	$ (739,666,000)	$ 1,314,000	$ (5,393,309,000)	$ 40,179,000
3)	NPL/NOL net of deferrals: (1) - (2)	$ 8,571,040,000	$ 2,273,262,000	$ (20,527,000)	$ 36,308,902,000	$ (56,513,000)
	During Year					
4)	Pension Expense (PE)/OPEB Expense (OE)	$ 3,111,962,000	$ 1,597,401,000	$ 2,367,000	$ (2,648,336,000)	$ 42,068,000
5)	Employer Contributions during year	$ 2,761,946,000	$ 880,449,000	$ 1,146,000	$ 1,197,278,000	$ 17,019,000
	End of year					
6)	**Expected NPL/NOL, net of deferrals: (3) + (4) - (5)**	**$ 8,921,056,000**	**$ 2,990,214,000**	**$ (19,306,000)**	**$ 32,463,288,000**	**$ (31,464,000)**
7)	Actual NPL/NOL	$ 14,842,238,000	$ 5,641,428,000	$ (13,240,000)	$ 23,746,852,000	$ 29,748,000
8)	Net deferrals	$ 5,908,104,000	$ 2,646,690,000	$ 6,066,000	$ (8,536,030,000)	$ 61,210,000
9)	**Actual NPL/NOL net of Deferrals: (7) - (8)**	**$ 8,934,134,000**	**$ 2,994,738,000**	**$ (19,306,000)**	**$ 32,282,882,000**	**$ (31,462,000)**
10)	**Difference: (9) - (6)**	**$ 13,078,000**	**$ 4,524,000**	**$ -**	**$ (180,406,000)**	**$ 2,000**
11)	Contributions not allocated to employers	$ (13,078,000)	$ (4,524,000)	$ -	$ (101,000)	$ (2,000)
12)	Other amounts included in Assets	$ -	$ -	$ -	$ -	$ -
13)	Net amortizations from changes in proportional amounts in OE	$ -	$ -	$ -	$ -	$ -
14)	Non-Employer/Add'l Contributions	$ -	$ -	$ -	$ 180,506,000	$ -
15)	Total Other: (11) + (12) + (13) + (14)	$ (13,078,000)	$ (4,524,000)	$ -	$ 180,405,000	$ (2,000)
16)	**Unexplained Difference: (10) + (15)**	**$ -**	**$ -**	**$ -**	**$ (1,000)**	**$ -**

The (non-calculated) numbers shown above are taken from the Buck and Segal GASB reports that were provided for this review.