North Dakota Teachers' Fund for Retirement

Actuarial Audit of the July 1, 2021 Actuarial Valuation

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January 12, 2023

Board of Trustees
North Dakota Teachers' Fund for Retirement
3442 East Century Avenue
Bismarck, ND 58507-7100

Members of the Board:

Gabriel, Roeder, Smith & Company (GRS) is pleased to present this report of an actuarial audit of the July 1, 2021 Actuarial Valuation of the North Dakota Teachers' Fund for Retirement (NDTFFR). We are grateful to the NDTFFR staff, and Segal, the retained actuary, for their cooperation throughout the actuarial audit process.

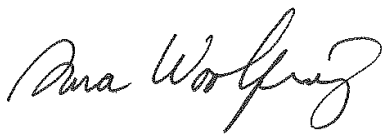
This actuarial audit involves an independent verification and analysis of the assumptions, procedures, methods, and conclusions used by the retained actuary for NDTFFR in the valuation as of July 1, 2021, to ensure that the conclusions are technically sound and conform to the appropriate Standards of Practice as promulgated by the Actuarial Standards Board.

GRS is pleased to report to the Board and Staff that, in our professional opinion, the July 1, 2021 Actuarial Valuation prepared by the retained actuary provides a fair and reasonable assessment of the financial position of NDTFFR.

Ms. Woolfrey and Mr. Wood are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Thank you for the opportunity to work on this assignment.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



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SECTION I

EXECUTIVE SUMMARY

Executive Summary

The North Dakota Retirement and Investment Office engaged Gabriel, Roeder, Smith & Company (GRS) for an actuarial audit of the 2021 actuarial valuation prepared for the North Dakota Teachers' Fund for Retirement.

The purpose of this report is to:

- Provide an evaluation and express an opinion regarding the reasonableness and accuracy of the valuation results (including a determination of actuarial accrued liability, normal cost, and actuarially determined contributions), appropriateness of the actuarial assumptions, and application of the actuarial cost method for the 2021 actuarial valuation; and
- Include any recommendations regarding reasonable alternatives to the actuarial assumptions used in the 2021 actuarial valuation.

The scope of this actuarial audit includes the following:

- Analyze the appropriateness of the actuarial assumptions;
- Review the actuarial assumptions and methodology for compliance with generally recognized and accepted actuarial principles and practices which are consistent with Actuarial Standards of Practice, the Code of Professional Conduct, and the Qualification Standards for Public Statements of Actuarial Opinion of the American Academy of Actuaries;
- Evaluate the data used for performance of the 2021 actuarial valuation, the degree to which the data is sufficient to support the conclusions of the 2021 actuarial valuation, and the use and appropriateness of any assumptions made regarding the data;
- Conduct a replication of the valuation results using the same data, methods, and assumptions used by the retained actuary in the 2021 actuarial valuation; and
- Assess whether the 2021 actuarial valuation appropriately reflects information pursuant to Actuarial Standards of Practice.

Summary of our Review

Based on our review of the census data, experience study documents, liability replications, and actuarial valuation report, we believe the 2021 actuarial valuation for NDTFFR is reasonable for the purpose, based on reasonable assumptions and methods, and the report generally complies with the Actuarial Standards of Practice.

The technical portion of the audit or the replication was clean with very limited findings. The Total Present Value of Future Benefits is generally considered the primary actuarial result for replication purposes. **GRS was able to match this primary result within 0.2%.**

GRS has identified the following items for the Board, the retained actuary and Staff for the upcoming valuation and experience study which we believe will further improve the reliability of your valuation results in future years. Given that the July 1, 2022 valuation has already been published, we recommend these be incorporated in the July 1, 2023 valuation or as part of the next experience study.

Refinements for the actuarial valuation as of July 1, 2023:

- GRS recommends that early retirement rates be eliminated in circumstances where the benefit is substantially reduced. For additional details, see page 11 under "Departures".
- GRS recommends that the determination of the normal cost rate be better aligned with the associated payroll. For additional details, see page 14.
- GRS recommends that the administrative expense assumption be based on an average of the prior two years, adjusted for payroll, to reflect the biennial cycle of the plan's expenses.

SECTION II

GENERAL ACTUARIAL AUDIT PROCEDURE

General Actuarial Audit Procedure

GRS received and reviewed the following items:

- July 1, 2021 actuarial valuation report;
- Analysis of Actuarial Experience During the Period July 1, 2014 through June 30, 2019
- A preliminary set of census data for plan participants and beneficiaries as of July 1, 2020 and July 1, 2021 originally provided by NDTFFR to the retained actuary for the actuarial valuation; and
- A final set of census data for plan participants and beneficiaries as of July 1, 2020 and July 1, 2021 used by the retained actuary for the actuarial valuation.

In performing our review, we:

- Reviewed descriptions of member benefits and applicable statutes to understand the benefits provided;
- Reviewed the appropriateness of the actuarial assumptions and methods;
- Reviewed the actuarial valuation report; and
- Replicated the actuarial valuation results, including the determination of actuarial accrued liability, normal cost, and actuarially determined contributions.

The actuarial audit observations, which follow, are based on our review of this information and subsequent correspondence with the retained actuary for clarification and further documentation.

Key Actuarial Concepts

An actuarial valuation is a detailed statistical simulation of the future operation of a retirement system using the set of actuarial assumptions adopted by the governing board. It is designed to simulate all of the dynamics of such a retirement system for each current participant of the plan, including:

- Accrual of future service,
- Changes in benefits,
- Leaving the plan through retirement, disability, withdrawal, or death, and
- Determination of and payment of benefits from the plan.

This simulated dynamic is applied to each active member in the plan and results in a set of expected future benefit payments for that member. Discounting those future payments for the likelihood of survival at the assumed rate of investment return produces the Total Present Value of Plan Benefits (TPV) for that participant. The actuarial cost method will allocate this TPV between the participant's past service (actuarial accrued liability) and future service (future normal costs).

We believe that an actuarial audit should not focus on finding differences in actuarial processes and procedures utilized by the consulting actuary and the auditing actuary. Rather, our intent is to identify and suggest improvements to the process and procedures utilized by the retained actuary for NDTFFR. In performing this actuarial audit, we attempted to limit our discussions regarding opinion differences and focus our attention on the accuracy of the calculations of the liability and costs, completeness and reliability of reporting, and compliance with the Actuarial Standards of Practice that apply to the work performed by the retained actuary.

These key actuarial concepts will be discussed in more detail throughout this report.

Actuarial Qualifications

The actuarial valuation report was signed by Matthew Strom, FSA, MAAA, EA, and Kim Nicholl, FSA, MAAA, EA, and Tatsiana Dybal, FSA, MAAA, EA. Ms. Nicholl has since retired, but based on the information provided by the online actuarial directory sponsored by the Society of Actuaries, Mr. Strom and Ms. Dybal have attained the actuarial credentials noted on the signature line of the actuarial valuation report and are compliant with the Society of Actuaries Continuing Professional Development requirement.

SECTION III

ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions

Overview

For any pension plan, actuarial assumptions are selected that are intended to provide reasonable estimates of future expected events, such as retirement, turnover, and mortality. These assumptions, along with an actuarial cost method, the employee census data, and the plan's provisions, are used to determine the actuarial liabilities and the overall actuarially determined funding requirements for the plan. The true cost to the plan over time will be the actual benefit payments and expenses required by the plan's provisions for the participant group under the plan. To the extent the actual experience deviates from the assumptions, experience gains and losses will occur. These gains (losses) then serve to reduce (increase) future actuarially determined contributions and increase (reduce) the funded ratio. The actuarial assumptions should be individually reasonable and consistent in the aggregate, and should be reviewed periodically to ensure that they remain appropriate.

The Actuarial Standards Board ("ASB") provides guidance on establishing actuarial assumptions for a retirement program through the following Actuarial Standards of Practices (ASOP):

(1) ASOP No. 4, *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*
(2) ASOP No. 23, *Data Quality*
(3) ASOP No. 25, *Credibility Procedures*
(4) ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*
(5) ASOP No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*
(6) ASOP No. 44, *Selection and Use of Asset Valuation Methods for Pension Valuations*
(7) ASOP No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*
(8) ASOP No. 56, *Modelling*

We generally reviewed the application of the ASOPs applicable on the valuation date of July 1, 2021 for NDTFFR. Subsequent changes to the ASOPs will have to be reflected in future actuarial valuation reports.

The actuarial valuation report for NDTFFR contains descriptions of the actuarial assumptions which were used in the 2021 actuarial valuation. Additionally, the retained actuary published an actuarial experience study report, dated March 19, 2020. We conducted a thorough review of these documents in order to assess the reasonableness of the assumptions used in the actuarial valuations.

Actuarial assumptions for the valuation of retirement programs are of two types: (i) demographic assumptions, and (ii) economic assumptions. We have assessed the reasonableness of both types as part of this actuarial audit.

Demographic Assumptions

General

These assumptions simulate the movement of participants into and out of plan coverage and between status types. Key demographic assumptions are:

- turnover among active members,
- retirement patterns among active members, and
- healthy retiree mortality.

In addition, there are a number of other demographic assumptions with less substantial impact on the results of the process, such as:

- disability incidence and mortality among disabled benefit recipients,
- mortality among active members,
- percent of active members who are married and the relationship of the ages of participants and spouses, and
- benefit elections upon retirement or termination.

Experience Study Process

Demographic assumptions for retirement programs are normally established by statistical studies of recent actual experience, called experience studies. Such studies underlie the assumptions used in the valuations.

In an experience study, the actuary first determines the number of deaths, retirements, etc. that occurred during the experience period. Then the actuary determines the number "expected" to occur, based on the current actuarial assumptions. Finally, the actuary calculates the A/E ratio, where "A" is the actual number (of retirements, for example) and "E" is the expected number. If the current assumptions were "perfect", the A/E ratio would be 100%. When the A/E ratio varies much from 100%, it is a sign that new assumptions may be needed. (However, the actuary may prefer to set assumptions to produce an A/E ratio a little above or below 100%, in order to introduce some conservatism.)

The actuary can further enhance the "count-weighted" process, described above, by using a "liability-weighted" experience analysis. A liability-weighted analysis will generally use amounts such as benefits or liabilities to "weight" and review the experience. From the perspective of the retirement assumption, selecting an assumption based on headcount-weighting is consistent with estimating expected retirements, but selecting an assumption based on amount-weighting is consistent with minimizing gains and losses associated with expected retirements. By weighting the data by benefit amounts, the actuary gives more weight to members who have larger benefits (and thus have larger liabilities). The same concepts apply when the amount-weighted approach is applied to other demographic assumptions such as mortality and termination.

Assumption Setting

Once it is determined whether or not an assumption needs adjustment, setting the new assumption depends upon the extent to which the current experience is an indicator of the long-term future.

- Full credibility may be given to the current experience. Under this approach, the new assumptions are set very close to recent experience.
- Alternatively, the recent experience might be given only partial credibility. Thus, the new assumptions may be set by blending the recent experience with the prior assumption.
- If recent experience is believed to be atypical of the future, such knowledge is taken into account.
- Finally, it may be determined that the size of the plan does not provide a large enough sample to make the data credible. In such cases, the experience of the plan may be disregarded and the assumption is set based upon industry standards for similar groups.

Actuarial Standards of Practice (ASOP) No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*, applies to actuaries when they are selecting demographic assumptions. In accordance with ASOP No. 35, an actuary should identify the types of demographic assumptions to use for a specific measurement. In doing so, the actuary should determine the following:

a) The purpose and nature of the measurement;
b) The plan provisions or benefits and factors that will affect the timing and value of any potential benefit payments;
c) The characteristics of the obligation to be measured (such as measurement period, pattern of plan payments over time, open or closed group, and volatility);
d) The contingencies that give rise to benefits or result in loss of benefits;
e) The significance of each assumption; and
f) The characteristics of the covered group.

Not every contingency requires a separate assumption. For example, for a plan that is expected to provide benefits of equal value to employees who voluntarily terminate employment, become disabled, or retire, the actuary may use an assumption that reflects some or all of the above contingencies in combination rather than selecting a separate assumption for each.

Observations on Demographic Assumptions

Overall, it appears that the current demographic assumptions are reasonable for valuing the liabilities and assessing the contributions as of 2021.

Mortality

The healthy retiree mortality assumption uses a recent, standard table published by the SOA based on public sector data (Pub-2010), specifically reflecting the underlying teacher population (the Teachers version of the Pub-2010 tables). The adjustments made specific to NDTFFR relied upon benefit-weighted information and explicitly cited the amount of data and the resulting credibility given to the data.

Future mortality adjustments were reflected using the most recent table available at the time, MP-2019. We find that each component of this approach follows best practice.

Active, disabled, and survivor mortality assumptions play a much lesser role in the valuation and are lower frequency events, providing less credible data. We concur with the retained actuary's choice of standard active employee, disabled mortality, and contingent survivor tables that are reflective of the underlying population.

Departures (Retirement, Termination, Disability)

During the five-year experience period, demographic gains and losses related to departures from active status were minimal in relation to the overall liabilities and did not demonstrate any consistent bias in the assumptions. There was minimal change recommended to the assumptions in the most recent experience study which is consistent with the observed gains and losses over the study period. We believe these assumptions to be reasonable in general.

We did note, however, that the early retirement rates, as currently being applied, can result in assuming that a certain percentage of members who are not grandfathered under the pre-2013 provisions will take an extremely reduced early retirement benefit. A non-grandfathered member who retires at age 55 will potentially be subject to an 80% reduction in their benefit (resulting in them receiving 20% of the unreduced benefit). This is not something that has fully had time to play out in the gain loss experience (to observe a possible bias), and the data used to set this assumption was largely reflective of grandfathered members who are subject to a smaller reduction. However, until there is sufficient data to study this group, we feel it would be prudent to assume no early retirement from this group in instances when the member is more than 5 years from unreduced retirement (a greater than 40% reduction in benefit). Assuming retirements with deep early retirement reductions while waiting to have sufficient data to study the group may understate the normal costs for this group. This could result in new unfunded liabilities once there is sufficient data to study the group and the rates are likely lowered or eliminated at younger ages. Implementing a change now will result in relatively minimal impact to plan results and potentially head off bigger impacts later. GRS found that implementing this change as recommended increased the total actuarial contribution requirement by 0.22% of pay.

Other

Mortality, retirement and termination rates are the primary demographic assumptions that impact the valuation results. We examined the other demographic assumptions and found them to be reasonable and similar to those used by other public sector plans.

Economic Assumptions

General

Economic assumptions simulate the impact of economic forces on the amounts and values of future benefits. Key economic assumptions are the assumed rate of investment return and assumed rates of future salary increase. All economic assumptions are built upon an underlying inflation assumption.

ASOP No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*, applies to actuaries when they are selecting economic assumptions. ASOP No. 27 states that each economic assumption

selected by the actuary should be reasonable. For this purpose, an assumption is reasonable if it has the following characteristics:

a) It is appropriate for the purpose of the measurement;
b) It reflects the actuary's professional judgment;
c) It takes into account historical and current economic data that is relevant as of the measurement date;
d) It reflects the actuary's estimate of future experience, the actuary's observation of the estimates inherent in market data, or a combination thereof; and
e) It has no significant bias (i.e., it is not significantly optimistic or pessimistic), except when provisions for adverse deviation or plan provisions that are difficult to measure are included and disclosed, or when alternative assumptions are used for the assessment of risk.

Additionally, ASOP No. 27 states that communications regarding actuarial reports subject to this standard should contain the following:

a) A description of each significant assumption used in the measurement and whether the assumption represents an estimate of future experience, and
b) A description of the information and analysis used in selecting each economic assumption that has a significant effect on the measurement.

Inflation

We believe the inflation assumption of 2.30% is reasonable. Although it was set during a time with very different economic conditions, these assumptions are intended to reflect long-term expectations and it remains appropriate today. The current high inflation environment does not necessitate a change in this long-term assumption.

Administrative Expenses

The administrative expenses were not specifically addressed in the experience study, but the current assumption uses prior year actual expenses with a one-year inflation adjustment. This is not inappropriate, but we noted that the administrative expenses tend to oscillate biennially (possibly associated with the legislative cycle). It may be slightly more appropriate to use an average of the prior two years (adjusted for inflation).

Investment Return

The investment return assumption is one of the principal assumptions in any actuarial valuation. It is used to discount future expected benefit payments to the valuation date to determine the liabilities of the retirement system. Even a small change to this assumption can produce significant changes to the liabilities and contribution rates.

This assumption is generally set based on forward-looking capital market assumptions provided by investment consultants. These capital market assumptions vary highly from investment consultant to investment consultant and vary highly depending on the period in which the capital market assumptions were developed, and tends to be a more subjective assumption than others. Segal used the 2019 Horizon survey of 20-year returns as their source of capital market assumptions, and ultimately recommended a 7.25% investment return assumption.

We do not find this to be inappropriate; however, we offer the following perspective for the Board regarding reviewing this assumption in the next experience study:

- We see an increased consideration of 10-year capital market assumptions in studying this assumption. Although the plan has a long-term investment horizon, near-term returns are important in the outcome of the plan and should carry some weight. For reference, using the 10-year capital market assumptions from the same Horizon survey used in your most recent experience study would have resulted in a geometric real return almost one percent less than the 5.18% shown on page 15 of the report. Thus, the 0.23% margin for adverse experience is a function of using the longer time horizon to set the return assumption. Therefore, the Board should not take this to mean this assumption was set conservatively.
- At 7.25%, NDTFFR is at the top end of this assumption for their peer group. Most public sector plans now use returns that are 7.00% or less.
- Lastly, and most importantly, NDTFFR is a fixed contribution rate plan with a sunset provision regarding the contribution. In general, we aim to determine a best estimate set of assumptions, but also find that there is an asymmetry of outcomes when it comes to fixed rate plans. If we choose our assumptions to be slightly conservative, and things work out better than expected, then the plan is simply better funded than assumed. If we choose our assumptions to be slightly aggressive, and things don't work out as well as expected, we may find that the plan is unsustainable and that the Board does not have the power for corrective action. Although not an immediate concern, the sunset provision should also weigh into the assumption setting process so as to avoid prematurely lowering the contributions.

Wage-Related Assumptions

For the merit-based salary increase assumption, the study removed actual inflation during the study period which we find to be best practice. The salary increase experience seemed relatively in line with historical rates and modest changes were made according to experience. The 3.25% payroll growth assumption appears reasonable and supported by the information provided.

Actuarial Methods

Actuarial Cost Method

The Entry Age Normal actuarial cost method is the most prevalent funding method in the public sector. It is appropriate for the public sector because it produces costs that remain relatively stable as a percentage of payroll over time, resulting in intergenerational equity for taxpayers. We have reviewed the retained actuary's application of the Entry Age Normal actuarial cost method and we believe that the method is reasonable and appropriately applied.

Asset Smoothing Method

NDTFFR uses five-year asset smoothing with a 20% corridor. This is a reasonable and common approach.

Amortization Method

The Actuarially Determined Contribution (ADC) uses a 22-year closed, level percent of pay amortization. We find this to be a reasonable approach at the current time. Eventually, as the amortization period begins to shorten (for example when the amortization reaches 10 to 15 years), NDTFFR may wish to use a different approach such as a layered amortization approach to avoid extreme volatility in the ADC produced by short amortization periods applied to new gains and losses.

We noted that in their most recent 2022 valuation presentation, Segal already brought up this idea with the Board. The example given included different amortization periods for different sources of unfunded liabilities. Although it is consistent with CCA whitepaper on this topic, which is considered to be a model document, the authors of this report prefer to introduce a single new amortization base each year for simplicity and to avoid anomalies that can occur with the more complex approach.

Determination of Normal Cost Rate and Alignment with Contributory Payroll

The payroll for the upcoming year was reported as $793 million. GRS was able to closely replicate this amount using the fiscal year 2021 pays for the active population along with a year's salary increase based on the individual salary increase assumption. This amount reflects the expected payroll if the entire active population works the full fiscal year 2022. For purposes of determining contributory payroll towards unfunded liabilities, GRS finds this to be an appropriate payroll estimation.

GRS was able to closely replicate the Segal normal cost of $95.6 million based on the active population at July 1, 2021. This amount relates only to current actives, no new hires during fiscal year 2022, and reflects that many members will terminate and retire during the year. New hire payroll should not be relied on to fund these closed group normal costs. New hires come in with a year of service at the valuation date causing a $6 or $7 million liability loss each year. They also come in with contributions sufficient to cover these liabilities. Thus, an approach that excluded new hire normal costs AND new hire contributions in determining funding sufficiency would be acceptable. However, in this instance, new hire normal costs are *excluded* while new hire contributions are *included* thus overstating contribution sufficiency. Essentially, the current approach relies on new hire contributions to pay for new hire liabilities, contribute towards the unfunded liability *AND* pay for normal costs of members terminating during the year which overcounts this new hire contributory payroll.

In converting the closed group dollar normal cost amount to a rate, GRS would spread this normal cost dollar amount over an expected payroll of the active members at July 1, 2021 which reflects that not all members will work the full year, consistent with how the normal cost dollar amount was determined. GRS estimates this expected pay during fiscal year 2022 to be $760 million. Spreading the $96 million normal cost amount over this $760 million expected pay (rather than the $793 million open group pay), increases the normal cost rate by about 0.5%. We find that this higher normal cost rate would be the more appropriate rate to determine the contribution sufficiency of the statutory rates.

SECTION IV

ACTUARIAL VALUATION RESULTS

Actuarial Valuation Results

Replication of Actuarial Valuation Results

We replicated the 2021 actuarial valuation results using the assumptions and methods used by the retained actuary, and we were able to replicate the plan liabilities very closely.

NDTFFR Key Valuation Results as of July 1, 2021

Development of Current Plan Obligations

	Segal	GRS	Difference
1. Present Value of Future Benefits			
Active members			
Retirement	$2,506	$2,497	-0.4%
Withdrawal	184	189	2.9%
Death	35	35	2.6%
Disability	39	45	15.3%
Total	2,764	2,767	0.1%
Total Active	2,764	2,767	0.1%
Retirees and Beneficiaries	2,515	2,524.31	0.4%
Inactive vested members	118	118	0.2%
Inactive non-vested members	14	14	0.0%
Total	$5,411	$5,423	**0.2%**
2. Present Value of Future Normal Costs	$1,075	$1,108	3.1%
3. Actuarial Accrued Liability [1. - 2.]	$4,336	$4,314	-0.5%

$ in millions

Development of the Actuarially Determined Employer Contribution - Replicate

	Segal	GRS	Difference
Actuarial Accrued Liability	$4,336	$4,314	-0.5%
Actuarial Value of Assets	$2,974	$2,974	
Unfunded Actuarial Accrued Liability	$1,362	$1,341	-1.6%
Normal Cost	$95.6	$94.5	-1.1%
Administrative Expenses	$2.7	$2.7	0.0%
Amortization of Unfunded Liability	$92.8	$91.4	-1.6%
Payroll for Upcoming Year	$793	$793	0.0%
Amounts as a % of Pay:			
Normal Cost*	12.06%	11.92%	
Administrative Expenses	0.35%	0.35%	
Amortization of Unfunded Liability	11.71%	11.52%	
Total Actuarially Determined Contribution	24.12%	23.79%	
Employee Contribution Rate	11.75%	11.75%	
Net Employer Actuarially Determined Contribution**	12.37%	12.04%	

**The normal cost rate shown attempts to fully replicate Segal's methodology. The normal cost rate, and subsequently the Net Employer Actuarially Determined Contribution, would be 0.50% higher using recommended methodology.*

***The GRS Net Employer Actuarially Determined Contribution after incorporating both the change to the normal cost rate determination as well as the recommended elimination of the application of retirement rates in circumstances with large early retirement reductions is 12.76% of pay (or 0.72% higher than the replication results displayed above).*

$ in millions

SECTION V

CONTENT OF THE VALUATION REPORT

Content of the Valuation Report and Presentation

We have reviewed the actuarial valuation report and presentation with particular attention to the requirements of ASOP Nos. 4, 41, 51 and 56, and have no major concerns in this regard.

We have one minor item for the upcoming report:

- Currently there is an assumption regarding inactive vested retirements that is not noted in the valuation report. For inactive vested retirements, the current assumption is that 5% will retire at each early retirement age prior to normal retirement and that 100% of the remaining inactive vested members will retire at normal retirement age. Segal indicated that they would update this in the next valuation report, however it was not updated in the 2022 valuation and will need to be updated in the 2023 valuation.

SECTION VI

SUMMARY

Summary

Based on our review of the census data, experience study documents, liability replications, and actuarial valuation report, we believe the 2021 actuarial valuation is reasonable for the purpose of determining the sufficiency of the current contribution rates, based on reasonable assumptions and methods, and the report generally complies with the Actuarial Standards of Practice.

GRS has identified some items for the Board, the retained actuary and Staff for the upcoming valuation and experience study which we believe will further improve the accuracy of your valuation results in future years, as well as some strategic considerations for the Board going forward. These recommendations are for consideration, but do not hinder our opinion of this being a "clean" audit.