

ACTUARIAL REVIEW OF THE
2021 ACTUARIAL VALUATION OF THE
TEACHERS' RETIREMENT SYSTEM OF LOUISIANA



ACTUARIAL SERVICES
PRESENTED TO THE PUBLIC RETIREMENT SYSTEMS' ACTUARIAL COMMITTEE
ON DECEMBER 16, 2021



LOUISIANA LEGISLATIVE AUDITOR
MICHAEL J. "MIKE" WAGUESPACK, CPA

December 3, 2021

The Honorable Phillip DeVillier
Chairman, Public Retirement Systems' Actuarial Committee
Louisiana House of Representatives
Post Office Box 94062
Baton Rouge, Louisiana 70804

Re: Actuarial Review of TRSL's 2021 Actuarial Valuation

Dear Chairman DeVillier and PRSAC Members:

In accordance with La. R.S. 11:127(C) and R.S. 24:513(C)(1), the Louisiana Legislative Auditor has conducted an Actuarial Review for the Teachers' Retirement System of Louisiana (TRSL or System).

The following presents the results of our Actuarial Review of TRSL's June 30, 2021 Actuarial Valuation (prepared by Foster & Foster and dated October 8, 2021). In doing so, we have reviewed certain actuarial assumptions and methods employed by TRSL and its actuary for appropriateness.

I would like to thank TRSL's director, staff, and actuary for the cooperation and assistance provided for this review.

Sincerely,

Michael J. Waguespack, CPA
Legislative Auditor

MJW:KJH:ch

cc: Ms. Katherine Whitney, Director
Teachers' Retirement System of Louisiana

Ms. Shelly Johnson, ASA, MAAA
Foster & Foster Actuaries & Consultants

LLA'S ACTUARIAL REVIEW OF TRSL'S 2021 ACTUARIAL VALUATION

Executive Summary

The Louisiana Legislative Auditor (LLA) performed an Actuarial Review (AR or Review) of the Teachers' Retirement System of Louisiana's (TRSL) June 30, 2021 Actuarial Valuation dated October 8, 2021.

This Review is a limited scope review intended to:

1. Evaluate the appropriateness of certain actuarial assumptions and methods adopted by TRSL's board.
2. Identify potential improvements to these actuarial assumptions and methods.
3. Identify any actuarial assumption or method that clearly violates any relevant Actuarial Standards of Practice (ASOPs).

Summary of Conclusions

We did not identify any actuarial assumption or method that violates any ASOPs. Nevertheless, we offer the following recommendations for consideration by the TRSL board and by the Public Retirement Systems' Actuarial Committee:

1. *Gain-sharing and Cost-of-Living Adjustments (COLAs)*. We believe the current method of implicitly valuing the COLA by reducing the investment return assumption has potentially led to stakeholder confusion regarding the investment return needed to fund benefits based on current assumptions and contribution estimates. We believe an explicit method would increase transparency. We recommend the use of an explicit, rather than implicit, method for valuing future COLAs.

In addition, we believe stakeholders may wish to consider if the current statutory structure that indirectly finances COLAs is meeting the desired policy goals. A clearer connection between the contribution to the trust and the COLA(s) it is designed to fund is likely to be less confusing and increase accountability.

2. *Investment Return Assumption*. Since 2018, the decreases in the System's assumptions have kept pace with the decreases in the investment return assumption calculated by the LLA. However, the System's assumption remains approximately 100 basis points higher than this benchmark. We recommend the System continue to lower its investment return assumption and consider:
 - Incorporating conservatism in the assumption by consistently targeting a rate that is closer to a 60% probability of achieving the assumption over time, as calculated by the System's actuary; and
 - Reflecting the impact of cash flow timing on total expected returns.

Introduction

The Louisiana Legislative Auditor (LLA) performed an Actuarial Review (Review) of the Teachers' Retirement System of Louisiana's (TRSL or System) June 30, 2021 Actuarial Valuation dated October 8, 2021, as prepared by Foster & Foster. This Review is being performed in accordance with La. 11:127(C) and R.S. 24:513(C)(1). This Review, in conjunction with the System's full actuarial valuation, is intended to fulfill the requirements of La. R.S. 11:127(C) to the Public Retirement Systems' Actuarial Committee (PRSAC).

Actuarial Standards of Practice (ASOPs) are principles-based, rather than prescriptive, in nature, and therefore actuarial valuations involve significant use of an actuary's professional judgement when developing actuarial assumptions and methods. This can result in different actuaries utilizing different assumptions and methodologies when approaching similar, or even the same, benefit structures and legislative constraints.

This Review is a limited scope review intended to:

1. Evaluate the appropriateness of certain actuarial assumptions and methods adopted by TRSL's board.
2. Identify potential improvements to these actuarial assumptions and methods.
3. Identify any actuarial assumption or method that clearly violates any relevant ASOPs.

We hope the recommendations help the TRSL board in its decision-making process, as well as PRSAC in its "review and study" of the retirement systems.

As a limited scope review, we relied on previously-published LLA analyses and, where necessary, reasonable estimating techniques to advance the analysis to the current valuation date. We did not attempt to replicate the System actuary's results; perform a full actuarial valuation using alternative assumptions and methods developed by the LLA; nor did we perform a full and detailed analysis of any assumptions or methods.

Further, the discussion included in this Review is limited to (1) the treatment of future COLA benefits and (2) the investment return assumption. The limited discussion does not indicate that other assumptions and methods were not considered, nor that recommendations for improvement in other assumptions and methods will not be included in future reviews.

This Review was prepared by Kenneth J. Herbold, Director of Actuarial Services for the LLA; and by James J. Rizzo, Senior Consultant and Actuary, and Piotr Krekora, Senior Consultant and Actuary, both employed by Gabriel, Roeder, Smith & Company (GRS). GRS is under contract with the LLA to provide backup, research, calculations, actuarial services, and advice.

Our Recommendations

We did not identify any actuarial assumption or method that violates any ASOPs. Nevertheless, we offer the following recommendations for consideration by the TRSL board and by PRSAC:

1. Gain-sharing and Cost-of-Living Adjustments (COLAs)

La. R.S. 11:883.1 – 11.883.4 outlines the provisions for the funding and granting of COLAs. The statute provides for a side fund referred to as the Experience Account. The Experience Account is automatically funded via gain-sharing (i.e., when investment returns exceed a specified threshold). In addition, the board, with the approval of the legislature, may grant ad-hoc COLAs subject to a number of limitations outlined in the statute.

While the COLAs themselves are neither automatic nor guaranteed, the System and its actuary assume that future COLAs are reasonably likely to occur and therefore reflect the value of these benefits when developing the actuarial accrued liability. The alternative would be to not recognize future COLA benefits in the valuation which (a) ignores the reasonable expectation that COLAs will be granted in the future with some frequency and (b) to the extent they are not fully funded by the Experience Account pushes the cost of providing those COLAs out to future generations of taxpayers.

TRSL's Methodology

The *actuarial method* currently used to recognize the cost of future COLAs is to reduce the investment return assumption by 35 basis points when developing the discount rate. The 35 basis points represents the average investment gain expected to be transferred to the Experience Account in any given year, reflecting anticipated volatility in actual returns. Of course, such a transfer is not expected to occur every year. Some years will have none; some years may have a smaller amount; and some years may have a larger amount transferred.

We express no opinion whether 35 basis points is currently a reasonable estimate for this purpose.

Transparency

The chosen actuarial method implicitly recognizes the costs of TRSL's COLA program, rather than directly measuring expected future COLAs using an explicit actuarial method. This results in the use of a *discount rate assumption* that differs from the *assumed investment return*:

Actuarial Valuation Date	Investment Return Assumption	Reduction to Recognize Future COLAs	Discount Rate*
June 30, 2021	7.75%	0.35%	7.40%
June 30, 2020	7.80%	0.35%	7.45%
June 30, 2019	7.95%	0.40%	7.55%
June 30, 2018	8.05%	0.40%	7.65%

* Used to discount expected future benefit payments to the valuation date, i.e. calculate the plan's liabilities.

The investment return and discount rate assumptions are distinct assumptions outlined in ASOP No. 27; however, common practice for public plans is to use the same rate for both assumptions. This leads to the majority of public plan stakeholders using the terms interchangeably in verbal and written discussion. Therefore, based on evidence outlined in the LLA's *Comprehensive Actuarial Review of the 2019 Actuarial Valuation of the Teachers' Retirement System of Louisiana*, the use of an implicit method to value COLAs that results in a discount rate that differs from the investment return assumption has likely contributed to stakeholder confusion regarding the investment return necessary to fully fund the plan under current assumptions and contribution levels.

Alternative Methods

The following summarizes two alternative explicit methods of recognizing future COLAs. Both methods use the same type of Monte Carlo stochastic simulation and should not require much additional actuarial effort, if any, beyond what has already been undertaken.

1. *Single equivalent annual COLA assumption.* An open group forecast valuation simulation spins off information about the frequency and magnitude of each year's potential transfer to the Experience Account. The mean (average) transfer amount can be considered a benefit stream. Solving for x , an annual equivalent COLA having the same actuarial present value over the next 30 years as the average simulated transfer amount can be determined. That single equivalent annual COLA becomes an actuarial assumption built into the usual actuarial valuation procedures.
2. *Single equivalent benefit load assumption.* Dividing that same mean (average) transfer stream for each year by its regular benefits payable for that year, as spun off from the open group forecast valuation simulation, provides an estimate of the "load" on regular benefits that approximates the average transfer amount. That load estimate becomes an actuarial assumption built into the usual actuarial valuation procedures.

In other words, method 1 assumes a small annual COLA is granted which is approximately equal to the present value of a semi-regular COLA granted less frequently than annually, while method 2 calculates how much the same present value would be as a percentage of the liability and then increases the total liability by that percentage. Either of these two alternative *actuarial methods* are, in our opinion, more straight-forward than the current implicit method and would likely:

- Be less confusing to the public;
- Be more transparent and promote accountability; and
- Not change the contribution rates or unfunded actuarial accrued liabilities materially, according to calculations prepared and presented in the LLA's *2018 Actuarial Valuation Report on the Teachers' Retirement System of Louisiana* dated December 14, 2018.

Additional Considerations

As noted above, current statute requires investment returns above a specified threshold be transferred to the Experience Account. Both the concept of gain-sharing and the use of a “side fund” designed to finance COLAs can be used in reasonable and responsible ways. However, the current statutory design lacks transparency and therefore suffers from similar issues as those outlined above. The current indirect method of financing COLAs obscures the anticipated cost to employers and makes it more difficult for members to understand the likelihood of receiving a COLA; while at the same time diverting investments gains which slows progress towards fully funding current benefits. A clearer connection between the contribution to the trust and the benefits they are designed to fund is less confusing, increases accountability, and serves to dampen contribution volatility.

Conclusion

We believe the current method of implicitly valuing the COLA by reducing the investment return assumption has potentially led to stakeholder confusion regarding the investment return needed to fund benefits based on current assumptions and contribution estimates. We believe an explicit method would increase transparency and therefore recommend the use of an explicit, rather than implicit, method for valuing future COLAs.

In addition, we believe stakeholders may wish to consider if the current statutory structure that indirectly finances COLAs is meeting the desired policy goals. A clearer connection between the contribution to the trust and the COLA(s) it is designed to fund is likely to be less confusing and increase accountability.

2. Investment Return Assumption

The last comprehensive analysis of the investment return assumption was prepared and presented in the LLA’s *2018 Actuarial Valuation Report on the Teachers’ Retirement System of Louisiana*, dated December 14, 2018, using forecasts published in 2018. Since that analysis was completed, professional investment forecasters have continued lowering their expectations for the mid-term and longer-term.

For this Review, a detailed analysis of independent experts’ 2021 forecasts for TRSL’s portfolio was not undertaken. Instead, we provide an estimate of the return assumption calculated using the same methodology as prior LLA analyses, for consistency and illustrative purposes. Those results can be found in the section below entitled *Benchmark Investment Return Assumption*. We also present observational commentary.

Selecting an Investment Return Assumption

ASOP No. 27 provides guidance for selecting “reasonable” economic assumptions. The ASOP outlines multiple characteristics to define what constitutes a reasonable assumption, including that it “is expected to have no significant bias (i.e., it is not significantly optimistic or pessimistic).” However, the ASOP specifically allows assumptions to be adjusted for conservatism.

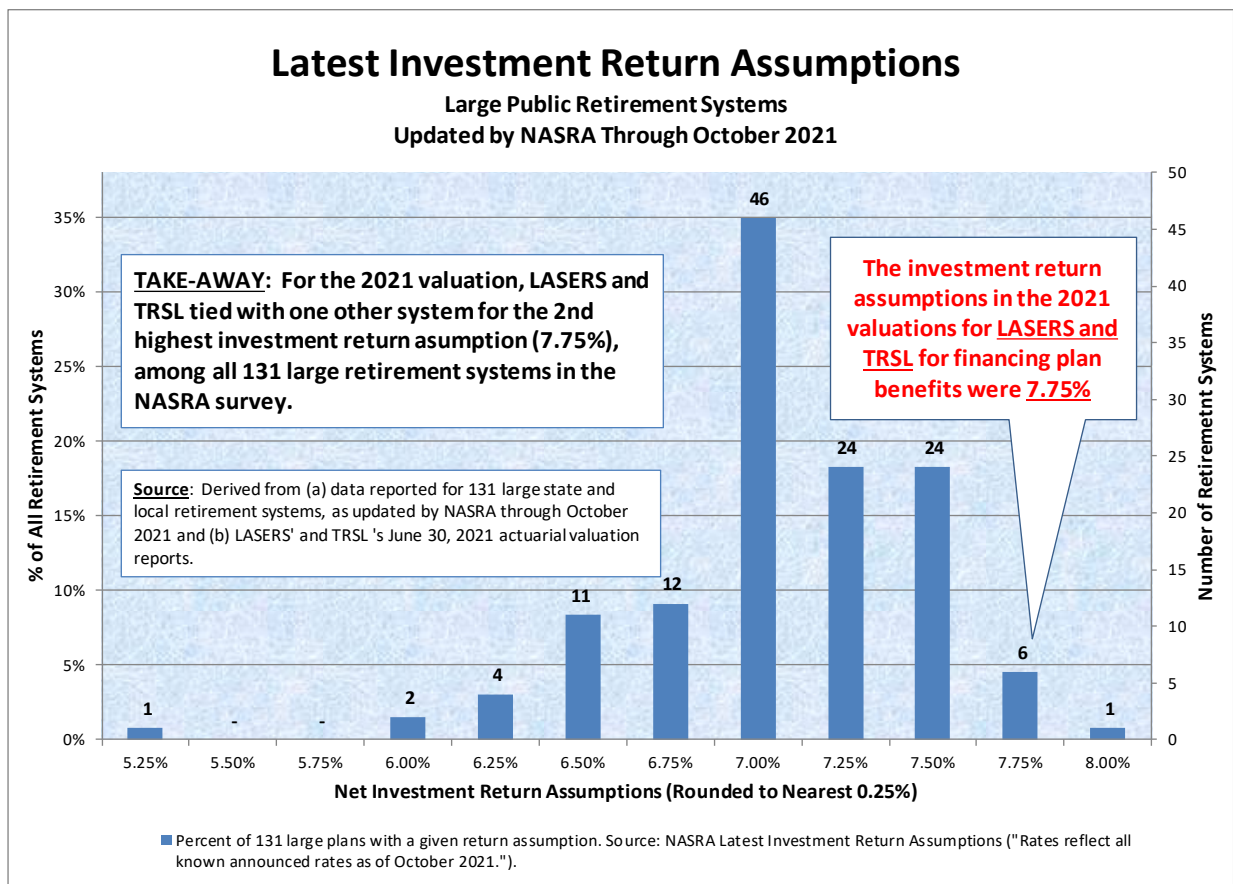
This is particularly important when considering an appropriate investment return assumption because the investment return assumption is tied directly to the discount rate, which has the single largest impact on the development of the liability. Small changes in the assumption can have a large impact, which is why an overly optimistic investment return assumption, applied repeatedly, can (a) create repeated actuarial losses, (b) cause underfunding by understating the required contribution, (c) impede the scheduled progress to pay off the unfunded liability and achieve full funding, and (d) undermine the actuarial integrity of the pension-promise.

TRSL’s board and actuary have consistently lowered the investment return assumption over the past few years, from 8.05% as of June 30, 2018 to 7.75% for the June 30, 2021 valuation, and reduced further to 7.60% for the development of the 2022-2023 fiscal year contribution. We commend TRSL for lowering its investment return assumption.

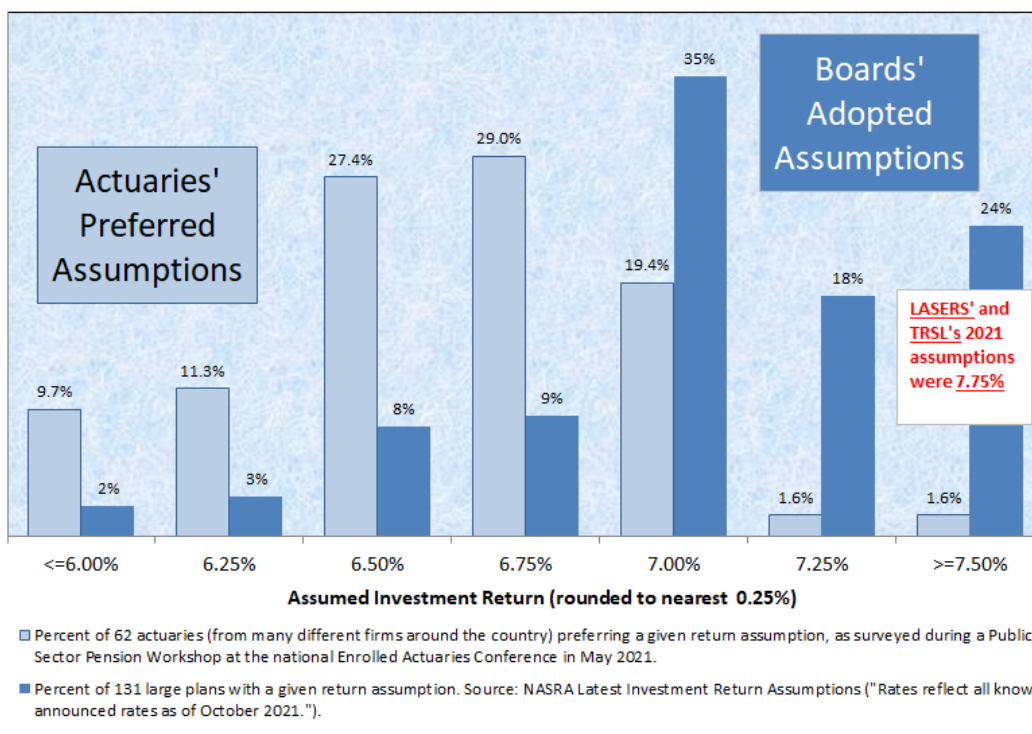
However, despite the recent reductions, TRSL continues to have one of the highest investment return assumptions amongst its peers.

Comparison to Peers

The following two charts present the distribution of current return assumptions for large retirement systems using the latest NASRA Survey and from a survey of actuaries’ generally-preferred assumptions.



Comparison of Actuaries' Preferred Return Assumptions with Pension Boards' Adopted Assumptions



Comparing return assumptions across peers is not the most appropriate way to assess the reasonableness or the degree of conservatism of TRSL's return assumption, but it can still be informative and provide context when reviewing the assumption. It is important to note two factors for this analysis:

- TRSL's asset allocation appears to have a higher risk profile than many other pension funds, which might support a higher investment return assumption compared to others with more conservative portfolios.
- Many retirement systems only review their investment return assumption once every five years, so the survey data may not fully reflect changes in capital market assumptions over the past several years.

A better benchmark is to apply the robust and disciplined methodology discussed below, comparing the return assumption with what results from the capital market assumptions of several nationally respected investment forecasters.

Benchmark Investment Return Assumption

In the supporting documentation for the discount rate and investment return assumption, TRSL's actuary used the long-term (30 years) set of the capital market assumptions from its investment consulting firm. However, we believe an assumed rate of return that falls between the mid-term and long-term expectations is more appropriate for TRSL and for most other mature retirement systems. This more accurately reflects the inherent drag on total returns that results when

distributions are larger than contributions (i.e., negative non-investment cash flow), and therefore some portion of current assets will be invested for a shorter time horizon.

The LLA has historically developed an investment return assumption designed to develop a consensus average expected return based on the capital market assumptions of several respected and independent professional investment forecasters, as applied to a plan’s own asset allocation and its own expected benefit cash flow. Relying on *several* such firms ensures the result does not represent just one firm’s opinion, but reflects the mainstream of thought leaders.

Following are the professional investment forecasters whose capital market assumptions inform us in deriving a consensus average.

Participating Professional Investment Forecasters			
Aon/Hewitt	Blackrock	BNY/Mellon	Callan
Cambridge	J.P. Morgan	Meketa	Mercer
RVK	NEPC	Verus	Wilshire

For this Review, an *estimate* of the benchmark return assumption was developed based on (a) the most recent comprehensive analyses for TRSL (2018), (b) our general understanding of the direction and change-magnitude of forecasters’ expectations in recent years (from 2018 to 2021) applied to TRSL’s asset allocation, and (c) a slight decrease in the expected rate of inflation embedded in return expectations (from 2018 to 2021). As outlined in the LLA’s *2018 Actuarial Valuation Report*, the benchmark return falls closer to the mid-term (10-year) expectations than it does to the longer-term (20- and 30-year) expectations.

The following table shows the comparison the System’s investment return assumption and the LLA developed benchmark:

Actuarial Valuation Date	Investment Return Assumption	Benchmark	Difference
June 30, 2021	7.75%	6.75%	1.00%
June 30, 2020	7.80%	7.00%	0.80%
June 30, 2019	7.95%	N/A	N/A
June 30, 2018	8.05%	7.00%	1.05%

Conclusion

Since 2018, the decreases in the System's assumptions have kept pace with the decreases in the investment return assumption calculated by the LLA. However, the System's assumption remains approximately 100 basis points higher than this benchmark. We recommend the System continue to lower its investment return assumption, and consider:

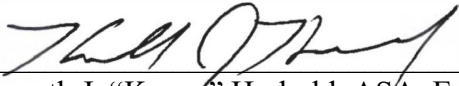
- Incorporating conservatism in the assumption by consistently targeting a rate that is closer to a 60% probability of achieving the assumption over time, as calculated by the System's actuary; and
- Reflecting the impact of cash flow timing on total expected returns.

Actuarial Certification

This Actuarial Review constitutes a Statement of Actuarial Opinion. It has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents information it is purported to present. This review was performed in conformity with generally accepted actuarial principles and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

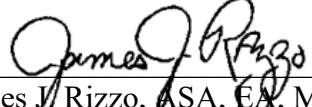
Kenneth J. Herbold, James J. Rizzo, and Piotr Krekora are members of the American Academy of Actuaries and meet the US Qualification Standards necessary to render the actuarial opinions contained herein.

The signing actuaries are independent of the Teachers' Retirement System of Louisiana.




Kenneth J. "Kenny" Herbold, ASA, EA, MAAA
Director of Actuarial Services
Louisiana Legislative Auditor

December 3, 2021
Date



James J. Rizzo, ASA, EA, MAAA
Senior Consultant and Actuary
Gabriel, Roeder, Smith & Company

December 3, 2021
Date



Piotr Krekora, ASA, EA, MAAA, PhD
Senior Consultant and Actuary
Gabriel, Roeder, Smith & Company

December 3, 2021
Date

Appendix

Qualifications and Caveats

This Actuarial Review was prepared in accordance with La. R.S. 11:127(C) and 24:513(C)(1). This Review, in conjunction with the System's full actuarial valuation, is intended to fulfill the requirements of La. R.S. 11:127(C) to the Public Retirement Systems' Actuarial Committee (PRSAC) for 2021 and is intended for use by PRSAC and those designated or approved by PRSAC. This Actuarial Review may be provided to parties other than PRSAC only in its entirety and only with the permission of PRSAC. The Louisiana Legislative Auditor is not responsible for unauthorized use of this Actuarial Review.

This Actuarial Review should not be construed as providing tax advice, legal advice, or investment advice. It should not be relied on for any purpose other than the purposes described herein. This Actuarial Review assumes the continuing ability of TRSL to collect the contributions necessary to fund its Plan. A determination regarding whether or not TRSL is actually willing and able to do so in the future is outside our scope of expertise and was not performed.

The findings in this Actuarial Review are based on data and other information as of June 30, 2021, and forecasts published for 2021. This Actuarial Review was based upon information furnished by TRSL, the System's investment consultant, the System's actuary, and by numerous external inflation and investment forecasters. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by outside parties.

All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board and with applicable statutes.

At the time of this writing, we consider the 2021 forecasts of the future inflation and capital market assumptions (including future investment returns) from the subject matter experts to be suitable for development of the benchmark return assumption for the 2021 actuarial valuation. All actuarial projections have a degree of uncertainty because they are based on the probability of occurrence of future contingent events. Accordingly, actual results will be different from the results contained in the analysis to the extent actual future experience varies from the experience implied by the assumptions.

This Actuarial Review was prepared using GRS proprietary capital market asset model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled. We are relying on the GRS actuaries and Internal Software, Training, and Processes Team who developed and maintain the model.