

Presented to the Public Retirement
Systems' Actuarial Committee
February 8, 2023

ACTUARIAL SERVICES

FIREFIIGHTERS' RETIREMENT SYSTEM 2022 ACTUARIAL VALUATION REVIEW

January 27, 2023

The Honorable Edward J. Price
Chairman, Public Retirement Systems' Actuarial Committee
Louisiana State Senate
Post Office Box 94183
Baton Rouge, Louisiana 70804

Re: Actuarial Review of FRS' 2022 Actuarial Valuation


Dear Chairman Price and PRSAC Members:

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

The following presents the results of our Actuarial Review of FRS' June 30, 2022 Actuarial Valuation (prepared by Curran Actuarial Consulting, Ltd. and dated November 9, 2022). In doing so, we have reviewed certain actuarial assumptions and methods employed by FRS and its actuary for appropriateness.

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

Respectfully submitted,



Michael J. "Mike" Waguespack, CPA
Legislative Auditor

MJW:KH:lm

cc: Mr. Steven Stockstill, Director and Legal Counsel
Firefighters' Retirement System

Mr. Gregory Curran, FCA, MAAA, ASA
Curran Actuarial Consulting, Ltd.



Executive Summary

The Louisiana Legislative Auditor (LLA) performed an Actuarial Review (AR or Review) of the Firefighters' Retirement System's (FRS or System) June 30, 2022 Actuarial Valuation dated November 9, 2022.

This Review is a limited-scope review intended to:

1. Evaluate the appropriateness of certain actuarial assumptions and methods adopted by FRS' 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 FRS' board and by the Public Retirement Systems' Actuarial Committee:

1. *Cost-of-Living Adjustments (COLAs)*. Currently, FRS' board and its actuary do not anticipate future COLAs in the actuarial valuations. By not including actuarially-expected future COLA benefits, the actuarial valuations (a) ignore the reasonable expectation that COLAs will be granted in the future with some frequency and (b) push the cost of providing those COLAs out to future generations of taxpayers.

We recommend the FRS' board engage its actuary to undertake a quantitative actuarial analysis of the operation of the COLA provisions to identify (1) the frequency with which future COLAs may be permitted, (2) the likely magnitude of those COLAs, and (3) the potential financial position of the plan at that time; so the board may better understand and evaluate (1) the likelihood a COLA would be granted when permitted and (2) the impact of incorporating these expectations now versus reflecting them (and therefore funding them) only after they have been granted.

2. *Investment Return Assumption*. For 2022, recent changes in the asset allocation and a slight increase in both short-term return expectations and the embedded inflation assumption resulted in an increase in the benchmark. While recent market turmoil has potentially resulted in an increase in professional expectations of future investment performance since last year, we recommend the System continues to closely monitor its investment return assumption and consider:

- Incorporating conservatism in the assumption by consistently targeting a rate that is closer to having a 60% probability of achieving the assumption over time; and
- Reflecting the impact of cash flow timing on total expected returns, recognizing when distributions are larger than contributions some portion of current assets will necessarily be needed to pay benefits and will therefore not be invested for the long-term.

Introduction

The Louisiana Legislative Auditor (LLA) performed an Actuarial Review (AR or Review) of the Firefighters' Retirement System's (FRS or System) June 30, 2022 Actuarial Valuation dated November 9, 2022 as prepared by Curran Actuarial Consulting, Ltd. This Review is being performed 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).

Actuarial Standards of Practice (ASOPs) are principles-based, rather than prescriptive, in nature; 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 FRS' 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 FRS' 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.

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 FRS' board and by PRSAC:

1. Cost-of-Living Adjustments (COLAs)

La. R.S. 11:241, 11:243, 11:246, and 11:2260(A)(7) outline the provisions for the funding and granting of COLAs. Generally speaking, the board may grant ad-hoc COLAs subject to certain limitations outlined in statute.

Currently, the FRS' board and its actuary do not anticipate future COLAs in the actuarial valuations. Future COLAs are recognized only after they are granted.

While there are numerous trigger-points and moving parts in the statutory structure, the following are terms used by the LLA to broadly categorize the statutory limitations placed on the FRS' board.

1. *The Window Rule*¹ limits how frequently a COLA may be granted by the board, based on the funded ratio of the plan.
2. *The Sufficient Actuarial Return Rule*² limits COLAs to years following a year in which the actuarially smoothed investment earnings (i.e. the actuarial investment return) exceed the assumed investment return.

Modelling FRS' Current COLA Provisions

Ad-hoc COLAs are a unique benefit feature that require professional judgement when determining if, and to what extent, they should be recognized in a liability measurement. First, the actuary must determine if including a particular provision in a model is appropriate for the purpose of the measurement.

FRS COLAs are funded by an increase in the employer contribution rate when the benefit is recognized in the liability. Currently, FRS only recognizes this increase after a COLA is granted. While the granting of this type of COLA is limited to "good" years (i.e., when the Sufficient Actuarial Return Rule is met), actuarial assumptions are

¹ Per R.S. 11:243(G)(1) and (3), the Board may grant a benefit increase only if any of the following apply: (a) the system has a funded ratio of at least 90% and has not granted a benefit increase to retirees, survivors, or beneficiaries in the most recent fiscal year, (b) the system has a funded ratio of at least 80% and has not granted such an increase in any of the two most recent fiscal years, or (c) the system has a funded ratio of at least 70% and has not granted a benefit increase to retirees, survivors, or beneficiaries in any of the three most recent fiscal years. The funded ratio as of any fiscal year is the ratio of the actuarial value of assets to the actuarial accrued liability under the funding method prescribed by the office of the legislative auditor.

² Per R.S. 11:2260(A)(7), the Board is authorized to use interest earnings on investments of the system in excess of normal requirements to provide a supplemental COLA of up to 3% to all eligible pensioners. Additionally, per R.S. 11:246, the Board has the authority to provide an additional COLA of 2% to eligible pensioners over age 65 if there are sufficient excess interest earnings to fund the entire 2% additional COLA.

generally developed recognizing the inherent volatility of investment returns and therefore these “good” years are assumed to offset the “bad” years and thus are assumed to help finance current plan benefits. Therefore, when there is a reasonable expectation (not a guaranteed expectation) of COLAs being granted in the future, an actuary should consider recognizing the likelihood and magnitude in the measurement of system costs and liabilities. This helps avoid pushing the cost of benefits out to future generations of taxpayers.

Once it is determined if a particular benefit provision should be included in the measurement, the actuary must weigh the materiality of such a benefit provision against the difficulty of calculating the liability.

Often, actuaries look for a pattern from the past, as one of several factors when deciding whether to assume COLAs will be granted in the future. The following exhibit illustrates the recent history of tests and rules relating to FRS’ COLAs.

COLA History for the Firefighters’ Retirement System					
Actuarial Valuation Date	Statutory Conditions for Granting a COLA Under:		COLA Permitted?	COLA Granted?	Comments
	The Window Rule	The Sufficient Actuarial Return Rule			
June 30, 2022	Satisfied	Not Satisfied	N	N	None permitted for failure of Actuarial Return Rule
June 30, 2021	Satisfied	Satisfied	Y	N	Permitted, but no COLA granted
June 30, 2020	Satisfied	Not Satisfied	N	N	None permitted for failure of Actuarial Return Rule
June 30, 2019	Satisfied	Not Satisfied	N	N	None permitted for failure of Actuarial Return Rule
June 30, 2018	Satisfied	Not Satisfied	N	N	None permitted for failure of Actuarial Return Rule
June 30, 2017	Not Satisfied	Not Satisfied	N	N	None permitted for failure of both rules
June 30, 2016	Not Satisfied	Not Satisfied	N	N	None permitted for failure of both rules
June 30, 2015	Not Satisfied	Not Satisfied	N	N	None permitted for failure of both rules
June 30, 2014 ³	Satisfied	Satisfied	Y	Y	2.25% COLA granted to all employees effective January 1, 2015

In FRS’ case, the board has not granted a COLA since January 1, 2015. However, the board was not permitted to grant a COLA for the majority of this time due to statutory limitations. Therefore, this should not necessarily be viewed as a pattern of the board choosing to not grant COLAs. Further, there is considerable pressure to grant COLAs when and if they are permitted, due to (a) the board responding to retirees’ needs, (b) COLAs being granted by Social Security and other Louisiana retirement systems, and (c) a lack of COLAs granted to members in the recent past.

³ The June 30, 2014 valuation date marks the first year that FRS is covered under La. R.S. 11:243 at the election of the trustees, per Act 2013, No. 170.

However, other conditions may decrease the likelihood a COLA will be given, even when permitted by statute. Following the adoption of the June 30, 2021 actuarial valuation, the FRS' board chose to *not grant a COLA, even though it was permitted to do so*. One of the cited reasons was the growth of the employer contribution rate over the recent past and concern for continued increase in the years to follow.

Given these factors, any analysis should first look to whether, and when, the natural operation of the statutory limitations will permit COLAs. Next, the analysis would need to consider the likelihood the board would grant a COLA when permitted. Clearly, the inclusion of any expected future COLAs in the current contribution rate will itself result in higher immediate contribution rates, potentially decreasing the likelihood of that exact COLA. However, the frequency and magnitude of future COLAs can be modelled using accepted techniques that consider the resulting iterative dilemma.

Conclusion

Currently, the FRS' board and its actuary do not anticipate future COLAs in their actuarial funding valuations. We believe it is appropriate and more transparent to recognize the frequency and magnitude of all reasonably likely future COLAs in the actuarial valuation for FRS, given the current statutory structure. By not including expected future COLA benefits in the liabilities, FRS may not be fully reflecting all significant plan benefits and is therefore delaying the funding which may ultimately increase the long-term cost to employers of providing such benefits.

We recommend the FRS' board engage its actuary to undertake a quantitative actuarial analysis of the operation of the COLA provisions, to identify (1) the frequency with which future COLAs may be permitted, 2) the likely magnitude of those COLAs, and 3) the potential financial position of the plan at that time; so the board may better understand and evaluate (1) the likelihood a COLA would be granted when permitted and 2) the impact of incorporating these expectations now versus reflecting them (and therefore funding them) only after they have been granted.

2. Investment Return Assumption

The last comprehensive analysis of the investment return assumption was prepared and presented in the LLA's *Comprehensive Actuarial Review of the 2020 Actuarial Valuation of the Firefighters' Retirement System* dated December 8, 2020, using forecasts published in 2020. Two significant changes have occurred since that analysis was completed: (i) professional investment forecasters have lowered their expectations and (ii) FRS made certain changes to its long-term target asset allocation.

For this Review, a detailed analysis of independent experts' 2022 forecasts for FRS' portfolio was not undertaken. Instead, we provide an estimate of the return assumption calculated based on the methodology in prior LLA analyses, for consistency and illustrative purposes. Those results can be found in the section below

titled *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.

FRS’ board and actuary have consistently lowered the investment return assumption over the past few years, from 7.30% as of June 30, 2018 to 6.90% for the June 30, 2021 valuation. We commend FRS for lowering its investment return assumption.

Benchmark Investment Return Assumption

In the supporting documentation for the discount rate and investment return assumption, FRS’ actuary used the long-term (20-30 years) capital market assumptions from various investment consulting firms. However, we believe an assumed rate of return that falls between the mid-term and long-term expectations is more appropriate for FRS 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 have informed us in deriving the historical 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 benchmark assumptions since the most recent comprehensive analyses for FRS (2020), (b) our general understanding of the direction and change-magnitude of forecasters' expectations in recent years (from 2020 to 2022), (c) changes in the System's long-term target asset allocation between 2020 and 2022, and (d) a slight increase in the expected rate of inflation embedded in return expectations (from 2020 to 2022). As outlined in the LLA's *2020 Comprehensive Actuarial Review*, the benchmark return falls closer to the mid-term (10-year) expectations than it does to the longer-term (20-30 years) expectations.

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

Actuarial Valuation Date	Investment Return Assumption	Benchmark	Difference
June 30, 2022	6.90%	6.50%	0.40%
June 30, 2021	6.90%	6.00%	0.90%
June 30, 2020	7.00%	6.00%	1.00%
June 30, 2019	7.15%	6.50%	0.65%
June 30, 2018	7.30%	6.30%	1.00%

Conclusion

For 2022, recent changes in the asset allocation and a slight increase in both short-term return expectations and the embedded inflation assumption resulted in an increase in the benchmark assumption. While recent market turmoil has potentially resulted in an increase in professional expectations of future investment performance since last year, we recommend the System continues to closely monitor its investment return assumption and consider:

- Incorporating conservatism in the assumption by consistently targeting a rate that is closer to having a 60% probability of achieving the assumption over time; and
- Reflecting the impact of cash flow timing on total expected returns, recognizing when distributions are larger than contributions (i.e., negative non-investment cash flow) some portion of current assets will be invested for a shorter time horizon and will not be able to achieve the anticipated long-term investment return.

APPENDIX

Actuarial Disclosures

Intended Use

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 2022 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 the System to collect the contributions necessary. A determination regarding whether or not the System is actually willing and able to do so in the future is outside our scope of expertise and was not performed.

Actuarial Data, Methods and Assumptions

The findings in this Actuarial Review are based on data and other information as of June 30, 2022, and forecasts published for 2022. This Actuarial Review was based upon information furnished by the System, 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.

For certain calculations that may be presented herein, we have utilized commercially available valuation software. We made a reasonable attempt to understand the intended purpose of, general operation of, major sensitivities and dependencies within, and key strengths and limitations of these models. In our professional judgment, the models have the capability to provide results that are consistent with the purposes of the analysis and have no material limitations or known weaknesses. Tests were performed to ensure that the model reasonably represents that which is intended to be modeled.

To the extent that this Actuarial Review relies on calculations performed by the Systems' actuaries, to the best of our knowledge, no material biases exist with respect to the data, methods or assumptions used to develop the analysis other than those specifically identified. We did not audit the information provided, but have reviewed

the information for reasonableness and consistency with other information provided by or for the affected retirement systems.

Conflict of Interest

There are no known conflicts that would compromise the ability to present an unbiased statement of actuarial opinion.

Risks Associated with Measuring Costs

This actuarial note is an actuarial communication, and is required to include certain disclosures in compliance with Actuarial Standards of Practice (ASOP) No. 51.

A full actuarial determination of the retirement system's costs, actuarially determined contributions and accrued liability require the use of assumptions regarding future economic and demographic events. The assumptions used to determine the retirement system's contribution requirement and accrued liability are summarized in the system's most recent Actuarial Valuation Report being reviewed.

The actual emerging future experience, such as a retirement fund's future investment returns, may differ from the assumptions. To the extent that emerging future experience differs from the assumptions, the resulting shortfalls (or gains) must be recognized in future years by future taxpayers. Future actuarial measurements may also differ significantly from the current measurements due to other factors: changes in economic or demographic 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 system's funded status); and changes in plan provisions or applicable law.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns (assumptions);
2. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
3. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
4. Longevity and life expectancy risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
5. Other demographic risks – members may terminate, retire or become disabled at times or with benefits at rates that differ from what was assumed, resulting in actual future accrued liability and contributions differing from expected.

The scope of this Actuarial Review does not include an analysis of the potential range of such future measurements or a quantitative measurement of the future risks of not achieving the assumptions. In certain circumstances, detailed or quantitative assessments of one or more of these risks as well as various plan maturity measures and historical actuarial measurements may be requested from the actuary. Additional risk assessments are generally outside the scope of an actuarial review. Additional assessments may include stress tests, scenario tests, sensitivity tests, stochastic modeling, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

However, the general cost-effects of emerging experience deviating from assumptions can be known. For example, the investment return since the most recent actuarial valuation may be less (or more) than the assumed rate, or a cost-of-living adjustment may be more (or less) than the assumed rate, or life expectancy may be improving (or worsening) compared to what is assumed. In each of these situations, the cost of the plan can be expected to increase (or decrease).

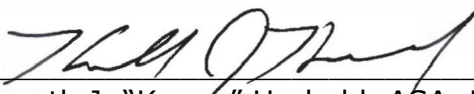
At the time of this writing, we consider the 2022 forecasts of the future inflation and capital market assumptions (including future investment returns) from the subject matter experts to be suitable for development of the benchmark return assumption for the 2022 actuarial valuation.

The use of reasonable assumptions and the timely receipt of the actuarially determined contributions are critical to support the financial health of the plan. However, employer contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

Certification

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.

Kenneth J. Herbold is an Associate of the Society of Actuaries (ASA), a Member of the American Academy of Actuaries (MAAA), and an Enrolled Actuary (EA) under the Employees Retirement Income Security Act of 1974. Mr. Herbold meets the US Qualification Standards necessary to render the actuarial opinion contained herein.



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

January 27, 2023
Date