

ACTUARIAL REVIEW OF THE  
2018 ACTUARIAL VALUATION OF THE  
SHERIFFS' PENSION AND RELIEF FUND



ACTUARIAL SERVICES  
PRESENTED TO THE PUBLIC RETIREMENT SYSTEMS' ACTUARIAL COMMITTEE  
FEBRUARY 25, 2019



LOUISIANA LEGISLATIVE AUDITOR  
DARYL G. PURPERA, CPA, CFE

February 5, 2019

Mr. Osey "Skip" McGee, Jr.  
Executive Director  
Sheriffs' Pension and Relief Fund  
1225 Nicholson Drive  
Baton Rouge, Louisiana 70802

**Re: Actuarial Review of the 2018 Actuarial Valuation**

Dear Mr. McGee:

To fulfill the requirements of R.S. 11:127(C) to the Public Retirement Systems' Actuarial Committee (PRSAC) for 2018, the Louisiana Legislative Auditor (LLA) has arranged for an Actuarial Review for the Sheriffs' Pension and Relief Fund (SPRF).

In lieu of a Comprehensive Actuarial Review or a Brief Actuarial Review as we have prepared for statewide retirement systems in the past, we are submitting herein an Actuarial Review (AR) for PRSAC's consideration. The scope of this Actuarial Review is less robust than a Comprehensive Actuarial Review, but provides more specific opinions and recommendations than previous Brief Actuarial Reviews prepared for other statewide retirement systems.

The remainder of this letter contains the results of our Actuarial Review of your June 30, 2018 actuarial valuation (prepared by G.S. Curran & Company and dated November 29, 2018). More specifically, we have evaluated for appropriateness the actuarial assumptions and methods employed by the System and its actuary.

I would like to thank you, your staff, and the board's actuary for your cooperation and assistance with this review.

Sincerely,

Daryl G. Purpera, CPA, CFE  
Legislative Auditor

DGP:JJR:ch

cc: G.S. Curran & Company

2018 ACTUARIAL REVIEW FOR SPRF

## Scope of Review

The 2018 actuarial valuation report for the Sheriffs' Pension and Relief Fund (SPRF) for funding purposes was prepared by G.S. Curran & Company, and dated November 29, 2018.

This Actuarial Review of that report was prepared by the actuary for the Louisiana Legislative Auditor, Gabriel, Roeder, Smith & Company (under the supervision of Mr. James J. Rizzo), and includes evaluations for appropriateness of key actuarial assumptions and methods.

This Actuarial Review presents opinions concerning various assumptions and methods employed by the board and its actuary in the 2018 funding valuation. However, a full actuarial valuation replicating the actuary's results was not performed; nor was a full actuarial valuation performed using recommended assumptions and methods.

This Actuarial Review is limited to discussion of (1) appropriate treatment of SPRF's gain-sharing COLA benefits, (2) appropriate investment return assumption, (3) appropriate salary increase assumptions given recent reductions in the assumed rate of inflation and (4) the actuary's use of acceptable mortality tables.

## Summary of Findings

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

The cost of future COLAs is currently not included in the 2018 funding valuation. Future COLAs are currently treated by the board and its actuary on a pay-as-you-go basis, recognizing them in the calculations of costs and liabilities only after they are granted.

With rare exceptions, pay-as-you-go funding is not generally acceptable in actuarial practice. The board and its actuary recognize all other future benefits promised by the plan using their respective likelihoods of eligibility and their projected amounts. But the board and its actuary do not recognize any future expected COLA benefits until after they occur.

"Gain-sharing COLAs" are allowed when the actual investment earnings exceed the valuation rate, effectively sharing the better-than-assumed gains with the eligible members. The authority for the SPRF board to pay gain-sharing COLAs is also subject to various timing and other conditions and restrictions. Practically speaking, there are two types of gain-sharing COLAs outlined in statutes for SPRF.

- R.S. 11:2178(K) describes COLAs (called "*supplemental*" for this purpose) and
- R.S. 11:246 describes "*additional*" cost-of-living adjustments.

The likelihood of future gain-sharing COLAs being allowed is actuarially predictable when standing alone. The statutory provisions that give rise to allowing SPRF gain-sharing COLAs operate under something akin to auto-pilot. The rules are set forth in statutes. However, when a gain-sharing COLA is allowed to be paid, the SPRF board has discretionary authority to grant, or not to grant, a gain-sharing COLA to increase eligible members' benefits.

In addition, "Funding Deposit COLAs" are allowed for SPRF when there is a balance in the Funding Deposit Account (FDA). For example, a Funding Deposit COLA was granted as of January 1, 2018. Again, the authority for the SPRF board to pay FDA COLAs is subject to various timing and other conditions and restrictions.

- R.S. 11:107.1(D)(4)(a) and R.S. 11:243(G)

While the workings of the gain-sharing statutory template and the board’s likelihood to pay gain-sharing COLAs are fairly simple to model (actuarially speaking), the inclusion of the FDA as an optional source for paying a COLA complicates the discretionary aspects of the ultimate end-game of granting a COLA and which type and, therefore, complicates the actuarial model.

Recommendation -- For SPRF, the actuary for the LLA cannot unequivocally recommend recognizing future COLAs in the measurement of SPRF’s total benefit cost and liabilities. However, we do recommend that the SPRF board engage its actuary to (a) undertake a quantitative actuarial analysis of the operation of the gain-sharing provisions alone and (b) overlay at least a qualitative analysis of the interaction of the possibilities of paying a Funding Deposit Account COLA and how that might affect the system’s costs and liabilities determined under the gain-sharing-only analysis in (a) above.

The actuary for the LLA created an actuarial model for measuring the likelihood of another statewide system’s board (Firefighters’ Retirement System; FRS) being allowed to grant a gain-sharing-only COLA and the maximum amounts allowed during each of the next 30 years, based on those statutory rules<sup>1</sup>. FRS’ gain-sharing-only COLAs were found to be expected frequently and found to be material.

The following table presents the summary results of that actuarial analysis for FRS, under R.S. 11:246 (*additional* COLAs) and R.S. 11:2260(A)(7) (*supplemental* COLAs):

<b>Summary of Results (30-year Averages) for FRS</b>			
	<i>Supplemental</i> COLA <sup>a</sup>	<i>Additional</i> COLA <sup>b</sup>	Total COLA <sup>b</sup>
Annual Probability of COLA allowed and granted	25.5%	20.0%	20.0%
COLA rate, given COLA is allowed and granted	2.3%	1.8%	4.1%
Single equivalent fixed annual COLA rate	0.62%	0.34%	0.96%

<sup>a</sup> For all eligible retirees

<sup>b</sup> For all eligible retirees over age 65

While SPRF assets, liabilities and demographics are not the same as FRS and while SPRF also allows for FDA COLAs, whereas FRS is limited to gain-sharing-only COLAs, it is nevertheless instructive for the SPRF board to see how likely it is for FRS’ board to be allowed to grant gain-sharing COLAs from excess interest earnings. Given the similarities between SPRF’s and FRS’ gain-sharing COLA provisions, consideration of FRS’ results may give SPRF’s board sufficient reason to engage its actuary to undertake a similar study, specifically for SPRF (with and without incorporating FDA COLAs).

The cost and liability for future expected COLA benefits can be approximated with this model and recognized in the regular annual valuation to improve the board’s public representation of the system’s costs and liabilities.

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<sup>1</sup> For results of the actuarial study prepared by the actuary for the LLA concerning the likelihood and amount of gain-sharing COLAs being paid by the Firefighters’ Retirement System (FRS), please refer to the LLA’s website for the Actuarial Review of the June 30, 2018 funding valuation for FRS.

## 2. Overly Optimistic Return Assumption

For this Actuarial Review, a detailed analysis of independent experts' current forecasts for SPRF's portfolio was not undertaken. The last time such a detailed analysis was undertaken by the actuary for the LLA was for the 2017 valuation report (presented in a Comprehensive Actuarial Review dated February 5, 2018).

The SPRF's 2017 valuation report used a 7.40% return assumption. The Comprehensive Actuarial Review suggested 5.69% for the 2017 return assumption based on a consensus average of independent national investment forecasters.

The SPRF board and actuary did lower the return assumption for the 2018 valuation to 7.25%. However, the trend among professional investment forecasters since 2017 has generally been to lower their forecast further. Since 2017, SPRF's return assumption was lowered only 0.125%, while the experts' forecasts applied to other retirement systems has been shown to lower their expectations by significantly more than that. There is no reason the same would not be true of SPRF's fund as well.

Recommendation -- In the absence of conducting a detailed analysis using SPRF's own asset allocation and its own expected cash flow, the actuary for the LLA recommends that the SPRF retirement board and actuary consider lowering the return assumption to be somewhere within a range from 5.0% to 6.0%, with the top end of that range being the most aggressive (not conservative) assumption. It is recommend that the SPRF board lower its return assumption again for the 2019 valuation, in order to (a) bring it into the mainstream of professional forecasters and (b) produce a more appropriate representation of the system's costs and liabilities.

## 3. Salary Scale Inconsistency

The assumed rate of inflation is an important and common building block in a pension valuation's assumption concerning expected rate of return as well as salary increases for individual members.

In the two most recent funding valuation reports (2018), the board's assumption for inflation dropped by 0.10% and 0.175% from the prior year, respectively. However, the salary increase assumption was not lowered by similar levels. No parallel change was made in tandem to the salary increase assumptions. This makes the salary increase assumption inconsistent with the embedded inflation assumption.<sup>2</sup>

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<sup>2</sup> Actuarial Standard of Practice (ASOP) No. 27, section 3.12 states:

*Consistency among Economic Assumptions Selected by the Actuary for a Particular Measurement—With respect to any particular measurement, each economic assumption selected by the actuary should be consistent with every other economic assumption selected by the actuary for the measurement period, unless the assumption, considered individually, is not material, as provided in section 3.5.2. A number of factors may ASOP No. 27—September 2013 14 interact with one another and may be components of other economic assumptions, such as inflation, economic growth, and risk premiums. In some circumstances, consistency may be achieved by using the same inflation, economic growth, and other relevant components in each of the economic assumptions selected by the actuary. Consistency is not necessarily achieved by maintaining a constant difference between one economic assumption and another. For each measurement date, the actuary should reevaluate the individual assumptions and the relationships among them, and make appropriate adjustments.*

Valuation June 30:	2016	2017	2018
Return Assumption	7.50%	7.40%	7.25%
<b>Reduction in Return Assumption from Prior Year</b>	NA	<b>0.10%</b>	<b>0.125%</b>
Inflation Assumption	2.875%	2.775%	2.6%
<b>Reduction in Inflation Assumption from Prior Year</b>	NA	<b>0.10%</b>	<b>0.175%</b>
Salary Increase Assumption	5.50%	5.50%	5.50%
<b>Reduction in Salary Increase Assumption From Prior Year</b>	NA	<b><u>None</u></b>	<b><u>None</u></b>

If the board had lowered the salary increase assumption to be consistent with lowering the inflation assumption for the 2017 and 2018 valuations (decreasing effects), these would have been perfect opportunities to partially offset the effects of even lower and more mainstream return assumptions for 2017 and 2018 (increasing effects). This way, the return assumption could be lower than 7.25% by now, with less impact on the contribution and liability levels.

#### **4. Mortality Assumption**

The 2018 Actuarial Valuation (page 39) states that the mortality assumption for annuitant and beneficiary mortality is the “RP 2000 Combined Healthy with Blue Collar Adjustment Sex Distinct Tables Projected to 2028 for males and set forward 1 year and Projected to 2028 for females. (Projections based on Scale AA as published by the Society of Actuaries).”

To evaluate the reasonableness of the mortality assumption, we reviewed the base mortality (RP2000 with Blue Collar Adjustments) separately from the projection scale (Scale AA). We believe the use of the RP2000 with Blue Collar Adjustments as the base mortality table to be reasonable. Therefore, we find the base table (before projection for future mortality) to be fully appropriate for the 2018 Actuarial Valuation.

Once the base table was found to be reasonable, we then reviewed the projection scale used in the mortality assumption (projection Scale AA). We believe the actuary’s use of Scale AA projected to 2028 is not unreasonable.

A more current approach to estimating mortality rates for valuation purposes would be to use either: (a) RP2000 projected generationally by Scale BB or (b) RP2014 loaded with 120% (for CDC data) and adjusted for partially credible plan-specific experience, then projecting generationally using MP2017 or MP 2018. Blue Collar adjustment would also be reasonable for each. While either of these two approaches would be more current and preferable methodologies, we do not find the mortality tables used in the SPRF 2018 actuarial funding valuation report to be unreasonable.

## Actuarial Certification

This report is considered to be a Statement of Actuarial Opinion. We therefore make the following certification:

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. 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.

We, James J. Rizzo and Piotr Krekora, are Consultants and Actuaries with Gabriel, Roeder, Smith & Company, the current actuary for the Louisiana Legislative Auditor. We are members of the American Academy of Actuaries, Associates in the Society of Actuaries, and Enrolled Actuaries, and we meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein.



James J. Rizzo, ASA, MAAA

February 5, 2019

Date



Piotr Krekora, ASA, MAAA, PhD

February 5, 2019

Date