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February 2, 2021

Mr. Duncan Baird
Executive Secretary
Arkansas State Police Retirement System
One Union National Plaza
124 West Capitol, 4th Floor
Little Rock, Arkansas 72201

**Re: Actuarial Analysis of Proposed Benefit Changes**
**JNL176 Dated 01-21-2021; SB233 Dated 01-27-2021**

Dear Mr. Baird:

As requested, enclosed are the results of a supplemental actuarial valuation related to proposed benefit changes included in JNL176 dated 01-21-2021 and SB233 dated 01-27-2021.

Please let us know if you have any questions or comments.

Sincerely,

Mita D. Drazilov, ASA, FCA, MAAA

David L. Hoffman

Heidi G. Barry, ASA, FCA, MAAA

MDD/DLH/HGB:sc
Enclosure

One Towne Square | Suite 800 | Southfield, Michigan 48076-3723

# Arkansas State Police Retirement System
# Supplemental Actuarial Valuation
# as of June 30, 2020
# JNL176 Dated 01-21-2021; SB233 Dated 01-27-2021

**Requested By**: Mr. Duncan Baird, Executive Secretary
Arkansas State Police Retirement System

**Date:** February 2, 2021

**Submitted By**: Mita D. Drazilov, ASA, FCA, MAAA, Heidi G. Barry, ASA, FCA, MAAA
and David L. Hoffman
Gabriel, Roeder, Smith & Company

This report presents results of an actuarial valuation of proposed benefit changes for members of Tier One and Tier Two of the Arkansas State Police Retirement System. Mita D. Drazilov and Heidi G. Barry are Members of the American Academy of Actuaries (MAAA) as indicated, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

**The date of the valuation was June 30, 2020.** This means that the results of the supplemental valuation indicate what the June 30, 2020 valuation would have shown if the proposed benefit changes had been in effect on that date. Supplemental valuations do **not** predict the result of future actuarial valuations. Rather, supplemental valuations give an indication of the probable long-term cost of the **benefit changes only** without comment on the complete end result of the future valuations.

Actuarial assumptions and methods were consistent with those used in the regular actuarial valuation of the Retirement System on the valuation date, unless otherwise noted. Actuarial assumptions are adopted by the Retirement Board of Trustees. In particular:

- The assumed rate of investment return was 7.15%.
- Payroll was assumed to increase 3.25% per year.
- Changes in Accrued Liability were amortized over 19 years.

It is our understanding that benefits for current inactive or retired members would not be affected by the proposed benefit change. They were excluded from this study.

A brief summary of the active data, as of June 30, 2020, used in these valuations is presented below:

| Group | Number | Covered Payroll | Average in Years | |
|---|---|---|---|---|
| | | | Age | Service |
| Tier One | 25 | $ 2,035,899 | 51.1 | 23.0 |
| Tier Two | 457 | 26,506,757 | 38.3 | 9.8 |
| Tier One - DROP | 58 | 4,695,267 | 56.5 | 28.4 |
| Tier Two - DROP | 1 | 73,170 | 55.6 | 31.3 |
| **Total** | **541** | **$ 33,311,093** | **40.9** | **12.5** |

**Present Provisions:**

Members are eligible to retire with an unreduced retirement benefit after **30** years of actual service (credited service for Tier Two), regardless of age, or at age 65 with **5** actual years of service (credited service for Tier Two). The age requirement is reduced by one month for every two months of Public Safety actual service credit, but not below age 52 for Tier One members. The age requirement is reduced by seventy-five-hundredths (0.75) of a month for each credited month of Public Safety service credit, but not below age 55 for Tier Two members. Public Safety service credit is granted at the rate of 1.5 months of credit for each month of actual Public Safety employment for Tier One. Service is credited at a rate of one for one in Tier Two.

Members with at least 30 years of actual service who are eligible to receive a service retirement pension may participate in the DROP. Participating members may continue in employment for up to 7 years and have one hundred percent (100%) for Tier I and seventy-two percent (72%) for Tier II of their accrued monthly benefit (at date of participation) credited to an individual account in the Deferred Retirement Option Plan in lieu of any further benefit accruals.

Tier One: **1.55%** of FAP times years and months of credited service. Tier Two: **2.475%** of FAP times credited service. If retirement is prior to age 62, an additional .322% of FAP times credited service will be paid until the retiree attains age 62 for Tier One or .513% of FAP times credited service for Tier Two.

**Proposed Provisions:**

Members are eligible to retire with an unreduced retirement benefit after **25** years of actual service (credited service for Tier Two), regardless of age, or at age 65 with **10** actual years of service (**5** years of credited service for Tier Two). The age requirement is reduced by one month for every two months of Public Safety actual service credit, but not below age 52 for Tier One members. The age requirement is reduced by seventy-five-hundredths (0.75) of a month for each credited month of Public Safety service credit, but not below age 55 for Tier Two members. Public Safety service credit is granted at the rate of 1.5 months of credit for each month of actual Public Safety employment for Tier One. Service is credited at a rate of one for one in Tier Two.

Members with at least 30 years of actual service who are eligible to receive a service retirement pension may participate in the DROP. Participating members may continue in employment for up to 7 years and have one hundred percent (100%) for Tier I and seventy-two percent (72%) for Tier II of their accrued monthly benefit (at date of participation) credited to an individual account in the Deferred Retirement Option Plan in lieu of any further benefit accruals.

Tier One: **1.86%** of FAP times years and months of credited service. Tier Two: **2.97%** of FAP times credited service. If retirement is prior to age 62, an additional .322% of FAP times credited service will be paid until the retiree attains age 62 for Tier One or .513% of FAP times credited service for Tier Two.

## Actuarial Statement

The financial effects of the proposal are shown below. These financial effects include the computed increase in (a) the employer contribution rate expressed as a % of payroll, (b) the fiscal year (FY) 2021 employer contribution dollar amount and (c) the actuarial accrued liability. Payroll includes the payroll for active members as well as DROP participants.

**Impact on Results**

| | % of Payroll | | |
|---|---|---|---|
| **Employer Contribution Rate** | **Tier One** | **Tier Two** | **Total** |
| Normal Cost | 4.51% | 6.04% | 5.76% |
| UAAL (19-year amortization) | 3.31% | 6.12% | 5.55% |
| **Total** | 7.82% | 12.16% | 11.31% |
| **FY 2021 Employer $ Contribution*** | $ 543,485 | $ 3,337,163 | $ 3,880,648 |
| **Actuarial Accrued Liability** | $ 2,994,012 | $ 21,835,549 | $ 24,829,561 |

* *Tier One, Tier Two and total amortization payments are expected to increase by 3.25% of payroll annually for the remainder of the amortization period.*
*Employers are assumed to contribute on DROP payroll.*

## Additional Comments

**Comment 1** — The figures shown on the prior page are based on the June 30, 2020 actuarial valuation. Please remember that this change, if adopted, would likely impact the June 30, 2021 valuation. That valuation will likely be completed in the fall of 2021, and is based on member data and financial results as of June 30, 2021, neither of which is available to us at this time.

**Comment 2** — The calculations are based upon assumptions regarding future events, which may or may not materialize. They are also based upon present and proposed plan provisions that are outlined in this report. If you have reason to believe that the assumptions that were used are unreasonable, that the plan provisions are incorrectly described, that important plan provisions relevant to this proposal are not described, or that conditions have changed since the calculations were made, you should contact the authors of this report prior to relying on information in this report.

**Comment 3** — If you have reason to believe that the information provided in this report is inaccurate, or is in any way incomplete, or if you need further information in order to make an informed decision on the subject matter of this report, please contact the authors of this report prior to making such decision.

**Comment 4** — This report is intended to describe the financial effect of the proposed plan change. No statement in this report is intended to be interpreted as a recommendation in favor of the change, or in opposition to it.

**Comment 5** — In the event that more than one plan change is being considered, it is very important to remember that the results of separate actuarial valuations cannot generally be added together to produce a correct estimate of the combined effect of all of the changes. The total can be considerably greater than the sum of the parts due to the interaction of various plan provisions with each other, and with the assumptions that must be used.

**Comment 6** — This report is intended to describe the financial effect of the proposed plan change on the Retirement System. Except as otherwise noted, potential effects on other benefit plans were not considered.

**Comment 7** — The reader of this report should keep in mind that actuarial calculations are mathematical estimates based on current data and assumptions about future events (which may or may not materialize). Please note that actuarial calculations can and do vary from one valuation year to the next, sometimes significantly if the group valued is very small (less than 30 lives). As a result, the cost impact of a benefit change may fluctuate over time, as the demographics of the group changes.

**Comment 8** — It was assumed that all active members as of June 30, 2020 would be affected by the changes in eligibility conditions.

## Additional Comments (Concluded)

**Comment 9** — The rates of age based and service based normal retirement used in this supplemental valuation are shown below. For members with 25 or more years of credited service and at least age 50 at the beginning of the year, the percentages shown for service-based retirement takes precedent over the percentages shown for age-based retirement for Tier Two.

| Retirement Ages | Percent of Eligible Active Members Retiring Within Next Year | | Years of Credited Service | Percent of Eligible Active Members Retiring Within Next Year |
|---|---|---|---|---|
| | Tier One | Tier Two | | Tier Two |
| 47 | 1% | - | | |
| 48 | 1% | - | 25 | 20% |
| 49 | 8% | - | 26 | 10% |
| 50 | 8% | 1% | 27 | 10% |
| 51 | 8% | 1% | 28 | 10% |
| 52 | 8% | 1% | 29 | 10% |
| 53 | 8% | 6% | 30 | 10% |
| 54 | 8% | 6% | 31 | 10% |
| 55 | 10% | 25% | 32 | 10% |
| 56 | 10% | 20% | 33 | 20% |
| 57 | 10% | 18% | 34 | 35% |
| 58 | 25% | 18% | 35 | 40% |
| 59 | 40% | 20% | 36 & Over | 100% |
| 60 | 50% | 25% | | |
| 61 | 60% | 30% | | |
| 62 | 80% | 100% | | |
| 63 | 80% | 100% | | |
| 64 | 100% | 100% | | |
| 65 | 100% | 100% | | |

A member is assumed to be eligible to retire at age 52 (55 for Tier Two) with 17 years of service, or at age 49 with 25 years of service (Tier One), or at any age with 25 years of service (Tier Two).

For purposes of this modeling, Tier Two members who are eligible to retire under the service based condition are assumed to have one year of credited service in addition to the credited service that is reported for actuarial valuation purposes.

**Comment 10** — This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.