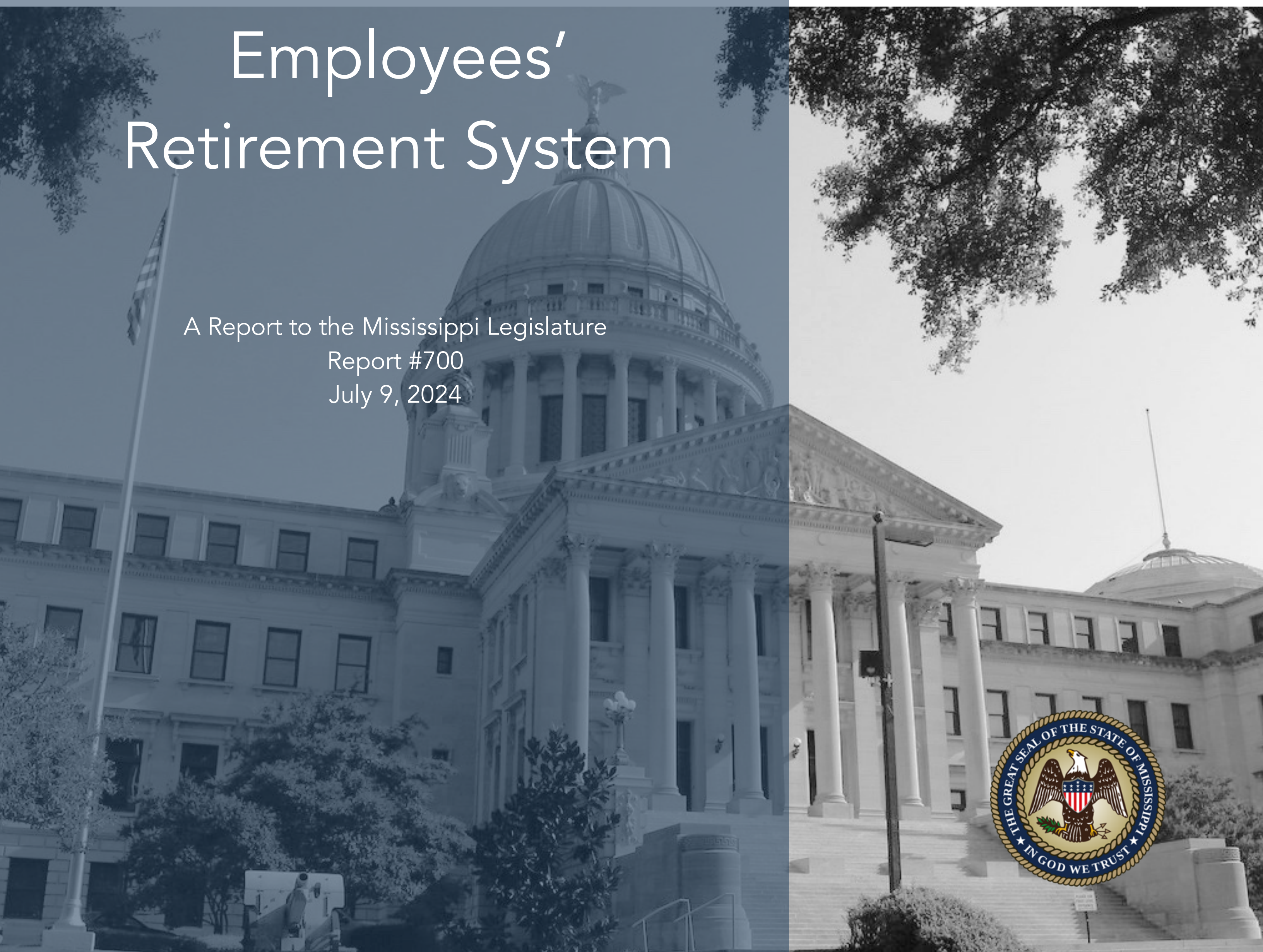
PEER
MISSISSIPPI
Joint Legislative Committee on Performance Evaluation and Expenditure Review

2023 Update on Financial Soundness of the Public Employees' Retirement System

A Report to the Mississippi Legislature
Report #700
July 9, 2024



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About PEER:

The Mississippi Legislature created the Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER Committee) by statute in 1973. A joint committee, the PEER Committee is composed of seven members of the House of Representatives appointed by the Speaker of the House and seven members of the Senate appointed by the Lieutenant Governor. Appointments are made for four-year terms, with one Senator and one Representative appointed from each of the U.S. Congressional Districts and three at-large members appointed from each house. Committee officers are elected by the membership, with officers alternating annually between the two houses. All Committee actions by statute require a majority vote of four Representatives and four Senators voting in the affirmative.

Mississippi's constitution gives the Legislature broad power to conduct examinations and investigations. PEER is authorized by law to review any public entity, including contractors supported in whole or in part by public funds, and to address any issues that may require legislative action. PEER has statutory access to all state and local records and has subpoena power to compel testimony or the production of documents.

PEER provides a variety of services to the Legislature, including program evaluations, economy and efficiency reviews, financial audits, limited scope evaluations, fiscal notes, and other governmental research and assistance. The Committee identifies inefficiency or ineffectiveness or a failure to accomplish legislative objectives, and makes recommendations for redefinition, redirection, redistribution and/or restructuring of Mississippi government. As directed by and subject to the prior approval of the PEER Committee, the Committee's professional staff executes audit and evaluation projects obtaining information and developing options for consideration by the Committee. The PEER Committee releases reports to the Legislature, Governor, Lieutenant Governor, the agency examined, and the general public.

The Committee assigns top priority to written requests from individual legislators and legislative committees. The Committee also considers PEER staff proposals and written requests from state officials and others.

Joint Legislative Committee on Performance Evaluation and Expenditure Review

PEER Committee

P.O. Box 1204 | Jackson, Mississippi 39215-1204

July 9, 2024

Honorable Tate Reeves, Governor
Honorable Delbert Hosemann, Lieutenant Governor
Honorable Jason White, Speaker of the House
Members of the Mississippi State Legislature

On July 9, 2024, the PEER Committee authorized release of the report titled ***2023 Update on Financial Soundness of the Public Employees' Retirement System.***

Charles A. Younger

Representative Charles Younger, Chair

This report does not recommend increased funding or additional staff.

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2023 Update on Financial Soundness of the Public Employees' Retirement System

PEER MISSISSIPPI
Joint Legislative Committee on Performance Evaluation and Expenditure Review

Report Highlights

July 9, 2024

CONCLUSION: The PEER Committee, under the authority found in MISS. CODE ANN. § 5-3-51 (1972) et seq., carried out the statutorily required review of the financial condition of the Public Employees' Retirement System (PERS). This 2023 report includes an update on the financial soundness of PERS, a review of alternate funding streams for pension systems, and an update on changes made to the Mississippi Highway Safety Patrol Retirement System (MHSPRS) and the Supplemental Legislative Retirement Program (SLRP).

BACKGROUND

The Public Employee's Retirement System of Mississippi (PERS) is a defined benefit retirement plan for a majority of employees (and/or their beneficiaries) of state agencies, counties, cities, colleges and universities, public school districts, and other participating political subdivisions. State law requires PEER to report annually to the Legislature on the financial soundness of PERS.

The PERS system is under the administration of the 10-member PERS Board of Trustees, which has a primary responsibility of ensuring adequate funding of the plans it administers. One way the Board accomplishes this task is by setting contribution rates for employers participating in the plan. For assistance in setting these rates, the PERS Board receives actuarial reports annually and works with independent actuarial advisers to develop comprehensive models that are used to project the financial position of the various plans. These models include components such as investment return assumptions, wage inflation assumptions, retirement tables, and retiree mortality tables.

Each of these components must work in concert with the others for the PERS plan to maintain financial soundness. Underperformance in any one area can cause additional stress on other components and can lead to underperformance of the PERS plan as a whole.

Financial soundness includes an understanding of the role of actuarial soundness and all relevant environmental conditions, such as an understanding of risk and investment management. Therefore, continued analysis of PERS by those responsible for ensuring the long-term financial health of the system is warranted.

Scope Limitation: This report evaluates potential impacts of legislation passed during the 2024 Legislative Session (i.e., Senate Bill 3231 and Senate Bill 2468). Numbers and information attributed to actuarial reports in this review have not been recalculated to account for the impact of legislation passed during the 2024 Legislative Session.

KEY FINDINGS

- **As a result of Cavanaugh Macdonald Consulting's most recent experience study, the PERS Board voted to maintain the current price inflation assumption and the current wage inflation assumption and change the investment return assumption.**
  The PERS Board adopted a decrease in the plan's investment return assumption, reducing the assumption from 7.55% to 7.00%.
- **After the most recent experience study, the PERS Board adopted changes to several of its demographic assumptions.**
  Assumptions that changed include the withdrawal, disability retirement, service retirement, and merit salary increase assumptions.
- **For the past five fiscal years, the PERS average payroll increase has been above the projected annual rate of wage increase; however, over the past 10 fiscal years, it has been below the projected rate.**
  Less-than-expected payroll growth can increase the amortization period of the unfunded actuarial accrued liability (UAAL). However, the upward pressure on the UAAL may be partially or totally offset due to the decrease in the number of future liabilities resulting from a lower payroll amount than assumed in the actuarial model.
- **Based on the results of the evaluation metrics in the funding policy as of June 30, 2023, two of the plan's metrics are at yellow signal-light status and one the of the plan's metrics is at red signal-light status.**
  While one metric remains in the red-light signal status, all three funding policy metric results improved from June 30, 2022, to June 30, 2023.
- **Primarily due to the change in employer contribution rate, the PERS plan has a projected future funding ratio of 65.5% as of 2047. This is increased from the FY 2022 projection of 48.6%.**
  The increase in the future funding level is primarily due to the change in the employer contribution rate but this increase has been partially offset by the reduction in the plan's investment return assumption.

Mississippi Highway Safety Patrol Retirement System

The Mississippi Highway Safety Patrol Retirement System (MHSPRS) plan is a defined benefit retirement plan for the benefit of eligible Mississippi Highway Safety Patrol sworn officers.

As a result of the most recent experience study conducted by the independent actuarial firm Cavanaugh Macdonald Consulting, LLC, the PERS Board adopted changes to the actuarial assumptions used by the MHSPRS plan at its August 2023 meeting. The cumulative effect of these changes for the FY 2023 valuation was a one-time increase to the unfunded actuarial accrued liability of approximately $43 million.

The PERS Board also adopted amendments to the MHSPRS plan funding policy. These amendments changed the assessment metrics of the MHSPRS plan from a single-factor approach to a multi-factor signal-light approach with specific targets tailored to the MSHPRS plan. Based on the results of these metrics from the MHSPRS plan's Fiscal Year 2023 valuation and projection report, the MHSPRS plan's actuary recommended no change to the MHSPRS plan's employer contribution rate.

Supplemental Legislative Retirement Plan

The Supplemental Legislative Retirement Plan (SLRP) is a defined benefit retirement plan for the benefit of eligible Mississippi State Legislators and the President of the Senate. Members of SLRP are also members of PERS. Contributions are made by the members and their employers (i.e., Mississippi Senate and House of Representatives) to both plans.

As a result of the most recent experience study conducted by the independent actuarial firm Cavanaugh Macdonald Consulting, LLC, for the four-year period ended June 30, 2022, the PERS Board adopted changes to the actuarial assumptions used by SLRP at its August 2023 meeting. The cumulative effect of these changes for the FY 2023 valuation was a one-time increase to the unfunded actuarial accrued liability of approximately $1.6 million.

The PERS Board also adopted amendments to the SLRP funding policy. These amendments changed the assessment metrics of the SLRP plan from a single-factor approach to a multi-factor signal-light approach with specific targets tailored to the SLRP plan. Based on the results of these metrics, for the fiscal year ended June 30, 2023, the SLRP actuary recommended a continuation of the plan's employer contribution rate increase, effective July 1, 2024. This increase is projected to increase employer contribution cost by approximately $86,000.

Investment Returns

For FY 2023, the PERS Board had investment management contracts for 60 portfolios (including four that were added and two that were terminated in FY 2023) and paid management fees to investment managers on 55 of these portfolios.

Having realized a market gain of approximately 7.76% in the PERS plan's combined investment portfolio, the market value of assets increased from approximately $31.2 billion to $32 billion during FY 2023, an increase of approximately $0.8 billion. PERS's investment performance for FY 2023 was above the current actuarial model's utilized investment return rate of 7.55%.

Senate Bill 3231

During the 2024 Legislative Session, the Legislature passed Senate Bill 3231. The components of this bill, effective on May 9, 2024, shift the responsibility of setting the employer contribution rate from the PERS Board to the Legislature and institute a statutory plan for increasing the rate over time. The bill shifts the PERS Board to an advisory capacity on setting the employer contribution rate while also requiring additional information be gathered before rate increase recommendations can be made.

Senate Bill 2468

During the 2024 Legislative Session, the Legislature passed Senate Bill 2468. This bill directs the transfer of $110 million from the capital expense fund to the Employers' accumulation account of PERS. This transfer creates a one-time cash infusion into the PERS plan.

Impact of Senate Bills 3231 and 2468

Potential Change in Funding Ratio

An employer contribution rate increase strategy that targets a lower rate, even when coupled with a one-time cash infusion made by the Legislature, may not be sufficient to get the plan back to an all-green signal-light status and could necessitate an ultimate employer contribution rate in excess of the rate initially recommended by the plan's actuary.

However, while the Legislature's approach changes future funding projections for the plan, with the addition of the one-time transfer of $110 million in capital expense funds, the funds projected to be received by the PERS plan for fiscal year 2025 are on par with the funds expected under the PERS Board's plan.

While the funding for the first year is comparable, each year in the future could potentially see a greater deviation in expected employer contribution revenues for the PERS plan. This deviation does not immediately constitute a problem for the PERS plan; however, careful evaluation of the plan's future liabilities and funding needs will be necessary to ensure the sustainability of the PERS plan.

Increased Utilization of State Funds

Of the projected $37.25 million in additional expected employer contributions, approximately $9.5 million would be expected to come from general funds. When this is added to the $110 million that was transferred from the capital expense funds, it totals approximately $119.5 million that comes from wholly derived state funds.

This represents an increase in the use of state funds of approximately 214%. By lowering the increase in the employer contribution rate, and providing a one-time transfer of funds, the Legislature has shifted the funding of PERS more heavily onto the state and reduced the ability to utilize other sources of funding such as federal grant funds, county and municipality funds, and special funds dollars. This new approach deviates from the historical model of providing contributions to the plan based on the covered payroll of each employer within the system.

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Senator Charles Younger, Chair | James F. (Ted) Booth, Executive Director

2023 Update on Financial Soundness of the Public Employees' Retirement System

Introduction

Authority, Scope, and Purpose

MISS. CODE ANN. § 25-11-101 (1972) directs the PEER Committee to:

> *…have performed random actuarial evaluations, as necessary, of the funds and expenses of the Public Employees' Retirement System and to make annual reports to the Legislature on the financial soundness of the system.*

The PEER Committee, under the authority found in MISS. CODE ANN. § 5-3-51 (1972) et seq., carried out the statutorily required review of the financial condition of the Public Employees' Retirement System (PERS). Actuarial reviews authorized by MISS. CODE ANN. § 25-11-101 (1972) are discretionary.

This 2023 report includes an update on the financial soundness of PERS, a review of alternate funding streams for pension systems, and an update on changes made to the Mississippi Highway Safety Patrol Retirement System (MHSPRS) and the Supplemental Legislative Retirement Program (SLRP).

Financial soundness includes an understanding of the role of actuarial soundness and all relevant environmental conditions, such as an understanding of risk and investment management. Therefore, continued analysis of PERS by those responsible for ensuring the long-term financial health of the system is warranted.

Scope Limitation

This report evaluates potential impacts of legislation passed during the 2024 Legislative Session (i.e., Senate Bill 3231 and Senate Bill 2468). Numbers and information attributed to actuarial reports in this review have not been recalculated to account for the impact of legislation passed during the 2024 Legislative Session.

Method

To conduct this analysis, PEER:

- reviewed PERS's financial reports;
- reviewed actuarial reports, projections, and experience studies prepared for PERS, MMHSPRS, and SLRP;
- reviewed investment assessments prepared for PERS;
- interviewed personnel of PERS; and,
- reviewed documents produced by National Association of State Retirement Administrators and information compiled by National Conference of State Legislatures to evaluate potential alternative funding streams.

Background

Mississippi provides a retirement system for public employees overseen by an agency of state government that is responsible for the investment and administration of the benefit payment process.

This chapter will present:

- an overview of PERS;
- the composition and role of the Board of Trustees of the Public Employees' Retirement System (PERS Board);
- the definition of financial soundness; and,
- the impact of legislation from the 2024 Legislative Session.

Overview of the Public Employees' Retirement System

Under MISS. CODE ANN. § 25-11-101 (1972), the Legislature created a retirement system to provide retirement allowances and other benefits for officers and employees in the state's service and their beneficiaries. The PERS Board is responsible for the administration of PERS and for all other state retirement systems.

Under MISS. CODE ANN. § 25-11-101 (1972), the Legislature created a retirement system to provide retirement allowances and other benefits for officers and employees in the state's service and their beneficiaries. The PERS Board is responsible for the administration of PERS and for all other state retirement systems. For purposes of this report, the collection of these systems will be referred to as the "System." Exhibit 1 on page 3 lists the plans under the System.

Exhibit 1: Overview of the System

The System

- Public Employees' Retirement System
- Mississippi Highway Safety Patrol Retirement System
- Mississippi Government Employees' Deferred Compensation Plan and Trust
- Municipal Retirement Systems
- Supplemental Legislative Retirement Plan
- Optional Retirement Plan
- Medicare Supplemental Insurance Program

SOURCE: Public Employees' Retirement System of Mississippi.

Composition and Role of the PERS Board of Trustees

Established in MISS. CODE ANN. § 25-11-15 (1972), the 10-member PERS Board of Trustees is responsible for the administration of the state's retirement system.

Composition of the PERS Board of Trustees

The current membership of the PERS Board includes:

- the State Treasurer;
- a gubernatorial appointee;
- two state employees;
- one municipal employee;
- one county employee;
- one Institutions of Higher Learning employee;
- one public school/junior college employee; and,
- two retiree members of PERS.

> Except for the State Treasurer and the Governor's appointee, all trustees are elected by the employee groups they represent.

Except for the State Treasurer and the Governor's appointee, all trustees are elected by the various constituency employee groups they represent (i.e., state, municipal, county, Institutions of Higher Learning, public schools, junior colleges, and retirees).

In addition to those members, state law provides for four legislative advisers to assist the PERS Board (two each from the Mississippi Senate and House of Representatives).

Role of the PERS Board of Trustees

A primary responsibility of the PERS Board is to ensure adequate funding of the plans it administers. In its April 2023 meeting, the PERS Board continued its contractual relationship with Cavanaugh Macdonald Consulting, LLC, a nationwide actuarial and healthcare consulting firm. The contract extension with Cavanaugh Macdonald Consulting, LLC, procures actuarial services through the end of FY 2028. Cavanaugh Macdonald Consulting, LLC, is contracted to create comprehensive models that are used to project the financial position of the various plans. These models include factors such as investment return assumptions, wage inflation assumptions, retirement tables, and retiree mortality tables.

In addition to annual actuarial valuation and projection reports, the PERS Board biennially compares the actual experiences of the various plans to expected experience for reasonableness and adjusts, as necessary, the assumptions used. Information from the most recent study was presented to the PERS Board at its April 2023 meeting.

The PERS Board also contracts with an investment consultant to conduct asset/liability studies, provide quarterly performance reports and economic updates, and assist the PERS Board and staff in establishing an asset allocation policy and selecting investment management firms. The PERS Board currently contracts with Callan LLC (Callan), one of the nation's largest independently owned investment consulting firms.

PERS Board members have a fiduciary duty to manage and invest the funds of the various plans for the exclusive benefit of the members and beneficiaries in the manner provided by law. MISS. CODE ANN. § 25-11-121 (1972) provides guidelines and limitations on the types of assets the PERS Board may use as investments for the PERS plan.

Components of Financial Soundness

"Financial soundness" should be defined not as a point-in-time comparison of assets and liabilities, but as a multi-faceted construct involving an understanding of the role of actuarial soundness in judging financial health, a broadly defined view of affordability that encompasses sustainability in light of all relevant environmental conditions, and an understanding of the role of risk and investment management in the long-term financial health of the system.

Actuarial Soundness

The PERS Board, in consultation with its actuaries, develops an actuarial model based on assumptions such as projected investment returns, payroll increases, inflation, retirement ages, mortality rates, marriage rates, and accrued leave to project the plan's future assets and liabilities. Although the PERS Board sets plan assumptions based on biennial experience studies, the plan's actual experience (e.g., investment returns or mortality rates) is a product of environmental and demographic factors.

Variances in the actual experience of the plan compared to the model's assumptions have an impact on the plan's financial condition. Therefore, the PERS Board, with assistance from its staff and other contractual advisers, endeavors to maintain the actuarial soundness of the plan by monitoring all components used in the PERS actuarial model through quarterly updates on the performance of the plan's assets, annual actuarial updates, annual projections, and biennial experience reports.

This report discusses the actuarial soundness of the following four areas of the PERS plan:

- assumption changes based on the most recent experience study;
- differences between actual and assumed wage inflation;
- active and retired member assumptions; and,
- differences between actuarially recommended and Board-adopted long-term assumed investment rate of return.

Sustainability

Sustainability refers to the PERS System's ability to meet its long-term financial obligations to retirees and beneficiaries. This includes ensuring that the System is adequately funded with sufficient assets to cover the present and future liabilities and setting employer and employee contribution rates at levels that are sufficient to fund the benefits owed to its members.

This report discusses the following topics related to sustainability:

- a review of funding policy metrics;
- the anticipated accrued liability payment period;
- actions by the PERS Board regarding PERS's employer contribution rate;
- actuarial recommendations to the PERS Board regarding PERS's employer contribution rate; and,
- actions by the Legislature regarding PERS's employer contribution rate.

Risk Management and Investment Management

Risk management and investment management represent the other major components of financial soundness. These concepts are utilized to provide a framework for the structure that will manage the plan's long-term risk environment in ways that allow it a reasonable opportunity to collect or earn sufficient assets to meet its benefit obligations.

Impact of the 2024 Legislative Session

During the 2024 Legislative Session, the Legislature passed Senate Bill 3231 and Senate Bill 2468. These bills address the responsibility for setting the employer contribution rate and how it will change in the future and provide a one-time cash infusion into the PERS plan.

Senate Bill 3231

During the 2024 Legislative Session, the Legislature passed Senate Bill 3231. The components of this bill, effective on May 9, 2024, shift the responsibility of setting the employer contribution rate from the PERS Board to the Legislature and institute a statutory plan for increasing the rate over time. The bill shifts the PERS Board to an advisory capacity on setting the employer contribution rate while also requiring additional information be gathered before rate increase recommendations can be made. For more information regarding the effects of this bill, see page 24.

Senate Bill 2468

During the 2024 Legislative Session, the Legislature passed Senate Bill 2468. This bill directs the transfer of funds from the capital expense fund to the Employers' accumulation account of PERS.[1] This transfer creates a one-time cash infusion into the PERS plan. For more information regarding the effects of this bill, see page 25.

[1] The Employer's accumulation account represents the accumulation of all reserves for the payment of all retirement allowances and other benefits payable from contributions made by PERS-covered employers to be used for the payment of the retirement allowances and other benefits of plan members.

Assumption Changes Based on the Most Recent Experience Study

The most recent experience study conducted by PERS's consulting actuarial firm, Cavanaugh Macdonald Consulting, LLC, was completed for the four-year period ending June 30, 2022, and was presented to the PERS Board at its April 2023 meeting. Based on the recommendations presented at the meeting, the PERS Board adopted changes to the plan's economic, demographic, and other actuarial assumptions at its August 2023 meeting. The Board elected to use the new assumptions effective July 1, 2023, and will be used in the calculation of system liabilities for FY 2023.

The most recent experience study conducted by PERS's consulting actuarial firm, Cavanaugh Macdonald Consulting, LLC, can be found on PERS's website at the following web address:
https://www.pers.ms.gov/sites/default/files/Content/ExpStudies/Experience_Investigation_PERS_MRS_MMHSPRS_SLRP_2022.pdf

Economic Assumptions

Economic assumptions seek to explain the environment in which the PERS plan will operate and estimate the environment's broad effects on the plan. As a result of Cavanaugh Macdonald Consulting's most recent experience study, the PERS Board voted to maintain the current price inflation assumption and the current wage inflation assumption and change the investment return assumption.

Economic assumptions seek to explain the environment in which the PERS plan will operate and estimate the environment's broad effects on the plan. The economic assumptions of the PERS plan model include factors for price inflation, wage inflation, and investment returns.[2]

Because of its consulting actuary's most recent four-year experience study and the recommendations of PERS staff, the PERS Board adopted a decrease in the plan's investment return assumption, reducing the assumption from 7.55% to 7.00%.

As a result of the most recent four-year experience study ending June 30, 2022, the PERS Board voted on the following regarding its economic assumptions:

- **To maintain the current price inflation assumption for the plan at 2.40%.**
- **To maintain the current wage inflation assumption of 2.65%.**
- **To change the investment return assumption for the plan:** The PERS Board reduced the investment return assumption from 7.55% to 7.00% (a reduction of 0.55%). The revised

[2] The investment return assumption is a combination of the price inflation and real rate of return assumptions and is reported net of investment expense (i.e., expenses and fees charged by the PERS Board's hired investment managers).

investment return assumption of 7.00% was utilized in the calculation of system liabilities for FY 2023 and will be utilized by all facets of the plan assumptions for FY 2024 and future years.

- The previous investment return target of 7.55% was utilized for FY 2023.

Exhibit 2 on page 8 shows an analysis of the economic assumptions both before and after the most recent changes.

Exhibit 2: PERS Economic Assumptions as of June 30, 2022

Assumption	FY 2023 and Future Years[2]	Rate Prior to FY 2023
Price Inflation	2.40%	2.40%
Wage Inflation	2.65%	2.65%
Investment Return[1]	7.00%[3]	7.55%

1. Net of investment expense.
2. The revised economic assumptions were used in the valuation of system liabilities for FY 2023.
3. For Fiscal Year 2023, the plan's investment return target was 7.55%.

SOURCE: *State of Mississippi Retirement Systems Experience Investigation for the Four-Year Period Ending June 30, 2022*, Cavanaugh Macdonald Consulting, LLC, and PERS Funding Policy.

Price Inflation

At its August 2023 meeting, the PERS Board voted to maintain the current price inflation assumption of 2.40%.

The price inflation assumption attempts to address the effect that inflation has on the cost of living over time. The PERS Board and its actuary use the price inflation assumption as a component in determining both the wage inflation and investment return assumptions.

In assessing the recommendation for price inflation, the PERS Board's consulting actuary considered several factors, including historical rates over the past 50 years of the U.S. Department of Labor's *Consumer Price Index for the U.S. City Average and All Urban Consumers*; information from fourth quarter 2022 "Survey of Professional Forecasters";[3] and reports from the Social Security Administration's Chief Actuary.

Based on the most recent experience study and its consulting actuary's recommendation, the PERS Board voted at its August 2023 meeting to maintain the current price inflation assumption of 2.40%. This rate was adopted at the PERS Board's August 2021 meeting.

[3] The "Survey of Professional Forecasters" is a quarterly survey of macroeconomic forecasts in the United States, published by the Philadelphia Federal Reserve Bank.

Wage Inflation

The wage inflation assumption of the actuarial model accounts for projected salary growth over time. Accurate projection of future salary levels helps the PERS Board and its actuary estimate the amount of additional funds the plan can expect to receive from future employee and employer contributions.

At its August 2023 meeting, the PERS Board voted to maintain the current wage inflation assumption of 2.65%.

To assess the real rate of wage inflation, the PERS Board's consulting actuary considered both real wage growth figures derived from historical information and future projections reported by the Social Security Administration. According to the historical information, real rates of wage growth have been 1.35% and 0.67% for the past 10 and 50 years, respectively. Additionally, the Social Security Administration projects a real rate of wage growth of approximately 1.15% per year.

Based on the most recent experience study and its consulting actuary's recommendation, the PERS Board voted at its August 2023 meeting to maintain the current wage inflation assumption of 2.65%. This rate was adopted in its August 2021 meeting.

How is the wage inflation assumption determined?

The wage inflation assumption accounts for **projected salary growth over time**. Salary growth is composed of two parts:

- **Inflation:** This component seeks to account for the overall increases in the value of labor over time. It considers the impact of inflation and the real rate of wage inflation (i.e., the actual rate of inflation wages experience after the effects of price inflation are removed).
- **Promotion or merit salary increases:** These are salary increases given for reaching a defined goal (e.g., certifications, training completions), education attainment, longevity, or promotion.

Investment Return

The investment return assumption projects the investment performance of the assets in the plan (i.e., rate of return of current and future investments).

At its August 2023 meeting, The PERS Board voted to reduce the plan's investment return assumption from 7.55% to 7.00% (a reduction of 0.55%).

The PERS Board voted to reduce the plan's investment return assumption from 7.55% to 7.00% (a reduction of 0.55%) at its August 2023 meeting. To determine the investment rate of return assumption, the PERS Board considers the following sources:

- its actuary's calculations of estimated future investment returns of current and future investments, which are guided by the current market assumptions of the PERS Board's investment consultants and PERS's asset allocation model that is set by the PERS Board;
- information provided by Callan's 2023 *Capital Market Projection*; and,

- information provided by Horizon Actuarial Services's *2022 Survey of Capital Market Assumptions*.[4]

Based on these sources, PERS's consulting actuary continued its recommendation that the PERS Board utilize 7.00% as the plan's investment return assumption. This recommendation was first made to the PERS Board in the results from the plan's 2021 experience study (for the period ended June 30, 2020).

This new rate aligns with the median investment return assumption of public pension plans reported in the November 2023 *Public Fund Survey*.[5] Additionally, the average investment return assumption for plans in National Association of State Retirement Administrators's (NASRA) public plan database was 6.93% (with a median of 7.00%) for the FY 2023 period. The PERS Board voted to utilize the 7.00% investment return assumption in order to adapt to more current expectations for future investment growth and valuations of future liabilities.

Due to the inherent volatility of investment markets, and to prospective changes in the plan's asset allocation model, it is imperative that the PERS Board and its consulting actuary continue to monitor the investment return assumption in future years to ensure that it accurately reflects market conditions and the PERS investment allocation model.

Demographic Assumptions

Demographic assumptions are based on various factors such as age, gender, and years of service of plan members. These assumptions help estimate how many members will retire, how long they will live, and other key demographic trends that impact the plan's financial obligations. After the most recent experience study, the PERS Board adopted changes to several of its demographic assumptions, including the withdrawal, disability retirement, service retirement, and merit salary increase assumptions.

Demographic assumptions are based on various factors such as age, gender, and years of service of plan members. These assumptions help estimate how many members will retire, how long they will live, and other key demographic trends that impact the plan's financial obligations.

After the most recent experience study, the PERS Board adopted changes to several of its demographic assumptions.

A demographic experience study compares actual membership experience of the plan during the evaluation period (i.e., the four-year period ending June 30, 2022) to what was expected to occur based on the assumptions used in the most recent actuarial valuations.

For the PERS plan, the following demographic assumptions were used and evaluated:

- rates of withdrawal;

[4] Horizon Actuarial Services, LLC, is an independent consulting firm specializing in providing actuarial and consulting services to multiemployer benefit plans. The *2022 Capital Market Assumptions* report is a survey of 40 investment firms' outlooks on short- and long-term investment returns.

[5] The *Public Fund Survey* is an online compendium of key characteristics of 130 of the nation's largest public retirement systems. The survey is sponsored by the National Association of State Retirement Administrators. The November 2023 *Public Fund Survey* is as of FY 2022.

- pre-retirement mortality;
- rates of disability retirement;
- rates of service retirement;
- post-retirement mortality; and,
- rates of salary increase (e.g., merit salary increases).

After the most recent experience study, the PERS Board adopted changes to several of its demographic assumptions, including the withdrawal, disability retirement, service retirement, and merit salary increase assumptions.

To provide an example of demographic assumption changes, the following section discusses the changes made to the rates of service retirements assumption.

Increased Mortality Rate due to COVID-19:

While the PERS plan experienced higher pre- and post-retirement mortality rates than expected for the review period, the actuary attributed this increase to the effects of the COVID-19 pandemic, and stated:

> *…this amount is within ranges as to what other public sector retirement plans are experiencing across the country for COVID-related deaths.*

As a result, no recommendation was made to adjust the demographic assumptions for pre- and post-retirement mortality.

Rates of Service Retirements

Definition: service retirement
the decision by an active member to terminate employment in a PERS-covered position and begin drawing retirement based on the number of service credits obtained.

The PERS plan is a defined benefit plan that pays retired employees (or their beneficiaries) an amount determined through a calculation based on the plan's benefits and the employee's salary and years of service. The number of service credits earned by an active member and the age at which the member chooses to retire have a direct impact on the benefit payable to the member in retirement. Therefore, accurately estimating the plan's future liabilities associated with these benefit payments is essential.

Because predicting how long an individual will choose to work is impossible, the plan and its actuary have historically relied on the trends of the plan's existing members as an indicator of future active member behavior.

For example, during the plan's most recent experience study, PERS's actuary found that the plan experienced 17,999 actual service retirements over the four-year period assessed.[6] This amount is in excess of the 17,728 retirements predicted by the plan's assumptions for the same period.

After the most recent experience study, the PERS Board adopted its consulting actuary's recommended changes to the predicted rates of service retirements.

The PERS Board adopted its consulting actuary's recommended changes to the estimated rates of service retirements to mirror the rates of service retirements experience of the PERS plan more closely. The plan's actuary recommended changes to 16 of the plan's 30 assumed demographic striations. For more information on the recommended changes, see Exhibit 3 on page 12.

[6] Active member retirements related to injury or inability to continue employment in a PERS-covered position are estimated through a different assumption.

Exhibit 3: Comparative Rates of Retirement

Age	Rates of Service Retirement†							
	Males				Females			
	Under 25 Years of Service		25 Years of Service and Over		Under 25 Years of Service		25 Years of Service and Over	
	Present	Proposed	Present	Proposed	Present	Proposed	Present	Proposed
45	*	*	25.00%	28.00%	*	*	21.00%	21.00%
50	*	*	19.00%	20.00%	*	*	14.50%	16.50%
55	*	*	18.00%	20.00%	*	*	19.75%	20.75%
60	11.25%	11.50%	19.00%	19.50%	13.25%	13.25%	21.50%	21.50%
62	21.00%	20.00%	29.00%	29.00%	18.75%	18.75%	34.00%	32.25%
65	25.50%	26.50%	32.00%	33.00%	30.00%	30.00%	42.25%	40.00%
70	19.50%	21.25%	26.00%	26.00%	23.00%	24.25%	30.00%	30.00%
75	22.00%	22.00%	24.00%	22.00%	21.50%	24.00%	25.00%	25.00%
80	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

† The rates and changes in this chart apply to all tiers; however, while Tiers 1, 2, and 3 require 25 years of service, Tier 4 requires 30 years of service for its members.

* Due to the statutory design of the PERS plan, non-service retirements are not possible for people under the age of 60.

SOURCE: State of Mississippi Retirement Systems: *Experience Investigation for the Four-Year Period Ending June 30, 2022*.

In its recommendation, the plan actuary drew specific attention to retirement changes made in earlier retirement ages. The accuracy of these estimates is particularly important because the retirement of active members at younger ages creates the potential for the payment of retirement benefits for longer periods of time (including the increase of the retired member's cost-of-living adjustment).

Administrative Expenses Assumptions

The PERS System may direct assets, proceeds, and income toward the payment of the administrative expenses for providing and operating the system. PERS is a pre-funded pension plan,[7] which means that the funds placed in the trust annually must account for future liabilities as well as administrative costs incurred while managing the System.

Definition: covered payroll
Covered payroll represents the wages paid to active members of PERS working in a PERS-covered position during a fiscal year. Covered payroll is the number that employee and employer contributions will be based on.

Since 2013, the actuarial assumptions adopted by the PERS Board have included an estimate for budgeted administrative expenses in the normal cost[8] calculations. As a result of a previous experience study (for the four-year period ended in 2020), the PERS Board elected to utilize an administrative expense assumption of 0.28% of covered payroll as a component of normal costs.

[7] A pre-funded pension plan is a pension plan that is funded concurrently with the accrual of benefits for its members, through the calculation of the normal cost.

[8] Normal cost is the annual cost of providing retirement benefits for services performed by current members. This is a shared responsibility between the member and employer.

With the data from the most recent experience study (for the four-year period ending June 30, 2022) the plan's actuary included an evaluation of the rate of administrative expenses as a percentage of covered payroll. As illustrated in Exhibit 4 on page 13, the plan's administrative expenses have decreased approximately 6% over the four-year period, while covered payroll has increased by 5%. This has brought the cost of administration expenses as a percentage of covered payroll from approximately 0.28% to 0.25% over the four-year period.

Exhibit 4: PERS Administrative Expenses as a Percentage of Payroll for the Periods ended June 30, 2019, through June 30, 2022 ($ in thousands)

Year Ended June 30	Administrative Expense	Annual Payroll	Percentage
2019	16,905	6,144,916	0.28%
2020	19,757	6,287,441	0.31%
2021	15,691	6,246,077	0.25%
2022	15,926	6,454,760	0.25%

SOURCE: *State of Mississippi Retirement Systems Experience Investigation for the Four-Year Period Ending June 30, 2022,* Cavanaugh Macdonald Consulting, LLC.

As a result of the plan's most recent experience study, the PERS Board decreased its assumption for the estimation of its administrative expenses from 0.28% to 0.26% of covered payroll.

Because of this change, Cavanaugh Macdonald recommended a decrease of 0.02% in the plan's administrative expense assumption. This decrease would lower the assumption from 0.28% to 0.26%. The PERS Board adopted this recommendation in its August 2023 meeting for utilization in the plan's annual valuation for the period ending June 30, 2023.

Effects of Lowering the Administrative Expense Assumption

Lowering the administrative expense assumption could potentially increase the contributions available to pay down the plan's unfunded actuarially accrued liability and could contribute to an increase in the plan's future projected funding status. Additionally, because the administrative expense assumption is included in the PERS System's normal cost calculation, this change could help the PERS System to estimate the cost of member benefits more accurately and accrue funds into the system to account for potential future expenses.

Based on the PERS plan's reported covered payroll for the fiscal year ended June 30, 2023, the projected impact of this change is a reduction of approximately $1.4 million in the normal cost component of covered payroll.

Differences between Actual and Assumed Wage Inflation

The wage inflation assumption is the estimate of the amount that PERS members' wages will increase annually in future years. For the past five fiscal years, the PERS average payroll increase has been above the projected annual rate of wage increase; however, over the past 10 fiscal years, it has been below the projected rate. Less-than-expected payroll growth can increase the amortization period of the unfunded actuarial accrued liability. However, the upward pressure on the UAAL may be partially or totally offset due to the decrease in the number of future liabilities resulting from a lower payroll amount than assumed in the actuarial model.

Differences between Actual and Assumed Wage Inflation

The wage inflation assumption is the estimate of the amount that PERS members' wages will increase annually in future years. This rate affects the projected amount of funds that are to be contributed annually for investments to calculate and meet the number of future plan liabilities. PERS receives employee and employer contributions from seven sources:

- state agencies;
- state universities;
- public school districts;
- community and junior colleges;
- counties;
- municipalities; and,
- other political subdivisions (e.g., water or sewer utility districts).

For FY 2023, each employee was required to contribute 9% of his or her salary to PERS, and his or her employer was required to contribute 17.40% of the employee's total salary to PERS.

The wage inflation assumption is composed of the impact of inflation and the real rate of wage inflation, which work together to account for the overall increases in the value of labor over time. Currently, these components are 2.40% and 0.25%, respectively.[9] Wage inflation figures can be affected both by changes in payments to an individual (e.g., wage increases resulting from pay or merit raises) and the payments to the total number of individuals (e.g., growing or shrinking workforces).

For the past five fiscal years, the PERS average payroll increase has been above the projected annual rate of wage increase; however, over the past 10 fiscal years, it has been below the projected rate.

For the past five fiscal years (FY 2019 through FY 2023), the PERS average annual payroll[10] increase has been above the projected 2.65% annual rate of wage increase. For the past five fiscal years, the average annual payroll increase was 3.38%.

For the past 10 fiscal years (FY 2014 through FY 2023), the PERS average annual payroll increase has been below the projected 2.65% annual rate of wage increase. For the past 10 fiscal years the average annual payroll increase was 1.99%.

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[9] Over the past 10-year period, the PERS Board's actuarial assumptions included an assumed growth rate of 4.25% from FY 2014, 3.75% for FY 2015 and FY 2016, 3.25% for FY 2017 and FY 2018, 3.00% for FY 2019 and FY 2020, and 2.65% for FY 2021 to FY 2023.

[10] Annual payroll is a statistical figure reported in the PERS plan's annual valuation that represents the total combined wages paid to PERS members by PERS plan employers.

Exhibit 5 on page 15 presents the total payroll reported to PERS for fiscal years 2022 and 2023. As this exhibit indicates, for FY 2023 alone, PERS experienced an increase in payroll of 9.46%, attributable to increases in total payroll from all payroll sources. Also illustrated in Exhibit 5, wages of employees of state agencies, which represented approximately 17% of the PERS plan's total covered payroll, experienced an increase of 11.33% for FY 2023. For context, for FY 2022 alone, PERS experienced a total payroll increase of approximately 3.34% with state agencies experiencing an increase of approximately 2.07%.

Exhibit 5: PERS Plan Payroll Growth (by Source) for FYs 2022 and 2023

Payroll Source	Total Payroll		Increase (Decrease)	Percentage Change
	FY 2023	FY 2022		
State Agencies	$ 1,222,667,756	$ 1,098,269,192	$ 124,398,564	11.33%
State Universities	1,124,528,218	1,020,004,907	104,523,311	10.25%
Public Schools	2,770,307,893	2,522,338,521	247,969,372	9.83%
Community & Junior Colleges	312,666,211	298,907,368	13,758,843	4.60%
Counties	638,591,490	587,889,282	50,702,208	8.62%
Municipalities	680,269,298	626,517,397	53,751,901	8.58%
Other Political Subdivisions	316,388,338	300,833,496	15,554,842	5.17%
Total	**$7,065,419,204**	**$6,454,760,163**	**$ 610,659,041**	**9.46%**

SOURCE: PEER analysis of the *Report on the Annual Valuation of the Public Employees' Retirement System of Mississippi* as of June 30, 2023.

While PERS has experienced positive payroll growth in four of the last five fiscal years, as shown in Appendix A on page 45, each of these periods' results, with the exception of FY 2022 and FY 2023, were below the rate of wage growth assumed by the PERS Board for the corresponding period.

Definition: amortization period
The amount of time it takes a borrower to pay back full loan principal plus interest.

As reported in *An Update on the Financial Soundness of the Mississippi Public Employees' Retirement System and Related Legal Issues: 2014* (PEER Report #591), PERS's actuaries stated that less-than-expected payroll growth can increase the amortization period of the unfunded actuarial accrued liability (UAAL), which occurs when a pension system's current actuarial value of assets is less than the present value of benefits earned by retirees, inactive members, and current employees as of the valuation date. However, the upward pressure on the UAAL may be partially or totally offset due to the decrease in the number of future liabilities resulting from a lower payroll amount than assumed in the actuarial model.

In addition, the November 2023 edition of NASRA's *Public Fund Survey* states that when a plan's payroll grows at a rate less than expected, the base amount of funds used to amortize the plan's unfunded liability is smaller, meaning that the cost of amortizing the unfunded liability is larger. This is due to the fact that only part of the amount contributed to the PERS plan each year goes to the accrual of employee benefits. This component is called the normal cost. The remainder of the contributions, which are not designated for the accrual of specific member future benefits, are held in the trust and utilized by the PERS plan to begin paying off the plan's UAAL.

For example, the FY 2023 valuation utilizes a total contribution rate of 31.40% of covered payroll (9% employee contribution and 22.40% employer contribution). While this was not the rate contributed by employees and employers during FY 2023, this rate reflects the decision made by the PERS Board at its August 2023 meeting to increase the employer contribution rate to 22.40%.

Utilizing the new employer rate, the calculated normal cost for FY 2023 was 11.62% (9% employee and 2.62% employer). The remainder of the employer contribution, 19.78%, is added to the assets of the plan for use in paying down the plan's UAAL. For FY 2023, for every dollar of covered payroll, the PERS plan received approximately 19.78 cents to be invested to help pay down the plan's UAAL. If the plan experiences less payroll growth than anticipated, the 19.78 cents per dollar of the difference between anticipated and actual covered payroll is not deposited into the PERS trust assets and is not able to grow at the assumed rate of 7.00% annually. Over a 30-year period, assuming all other assumptions are met, this 19.78 cents would grow to $1.51, an increase of approximately 661%.

The PERS Board should continue to analyze variation between actual and assumed wage growth.

Although the PERS Board has made changes to actuarial assumptions in the past, and recent salary increases have raised the five-year average salary growth above the targeted growth rate, the plan's 10-year average continues to be below the plan's targeted growth rate. Continued analysis of the difference between actual and assumed wage inflation is warranted. This is made more evident when PERS's experience, from the previous fiscal year, is compared to the average experience of plans in NASRA's *Public Fund Survey*. The survey's November 2023 report indicates that the median experience for plans in the survey for FY 2022 was a positive change in annual payroll of approximately 4.03%, as compared to the PERS FY 2022 increase of 3.34%. In addition, the survey indicates that the median annual payroll change has been above 2% for four of the past five fiscal years, FY 2018 through FY 2022, while PERS's average wage growth over the same period was 1.36%.

Active and Retired Member Assumptions

The PERS plan, and all other plans administered by the PERS Board, have three types of members: active, inactive, and retired (also referred to as a retiree).

Active Member
Current employees who are contributing to the plan through monthly withholding from pay.

Inactive Member
Members of PERS who are no longer working in a PERS-covered position and have not retired/received a refund of contributions.

Retired Member
Individuals who are no longer working in a PERS-covered position and have begun receiving payments based on their retirement calculations.

Each type of member is considered within the actuarial model of the plans; however, because liabilities associated with inactive members account for only 0.88% of the overall PERS plan's present value of future benefits, the ratio of active to retiree members is of primary importance. As shown in Exhibit 6 on page 17, the ratio of active to retiree members in the PERS plan decreased from 1.74:1 in FY 2013 to 1.25:1 in FY 2023, or approximately 28.48%.[11] The declining ratio is attributable to a decrease in the number of active members and an increase in the number of retiree members over the period.

Exhibit 6: PERS System Active and Retiree Members for FY 2013 through FY 2023 (in Thousands)*

Member Type	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Active	162	162	158	155	153	151	151	151	146	145	147
Retiree	93	96	99	102	105	108	110	112	115	117	118
Ratio	1.74:1	1.69:1	1.60:1	1.52:1	1.46:1	1.40:1	1.37:1	1.35:1	1.27:1	1.24:1	1.25:1

*Calculations are based on rounding to the nearest tenth.

SOURCE: Public Employees' Retirement System of Mississippi.

While the PERS System saw an increase in the number of active members from FY 2022 to FY 2023, the actual rate of increase (1.10%) was still slightly lower than the rate of retiree member increase of (1.18%). The increase in the ratio shown in Exhibit 6 can be attributed to rounding.

The PERS System saw an increase in active members of 1,596 during FY 2023. Active membership gains in the PERS plan accounted for approximately 98% of this increase (1,569 more active members). This is the first increase in active membership since fiscal year 2012.

Exhibit 7 on page 18 provides more detailed information about the increase in active employee membership specific to the PERS plan. While not every employer group has seen an increase in active membership, the overall effect was a higher number of active employees from FY 2022 to FY 2023.

[11] The rate of decline in the ratio of active members to retired members between FY 2012 and FY 2022 was approximately 32%.

Exhibit 7: PERS Plan Active Employee Change (by Employer) for FYs 2022 and 2023

Employers	Active Employees		Increase (Decrease)	Percentage Change
	FY 2022	FY 2023		
State Agencies	24,466	24,922	456	1.86%
State Universities	16,774	17,220	446	2.66%
Public Schools	60,787	61,095	308	0.51%
Community & Junior Colleges	5,761	5,835	74	1.28%
Counties	14,486	14,671	185	1.28%
Municipalities	15,404	15,526	122	0.79%
Other Political Subdivisions	6,738	6,716	(22)	(0.33%)
Total	**144,416**	145,985	1,569	1.09%

SOURCE: PEER analysis of the *Report on the Annual Valuation of the Public Employees' Retirement System of Mississippi* as of June 30, 2022, and June 30, 2023.

As a result of the systemic decrease in the active-to-retiree ratio, the payroll of fewer active members must fund future pension obligations, a factor made more important because contributions from active members and their employers comprise approximately 45% of PERS revenues (as of FY 2023).

According to the November 2023 *Public Fund Survey*, the most recent nationwide information available, when examining the membership of the pension plans tracked by the database, the overall active-to-retiree ratio is 1.25:1 as of the end of FY 2022. The decline in the PERS active-to-retiree member ratio to 1.24:1 at the end of FY 2022 places PERS below the average ratio for other pension plans across the nation. This indicates that PERS has a lower active-to-retiree member ratio compared to the average pension plan in the United States.

At the end of FY 2022, the active-to-retiree member ratio was 1.24:1, which is a lower ratio than the average U.S. pension plan.

In addition, the *Public Fund Survey* observed that a lower ratio of active members to retiree members results in funding future obligations over a smaller payroll base, although a declining active-to-retiree member ratio does not automatically pose an actuarial or financial problem. However, when combined with an unfunded liability, a low or declining ratio of actives to retirees can cause financial distress for a pension system provider.

With a maturing plan,[12] increasing retirements are expected, and the model attempts to account for these changes through the use of demographic assumptions. In addition to the PERS ratio of active members to retirees being below the national average, PERS's experience also differs from the average plan of the *Public Fund Survey* in the area of active membership growth. PERS active membership has continued to decline, whereas the national average plan's membership has grown in seven of the last eight fiscal years (FY 2015 through FY 2022). The national average plan's membership did decline by a rate greater than 1% for FY 2021.

[12] According to Zacks Investment Research, a maturing pension plan is a plan where the number of employees and retirees is approaching equality.

Sustainability of the PERS Plan Funding Policy

This chapter will discuss:

- a review of funding policy metrics;
- the anticipated accrued liability payment period;
- changes to employer contribution rate; and,
- potential impacts of the legislature's actions regarding the employer contribution rate and one-time funds.

Review of Funding Policy Metrics

The PERS funding policy contains three metrics that track the plan's sustainability (e.g., progress achieving funding goals). The metrics are evaluated using a "signal light approach." Based on the results of the evaluation metrics in the funding policy as of June 30, 2023, two of the plan's metrics are at yellow signal-light status and one the of the plan's metrics is at red signal-light status.

Definition: pension plan funding policy
According to NASRA, a pension plan funding policy is a set of guidelines that determines how much should be contributed each year by the employers and active participants to provide for the secure and systematic funding of benefits.

The PERS funding policy utilizes three metrics to track the plan's sustainability (e.g., progress in achieving the funding goals and objectives set by the PERS Board). The plan's funding policy defines several goals and objectives, including contribution rate stability and the maintenance of an increasing trend in the plan's funded ratio (over the projection period) with the target of a 100% funding level. For more information on PERS's funding policy metrics, see Appendix B on page 46.

The policy also includes a course of action should any of the metrics fall below certain thresholds. The metrics are evaluated through the use of a "signal light" approach (i.e., green indicating goals and objectives are achieved, yellow representing a warning that future negative actions may lead to a failure to reach the goals and objectives, and red suggesting that the Board must consider making changes to the employer contribution rate).

During FY 2023, the PERS Board operated the PERS plan under the funding policy that was implemented during FY 2019.[13]

[13] The funding policy utilized in this report was adopted in FY 2019 and amended in FY 2022 to lower the plan's investment rate assumption to 7.55%. At its April 2023 Board meeting, the PERS Board adopted a new funding policy to be implemented in FY 2024.

Based on the results of the evaluation metrics in the funding policy as of June 30, 2023, two of the plan's metrics are at yellow signal-light status, and one of the plan's metrics is at red signal-light status.

Exhibit 8 on page 21 illustrates the status of these three metrics as assessed through the annual valuation and projection report as of June 30, 2022, and June 30, 2023.

Exhibit 8: PERS Funding Policy Metric Results as of June 30, 2022, and June 30, 2023*

Metric	2022	2022 Status	2023	2023 Status
Funded Ratio (in FY 2047)	48.6%	Yellow	65.5%	Yellow
Cash Flow as a	-7.8%	Yellow	-5.4%	Yellow
ADC/FCR Ratio**	124.8%	Red	112.4%	Red

*These results are based on the full implementation of PERS Board's plan to adjust the employer contribution rate to 22.40%.

** The plan's actuarially determined contribution (ADC) is the potential payment to the plan as determined by the actuary using a contribution allocation procedure that, if contributed consistently and combined with investment earnings, would be sufficient to pay promised benefits in full over the long term. The plan's fixed contribution rate (FCR) is the employer contribution rate set by the Board.

SOURCE: *Report on the Annual Valuation of the Public Employees' Retirement System of Mississippi*, prepared as of June 30, 2023.

As highlighted above, all three funding policy metric results improved from June 30, 2022, to June 30, 2023. For the fiscal year ended June 30, 2023, the plan's projected funding level was 65.5%, increased from 48.6% for the year ended June 30, 2022. The cash flow as a percentage of assets increased from -7.8% to -5.4%. Additionally, though the ADC/FCR ratio remains at a red signal light status, the ratio improved from 124.8% to 112.4%. These numbers represent the funding metrics as they existed at the time of the most recent experience study conducted by the independent actuarial firm Cavanaugh Macdonald Consulting, LLC, for the four-year period ended June 30, 2022.

Anticipated Accrued Liability Payment Period

The anticipated accrued liability payment period is the estimated length of time under current actuarial assumptions that is required to pay the UAAL. As of June 30, 2023, PERS's anticipated accrued liability payment period was 32.2 years, a decrease from 48.8 years as of June 30, 2022. It is possible that the PERS Board's decision to lower the plan's investment rate assumption may have future impacts on the plan's anticipated accrued liability payment period.

As highlighted previously, the PERS Board operates the PERS plan under a funding policy that uses three metrics to track the plan's progress in achieving the funding goals and objectives set by the PERS Board. While not a part of the funding policy, there are other metrics that can be viewed to help assess the sustainability of the plan. One of these is the plan's anticipated accrued liability payment period.

The anticipated accrued liability payment period is the estimated length of time under current actuarial assumptions that is required to pay the UAAL. As of June 30, 2023, PERS's anticipated accrued liability payment period was 32.2 years, a decrease from 48.8 years as of June 30, 2022.[14] The PERS Board's actuary attributes the decrease primarily to increased future contributions from the employer rate increase and higher-than-expected wage growth experienced by the plan during FY 2023. Higher-than-expected mortality experience also contributed to the reduction in the payment period.

Conversely, current-year realization of investment losses from four of the past five fiscal years contributed to an increase in the anticipated accrued liability payment period. By using the accepted practice of "smoothing," PERS recognizes actuarial investment gains and losses over a five-year period. This allows the calculation of the anticipated accrued liability payment period and the accrued liability funding percentage to be based on a five-year period rather than on a one-year period, reducing the chance of large fluctuations in these figures. In FY 2023, actuarially smoothed investment returns were approximately $135 million lower than the actuarially projected returns for FY 2019 through FY 2023.

It is possible that the PERS Board's decision to lower the plan's investment rate assumption may have future impacts on the plan's anticipated accrued liability payment period.

For example, during fiscal year 2023, the PERS plan had an actuarial return[15] on invested assets of 6.85%. This rate of return is used to compare to the plan's investment return assumption to determine the actuarial impact of investment gains or losses on the plan for the year. Because this rate was lower than the assumed return of 7.55%, the plan experienced an actuarial loss. If the plan had been operating under the new investment return assumption of 7.00%, the plan would still have experienced an actuarial investment loss, but the actuarial investment loss would have been smaller and had a smaller impact on the plan's anticipated accrued liability payment period.

Changes to the Employer Contribution Rate

According to the PERS funding policy, if any one metric is in the red signal-light status, the actuary will recommend an employer contribution rate increase that is sufficient to get all three funding policy metrics back into the green signal-light status. In light of the plan's funding policy metrics in FY 2023, the actuary recommended the Board extend the plan's prescribed 2% yearly rate increase until the plan reaches an employer contribution rate of 27.40%.

Prospective Rate Change due to FY 2022 Funding Policy Metrics and Investment Experience

The plan's funding policy metrics for FY 2022 showed all three of the plan's metrics reaching the red signal-light status. According to the PERS funding policy, if any one metric is in the red signal-light status in conjunction with the annual valuation report and the projection report, the actuary will determine and recommend to the Board an employer contribution rate increase to consider that is sufficient to get all three funding policy metrics back into the green signal-light status.

Based on the results for FY 2022, and the negative investment experience of the plan for FY 2022, the plan's actuary recommended increasing the plan's employer contribution rate from 17.40% to 22.40%, an increase of 5.00%.

[14] PERS's anticipated liability payment period, as of June 30, 2021, was 50.9 years.

[15] Actuarial return is the investment return experienced by the plan during the current year when realizing the impact of actuarially smoothed gains and losses from the current and four most recent years.

In its December 2022 meeting, the PERS Board voted to adopt the employer contribution rate change to 22.40%, which was recommended by the plan's actuary, with an effective date of October 1, 2023. In light of concern expressed by multiple employer groups, the PERS Board voted in its February 2023 meeting to amend the effective date of the prospective rate change to July 1, 2024.

The prospective implementation of the rate change was further amended by the Board in its August 2023 meeting. During this meeting, the Board voted to change the employer contribution rate at 2% per year until the rate reaches the most current actuarially recommended rate approved by the Board. Based on this action, the PERS Board intended to amend the employer contribution rate to 19.40%, with an effective date of July 1, 2024, with an eventual targeted rate of 22.40%.

Actuarially Recommended Rate Change due to FY 2023 Funding Policy Metrics and Board Action

The plan's funding policy metrics for FY 2023 showed that the PERS plan's ADC/FCR funding policy metric reached a red signal-light status.

Based on these results, and the Board's previous decision to change the employer contribution rate at 2% per year until the rate reaches 22.40%, the plan's actuary has recommended that the Board consider extending the plan's prescribed 2% per year rate increases until the plan ultimately reaches an employer contribution rate of 27.40%. This would be an additional increase of 5.00%.

> The PERS Board's actuary recommended the Board consider extending the plan's prescribed 2% per year rate increases until the plan ultimately reaches an employer contribution rate of 27.40%.

While the PERS plan's funding policy targets the most current recommendation from the plan's actuary (i.e., 27.40%) as the goal of the plan, the PERS Board has only voted to approve the 2% increases in the employer contribution rate up to the previously recommended 22.40%.

> As of the April 2024 Board meeting, the PERS Board had only voted to approve the 2% increases in the employer contribution rate up to the previously recommended 22.40%.

As with the PERS Board's decision to prospectively increase the employer contribution rate incrementally to 22.40%, a phase-in approach to potentially implement the new recommendation of the plan's actuary may allow more time for the PERS Board to evaluate the performance of the PERS plan and its investments, and to adjust future funding requests based on these results. This approach may also provide additional time for PERS employers to adjust annual budgets and to plan for the increases to employee benefits costs.

However, the recommendations of the plan's actuary were based on the results of the plan's funding policy metrics and investment performance from FY 2023. A longer implementation period for the necessary calculated rate increase to get the plan back to an all-green signal-light status can necessitate an ultimate employer contribution rate in excess of the rate initially calculated.

As seen in Exhibit 9 on page 24, the recommendation provided by the actuary is projected to be sufficient to place all three metrics of the plan's funding policy into a green signal-light status within one fiscal year.

Exhibit 9: PERS Funding Policy Metric Results with the Change in Employer Contribution Rate to 27.40% Projected for June 30, 2024

Metric	Result	Status
Funded Ratio (in FY 2047)	90.5%	Green
Cash Flow as a Percentage of Assets	-4.7%	Green
ADC/FCR Ratio*	95.4%	Green

*The plan's actuarially determined contribution (ADC) is the potential payment to the plan as determined by the actuary using a contribution allocation procedure that, if contributed consistently and combined with investment earnings, would be sufficient to pay promised benefits in full over the long term. The plan's fixed contribution rate (FCR) is the employer contribution rate set by the Board.

SOURCE: *Report on the Annual Valuation of the Public Employees' Retirement System of Mississippi*, prepared as of June 30, 2023.

It should be noted that the plan actuary has utilized the PERS Board's approved phased-in approach in these projection calculations whenever possible, but according to the plan actuary:

> *…the method of calculating the ADC/FCR ratio can only use one rate, and the rate utilized was 27.40%.*

Subsequently, the results of this ratio may be slightly overstated when compared to the results the plan would experience under the rate for FY 2025 statutorily approved by the Legislature during the 2024 Legislative Session (i.e., 17.90%). This could lead to the plan's ADC/FCR ratio calculation passing the plan's funding policy metrics when actual results might differ.

Potential Impacts of the Legislature's Actions Regarding the Employer Contribution Rate and One-time Funds

During the 2024 Legislative Session, the Legislature enacted Senate Bill 3231, which most notably transferred the authority to set the employer contribution rate for the PERS plan to the Legislature, and Senate Bill 2468, which directed the State Treasurer to make a one-time transfer of $110 million in capital expense funds to the Employers' accumulation account of the Public Employees' Retirement System.

During the 2024 Legislative Session, the Legislature enacted Senate Bill 3231 and Senate Bill 2468 regarding the PERS System.

Senate Bill 3231

Senate Bill 3231 enacted the following measures:

- halted the prospective 2% employer contribution rate increase approved by the PERS Board;
- instituted a 0.5% employer contribution rate increase each year for five years, starting July 1, 2024;

- transferred the authority to set the employer contribution rate for the PERS plan to the Legislature;
- granted the PERS Board the authority to make recommendations to the Legislature regarding additional funding sources for the PERS plan, including employer contribution increases, based on the assets and liabilities of the retirement plan;
- created a requirement that any recommendations made by the PERS Board regarding an adjustment to the employer contribution rate be accompanied by recommendations from at least two actuaries that are independent of each other and the plan; and,
- stated the intent of the Legislature to enact legislation to create a new retirement plan tier for future members of the system after July 1, 2025.

Senate Bill 2468

Among several other funding transfers, Senate Bill 2468 directed the State Treasurer to make a one-time transfer of $110 million in capital expense funds to PERS's Employers' accumulation account. The Employer's accumulation account represents the accumulation of all reserves for the payment of all retirement allowances and other benefits payable from contributions made by PERS-covered employers to be used for the payment of the retirement allowances and other benefits of plan members.

Impacts of Senate Bills 3231 and 2468

Senate Bill 3231 prohibits the PERS Board's plan of to gradually increase the employer contribution rate from 17.40% to 22.40%. The bill replaces the PERS Board's plan with a statutorily mandated funding plan that will increase the PERS plan's employer contribution rate from 17.40% to 19.90% through 0.5% increases over the next five fiscal years (fiscal years 2025 through 2029). In addition, Senate Bill 2468 enacts a one-time transfer of $110 million of capital expense funds into the PERS trust.

Potential Change in Funding Ratio

Projections calculated by the PERS plan's actuary utilizing the requirements and structure outlined by the PERS plan's funding policy show that the change in approach for increasing the employer contribution rate, in addition to the one-time funds transfer, reduces the plan's projected future funded ratio from 65.5% to 49.9%.

While these figures are projections and are based on the PERS plan's actual experience exactly mirroring the plan's assumptions over the time period, they do show that barring other actions taken in the interim, under the approach implemented by the Legislature, the PERS plan is currently expected to be at a lower funded level in the future than it currently is today.

Additionally, an employer contribution rate increase strategy that targets a lower rate, even when coupled with a one-time cash infusion made by the Legislature, may not be sufficient to get the plan back to an all-green signal-light status and could necessitate an ultimate employer contribution rate in excess of the rate initially recommended by the plan's actuary. Based on these results, it is imperative that the Legislature and the PERS Board continue to assess the performance of the plan and evaluate the status of the PERS plan in the future.

However, it must be noted that while the Legislature's approach changes future funding receipt projections for the plan, with the addition of the one-time transfer of $110 million in capital expense funds, the funds projected to be received by the PERS plan for fiscal year 2025 are on par with the funds expected under the PERS Board's plan.

Under the PERS Board's plan, the 2% increase in the employer contribution rate was projected to result in an increase of approximately $149 million in employer contributions for the plan for fiscal year 2025. Based on the figures utilized for these assumptions, PEER calculates that the one-half percent increase instituted by the Legislature is projected to result in an increase of approximately $37.25 million. When coupled with the $110 million transfer, the resulting $147.25 million is approximately 99% of the PERS Board's expected increase. Without the additional funds transfer, the projected revenues raised by the employer contribution rate increase would only be 25% of the revenues expected under the PERS Board's plan.

While the funding for the first year is comparable, each year in the future could potentially see a greater deviation in expected employer contribution revenues for the PERS plan. This deviation does not immediately constitute a problem for the PERS plan; however, careful evaluation of the plan's future liabilities and funding needs will be necessary to ensure the sustainability of the PERS plan.

Increased Utilization of State Funds

An additional impact of the changes implemented by the Legislature during the 2024 Legislative session stems from the source of funds utilized by the Legislature to fund PERS. As highlighted above, the projected increase in PERS employers contributions under the PERS Board's plan was approximately $149 million.

While these additional contributions would have been spread across all PERS-covered employer groups, calculations based on PERS staff's initial cost analysis estimated approximately $114 million would have come from entities receiving state funds, with approximately $38 million having come from state general funds. Utilizing the same methodology as above, PEER staff calculated the cost breakdown of the Legislature's new statutorily mandated approach. Of the projected $37.25 million in additional expected employer contributions, approximately $9.5 million would be expected to come from general funds. When this is added to the $110 million that was transferred from the capital expense funds, it totals approximately $119.5 million that comes from wholly derived state funds.

This represents an increase in the use of state funds of approximately 214%. By lowering the increase in the employer contribution rate, and providing a one-time transfer of funds, the Legislature has shifted the funding of PERS more heavily onto the state and reduced the ability to utilize other sources of funding such as federal grant funds, county and municipality funds, and special funds dollars. While this is within the purview of the Legislature its new approach does deviate from the historical model of providing contributions to the plan based on the covered payroll of each employer within the System.

Risk Management and Investment Management

This chapter will discuss:

- risk management; and,
- investment management.

These concepts are utilized to provide a framework for the structure that will manage the plan's long-term risk environment in ways that allow it a reasonable opportunity to collect or earn sufficient assets to meet its benefit obligations.

Risk Management

The calculation of a plan's funding ratio is an accounting measure that quantifies the plan's ability to meet its projected future obligations based on service already performed with assets currently available. For FY 2023, the actuarial value of assets in PERS decreased in relation to the actuarial value of its liabilities, lowering to 56.1% for FY 2023 from 61.3% for FY 2022. According to projections prepared by PERS's consulting actuary as of June 30, 2023, the plan's funding ratio was projected to be 65.5% by 2047.

To determine the funding ratio, or funding level, of a plan, the current value of all projected future obligations of the plan (such as future pension payments) is calculated. In other words, the cost of all of the plan's future obligations is calculated in today's dollars. The total of the current value of future obligations is compared to the plan's assets on hand today and a funding ratio is derived.

The calculation of a plan's funding ratio is an accounting measure that quantifies the plan's ability to meet its projected future obligations based on service already performed with assets currently available. However, this measure, like most accounting measures, assesses the plan in a conservative manner and does not take into account items such as future investment gains and losses and/or loss of contributions from employees and participating employers. This measure also does not reflect the ability of the plan to meet its current obligations.

For FY 2023, the actuarial value of assets in PERS decreased in relation to the actuarial value of its liabilities, lowering to 56.1% for FY 2023 from 61.3% for FY 2022.[16] The plan actuary attributes this decrease in the relationship between these two valuations primarily to the investment assumption rate.

[16] For the fiscal year ended on June 30, 2021, the PERS plan had a funding level of 61.3%.

Primarily due to the change in employer contribution rate, the PERS plan has a projected future funding ratio of 65.5% as of 2047. This is increased from the FY 2022 projection of 48.6%.

According to projections prepared by PERS's consulting actuary as of June 30, 2023, the plan's funding ratio was projected to be 65.5% by 2047, as compared to 48.6% reported in the FY 2022 projection reports.[17] The increase in the future funding level is primarily due to the change in the employer contribution rate but this increase has been partially offset by the reduction in the plan's investment return assumption.

Although an 80% funding ratio is frequently cited as a measure of an adequately funded pension system, there is no industry statement or requirement for a pension plan's funding level to be at 80% to be defined as "healthy." Neither the Governmental Accounting Standards Board[18] nor the American Academy of Actuaries uses an 80% funded ratio to define a plan as financially healthy.

For any projected funding level information to be accurate, all actuarial assumptions must be met exactly for all fiscal years forecasted. As past performance indicates, results can exceed or fall short of this mark, creating variability from the model.

Investment Management

PERS's investment performance for FY 2023 was above the current actuarial model's utilized investment return rate of 7.55%, placing it above the median return for its peer group[1] of 7.50%. Additionally, PERS's investment performance has exceeded its peer group median for each of the past 5- and 10-year periods.

Having realized a market gain of approximately 7.76% in the PERS plan's combined investment portfolio, the market value of assets increased from approximately $31.2 billion to $32 billion during FY 2023, an increase of approximately $0.8 billion.

As presented in Exhibit 10 on page 29, according to investment consultant Callan, PERS's investment performance for FY 2023 was above the current actuarial model's utilized investment return rate of 7.55%, placing it above the median return for its peer group[19] of 7.50%. Additionally, PERS's investment performance has exceeded its peer group median for each of the past 5-, and 10-year periods.

[17] For the period ended on June 30, 2021, the PERS plan's projected funding level in 2047 was 93.5%.

[18] The Governmental Accounting Standards Board is an independent organization that establishes standards of accounting and financial reporting for state and local governments in the United States.

[19] The PERS peer group is composed of other nationally based large pension plans (plans having greater than $10 billion in assets).

Exhibit 10: Comparison of PERS Investment Performance to Peer Group of Public Pension Plans with Assets of More than $10 Billion

Category	FY 2023	3-Year Return	5-Year Return	10-Year Return
PERS Return	7.76%	9.36%	7.63%	8.47%
Peer Group Median (midpoint)	7.50%	9.49%	7.41%	7.94%
PERS Percentile Rank	44*	56	50	12
25th Percentile*	9.09%	10.53%	8.01%	8.21%
10th Percentile	10.48%	11.60%	8.48%	8.54%

* In this example, 44th percentile means PERS outperformed 56% of peer group funds; 25th percentile means these returns were greater than 75% of peer group funds.

SOURCE: Callan LLC, *Investment Performance Review,* as of June 30, 2023.

According to the *Public Fund Survey*, the median public pension annualized investment 10-year return for the period ending December 31, 2022, was 7.3% and the 30-year return was 7.9%.[20] Over the past 10 years, PERS's investment return on assets averaged 8.47%. Investment returns ranged from -8.54% during FY 2022 to 32.71% during FY 2021. The volatility of the recent years' returns reinforces the principle of viewing investment returns over a long period and comparing long-term returns to investment return goals rather than focusing on a single year's returns or returns over a short period.

Historically, PERS's investment returns have averaged 7.51% over the past 15 years, 7.82% over the past 20 years, 6.55% over the past 25 years, and 7.80% over the past 30 years. PERS's investment returns have exceeded the median for other public pension plans for the past 10-year period.

Because investment returns are the largest piece of a pension's funding source, when actual returns fall below projections, over time the plan must rely on other sources (i.e., contributions) to provide for the difference, which could lead to decreases in the plan's assets.

The PERS Board and its consulting actuary plan to continue to monitor the investment return assumption in future years to ensure that the investment return assumption accurately reflects market conditions and the System's investment allocation model.

Asset Allocation Model

The PERS independent investment consultant periodically performs an asset/liability allocation study that considers projected future liabilities of the System, expected risk, returns of various asset classes, and statutory investment restrictions. For FY 2023, the PERS Board began to implement the new asset allocation model adopted by the PERS Board in its June 2022 meeting. The asset allocation model determines the mix of asset classes in which PERS will invest and the overall weight of each asset class within the whole portfolio.

The PERS Board and PERS staff use this model to mitigate investment risk through diversification and to establish risk and rate of return expectations for the adopted target asset allocation mix. On a quarterly

[20] At the time of publication of this report, the *Public Fund Survey* for the period ending June 30, 2023, had not been released.

basis, the PERS Board and its staff, in consultation with its investment advisers, review the performance of each investment manager relative to the asset class's target performance level.

Exhibit 11 on page 30 presents the actual FY 2023 investment allocation compared to PERS's overall asset allocation model.

Exhibit 11: PERS FY 2023 Actual Asset Allocation Compared to PERS Overall Asset Allocation Model

Model	U.S. Equity	Non-U.S. Equity	Debt Investments	Real Estate	Private Equity	Private Credit	Private Infrastructure	Global Equity	Cash
Model	25%	20%	18%	10%	10%	2%	2%	12%	1%
FY 2023	26%	20%	19%	10%	12%	0%	0%	12%	1%

SOURCE: Callan LLC, *Investment Performance Review, as of June 30, 2023, and PERS Investment Policy Statement.*

PERS's assets are being invested in accordance with the asset allocation model. Instances in which current investment levels do not agree with the model do not automatically constitute a cause for alarm or present the need for an immediate change in investment levels.

The investment model represents targeted investment levels designed to prevent the investment portfolio from becoming too heavily weighted in a certain investment type. Market conditions may, at times, cause a prudent manager to call for slight departures from target goals. For these reasons, the PERS Board monitors investment performance, strategies, and weights throughout the year and manages the investment portfolio based on input from professional money managers, advisers, and its professional staff.

Private Credit Investment Allocation

The new asset allocation model adopted by the PERS Board plans for investment in two new asset classes:

- private credit; and,
- private infrastructure.

For more information on the creation of the new asset allocation model and the new asset classes themselves, see PEER Report #685, *2022 Update on Financial Soundness of the Public Employees' Retirement System.*

As shown in Exhibit 11, for FY 2023, the plan did not have any investments in these asset classes. However, at the end of FY 2023, the PERS plan has committed $500 million for investment in this asset class ($250 million each for two selected managers).

After the final approval of the new asset classes in June 2022, PERS investment staff, along with PERS investment consultant, Callan, held meetings with various other pension systems about how they structured their private credit investments and how they chose their fund managers to assess the options available for fund management.

In its April 2023 meeting, the PERS Board, at the recommendation of Callan and PERS investment staff, approved the use of a fund-of-one structure for the PERS System's private credit portfolio. A fund-of-one structure is a partnership between the PERS System and its asset manager. The contracted asset manager is responsible for creation of a fund or group of investments for the System that meets the parameters defined in the contract (e.g., size or duration). The asset manager is also responsible for all underlying administrative, tax, auditing, and legal requirements of the investments. This investment structure is the same structure that the PERS System employs in its private equity investments.

PERS investment staff began working with Callan to develop a list of potential candidates in May 2023 and began conducting interviews with selected candidates in August 2023. Through a two-stage interview process, candidates were evaluated on criteria such as assets under management, sector strategy, fees, and investment structuring. Two managers were selected from this process and the PERS Board approved the investment staff's recommendation of Blue Owl Capital and Grosvenor Capital Management in its October 2023 meeting.

Since the approval of the investment managers in October, contracts were finalized with each manager and both investment managers have begun drawing money to invest from the money committed by PERS. Unlike the purchase of stocks or bonds, the relationships with these managers are structured as open-ended investments with a duration of 7 to 10 years. This means that the money committed to the managers is only committed for a limited time, and it is possible that one or both managers may not access their full $250 million commitment. This is possible because each investment manager looks for investment opportunities within their individual mandate, and each investment made by these managers is an individually negotiated agreement with potential creditors that is structured for a defined timeframe.

Like with all other investments of the PERS System, PERS staff will monitor the use and performance of these investment managers and will make reports to the PERS Board at its bi-monthly meetings.

Investment Managers

> In FY 2023, the PERS Board had 60 investment management contracts with payments to 55 managers.

In addition to PERS's efforts to mitigate investment risk for plan assets through asset diversification, the PERS Board's decision to utilize numerous investment managers also minimizes investment risk, as it prevents a large portion of plan assets from being under the management of any one investment manager. For FY 2023, the PERS Board had investment management contracts for 60 portfolios (including four that were added and two that were terminated in FY 2023) and paid management fees to investment managers on 55 of these portfolios. The remaining five active investment managers either have not yet begun their contracted investments or are finishing their previously contracted investments and therefore have not yet been paid.

According to the PERS plan's *Investment Policy Statement,* external investment managers are retained because of their skill and expertise within a specialized part of the PERS portfolio. Investment managers are charged with managing the assets and the allocation of the assets within his/her control in compliance with the policies, guidelines, and objectives included in their Investment Management Agreement with PERS.

Investment managers are required to act as trustees to PERS and construct and manage investment portfolios that are consistent with the investment philosophy and disciplines (asset classes) for which they were hired.

Callan LLC assists the Board in selecting investment managers.

Selection of investment managers is ultimately the responsibility of the PERS Board. The process for selection of an investment manager begins with the plan's investment consultant, Callan, vetting potential options and assisting the PERS staff with creating a list of candidates that meet the search criteria. These criteria include a wide range of qualitative and quantitative factors such as:

- asset class;
- investment style;
- assets under management relative to the size of PERS's prospective investment;
- manager's staff size;
- management structure and experience; and,
- manager's historical performance and risk tolerance.

The list of candidates is discussed by a manager search committee that selects a group of finalists to be interviewed by the PERS Board. After conducting interviews with the finalists, the Board will select the best option as an investment manager for the PERS plan.

Once a manager is selected and engaged, the PERS Board, with the assistance of Callan and the PERS staff, monitors the performance of investment managers within the plan. This monitoring is also based on both qualitative and quantitative factors, as outlined in the plan's *Investment Policy Statement.*

The Statement lists qualitative assessment factors such as a manager's adherence to his or her stated investment objectives, organizational structure and stability, and changes in investment policy. Quantitative factors include underperformance over a full market cycle, material changes to the risk profile, and portfolio characteristics that are inconsistent with expectations.

Based on the assessment of these factors, the Board can vote to place managers deemed to be underperforming on the PERS Watchlist. The Watchlist assists in monitoring performing funds relative to benchmarks and peers. Any fund that fails to outperform its benchmark or peer group median for the specified time period may be placed on the Watchlist for further review. Improvement relative to long-term objectives will allow for a fund's removal from the Watchlist while continued underperformance could prompt the Board to terminate the fund. The Board has the authority at any time to terminate or replace an investment manager.

For FY 2023, PERS paid $100.9 million to investment managers on PERS plan assets of $32 billion, a combined investment management expense rate of 0.32% (the expense rate for the fiscal year ending June 30, 2022, was 0.34%).

In FY 2023, PERS paid $100.9 million to investment managers on PERS plan assets of $32 billon, a 0.32% investment management expense rate.

As of June 30, 2023, Loomis Sayles & Company, LP, a manager in the core plus domestic fixed-income sector, had the most assets under management as a percentage of the total portfolio by any one active investment manager[21] with 3.44% (approximately $1.1 billion of the PERS plan's $32 billion in assets).

For more information on investment management fees, see Appendix C on page 51.

[21] Active investment management refers to a portfolio management strategy by which the manager uses various investment research approaches, models, and systems to select the fund's specific investments with the goal of outperforming the fund investment's benchmark index.

Update on the Highway Safety Patrol Retirement System Plan

This chapter discusses:

- administration of the Mississippi Highway Safety Patrol Retirement System (MHSPRS) plan;
- changes to the MHSPRS plan's actuarial assumptions; and,
- changes to the MHSPRS plan's funding policy metrics.

Administration of MHSPRS

The MHSPRS plan is a defined benefit retirement plan for the benefit of eligible Mississippi Highway Safety Patrol sworn officers. The six-member MHSPRS Administrative Board, with the approval of the Attorney General, makes rules and regulations necessary for the efficient, orderly, and successful operation of the plan. The PERS Board of Trustees administers the plan and the plan's assets are invested collectively with assets from all plans under PERS Board administration.

The MHSPRS plan is a defined benefit retirement plan, qualified under Section 401 (a) of the Internal Revenue Code and established by the Mississippi Legislature in 1958 under MISS. CODE ANN. § 25-13-1 (1972) et seq., for the benefit of eligible Mississippi Highway Safety Patrol sworn officers. As a defined benefit retirement plan, the MHSPRS plan involves a trust fund supported by payroll-based contributions from employers and employees as well as investment returns. For any given eligible employee, benefits are based on average compensation, years of creditable service, and selected benefit payment method.

Employees of the Mississippi Highway Safety Patrol are state employees, and, as such, could be covered under PERS. However, due to the hazardous nature of employment as a sworn officer of the Mississippi Highway Safety Patrol, the Mississippi Legislature created MHSPRS, a substitute retirement plan with generous benefits, with an employer contribution of 49.08% since 2018.

Due to the hazardous nature of Mississippi Highway Safety Patrol's employment, MHSPRS provides a substitute retirement plan with broader benefits.

The MHSPRS plan is a separate retirement plan from PERS. It has its own assets, (i.e., investments held in trust for the exclusive use of its members and their beneficiaries), and its own liabilities. As a separate plan, MHSPRS has its own board, created under MISS. CODE ANN. § 25-13-25 (1972) as follows:

> *There is established an administrative board for the Mississippi Highway Safety Patrol Retirement System, which shall be composed of the Commissioner of Public Safety, four active members of the retirement system elected by the active members of the system,*

and one retired member of the retirement system elected by the retired members of the system.

As indicated above, the following six members comprise the MHSPRS Administrative Board:

- the Commissioner of Public Safety;
- an MHSPRS retiree representative;
- a representative from highway patrol headquarters; and,
- one representative from each highway patrol region (North, Central, and South).

All members of the MHSPRS Administrative Board, other than the Commissioner of Public Safety, are elected by their respective constituencies. In accordance with MISS. CODE ANN. § 25-13-25 and with the approval of the Attorney General, the MHSPRS Administrative Board makes rules and regulations necessary for the efficient, orderly, and successful operation of the plan. While the MHSPRS Administrative Board meets annually with the PERS consulting actuary, the actuarial assumptions utilized by the MHSPRS plan are the responsibility of the PERS Board.

Although MHSPRS is a separate plan from PERS with its own administrative board, under the guidance of its consulting actuary, the PERS Board of Trustees administers the plan to ensure financial soundness and compliance with the guidelines established by the Governmental Accounting Standards Board. The PERS Board also appoints the executive director of the agency, and, under MISS. CODE ANN. § 25-13-7 (1972), the PERS Board serves as the custodian of MHSPRS plan assets. These assets are invested collectively with assets from all plans under PERS Board administration.

Changes to the MHSPRS Plan's Actuarial Assumptions

As a result of the most recent experience study conducted by the independent actuarial firm Cavanaugh Macdonald Consulting, LLC, for the four-year period ended June 30, 2022, the PERS Board adopted changes to the actuarial assumptions used by the MHSPRS plan at its August 2023 meeting. The cumulative effect of these changes for the FY 2023 valuation was a one-time increase to the unfunded actuarial accrued liability of approximately $43 million.

As with the PERS plan, Cavanaugh Macdonald Consulting, LLC, conducts an experience study every two years for the MHSPRS plan. The results of the most recent experience study (for the period ended June 30, 2022) were presented at the April 2023 meeting of the PERS Board and the MHSPRS Administrative Board and adopted during the August 2023 meeting of the PERS Board.

The adopted changes included adjustments to the MHSPRS plan's economic and demographic assumptions. Some of these changes include:

- lowering the MHSPRS plan's investment rate of return assumption from 7.55% to 7.00%;
- lowering the disability retirement rate assumption to reflect actual MHSPRS plan experience more accurately;
- changing the service retirement rate assumptions to better match the MHSPRS plan's actual experience;

- increasing the assumption for unused leave and prior military service for all members at retirement from two years to two and one-quarter years; and,
- changing the method used for the salary merit scale assumption.[22]

Adoption of the changes to the assumptions increased the MHSPRS plan's unfunded liability by approximately $43 million.

Changes to the MHSPRS Plan's Funding Policy

The PERS Board, at its August 2023 meeting, adopted amendments to the MHSPRS plan funding policy. These amendments changed the assessment metrics of the MHSPRS plan from a single-factor approach to a multi-factor signal-light approach with specific targets tailored to the MSHPRS plan. Based on the results of these metrics from the MHSPRS plan's Fiscal Year 2023 valuation and projection report, the MHSPRS plan's actuary recommended no change to the MHSPRS plan's employer contribution rate.

As with the PERS plan, the calculations for how much should be contributed each year by the employers and active participants is based on a funding policy that has been adopted by the PERS Board. The PERS Board, at its August 2023 meeting, amended the funding policy of the MHSPRS plan.

The changes made to the MHSPRS funding policy changed the evaluation metrics of the plan from a single metric (the future funded ratio) to a multi-factor signal-light approach similar to the metrics utilized by the funding policy instituted by the PERS Board. The MHSPRS funding policy utilizes the same three metrics as the PERS funding policy: the funded ratio, cash flow as a percentage of assets, and the actuarially determined contribution/fixed contribution rate (ADC/FCR) ratio. However, the dividing lines for some of the metrics have been changed to be tailored specifically to the needs of the MHSPRS plan. For more information about the specifics of the metrics for the MSHPRS plan see Appendix D on page 54.

Like the language within the PERS plan funding policy, the MHSPRS plan funding policy includes instructions for the plan actuary that state:

> *If any one of the metrics are in the Red Signal-Light status in conjunction with the annual valuation report and the projection report, the actuary will determine and recommend to the Board an employer contribution rate increase to consider that is sufficient enough to get all three metrics back into the Green Signal-Light status.*

Exhibit 12 on page 37 illustrates the MHSPRS funding policy metric results as of June 30, 2023.

[22] This assumption was changed from a method that used correlation between a member's age and salary to a method that uses a correlation between a member's years of service and salary.

Exhibit 12: MHSPRS Funding Policy Metric Results as of June 30, 2023

Metric	Result	Status
Funded Ratio (in FY 2047)	78.6%	Yellow
Cash Flow as a Percentage of Assets	-4.4%	Green
ADC/FCR Ratio* for 2023 Valuation	105.2%	Yellow
Projected ADC/FCR Ratio* for 2024 Valuation	106.5%	Yellow

* The plan's actuarially determined contribution (ADC) is the potential payment to the plan as determined by the actuary using a contribution allocation procedure that, if contributed consistently and combined with investment earnings, would be sufficient to pay promised benefits in full over the long term. The plan's fixed contribution rate (FCR) is the employer contribution rate set by the MHSPRS Administrative Board.

SOURCE: *Report on the Annual Valuation of the Mississippi Highway Safety Patrol Retirement System* prepared as of June 30, 2023.

Based on these results, the MSHPRS plan's actuary recommended no change to the MHSPRS plan's employer fixed contribution rate of 49.08%. However, the actuary cautioned that any negative experience in the near future may necessitate an increase in the fixed contribution rate for the MSHPRS plan.

Update on the Supplemental Legislative Retirement Plan

This chapter discusses:

- administration of the Supplemental Legislative Retirement Plan (SLRP);
- changes to the SLRP actuarial assumptions; and,
- changes to the SLRP funding policy and the employer contribution rate.

Administration of SLRP

SLRP is a defined benefit retirement plan for the benefit of eligible Mississippi State Legislators and the President of the Senate. Members of SLRP are also members of PERS. Contributions are made by the members and their employers (i.e., Mississippi Senate and House of Representatives) to both plans. The PERS Board of Trustees administers the plan and the plan's assets are invested collectively with assets from all plans under PERS Board administration.

SLRP is a defined benefit retirement plan, qualified under Section 401 (a) of the *Internal Revenue Code* and established by the Mississippi Legislature in 1989 under MISS. CODE ANN. § 25-11-301 (1972), for the benefit of all eligible Mississippi State Legislators and the President of the Senate. As a defined benefit retirement plan, the SLRP plan involves a trust fund supported by payroll-based contributions from employers (i.e., Mississippi Senate and House of Representatives) and employees as well as investment returns. For any given eligible employee, benefits are based on average compensation, years of creditable service, and selected benefit payment method.

SLRP is a defined benefit retirement plan that is designed to supplement preexisting PERS benefits for eligible members.

State legislators and the President of the Senate are state employees, and, as such, are also covered under PERS. SLRP is a defined benefit retirement plan that is designed to supplement preexisting PERS benefits for eligible members (meaning SLRP members contribute to and receive benefits from both PERS and SLRP).

The assets of the SLRP plan are separate from the assets of the PERS plan (or other plans overseen and administered by the PERS Board) and held in trust for the exclusive use of its members and their beneficiaries.

Under the guidance of a consulting actuary, the PERS Board of Trustees administers the plan to ensure financial soundness and compliance with the guidelines established by the Governmental Accounting Standards Board. Under MISS. CODE ANN. § 25-11-307 (1972), the PERS Board serves as the custodian of SLRP plan assets. These assets are invested collectively with assets from all plans under PERS Board administration.

Changes to the SLRP Plan's Actuarial Assumptions

As a result of the most recent experience study conducted by the independent actuarial firm Cavanaugh Macdonald Consulting, LLC, for the four-year period ended June 30, 2022, the PERS Board adopted changes to the actuarial assumptions used by SLRP at its August 2023 meeting. The cumulative effect of these changes for the FY 2023 valuation was a one-time increase to the unfunded actuarial accrued liability of approximately $1.6 million.

Like the PERS plan, SLRP conducts an experience study every two years. This study is also conducted by Cavanaugh Macdonald Consulting, LLC. The results of the most recent experience study, for the period ended June 30, 2022, were presented at the April 2023 meeting of the PERS Board and adopted during the August 2023 meeting of the PERS Board.

The adopted changes included changes to the MHSPRS plan's economic and demographic assumptions. Some of these changes included:

- lowering the SLRP investment rate of return assumption from 7.55% to 7.00%;
- lowering the disability retirement rate assumptions to reflect actual SLRP experience;
- increasing the service retirement rate assumption from 2.5% to 3.5%, during non-election years, to more accurately reflect actual SLRP experience; and,
- reducing the administrative expense assumption from 0.28% to 0.15% of payroll.

Adoption of the changes to the assumptions increased SLRP unfunded liability by approximately $1.6 million.

Changes to the SLRP Funding Policy and Employer Contribution Rate

The PERS Board, at its August 2023 meeting, adopted amendments to the SLRP funding policy. These amendments changed the assessment metrics of the SLRP plan from a single-factor approach to a multi-factor signal-light approach with specific targets tailored to the SLRP plan. Based on the results of these metrics, for the fiscal year ended June 30, 2023, the SLRP actuary recommended a continuation of the plan's employer contribution rate increase, effective July 1, 2024. This increase is projected to increase employer contribution cost by approximately $86,000.

As with the PERS plan, the calculations for how much should be contributed each year by the employers and active participants are based on a funding policy that has been adopted by the PERS Board. The PERS Board, at its August 2023 meeting, amended the funding policy of SLRP.

The changes made to the SLRP funding policy changed the evaluation metrics of the plan from a single metric (the future funded ratio) to a multi-factor signal-light approach similar to the metrics utilized by the funding policy instituted by the PERS Board for the PERS plan in July 2018. The new SLRP funding policy utilizes the same three metrics as the PERS funding policy, the funded ratio, cash flow as a percentage of assets, and the actuarially determined contribution/fixed contribution rate (ADC/FCR) ratio. However, the dividing lines for some of the metrics have been changed to be tailored specifically to the needs of SLRP. Exhibit 13 on page 40 illustrates the SLRP funding policy metrics as of June 30, 2023.

Like the language within the PERS plan funding policy, the SLRP funding policy includes instructions for the plan actuary that state:

> *If any one of the metrics are in the Red Signal-Light status in conjunction with the annual valuation report and the projection report, the actuary will determine and recommend to the Board an employer contribution rate increase to consider that is sufficient enough to get all three metrics back into the Green Signal-Light status.*

For more information about the specifics of the metrics for SLRP, please see Appendix E on page 60.

Exhibit 13: SLRP Funding Policy Metric Results as of June 30, 2023

Metric	Result	Status
Funded Ratio (in FY 2047)	78.4%	Yellow
Cash Flow as a Percentage of Assets	-5.6%	Yellow
ADC/FCR Ratio* for 2023 Valuation	102.0%	Yellow
Projected ADC/FCR Ratio* for 2024 Valuation	107.8%	Yellow

* The plan's actuarially determined contribution (ADC) is the potential payment to the plan as determined by the actuary using a contribution allocation procedure that, if contributed consistently and combined with investment earnings, would be sufficient to pay promised benefits in full over the long term. The plan's fixed contribution rate (FCR) is the employer contribution rate set by the Board.

SOURCE: *Report on the Annual Valuation of the Supplemental Legislative Retirement Plan of Mississippi* prepared as of June 30, 2023.

Based on these results, the SLRP actuary (i.e., Cavanaugh Macdonald Consulting, LLC) recommended that the PERS Board continue utilizing the new SLRP employer contribution rate of 8.40% that is scheduled to go into effect for FY 2025 (the fiscal year starting July 1, 2024).

The new employer contribution rate was authorized by the PERS Board during its August 2023 meeting. This was done on recommendation from the SLRP actuary, increasing the employer contribution rate from 7.40% to 8.40%, an increase of 1.00%.

Based on the projected payroll for FY 2025, the additional cost due to the employer rate increase is projected to be approximately $87,000. As a comparative figure, total employer contributions received by SLRP during FY 2023 were approximately $623,000.

Potential Additional Revenue Streams for Retirement Systems

This chapter discusses:

- an overview of pension system funding; and,
- alternative funding mechanisms for pension systems.

An Overview of Pension System Funding

During its June 2022 Board meeting, the PERS Board adopted changes to the asset allocation model utilized by the System. This change expanded the asset classes utilized by the plan to include investment capacity in private credit and private infrastructure investments.

A component of the PERS Board's responsibility is the investment of assets held in trust for System members and beneficiaries. These investments must conform to specific guidelines for allowable investments codified in MISS. CODE ANN. § 25-11-121 (1972).

To help mitigate risk, the PERS Board invests the assets of the System through the use of an asset allocation model. This model determines the mix of asset classes in which the System invests and the overall weight of each asset class within the portfolio.

Funding of Pension Systems

The funding of a pension system should attempt to balance the revenues received by the plan with the system's projected expenses and obligations. This can be summed up by the following simplified formula:

Contributions (C) + Investment Returns (I) = Benefit Payments (B) + Expenses of the System (E)

However, because pension systems are long-lived assets (i.e., assets that are expected to provide economic benefits over a future period of time), the actual cost of benefit payments and expenses of the system are uncertain. To ensure a pension plan is fully funded, the funding formula must try to account for events that may be years in the future and are potentially variable. For example:

- At what age will future employees enter employment and become active members?
- At what age will active members[23] become retired members[24] and begin to draw retirement benefits?
- For how many years will a retired member draw retirement benefits?

[23] Active members are current employees of a PERS-covered entity who are contributing to the plan through a monthly withholding from pay.

[24] Retired members are individuals who are no longer working in PERS-covered positions and have begun receiving payments based on their retirement calculations. This group also includes the survivors and beneficiaries of members who are receiving payments.

To account for these variables, pension systems attempt to model the activity and cost of active and retiree members through the adoption of various economic and demographic assumptions. Pension systems' actuaries use these assumptions to help calculate the systems' projected costs. This amount is called the actuarially determined contribution (ADC).[25] The ADC is the recommended combined contribution from both employees and employers. This recommended contribution is calculated to help a defined benefit pension plan meet its current funding needs for the reporting period.

In its 2013 guide, *Pension Funding: A Guide for Elected Officials*, the National Association of State Retirement Administrators (NASRA), along with several other national organizations,[26] recommended that entities responsible for a public pension plan make fully funding the system's ADC a component of the system's funding policy (i.e., the guidelines that govern the funding of the operations of a pension system). However, the ADC is only a recommendation or target. Entities responsible for public pension plans are not required to make contributions sufficient to meet the system's calculated ADC, and there are no mandates regarding what method entities can utilize to determine the amount of annual contribution to the plans they sponsor.

According to NASRA, traditionally, entities fund public pension plans through employee contributions withheld from employees' paychecks and employer contributions from general funds and other sources that are used to pay employees (i.e., grant funds). However, in recent years, a growing number of public employers have utilized alternative funding mechanisms to supplement or replace other sources of funding for employer contributions to public pensions when systems funding has fallen below the amounts recommended in the system's ADC calculation or when assumptions and estimates used in calculation of the system's ADC have been inaccurate.

Alternative Funding Mechanisms for Pensions Systems

The use of alternative funding mechanisms for other government sponsored pension systems can be grouped into discretionary contributions and statutory contributions.

The use of alternative funding mechanisms for other government-sponsored pension systems, as highlighted by NASRA, can be grouped into two categories:

- discretionary contributions; and,
- statutory contributions.

[25] In accordance with Governmental Accounting Standards Board *Statement Number 67* (GASB 67), in most cases, pension system actuaries are required to calculate a system's ADC in conformity with the Actuarial Standards of Practice set by the Actuarial Standards Board. The ADC must be based on the most recent measurements available when the contribution for the reporting period was adopted.

[26] National Governors Association, National Conference of State Legislatures, The Council of State Governments, National Association of Counties, National League of Cities, The U.S. Conference of Mayors, International City/County Management Association, National Council on Teacher Retirement, National Association of State Auditors, Comptrollers and Treasurers, Government Finance Officers Association, and National Association of State Retirement Administrators.

Alternative Funding through Discretionary Contributions

Discretionary contributions are contributions that are periodic or irregular in nature. This means that a system sponsor has chosen to provide additional contributions to a pension system without use of a formulaic provision or legal requirement. For example, during the 2024 Legislative Session, Senate Bill 2468 was passed to enact a one-time transfer of $110 million of capital expense funds into the PERS trust.

Some other examples of this type of funding being used by government pensions include:

- The Tennessee Consolidated Retirement System State and Higher Education pension plan has received a total of $900 million in excess contributions over the past three fiscal years ($250 million in FY 2022, $350 in FY 2023, and $300 million in FY 2024); and,
- The Missouri State Employees' Retirement System pension plan was budgeted a $500 million extraordinary payment during FY 2023.

Because contributions made to pension systems in this manner are singular or limited in nature, they do not commit the system's sponsor to a future course of action or additional funding provisions. However, due to the unpredictable nature of this type of funding, it cannot be used by pension system administrators or system actuaries in the future projections of plan assets and liabilities and can lead to higher current costs and contribution requirements.

For more examples of these types of funding actions please see Appendix F on page 66.

Alternative Funding through Statutory Contributions

Statutory contributions are contributions that have legal requirements or other formulaic provisions governing their distribution. This could take one of two forms:

- actions guaranteeing some future action; or,
- actions on the system's behalf when certain conditions are met.

This type of funding mechanism is already being utilized in Mississippi. The MHSPRS pension plan receives proceeds from Motor Vehicle Report (MVR) fees and driver's license reinstatement fees as a form of revenue in addition to employee and employer contributions for the funding of the plan each year. [27]

Like Mississippi, other governmental entities have utilized statutory alternative funding to supplement plans they sponsor. These other alternative funding mechanisms can take many forms such as, but not limited to:

- **dedicated annual contributions** (e.g., In 2018, the state of Colorado allocated annual funding of up to $225 million to the Colorado Public Employees' Retirement Association [PERA]. This funding mechanism was established with conditions that can increase or decrease the annual contribution by $20 million depending on how the current PERA contribution rate compares to the plan's most recently calculated ADC.);
- **dedicated assets** (e.g., In 2017, the state of New Jersey Legislature approved the transfer of ownership of the state lottery to the state pension fund.);

[27] MISS. CODE ANN. § 63-1-46 (b) (ii) (1972) and MISS. CODE ANN. § 63-15-71 (1972).

- **dedicated taxes** (e.g., The city of Springfield, Missouri, collects a sales tax premium of 0.75% to fund its closed pension plan for public safety personnel.);
- **insurance policy surcharges** (e.g., The state of Pennsylvania charges a 2% casualty and fire insurance premium tax on out-of-state insurance companies to help fund municipal pension systems in the state);
- **mineral and severance tax revenues** (e.g., In 2013, the state of Montana dedicated a portion of the state's coal severance tax revenues to the state's pension system based on a statutorily determined schedule.); and,
- **budget surplus/one-time monies** (e.g., In 2023, the state of Louisiana passed an amendment to its constitution requiring 25% of all non-recurring revenues be appropriated to the state's pension system.[28])

Contributions made to pension systems in this manner have the benefit of being expected by pension system administrators and system actuaries. This means that the current year receipts as well as future expected amounts can be utilized in the future projections of plan assets and liabilities. For example, the MHSPRS plan assumptions and the plan's actuary use an estimate of MVR fees of approximately $3.4 million per year in the calculation of the plan's ADC. It is possible that without the inclusion of the MVR fees in its calculation, the employer contribution rate for the MHSPR plan could be larger.

For more examples of these types of funding actions please see Appendix G on page 69.

[28] This funding stream was originally passed as a 5% dedication in 2011 that was expanded to 10% in 2016.

Appendix A: PERS Payroll Growth for FY 2018 through FY 2023

	Payroll for the Fiscal Year Ending June 30 (in thousands) †						Percentage Change
Employer Group	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2018-2023**
State Agencies	$1,052,316	$1,063,711	$1,114,860	$1,076,040	$1,098,269	$1,222,668	16.19%
State Universities	$974,096	$1,006,586	$1,020,097	$996,451	$1,020,005	$1,124,528	15.44%
Public Schools	$2,247,354	$2,315,173	$2,387,606	$2,403,327	$2,522,339	$2,770,308	23.27%
Community/Junior Colleges	$294,536	$302,705	$299,391	$300,435	$298,907	$312,666	6.16%
Counties	$493,220	$506,733	$520,773	$572,144	$587,889	$638,592	29.47%
Municipalities	$587,108	$595,249	$600,156	$595,147	$626,517	$680,269	15.87%
Other Political Subdivisions	$350,602	$354,758	$344,559	$302,533	$300,834	$316,388	-9.76%
Total Payroll Reported to PERS	$5,999,232	$6,144,915	$6,287,442	$6,246,077	$6,454,760	$7,065,419	17.77%
Actuarial Assumed Rate of PERS Plan Salary Growth	*	3.00%	3.00%	2.65%	2.65%	2.65%	
Actual Rate of PERS Plan Salary Growth	*	2.43%	2.32%	-0.66%	3.34%	9.46%	

† Payroll totals reported here have been rounded and may be different from the payroll figures reported on page 15.
* 2018 payroll data is for baseline comparisons only.

SOURCE: PERS annual valuations for years ending June 30, 2018, through June 30, 2023.

Appendix B: PERS Funding Policy Technical Appendix

Progress of the PERS plan's funding policy is tracked through the use of three metrics:

- the funded ratio;
- cash flow as a percentage of assets; and,
- the actuarially determined contribution.

These metrics are tracked through a tiered method called the "signal light" approach, in which each level of the predefined metric tranches is assigned a color and a definition (Exhibit B1).

Exhibit B1: PERS Funding Policy "Signal Light" Levels and Definitions

Status	Definition
Green	Plan passes metric and PERS funding goals and objectives are achieved.
Yellow	Plan passes metric but a warning is issued that negative experience may lead to failing status.
Red	Plan fails metric and PERS must consider contribution increases.

SOURCE: PERS Board of Trustees policy.

The new funding policy, like its most recent predecessor, also includes a provision that serves as a safety net for the plan. If any one of the metrics is in red signal-light status in conjunction with the annual valuation report and the projection report, the actuary will determine and recommend to the Board for its consideration an employer contribution rate increase that is sufficient to get all three metrics back into green signal-light status.[29]

Funded Ratio

The calculation of a plan's funding level is an accounting measure that quantifies the plan's ability to meet its projected future obligations, based on service already performed, with assets currently available.

This metric uses information from the 30-year projection reports developed by the plan's actuaries to assess the plan's funding level at a defined point in the future (for now, FY 2047).

Exhibit B2 presents the funding policy's defined channels for the funded ratio signal lights.

[29] Any resulting contribution rate increase would be effective for July 1, 18 months following the completion of the associated projection report. The delay allows the state, counties, municipalities, and political subdivisions ample time to incorporate the increase into their operating budgets.

Exhibit B2: Signal Light Definitions for Funded Ratio

Funded ratio above 80% in 2047.
Funded ratio between 65% and 80% in 2047.
Funded ratio below 65% in 2047.

SOURCE: PERS Board of Trustees policy.

For the year ended on June 30, 2023, the projected funding ratio in FY 2047 is 65.5% placing the PERS System in the yellow signal-light status.

As noted on page 20, one of the policy's goals is to maintain an increasing trend in the funded ratio over the projection period with an ultimate goal of being 100% funded. However, the use of a 100% funded ratio can be seen differently when used as a target of financial health versus a goal of a pension's funding policy.

Even with the assignment of being 80% funded as the threshold for green status, there is no industry statement or requirement for a pension plan's funding level to be at 80% to be defined as "healthy." Neither the Governmental Accounting Standards Board nor the American Academy of Actuaries uses an 80% funded ratio to define a plan as financially healthy.

Cash Flow as a Percentage of Assets

The PERS funding policy defines "cash flow as a percentage of assets" as the difference between total contributions coming into the trust and the benefit payments made to retirees and beneficiaries withdrawn from the trust as a percentage of beginning year market value of assets. The formula for cash flow as a percentage of assets also can be defined as follows:

$$\frac{\text{Total Annual Contributions} - \text{Benefit Payments}^{30}}{\text{Beginning of Year Market Value of Assets}}$$

For example, computing the cash flow as a percentage of assets for FY 2023 (in thousands) is calculated as follows:

$$\frac{(1{,}965{,}549 - 3{,}352{,}602)}{30{,}791{,}115} \text{ x } 100 = -4.50\%$$

PERS testing of cash flow as a percentage of assets is not only a point-in-time comparison for the current fiscal year, but it also will be evaluated over the entirety of the period reviewed during the actuary's 30-year projection report, with the lowest current or projected cash flow as a percentage of assets used as the metric result.

Exhibit B3 defines signal-light statuses for cash flow as a percentage of assets.

[30] For purposes of this calculation, PEER included any refunds made to inactive members as benefit payments.

Exhibit B3: Signal Light Definitions for Cash Flow as a Percentage of Assets

Net Cash Flow Percentage above –5.25% during the projection period.
Net Cash Flow Percentage between –5.25% and –7.00% during the projection period.
Net Cash Flow Percentage below –7.00% during the projection period.

NOTE: The targets utilized in this metric were adjusted during the April 2022 Board meeting to correspond with the approved changes in the plan's utilized investment return rate.

SOURCE: PERS Board of Trustees policy.

For the projection period, the lowest cash flow rate is –5.36% in FY 2037, which places the PERS plan in the yellow signal-light status for this metric.

The *Public Fund Survey* also provides data on cash flow as a percentage of assets. According to the November 2022 report, nearly all systems in the survey had a negative cash flow, and the median cash flow as a percentage of assets for plans in its survey, as of FY 2022, was –2.0%.[31] While this can be compared to the PERS result of –7.8% for FY 2022, it must also be noted that this is not a direct comparison. As discussed on page 28, PERS cash flow as a percentage of assets metric is not a point-in-time comparison (like the *Public Fund Survey*) but a measure over its full projection period, and the *Public Fund Survey* metric accounts for administrative expenses, while the PERS metric excludes administrative expenses from the calculation.

ADC/FCR Ratio

The ADC/FCR ratio is a comparison of the plan's actuarially determined contribution (ADC) and the plan's fixed contribution rate (FCR).

The plan's funding policy defines the ADC as the potential payment to the plan as determined by the actuary based on the following principal elements disclosed in the funding policy:

- actuarial cost method;
- asset valuation method; and,
- amortization method.

The purpose of the ADC is to provide a measure of the potential contribution rate necessary to allow the PERS plan to reach its funding goals within a 30-year period under the prescribed methods outlined in the Board's funding policy.

The plan's funding policy defines the FCR as the employer contribution rate set by the Board. [32]

The ADC/FCR ratio is determined by dividing the ADC calculated during the actuarial valuation for the fiscal year (typically released during the Board's December meeting) by the FCR set by the Board for the same period. The results of this calculation will be compared to the signal-light levels described in Exhibit B4.

[31] The *Public Fund Survey* cash flow as a percentage of assets figure also includes administrative expenses within plan outflows in its methodology.

[32] To help potentially limit annual fluctuations to members' and employers' contribution expenditures, the Board adopted funding policies that "fix" the employer contribution rate as a percentage of covered payroll.

Exhibit B4: Signal Light Definitions for Actuarially Determined Contribution/Fixed Contribution Rate

ADC/FCR ratio at or below 100% of fixed contribution rate at valuation date.
ADC/FCR ratio between 100% and 110% of fixed contribution rate at valuation date.
ADC/FCR ratio above 110% of fixed contribution rate at valuation date.

SOURCE: PERS Board of Trustees policy.

For the fiscal year ended on June 30, 2023, the plan's ADC/FCR ratio was 112.4%, placing it in red signal-light status.[33] This indicates that the FCR set by the Board is smaller than the ADC, and the difference between these two figures, in the opinion of the plan's actuary, is outside the range established. It must also be noted that this result is calculated using the PERS Board's new approved rate of 22.40% as the fixed contribution rate instead of the 17.40% employer contribution rate used to calculate employer contributions for FY 2023. According to the plan actuary, Cavanaugh Macdonald, because the valuation and projection report is calculated using the PERS Board's phased-in approach to raising the employer contribution rate from 17.40% to the targeted 22.40%, the full 22.40% contribution rate must be used in the calculation of the ADC/FCR ratio. The use of this rate could cause the ratio results to reflect a lower ADC/FCR ratio than what the PERS plan is currently experiencing.

According to the PERS funding policy, if any one metric is in the red signal-light status in conjunction with the annual valuation report and the projection report, the actuary will determine and recommend to the Board an employer contribution rate increase to consider that is sufficient enough to get all three funding policy metrics back into the green-light status.

Amortization Method Assumptions for the Actuarially Determined Contribution

A plan's amortization period is the length of time necessary for a plan's unfunded liabilities to be paid if all actuarial assumptions are met over that period. Under the Board's prior funding policy, the amortization period fluctuated, which was not an uncommon practice among plans. To help align the plan with actuarial standards of practice, the PERS Board, as advised by its actuarial consultants, adopted a layered amortization[34] for use in calculating the actuarially determined contribution.

Under a layered amortization approach, the Board has elected to amortize the plan's existing unfunded actuarial accrued liability balance (as of June 30, 2018) over a closed[35] 30-year amortization period and any future changes to the unfunded balance (i.e., actuarial gains/losses, assumption changes, and plan changes) over a closed 25-year amortization period. These amortization assumption methods pertain to the calculation for the ADC only.

Actuaries must have a component of the funding model that can be adjusted to account for asset changes. The PERS Board, in attempting to maintain its goal of a stable contribution rate (17.40% as of July 1, 2019), has

[33] For the year ended on June 30, 2022, the plan's ADC was 25.17% and the plan's FCR was 22.40%.

[34] Layered amortization is the amortization of components of the UAAL over a separate fixed period as they emerge.

[35] A closed amortization period is a type of amortization period utilized by pension plans that results in the full amortization of specific items within a finite (or predefined) period (i.e., a traditional 30-year mortgage on a home).

elected to continue using the plan's amortization period as this variable. As discussed previously, on page 22, the PERS plan's projected UAAL payment period, as of June 30, 2023, is 32.2 years.

Because the new amortization assumptions apply to the calculation of the ADC only, it is possible for the projected payment period of the plan to extend past the 30-year target included in the ADC calculation. To help ensure that the plan's projected payment period does not deviate too far from these assumptions, the Board's funding policy includes a metric that requires the comparison of the plan's fixed contribution rate to the ADC annually.

SOURCE: PEER analysis.

Appendix C: PERS Investment Management Fees, FY 2023 and FY 2022

CLASS	MANAGER	$ FY 23 (thousands)	$ FY 22 (thousands)
U.S. Equity	ARTISAN PARTNERS (LARGE CAP GROWTH)	1,806	2,382
U.S. Equity	DIMENSIONAL FUND ADVISORS (SMALL CAP VALUE)	950	1,258
U.S. Equity	EAGLE CAPITAL (LARGE CAP CORE)	5,033	5,755
U.S. Equity	NORTHERN TRUST (RUSSELL MID CAP - PASSIVE) — Terminated Q2 FY 2023	6	(24)
U.S. Equity	NORTHERN TRUST (S&P 500 - PASSIVE)	248	272
U.S. Equity	RIVERBRIDGE (SMALL CAP GROWTH)	2,086	2,511
U.S. Equity	VICTORY CAPITAL MANAGEMENT — Hired Q1 FY 2023	1,953	–
U.S. Equity	WELLINGTON (MID CAP VALUE) — Terminated Q1 FY 2023	91	2,544
U.S. Equity	WELLINGTON (SMALL CAP CORE)	2,093	2,313
Non-U.S. Equity	ARROWSTREET CAPITAL (ALL COUNTRIES X-US)	3,701	4,133
Non-U.S. Equity	BAILLIE GIFFORD (ALL COUNTRIES X-US)	2,524	3,002
Non-U.S. Equity	FISHER INVESTMENTS (EMERGING MARKETS)	3,458	4,027
Non-U.S. Equity	LAZARD ASSET MANAGEMENT (EMERGING MARKETS)	2,184	2,293
Non-U.S. Equity	MARATHON (ALL COUNTRIES X-US)	4,557	4,979
Non-U.S. Equity	MONDRIAN (SMALL CAP DEVELOPED MARKETS)	2,079	2,476
Non-U.S. Equity	NORTHERN TRUST EAFE (DEVELOPED MARKETS – PASSIVE) — Terminated Q4 FY 2022	–	214
Non-U.S. Equity	NORTHERN TRUST (ALL COUNTRIES X-US)	200	33
Non-U.S. Equity	PRINCIPAL GLOBAL (SMALL CAP INTERNATIONAL)	1,188	1,660
Debt Investments	ALLIANCEBERNSTEIN (GLOBAL FIXED INCOME)	1,768	1,977
Debt Investments	LOOMIS SAYLES (CORE PLUS)	1,921	2,068
Debt Investments	MANULIFE (CORE)	955	1,051
Debt Investments	NORTHERN TRUST (CORE – PASSIVE)	89	147
Debt Investments	PACIFIC INVESTMENT MANAGEMENT CO. (CORE)	950	1,011
Debt Investments	PACIFIC INVESTMENT MANAGEMENT CO. (GLOBAL)	1,775	2,008
Debt Investments	PRUDENTIAL (CORE PLUS)	1,481	1,575
Debt Investments	WELLINGTON (EMERGING MARKETS)	2,829	3,100

CLASS	MANAGER	$ FY 23 (thousands)	$ FY 22 (thousands)
Real Estate	AEW PARTNERS VI, LP*	–	–
Real Estate	AEW PARTNERS VII, LP	25	122
Real Estate	AEW PARTNERS VIII, LP	128	190

Real Estate	AEW PARTNERS IX, LP	516	600
Real Estate	AEW PARTNERS X, LP** — Hired Q42 FY 2023	–	–
Real Estate	AG CORE PLUS FUND II LP — Terminated Q2 FY 2022	–	–
Real Estate	AG CORE PLUS FUND III LP	16	64
Real Estate	AG CORE PLUS FUND IV LP	451	528
Real Estate	AG CORE PLUS VALUE X LP	737	1,108
Real Estate	AG VALUE XI LP — Hired Q2 FY 2023	1,206	–
Real Estate	CENTERSQUARE	666	1,031
Real Estate	COHEN & STEERS	650	1,429
Real Estate	HANCOCK TIMBER FUND	607	781
Real Estate	HEITMAN VALUE PARTNERS III LP*	–	1
Real Estate	HEITMAN VALUE PARTNERS IV LP	268	301
Real Estate	HEITMAN VALUE PARTNERS V LP	283	88
Real Estate	INVESCO VALUE ADD FUND IV LP	50	149
Real Estate	INVESCO VALUE ADD FUND V LP	814	722
Real Estate	INVESCO VALUE ADD FUND VI LP***	243	–
Real Estate	INVESCO US INCOME FUND — Hired Q3 FY 2022	1,114	–
Real Estate	JP MORGAN STRATEGIC PROPERTY FUND	3,871	3,769
Real Estate	PRINCIPAL GLOBAL INVESTORS	7,367	7,372
Real Estate	TA REALTY ASSOCIATES FUND X LP*	–	13
Real Estate	TA REALTY ASSOCIATES FUND XI LP	416	543
Real Estate	TA REALTY ASSOCIATES FUND XII LP	1,630	942
Real Estate	TA REALTY ASSOCIATES FUND XIII LP** — Hired Q4 FY 2022	–	–
Real Estate	UBS TRUMBULL PROPERTY FUND	2,194	1,545
Real Estate	UBS TRUMBULL PROPERTY GROWTH & INCOME FUND	2,606	1,995
Real Estate	WESTBROOK X LP	234	270
Real Estate	WESTBROOK XI LP	768	2,137
Real Estate	WESTBROOK XII LP — Hired Q4 FY 2023	–	–
Private Equity	GROSVENOR & PATHWAY CAPITAL MAN – PRIVATE EQUITY	14,617	14,685
Global Equity	ACADIAN	3,477	3,805
Global Equity	EPOCH	3,969	4,513
Global Equity	HARDING LOEVNER	3,369	3,975
Global Equity	LSV ASSET MANAGEMENT (GLOBAL – VALUE) — Hired Q4 FY 2022	2,695	–
Global Equity	NORTHERN TRUST (GLOBAL – PASSIVE) — Terminated Q4 FY 2022	16	342
		100,928	105,785

* While PERS paid no investment management fees to this manager during FY 2023, PERS's relationship with this manager/investment is still ongoing.

** PERS has entered into an investment management agreement with this manager, but no funds have been called for investment.

*** PERS entered into an investment management agreement with this manager on May 14, 2021. PERS began paying fees once the manager called funds for investment.

SOURCE: PERS staff and PERS FY 2023 and FY 2022 *Annual Comprehensive Financial Report*.

Appendix D: MHSPRS Funding Policy

The purpose of the funding policy is to state the overall funding goals and objectives for the Mississippi Highway Safety Patrol Retirement System (HSPRS), and to document both the metrics that will be used to measure progress toward achieving those goals, and the methods and assumptions employed to develop the metrics. The employer contribution rate for HSPRS will be set based on the metrics, assumptions and methods outlined in Section II and III of this policy.

I. Funding Goals and Objectives

The objective in requiring employer and member contributions to HSPRS is to accumulate sufficient assets during a member's employment to fully finance the benefits the member will receive in retirement. In meeting this objective, HSPRS will strive to meet the following goals:

- Preservation of the defined benefit structure for providing lifetime benefits to the HSPRS membership,
- Contribution rate stability as a percentage of payroll (Fixed Contribution Rate – FCR),
- Maintain an increasing trend in the funded ratio over the projection period with an ultimate goal of being 100% funded,
- Require clear reporting and risk analysis of the metrics by the actuary as outlined in Section II of this policy using a "Signal Light" approach to assist the Board in determining whether increases or decreases are needed in the employer contribution rate, and
- Ensure benefit improvements are funded through increases in contribution requirements in accordance with Article 14, S 272A, of the Mississippi Constitution.

II. Metrics

To track progress in achieving the outlined funding goals and objectives and to assist the Board in making a determination whether an increase or decrease in the employer contribution rate for HSPRS should be considered, certain metrics will be measured annually in conjunction with information provided in the actuarial valuation and projection report. As part of the annual valuation and projection reports, each metric will be calculated and assigned a "Signal Light" with the following definitions:

Status	Definition
Green	Plan passes metric and HSPRS' funding goals, and objectives are achieved
Yellow	Plan passes metric but a warning is issued that negative experience may lead to failing status
Red	Plan fails metric and HSPRS must consider contribution increases

If any one of the metrics are in the Red Signal Light status in conjunction with the annual valuation report and the projection report, the actuary will determine and recommend to the Board an employer contribution rate increase to consider that is sufficient enough to get all three metrics back into the Green Signal Light status. The employer contribution rate increase would be effective beginning July 1st, 18 months following the completion of the projection report (e.g., if the projection report in 2024 deems an increase to be considered, then it would be effective for July 1, 2026).

The following metrics will be measured:

- **Funded Ratio** – Funded Ratio is defined as the actuarial value of assets divided by the actuarial accrued liability. One of the funding goals is to have an increasing funded ratio over the projection period with an ultimate goal of having a 100 percent funded ratio. The Board sets the Signal Light definition as follows:

Status	Definition
Green	Funded Ratio above 90% in 2047
Yellow	Funded Ratio between 70% and 90% in 2047
Red	Funded Ratio below 70% in 2047

- **Cash flow as a percentage of assets** – Cash flow as a percentage of assets is defined as the difference between total contributions coming into the trust and the benefit payments made to retirees and beneficiaries going out of the trust as a percentage of beginning year market value of assets. Over the projection period, this percentage will fluctuate from year to year so for Signal Light testing, the net cash flow percentage over the entire projection period will be tested. The Board sets the Signal Light definition as follows:

Status	Definition
Green	Net Cash Flow Percentage above negative 5.80% (-5.80%) during the projection period
Yellow	Net Cash Flow Percentage between negative 5.80% (-5.80%) and negative 7.55% (-7.55%) during the projection period
Red	Net Cash Flow Percentage below negative 7.55% (-7.55%) during the projection period

- **Actuarially Determined Contribution (ADC)** – ADC is defined as the contribution requirement determined by the actuary using a contribution allocation procedure based on the principal elements disclosed in Section III of this funding policy:

    1. Actuarial Cost Method
    2. Asset Smoothing Method
    3. Amortization Method

    The calculation of the ADC will be determined during the actuarial valuation and not during the projection report. The ratio of the ADC to the fixed contribution rate (ADC/FCR) as set by this Funding Policy will be tested. The Board sets the Signal Light definition as follows:

Status	Definition
Green	ADC ratio at or below 100% of fixed contribution rate at valuation date
Yellow	ADC ratio between 100% and 110% of fixed contribution rate at valuation date
Red	ADC ratio above 110% of fixed contribution rate at valuation date

If all of the metrics are in the Greed Signal Light status in conjunction with the annual valuation report and the projection report and the following additional criteria is met for two consecutive valuation and projection cycles, the actuary may recommend to the Board an employer contribution rate decrease to consider. The additional criteria is based on the actuary's long-term investment return assumption recommended by the actuary in the most recent experience study and is as follows:

- Funded Ratio in 2047 is above 110%,
- Cash Flow as a percentage of assets is above negative 3.5% during the projection period, and
- ADC Ratio is below 90% for all years of the projection period.

III. Assumptions and Methods

Each year, the actuary will perform an actuarial valuation and projection report for funding purposes. During the process, the actuary shall calculate all the metrics listed in Section II of this funding policy and HSPRS' Signal Light status for each metric. The following three major components of a funding valuation will be used:

- **Actuarial Cost Method** – This component determines the attribution method upon which the cost/liability of the retirement benefits are allocated to a given period, defining the normal cost or annual accrual rate associated with projected benefits. The Entry Age Normal Cost Method (EAN) is to be used for determination of the normal cost rate and the actuarial accrued liability for purposes of calculating the Actuarial Determined Contribution (ADC).

- **Asset Valuation Method** – This component dictates the method by which the asset value, used in the determination of the Unfunded Actuarial Accrued Liability (UAAL) and Funded Ratio, is determined. The asset valuation method to be used shall be a five-year smoothed market value of assets. The difference between the actual market value investment returns and the expected market investment returns is recognized equally over a five-year period.
- **Amortization Method** – This component prescribes, in terms of duration and pattern, the systematic manner in which the difference between the accrued liability and the actuarial value of assets is reduced. For purposes of calculating the ADC metric, the following amortization method assumptions are used**:**
    I. Once established for any component of the UAAL, the amortization period for that component will be closed and will decrease by one year annually.
    II. The amortization payment will be determined on a level percentage of pay basis.
    III. The length of the amortization periods will be as follows:
        a. Existing UAAL on June 30, 2023 – 25 years.
        b. Annual future actuarial experience gains and losses, assumption changes or benefit enhancements or reductions – 25 years from the date of the valuation.
    IV. If any future annual actuarial valuation indicates that HSPRS has a negative UAAL, the ADC shall be set equal to the Normal Cost.
- **Actuarial Assumptions** – The actuarial assumptions are used to develop the annual and projected actuarial metrics, as well as the ADC rates. The actuarial assumptions are derived and proposed by the actuary and adopted by the PERS' Board in conformity with the *Actuarial Standards of Practice*. The actuarial assumptions for this funding policy were developed using the experience for the four-year period ending June 30, 2020 (State of Mississippi Retirement Systems Experience Investigation for the Four-Year Period Ending June 30, 2020). The long-term investment return assumption adopted by the PERS' Board in conjunction with the experience investigation is 7.55 percent and, upon approval by the Board, will be reduced until it reaches the rate recommended by the actuary in the most recent experience study using investment gains based on the following parameters:
- 2% Excess return over assumed rate, lower assumption by 5 basis points,
- 5% Excess return over assumed rate, lower assumption by 10 basis points,
- 8% Excess return over assumed rate, lower assumption by 15 basis points,
- 12% Excess return over assumed rate, lower assumption by 20 basis points.

IV. Governance Policy/Process

Below is a list of specific actuarial and funding related studies, the frequency at which they should be commissioned by the Board and additional responsibilities related to each:

- **Actuarial Valuation (performed annually)** – The Board is responsible for the review of HSPRS' annual actuarial valuation report, which provides the annual funded ratio and the calculation of the ADC.
- **Projection Report (performed annually)** – The Board is responsible for the review of HSPRS' 30-year projection report, which will include the actuarial metrics and Signal Light status for each metric over a 30-year period.
- **Experience Analysis (performed every two years on a rolling four-year)** – The Board is responsible for ensuring that an experience analysis is performed as prescribed, review of the results of the study, and approving the actuarial assumptions and methodologies to be used for all actuarial purposes relating to the defined benefit pension plan.
- **Actuarial Audit (performed at least every five years)** – The Board is responsible for the review of an audit report performed by a new actuarial firm to provide a critique of the reasonableness of the actuarial methods and assumptions in use and the resulting actuarially computed liabilities and contribution rates.
- **Funding Policy Review (performed at least annually)** – The Board is responsible for the periodic review of this policy, but at least annually following the Projection Report and biennially following the Experience Analysis.

V. Glossary of Funding Policy Terms

- **Actuarial Accrued Liability (AAL):** The AAL is the value at a particular point in time of all past normal costs. This is the amount of assets the plan would have today if the current plan provisions, actuarial assumptions, and participant data had always been in effect, contributions equal to the normal cost had been made, and all actuarial assumptions had been met.
- **Actuarial Cost Method:** The actuarial cost method allocates a portion of the total cost (present value of benefits) to each year of service, both past service and future service.
- **Actuarial Determined Contribution (ADC):** The potential payment to the plan as determined by the actuary using a contribution allocation procedure that, if contributed consistently and combined with investment earnings, would be sufficient to pay promised benefits in full over the long term. The ADC may or may not be the amount actually paid by the plan sponsor or other contributing entity.
- **Asset Values**:
  - **Actuarial Value of Assets (AVA):** The AVA is the market value of assets less the deferred investment gains or losses not yet recognized by the asset smoothing method.
  - **Market Value of Assets (MVA):** The MVA is the fair value of assets of the plan as reported in the plan's audited financial statements.
- **Entry Age Normal Actuarial Cost Method (EAN):** The EAN actuarial cost method is a funding method that calculates the normal cost as a level percentage of pay or level dollar amount over the working lifetime of the plan's members.

- **Funded Ratio:** The funded ratio is the ratio of the plan assets to the plan's actuarial accrued liabilities.
    - **Actuarial Value Funded Ratio:** is the ratio of the AVA to the AAL.
- **Normal Cost**: The normal cost is the cost allocated under the actuarial cost method to each year of active member service.
- **Present Value of Benefits (PVB) or total cost:** The PVB is the value at a particular point in time of all projected future benefit payments for current plan members. The future benefit payments and the value of those payments are determined using actuarial assumptions regarding future events. Examples of these assumptions are estimates of retirement and termination patterns, salary increases, investment returns, etc.
- **Surplus:** A surplus refers to the positive difference, if any, between the AVA and the AAL.
- **Unfunded Actuarial Accrued Liability (UAAL):** The UAAL is the portion of the AAL that is not currently covered by the AVA. It is the positive difference between the AAL and the AVA.
- **Valuation Date:** The valuation date is the annual date upon which an actuarial valuation is performed; meaning that the trust assets and liabilities of the plan are valued as of that date. HSPRS' annual valuation date is June 30.

SOURCE: PERS Board of Trustees meeting minutes from August 22, 2023.

Appendix E: SLRP Funding Policy

The purpose of the funding policy is to state the overall funding goals and objectives for the Supplemental Legislative Retirement Plan of Mississippi (SLRP), and to document both the metrics that will be used to measure progress toward achieving those goals, and the methods and assumptions employed to develop the metrics. The employer contribution rate for SLRP will be set based on the metrics, assumptions and methods outlined in Section II and III of this policy.

I. Funding Goals and Objectives

The objective in requiring employer and member contributions to SLRP is to accumulate sufficient assets during a member's employment to fully finance the benefits the member will receive in retirement. In meeting this objective, SLRP will strive to meet the following goals:

- Preservation of the defined benefit structure for providing lifetime benefits to the SLRP membership,
- Contribution rate stability as a percentage of payroll (Fixed Contribution Rate – FCR),
- Maintain an increasing trend in the funded ratio over the projection period with an ultimate goal of being 100% funded,
- Require clear reporting and risk analysis of the metrics by the actuary as outlined in Section II of this policy using a "Signal Light" approach to assist the Board in determining whether increases or decreases are needed in the employer contribution rate, and
- Ensure benefit improvements are funded through increases in contribution requirements in accordance with Article 14, S 272A, of the Mississippi Constitution.

II. Metrics

To track progress in achieving the outlined funding goals and objectives and to assist the Board in making a determination whether an increase or decrease in the employer contribution rate for SLRP should be considered, certain metrics will be measured annually in conjunction with information provided in the actuarial valuation and projection report. As part of the annual valuation and projection reports, each metric will be calculated and assigned a "Signal Light" with the following definitions:

Status	Definition
Green	Plan passes metric and SLRP funding goals, and objectives are achieved
Yellow	Plan passes metric but a warning is issued that negative experience may lead to failing status
Red	Plan fails metric and SLRP must consider contribution increases

If any one of the metrics are in the Red Signal Light status in conjunction with the annual valuation report and the projection report, the actuary will determine and recommend to the Board an employer contribution rate increase to consider that is sufficient enough to get all three metrics back into the Green Signal Light status. The employer contribution rate increase would be effective beginning July 1st, 18 months following the completion of the projection report (e.g., if the projection report in 2024 deems an increase to be considered, then it would be effective for July 1, 2026).

The following metrics will be measured:

- **Funded Ratio** – Funded Ratio is defined as the actuarial value of assets divided by the actuarial accrued liability. One of the funding goals is to have an increasing funded ratio over the projection period with an ultimate goal of having a 100 percent funded ratio. The Board sets the Signal Light definition as follows:

Status	Definition
Green	Funded Ratio above 90% in 2047
Yellow	Funded Ratio between 70% and 90% in 2047
Red	Funded Ratio below 70% in 2047

- **Cash flow as a percentage of assets** – Cash flow as a percentage of assets is defined as the difference between total contributions coming into the trust and the benefit payments made to retirees and beneficiaries going out of the trust as a percentage of beginning year market value of assets. Over the projection period, this percentage will fluctuate from year to year so for Signal Light testing, the net cash flow percentage over the entire projection period will be tested. The Board sets the Signal Light definition as follows:

Status	Definition
Green	Net Cash Flow Percentage above negative 5.80% (-5.80%) during the projection period
Yellow	Net Cash Flow Percentage between negative 5.80% (-5.80%) and negative 7.55% (-7.55%) during the projection period
Red	Net Cash Flow Percentage below negative 7.55% (-7.55%) during the projection period

- **Actuarially Determined Contribution (ADC)** – ADC is defined as the contribution requirement determined by the actuary using a contribution allocation procedure based on the principal elements disclosed in Section III of this funding policy:

    1. Actuarial Cost Method
    2. Asset Smoothing Method
    3. Amortization Method

    The calculation of the ADC will be determined during the actuarial valuation and not during the projection report. The ratio of the ADC to the fixed contribution rate (ADC/FCR) as set by this Funding Policy will be tested. The Board sets the Signal Light definition as follows:

Status	Definition
Green	ADC ratio at or below 100% of fixed contribution rate at valuation date
Yellow	ADC ratio between 100% and 110% of fixed contribution rate at valuation date
Red	ADC ratio above 110% of fixed contribution rate at valuation date

If all of the metrics are in the Greed Signal Light status in conjunction with the annual valuation report and the projection report and the following additional criteria is met for two consecutive valuation and projection cycles, the actuary may recommend to the Board an employer contribution rate decrease to consider. The additional criteria is based on the actuary's long-term investment return assumption recommended by the actuary in the most recent experience study and is as follows:

- Funded Ratio in 2047 is above 110%,
- Cash Flow as a percentage of assets is above negative 3.5% during the projection period, and
- ADC Ratio is below 90% for all years of the projection period.

III. Assumptions and Methods

Each year, the actuary will perform an actuarial valuation and projection report for funding purposes. During the process, the actuary shall calculate all the metrics listed in Section II of this funding policy and SLRP's Signal Light status for each metric. The following three major components of a funding valuation will be used:

- **Actuarial Cost Method** – This component determines the attribution method upon which the cost/liability of the retirement benefits are allocated to a given period, defining the normal cost or annual accrual rate associated with projected benefits. The Entry Age Normal Cost Method (EAN) is to be used for determination of the normal cost rate and the actuarial accrued liability for purposes of calculating the Actuarial Determined Contribution (ADC).

- **Asset Valuation Method** – This component dictates the method by which the asset value, used in the determination of the Unfunded Actuarial Accrued Liability (UAAL) and Funded Ratio, is determined. The asset valuation method to be used shall be a five-year smoothed market value of assets. The difference between the actual market value investment returns and the expected market investment returns is recognized equally over a five-year period.
- **Amortization Method** – This component prescribes, in terms of duration and pattern, the systematic manner in which the difference between the accrued liability and the actuarial value of assets is reduced. For purposes of calculating the ADC metric, the following amortization method assumptions are used**:**
    - I. Once established for any component of the UAAL, the amortization period for that component will be closed and will decrease by one year annually.
    - II. The amortization payment will be determined on a level percentage of pay basis.
    - III. The length of the amortization periods will be as follows:
        - a. Existing UAAL on June 30, 2023 – 25 years.
        - b. Annual future actuarial experience gains and losses, assumption changes or benefit enhancements or reductions – 25 years from the date of the valuation.
    - IV. If any future annual actuarial valuation indicates that SLRP has a negative UAAL, the ADC shall be set equal to the Normal Cost.
- **Actuarial Assumptions** – The actuarial assumptions are used to develop the annual and projected actuarial metrics, as well as the ADC rates. The actuarial assumptions are derived and proposed by the actuary and adopted by the PERS' Board in conformity with the *Actuarial Standards of Practice*. The actuarial assumptions for this funding policy were developed using the experience for the four-year period ending June 30, 2020 (State of Mississippi Retirement Systems Experience Investigation for the Four-Year Period Ending June 30, 2020). The long-term investment return assumption adopted by the PERS' Board in conjunction with the experience investigation is 7.55 percent and, upon approval by the Board, will be reduced until it reaches the rate recommended by the actuary in the most recent experience study using investment gains based on the following parameters:
- 2% Excess return over assumed rate, lower assumption by 5 basis points,
- 5% Excess return over assumed rate, lower assumption by 10 basis points,
- 8% Excess return over assumed rate, lower assumption by 15 basis points,
- 12% Excess return over assumed rate, lower assumption by 20 basis points.

IV. Governance Policy/Process

Below is a list of specific actuarial and funding related studies, the frequency at which they should be commissioned by the Board and additional responsibilities related to each:

- **Actuarial Valuation (performed annually)** – The Board is responsible for the review of SLRP's annual actuarial valuation report, which provides the annual funded ratio and the calculation of the ADC.
- **Projection Report (performed annually)** – The Board is responsible for the review of SLRP's 30-year projection report, which will include the actuarial metrics and Signal Light status for each metric over a 30-year period.
- **Experience Analysis (performed every two years on a rolling four-year)** – The Board is responsible for ensuring that an experience analysis is performed as prescribed, review of the results of the study, and approving the actuarial assumptions and methodologies to be used for all actuarial purposes relating to the defined benefit pension plan.
- **Actuarial Audit (performed at least every five years)** – The Board is responsible for the review of an audit report performed by a new actuarial firm to provide a critique of the reasonableness of the actuarial methods and assumptions in use and the resulting actuarially computed liabilities and contribution rates.
- **Funding Policy Review (performed at least annually)** – The Board is responsible for the periodic review of this policy, but at least annually following the Projection Report and biennially following the Experience Analysis.

V. Glossary of Funding Policy Terms

- **Actuarial Accrued Liability (AAL):** The AAL is the value at a particular point in time of all past normal costs. This is the amount of assets the plan would have today if the current plan provisions, actuarial assumptions, and participant data had always been in effect, contributions equal to the normal cost had been made, and all actuarial assumptions had been met.
- **Actuarial Cost Method:** The actuarial cost method allocates a portion of the total cost (present value of benefits) to each year of service, both past service and future service.
- **Actuarial Determined Contribution (ADC):** The potential payment to the plan as determined by the actuary using a contribution allocation procedure that, if contributed consistently and combined with investment earnings, would be sufficient to pay promised benefits in full over the long term. The ADC may or may not be the amount actually paid by the plan sponsor or other contributing entity.
- **Asset Values**:
  - **Actuarial Value of Assets (AVA):** The AVA is the market value of assets less the deferred investment gains or losses not yet recognized by the asset smoothing method.
  - **Market Value of Assets (MVA):** The MVA is the fair value of assets of the plan as reported in the plan's audited financial statements.
- **Entry Age Normal Actuarial Cost Method (EAN):** The EAN actuarial cost method is a funding method that calculates the normal cost as a level percentage of pay or level dollar amount over the working lifetime of the plan's members.

- **Funded Ratio:** The funded ratio is the ratio of the plan assets to the plan's actuarial accrued liabilities.
  - **Actuarial Value Funded Ratio:** is the ratio of the AVA to the AAL.
- **Normal Cost**: The normal cost is the cost allocated under the actuarial cost method to each year of active member service.
- **Present Value of Benefits (PVB) or total cost:** The PVB is the value at a particular point in time of all projected future benefit payments for current plan members. The future benefit payments and the value of those payments are determined using actuarial assumptions regarding future events. Examples of these assumptions are estimates of retirement and termination patterns, salary increases, investment returns, etc.
- **Surplus:** A surplus refers to the positive difference, if any, between the AVA and the AAL.
- **Unfunded Actuarial Accrued Liability (UAAL):** The UAAL is the portion of the AAL that is not currently covered by the AVA. It is the positive difference between the AAL and the AVA.
- **Valuation Date:** The valuation date is the annual date upon which an actuarial valuation is performed; meaning that the trust assets and liabilities of the plan are valued as of that date. SLRP's annual valuation date is June 30.

SOURCE: PERS Board of Trustees meeting minutes from August 22, 2023.

Appendix F: Alternative Funding through Discretionary Contributions

Selected States Appropriating Funds Above the ADEC to Public Pension Plans since FY 21

State	System(s)	Surplus Appropriation $	Comments
Arizona	PSPRS, CORP	$1.58 billion in FY 2021 $2.85 billion in FY 2022 $409 million in FY 2023	Senate Bill 1823 makes supplemental appropriations of $500 million to PSPRS and CORP for FY 2021 to reduce the Department of Public Safety (DPS) and Department of Corrections (ADC) unfunded liability, respectively. Individual local employers also made additional contributions to pay down their unfunded liabilities: https://www.psprs.com/article/additional-pension-debt-contributions-top-1-5-billion- Additional local employer contributions to PSPRS and CORP for FY 21 totaled approximately $577 million ($534 million to PSPRS and $43 million to CORP). The State of Arizona made supplemental appropriations of approximately $560 million to PSPRS and approximately $555 million to CORP in FY 22. Additional local employer contributions to PSPRS and CORP for FY 22 totaled approximately $1.72 billion ($1.64 billion to PSPRS and $77 million to CORP). For FY 23, as of the date listed below, additional amounts of nearly $299 million and $110 million have been contributed by local employers to PSPRS and CORP, respectively.
California	CalPERS	$1.9 billion in FY 22; $2.9 billion in FY 23	The FY 22 budget includes a $1.9 billion payment to pay down the state's unfunded liabilities that is in addition to the regular required state contribution. The FY 23 budget estimates $2.9 billion in one-time Proposition 2 debt repayment funding in 2022-23 to further reduce the unfunded liabilities of the CalPERS state plans.
Colorado	Colorado PERA	$380 million	PERA will receive $380 million from the state. That amounts to a restoration of the missed $225 million direct distribution plus a prepayment of a portion of future direct distributions to PERA. Lawmakers enacted legislation to forego the $225 million direct distribution payment to PERA in 2020 during the early stages of the COVID-19 pandemic, when the General Assembly cut billions of dollars from the state budget. The state automatically resumed payments in 2021 — additional legislation would be required for the state to forego any future payments — but did not make up 2020's payment. PERA will also receive 2022's direct distribution of $225 million on July 1. The $380 million will come from a cash fund the legislature set up in 2021 solely for future payments to PERA. Details: https://bit.ly/3PShjkz
Connecticut	SERS and TRS	$1.6 billion in FY 22; $3.6 billion in FY 23	Connecticut Retirement Plans & Trust Funds will receive $3.6 billion in additional contributions in FY 23 due to a state budget surplus. $2.7 billion will be contributed to the SERS, and $903 million to the TRF. State law directs a certain amount of surplus to the state's budget reserve, but if that fund reaches 15% of general appropriations in the same fiscal year, the excess must be contributed to the two retirement systems. In FY 21 an extra $904 million was directed to TRF, and $720 million to SERS.
Hawaii	ERS	$300 million	2022 legislation appropriated an additional $300 million into the pension accumulation fund. See Senate Bill 514 (section 2 (d):https://legiscan.com/HI/text/SB514/2022
Illinois	SERS, SURS, JRS, GARS and TRS	$300 million in FY 22, $200 million in FY 23	The additional amount will be contributed directly to the state's Pension Stabilization Fund, which was created in 2006 to make additional contributions to the five state retirement systems when state general fund revenues exceed certain thresholds each year. The added funds mark the first time the state has contributed to the fund in

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			two decades, and are projected to reduce long term liabilities by an estimated $1.8 billion. FY 23 will be the first time since 1994 that the state's annual pension contribution will exceed the statutory minimum.
Kansas	PERS	$871 million, including $600 million in FY 22 and the remainder in FY 23	SB 421 transfers $1.125 billion from the State General Fund (SGF) directly to the Kansas PERS Trust Fund. Of that amount, the first $253.9 million SGF pays off outstanding accounts receivable for KPERS-School employer contributions withheld in FY 2017 and FY 2019 ("layering payments") while the remaining $871.1 million SGF would be applied to the KPERS-School unfunded actuarial liability. The bill also transfers $853.9 million in FY 2022 in two installments—$553.9 million on the effective date of the bill and $300.0 million on June 1, 2022. The remaining $271.1 million would be transferred in FY 2023 in two installments, both subject to approval, but not modification, from the State Finance Council—$146.1 million on August 1, 2022, and $125.0 million on December 1, 2022. Details: http://www.kslegislature.org/li/b2021_22/measures/sb421/
Kentucky	KERS	$215 million to the SPRS in FY 2021-2022 $240 million to the KERS Nonhazardous pension fund in FY 2022-23 and FY 2023-24 (for a total of $480 million)	House Bill 1 (the State Executive Branch Budget Bill) allocates an additional $485 million in General Fund dollars to the system. This includes $215 million in FY 2021-2022 (the current fiscal year) for the State Police Retirement System pension fund to be applied to the unfunded liability, which is expected to lower the SPRS contribution rate from 146.06% to 99.43%. The rest of the $485 million will consist of $135 million in each fiscal year of the biennium (2022-23 and 2023-24) for the Kentucky Employees' Retirement System Nonhazardous pension fund to be applied to the unfunded liability. House Bill 604 allocates $105 million in each fiscal year to be applied to the unfunded liability of the KERS Nonhazardous pension fund.
	TRS	$479.2 million	The State of Kentucky made a lump sum contribution of $479.2 million to pay off the liability for ad hoc benefit increases and sick leave allowances granted after 1981.
Louisiana	LASERS and TRS	$348 million to LASERS, $49 million to TRSL	Act 397 (House Bill 560) made supplemental appropriations to the initial unfunded accrued liability (IUAL) of $348 million to LASERS and $49 million to TRSL.
		$21.8 million to LASERS, $48.1 million to TRSL	Act 170 (House Bill 592) makes a supplemental appropriation to the initial unfunded accrued liability (IUAL) of $21.8 million to LASERS, and $48.1 million to the TRSL from a portion of the FY 2020-21 surplus funds in the state treasury.
Massachusetts	SERS and TRS	$350 million	The FY 22 and FY 23 budgets include supplemental contributions of $250 million and $100 million, respectively, to the Commonwealth's Pension Liability Fund, split proportionately between the Massachusetts SERS and TRS. • Section 2 of Chapter 33 of the Acts of 2021 reads as follows: *…the comptroller shall, not later than October 15, 2021, establish a monthly schedule for the duration of said fiscal year transferring no less than: (i) $350,000,000 to the Student Opportunity Act Investment Fund, established in section 35RRR of chapter 10 of the General Laws; and (ii) $250,000,000 into the Commonwealth's Pension Liability Fund…* • Section 182 of Chapter 126 of the Acts of 2022 reads as follows: *SECTION 182. Notwithstanding any general or special law to the contrary, the comptroller shall, not later than September 1, 2022, transfer $100,000,000 from the General Fund to the Commonwealth's Pension Liability Fund established in subsection (e) of subdivision (8) of section 22 of chapter 32 of the General Laws.*

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Michigan	SPRS	$100 million	The FY 2022-23 General Government Budget includes a $100 million supplemental payment to pay down the unfunded liabilities of the Michigan State Police Retirement System.
Minnesota	SRS, PERA, TRA, St. Paul TRFA	$99.2 million to SRS $194.7 million to PERA $176.2 million to TRA $15.7 million to St. Paul TRFA	2023 legislation directs a one-time appropriation for FY 2024 from the state's general fund to each state pension fund, to fully fund the cost of a one-time lump sum COLA payment and reduce each plan's unfunded liabilities. See Article 6: https://lcpr.mn.gov/documents/omnibus/2023/HF3100.2nd.Engr.Summary.Pension.Budget.Omnibus.Bill.pdf
Missouri	MOSERS	$500 million	The FY 2023 budget includes a $500 million extraordinary payment to MOSERS in addition to the regular annual contribution. https://oa.mo.gov/budget-planning/budget-information/2023-budget-information/appropriation-bills-fiscal-year-2023
New Jersey	PERS, PFRS, TPAF, SPRS, JRS	$505 million	The state's FY 2022 contribution marks the first time New Jersey is making the full ADC to the pension fund, plus an additional $505 million.
North Dakota	PERS	$135 million one-time $65 million ongoing biennial appropriation	2023 legislation directs a one-time transfer of $135 million of state funds to PERS, and an ongoing appropriation of $65 million from the state's oil and gas tax revenues each biennium. HB 1040: https://legiscan.com/ND/bill/HB1040/2023
Tennessee	TCRS State and Higher Education plan	Total $900 million over three fiscal years: 1) $250 million in FY 22 2) $350 million in FY 23 3) $300 million in FY 24	FY 22: https://treasury.tn.gov/Explore-Your-TN-Treasury/Communications/Press-Room/tennessee-general-assembly-makes-historic-250-million-contribution-to-tcrs FY 23: https://www.sycamoreinstitutetn.org/lee-2023-tn-budget/ FY 24: https://www.sycamoreinstitutetn.org/lee-2024-tn-budget/
Texas	ERS, LECOS, JRS	$900 million to ERS $772 million to LECOS $99 million to JRS	SB 30: https://capitol.texas.gov/BillLookup/Text.aspx?LegSess=88R&Bill=SB30 The supplemental payments to LECOS and JRS eliminate the unfunded liability for those plans.
Vermont	SERS, STRS	$125 million to SERS in FY 22 $75 million to STRS in FY 22	https://legislature.vermont.gov/Documents/2022/Docs/ACTS/ACT114/ACT114%20Act%20Summary.pdf
Virginia	VRS	$750 million in FY 22 $250 million in FY 23	FY 22: https://budget.lis.virginia.gov/amendment/2022/2/HB29/Introduced/CR/277/1c/ FY 23: https://budget.lis.virginia.gov/amendment/2022/2/HB30/Introduced/CR/485/7c/

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SOURCE: National Association of State Retirement Administrators.

Appendix G: Alternative Funding through Statutory Contribution

Below are other examples of statutory contributions made by governmental pension systems:

State of Arizona

A portion of taxes paid on fire insurance policies are used to fund the firefighters' relief and pension fund, as well as some firefighting services. Per statute, these taxes are distributed each year to qualified municipal fire departments, legally organized fire districts, and public agencies that hire a private contractor to provide fire protection services. The proceeds of distribution are used exclusively for the benefit of firefighters who have retired and participate in an eligible retirement fund through their employer. The funds that are distributed are based on the amount of fire insurance premium tax collected, the assessed value of the municipality or fire district, and the number of agencies qualified for participation.

Town of Prescott (Arizona)

In 2017, the town of Prescott approved a 0.75% sales tax dedicated to reducing the unfunded liability of the town's pension plan for firefighters and police officers that are administered by the Public Safety Personnel Retirement System specifically. This tax was approved until the unfunded liability fell below $1.5 million, or through 2027, whichever occurs first. As of December 2022, the city voted to sunset this tax, as unfunded liabilities were expected to fall below $1.5 million in the coming year.

City of Pasadena (California)

The city of Pasadena applies all revenues received from cell towers to its unfunded pension and other post-employee benefits[36] liabilities.

State of Connecticut

According to state statute, once the state's Budget Reserve Fund has reached its statutory maximum, the state treasurer is directed to deliver any remaining surplus funds to either of the two state retirement systems (Connecticut State Employees' Retirement Fund and the Connecticut Teachers' Retirement Fund).

State of Florida

The 2023 Florida Statutes, including Special Session C, authorized the assessment and imposition of a state excise tax on every insurance company, corporation, or other insurer engaged in the business of property insurance. This excise tax on property insurance premiums is in addition to any lawful license or excise tax already levied by municipalities and fire districts and the revenue from these excise taxes will be deposited in the firefighter's pension trust fund. These taxes collectively (the lawful license or excise tax plus the additional state excise tax) are limited to 1.85% of the gross amount of receipts on all premiums collected.

City of Jacksonville (Florida)

In the city of Jacksonville in 2016, voters approved County Referendum 1, extending a half-cent sales tax to be used to reduce the city's unfunded pension liabilities. This sales tax will not take effect until 2030,

[36] Other post-employee benefits are benefits, other than pension distributions, that employees may begin to receive from their employer once they retire. Other post-employment benefits can include life insurance, health insurance, and deferred compensation payments.

however, upon the expiration of another half-cent sales tax in the city (that was initially passed in 2000 as part of the Better Jacksonville Plan).

City of Chicago (Illinois)

In 2014, the Chicago City Council created a surcharge on 911 phone lines to fund the city laborers' pension plan. In 2016, the City Council approved an increase to city water and sewage fees, phased in over several years, to fund the city's Municipal Employees' Annuity and Benefit Fund.

State of Kansas

The Kansas State Legislature passed Sub House Bill 2333 in 2012, which directs a share of state gaming revenue from state-owned casinos and 80% of the proceeds from the sale of state surplus real estate (beginning FY 2014) to the Kansas Public Employees' Retirement System's unfunded liabilities.

State of Minnesota

In 2018, the Minnesota State Legislature approved an annual state aid payment legislature to the Minnesota Public Employees' Retirement Association of $4.5 million in FYs 2019 and 2020, and $9 million annually from FY 2021 until FY 2048. Per Minnesota's Supplemental State Aid Work Group Report, an additional $1 million will be paid to the Minnesota State Retirement System for the State Patrol Plan, and another $5.5 million will be distributed to all fire departments, where the plan's retirement coverage is not solely with the Police and Fire Retirement Plan.

State of North Carolina

In 2018, the General Assembly of North Carolina created The Unfunded Liability Solvency Reserve, for the purposes of paying down the state's unfunded pension and healthcare liabilities. The reserve is appropriated funds from several sources, including General Assembly appropriations, statutory excesses from the state's "rainy day" fund, and savings from the refinancing of general obligation bonds. Funds may only be transferred to the Health Benefit Fund or the Retirement System, for the purpose of decreasing the liabilities of those funds.

State of Oklahoma

Oklahoma's Teacher Retirement System (TRS) receives 5.25% of the state's sales tax, use, and corporate and individual income tax through fiscal year 2028. These funds are collected as a dedicated tax.[37] However, after a series of decreases and subsequent increases in the tax rate, the amount is now 5.25% through FY 28. After fiscal year 2008, the collected amount will be reduced to five percent.

TRS also receives one percent of the cigarette taxes collected by the State and five percent of net lottery proceeds collected by the state.

In 2013, the state legislature created the Oklahoma Pension Stabilization Fund which receives surplus state revenues that are in excess of the funds required to be deposited in the Constitutional Reserve Fund.

State of Oregon

In 2018, the Oregon State Legislature passed a bill that allocates revenue to public pension unfunded liabilities from several alternate sources, including capital gains tax, estate tax, debt collection, lawsuit settlements, lottery revenues above estimates, and tax receipts on alcohol and marijuana.

[37] This source of revenue was instituted during FY 2008 at 5%.

City of Philadelphia (Pennsylvania)

In 2013, the City of Philadelphia was authorized to collect an additional one percent sales tax to offset increased pension contributions. A fixed amount of the collections is dedicated to school funding, with the remainder dedicated to pension funding.

SOURCE: PEER review of research received from the National Conference of State Legislatures and the National Association of State Retirement Administrators.

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