



Cavanaugh Macdonald
CONSULTING, LLC

The experience and dedication you deserve



Retirement Systems
of Alabama

**Report on the Actuarial Valuation of the
Employees' Retirement System of Alabama
Prepared as of September 30, 2022**





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

May 9, 2023

Board of Control
Employees' Retirement System of Alabama
Montgomery, Alabama

Members of the Board:

In this report are submitted the results of the annual actuarial valuation of the assets and liabilities of the Employees' Retirement System of Alabama, prepared as of September 30, 2022 in accordance with Section 36-27-23(p) of the act governing the operation of the System.

The purpose of this report is to provide a summary of the funded status of the System as of September 30, 2022 and to recommend rates of employer contribution. While not verifying the data at the source, the actuary performed tests for consistency and reasonability.

The valuation reflects an additional 4% salary increase granted to State employees and State policeman effective October 1, 2022.

On the basis of the valuation, it is recommended that the employer make contributions to the System for State employees (members other than State policemen) at the rate of 16.26% of payroll for Tier I members and 16.02% for Tier II members for the fiscal year ending September 30, 2025. It is also recommended that the employer make contributions to the System for State policemen at the rate of 56.68% of payroll for Tier I members and 48.20% for Tier II members for the fiscal year ending September 30, 2025. The contribution rates for local employers for the fiscal year beginning October 1, 2024 will be submitted in a separate report and will include the impact of the employer-elected changes through September 30, 2022, and the impact of any employer elections of Act 2022-348 approved by the Board through September 30, 2022.

Effective with the September 30, 2021 Valuation, the Board approved a phase in of the increase in the required contributions due to the assumption changes made in the most recent experience investigation over a period not to exceed five years with a floor equal to the 2023 fiscal year employer contribution rates. The contribution rates shown in this report reflect the second year using this methodology.



The promised benefits of the System are included in the actuarially calculated contribution rates which are developed using the Entry Age Normal cost method. Five-year smoothed market value of assets is used for actuarial valuation purposes. Gains and losses are reflected in the unfunded actuarial accrued liability that is being amortized by regular annual contributions as a level percentage of payroll, on the assumption that payroll will increase by 2.75% annually. The assumptions recommended by the actuary and adopted by the Board are in the aggregate reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System. The assumptions and methods used for funding purposes meet the parameters outlined in the Board's funding policy.

In this report we provide the following information and supporting schedules in the Actuarial and Statistical Sections of the Annual Comprehensive Financial Report:

- Summary of Actuarial Assumptions and Methods
- Actuarial Cost Method
- Summary of Plan Provisions as Interpreted for Valuation Purposes
- Schedule of Funding Progress
- Solvency Test
- Schedule of Active Member Valuation Data

We also provide the following schedules for the Annual Comprehensive Financial Report in a separate supplemental report:

- Analysis of Actuarial Gains and Losses
- Schedule of Retirants and Beneficiaries Added and Removed from Rolls
- Retired Members by Type of Benefit as of September 30, 2022
- Ten-Year History of Average Monthly Benefit Payments as of September 30

The necessary GASB Statements No. 67 and 68 disclosure information is provided in separate supplemental reports.

This is to certify that Larry Langer and Edward Koebel are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

In order to prepare the results in this report, we have utilized actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.



Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

The actuarial computations presented in this report are for purposes of determining the recommended funding amount for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

In our opinion the System is operating on an actuarially sound basis. Assuming that contributions to the System are made by the employer from year to year in the future at the rates recommended on the basis of the successive actuarial valuations, the continued sufficiency of the retirement fund to provide the benefits called for under the System may be safely anticipated.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'LL'.

Larry Langer, ASA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink, appearing to read 'Cathy Turcot'.

Cathy Turcot
Principal and Managing Director

A handwritten signature in blue ink, appearing to read 'Edward J. Koebel'.

Edward J. Koebel, EA, FCA, MAAA
Chief Executive Officer

A handwritten signature in blue ink, appearing to read 'Jennifer Johnson'.

Jennifer Johnson
Senior Consultant



Table of Contents

<u>Section</u>	<u>Item</u>	<u>Page No.</u>
I	Summary of Principal Results	1
II	Membership Data	6
III	Assets	10
IV	Comments on Valuation	12
V	Contributions Payable by Employers	16
VI	Analysis of Financial Experience	17
VII	Accounting Information	22
VIII	Risk Assessment	25
 <u>Schedule</u>		
A	Valuation Balance Sheet and Solvency Test	31
B	Development of the Actuarial Value of Assets	36
C	Summary of Receipts and Disbursements	41
D	Outline of Actuarial Assumptions and Methods	42
E	Actuarial Cost Method	51
F	Board Funding Policy	52
G	Projection of Transitional UAAL and Amortization of Bases	56
H	Summary of Main Plan Provisions as Interpreted for Valuation Purposes	62
I	Schedules of Membership Data	74





Section I: Summary of Principal Results

1. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results for State Employees, State Policemen and Local Employees are summarized below:

SUMMARY OF PRINCIPAL RESULTS FOR STATE EMPLOYEES

VALUATION DATE	September 30, 2022	September 30, 2021
Number of active members	26,656	27,535
Annual compensation	\$ 1,502,382,664	\$ 1,422,423,897
Number of retired members and beneficiaries ²	25,112	24,851
Annual retirement allowances ²	\$ 590,495,545	\$ 575,717,875
Number of deferred vested members	1,232	1,170
Estimated deferred annual allowances	\$ 17,317,584	\$ 15,621,806
Assets:		
Actuarial value	\$ 5,256,065,623	\$ 5,294,885,093
Market value	4,682,982,735	5,714,042,720
Unfunded actuarial accrued liability	\$ 3,594,520,368	\$ 3,245,658,150
Funded Ratio based on Actuarial Value of Assets	59.4%	62.0%
CONTRIBUTIONS FOR FISCAL YEAR ENDING¹	September 30, 2025	September 30, 2024
<u>Tier I (first hired prior to January 1, 2013)</u>		
Employer contribution rate		
Normal	1.18%	1.10%
Accrued liability	14.71	13.55
Death benefit	0.07	0.07
Administration	0.30	0.30
Subtotal	16.26%	15.02%
Act 2022-229	N/A	0.98
Total	16.26%	16.00%
<u>Tier II (first hired on or after January 1, 2013)</u>		
Employer contribution rate		
Normal	0.94%	0.86%
Accrued liability	14.71	13.55
Death benefit	0.07	0.07
Administration	0.30	0.30
Subtotal	16.02%	14.78%
Act 2022-229	N/A	0.98
Total	16.02%	15.76%
Blended Amortization period	25.9 years	26.9 years

¹Contribution rates reflect a phase-in of the cost of assumption changes over a period not to exceed five years.

²Includes post-DROP members in suspended status who are also active with a second retirement account.





Section I: Summary of Principal Results

SUMMARY OF PRINCIPAL RESULTS FOR STATE POLICEMEN

VALUATION DATE	September 30, 2022	September 30, 2021
Number of active members	724	798
Annual compensation	\$ 51,897,979	\$ 50,818,742
Number of retired members and beneficiaries ²	994	963
Annual retirement allowances ²	\$ 49,690,895	\$ 47,644,468
Number of deferred vested members	24	26
Estimated deferred annual allowances	\$ 579,353	\$ 460,671
Assets:		
Actuarial value	\$ 379,553,710	\$ 380,495,711
Market value	338,355,676	410,079,481
Unfunded actuarial accrued liability	\$ 335,934,941	\$ 309,274,541
Funded Ratio based on Actuarial Value of Assets	53.0%	55.2%
CONTRIBUTION FOR FISCAL YEAR ENDING¹	September 30, 2025	September 30, 2024
<u>Tier I (first hired prior to January 1, 2013)³</u>		
Employer contribution rate		
Normal	9.83%	9.67%
Accrued liability	46.48	42.16
Death benefit	0.07	0.07
Administration	<u>0.30</u>	<u>0.30</u>
Subtotal	56.68%	52.20%
Act 2022-229	<u>N/A</u>	<u>1.18</u>
Total	56.68%	53.38%
<u>Tier II (first hired on or after January 1, 2013)⁴</u>		
Employer contribution rate		
Normal	1.35%	1.13%
Accrued liability	46.48	42.16
Death benefit	0.07	0.07
Administration	<u>0.30</u>	<u>0.30</u>
Subtotal	48.20%	43.66%
Act 2022-229	<u>N/A</u>	<u>1.18</u>
Total	48.20%	44.84%
Blended Amortization Period	20.0 years	21.0 years

¹Contribution rates reflect a phase-in of the cost of assumption changes over a period not to exceed five years.

²Includes post-DROP members in suspended status who are also active with a second retirement account.

³Includes members with Tier I FLC benefits.

⁴Includes members with Tier II FLC benefits.





Section I: Summary of Principal Results

SUMMARY OF PRINCIPAL RESULTS FOR LOCAL EMPLOYEES

VALUATION DATE	September 30, 2022	September 30, 2021
Number of active members	57,317	56,238
Annual compensation	\$ 2,823,642,750	\$ 2,596,107,201
Number of retired members and beneficiaries*	30,637	29,779
Annual retirement allowances*	\$ 671,570,859	\$ 637,689,134
Number of deferred vested members	2,286	2,130
Estimated deferred annual allowances	\$ 31,682,749	\$ 29,257,392
Assets:		
Actuarial value	\$ 8,869,193,720	\$ 8,615,712,374
Market value	7,917,735,508	9,293,003,400
Unfunded actuarial accrued liability	\$ 3,660,668,351	\$ 3,258,916,073
Funded Ratio based on Actuarial Value of Assets	70.8%	72.6%
CONTRIBUTIONS FOR FISCAL YEAR ENDING	September 30, 2025	September 30, 2024
Employer contribution rate		
Normal	Varies	Varies
Accrued liability	Varies	Varies
Death benefit	0.07%	0.07%
Administration	<u>0.30</u>	<u>0.30</u>
Total	Varies	Varies
Amortization period	Varies	Varies

*Includes post-DROP members in suspended status who are also active with a second retirement account.





Section I: Summary of Principal Results

SUMMARY OF PRINCIPAL RESULTS FOR ALL GROUPS

VALUATION DATE	September 30, 2022	September 30, 2021
Number of active members	84,697	84,571
Annual compensation	\$ 4,377,923,393	\$ 4,069,349,840
Number of retired members and beneficiaries*	56,743	55,593
Annual retirement allowances*	\$ 1,311,757,299	\$ 1,261,051,477
Number of deferred vested members	3,542	3,326
Estimated deferred annual allowances	\$ 49,579,686	\$ 45,339,869
Assets:		
Actuarial value	\$ 14,504,813,053	\$ 14,291,093,178
Market value	12,939,073,919	15,417,125,601
Unfunded actuarial accrued liability	\$ 7,591,123,660	\$ 6,813,848,764
Funded Ratio based on Actuarial Value of Assets	65.6%	67.7%

*Includes post-DROP members in suspended status who are also active with a second retirement account.

- Comments on the valuation results as of September 30, 2022 are given in Section IV and further discussion of the contribution levels is set out in Section V.
- Schedule B of this report shows the development of the actuarial value of assets.
- The Board funding policy is shown in Schedule F.
- Schedule D of this report outlines the full set of actuarial assumptions and methods used in the current valuation. There have been no changes since the previous valuation. Effective with the September 30, 2021 Valuation, the Board approved a phase in of the increase in the required contributions due to the assumption changes made in the most recent experience investigation over a period not to exceed five-years with a floor equal to the 2023 fiscal year employer contribution rates.





Section I: Summary of Principal Results

6. Provisions of the System, as summarized in Schedule H, were taken into account in the current valuation. There have been no changes since the previous valuation.
7. The results shown in this report reflect all local employer elections approved by the Board through October 1, 2022. The contribution rates for local employers for the fiscal year beginning October 1, 2024 will be submitted in a separate report.
8. The funded ratio shown in the Summary of Principal Results is the ratio of the actuarial value of assets to the actuarial accrued liability. The funded status would be different based on market value of assets. The funded ratio is an indication of progress in funding the promised benefits. Since the ratio is less than 100%, there is a need for additional contributions towards payment of the unfunded actuarial accrued liability. In addition, this funded ratio does not have any relationship to measuring sufficiency if the plan had to settle its liabilities.





Section II: Membership Data

1. Data regarding the membership of the System for use as a basis of the valuation were furnished by the Retirement System office. The following table shows the number of active members and their annual compensation as of September 30, 2022 on the basis of which the valuation was prepared.

TABLE 1
THE NUMBER AND ANNUAL COMPENSATION OF
ACTIVE MEMBERS AS OF SEPTEMBER 30, 2022

GROUP	NUMBER	COMPENSATION
State Employees		
Tier 1, FLC	1,703	\$120,422,064
Tier 1, Non-FLC	13,032	\$838,923,704
Tier 2, FLC	727	\$40,352,638
Tier 2, Non-FLC	11,094	\$493,698,439
Post-DROP Members Still in Active Service	100	8,985,819
Total	26,656	\$1,502,382,664
State Policemen		
Tier 1, Group 1	373	31,085,923
Tier 1, Group 2	130	8,046,224
Tier 2, Group 1	7	498,435
Tier 2, Group 2	214	12,267,397
Post-DROP Members Still in Active Service	0	0
Total	724	\$51,897,979
Local Employees		
Tier 1, FLC	7,182	\$469,090,675
Tier 1, Non-FLC	20,557	\$1,140,016,891
Tier 2, FLC	5,931	\$285,987,687
Tier 2, Non-FLC	23,608	\$924,675,807
Post-DROP Members Still in Active Service	39	3,871,690
Total	57,317	\$2,823,642,750
All Groups		
Tier 1	42,977	\$2,607,585,481
Tier 2	41,581	\$1,757,480,403
Post-DROP Members Still in Active Service	139	12,857,509
Total	84,697	\$4,377,923,393

The table reflects the active membership for whom complete valuation data were submitted. The results of the valuation include an estimated liability for an additional 208 vested inactive members where complete data was not available (with liabilities equal to contribution balances multiplied by a factor of 3), contribution balances for an additional 24,474 non-vested inactive members who have contributed in the last 5 years, and 24,362 non-vested inactive members who have not contributed for more than 5 years.





Section II: Membership Data

2. The following table shows a six-year history of active member valuation data.

TABLE 2
SCHEDULE OF ACTIVE MEMBER VALUATION DATA
STATE EMPLOYEES

<u>Valuation Date</u>	<u>Number</u>	<u>Annual Payroll</u>	<u>% Increase in Total Pay*</u>	<u>Annual Average Pay</u>	<u>% Increase in Average Pay**</u>
9/30/2022	26,656	\$1,502,382,664	5.62%	\$ 56,362	9.10%
9/30/2021	27,535	1,422,423,897	-0.09%	51,659	2.30%
9/30/2020	28,193	1,423,647,929	4.84%	50,497	6.11%
9/30/2019	28,533	1,357,895,545	4.84%	47,590	6.57%
9/30/2018	29,004	1,295,229,592	1.85%	44,657	1.58%
9/30/2017	28,926	1,271,674,805	0.50%	43,963	1.11%

* 3.39% annual increase for total pay since 2017.

** 5.09% annual increase for average pay since 2017.

STATE POLICE

<u>Valuation Date</u>	<u>Number</u>	<u>Annual Payroll</u>	<u>% Increase in Total Pay*</u>	<u>Annual Average Pay</u>	<u>% Increase in Average Pay**</u>
9/30/2022	724	\$51,897,979	2.12%	\$ 71,682	12.56%
9/30/2021	798	50,818,742	-1.68%	63,683	1.77%
9/30/2020	826	51,686,733	20.19%	62,575	-0.91%
9/30/2019	681	43,004,849	4.43%	63,150	1.21%
9/30/2018	660	41,180,794	2.02%	62,395	-3.86%
9/30/2017	622	40,366,017	-2.06%	64,897	3.14%

* 5.15% annual increase for total pay since 2017.

** 2.01% annual increase for average pay since 2017.

LOCAL EMPLOYEES

<u>Valuation Date</u>	<u>Number</u>	<u>Annual Payroll</u>	<u>% Increase in Total Pay*</u>	<u>Annual Average Pay</u>	<u>% Increase in Average Pay**</u>
9/30/2022	57,317	\$2,823,642,750	8.76%	\$ 49,264	6.72%
9/30/2021	56,238	2,596,107,201	2.37%	46,163	2.79%
9/30/2020	56,466	2,535,901,049	5.97%	44,910	3.82%
9/30/2019	55,320	2,393,056,664	2.15%	43,258	5.06%
9/30/2018	56,901	2,342,770,725	3.09%	41,173	1.65%
9/30/2017	56,109	2,272,659,180	0.28%	40,504	-1.60%

* 4.44% annual increase for total pay since 2017.

** 3.99% annual increase for average pay since 2017.





Section II: Membership Data

TOTAL EMPLOYEES

<u>Valuation Date</u>	<u>Number</u>	<u>Annual Payroll</u>	<u>% Increase in Total Pay*</u>	<u>Annual Average Pay</u>	<u>% Increase in Average Pay**</u>
9/30/2022	84,697	\$4,377,923,393	7.58%	\$ 51,689	7.42%
9/30/2021	84,571	4,069,349,840	1.45%	48,118	2.55%
9/30/2020	85,485	4,011,235,711	5.73%	46,923	4.55%
9/30/2019	84,534	3,793,957,058	3.12%	44,881	5.60%
9/30/2018	86,565	3,679,181,111	2.64%	42,502	1.56%
9/30/2017	85,657	3,584,700,002	0.33%	41,849	-0.66%

* 4.08% annual increase for total pay since 2017.

** 4.31% annual increase for average pay since 2017.





Section II: Membership Data

3. The following table shows the number and annual retirement allowances payable to retired members and their beneficiaries on the rolls of the Retirement System as of the valuation date.

TABLE 3

**THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES
OF RETIRED MEMBERS AND BENEFICIARIES OF
DECEASED MEMBERS ON THE ROLLS AS OF SEPTEMBER 30, 2022**

TYPE OF RETIREMENT	GROUP			
	STATE EMPLOYEES ¹	STATE POLICEMEN ²	LOCAL EMPLOYEES ³	TOTAL
Service:				
Number ⁴	21,094	847	25,967	47,908
Annual Allowances ⁴	\$ 530,045,157	\$ 45,671,376	\$ 607,426,520	\$ 1,183,143,053
Disability:				
Number	2,164	44	1,976	4,184
Annual Allowances	\$ 32,006,503	\$ 1,445,436	\$ 29,541,288	\$ 62,993,227
Beneficiaries:				
Number	1,854	103	2,694	4,651
Annual Allowances	\$ 28,443,885	\$ 2,574,083	\$ 34,603,051	\$ 65,621,019
Total:				
Number	25,112	994	30,637	56,743
Annual Allowances	\$ 590,495,545	\$ 49,690,895	\$ 671,570,859	\$ 1,311,757,299

¹ In addition, there are 1,232 vested inactive members with estimated deferred annual allowances totaling \$17,317,584.

² In addition, there are 24 vested inactive members with estimated deferred annual allowances totaling \$579,353.

³ In addition, there are 2,286 vested inactive members with estimated deferred annual allowances totaling \$31,682,749.

⁴ Includes post-DROP members in suspended status who are also active with a second retirement account.

4. Tables in Schedule I show the distribution by age and service of the number and average annual compensation of active members included in the valuation. In addition, tables in Schedule I show the distribution by age and benefit type of the number, annual benefits, and average annual benefits of retired members included in the valuation.





Section III: Assets

1. The current retirement law provides for the maintenance of five funds for the purpose of recording the fiscal transactions of the System, namely, the Annuity Savings Fund, the Pension Accumulation Fund, the Deferred Retirement Option Plan Fund, the Pre-Retirement Death Benefit Fund, and the Expense Fund.

(a) Annuity Savings Fund

The Annuity Savings Fund is the fund to which are credited all contributions made by members together with regular interest thereon. When a member retires or when a survivor allowance becomes payable, the amount of the member's accumulated contributions are transferred from the Annuity Savings Fund to the Pension Accumulation Fund. On September 30, 2022, the market value of assets credited to this Fund amounted to \$3,406,261,701 which represent the contributions of members to this date.

(b) Pension Accumulation Fund

The Pension Accumulation Fund is the fund to which are credited all contributions made by the employers, except those contributions made to the Pre-Retirement Death Benefit Fund which was created October 1, 1983. When a member retires or when a survivor allowance becomes payable, the pension is paid from this fund. The market value of assets credited to this fund amounted to \$9,488,913,018 on September 30, 2022.

(c) DROP Fund

The DROP Fund is the fund to which are credited deferred retirement benefits on behalf of members who elect to participate in the DROP, together with regular interest thereon. In addition, member contributions while participating in the DROP, together with regular interest therein, are credited to the Fund. At the end of the DROP deferral period, the member receives the amount of the deferred retirement benefits and contributions plus interest in the member's DROP account. The DROP is closed to new participants as of June 1, 2011. On September 30, 2022, the market value of assets credited to this Fund amounted to \$43,899,200.

(d) Pre-Retirement Death Benefit Fund

The Pre-Retirement Death Benefit Fund is the fund to which are credited contributions made by the employer for the special pre-retirement death benefit which became effective October 1, 1983. On September 30, 2022, the market value of assets credited to this fund amounted to \$16,603,820. These assets are not included in the valuation and the liabilities associated with these death benefits are not included in the valuation.





Section III: Assets

(e) Expense Fund

The Expense Fund is the fund from which the expenses of the administration of the Retirement System are paid. Any amounts credited to the accounts of members withdrawing before retirement and not returnable under the provisions of Code Section 36-27-16(c) are credited to the Expense Fund. Additional contributions required to meet the expenses of the Retirement System made by the employer are also credited to this fund. On September 30, 2022, the book value of assets credited to this fund amounted to \$3,846,909. These assets are not included in the valuation.

2. As of September 30, 2022 the total market value of assets exclusive of the Pre-Retirement Death Benefit Fund and the Expense Fund amounted to \$12,939,073,919 as shown in the following table.

TABLE 4

**MARKET VALUE OF ASSETS BY FUND
AS OF SEPTEMBER 30, 2022**

FUND	MARKET VALUE OF ASSETS
Annuity Savings Fund	\$ 3,406,261,701
Pension Accumulation Fund	9,488,913,018
DROP Fund	<u>43,899,200</u>
Total Market Value of Assets	\$ 12,939,073,919

3. The five-year market related actuarial value of assets as of September 30, 2022 was \$14,504,813,053. The following table shows the actuarial value of assets used for the current valuation allocated among State employees, State policemen and local employees.

TABLE 5

**COMPARISON OF ACTUARIAL VALUE OF ASSETS
AT SEPTEMBER 30, 2022 AND SEPTEMBER 30, 2021**

GROUP	SEPTEMBER 30, 2022 ACTUARIAL VALUE	SEPTEMBER 30, 2021 ACTUARIAL VALUE
State Employees	\$ 5,256,065,623	\$ 5,294,885,093
State Policemen	379,553,710	380,495,711
Local Employees	<u>8,869,193,720</u>	<u>8,615,712,374</u>
Total Assets	\$ 14,504,813,053	\$ 14,291,093,178

4. Schedule C shows the receipts and disbursements of the System for the year preceding the valuation date and a reconciliation of the fund balances at market value.





Section IV: Comments on Valuation

1. Schedule A of this report contains the valuation balance sheets which show the present and prospective assets and liabilities of the System as of September 30, 2022. Separate balance sheets are shown for each employee group as well as in total for all groups.
2. The total valuation balance sheet shows that the System has total prospective liabilities of \$25,202,324,167. Of this amount, \$12,265,707,511 is for the prospective benefits payable on account of present retired members, beneficiaries of deceased members, and DROP participants, \$425,345,414 is for the prospective benefits payable on account of present inactive members and \$12,511,271,242 is for the prospective benefits payable on account of present active members. Against these liabilities the System has total actuarial value of assets of \$14,504,813,053 as of September 30, 2022. The difference of \$10,697,511,114 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future. Of this amount, \$2,096,328,500 is the present value of future contributions expected to be made by members to the Annuity Savings Fund, and the balance of \$8,601,182,614 represents the present value of future contributions payable by the employers.
3. The employers' contributions to the System consist of normal contributions and unfunded actuarial accrued liability (UAAL) contributions. Prospective employer normal contributions have a present value of \$1,010,058,954. When this amount is subtracted from \$8,601,182,614, which is the present value of the total future contributions to be made by the employers, there remains \$7,591,123,660 as the amount of future UAAL contributions.
4. The funding policy adopted by the Board, as shown in Schedule F, provides that the initial total UAAL established as of September 30, 2021 shall be amortized over a closed 27-year period for state employees and a closed 21-year period for state police. Each subsequent valuation may produce a New Incremental UAAL consisting of all benefit changes that have occurred since the previous valuation which shall be amortized over a closed 15-year period. Each valuation beginning with the September 30, 2028 valuation for State employees, and the September 30, 2022 valuation for State





Section IV: Comments on Valuation

police will produce a New Incremental UAAL consisting of all assumption and method changes and experience gains and/or losses that have occurred since the previous valuation and will be amortized over closed 20- year periods. All gains and losses occurring after the establishment of the initial total UAAL and before those dates, except for those due to benefit improvements, shall be included in the remaining initial total UAAL each year and amortized over the remaining closed period.

5. The total UAAL rate payable by the State is 14.71% of payroll for State employees and 46.48% of payroll for State Policemen determined in accordance with the Board's funding policy and the phase-in methodology adopted by the Board. The UAAL contribution rate has been calculated on the assumption that each incremental component of accrued liability contribution will increase by 2.75% each year. Schedule G of this report shows the amortization schedules for all bases as of September 30, 2022.
6. The following table shows the components of the total UAAL and the derivation of the accrued liability contribution rate in accordance with the funding policy for State employees and State policemen:





Section IV: Comments on Valuation

TABLE 6

TOTAL UAAL AND UAAL CONTRIBUTION RATE

STATE EMPLOYEES

	<u>UAAL</u>	<u>Amortization Period</u>	<u>Amortization Payment</u>
Remaining Initial Total UAL	\$3,584,234,913	26	\$245,059,718
Benefit Improvements Effective 10/1/2021	<u>10,285,455</u>	14	<u>1,038,785</u>
Total	\$3,594,520,368		\$246,098,503
Total Amortization Payment Adjusted for Timing			<u>237,260,548</u>
Total Estimated Payroll*			\$1,558,421,440
UAAL Contribution Rate			15.22%
UAAL Contribution Rate Phase-in Methodology**			14.71%

STATE POLICE

	<u>UAAL</u>	<u>Amortization Period</u>	<u>Amortization Payment</u>
Remaining Initial Total UAL	\$308,186,902	20	\$24,500,546
New Incremental UAL 9/30/2022	\$27,489,656	20	\$2,185,400
Benefit Improvements Effective 10/1/2021	<u>258,383</u>	14	<u>26,096</u>
Total	\$335,934,941		\$26,712,042
Total Amortization Payment Adjusted for Timing			<u>25,752,752</u>
Total Estimated Payroll*			\$54,655,476
UAAL Contribution Rate			47.12%
UAAL Contribution Rate Phase-in Methodology**			46.48%

* Estimated payroll based on applying the assumed salary scale to current salaries.

** Phase in impact of assumption and method changes on employer contribution rates over a period not to exceed five years and maintain floor of FYE 2023 contribution rates.





Section IV: Comments on Valuation

7. The Pre-Retirement Death Benefit Program was established October 1, 1983 under Act No. 83-616. The liabilities and assets associated with the pre-retirement death benefit are not included in the annual actuarial valuation of the System; however, the sufficiency of the Fund to provide the promised benefits is reviewed annually. The contribution requirements are determined every five years during our experience investigation. For all employers, an additional contribution of 0.07% of payroll will be required to meet the cost of the pre-retirement death benefit program this year.
8. For all employers, an additional contribution of 0.30% is required to cover the expenses of administering the System.
9. In our opinion, the current experience, assumptions, and methods adopted by the Board support the funding policy and generally accepted and emerging practice. Assuming that required contributions continue to be made each year, the funding of the System and the objectives of the Funding Policy will continue to remain on track.





Section V: Contributions Payable by Employers

- The retirement act provides that the Board of Control shall certify to the Chief Fiscal Officer of each employer the rates of contribution required to be paid by the employer.
- On the basis of the actuarial valuation prepared as of September 30, 2022 it is recommended that the State make contributions at the following rates for the fiscal year beginning October 1, 2024:

TABLE 7

ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION RATES

CONTRIBUTION RATE***	PERCENTAGE OF MEMBERS' COMPENSATION FOR FISCAL YEAR ENDING SEPTEMBER 30, 2025			
	STATE EMPLOYEES		STATE POLICEMEN	
	<u>Tier I</u>	<u>Tier II</u>	<u>Tier I</u>	<u>Tier II</u>
Employer Normal Cost	1.18%*	0.94%*	9.83%**	1.35%**
Accrued liability	14.71	14.71	46.48	46.48
Death benefit	0.07	0.07	0.07	0.07
Administration	<u>0.30</u>	<u>0.30</u>	<u>0.30</u>	<u>0.30</u>
Total	16.26%	16.02%	56.68%	48.20%

* The total Normal Cost rate is 8.81% for Tier I and 7.02% for Tier II. Tier I members contribute 7.50% (8.50% for FLC members) and Tier II members contribute 6.00% (7.00% for FLC members).

** The total Normal Cost rate is 19.51% for Tier I and 8.47% for Tier II. All Police Group 1 members contribute 10.00%. Tier I Police Group 2 members contribute 8.50% and Tier II Police Group 2 members contribute 7.00%.

*** Contribution rates reflect a phase-in of the cost of assumption changes over a period not to exceed five years with a floor equal to the 2023 fiscal year contribution rates.

- The total employer contribution rates without the phase-in would have been 17.29% of compensation for State employees Tier I, 16.87% of compensation for State employees Tier II, 58.45% of compensation for State Police Tier I, and 49.60% of compensation for State Police Tier II.
- Contribution rates for Local Employers will be submitted in a separate report. The rates for the fiscal year beginning October 1, 2024 were determined as of September 30, 2022, and will reflect any elections made pursuant to Act 2011-676, and Act 2022-348 as of September 30, 2022.





Section VI: Analysis of Financial Experience

The calculation of the System's liabilities and actuarial value of assets requires the use of several assumptions concerning the future experience of the System and its members. In each annual actuarial valuation, the experience of the System is compared with what was expected based on the actuarial assumptions. The differences between the actual and expected experience are called actuarial gains or losses depending on whether the difference increases or decreases the UAAL. For State employees, the UAAL increased \$348,862,218; for State policemen, the UAAL increased \$26,660,400. The most significant items contributing to the increase were higher than expected salary increases and less than expected investment earnings. Other sources of gains and losses were relatively small and there appear to be no trends developing that would be of concern to the System. The following tables show the reconciliation of the UAAL of the System and a breakdown by source of the actuarial gains and losses for State employees and State policemen. These sources include the expected return on assets, salary increases, retirement, withdrawal, disability, and mortality.

Since the benefits, assumptions and accrued liability rates vary by location for the Local employees, we do not develop an analysis of financial experience by source for this group.





Section VI: Analysis of Financial Experience

RECONCILIATION OF THE UNFUNDED ACTUARIAL ACCRUED LIABILITY FOR THE YEAR ENDING SEPTEMBER 30, 2022

(Dollar amounts in thousands)

	STATE EMPLOYEES	STATE POLICEMEN
(1) UAAL at beginning of year	\$ 3,245,658	\$ 309,275
(2) Total normal cost beginning of the year	119,638	9,085
(3) Actual contributions	319,173	30,625
(4) Interest accrual: $[[(1) + (2)] - \frac{1}{2} [(3)]] \times .07450$	238,825	22,577
(5) Expected UAAL before changes: (1) + (2) - (3) + (4)	3,284,948	310,312
(6) Increase from benefit changes	0	0
(7) Changes from revised actuarial assumptions and methods	0	0
(8) Expected UAAL after changes: (5) + (6) + (7)	3,284,948	310,312
(9) Actual UAAL at end of year	3,594,520	335,935
(10) Total (Gain)/Loss: (9) - (8)	\$ 309,572	\$ 25,623





Section VI: Analysis of Financial Experience

**DEVELOPMENT OF (GAIN)/LOSS
FROM INVESTMENT RETURN
FOR THE YEAR ENDING SEPTEMBER 30, 2022**
(Dollar amounts in thousands)

	STATE EMPLOYEES	STATE POLICEMEN
(1) Actuarial Value of Assets (BOY)	\$ 5,294,885	\$ 380,496
(2) Adjustment*	83	0
(3) Net Cash Flow	(312,477)	(20,596)
(4) Expected Return: [(1) + (2) + ½ [(3)]] x .07450	382,835	27,580
(5) Expected Actuarial Value of Assets: [(1) + (2) + (3) + (4)]	5,365,326	387,480
(6) Actual Actuarial Value of Assets (EOY)	5,256,066	379,554
(7) (Gain)/Loss: (5) – (6)	\$ 109,260	\$ 7,926

**Differences due to adjustments made to local units' assets after previous report was issued*





Section VI: Analysis of Financial Experience

**(GAINS)/ LOSSES BY SOURCE
FOR THE YEAR ENDING September 30, 2022**
(Dollar amounts in thousands)

Source	<u>STATE EMPLOYEES</u>		<u>STATE POLICEMEN</u>	
	Total	% of Actuarial Accrued Liability	Total	% of Actuarial Accrued Liability
Age and Service Retirements. Generally, earlier retirements cause losses and later retirements cause gains.	\$ 2,159	0.02%	\$ (581)	(0.08%)
Withdrawal. More withdrawals than expected usually cause gains and less withdrawals than expected cause losses.	(21,391)	(0.24%)	(1,711)	(0.24%)
Disability Retirements. More disabilities than expected generally cause losses and less disabilities than expected cause gains.	549	0.01%	(37)	(0.01%)
Death-In-Service Benefits. If survivor claims are less than assumed, there is a gain. If claims are more than assumed, there is a loss.	4,032	0.05%	205	0.03%
Salary Increases. If salaries increase more than expected, there is a loss. If salaries increase less than expected, there is a gain.	195,670	2.21%	16,645	2.33%
New Members/Rehires. Any past service causes losses.	21,005	0.24%	1,203	0.17%
Retiree Mortality. More deaths than expected cause gains, less than expected cause losses.	(2,868)	(0.03%)	(907)	(0.13%)
Investment Return. Investment income greater than expected causes gains while investment income less than expected cause losses.	109,260	1.23%	7,926	1.11%
Other. Miscellaneous gains and losses resulting from data corrections, timing of financial transactions, unit transfers, changes in valuation software, etc.	1,156	0.01%	2,880	0.40%
Total (Gain)/Loss	\$ 309,572	3.50%	\$ 25,623	3.58%





Section VI: Analysis of Financial Experience

(GAINS)/ LOSSES BY SOURCE

Historical Trends

(Dollar amounts in thousands)

STATE EMPLOYEES

SOURCE	September 30				
	2022	2021	2020	2019	2018
Age and Service Retirements	\$ 2,159	\$ (15,321)	\$ (14,306)	(9,517)	(4,114)
Withdrawal	(21,391)	(14,843)	(7,618)	(4,000)	(585)
Disability Retirements	549	(45)	400	485	629
Death-In-Service Benefits	4,032	2,608	3,512	305	(754)
Salary Increases	195,670	(807)	87,419	99,221	(6,128)
New Members/Rehires	21,005	19,376	16,550	18,713	12,294
Retiree Mortality	(2,868)	(4,450)	(10,301)	27,728	(145)
Investment Return	109,260	(119,475)	(6,741)	19,518	(65,023)
Other	1,156	311	(1,853)	(6,256)	499
Total (Gain)/Loss	\$ 309,571	\$ (132,646)	\$ 67,062	146,197	(63,328)

STATE POLICEMEN

SOURCE	September 30				
	2022	2021	2020	2019	2018
Age and Service Retirements	\$ (581)	\$ (936)	\$ (1,136)	487	1,563
Withdrawal	(1,711)	(1,747)	(2,170)	(2,371)	(1,276)
Disability Retirements	(37)	(77)	57	244	50
Death-In-Service Benefits	205	207	197	187	(92)
Salary Increases	16,645	(4,162)	1,908	7,061	(4,511)
New Members/Rehires	1,203	2,804	6,144	1,226	3,137
Retiree Mortality	(907)	(2,519)	104	1,204	717
Investment Return	7,926	(8,289)	(242)	1,594	(4,245)
Other	2,880	(203)	228	308	601
Total (Gain)/Loss	\$ 25,622	\$ (14,922)	\$ 5,090	9,940	(4,056)





Section VII: Accounting Information

The information required under Governmental Accounting Standards Board (GASB) Statements No. 67 and 68 is issued in separate reports. The following information is provided for informational purposes only.

1. The following is a distribution of the number of employees by type of membership.

NUMBER OF ACTIVE AND RETIRED MEMBERS AS OF SEPTEMBER 30, 2022

GROUP	NUMBER			
	State Employees	State Police	Local Employees	Total
Retirees and beneficiaries currently receiving benefits	25,112	994	30,637	56,743
Terminated employees entitled to benefits but not yet receiving benefits	7,191	58	20,975	28,224
Non-vested inactive members who have not contributed for more than 5 years	24,362	0	0	24,362
Active Members	<u>26,656</u>	<u>724</u>	<u>57,317</u>	<u>84,697</u>
Total	83,321	1,776	108,929	194,026





Section VII: Accounting Information

2. The schedule of funding progress is shown below. Please note amounts in this table may not add due to rounding differences.

SCHEDULE OF FUNDING PROGRESS (Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
TOTAL ALL GROUPS						
9/30/2017 ¹	\$11,690,952	\$17,250,834	\$5,559,883	67.8%	\$3,584,700	155.1%
9/30/2018 ¹	12,240,597	17,829,735	5,589,138	68.7	3,679,181	151.9
9/30/2019	12,645,789	18,543,542	5,897,753	68.2	3,793,957	155.5
9/30/2020 ²	13,491,176	19,786,472	6,295,296	68.2	4,011,236	156.9
9/30/2021 ^{1,2,3}	14,291,093	21,104,942	6,813,849	67.7	4,069,350	167.4
9/30/2022	14,504,813	22,095,937	7,591,124	65.6	4,377,923	173.4
STATE EMPLOYEES						
9/30/2017 ¹	\$4,759,602	\$7,581,147	\$2,821,545	62.8%	\$1,271,675	221.9%
9/30/2018 ¹	4,887,403	7,723,822	2,836,419	63.3	1,295,230	219.0
9/30/2019	4,964,556	7,964,131	2,999,575	62.3	1,357,896	220.9
9/30/2020	5,083,172	8,155,858	3,072,686	62.3	1,423,648	215.8
9/30/2021 ^{1,3}	5,294,885	8,540,543	3,245,658	62.0	1,422,424	228.2
9/30/2022	5,256,066	8,850,586	3,594,520	59.4	1,502,383	239.3
STATE POLICEMEN						
9/30/2017 ¹	\$333,960	\$607,107	\$273,147	55.0%	\$40,366	676.7%
9/30/2018 ¹	341,389	620,411	279,022	55.0	41,181	677.6
9/30/2019	346,309	639,187	292,878	54.2	43,005	681.0
9/30/2020	359,724	658,319	298,595	54.6	51,687	577.7
9/30/2021 ^{1,3}	380,496	689,771	309,275	55.2	50,819	608.6
9/30/2022	379,554	715,489	335,935	53.0	51,898	647.3
LOCAL EMPLOYEES						
9/30/2017 ¹	\$6,597,390	\$9,062,580	\$2,465,190	72.8%	\$2,272,659	108.5%
9/30/2018 ¹	7,011,805	9,485,502	2,473,697	73.9	2,432,771	105.6
9/30/2019	7,334,924	9,940,224	2,605,299	73.8	2,393,057	108.9
9/30/2020 ²	8,048,280	10,972,295	2,924,016	73.4	2,535,901	115.3
9/30/2021 ^{1,2,3}	8,615,712	11,874,628	3,258,916	72.6	2,596,107	125.5
9/30/2022	8,869,194	12,529,862	3,660,668	70.8	2,823,643	129.6

¹ Reflects changes in actuarial assumptions and methods.

² Reflects impact of Act 2019-132.

³ Reflects impact of Act 2022-351 and Act 2022-184.





Section VII: Accounting Information

3. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at September 30, 2022. Additional information as of the latest actuarial valuation follows.

	<u>State Employees</u>	<u>State Policemen</u>	<u>Local Employees</u>
Valuation date	9/30/2022	9/30/2022	9/30/2022
Actuarial cost method	Entry age	Entry age	Entry age
Amortization method	Level percent Closed	Level percent Closed	Level percent Closed
Single equivalent remaining amortization period	25.9 years	20.0 years	Within 30 years - Varies by employer
Asset valuation method	Five-year market related value	Five-year market related value	Five-year market related value
Actuarial assumptions:			
Investment rate of return*	7.45%	7.45%	7.45%
Projected salary increases*	3.25 – 6.00%	4.00 – 7.75%	3.25 – 6.00%
Cost-of-living adjustment	None	None	None
*Includes price inflation at	2.50%	2.50%	2.50%





Section VIII: Risk Assessment

Overview

Actuarial Standards of Practice (ASOP) No. 51, issued by the Actuarial Standards Board, provides guidance on assessing and disclosing risks related to pension plan funding. This guidance is binding on all credentialed actuaries practicing in the United States. This standard was issued as final in September 2017 with application to measurement dates on or after November 1, 2018.

The term “risk” frequently has a negative connotation, but from an actuarial perspective, it can simply be considered that what actually happens in the real world will not always match what was expected, based on actuarial assumptions. Of course, when actual experience is better than expected, the favorable risk is easily absorbed. The risk of unfavorable experience will likely be unpleasant, and so understandably, there is a focus on aspects of risk that are negative.

Risk can usually be reduced or eliminated at some cost. Consumers, for example, buy auto and home insurance to reduce the risk of accidents or catastrophes. Another way to express this concept, however, is that there is generally some reward for assuming risk. Thus, retirement plans invest not just in US Treasury bonds, which have almost no risk, but also in equities, which are considerably riskier – because they have an expected reward of a higher return that justifies the risk.

Under ASOP 51, the actuary is called upon to identify the significant risks to the pension plan and provide information to help those sponsoring and administering the plan understand the implications of these risks. In this section, we identify some of the key risks for the System and provide information to help interested parties better understand these risks.





Section VIII: Risk Assessment

Investment Risk

The investment return on assets is the most obvious risk – and usually the largest risk – to funding a pension plan. To illustrate the magnitude of this risk, the following chart shows the Asset Volatility Ratio (AVR), defined as the fair value of assets divided by covered payroll.

STATE EMPLOYEES (\$ in thousands)

Valuation	Fair Value of Assets	Covered Payroll	Asset Volatility Ratio
2017	\$4,910,513	\$1,271,675	3.86
2018	\$5,059,401	\$1,295,230	3.91
2019	\$4,917,295	\$1,357,896	3.62
2020	\$4,931,877	\$1,423,648	3.46
2021	\$5,714,043	\$1,422,424	4.02
2022	\$4,682,983	\$1,502,383	3.12

STATE POLICE (\$ in thousands)

Valuation	Fair Value of Assets	Covered Payroll	Asset Volatility Ratio
2017	\$343,920	\$40,366	8.52
2018	\$352,888	\$41,181	8.57
2019	\$342,665	\$43,005	7.97
2020	\$348,883	\$51,687	6.75
2021	\$410,079	\$50,819	8.07
2022	\$338,356	\$51,898	6.52

The asset volatility ratio is especially useful to compare across plans or through time. It is also frequently useful to consider how the AVR translates into changes in the Required Contribution Rate (actuarially determined employer contribution rate). The greater the AVR, the more volatility there is in the Required Contribution Rate. For plans with low AVRs, the impact of investment gains and losses on Required Contribution Rates is less than for plans with high AVRs. The AVR for State Employees as of September 30, 2022 is 3.12 and the AVR for State Police is 6.52.





Section VIII: Risk Assessment

As shown in the table below, if the market value return is 5% below assumed, or 2.45% (7.45% minus 5.00%) for the System, there will be an increase in the Required Contribution Rate of 0.42% of payroll in the first year for State Employees and 0.87% for State Police. Without asset smoothing or without returns above the expected return in the next four years, the impact on the Required Contribution Rate would be 2.08% for State Employees and 4.34% for State Police.

STATE EMPLOYEES

AVR	Unsmoothed Amortization	Smoothed Amortization
3.00	2.00%	0.40%
3.12	2.08%	0.42%
4.00	2.66%	0.53%

STATE POLICE

AVR	Unsmoothed Amortization	Smoothed Amortization
6.00	3.99%	0.80%
6.52	4.34%	0.87%
7.00	4.66%	0.93%





Section VIII: Risk Assessment

Sensitivity Measures

Valuations are generally performed with a single set of assumptions that reflects the best estimate of future conditions, in the opinion of the actuary and typically the governing board. Note that under actuarial standards of practice, the set of economic assumptions used for funding must be consistent. To enhance the understanding of the importance of an assumption, a sensitivity test can be performed where the valuation results are recalculated using a different assumption or set of assumptions.

The following tables contain the key measures for the System using the valuation assumption for investment return of 7.45%, along with the results if the assumption were 6.45% or 8.45%. In this analysis, only the investment return assumption is changed. Consequently, there may be inconsistencies between the investment return and other economic assumptions such as inflation or payroll increases. In addition, simply because the valuation results under alternative assumptions are shown here, it should not be implied that CMC believes that either assumption (6.45% or 8.45%) would comply with actuarial standards of practice. The contribution rates below represent the full ADEC with phase in.





Section VIII: Risk Assessment

STATE EMPLOYEES (\$ in thousands)

As of September 30, 2022	Current Discount Rate (7.45%)	-1% Discount Rate (6.45%)	+1% Discount Rate (8.45%)
Accrued Liability	\$8,850,586	\$9,787,963	\$8,055,590
Unfunded Liability	\$3,594,520	\$4,531,897	\$2,799,524
Funded Ratio (AVA)	59.4%	53.7%	65.2%
ADEC Rate*			
Tier I	17.29%	21.59%	13.43%
Tier II	16.87%	20.56%	13.47%

STATE POLICE (\$ in thousands)

As of September 30, 2022	Current Discount Rate (7.45%)	-1% Discount Rate (6.45%)	+1% Discount Rate (8.45%)
Accrued Liability	\$715,489	\$790,541	\$651,957
Unfunded Liability	\$335,935	\$410,987	\$272,404
Funded Ratio (AVA)	53.0%	48.0%	58.2%
ADEC Rate*			
Tier I	58.45%	69.62%	48.62%
Tier II	49.60%	57.85%	42.07%

* Contribution rates are determined based on the Board's current Funding Policy and do not reflect phase in of contributions.





Section VIII: Risk Assessment

Mortality Risk

The mortality assumption is a significant assumption for valuation results, second only to the investment assumption in most situations. The System's mortality assumption utilizes a mortality table (with separate rates for males and females, as well as different rates by status) and a projection scale for how the mortality table is expected to improve through time.

The future, however, is unknown, and actual mortality improvements may occur at a faster rate than expected, or at a slower rate than expected. Although changes in mortality will affect the benefits paid, this assumption is reviewed carefully during the regular experience studies that the System conducts so that incremental changes can be made to smoothly reflect emerging experience. The risk to the System due to mortality is significantly reduced due to the use of the generational improvement method. The next actuarial experience study will be for the period from October 1, 2020 to September 30, 2025.

Contribution Risk

The System is funded primarily by member and employer contributions to the trust fund, together with the earnings on those accumulated contributions. Each year in the valuation, the Actuarial Determined Employer Contribution (ADEC) rate is determined, based on the System's funding policy. This rate is the sum of the rates for the normal cost for the plan (which includes expected administrative expenses), and the rate necessary to amortize the UAAL. Since the level percentage of payroll method is used to determine the UAAL amortization amounts, there is an expectation that future payments will grow at the assumed 2.75% annual rate of increase in covered payroll. If payroll grows at a slower rate, under this amortization method, less than expected UAAL amortization payments would result in a greater UAAL in future years and may require increases to either the amortization rate or the amortization period. From a policy perspective, since the ADEC rate has always been made by the plan sponsors, and that procedure is expected to continue, there is no risk to the System associated with the contribution amounts being less than the ADEC.





Schedule A: Valuation Balance Sheet & Solvency Test

VALUATION BALANCE SHEET SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF THE EMPLOYEES' RETIREMENT SYSTEM OF ALABAMA

STATE EMPLOYEES

	SEPTEMBER 30, 2022
<u>ASSETS</u>	
Actuarial Value of Assets	\$ 5,256,065,623
Present value of future members' contributions to the Annuity Savings Fund	\$ 774,277,623
Present value of future employer contributions to the Pension Accumulation Fund	
Normal contributions	\$ 172,455,224
Unfunded accrued liability contributions	<u>3,594,520,368</u>
Total prospective employer contributions	\$ 3,766,975,592
Total Assets	<u>\$ 9,797,318,838</u>
<u>LIABILITIES</u>	
Present value of benefits payable on account of retired members and beneficiaries of deceased members now drawing retirement allowances	
Service Retirements	\$ 4,783,527,426
Disability Retirements	278,606,343
Beneficiaries of Deceased Members	214,093,323
DROP Participant Accounts	<u>32,223,341</u>
Total	\$ 5,308,450,433
Inactive Members	\$ 135,200,034
Inactive T-section accounts	\$ 22,225,688
Present value of prospective benefits payable on account of present active members:	
Service retirement allowances	\$ 3,808,259,141
Disability retirement allowances	216,787,019
Death Benefits	40,175,055
Termination Benefits	<u>266,221,468</u>
Total	\$ 4,331,442,683
Total Liabilities	<u>\$ 9,797,318,838</u>





Schedule A: Valuation Balance Sheet & Solvency Test

VALUATION BALANCE SHEET SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF THE EMPLOYEES' RETIREMENT SYSTEM OF ALABAMA

STATE POLICEMEN

	SEPTEMBER 30, 2022
<u>ASSETS</u>	
Actuarial Value of Assets	\$ 379,553,710
Present value of future members' contributions to the Annuity Savings Fund	\$ 34,423,262
Present value of future employer contributions to the Pension Accumulation Fund	
Normal contributions	\$ 29,138,173
Unfunded accrued liability contributions	<u>335,934,941</u>
Total prospective employer contributions	\$ 365,073,114
Total Assets	<u>\$ 779,050,086</u>
<u>LIABILITIES</u>	
Present value of benefits payable on account of retired members and beneficiaries of deceased members now drawing retirement allowances	
Service Retirements	\$ 453,953,571
Disability Retirements	13,372,156
Beneficiaries of Deceased Members	18,587,332
DROP Participant Accounts	<u>0</u>
Total	\$ 485,913,059
Inactive Members	\$ 2,813,632
Present value of prospective benefits payable on account of present active members:	
Service retirement allowances	\$ 270,311,236
Disability retirement allowances	7,938,294
Death Benefits	1,074,640
Termination Benefits	<u>10,999,225</u>
Total	\$ 290,323,395
Total Liabilities	<u>\$ 779,050,086</u>





Schedule A: Valuation Balance Sheet & Solvency Test

VALUATION BALANCE SHEET SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF THE EMPLOYEES' RETIREMENT SYSTEM OF ALABAMA

LOCAL EMPLOYEES

	SEPTEMBER 30, 2022
<u>ASSETS</u>	
Actuarial Value of Assets	\$ 8,869,193,720
Present value of future members' contributions to the Annuity Savings Fund	\$ 1,287,627,615
Present value of future employer contributions to the Pension Accumulation Fund	
Normal contributions	\$ 808,465,557
Unfunded accrued liability contributions	<u>3,660,668,351</u>
Total prospective employer contributions	\$ 4,469,133,908
Total Assets	<u>\$ 14,625,955,243</u>
<u>LIABILITIES</u>	
Present value of benefits payable on account of retired members and beneficiaries of deceased members now drawing retirement allowances	
Service Retirements	\$ 5,912,678,849
Disability Retirements	264,299,182
Beneficiaries of Deceased Members	282,690,129
DROP Participant Accounts	<u>11,675,859</u>
Total	\$ 6,471,344,019
Inactive Members	\$ 265,106,060
Present value of prospective benefits payable on account of present active members:	
Service retirement allowances	\$ 6,947,589,048
Disability retirement allowances	332,406,816
Death Benefits	66,455,357
Termination Benefits	<u>543,053,943</u>
Total	\$ 7,889,505,164
Total Liabilities	<u>\$ 14,625,955,243</u>





Schedule A: Valuation Balance Sheet & Solvency Test

VALUATION BALANCE SHEET SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF THE EMPLOYEES' RETIREMENT SYSTEM OF ALABAMA

TOTAL - ALL GROUPS

	SEPTEMBER 30, 2022
<u>ASSETS</u>	
Actuarial Value of Assets	\$ 14,504,813,053
Present value of future members' contributions to the Annuity Savings Fund	\$ 2,096,328,500
Present value of future employer contributions to the Pension Accumulation Fund	
Normal contributions	\$ 1,010,058,954
Unfunded accrued liability contributions	<u>7,591,123,660</u>
Total prospective employer contributions	\$ 8,601,182,614
Total Assets	<u>\$ 25,202,324,167</u>
<u>LIABILITIES</u>	
Present value of benefits payable on account of retired members, beneficiaries of deceased members now drawing retirement allowances, and DROP participants	
Service Retirements	\$ 11,150,159,846
Disability Retirements	556,277,681
Beneficiaries of Deceased Members	515,370,784
DROP Participant Accounts	<u>43,899,200</u>
Total	\$ 12,265,707,511
Inactive Members	\$ 403,119,726
Inactive T-section accounts	\$ 22,225,688
Present value of prospective benefits payable on account of present active members:	
Service retirement allowances	\$ 11,026,159,425
Disability retirement allowances	557,132,129
Death Benefits	107,705,052
Termination Benefits	<u>820,274,636</u>
Total	\$ 12,511,271,242
Total Liabilities	<u>\$ 25,202,324,167</u>





Schedule A: Valuation Balance Sheet & Solvency Test

SOLVENCY TEST (\$1000's)

Valuation Date	Aggregate Accrued Liabilities For			Reported Assets	Portion of Accrued Liabilities Covered by Reported Asset		
	(1) Active Member Contributions	(2) Retirants and Beneficiaries	(3) Active Members (Employer Financed Portion)		(1)	(2)	(3)
9/30/2022	\$3,406,262	\$12,265,708	\$6,423,967	\$14,504,813	100%	90%	0%
9/30/2021 ^{1,2,3}	3,292,498	11,794,825	6,017,619	14,291,093	100	93	0
9/30/2020 ²	3,207,392	10,984,539	5,594,541	13,491,176	100	94	0
9/30/2019	3,038,594	10,300,063	5,204,885	12,645,789	100	93	0
9/30/2018 ¹	2,922,432	9,944,503	4,962,800	12,240,597	100	93	0
9/30/2017 ¹	2,817,368	9,567,278	4,866,189	11,690,952	100	93	0

¹ Reflects changes in actuarial assumptions and methods.

² Reflects impact of Act 2019-132.

³ Reflects impact of Act 2022-351 and Act 2022-184.





Schedule B: Actuarial Value of Assets

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS AS OF SEPTEMBER 30, 2022 STATE EMPLOYEES

(1) Actuarial Value of Assets on September 30, 2021	
a. Actuarial Value on September 30, 2021	\$5,294,885,093
b. Adjustment	83,270
c. Adjusted Actuarial Value on September 30, 2021	<u>\$5,294,968,363</u>
(2) Market Value of Assets on September 30, 2022	\$4,682,982,735
(3) Market Value of Assets on September 30, 2021	
a. Market Value on September 30, 2021	\$5,714,042,720
b. Adjustment	90,350
c. Adjusted Market Value on September 30, 2021	<u>\$5,714,133,070</u>
(4) Cash Flow	
a. Contributions	\$319,008,197
b. Benefit Payments and DROP Disbursements	(606,983,938)
c. Refunds to Members and Employers	(19,115,388)
d. Transfers to Expense Fund - Interest Forfeitures	(3,692,235)
e. Transfers to/from Police/Locals	(1,693,432)
f. Investment Expenses	<u>(3,545,577)</u>
g. Net	<u>(\$316,022,373)</u>
(5) Investment Income	
a. Market total: (2) – (3)c – (4)g	(\$715,127,962)
b. Assumed Rate	7.45%
c. Amount for Immediate Recognition	
[(3)c x (5)b] + [(4)a + (4)b + (4)c + (4)d + (4)e] * (5)b * 0.5) - (4)f	\$417,608,730
d. Amount for Phased-in Recognition (5)a – (5)c	(\$1,132,736,692)
(6) Phased-In Recognition of Investment Income	
a. Current Year: 0.20*(5)d	(\$226,547,338)
b. First Prior Year	140,437,302
c. Second Prior Year	(18,733,249)
d. Third Prior Year	(50,653,722)
e. Fourth Prior Year	15,007,910
f. Total Recognized Investment Gain	<u>(\$140,489,097)</u>
(7) Actuarial Value of Assets on September 30, 2022:	
(1)c + (4)g + (5)c + (6)f	\$5,256,065,623





Schedule B: Actuarial Value of Assets

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS AS OF SEPTEMBER 30, 2022 STATE POLICEMEN

(1) Actuarial Value of Assets on September 30, 2021	
a. Actuarial Value on September 30, 2021	\$380,495,711
b. Adjustment	0
c. Adjusted Actuarial Value on September 30, 2021	\$380,495,711
(2) Market Value of Assets on September 30, 2022	\$338,355,676
(3) Market Value of Assets on September 30, 2021	
a. Market Value on September 30, 2021	\$410,079,481
b. Adjustment	0
c. Adjusted Market Value on September 30, 2021	\$410,079,481
(4) Cash Flow	
a. Contributions	\$30,625,405
b. Benefit Payments and DROP Disbursements	(49,769,348)
c. Refunds to Members and Employers	(925,831)
d. Transfers to Expense Fund - Interest Forfeitures	0
e. Transfers to/from Police/Locals	(526,387)
f. Investment Expenses	0
g. Net	(\$20,596,161)
(5) Investment Income	
a. Market total: (2) – (3)c – (4)g	(\$51,127,644)
b. Assumed Rate	7.45%
c. Amount for Immediate Recognition	
$[(3)c \times (5)b] + [(4)a + (4)b + (4)c + (4)d + (4)e] \times (5)b \times 0.5 - (4)f$	\$29,783,714
d. Amount for Phased-in Recognition (5)a – (5)c	(\$80,911,358)
(6) Phased-In Recognition of Investment Income	
a. Current Year: $0.20 \times (5)d$	(\$16,182,272)
b. First Prior Year	9,909,724
c. Second Prior Year	(1,334,858)
d. Third Prior Year	(3,524,396)
e. Fourth Prior Year	1,002,248
f. Total Recognized Investment Gain	(\$10,129,554)
(7) Actuarial Value of Assets on September 30, 2022:	
(1)c + (4)g + (5)c + (6)f	\$379,553,710





Schedule B: Actuarial Value of Assets

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS AS OF SEPTEMBER 30, 2022 LOCAL EMPLOYEES

(1) Actuarial Value of Assets on September 30, 2021	
a. Actuarial Value on September 30, 2021	\$8,615,712,374
b. Adjustment	<u>(83,270)</u>
c. Adjusted Actuarial Value on September 30, 2021	\$8,615,629,104
(2) Market Value of Assets on September 30, 2022	\$7,917,735,508
(3) Market Value of Assets on September 30, 2021	
a. Market Value on September 30, 2021	\$9,293,003,400
b. Adjustment	<u>(90,347)</u>
c. Adjusted Market Value on September 30, 2021	\$9,292,913,053
(4) Cash Flow	
a. Contributions	\$506,447,480
b. Benefit Payments and DROP Disbursements	(667,078,258)
c. Refunds to Members and Employers	(41,105,466)
d. Transfers to Expense Fund - Interest Forfeitures	0
e. Transfers to/from Police/Locals	2,219,819
f. Investment Expenses	<u>0</u>
g. Net	(\$199,516,425)
(5) Investment Income	
a. Market total: (2) – (3)c – (4)g	(\$1,175,661,120)
b. Assumed Rate	7.45%
c. Amount for Immediate Recognition	
$[(3)c \times (5)b] + \{[(4)a + (4)b + (4)c + (4)d + (4)e] \times (5)b \times 0.5\} - (4)f$	\$684,890,036
d. Adjustment for Employer Lump Sums	(\$32,706)
e. Adjusted Amount for Immediate Recognition (5)c + (5)d	\$684,857,330
f. Amount for Phased-in Recognition (5)a – (5)e	(\$1,860,518,450)
(6) Phased-In Recognition of Investment Income	
a. Current Year: $0.20 \times (5)f$	(\$372,103,690)
b. First Prior Year	223,171,545
c. Second Prior Year	(29,735,042)
d. Third Prior Year	(73,179,710)
e. Fourth Prior Year	<u>20,070,608</u>
f. Total Recognized Investment Gain	(\$231,776,289)
(7) Actuarial Value of Assets on September 30, 2022:	
(1)c + (4)g + (5)e + (6)f	\$8,869,193,720





Schedule B: Actuarial Value of Assets

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS AS OF SEPTEMBER 30, 2022 TOTAL - ALL GROUPS

(1) Actuarial Value of Assets on September 30, 2021	
a. Actuarial Value on September 30, 2021	\$14,291,093,178
b. Adjustment	0
c. Adjusted Actuarial Value on September 30, 2021	<u>\$14,291,093,178</u>
(2) Market Value of Assets on September 30, 2022	\$12,939,073,919
(3) Market Value of Assets on September 30, 2021	
a. Market Value on September 30, 2021	\$15,417,125,601
b. Adjustment	3
c. Adjusted Market Value on September 30, 2021	<u>\$15,417,125,604</u>
(4) Cash Flow	
a. Contributions	\$856,081,082
b. Benefit Payments and DROP Disbursements	(1,323,831,544)
c. Refunds to Members and Employers	(61,146,685)
d. Transfers to Expense Fund - Interest Forfeitures	(3,692,235)
e. Transfers to/from Police/Locals	0
f. Investment Expenses	<u>(3,545,577)</u>
g. Net	<u>(\$536,134,959)</u>
(5) Investment Income	
a. Market total: (2) – (3)c – (4)g	(\$1,941,916,726)
b. Assumed Rate	7.45%
c. Amount for Immediate Recognition	
$[(3)c \times (5)b] + [(4)a + (4)b + (4)c + (4)d + (4)e] * (5)b * 0.5 - (4)f$	\$1,132,282,480
d. Adjustment for Employer Lump Sums	(\$32,706)
e. Adjusted Amount for Immediate Recognition (5)c + (5)d	\$1,132,249,774
f. Amount for Phased-in Recognition (5)a – (5)e	<u>(\$3,074,166,500)</u>
(6) Phased-In Recognition of Investment Income	
a. Current Year: $0.20 * (5)f$	(\$614,833,300)
b. First Prior Year	373,518,571
c. Second Prior Year	(49,803,149)
d. Third Prior Year	(127,357,828)
e. Fourth Prior Year	36,080,766
f. Total Recognized Investment Gain	<u>(\$382,394,940)</u>
(7) Actuarial Value of Assets on September 30, 2022:	
(1)c + (4)g + (5)e + (6)f	\$14,504,813,053





Schedule B: Actuarial Value of Assets

DEVELOPMENT OF THE ACTUARIAL VALUE OF ASSETS AS OF SEPTEMBER 30, 2022

Date	Investment Gain/(Loss)	Amount Recognized	Remaining Balance as of 9/30/2022
9/30/2018	\$180,403,814	\$180,403,814	\$0
9/30/2019	(636,789,142)	(509,431,312)	(127,357,830)
9/30/2020	(249,015,747)	(149,409,447)	(99,606,300)
9/30/2021	1,867,592,852	747,037,142	1,120,555,710
9/30/2022	(3,074,166,500)	(614,833,300)	(2,459,333,200)





Schedule C: Summary of Receipts & Disbursements

SUMMARY OF RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDING SEPTEMBER 30, 2022

Receipts for the Period

Contributions:	
Members	\$310,158,803
Employers	545,974,851
Other	165,000
	<hr/>
Total	\$856,298,654
Investment Income	<u>(\$1,941,916,726)</u>
TOTAL	<u>(\$1,085,618,072)</u>

Disbursements for the Period

Benefit Payments	(\$1,311,229,490)
Refunds to Members	(61,311,685)
DROP Distributions	(12,602,054)
Miscellaneous:	
Transfers to Plant Fund	\$0
Transfers to Expense Fund-Interest Forfeitures	(3,692,235)
Transfers to Expense Fund-Investment Expenses	(3,545,577)
Transfers to Pre-retirement Death Benefit Fund	0
Unit Withdrawal	(52,572)
	<hr/>
TOTAL	<u>(7,290,384)</u>
TOTAL	<u>(\$1,392,433,613)</u>

Excess of Receipts Over Disbursements (\$2,478,051,685)

Reconciliation of Asset Balances

Market Value of Assets as of September 30, 2021	\$15,417,125,601
Adjustment	\$3
Excess of Receipts Over Disbursements	<u>(\$2,478,051,685)</u>
Market Value of Assets as of September 30, 2022	<u>\$12,939,073,919</u>





Schedule D: Outline of Actuarial Assumptions & Methods

The assumptions and methods used in the valuation were selected based on the actuarial experience study prepared as of September 30, 2020, adopted by the Board on September 14, 2021.

INVESTMENT RATE OF RETURN: 7.45% per annum, compounded annually, including price inflation at 2.50%.

SALARY INCREASES: Representative values of the assumed annual rates of future salary increases are as follows and include wage inflation at 2.75% per annum:

STATE AND LOCAL EMPLOYEES

Service	Annual Rate *
0	6.00 %
1-5	4.25
6-10	4.00
11-15	3.75
16-19	3.50
20 & Over	3.25

STATE POLICEMEN

Service	Annual Rate *
0-3	7.75 %
4-5	7.50
6	6.25
7-10	5.50
11-14	5.25
15-17	4.75
18-19	4.50
20 & Over	4.00

** Includes wage inflation at 2.75% per annum.*





Schedule D: Outline of Actuarial Assumptions & Methods

SEPARATIONS FROM ACTIVE SERVICE- STATE AND LOCAL EMPLOYEES

TERMINATION: Representative values of the assumed annual rates of withdrawal are shown in the following tables:

Years of Service	Annual Rate of Withdrawal*	
	Non-FLC Members	FLC Members
0-1	20.00%	16.50%
2	16.75	12.00
3	14.00	11.50
4	13.00	11.00
5	7.50	6.50
6	6.75	6.25
7	6.50	6.00
8	5.75	5.40
9	5.25	5.00
10-12	3.50	3.00
13-14	3.50	2.75
15	3.00	2.25
16-18	2.50	2.00
19	2.00	1.50
20+	1.50	1.50

There are no withdrawal decrements after eligibility for service retirement.

* For local employers with fewer than 25 employees the rates are multiplied by 50%.





Schedule D: Outline of Actuarial Assumptions & Methods

SERVICE RETIREMENT: The assumed annual rates of service retirement are as follows:

REGULAR MEMBERS

Age	Annual Rate ¹			
	TIER I ²		TIER II	
	1 ST Eligible	Subsequent	1 ST Eligible	Subsequent
49 & Under	16.50%	10.50%	2.50%	2.50%
50 to 54	20.00	10.50	2.50	2.50
55 to 56	20.00	10.50	10.00	10.00
57	20.00	10.50	20.00	20.00
58	25.00	12.50	20.00	20.00
59	23.00	12.50	20.00	20.00
60	12.00	15.00	50.00	50.00
61	13.00	12.00	50.00	50.00
62	23.00	23.00	50.00	50.00
63	23.00	20.00	23.00	20.00
64	23.00	17.00	23.00	17.00
65	32.00	25.00	32.00	25.00
66	35.00	28.50	35.00	28.50
67	35.00	24.00	35.00	24.00
68 to 79	35.00	21.00	35.00	21.00
80 & Above	100.00	100.00	100.00	100.00

¹For local employers with fewer than 25 employees we assume that all members retire upon first eligibility for a service retirement benefit.

²25% are assumed to retire at age 60 with 25 years of service.

FLC MEMBERS

Age	Annual Rate ¹			
	TIER I ²		TIER II	
	1 ST Eligible	Subsequent	1 ST Eligible	Subsequent
48 & Under 49	35.00%	22.00%	2.50%	2.50%
50 to 51	35.00	22.00	10.00	10.00
52 to 55	35.00	22.00	10.00	10.00
56 to 59	35.00	22.00	20.00	20.00
60	35.00	18.00	20.00	20.00
61	40.00	18.00	15.00	15.00
62	17.00	21.00	17.00	17.00
63	40.00	18.50	40.00	18.50
64	40.00	30.00	40.00	30.00
65	40.00	25.00	40.00	25.00
66	40.00	22.00	40.00	22.00
67-69	40.00	27.00	40.00	27.00
70 to 74	40.00	38.00	40.00	38.00
75 & Above	40.00	30.00	40.00	30.00
	60.00	30.00	60.00	30.00
	100.00	100.00	100.00	100.00

¹For local employers with fewer than 25 employees we assume that all members retire upon first eligibility for a service retirement benefit.

²50% are assumed to retire at age 60 with 25 years of service.





Schedule D: Outline of Actuarial Assumptions & Methods

RATES OF DEATH: Representative values of the assumed annual rates of death are as follows:

Age	Annual Rate of Death*			
	Non FLC State & Local		FLC State & Local	
	Male	Female	Male	Female
20	0.040%	0.014%	0.042%	0.016%
25	0.040	0.011	0.049	0.025
30	0.050	0.017	0.054	0.034
35	0.065	0.027	0.060	0.046
40	0.089	0.043	0.074	0.062
45	0.132	0.066	0.101	0.085
50	0.201	0.099	0.147	0.115
55	0.297	0.145	0.216	0.157
60	0.432	0.218	0.323	0.213
65	0.631	0.344	0.499	0.290
69	0.866	0.512	0.793	0.466

*Base mortality rates as of 2010 before application of the improvement scale

RATES OF DISABILITY: Representative values of the assumed annual rates of disability are as follows:

STATE EMPLOYEES

Age	Annual Rate of Disability*				
	Tier I			Tier II	
	Service < 25		Service >=25	Male	Female
	Male	Female			
20	0.014%	0.013%		0.014%	0.013%
25	0.082	0.075		0.082	0.075
30	0.150	0.138		0.150	0.138
35	0.180	0.200		0.180	0.200
40	0.350	0.300		0.350	0.300
45	0.650	0.500	0.250%	0.650	0.500
50	1.000	0.800	0.250	1.000	0.800
55	1.350	1.100	0.250	1.350	1.100
60	1.200	1.450	0.250	1.200	1.450
65	0.600	0.750	0.250	0.600	0.750
69	0.200	0.270		0.200	0.270





Schedule D: Outline of Actuarial Assumptions & Methods

LOCAL EMPLOYEES

Age	Annual Rate of Disability*				
	Tier I			Tier II	
	Service < 25		Service >=25	Male	Female
	Male	Female			
20	0.006%	0.014%		0.006%	0.014%
25	0.033	0.082		0.033	0.082
30	0.060	0.150		0.060	0.150
35	0.120	0.080		0.120	0.080
40	0.290	0.230		0.290	0.230
45	0.470	0.350	0.250%	0.470	0.350
50	0.800	0.600	0.250	0.800	0.600
55	1.300	0.900	0.250	1.300	0.900
60	1.000	0.550	0.250	1.000	0.550
65	0.500	0.160	0.250	0.500	0.160
69	0.100	0.032		0.100	0.032

*There are no disability rates for members with less than 10 years of service.





Schedule D: Outline of Actuarial Assumptions & Methods

STATE POLICE

GROUP 1: MEMBERS HIRED BEFORE JANUARY 1, 2015

Withdrawal		Age	Death		Disability		Retirement		
Years of Service	Rate		Male	Female	Male	Female	10-19	20-24	25+
0	6.00%	20	0.042%	0.016%	0.050%	0.012%			
1-5	6.00	25	0.049	0.025	0.250	0.060			
6-10	1.50	30	0.054	0.034	0.500	0.120			
11-15	1.50	35	0.060	0.046	0.300	0.180			
20+	1.00	40	0.074	0.062	0.200	0.290	5.00%	33.00%	40.00%
		45	0.101	0.085	0.550	0.440	20.00	35.00	40.00
		50	0.147	0.115	0.500	0.500	20.00	35.00	40.00
		55	0.216	0.157			100.00	100.00	33.00
		60	0.323	0.213					35.00
		62	0.383	0.241					35.00
		65	0.499	0.290					100.00

GROUP 2: MEMBERS HIRED AFTER JANUARY 1, 2015

RATES OF WITHDRAWAL

Years of Service	Annual Rate of Withdrawal
0-1	16.50%
2	12.00
3	11.50
4	11.00
5	6.50
6	6.25
7	6.00
8	5.40
9	5.00
10-12	3.00
13-14	2.75
15	2.25
16-18	2.00
19	1.50
20+	1.50

There are no withdrawal decrements after eligibility for service retirement.





Schedule D: Outline of Actuarial Assumptions & Methods

RATES OF SERVICE RETIREMENT

Age	Annual Rate			
	TIER I ¹		TIER II	
	1 ST Eligible	Subsequent	1 ST Eligible	Subsequent
51 & Under	35.00%	22.00%		
52 to 55	35.00	18.00	15.00%	
56 to 59	40.00	18.00	17.00	15.00%
60	17.00	21.00	40.00	17.00
61	40.00	18.50	40.00	18.50
62	40.00	30.00	40.00	30.00
63	40.00	25.00	40.00	25.00
64	40.00	22.00	40.00	22.00
65	40.00	27.00	40.00	27.00
66	40.00	38.00	40.00	38.00
67	40.00	30.00	40.00	30.00
68-69	40.00	30.00	60.00	30.00
70 to 74	60.00	30.00	100.00	30.00
75 & Above	100.00	100.00		100.00

¹ 50% are assumed to retire at age 60 with 25 years of service.

RATES OF DEATH: Representative values of the assumed annual rates of death are as follows:

Age	Annual Rate of Death*	
	Male	Female
20	0.042%	0.016%
25	0.049	0.025
30	0.054	0.034
35	0.060	0.046
40	0.074	0.062
45	0.101	0.085
50	0.147	0.115
55	0.216	0.157
60	0.323	0.213
65	0.499	0.290
69	0.793	0.466

*Base mortality rates as of 2010 before application of the improvement scale





Schedule D: Outline of Actuarial Assumptions & Methods

RATES OF DISABILITY: Representative values of the assumed annual rates of disability are as follows:

Age	Annual Rate of Disability*				
	Tier I			Tier II	
	Service < 25		Service >=25	Male	Female
	Male	Female			
20	0.014%	0.013%		0.014%	0.013%
25	0.082	0.075		0.082	0.075
30	0.150	0.138		0.150	0.138
35	0.180	0.200		0.180	0.200
40	0.350	0.300		0.350	0.300
45	0.650	0.500	0.250%	0.650	0.500
50	1.000	0.800	0.250	1.000	0.800
55	1.350	1.100	0.250	1.350	1.100
60	1.200	1.450	0.250	1.200	1.450
65	0.600	0.750	0.250	0.600	0.750
69	0.200	0.270		0.200	0.270

DEATH AFTER RETIREMENT: Rates of mortality are according to the Pub-2010 Below-Median Tables, projected generationally using the MP-2020 scale, which is adjusted by 66-2/3% beginning with year 2019:

Group	Membership Table	Set Forward (+)/ Setback (-)	Adjustment to Rates
Non FLC Service Retirees	General Healthy Below Median	Male: +2, Female: +2	Male: 90% ages < 65, 96% ages >= 65 Female: 96% all ages
FLC/State Police Service Retirees	Public Safety Healthy Below Median	Male: +1, Female: none	None
Beneficiaries	Contingent Survivor Below Median	Male: +2, Female: +2	None
Non-FLC Disabled Retirees	General Disability	Male: +7, Female: +3	None
FLC/State Police Disabled Retirees	Public Safety Disability	Male: +7, Female: none	None





Schedule D: Outline of Actuarial Assumptions & Methods

DEATH IN ACTIVE SERVICE BENEFIT: For those eligible for service retirement who die in active service, it is assumed that 70% of beneficiaries will elect the lump sum death benefit, 20% will elect the Option 2 allowance, and 10% will elect the Option 3 allowance.

BENEFITS PAYABLE UPON SEPARATION FROM SERVICE: For active members who separate from service prior to eligibility for a service retirement allowance, the liability is assumed to be the greater of the value of the refund of contributions and the value of the deferred annuity.

UNUSED SICK LEAVE: 1.00% load on service retirement liabilities for active members (No load for Tier II members).

PERCENT MARRIED: 100% of employees are assumed to be married, with the wife 3 years younger than the husband.

ACTUARIAL METHOD: Individual entry age normal cost method. Actuarial gains and losses are reflected in the unfunded actuarial accrued liability.

ASSET METHOD: Actuarial value, as developed in Schedule B. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between market value and expected market value.

LIABILITY FOR CURRENT INACTIVE MEMBERS: Member Contribution Balance is multiplied by a factor of 3.0 for vested local employees with incomplete data and by a factor of 1.0 for all non-vested inactive members.

LIABILITY FOR POST-DROP ACTIVE MEMBERS: Members are assumed to retire immediately and receive their accrued benefit.

COLA: No future ad hoc cost of living adjustments (COLAs) are assumed.

FUTURE SERVICE CREDIT: One year of creditable service per year of employment.





Schedule E: Actuarial Cost Method

1. The valuation is prepared on the projected benefit basis, which is used to determine the present value of each member's expected benefit payable at retirement or death. The calculations are based on the member's age, years of service, sex, compensation, expected future salary increases, and an assumed future interest earnings rate (currently 7.45%). The calculations consider the probability of a member's death or termination of employment prior to becoming eligible for a benefit and the probability of the member terminating with a service, disability, or survivor's benefit. The present value of the expected benefits payable to active members is added to the present value of the expected future payments to retired members and beneficiaries to obtain the present value of all expected benefits payable to the present group of members and beneficiaries.
2. The employer contributions required to support the benefits of the System are determined following a level funding approach, and consist of a normal contribution and an accrued liability contribution.
3. The normal contribution is determined using the "individual entry age normal" method. Under this method, a calculation is made to determine the uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.
4. The unfunded accrued liability is determined by subtracting the current assets and the present value of prospective employer normal contributions and member contributions from the present value of expected benefits to be paid from the System. The accrued liability contribution amortizes the balance of the unfunded accrued liability over a period of years from the valuation date.





Schedule F: Board Funding Policy

FUNDING POLICY OF THE EMPLOYEES' RETIREMENT SYSTEM BOARD OF CONTROL

Effective 9/30/2021

The purpose of the funding policy is to state the overall funding objectives for the Employees' Retirement System of Alabama (System), the benchmarks that will be used to measure progress in achieving those goals, and the methods and assumptions that will be employed to develop the benchmarks.

The Board's funding policy applies to all plans administered by the Board of Control. The funding policy reflects the Board's long-term strategy for stability in funding of the plans.

I. Funding Objectives

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

- To maintain an increasing funded ratio (ratio of system actuarial value of assets to actuarial accrued liabilities) that reflects a trend of improved actuarial condition. The long-term objective is to attain a funded ratio which is consistent with the fiscal health and long-term stability of the System.
- To maintain adequate asset levels to finance the benefits promised to members and monitor the future demands for liquidity.
- To develop a pattern of contribution rates expressed as a percentage of member payroll or as a dollar amount for employers with no active members as measured by valuations prepared in accordance with applicable State laws and the principles of practice prescribed by the Actuarial Standards Board. In no event will the employer contribution rate be negative.
- To provide intergenerational equity for taxpayers with respect to System costs.





Schedule F: Board Funding Policy

II. Benchmarks

To track progress in achieving the previously outlined funding objectives, the following benchmarks will be measured annually as of the valuation date. The valuation date is the date that the annual actuarial valuation of the System's assets and liabilities is prepared. This date is currently September 30th each year with due recognition that a single year's results may not be indicative of long-term trends:

- **Funded ratio** – The funded ratio, defined as the actuarial value of assets divided by the actuarial accrued liability, should increase over time, before adjustments for changes in benefits, actuarial methods, and/or actuarial assumptions.
- **Unfunded Actuarial Accrued Liability (UAAL) for State Employees and State Police**
 - **Initial Total UAAL** - The initial total UAAL established as of the initial valuation date (September 30, 2021) for which this funding policy is adopted shall be amortized over a closed period. (A closed amortization period is one which is calculated over a fixed period and at the end of that period, the amount is fully amortized). All gains and losses occurring after the initial valuation date and before September 30, 2028 for State Employees, and September 30, 2021 for State Police, with the exception of those due to benefit improvements, shall be included in the remaining initial total UAAL each year and amortized over the remaining closed period.
 - **New Incremental UAAL** - Each valuation after the initial valuation date will produce a New Incremental UAAL consisting of all benefit changes that have occurred since the previous valuation. Each valuation beginning with the September 30, 2028 valuation for State Employees and the September 30, 2022 valuation for State Police, will produce a New Incremental UAAL consisting of all assumption and method changes and experience gains and/or losses that have occurred since the previous valuation
- **UAAL Amortization Period and Contribution Rates for State Employees and State Police**
 - The Initial Total UAAL will be amortized over a 27-year closed period for State Employees and a 21-year closed period for State Police.
 - Except as noted later, each New Incremental UAAL shall be amortized over a closed 20-year period.
 - Incremental UAAL resulting from plan changes that grant benefit improvements shall be amortized over a period not to exceed 15 years.
 - Employer Normal Contribution Rate – the contribution rate determined as of the valuation





Schedule F: Board Funding Policy

date each year based on the provisions of Alabama Code Section 36-27-24.

- In each valuation subsequent to the adoption of this funding policy, the required employer contribution rate will be determined by the summation of the employer Normal Contribution Rate, a contribution rate for administrative expenses, a contribution rate for the pre-retirement death benefit fund, the individual amortization rate for each of the New Incremental UAAL bases, and the amortization rate for the remaining initial total UAAL.

- **UAAL and UAAL Amortization Period and Contribution Rates for Local Employers**

Local employers have assumptions and funding appropriate for their situations as deemed by Actuary and staff

- **UAAL Amortization Period for Employers joining the System after the Implementation of this Funding Policy**

- For Employers joining the System after the implementation of this Funding Policy, the employer contribution rate shall be computed as the sum of the employer Normal Contribution rate, a contribution rate for administrative expenses, a contribution rate for the pre-retirement death benefit fund and the initial UAAL contribution rate. The initial UAAL contribution rate shall be determined by amortizing the initial UAAL over a closed period equal to the expected future working lifetime of the active membership. This initial amortization period shall not be less than 10 years nor greater than 20 years.

- **Special Consideration**--If the resulting contribution rate will not support the cash flow and projected benefit payment needs of a particular unit or employer, then the RSA staff may approve a more aggressive funding policy for these units or employers. In addition, If the resulting contribution rate is determined to be in excess of the cash flow and projected benefit payment needs of a particular unit or employer, then the RSA staff may approve a less aggressive funding policy for these units or employers.

III. Methods and Assumptions

The actuarial funding method used to develop the benchmarks will be the Entry Age Normal (EAN) actuarial cost method. The actuarial methods and assumptions used will be those last adopted by the Board based upon the advice and recommendation of the actuary. The actuary shall conduct an investigation into the system's experience at least every five years and utilize the results of the investigation to form the basis for those recommendations.





Schedule F: Board Funding Policy

IV. Funding Policy Progress

The Board will periodically have projections of funded status performed to assess the current and expected future progress towards the overall funding goals of the System.





Schedule G: Amortization of Bases

AMORTIZATION SCHEDULE FOR THE REMAINING INITIAL TOTAL UAL ON SEPTEMBER 30, 2022

STATE EMPLOYEES

<u>Valuation Date</u>	<u>Balance of Initial UAL as of 9/30/2022</u>	<u>Amortization Period</u>	<u>Annual Amortization Payment</u>
9/30/2021	\$3,235,144,946	27	\$216,878,236
9/30/2022	3,584,234,913	26	245,059,718
9/30/2023	3,606,200,696	25	251,798,860
9/30/2024	3,623,063,788	24	258,723,329
9/30/2025	3,634,258,711	23	265,838,220
9/30/2026	3,639,172,765	22	273,148,771
9/30/2027	3,637,142,365	21	280,660,363
9/30/2028	3,627,449,108	20	288,378,523
9/30/2029	3,609,315,544	19	296,308,932
9/30/2030	3,581,900,620	18	304,457,428
9/30/2031	3,544,294,788	17	312,830,007
9/30/2032	3,495,514,743	16	321,432,832
9/30/2033	3,434,497,759	15	330,272,235
9/30/2034	3,360,095,607	14	339,354,721
9/30/2035	3,271,068,009	13	348,686,976
9/30/2036	3,166,075,600	12	358,275,868
9/30/2037	3,043,672,364	11	368,128,454
9/30/2038	2,902,297,501	10	378,251,987
9/30/2039	2,740,266,678	9	388,653,917
9/30/2040	2,555,762,629	8	399,341,899
9/30/2041	2,346,825,046	7	410,323,802
9/30/2042	2,111,339,710	6	421,607,706
9/30/2043	1,847,026,812	5	433,201,918
9/30/2044	1,551,428,391	4	445,114,971
9/30/2045	1,221,894,835	3	457,355,633
9/30/2046	855,570,367	2	469,932,912
9/30/2047	449,377,447	1	482,856,067
9/30/2048	0	0	0





Schedule G: Amortization of Bases

AMORTIZATION SCHEDULE FOR THE REMAINING INITIAL TOTAL UAL ON SEPTEMBER 30, 2022

STATE POLICE

<u>Valuation Date</u>	<u>Balance of Initial UAL as of 9/30/2022</u>	<u>Amortization Period</u>	<u>Annual Amortization Payment</u>
9/30/2021	\$309,010,437	21	\$23,844,813
9/30/2022	308,186,902	20	24,500,546
9/30/2023	306,646,280	19	25,174,311
9/30/2024	304,317,117	18	25,866,604
9/30/2025	301,122,138	17	26,577,936
9/30/2026	296,977,801	16	27,308,829
9/30/2027	291,793,818	15	28,059,822
9/30/2028	285,472,635	14	28,831,467
9/30/2029	277,908,879	13	29,624,333
9/30/2030	268,988,757	12	30,439,002
9/30/2031	258,589,417	11	31,276,074
9/30/2032	246,578,255	10	32,136,166
9/30/2033	232,812,169	9	33,019,911
9/30/2034	217,136,765	8	33,927,958
9/30/2035	199,385,496	7	34,860,977
9/30/2036	179,378,738	6	35,819,654
9/30/2037	156,922,800	5	36,804,695
9/30/2038	131,808,854	4	37,816,824
9/30/2039	103,811,790	3	38,856,787
9/30/2040	72,688,981	2	39,925,348
9/30/2041	38,178,962	1	41,023,295
9/30/2042	0	0	0
9/30/2043	0	0	0
9/30/2044	0	0	0
9/30/2045	0	0	0
9/30/2046	0	0	0
9/30/2047	0	0	0
9/30/2048	0	0	0





Schedule G: Amortization of Bases

AMORTIZATION SCHEDULE FOR THE NEW INCREMENTAL UAL ON SEPTEMBER 30, 2022

STATE POLICE

<u>Valuation Date</u>	<u>Balance of Incremental UAAL as of 9/30/2022</u>	<u>Amortization Period</u>	<u>Annual Amortization Payment</u>
9/30/2022	27,489,656	20	2,185,400
9/30/2023	27,352,236	19	2,245,498
9/30/2024	27,144,479	18	2,307,250
9/30/2025	26,859,493	17	2,370,699
9/30/2026	26,489,827	16	2,435,893
9/30/2027	26,027,426	15	2,502,880
9/30/2028	25,463,590	14	2,571,710
9/30/2029	24,788,918	13	2,642,431
9/30/2030	23,993,262	12	2,715,098
9/30/2031	23,065,662	11	2,789,764
9/30/2032	21,994,289	10	2,866,482
9/30/2033	20,766,382	9	2,945,310
9/30/2034	19,368,167	8	3,026,307
9/30/2035	17,784,788	7	3,109,530
9/30/2036	16,000,225	6	3,195,042
9/30/2037	13,997,200	5	3,282,905
9/30/2038	11,757,086	4	3,373,185
9/30/2039	9,259,804	3	3,465,947
9/30/2040	6,483,713	2	3,561,262
9/30/2041	3,405,488	1	3,659,197
9/30/2042	0	0	0





Schedule G: Amortization of Bases

AMORTIZATION SCHEDULE FOR BASE CLOSED ON SEPTEMBER 30, 2022 DUE TO BENEFIT IMPROVEMENTS

STATE EMPLOYEES

<u>Valuation Date</u>	<u>Balance of UAAL Due to Benefit Improvements as of 9/30/2022</u>	<u>Amortization Period</u>	<u>Annual Amortization Payment</u>
9/30/2021	\$10,513,204	15	\$1,010,983
9/30/2022	10,285,455	14	1,038,785
9/30/2023	10,012,936	13	1,067,352
9/30/2024	9,691,548	12	1,096,704
9/30/2025	9,316,864	11	1,126,863
9/30/2026	8,884,107	10	1,157,852
9/30/2027	8,388,121	9	1,189,693
9/30/2028	7,823,343	8	1,222,410
9/30/2029	7,183,772	7	1,256,026
9/30/2030	6,462,937	6	1,290,566
9/30/2031	5,653,860	5	1,326,057
9/30/2032	4,749,016	4	1,362,524
9/30/2033	3,740,294	3	1,399,993
9/30/2034	2,618,953	2	1,438,493
9/30/2035	1,375,572	1	1,478,052
9/30/2036	0	0	0





Schedule G: Amortization of Bases

AMORTIZATION SCHEDULE FOR BASE CLOSED ON SEPTEMBER 30, 2022 DUE TO BENEFIT IMPROVEMENTS

STATE POLICE

<u>Valuation Date</u>	<u>Balance of UAAL Due to Benefit Improvements as of 9/30/2022</u>	<u>Amortization Period</u>	<u>Annual Amortization Payment</u>
9/30/2021	\$264,104	15	\$25,397
9/30/2022	258,383	14	26,096
9/30/2023	251,537	13	26,813
9/30/2024	243,464	12	27,551
9/30/2025	234,051	11	28,308
9/30/2026	223,180	10	29,087
9/30/2027	210,720	9	29,887
9/30/2028	196,532	8	30,708
9/30/2029	180,466	7	31,553
9/30/2030	162,358	6	32,421
9/30/2031	142,033	5	33,312
9/30/2032	119,302	4	34,229
9/30/2033	93,961	3	35,170
9/30/2034	65,791	2	36,137
9/30/2035	34,555	1	37,129
9/30/2036	0	0	0





Schedule G: Amortization of Bases

AMORTIZATION SCHEDULE FOR TOTAL UAAL AS OF SEPTEMBER 30, 2022

STATE EMPLOYEES

<u>Year</u>	<u>Projected UAAL</u>	<u>Payment for year Beginning September 30,</u>
2022	\$3,594,520,368	\$217,889,219
2023	3,616,213,632	252,866,212
2024	3,632,755,336	259,820,033
2025	3,643,575,575	266,965,083
2026	3,648,056,872	274,306,623
2027	3,645,530,486	281,850,056
2028	3,635,272,451	289,600,933
2029	3,616,499,316	297,564,958
2030	3,588,363,557	305,747,994
2031	3,549,948,648	314,156,064
2032	3,500,263,759	322,795,356
2033	3,438,238,053	331,672,228
2034	3,362,714,560	340,793,214
2035	3,272,443,581	350,165,028
2036	3,166,075,600	358,275,868
2037	3,043,672,364	368,128,454
2038	2,902,297,501	378,251,987
2039	2,740,266,678	388,653,917
2040	2,555,762,629	399,341,899
2041	2,346,825,046	410,323,802
2042	2,111,339,710	421,607,706
2043	1,847,026,812	433,201,918
2044	1,551,428,391	445,114,971
2045	1,221,894,835	457,355,633
2046	855,570,367	469,932,912
2047	449,377,447	482,856,067
2048	0	0

STATE POLICE

<u>Year</u>	<u>Projected UAAL</u>	<u>Payment for year Beginning September 30,</u>
2022	\$335,934,941	\$23,870,210
2023	334,250,053	27,446,622
2024	331,705,060	28,201,405
2025	328,215,682	28,976,943
2026	323,690,808	29,773,809
2027	318,031,964	30,592,589
2028	311,132,757	31,433,885
2029	302,878,263	32,298,317
2030	293,144,377	33,186,521
2031	281,797,112	34,099,150
2032	268,691,846	35,036,877
2033	253,672,512	36,000,391
2034	236,570,723	36,990,402
2035	217,204,839	38,007,636
2036	195,378,963	39,014,696
2037	170,920,000	40,087,600
2038	143,565,940	41,190,009
2039	113,071,594	42,322,734
2040	79,172,694	43,486,610
2041	41,584,450	44,682,492
2042	0	0
2043	0	0
2044	0	0
2045	0	0
2046	0	0
2047	0	0
2048	0	0





Schedule H: Summary of Main System Provisions

AS INTERPRETED FOR VALUATION PURPOSES

The Employees' Retirement System of Alabama was established on October 1, 1945. The valuation took into account amendments to the System effective through the valuation date. Act 2019-132 allows local employers that participate in the System to elect to provide Tier I retirement benefits to their Tier II employees, upon approval by the Board of Control, until May 8, 2021, and will be reflected in the valuations prepared for the individual employers. Act 2022-138 removes the deadline for this election effective April 13, 2022. There is a new tier (Tier II) of benefits for all members initially joining the System on and after January 1, 2013. Act 2017-360 revised the definition of “state policemen” to include any employee hired by the Alabama State Law Enforcement Agency after January 1, 2015, who is certified by the Alabama Peace Officers’ Standards and Training Commission and performs law enforcement duties. These members pay the same employee contribution rate and receive the same benefits as certified law enforcement officers (FLC) of other state agencies and local employers. The following summary describes the main benefit and contribution provisions of the System as interpreted for the valuation.

1 – DEFINITIONS

Average Final Compensation – the average compensation of a member for:

- Tier 1 - the 3 highest years in the last 10 years of creditable service
- Tier 2 - the 5 highest years in the last 10 years of creditable service

Membership Service – all creditable service rendered while a member of the Retirement System and for which contributions are made.

Creditable Service – the sum of membership service, prior service, and any other previous service established as creditable in accordance with the provisions of the retirement law.

Annuity – payments for life derived from accumulated contributions of a member.

Pension – payments for life derived from the accumulated contributions of an employer.

Retirement Allowance – the sum of the annuity and pension payments.





Schedule H: Summary of Main System Provisions

2 – BENEFITS

MEMBERS CLASSIFIED AS STATE EMPLOYEES

Service Retirement Allowance

Condition for Allowance

Tier I A retirement allowance is payable upon the request of any member who has completed 25 years of creditable service, (except for employees of local employers who did not elect 25-year retirement), or who has attained age 60 and completed at least 10 years of creditable service.

Tier II A retirement allowance is payable upon the request of any member who has completed 30 years of creditable service or who has attained age 62 and completed at least 10 years of creditable service (age 56 with 10 years of creditable service for a full-time certified firefighter, police officer, or correctional officer).

Amount of Allowance

Tier I Upon service retirement, a member receives a retirement allowance equal to 2.0125% of the member's average final compensation multiplied by the number of years of his creditable service. At retirement, a member receives one additional year of creditable service in determining the retirement allowance for each five years of creditable service as a full-time certified firefighter, police officer, or correctional officer.

Tier II Upon service retirement, a member receives a retirement allowance equal to 1.65% of the member's average final compensation multiplied by the number of years of creditable service. The benefit is capped at 80% of the member's average final compensation. For a member whose age at retirement is less than age 62 (age 56 for a full-time certified firefighter, police officer, or correctional officer), the amount of the allowance will be reduced by 2% for each year that the member's age is less than age 62 (age 56 for a full-time certified firefighter, police officer, or correctional officer).





Schedule H: Summary of Main System Provisions

Disability Retirement Allowance

Condition for Allowance

A disability retirement allowance may be granted to a member who has 10 or more years of creditable service and becomes permanently incapacitated for duty before reaching eligibility for service retirement.

Amount of Allowance

Tier I

Upon retirement for disability, a member receives a retirement allowance equal to 2.0125% of the member's average final compensation multiplied by the number of years of his creditable service. At retirement, a member receives one additional year of creditable service in determining the retirement allowance for each five years of creditable service as a full-time certified firefighter, police officer, or correctional officer.

Tier II

Upon disability retirement, a member receives a retirement allowance equal to 1.65% of the member's average final compensation multiplied by the number of years of creditable service. The benefit is capped at 80% of the member's average final compensation.

Benefits Payable on Separation from Service

Any member who withdraws from service is entitled to receive a return of member contributions with allowable interest. A member who has completed 10 years of creditable service may, after separation from service, continue in the membership of the System and file for service retirement after reaching age 60 (age 62 for Tier II members).

Benefits Payable upon Death in Active Service

In the event of the death of a member eligible for service retirement, the designated beneficiary may elect: (1) to exercise option 2 (spouse) or option 3 (non-spouse beneficiary) as defined below under "Special Privileges at Retirement – All Employees" or (2) to receive a return of member contributions and total interest earned plus a death benefit payable from the preretirement death benefit fund equal to the salary on which the member made retirement contributions for the previous fiscal year (October 1 – September 30).*





Schedule H: Summary of Main System Provisions

In the event of the death of a member with more than one year of creditable service who is not eligible for retirement, the designated beneficiary shall receive a return of member contributions and total interest earned. Also, the designated beneficiary shall receive an additional death benefit payable from the preretirement death benefit fund equal to the salary on which their retirement contributions were made for the previous fiscal year (October 1 – September 30).*

In the event of a job-related death of a member at any age with less than 1 year of creditable service, the designated beneficiary shall receive the return of member contributions and total earned interest plus a death benefit payable from the pre-retirement death benefit fund equal to the annual earnable compensation of the member at the time death occurs.*

In the event of a non-job-related death of a member with less than 1 year of service, the beneficiary shall receive the return of member contributions and total interest earned plus a matching death benefit which is limited to a maximum of \$5,000.

* However, if the death occurred more than 180 calendar days after the member's last day in pay status or if the deceased had applied for a refund of contributions or terminated employment, the lump sum will be the same as if the member had less than one year of creditable service and the death was not job-related.

Deferred Retirement Option Plan (DROP)

A member could elect to participate in the Deferred Retirement Option Plan (DROP) upon completion of at least 25 years of service (at least 30 years for employers that did not elect 25 year retirement) of creditable service (excluding sick leave) and attainment of at least 55 years of age. Under the DROP, the member deferred receipt of a retirement allowance and continued employment for a period not to exceed five years, nor to be less than three years. At the end of this period, the member withdrew from active service and received the retirement benefit based on his or her years of service credit at the time of enrollment in the DROP, and also received a payment for the deferred retirement benefits, employee contributions while participating in the DROP, and interest earned on DROP deposits.

The effect of Act 2011-27 was that no new participants were allowed to enter DROP with an effective participation date after June 1, 2011.





Schedule H: Summary of Main System Provisions

Member Contributions

Tier I	<p>Prior to October 1, 2011, regular members contributed 5.0% of salary. Full-time certified police officers, firefighters, and correctional officers, contributed 6.0% of salary. DROP participants continued to contribute during the DROP period, but received a refund of these contributions and regular interest upon retirement.</p> <p>Beginning October 1, 2011, the contribution rates were increased to 7.25% of salary for regular members and 8.25% of salary for full-time certified police officers, firefighters, and correctional officers, for all State employees and for local employees whose employers elect to do so.</p> <p>Beginning October 1, 2012, the contribution rates were increased to 7.50% of salary for regular members and 8.50% of salary for full-time certified police officers, firefighters, and correctional officers, for all State employees and for local employees whose employers elect to do so.</p>
Tier II	<p>Regular members contribute 6% of salary and full-time certified firefighters, police officers, and correctional officers, contribute 7% of salary.</p>
Both	<p>If positive investment performance results in a decrease in the total contribution rate paid by employers and employees participating in the System, the Retirement Systems of Alabama shall first reduce the employee contribution rate.</p> <p>“Regular Interest” is 4% which is the rate adopted by the Board and applied to the balance in each member’s account every year; however, if a member receives a refund of contributions, the interest rate applied to the refund is lower than the 4% regular rate (Based on Section 36-27-16.3(c)(1)).</p>

MEMBERS OF LOCAL EMPLOYERS

Members of local employers generally receive the same benefit structure as State employees, however some benefits must be elected by individual employers. Members whose employers have not yet elected to grant retirement upon completion of 25 years of service must have 30 years of service for retirement before age 60 (For Tier I). These employers have the option of electing 25-year retirement for their Tier I members. Employers may also elect to increase Tier I member contribution rates to 7.5% of payroll for regular members and 8.5% of payroll for FLC members. Employers who have not elected to allow sick leave conversion may still elect to do so. Employers may elect to provide Tier I benefits to their Tier II members, provided the members pay the increased members rates shown above.





Schedule H: Summary of Main System Provisions

Members of the City of Montgomery who elected to remain under the City's retirement plan structure are subject to the conditions and benefit structure of that plan. A brief description of this structure is as follows:

Condition for Allowance

Group I For general municipal employees hired before October 1, 2013, a retirement allowance is payable upon the request of any member who has completed 20 years of creditable service, or who has attained age 65 (25 years or age 62 if hired after October 1, 2005 or elected)

Group II For members of the fire department or police department of the City, a retirement allowance is payable upon the request of any member who has completed 20 years of creditable service or attained age 62 (25 years or age 55 if hired after October 1, 2005, or 25 years or age 55 with 10 years of creditable service if hired after October 1, 2013)

Amount of Allowance

Group I **20-year retirement plan:** Upon service retirement a member receives a retirement allowance equal to 2.0% of the member's average final compensation multiplied by the number of years of his creditable service (up to 20 years), and 1% of the member's average final compensation multiplied by the number of years of his creditable service over 20 years. Maximum benefit is 60% of average final compensation.

25-year retirement plan: Upon service retirement a member receives a retirement allowance equal to 2.0% of the member's average final compensation multiplied by the number of years of his creditable service. Maximum benefit is 100% of average final compensation.

Group II **20-year retirement plan:** Upon service retirement a member receives a retirement allowance equal to 2.5% of the member's average final compensation multiplied by the number of years of his creditable service (up to 20 years), and 1% of the member's average final compensation multiplied by the number of years of his creditable service over 20 years. Maximum benefit is 60% of average final compensation.





Schedule H: Summary of Main System Provisions

25-year retirement plan: Upon service retirement a member receives a retirement allowance equal to 2.5% of the member's average final compensation multiplied by the number of years of his creditable service. Maximum benefit is 100% of average final compensation.

Age 62 retirement plan: Upon service retirement a member receives a retirement allowance equal to 2.5% of the member's average final compensation multiplied by the number of years of his creditable service. Maximum benefit is 100% of average final compensation. Benefit is reduced by early retirement factor (5/9% for each month annuity start date precedes age 62 but not earlier than age 55).

Employee Retention Incentive Program (ERIP)

An employee is eligible to enter the ERIP plan if he or she is an active employee and has at least 20 years of service (25 years for a 25-year retirement plan participant). The participant can effectively elect to retire up to three years prior to termination, and receive the payments that would have been made as a lump sum (accumulated with 5% interest). Subsequent monthly benefits are based on the benefit used to determine the lump sum.

Preretirement Death Benefits

If the member is eligible for a service retirement, 50% of the accrued benefit, reduced for a 50% joint and survivor annuity. If the member is not eligible for a service retirement benefit, a lump sum of member contributions is payable.

Disability Benefits

If a participant has 10 years of service and becomes permanently disabled he is entitled to immediately receive his monthly accrued benefit, based on his current years of service and current final average earnings.

Separation Benefits

Group I

Return of contributions if less than 10 years of service. If more than 10 years of service, member is entitled to his accrued benefit payable at age 62 (age 65 for 20-year plan).

Group II

Return of contributions if less than 10 years of service. If more than 10 years of service, member is entitled to his accrued benefit payable at age 55 (age 62 for 20-year plan and Age 62 plan).





Schedule H: Summary of Main System Provisions

MEMBERS CLASSIFIED AS STATE POLICEMEN

Service Retirement Allowance

Condition for Allowance

Tier I

Members hired prior to January 1, 2015: A retirement allowance is payable upon the request of any member who has completed 25 years of creditable service or who has attained age 52 and completed at least 10 years of creditable service.

Members hired after January 1, 2015: A retirement allowance is payable upon the request of any member who has completed 25 years of creditable service or who has attained age 60 and completed at least 10 years of creditable service.

Tier II

A retirement allowance is payable upon the request of any member who has completed 30 years of creditable service or who has attained age 56 and completed at least 10 years of creditable service.

Amount of Allowance

Tier I

Members hired prior to January 1, 2015: Upon service retirement a member receives a retirement allowance equal to 2.875% of the member's average final compensation multiplied by the number of years of his creditable service.

A member who has attained 20 or more years of creditable service and retires prior to age 60 is eligible to receive a "bonus service credit" up to 4 years as follows:

- Age 56 or older – bonus service of 4 years reduced by 1 month for each month over the age of 56.
- Age 52 to 56 – bonus service of 4 years.
- Age 52 or less (disability retirement only) – bonus service of 4 years.
- Age 52 or less with 25 or more years of service – bonus service of 4 years.





Schedule H: Summary of Main System Provisions

Members hired after January 1, 2015: Upon service retirement a member receives a retirement allowance equal to 2.0125% of the member's average final compensation multiplied by the number of years of his creditable service. At retirement, a member receives one additional year of creditable service in determining the retirement allowance for each five years of creditable service as an officer.

Tier II

Members hired prior to January 1, 2015: Upon service retirement a member receives a retirement allowance equal to 2.375% of the member's average final compensation multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation.

Members hired after January 1, 2015: Upon service retirement a member receives a retirement allowance equal to 1.65% of the member's average final compensation multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation. For a member whose age at retirement is less than age 56, the amount of the allowance will be reduced by 2% for each year that the member's age is less than age 56.

Disability Retirement Allowance

Condition for Allowance

A disability retirement allowance may be granted to a member who has 10 or more years of creditable service or who becomes disabled as a result of his employment in line of duty without regard to his years of creditable service, and who becomes permanently incapacitated, mentally or physically, for the further performance of duty before reaching the minimum age for service retirement.

Amount of Allowance

Tier I

Members hired prior to January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 2.875% of the member's average final compensation multiplied by the number of years of his creditable service.

Members hired after January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 2.0125% of the member's average final compensation multiplied by the number of years of his creditable service. At retirement, a member receives one additional year of





Schedule H: Summary of Main System Provisions

	<p>creditable service in determining the retirement allowance for each five years of creditable service as a full-time officer.</p>
<p>Tier II</p>	<p>Members hired prior to January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 2.375% of the member's average final compensation multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation.</p>
	<p>Members hired after January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 1.65% of the member's average final compensation multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation.</p>
<p>Benefits Payable on Separation from Service</p>	<p>Any member who withdraws from service is entitled to receive a return of member contributions with allowable interest. A member who has completed 10 years of creditable service may, after separation from service, continue in the membership of the System and file for service retirement after reaching age 52 (age 56 for Tier II members).</p>
<p>Benefits Payable upon Death in Active Service</p>	<p>In the event of the death of a member who is eligible for service retirement, the designated beneficiary may elect: (1) to exercise option 2 (spouse) or option 3 (non-spouse beneficiary) as defined below under "Special Privileges at Retirement – All Employees" or (2) to receive a return of member contributions and total interest earned plus a death benefit payable from the preretirement death benefit fund equal to the salary on which the member made retirement contributions for the previous fiscal year (October 1 – September 30).*</p>
	<p>In the event of the death of a member with more than one year of creditable service who is not eligible for retirement, the designated beneficiary shall receive a return of member contributions and total interest earned. Also, the designated beneficiary shall receive an additional death benefit payable from the preretirement death benefit fund equal to the salary on which their retirement contributions were made for the previous fiscal year (October 1 – September 30).*</p>
	<p>In the event of a job-related death of a member at any age with less than 1 year of creditable service, the designated beneficiary shall receive the return of member contributions and total earned interest plus a death benefit payable from the</p>





Schedule H: Summary of Main System Provisions

preretirement death benefit fund equal to the annual earnable compensation of the member at the time death occurs.*

In the event of a non-job-related death of a member with less than 1 year of creditable service, the beneficiary shall receive the return of member contributions and total interest earned plus a matching death benefit which is limited to a maximum of \$5,000.

- * However, if the death occurred more than 180 calendar days after the member's last day in pay status, or if the deceased had applied for a refund of contributions or terminated employment, the lump sum will be the same as if the member had less than one year of creditable service and the death was not job-related.

Deferred Retirement Option Plan (DROP)

Prior to March 25, 2011, a member could elect to participate in the Deferred Retirement Option Plan (DROP) upon completion of at least 25 years of creditable service (excluding sick leave) and attainment of at least 52 years of age. Under the DROP, the member deferred receipt of a retirement allowance and continued employment for a period not to exceed five years, nor to be less than three years. At the end of this period, the member withdrew from active service and received the retirement benefit based on his or her years of service credit at the time of enrollment in the DROP, and also received a payment for the deferred retirement benefits, employee contributions while participating in the DROP, and interest earned on DROP deposits.

The effect of Act 2011-27 was that no new participants were allowed to enter the DROP with an effective participation date after June 1, 2011.

Member Contributions

Tier I

Members hired prior to January 1, 2015: Each member contributes 10% of salary. DROP participants continued to contribute during the DROP period, but received a refund of these contributions with interest upon retirement.

Members hired after January 1, 2015: Each member contributes 8.5% of salary.

Tier II

Members hired prior to January 1, 2015: Each member contributes 10% of salary. DROP participants continued to contribute during the DROP period, but received a refund of these contributions with interest upon retirement.





Schedule H: Summary of Main System Provisions

Members hired after January 1, 2015: Each member contributes 7% of salary.

3 - SPECIAL PRIVILEGES AT RETIREMENT – ALL MEMBERS

In lieu of the full retirement allowance, any member may, at retirement, elect to receive a reduced retirement allowance equal in value to the full allowance, with the provision that:

Option 1. If the member dies before the annuity payments equal or exceed the present value of the member's annuity at the date of retirement, the balance is paid to a designated beneficiary or to his/her estate, or

Option 2. After the member's death, the member's allowance is continued throughout the life of the designated beneficiary, or

Option 3. After the member's death, one half of the member's allowance is continued throughout the life of the designated beneficiary, or

Option 4. Some other benefit is paid either to the member or to the designated beneficiary provided such benefit, together with the reduced retirement allowance, is of equivalent actuarial value to his retirement allowance and is approved by the Board of Control.

Partial Lump Sum Option Plan (PLOP). For members retiring on or after October 1, 2019, in addition to selecting Options 1, 2, 3, or 4, the member may also elect to receive a one-time lump-sum distribution in addition to the monthly retirement benefit. The PLOP distribution will be made as a single payment at the time the first monthly benefit is paid. Based on the amount of the PLOP and the member's age, the monthly retirement benefit is actuarially reduced.





Schedule I: Schedule of Membership Data

SCHEDULE OF MEMBERSHIP DATA AS OF SEPTEMBER 30, 2022

ACTIVE STATE EMPLOYEES

Attained Age	Completed Years of Service										Total	Payroll
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up		
Under 25	408	334	3								745	\$25,519,930
25 to 29	507	1,250	248								2,005	83,135,901
30 to 34	350	1,116	1,048	162	5						2,681	127,368,573
35 to 39	260	808	911	643	272	5					2,899	153,077,318
40 to 44	240	678	714	589	1,011	253	2				3,487	199,695,085
45 to 49	226	633	625	436	831	757	118	2			3,628	218,814,476
50 to 54	201	579	570	431	655	691	486	131	2		3,746	230,058,124
55 to 59	131	415	527	374	560	529	415	409	91		3,451	211,405,396
60 to 64	82	286	417	290	404	342	238	321	184	34	2,598	161,233,283
65 to 69	24	77	210	124	150	140	82	85	43	45	980	63,039,725
70 & up	12	40	100	79	74	45	30	38	9	9	436	29,034,853
Total	2,441	6,216	5,373	3,128	3,962	2,762	1,371	986	329	88	26,656	\$1,502,382,664

Average Age: 46.15 Average Service: 11.71





Schedule I: Schedule of Membership Data

SCHEDULE OF MEMBERSHIP DATA AS OF SEPTEMBER 30, 2022

ACTIVE STATE POLICE

Attained Age	Completed Years of Service										Total	Payroll
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up		
Under 25		11									11	\$530,553
25 to 29		50	22								72	4,005,190
30 to 34		38	46	17							101	6,006,145
35 to 39		16	13	46	27						102	6,865,087
40 to 44		16	9	25	66	31					147	10,871,741
45 to 49		5	8	12	42	40	23				130	10,678,831
50 to 54		11	9	6	32	33	23	1			115	9,024,503
55 to 59		2	2	7	9	6	3	3	1		33	2,792,068
60 & up			1	4	6		2				13	1,123,862
Total		149	110	117	182	110	51	4	1		724	\$51,897,979

Average Age:41.78 Average Service:13.64





Schedule I: Schedule of Membership Data

SCHEDULE OF MEMBERSHIP DATA AS OF SEPTEMBER 30, 2022

ACTIVE LOCAL EMPLOYEES

Attained Age	Completed Years of Service										Total	Payroll
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up		
Under 25	1,993	1,892	38								3,923	\$131,219,172
25 to 29	1,267	3,115	1,205	18							5,605	230,026,454
30 to 34	1,052	2,483	2,184	775	30						6,524	293,049,468
35 to 39	769	1,799	1,671	1,440	902	15					6,595	328,598,117
40 to 44	642	1,470	1,272	1,078	1,435	669	10	1	2	1	6,580	345,717,082
45 to 49	606	1,287	1,123	947	1,206	1,310	364	7		1	6,851	374,152,909
50 to 54	580	1,298	1,185	960	1,143	1,227	769	189	4	1	7,356	402,359,978
55 to 59	433	1,034	984	878	921	1,043	604	339	95	5	6,336	335,931,425
60 to 64	252	738	785	628	724	686	390	259	140	69	4,671	244,286,247
65 to 69	119	291	405	258	238	202	138	76	51	55	1,833	92,648,380
70 & up	97	248	203	140	110	115	59	41	17	13	1,043	45,653,518
Total	7,810	15,655	11,055	7,122	6,709	5,266	2,334	912	309	145	57,317	\$2,823,642,750

Average Age: 43.96

Average Service: 9.73





Schedule I: Schedule of Membership Data

SCHEDULE OF MEMBERSHIP DATA AS OF SEPTEMBER 30, 2022

NUMBER OF SERVICE RETIREMENTS AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	408	\$ 13,407,463	\$ 32,861
50 – 54	1,688	59,364,144	35,168
55 – 59	3,317	114,486,141	34,515
60 – 64	6,885	201,434,932	29,257
65 – 69	10,838	273,411,394	25,227
70 – 74	10,382	236,043,147	22,736
75 – 79	7,195	150,511,903	20,919
80 – 84	4,072	80,823,234	19,849
85 – 89	2,108	37,807,963	17,935
90 – 94	811	12,818,369	15,806
95 & Over	204	3,034,363	14,874
Total	47,908	\$ 1,183,143,053	\$ 24,696

Average Age: 70.17

*Includes post-DROP members in suspended status who are also active with a second retirement account.





Schedule I: Schedule of Membership Data

NUMBER OF BENEFICIARIES AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	255	\$ 3,082,206	\$ 12,087
50 – 54	139	2,213,009	15,921
55 – 59	213	3,442,904	16,164
60 – 64	376	6,709,778	17,845
65 – 69	566	9,064,078	16,014
70 – 74	782	11,115,999	14,215
75 – 79	800	11,137,723	13,922
80 – 84	673	8,905,998	13,233
85 – 89	512	6,364,303	12,430
90 – 94	252	2,752,643	10,923
95 & Over	83	832,378	10,029
Total	4,651	\$ 65,621,019	\$ 14,109

Average Age: 72.96





Schedule I: Schedule of Membership Data

SCHEDULE OF MEMBERSHIP DATA AS OF SEPTEMBER 30, 2022

NUMBER OF DISABLED RETIREES AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	271	\$ 4,218,102	\$ 15,565
50 – 54	414	7,416,304	17,914
55 – 59	637	11,077,927	17,391
60 – 64	865	13,493,319	15,599
65 – 69	826	11,530,771	13,960
70 – 74	619	8,700,735	14,056
75 – 79	344	4,162,754	12,101
80 – 84	134	1,528,768	11,409
85 – 89	56	665,246	11,879
90 – 94	14	142,940	10,210
95 & Over	4	56,361	14,090
Total	4,184	\$ 62,993,227	\$ 15,056

Average Age:63.95

